

# **St Agnes Beacon, Tubby's Head, Wheal Coates, Chapel Combe, Charlotte and Towan Moors, St Agnes, Cornwall**

## **Archaeological and ecological assessment**



**Historic Environment Projects**



**St Agnes Beacon, Tubby's Head,  
Wheal Coates, Chapel Combe and  
Charlotte Moor, St Agnes, Cornwall**

**Archaeological and ecological assessment for  
the National Trust**

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Within Historic Environment, the Project Manager was Adam Sharpe BA MIFA.

The views and recommendations expressed in this report are those of the Historic Environment Projects Team and are presented in good faith on the basis of professional judgement and on information currently available.

## **Freedom of Information Act**

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## **Cover illustration**

HE CC Aerial photograph F69-011 taken on 22 June 2005 showing the coastal landscape of the project area from just to the north of Tubby's Head through Wheal Coates and Chapel Porth to Porthgidden Cove together with St Agnes Beacon and Chapel Combe, set in their landscape context.

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Fig 127. *A view across Porthgwidden Cove from Midwinter's Shaft. Two small shallow adits* [190546]/ [190547] *can be seen centre and above right of centre in the cliff face.*

Fig 128. *The almost completely blocked stone-arched portal to a high level adit* [190557] *in Great Wheal Charlotte, not far to the west of the remains of the pumping engine house. This adit might have channelled water pumped by the engine to dressing floors sited just down slope.*

Fig 129. *One of the small coastal barrow dumps at Great Wheal Charlotte, this example consisting primarily of quartz, suggesting that it derived from a nearby copper dressing floor.*

Fig 130. *West Shaft* [190555] *in Great Wheal Charlotte, set on the cliff edge above Porthgwidden Cove, and fitted with a two part Chryd Cap.*

Fig 131. *A recent aerial view of Porthgwidden Cove and the remains of Great Wheal Charlotte. Much of the spoil deriving from mining operations seems likely to have been dumped over the cliff into the back of the cove.*

Fig 132. *A view of the coastal section of Great Wheal Charlotte seen from the coast path, the bob wall of the pumping engine house* [190567] *being a prominent skyline feature.*

Fig 133. *The mysterious concrete base* [190552] *in the north-western part of Charlotte Moor.*

Fig 134. *Looking south across Chapel Combe towards the site of North Towan Mine, marked by a series of substantial spoil dumps, as well as by the overgrown mine roadways which linked up areas of the site. Bracken obscures many of the features within this area.*

Fig 135. *The bob wall of Great Wheal Charlotte pumping engine house in 1987 during conservation works undertaken by the NT.*

Fig 136. *Great Wheal Charlotte engine house bob wall today, the remains of the engine house and boiler house, together with the associated shaft site having been recently enclosed within a post and barbed wire fence.*

Fig 137. *A plane table survey drawn up at 1:1000 by Peter Rose and Ann Preston Jones in 1985 showing possible round houses* [190582]/ [190585] *(centre) together with outcrop workings* [190578]/ [190579] *and prospecting pits* [190580] *(bottom right) and stony mound (possible shaft)* [190736] *top right of centre.*

Fig 138. *A series of closely-set outcrop workings* [190758], *part of Wheal Towan or one of its predecessors on the southern boundary of the property.*

Fig 139. Looking down the lower end of Chapel Combe, showing the US Army Road [190526] cutting up the hillside towards Mulgram Hill. Immediately to its right at its lower end is part of the original track route [190527], whilst in the valley bottom are the abutments for the bridge built in 1944 [190504].

Fig 140. A section of the roadway linking Great Wheal Charlotte (on the skyline) with Towan Cross, most of this route having been upgraded by US Army Engineers in June 1944 to allow the downs to be used for the temporary accommodation of troops awaiting embarkation to the Normandy beaches on D Day.

Fig 141. Treve Holman standing behind a prototype Holman Projector at the eastern end of the Charlotte Moor test firing range. Goonvrea and the Beacon can be seen in the background.

Fig 142. A group of Holman Projectors at the eastern end of the test range on Charlotte Moor, with Charlotte United engine house in the background (mid left).

Fig 143. Cooking up a Mills Bomb in an experimental steam-powered Holman Projector. No-one gathered round seemed particularly perturbed by the possible consequences.

Fig 144. A view southwards across the reverting arable land at the southern end of Charlotte Moor, formerly the site of medieval outfields, but now archaeologically blank.

Fig 145. Charlotte United pumping engine house [190616] from the south-west prior to its conservation between 1989 and 1993. Although the building has now been stabilised, its boiler house [190617] still requires attention, and the expanding shaft cone threatens to undermine the bob wall.

Fig 146. The banks defining field system [190719] (lower left centre), together with the two undated enclosures [190723] and [190724] (upper right centre) near Towan Cross show up well in this recent aerial photograph. However European gorse and blackthorn scrub is encroaching onto surrounding sites such as the shafts and reservoirs of East Towan [190733] masking sites associated with the mine, such as reservoir [190729].

Fig 147. Post-medieval quarrying on the rock outcrop on the southern flank of the Beacon, named by Thomas Tonkin in the early eighteenth century as Garder Wollas, 'the lower seat' [190156]. The prominent overhead power cables and poles diminish the strong visual amenity and historic character of the landscape.

Fig 148. Thin, metal-contaminated soils are common on the former mine sites within the project area, and are particularly vulnerable to erosion and the loss of vegetation cover.

Fig 149. The effects of visitor pressure on thin soils can be found at many points within the project area, but are particularly evident in this aerial photograph of Wheal Coates. Multiple, braided paths have developed on thin soils, removing the vegetation and topsoil and promoting erosion.

Fig 150. On Charlotte Moor, Towan Moor and St Agnes Beacon, many relatively subtle archaeological features have become swamped by unmanaged growth. In this view of Towan Moor a relatively substantial earth bank and ditch defining the western boundary of field system [190719] runs across the view from top left to bottom right. For other examples of this issue see Figs 45 and 49.

Fig 151. Dense growth of furze and scrub masks significant remains of both industrial and military activity on the northern end of the Beacon ridge.

Fig 152. Much of the complex of historic mining activity in the south-west corner of the Beacon rough ground is concealed under dense furze and scrub, and furze and bracken are also encroaching around the fringes of the NT property.

Fig 153. Specific management recommendations for St Agnes Beacon.

Fig 154. Specific management recommendations for Tubby's Head area.

Fig 155. Specific management recommendations for Wheal Coates.

Fig 156. Specific management recommendations for Chapel Porth and Charlotte Moor.

Fig 157. Plan and external elevations of Towanroath pumping engine house, Wheal Coates [190390].

- Fig 158. *Internal elevations of Towanroath pumping engine house [190390].*
- Fig 159. *Plan of Towanroath beam pumping engine house, horizontal pumping engine house and remains of boiler house. Western and southern elevations of horizontal pumping engine house and boiler house.*
- Fig 160. *Plan, external and internal elevations of Wheal Coates stamps engine house.*
- Fig 161. *Plan of horizontal winding engine house [190376], boiler house [190377] and all-indoor beam whim engine house [190378] at Wheal Coates.*
- Fig 162. *External elevations of horizontal winding engine house [190376] and all-indoor beam whim engine house [190378] at Wheal Coates.*
- Fig 163. *Internal elevations of horizontal winding engine house [190376] at Wheal Coates.*
- Fig 164. *Internal elevations of Wheal Coates beam whim engine house [190378].*
- Fig 165. *Wheal Coates boiler house [190377] external elevations.*
- Fig 166. *Wheal Coates boiler house [190377] internal elevations.*
- Fig 167. *Wheal Coates gas engine house [190379] external and internal elevations.*
- Fig 168. *Wheal Coates chimney [190373] sample elevation and plan.*
- Fig 169. *Wheal Coates dry [190385] near Towanroath Shaft plan.*
- Fig 170. *External elevations of the Wheal Coates smithy [190336].*
- Fig 171. *Internal elevations of the Wheal Coates smithy [190336].*
- Fig 172. *Plan, external and internal elevations of the Wheal Coates calciner [190346].*
- Fig 173. *Plan and elevations of the Wheal Coates tributers' stamps, waterwheel pit and dressing floors [190340]/[190341].*
- Fig 174. *Plan, external and internal elevations of Charlotte United pumping engine house and boiler house [190616]/[190617], together with plan of shaft [190618] and balance bob mountings [190619].*
- Fig 175. *Plan and principal elevations of Great Wheal Charlotte pumping engine house [190567].*
- Fig 176. *Plan and elevations of features in Chapel Porth car park, including café [190500] and toilet block [190495].*
- Fig 177. *Plan and external elevations of lifeguard/car parker bunker at Chapel Porth [190488].*
- Fig 178. *Plan indicating areas covered by inventory maps.*
- Fig 179. *Locations of inventory features in the northern section of St Agnes Beacon.*
- Fig 180. *Locations of inventory features in the central section of St Agnes Beacon.*
- Fig 181. *Locations of inventory features in the southern section of St Agnes Beacon.*
- Fig 182. *Locations of inventory features north of Tubby's Head.*
- Fig 183. *Locations of inventory features inland from Tubby's Head.*
- Fig 184. *Locations of inventory features to the south of Tubby's Head and at the northern end of Wheal Coates.*
- Fig 185. *Locations of inventory features at the north-western end of the Wheal Coates site.*
- Fig 186. *Locations of inventory features at the north-eastern end of the Wheal Coates site.*
- Fig 187. *Locations of inventory features in the south-western part of the Wheal Coates site.*
- Fig 188. *Locations of inventory features in the south-eastern part of the Wheal Coates site.*



*Fig 189. Locations of inventory features to the north-west of Chapel Porth.*

*Fig 190. Locations of inventory features to the north-east of Chapel Porth.*

*Fig 191. Locations of inventory features at Chapel Porth and Mulgram Hill.*

*Fig 192. Locations of inventory features to the east of Chapel Porth within and adjacent to Chapel Combe.*

*Fig 193. Locations of inventory features at Chapel Porth.*

*Fig 194. Locations of inventory features on Charlotte Moor (north-west).*

*Fig 195. Locations of inventory features on Charlotte Moor (north east).*

*Fig 196. Locations of inventory features on Charlotte Moor (centre west).*

*Fig 197. Locations of inventory features on Charlotte Moor (centre).*

*Fig 198. Locations of inventory features on Charlotte Moor (centre east).*

*Fig 199. Locations of inventory features on Charlotte Moor's south-western coast.*

*Fig 200. Locations of inventory features on Charlotte Moor (lower centre west).*

*Fig 201. Locations of inventory features on Charlotte Moor (lower centre).*

*Fig 202. Locations of inventory features on Charlotte Moor (lower centre east).*

*Fig 203. Locations of inventory features on Towan Moor.*

*Fig 204. Locations of inventory features at Wheal Towan.*

## **Abbreviations**

CRO	Cornwall County Record Office
EH	English Heritage
HER	Cornwall and the Isles of Scilly Historic Environment Record
HE	Historic Environment, Cornwall Council
NGR	National Grid Reference
NT	The National Trust
OS	Ordnance Survey
PRN	Primary Record Number in Cornwall HER
RIC	Royal Institution of Cornwall

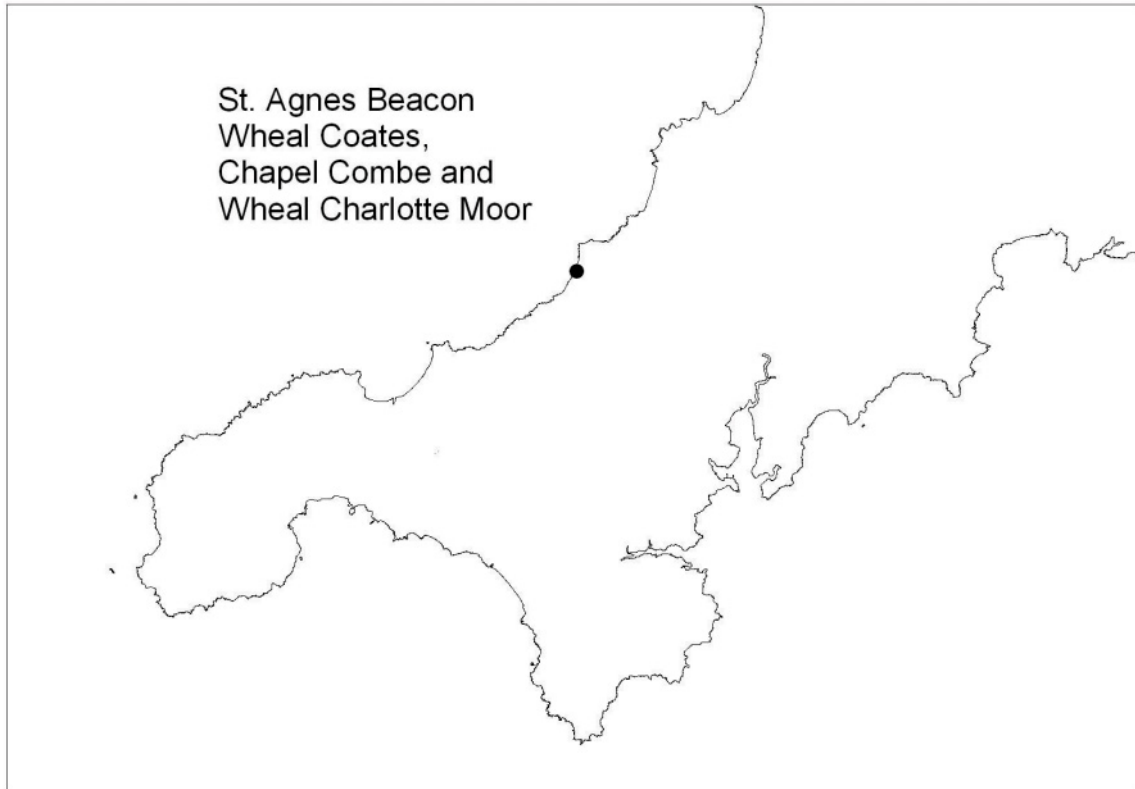


Fig 1. The location of the project area.



Fig 2. The extent of the project area, the coastal section stretching from just north of Tubby's Head in the north to just to the north of Porthtowan in the south.

## Summary

Historic Environment Projects were commissioned by the National Trust to undertake a survey of their properties on and flanking St Agnes Beacon to its west, including the coastal strip just to the north of Tubby's Head, the complex mining landscape at Wheal Coates, Chapel Porth and Chapel Combe, as well as Charlotte and Towan Moors to the south, the project area extending nearly as far south as Porthtowan. These properties have been entered into the Natural England Higher Level Stewardship scheme (St Agnes Coast and Beacon, HLS agreement No. AG00275420), and the aims of the project were to undertake an assessment of the archaeology and built structures of the project area, to re-assess previous ecological surveys, to provide an outline structural assessment of buildings within the property, to assemble a photographic and drawn record of all of its structures where possible, and to provide recommendations for the management of the properties.

St Agnes Beacon is a prominent landmark within the landscape of central Cornwall, its crest siting a number of prominent Bronze Age cairns, whilst on the coast Tubby's Head is the site of a small cliff castle. The surrounding landscape seems to have long been open downland, part of a large area of heathland which originally covered much of the area between St Agnes, Redruth and Truro. Chapel Porth was the site of a medieval chapel and holy well dedicated to St Agnes. Outcrop mining within the area around and to the west of St Agnes seems to have begun in the early post-medieval period, and to have been quickly followed by the first phases of downland enclosure, many of the tenants of the new smallholdings being tanners. To the west of the Beacon, tin and copper mines developed from coastal adits and trials on lode exposures in the cliffs, whilst the stream in Chapel Combe became an important resource for tin stamping mills and dressing floors, the valley having previously sited tin streaming operations. Shallow pits flanking the Beacon supplied candle clay for miners and a fine sand used by plasterers. Three coastal mines, Wheal Coates, Great Wheal Charlotte and North Towan, developed into large concerns during the 19<sup>th</sup> century, acquiring steam engines for pumping and winding ore, though by the early years of the 20<sup>th</sup> century all operations had ceased. At Wheal Coates, in particular, the field remains particularly well demonstrate the evolution of mining techniques over at least five centuries.

The Beacon's summit ridge also sited a fire beacon, a short-lived eighteenth-century summerhouse probably built by the Donnithorne family, a coastguard lookout and, during WWII, a radar station, whilst Charlotte and Towan Moors sited the test range used in the development of the Holman Projector, as well as being used by the US Army during the run-up to D-Day to site one of a number of dispersed encampments in the countryside surrounding embarkation points around the Fal Estuary.

Within these areas of coastal heathland, archaeological features spanning 4000 years are well-preserved, though scrub management is needed in some areas to ensure that this remains the case. The report suggests a range of management proposals covering vegetation management, access improvements and the provision of interpretation. The majority of structures within the properties have been conserved during the last five decades, and currently require only minimal attention.

# 1 Introduction

## 1.1 Project background

In February 2009, the Historic Environment Service of Cornwall County Council (now Historic Environment Projects, Cornwall Council) was invited by The National Trust to tender for an archaeological and ecological assessment of their properties on and to the west and south-west of St Agnes Beacon. These properties comprise the Beacon itself together with a strip of coastal land extending from Tubby's Head through Wheal Coates, Chapel Combe and Wheal Charlotte Moor, the southern end of the project area lying just to the north of Porthtowan (see Fig 2). As these properties have been entered into the Natural England Higher Level Stewardship scheme (St Agnes Coast and Beacon, HLS agreement No. AG00275420), the project was to comprise the re-assessment of the archaeology and built structures of the project area, the re-assessment of previous ecological surveys, an outline structural assessment of buildings within the property, the provision of a photographic record of all structures and recommendations for the management of the properties.

HE Projects were advised on 22 April 2009 that that the tender had been successful, subject to finalisation and acceptance of the draft Written Scheme of Investigation (WSI) submitted with the original tender bid.

## 1.2 Project aims and objectives

As set out in the brief, the project aims are:

- To investigate, describe and understand the archaeological and historic environment resource within the study area through historical and archaeological desk top and fieldwork methods.
- To undertake ecological surveys, with particular regard to areas within the vicinity of structures which may require conservation.
- To undertake specialist ecological surveys for bryophytes, lichens and bats.
- To understand the relative importance of the surviving archaeological features within the context of the wider historic landscape of the project area.
- To demonstrate the contribution made by mine buildings to the character of the landscape.
- To outline the current and future management requirements of the sites identified within the project area.
- To assess the feasibility of consolidation of structures within the project area and to provide an outline of the work which might be required, taking identified environmental factors into consideration.
- To discuss the importance of the archaeological sites/landscape in conjunction with research questions for particular events, periods, processes and industries where appropriate.
- To identify any requirements for further or more detailed archaeological or ecological recording.
- To identify the potential for educational access and for interpretation.
- To produce a statement of significance and a statement of guiding principles for the future management of the historic landscape and buildings.
- To produce and disseminate a report outlining the findings of the assessment.

## 1.3 Methods

### 1.3.1 Assessment tasks

#### *Preliminary*

- Liaison with Peter Bee, NT Regional Building Department to determine the conservation history of these buildings and any proposed future conservation works.
- Liaison with NT property staff to identify management and related issues.

- Liaison with St Agnes Parish Council.
- Liaison with the St Agnes Museum Trust and with local experts.
- Liaison with Cornwall Council.
- Liaison with the Historic Environment Specialist, Natural England.
- Liaison with English Heritage.
- Liaison with the ecological consultant.

#### *Desk-based assessment*

- Cornwall and Scilly Historic Environment Record
- Published sources
- Previous archaeological reports
- Archive maps, including the 1840 Tithe Award mapping for the Parish of St Agnes and the 1<sup>st</sup> and 2<sup>nd</sup> Editions of the OS 1:2500 County Series mapping
- Stereo and oblique aerial photographs forming part of the Cornwall and Scilly HER
- Air photo plots produced by the National Mapping Team.
- Archive photographs held in local collections
- Plans and other relevant documents in the Cornwall Record Office
- Documents in the Cornish Studies Library
- Records of the shaft safety works undertaken by Carrick District Council's Operation Minecap during 1982/3.
- Published material, plans, photographs and documents in the Courtney Library, Royal Institution of Cornwall Courtney
- Rights of Way and CROW Act open access land information
- Other relevant information held as GIS themes by CC

#### **1.3.2 Archaeological fieldwork**

Each of the areas was the subject of a detailed walk-over survey, the level of detail which could be recorded being subject to prevailing vegetation conditions. Recording was via a mix of sketch survey and notes, though measured elevation drawings and plans of structures were prepared where relevant. Air photo plots prepared by the NMP (National Mapping Programme) overlaid on current OS mapping combined with information derived from relevant historic maps was used as the survey base, and was checked and added to during field survey to produce the final survey mapping. Newly-discovered features were located using a hand-held GPS unit working in native (lat/long) format, readings being converted to NGRs using GridInquest software. Buildings were recorded by a combination of direct measurement and offsets, together with archive quality photography using a medium format camera and 100 ASA black and white film. Field drawings of the buildings were drawn up using CAD software.

In some parts of the Project Area, the presence of mine shafts or unstable cliff edges constrained survey work; dense vegetation in Chapel Combe, on parts of St Agnes Beacon, at Wheal Coates and on the southern margin of the site of Charlotte United similarly limited the survey team's ability to produce a complete record of all features.

The condition of each building and archaeological feature was examined to National Trust Level 3, which involved an assessment of their structural condition, conservation and management needs, identifying factors which might be leading to their deterioration and their vulnerability, allowing a prioritisation of works to be drawn up.

The known surviving buildings within the project area comprise the following:

- Early mine structures near Tubby's Head, probably part of Wheal Owles.
- Pumping, winding and stamping engine houses, chimney, calciner, smithy, dressing floor structures and wheelpit at Wheal Coates.

- Stamping mills and dressing floor structures in Chapel Combe, including those incorporated within modern structures within the Chapel Porth car park.
- Engine house at Charlotte United.
- Engine house bob wall at Great Wheal Charlotte.
- Elements of the Old Century tin dressing works in Chapel Combe.

Where practicable a series of photographs of each building was taken to record their general appearance, as well as internal and external elevations where this could be achieved safely. Buildings were recorded using B&W archive quality film stock using a medium format camera. Archive images included a suitable scale in each view. High quality (>8 Mpx) digital images were taken for use in the project report, and for future interpretation purposes. Photographs were taken of buildings and other features within the landscape, including those from significant public viewpoints.

### **1.3.3 Ecological survey**

A three-stage ecological survey was commissioned from Spalding Associates. The project manager was Jane Pilkington.

#### **Stage 1**

Preliminary meeting with National Trust, Natural England and Historic Environment Service to confirm scope of desktop review.

#### **Stage 2**

Desk top review of existing information from St Agnes Nature Conservation Evaluation (Stone *et al* 2007) and NVC surveys (as available), to extract existing records for nature conservation issues potentially at risk from works on historic environment. These included protected species, key SAC and SSSI features (species and habitats), other rare species and BAP priority issues where appropriate. The results were collated and produced as descriptive text in Word document as tables, and maps using a GIS system.

#### **Stage 3**

Generic recommendations for further ecological survey applicable to the site were compiled, based on results from stage 1. The scope of this stage was to include protected species (highlighting bats in particular and nesting birds), rare bryophytes, lichens, vascular plants and invertebrates and risk avoidance methods for issues such as sensitive and priority habitats, reptiles and other rare species. The potential for the creation of a geographic database for information gathered in Stage 2 was explored and related to findings of historic environment survey.

### **1.3.4 Post-fieldwork tasks**

- Conversion of sketch surveys to CAD format or GIS layers where appropriate.
- Preparation of survey output for archiving.

#### *Report*

- Prepare and distribute an illustrated report drawing together the results of the assessment, including the building condition survey and ecological surveys. A field visit with NT staff is proposed once the report has been brought to draft stage to discuss report results and management proposals. The results of discussions during the field visit will be incorporated into the final report.

#### *Archive*

- Archive all project materials, photographs, plans and notes to HES standards.

## **2 Background**

### **2.1 Location and setting**

St Agnes Beacon, centred at SW 71003 50420 and rising to just over 185m OD, is one of the most prominent and distinctive hills of west Cornwall. This is reflected in the siting of a group of Bronze Age ceremonial monuments and a post-medieval summerhouse - each probably intended as a 'landmark' to be seen from a wide area as well as a place from which to view the landscape - but it was also the location of a World War II radar station, the Beacon providing an elevated location giving good coverage over a wide expanse of the southern Irish Sea. From the Elizabethan period until the Napoleonic Wars it had also been the site of a signal beacon. Over much of the last three and a half millennia it is likely that the Beacon hill has provided rough grazing and fuel for nearby settlements, although these aspects have left little in the way of surface evidence. There are notable mining remains on the hill, both of surface working and shaft mining, and a series of boundaries tracing the late enclosure and reclamation of the rough ground.

The block of coastal land which runs from Tubby's Head to just to the north of Porthtowan is open, west-facing, flanked by high cliffs and contains one of the most spectacular ranges of mining remains in Cornwall, including the much-photographed group of engine houses at Wheal Coates. These stand within the context of extensive and well-preserved outcrop mining features which are likely to predate documented 17<sup>th</sup> century activity. Several flint scatters and a number of possible hut circles (round houses) testify to a long use of the area during prehistory. A few other features may be prehistoric dwellings but could also be related to post-medieval mining. The possible cliff castle at Tubby's Head is of particular importance because of its small size and clearly non-defensive location. The most notable medieval/early medieval sites are those of the chapel and holy well of St Agnes, of additional interest because of the Giant Bolster folklore associated with them. Other later features include a probable post-medieval field system and a firing range on Charlotte Moor used for field tests of the Holman Projector. The area was extensively used during World War II, the area siting beach defences at Chapel Porth, temporary US Army encampments and evidence for training activity on Charlotte Moor in the run-up to D Day in June 1944, the use of Charlotte Moor to dispose of unexploded German bombs and of Wheal Coates as a site for RAF practice firing. St Agnes Beacon sited a wartime radar station, possibly incorporating experimental equipment.

The stream in Chapel Combe rises at Mongoose, the section from Chapel Porth to Towan Cross falling within the project area, and was an important source of water power for the local mining industry, siting a series of water-powered tin stamping mills and their associated dressing floors, as well as the northern shafts of Charlotte United copper mine. A number of leats were tapped from the water course, feeding a stamping mill near East Wheal Charlotte and others in the lower part of the valley, the westernmost being sited at Chapel Porth. The northern branch of the stream (flowing in what is known locally as the 'Arrance Valley') rises near Goonvrea and is paralleled on its northern side by the course of the linear earthwork known as the Bolster Bank. This water course is also likely to have been an important resource for the local mining industry, especially near its junction with the stream in Chapel Combe where it served Wheal Freedom.

### **2.2 Geology and soils**

The majority of the project area is underlain by the metasandstones and metasilstones of the Gramscatho Beds metamorphosed and altered by the granite of the Cligga Head intrusion an isolated outlier of which outcrops in the area close to Beacon Cottage Farm, but extends which westwards in depth. This granite has, in places, been subject to kaolinisation, as can be seen in the walls and roof of the eastern end of the accessible section of the Towanroath Adit (Adam Sharpe pers.

comm.), the intersection between granite and killas being about 100m east of Towanroath Shaft at about 6.0m above sea level. At surface, Symons (1870) showed the granite outcropping between Arthur's Shaft at Wheal Coates in the west and Beacon Drive to the east, extending southwards not much further than the present car park.

St Agnes Beacon's soils are characterised by the soils of the Moretonhampstead series which are well drained gritty loams with a humose surface horizon in places. Most of the remainder of the project area is underlain by Manod series soils which are well drained fine loamy or fine silty soils over rock, which is shallow in places. The plateau of the project area close to Towan Cross has Denbeigh 2 series soils which are well drained fine loamy soils over slate or slate rubble.

Between White Rocks between Tubby's Head and St Agnes Head to the north and Wheal Coates to the south, the country rocks have been heavily metamorphosed by the intruding granite to form meta-mudstones and meta-siltstones. As the coastal plateau stretches towards the Beacon, Pliocene clays, silts, sands and gravels of the St Agnes formation overlie the bedrock. The clays were long used by miners for 'candle clay' to affix candles to their helmets, as pottery clay for making coarse pottery and bricks (Edmonds *et al* 1975, 79; Johns 1998, fig 4), whilst the fine sands were used in creating stucco plaster. The materials occurring in the beds were advertised in the Royal Cornwall Gazette on the 7<sup>th</sup> February 1843 as '*Beds of China clay, brick earth, fire clay, white and red sand for glass works, foundries, potteries ... lying on the cliffs and wastes of the parish of St Agnes.*'

The quaternary geology on the western side of St Agnes Beacon is complex, and the source of much of the eluvial and alluvial tin recovered from within this area, as reported on from a variety of sites by Hawkins (1832) as follows:

*(In a pit) 'on the north side of the beacon ... I found the yellow cobb, two and half feet in depth, mixed with a great proportion of rubble, all of which was composed of the hard quartz-veined killas, here called caple. This bed underlies the hill to the north. The next to it in succession, was a bed of brown sand, which attained a thickness of nine feet ... then occurred nine or ten feet of bluish-gray, and brown clay ... this bed is capped with four or five inches of white clay .... Below this sandy clay they find grit-sand six or seven feet deep, until they find the rock, which is said to be even and naked.'*

*'Immediately beneath the vegetable mould lies from two to three feet of cobb, pretty free from rubble or other matters. Then from three to four feet of yellow sand, which is succeeded by fourteen inches of mining clay. After this comes four and a half, or five feet of white sand, and then from two to three feet of yellow sand. Next occur pebbles of a flattened shape, which are a few inches in breadth, resting on two or three inches of ... black mud, which is in contact with the rock.'*

*'Captain Stephens added, that the sand and clay deposits extend for some distance along the western base of the beacon, preserving a breadth of about forty fathoms, and there the beds are as follow. First, under the vegetable mould, yellow cobb, mixed with much rubble four feet deep, then clay, which has a thickness of six feet, after which succeed two or three feet of ... puddle sand.'*

*'As for the stream-tin ... it occurs sometimes on the smooth surface of the killas rock, more abundantly in the hollows which have been formed on it ... and always beneath the larger masses of rock which are scattered over it.'*

*(At Wheal Coates) 'The great lode ... underlies three feet and a half to the south. All the other lodes underlie to the north about one foot in a fathom. They abound in heaves and slides.'*

*'Under the black vegetable mould I observed six or eight feet of brown rubble-earth, filled with pebbles of quartz and peach-rock, more or less rounded, together with some fragments of growan. Intermixed with this rubble, they find tin both in the state*



*of sand and gravel. They even find tin in the black mould above it. I also observed some marks of streaming operations down to the surface of the hard rock.'*

William Hals, writing in the early eighteenth century (Gilbert 1838, I, 6-7), described the material overlying the bedrock as follows:

*'... Under that for six foot deep, is found a fine sort of white and yellow clay, of which tobacco-pipes have been made; beneath this clay is a laying of sea-sand and nice totty-stones. Tow or three hundred fathoms from the sea, and about eighty fathoms above it, under this sand, is to be seen for about five foot deep, nothing but such totty-stones as are usually washed on the sea-shore, and in many of them grains of tin. Under those stones the soil or matter of the earth, for five or six feet deep, is nothing to be seen but carne-tyer, id est, spar-stone land or earth, under which spar-stone earth appears the firm rock, through which tin-loads are wrought or pursued by the tanners fifty, sixty, and seventy fathoms deep. This Ball, or lands containing this diversified matter or soil, contains about eighty acres in circumference; which amuseth most men how the earth, clay, sand, totty-stones, or spar-stone land, should yet be so high above the solid rocks to the top of this mountain, unless Noah's flood was universal, and reached to this island. ... a quantity of the white sort of sand in this Ball, or hill, washed in a stream or river of clear water, will instantly turn the same water into a milk-white colour, and not to be discerned from milk, as long as you continue to pour the said sand into the river; but this is to be understood only of such clean white sand as is made use of and prepared for writing sand boxes.'*

Most of the copper and tin mineral lodes follow an ENE-WSW trend and are mainly grouped at and to the south of Wheal Coates, reflecting the result of the contact between granite and killas which occurs here (see Geological Survey of Great Britain 1981, based on British Geological Survey 2005 and Soil Survey Data 2004). Fieldwork also revealed a number of elvan boulders scattered across the ground surface which were probably regularly quarried for building stone.

At Wheal Bungay, the locations of the shafts and surface workings suggest the location of a mineral lode trending roughly east-north-east to west-south-west and outcropping just to the south of Tubby's Head; shafts on an alignment trending north-west to south-east and crossing the lode outcrop near the prominent shaft in the southern part of Wheal Bungay may well be ventilation shafts on Wheal Coates' early northern adit, though an eroded zawn to the north of Tubby's Head suggests that the adit might have been driven along a cross-course.

Wheal Coates is traversed by approximately seven near-vertical, closely-spaced sub-parallel lodes which trend more or less north-east to south-west and carry both tin and copper. Only two shafts are named by Dines (1956): Towanroath Shaft (at SW 69879 50015) close to the coast and Water Shaft (SW 70137 50133), some way inland. The 1880 OS mapping shows a further four shafts at SW 70171 50133, SW 70113 50166, SW 70066 50265 and the original engine shaft at SW 70288 50327, 150m to the west of Beacon Drive. To the south, there are indications of at least two east-north-east to west-south-west trending lodes outcropping at the north-eastern end of Chapel Porth, Symons', 1870 map additionally naming Tonkin's Lode in Wheal Coates.

Symons' 1870 map of the St Agnes mining district (CRO LC-XIII-6, extract as Fig. 29) shows Wheal Coit lode continuing south west from the large openworks in the Higher Bal area to underlie the northern end of St Agnes Beacon (*cf* Dines 1956, map VIIA). Four further closely-spaced lodes are shown running parallel to each other across the southern slopes of the Beacon; Dines (1956, map VIIA) shows three lodes in the same area. The relationship between the Wheal Coates and Beacon lodes is uncertain. Although they are evidently parts of the same underlying structure, the enclosure of the Downs by early smallholdings has removed evidence for workings on the lode outcrops between these two areas.

At Great Charlotte, to the south of Chapel Combe, Dines names Main Lode trending between 15 degrees east and 20 degrees north, outcropping 400 yards to the south-west of Chapel Porth and carrying copper. Dines names seven shafts on this lode, these being Midwinter (SW 69511 49043, on the cliff edge, 425 yards south by west of Mulgram Hill), West (SW 69601 49119, also on the cliff edge, 127 yards to the north-east of Midwinter Shaft), William's (SW 69657 49179, 90 yards to the north-east of West Shaft), Cock's (SW 69726 49168, 80 yards to the east of William's Shaft), Moyle's (SW 69802 49161, 85 yards to the north-east of Cock's Shaft), East (SW 69930 49207, 145 yards east by north of Moyle's Shaft) and Engine (SW 69691 49050, 200 yards to the east of Midwinter Shaft). The 1880 OS mapping (Fig. 34) shows an additional shaft 133m to the north of Cock's Shaft and a further shaft 130m to the east of East Shaft which also seem likely to be associated with Great Charlotte, this shaft almost certainly being on the eastern extension of the strike of Main Lode. It seems likely that a fault underlies Chapel Combe, as no lodes seem to continue across it.

In Charlotte United, the 1880 OS mapping (Fig. 35) shows 17 shafts on at least four roughly parallel lodes, naming only 'Engine Shaft' at SW 70146 49041. Dines provides little information about the names of the lodes or the shafts, though the mine output suggests that they carried mostly copper with a little tin. The locations of the shafts on the two sides of Chapel Combe suggests that the lodes run across the valley; the extensions of the northern lodes being worked to some degree on its eastern side, in part as East Wheal Charlotte. Dines describes the Charlotte United Abandonment Plan (AMR41E) as showing three lodes: North Lode, which underlies north and courses  $E 5^{\circ} N$ ; Middle Lode, which is parallel to and 140 yards to the south of North Lode and South or Copper Lode, trending  $W 20^{\circ} N$  and underlying north, whose course should intersect Middle Lode at the stream in Chapel Combe. Dines (1956) notes Harvey's Shaft, Engine Shaft and an unnamed shaft 200 yards west by south of Engine Shaft as having been sunk on Copper Lode. The area worked by the mine contains considerably more shafts than this, however.

At the southern end of the project area three closely-set south-west to north-east trending parallel lodes outcropped on the cliffs just to the north of Porthtowan, and were worked as part of (or precursors to) Wheal Towan.

This area of the St Agnes coast was one of the areas within which Carrick District's Council undertook safety works to abandoned mine shafts as part of its 1982/3 Operation Minecap. The majority of documented shafts within publicly-accessible land were treated with the approval of the Duchy of Cornwall (as mineral lords), very many of these being fitted with two-part Clwyd Caps incorporating boulders and (usually) concrete, this approach effectively permanently sealing them (for example see Fig. 65). Other shafts were already choked with mine waste or, quite commonly, with rubbish (at Great Wheal Charlotte this included a large number of old cars), whilst a small number were left open, and either topped with 'bat castles' (as at Water Shaft, Wheal Coates, Fig. 104) or were enclosed within substantial stock fencing and barbed wire (as in the case of two large shafts at Charlotte United where capping would have been unfeasible).

## **2.3 Historic Landscape Characterisation**

See Fig. 11.

The whole of the Beacon is characterised as Upland Rough Ground (Cornwall County Council 1996). This has the longest history of human interference of any landscape type. Its principal attributes - impoverished soil supporting heath/scrub vegetation - are a product of prehistoric human intervention, maintained through medieval and early modern land use systems. Highly important remains of prehistoric and medieval settlements and ceremonial and ritual monuments often survive in rough ground.

The remainder of the project area is characterised as Coastal Rough Ground, defined as unenclosed sloping ground beyond fields but above cliffs. It is generally only found as a narrow band and is the result of thousands of years of human activity, particularly through summer grazing, turf-cutting and the extractive industry. There are often remains of human activity related to the coast; cliff-top barrows, cliff castles, coastguard sites, fortifications, etc. Of considerable importance, its rare and well-preserved archaeological features survive in understandable complexes where time-depth is clearly visible. The zone is highly valued by both local people and visitors and has good potential for research and presentation.

Substantial areas within both the Upland and Coastal Rough Ground areas of the property are dominated by the remains of past industrial activity; a discrete area on Wheal Charlotte Moor is, however, the only portion to be characterised as Industrial.

## **2.4 Vegetation history**

Both the 1880 and 1907 OS maps record most of the project area as a mix of rough pasture and furze. Extensive areas of bare or partly-revegetated spoil heaps were recorded around Wheal Coates and Wheal Charlotte, the substantial quantities of copper and other phyto-toxic sulphides within much of this material either stunting vegetation growth or precluding its growth altogether (see Fig. 148). At Great Wheal Charlotte this copper-rich material extends far beyond the shaft dumps in the form of thin spreads of dressing floor waste or of early barrow dumps of sorted waste, whilst the shaft dumps themselves have been extensively spread, dug into and, in part, removed to provide hardcore for roads such as that constructed across the commons by US Army engineers in 1944, or for other purposes. As a result, the heath cover here is thin, and in places absent. Towards the coast, a mixture of stunted heath species and short maritime grasses is found. Areas where the thin local soils are slightly more nutrient-rich or deeper have developed stands of bracken, bramble and scrub, whilst in wetter areas such as in Chapel Combe, Willow carr has developed, together with semi-mature sycamore, hawthorn and other trees.

The presence of elements of an apparently early field system [190721] on Wheal Charlotte Moor (Fig. 38) indicate that, despite the poor, thin and mineralised soils, the soil was capable of being cultivated, though these fields, very much exposed to the prevailing maritime climate, would have been relatively marginal and probably not used for any extended period. There appears also to have been an episode of ploughing just to the west of these fields [190713], presumably during or not long after WWII. An area of the coastal land to the west of Towan Farm sited medieval outfields which were improved to arable during WWII and which are now being allowed to revert. St Agnes Beacon is currently dominated by dwarf shrub heath, though gorse and bramble scrub is encroaching onto the margins of its lower slopes. The remainder of the project area is dominated by dwarf shrub heath with limited areas of scrub and bracken. On the coastal margins this is further dwarfed by the effects of exposure to salt spray, and many of the lower sections of the coastal slopes are of bare rock. In Chapel Combe a few small areas of deciduous woodland are developing, whilst near Towan Cross, scrub development on former heathland is well advanced, the coverage consisting at present mostly of blackthorn and hawthorn thicket.

## **2.5 Designations**

**Scheduled Monuments** (based on GIS dataset English Heritage 2004, see Figs 4, 5 & 7).

There are three Scheduled Monuments in the study area:

Scheduled Monument Cornwall no 29667, *'Bowl barrow on St Agnes Beacon 350 yards to the west of Cannonball Farm'*.

Scheduled Monument Cornwall no 726 *'Cliff Castle at Tubby's Head'*

Scheduled Monument Cornwall no 940 *'Medieval chapel and enclosures 570m NW'*

of Wheel Freedom'.

**Listed Buildings** (based on GIS dataset English Heritage, 2004, see Figs 6, 8 & 9).

There are seven Listed Buildings within the study area:

LB 63770, Engine house at SW 696 491 (Great Charlotte)

LB 63884, Chimney immediately east of New Whim (Wheal Coates)

LB 63882, Stamps house at SW 700 500 (Wheal Coates)

LB 63885, Calciner immediately north of the Stamps house (Wheal Coates)

LB 63769, Engine house at SW 699 492 (Charlotte United)

LB 63883, Old whim and new whim at SW 700 500 (Wheal Coates)

LB 63881, Towanroath Engine House at SW 699 500 (Wheal Coates)

The study area lies within Area A7 of the Cornwall and West Devon Mining Landscapes (Cornish Mining) World Heritage Site, inscribed in 2006.

The whole of the property lies with the Cornwall AONB and has also been designated as part of Cornwall County Council's St Agnes - Perranporth Area of Great Historic Value (AGHV), St Agnes Heritage Coast and as an Area of Great Scientific Value (AGSV).

The coastal sections of the properties lie within the Godrevy Head to St Agnes Site of Special Scientific Interest (SSSI) and Special Area of Conservation (SAC) (Fig 10).

## 2.6 Access and rights of way

See Fig 12.

- The western edge of the coastal section of the property is traversed by the South West Coast Path.
- Path 318/13/1 forms a circular route on St Agnes Beacon; 318/12/1 runs around the northern side of the Beacon and 318/63/2 runs southwards from the crest of the Beacon.
- Paths 318/14/1 & 7 run south-west across the southern part of Wheal Coates.
- Paths 318/23/1 & 2 run along the south side of Chapel Combe from Porth Towan to Towan Cross.
- Paths 318/35/1, 2, 4 & 5 run eastwards from Mulgram Hill to Towan Cross.
- Path 318/35/6 parallels the South West Coast Path from Mulgram Hill to Porthtown.
- All of the project area is registered as open access land under the CROW Act 2000.

## 2.7 Previous archaeological work

The section of the project area around Wheal Coates was the subject of an archaeological survey in 1986, based on detailed plane table mapping at a scale of 1:1000, this being undertaken by Cornwall Archaeological Unit (Sharpe and Smith 1986). St Agnes Beacon and an area at Chapel Porth were the subject of National Trust archaeological surveys (National Trust, undated and National Trust 1985 respectively), whilst recent desktop assessments of substantial parts of these areas have been undertaken by Graeme Kirkham as part of the HEATH Project work carried out by HES (Kirkham 2006a, 2006b). However, none of these properties have been subjected to archaeological field surveys which meet current standards, with the exception of a small area between Wheal Coates and St Agnes Head, which was assessed in 2007 by HES (Dudley 2007).

- Dudley, P, 2007. *Trevellas Coombe, New Downs Head and St Agnes Head, Cornwall: archaeological assessment*, HES report 2007R092 for The National Trust
- Kirkham, G, 2006a. *Chapel Porth, St Agnes, Cornwall: HEATH management assessment*. HES report for the HEATH Project.

- Kirkham, G, 2006b. *St Agnes Beacon, St Agnes, Cornwall: HEATH management assessment*. HES report for the HEATH Project.
- Sharpe, A., and Smith, J.R, 1986, *Wheal Coates: An Archaeological Survey for the National Trust*. CAU report for The National Trust
- The National Trust 1985, *Archaeological Survey: Chapel Porth (Cornwall)*. National Trust.
- The National Trust (Undated), *Archaeological Survey: St Agnes Beacon (Cornwall)*, National Trust.

Other relatively recent archaeological work undertaken by HES staff includes:

- Aerial photo mapping by HES – the areas have been plotted digitally as part of the National Mapping Programme. This provides a useful overview of archaeological potential, but this data must always be verified by checking on the ground.
- St Agnes Beacon – measured survey of some summit features, and historical account of the summer house, beacon, Ordnance Survey station, and barrows (A. Preston-Jones, n.d. [c 1997], *St Agnes Beacon, Journal of the St Agnes Museum Trust 13.*)
- St Agnes holy well, chapel and cave cult site – discussed in P. Rose, 2000-1, *Shadows in the imagination: encounters with caves in Cornwall, Cornish Archaeology 39-40* (published 2004).
- Wheal Charlotte – measured survey of possible roundhouse platforms (1985, HES archive).
- Wheal Charlotte – elevation drawing of engine house bob wall, 1990 (HES archive)

Other relevant recent work includes:

- St Agnes Well – historical account by Jo Mattingly (1998), *A well without water? The rise and fall of the Holy Well at Chapel Porth, St Agnes, Journal of the St Agnes Museum Trust 14.*)
- Wheal Coates – early mine workings – P. Budd and D. Gale, 1994, *Archaeological survey of an early mineworking at Wheal Coates, near St Agnes, Cornish Archaeology 33.*

## **2.8 Previous ecological survey**

Information has been extracted primarily from two documents: A National Vegetation Community survey of Godrevy Head to St. Agnes Site of Special Scientific Interest and Special Area of Conservation (SSSI/SAC) carried out by Wessex Environmental Associates in 2003 (this did not include the area at St Agnes Beacon) and a Nature Conservation Review, carried out by Ecology Land and People (ELP) in June 2007 for the National Trust (NT). From these two documents information on protected, Biodiversity Action Plan (BAP) and Red Listed species have been extracted for all taxa with the main focus being on plants and invertebrates as they were the focus of these two earlier studies; also listed are noteworthy and Biodiversity Action Plan Habitats. The purpose of this is to identify which species and which habitats are most threatened from the proposed activities and which may benefit so as best to advise working methods and protocols.

## **2.9 Conservation history**

The pumping engine house at Towanroath was conserved by the National Trust in 1973 (Figs. 88-89). This work involved a substantial amount of rebuilding work, 'restoring' the engine house to more or less its late 19<sup>th</sup> century appearance, and 'undoing' some of the modifications undertaken to it during the last re-working from 1906-14, when flat rods from the horizontal engine sited on the foundations of the old boiler house were taken through the old engine house following the removal of some stonework from the bob and rear walls. The 1970s pointing was undertaken using a cementitious mortar.

The upper engine houses (the stamps and the two whims), together with the surviving boiler house, the traction engine house and the chimney were conserved in 1986-8 by Percy Williams and Sons of Redruth (Figs. 95-96). The exposed open section of the calciner flue to the chimney was grilled over as part of these works (Fig. 99), whilst the interior of the calciner was excavated under archaeological supervision before the re-pointing of parts of the structure (Fig. 98). At the same time, some rationalisation of the path network from the upper part of the site down to Towanroath Shaft was undertaken in order to limit the effects of foot traffic on the eroding face of the coastal mine dumps. To control vehicle access to the site, one of the former clay pits adjacent to the road was partly infilled and levelled to create a visitor car park (Fig. 37), whilst a bund to prevent vehicular access to the clifftops was created at its western end and a site interpretation panel was installed on the northern wall of the all-indoor beam whim engine house.

Towanroath Shaft was capped off with a concrete slab incorporating a welded steel grille, this work almost certainly having taken place in 1973 during the conservation of the engine house. This original grille was subsequently replaced when inspection revealed that it had become corroded and unsafe. Some of the other shafts on site were treated as part of Carrick District Council's 'Operation Minecap' during 1983, Water Shaft being equipped with a masonry bat castle incorporating a raised grille on its upper surface (Fig. 104), the other shafts tackled being closed off with two part Clywd Caps.

The remaining bob wall of Great Charlotte pumping engine house was consolidated between 1987 and 1990 (Fig. 135). The shaft was plugged in 1983. Other shafts on Charlotte and Towan Moors were treated by Operation Minecap in the mid 1980s.

Charlotte United pumping engine house was stabilised and partly re-pointed in 1989. Works were undertaken to the remains of the Charlotte United engine house in 1993.

## **2.10 Historical summary**

### **2.10.1 Place-names**

(This section is based on the Institute of Cornish Studies place-name index.)

The earliest documented names for St Agnes Beacon are *Brievennoc*, recorded in 1201, *Brevannek* (1261) and *Bryanek* (1286) (Gover 1948, 362-6; ICS place-name index). The first element of this is the Cornish word *bre*, a hill, and the second has plausibly been derived from a hypothetical Cornish word *\*bannek*, meaning pointed (Gover 1948, 362-6; Padel 1985). Subsequent work by Padel (1988, 49), however, suggests that the second element is obscure, for the historic forms do not in fact allow a derivation from *\*bannek*. In the historic period the name Bryanick was used to refer to the settlement of St Agnes and by about the beginning of the eighteenth century the hill was referred to as 'Carne Breanick' or 'St Agnes Beacon' (Tonkin 1975-6, 203).

Towanroath was first recorded in 1710 and contains the Cornish elements *toll*, meaning 'hole' and *gruah*, 'hag, old woman, witch'. However, the meaning of *gruah* may have changed by the period of Modern Cornish as Tonkin in 1720 spoke of 'a famous Wrath or Giant' (Padel 1985, 123); the name may therefore mean the Giant's Hole and is likely to refer to the legend of the Giant Bolster and St Agnes (see below). The Giant's footprint was recorded in 1710 as 'St Agnes Foot' (ICS place-name index).

Chapel Porth was first recorded, as *Porthchapple*, in 1516 (Gover 1948, 362-6; ICS place-name index) and incorporates the Cornish word *porth*, meaning cove or harbour (Padel 1985, 190). Many *porth* names are associated with historic landing places for boats, although this is not an essential element of the meaning (*ibid.*, 191). Porthgwidde, immediately south of Chapel Porth, includes the Cornish word *guyn*, white, although possibly also meaning fair or pleasant (*ibid.*, 120, 191). Here the very restricted access down the cliff makes use by boats less likely, particularly given the proximity of the more easily accessible Chapel Porth, and the prefix is more likely to mean 'beach'.

Mulgram Hill was recorded as *Mullgran Hill* in 1708 (ICS place-name index) and the bounds of Wheal Mulgram were documented in the second half of the eighteenth century (CRO EN/1637), these apparently covering the whole of the northern part of Charlotte Moor. The setts of Great Wheal Charlotte and North Towan were developed within Mulgram Bounds. The name plausibly includes Cornish *moyl*, bald or bare, in common with other round-topped hills such as Mulfra (*moyl+bre*) in West Penwith. Wheal Coates was first recorded in 1692 (Gerrard 1986) and 1708 (Padel 1985) as '*Wheal an Coats*' which contains the Cornish element *wheryl* meaning 'work or working' (Padel 1985), with an unknown personal name.

## **2.10.2 Earlier prehistory**

### **2.10.2.1 Flint working**

Evidence of human activity for much of the earlier prehistoric period is available from casual finds of worked flint. Such finds are known from several locations within the study area. Henderson recorded a flint that he found on St Agnes Beacon about 1914 [90349] and other flint finds from the Beacon are in a collection in the Royal Cornwall Museum (TRURI: 2007.41). A few waste flakes have been found on the surface of an eroding footpath in the Wheal Coates area (HER PRN 19153, 19435), from close to the cliff edge just north of Tubby's Head and also in the vicinity of the supposed site of a stone circle [90053] between St Agnes Head and Towanroath Shaft (Preston-Jones 1986, 4; Ann Preston-Jones, pers. comm.). Finds were also made at Mulgram Hill on several occasions between 1986 and 1988, at a point where vegetation had been removed by visitor erosion. In August 1988, the collection from this area comprised 52 pieces, mainly small waste flakes, some very small, together with two possible utilized pieces. Individual pieces were generally between 4mm and 22mm in length, but one of the utilized pieces was 45mm long and one primary flake measured 60mm by 25mm. The flint was recorded as beach flint, blue-grey to white in colour. The relative sparsity of material from the site suggests a small-scale, temporary flint-working site rather than more intensive occupation [190760] (Preston-Jones 1986; HER PRN 25031).

Other flint finds have come from the wider area. Microliths of probable Mesolithic date have been reported from New Downs (HER PRN 19418) and nearby from eroded surfaces about 40m south of the coastguard lookout on St Agnes Head and from near White Rocks (Johns 1998, 23, 61, 99). Field walking in 1995 by members of Cornwall Archaeological Society in a field on the western flank of the Beacon recovered one struck flint and a hammerstone pebble (HER PRN 165560). A scraper was reported from a garden, probably in Goonvrea, in the 1950s (HER PRN 19138) and a further worked flint flake with retouch along one edge came from a garden about 400m east of the Beacon summit (Anon 1989 b). More than 100 flints, including ten cores and a high proportion of waste flakes, have been recovered from Dicky Pool Downs, south of the Beacon; a single microlith suggests a Mesolithic component within the assemblage (Burrows 1988; Anon 1989 a).

Lithic material has been recovered on many parts of the north Cornwall coast (for example, Johnson and David 1982), suggesting that such areas were resorted to frequently by groups of people over a long period of prehistory. Lithic scatters are often located at topographically distinctive sites and viewpoints such as headlands and local summits (*cf* Kirkham 2006c). While this may partly reflect the areas where modern visitors congregate and erosion occurs, thus making recovery of lithic material more probable, it may also reflect patterns of past activity: such locations may have been preferred as stopping places for individuals or small groups, at which small-scale flint working took place, and valued for their views over hunting territories, for aesthetic reasons or because their distinctive topography constituted them as distinct 'places' in the landscape and thus as suitable locations for particular forms of activity. The exposed position of most such sites makes it unlikely that they were used for anything more than short *ad hoc* visits. The collection noted above from a more

sheltered location in a stream valley at Dicky Pool Downs may represent a different type of occupation, perhaps a seasonal stopping place.

### **2.10.2.2 Barrows on St Agnes Beacon**

The four barrows or cairns located on the summit ridge of the Beacon (Figs. 41-2, 44) are likely to date to the Bronze Age, between approximately 2200 and 1600 BC. All four have been considerably damaged, probably by robbing for adjacent enclosure boundaries (below) and, in the case of the northern cairn [90359], for building the World War II radar station [190060]. Nothing is known of any finds from them. Their original form is also uncertain, although it is clear that the three southern cairns ([90353], [90355], [90357]) were formerly much larger than at present. Thomas Tonkin (1975-6, 203-4), writing in the early eighteenth century, referred to them as '*three great heaps of stones*'. William Hals, writing at about the same time, derived the former name for the Beacon, Carne Breanick, from

*'Came Bury-anacht or Bury-anack, synonymous words only varied by the dialect; id est, the still, quiet, spar-stone grave, or burying place, where, suitable to the name, on the natural, remote, lofty circumstances thereof, stand three spar-stone tumuli consisting of a vast number of those stones great and small piled up together . . .'*' (Gilbert 1838, I, 6).

This may suggest the selective use of quartz (spar) stones in the cairns which is not now particularly evident. However, the geologist Boase noted of the Beacon that while the lower part is a '*schistose rock ... [A]scending towards the summit the quartz gradually increases in quantity till at last it becomes the prevailing ingredient of the rock . . .'*' (Gilbert I, 14). Prevalence of quartz may therefore have simply reflected the stone immediately to hand.

The northern cairn [90357] of the southern group of three is now an irregular elongated mass of small stones (Fig. 44). This may be a consequence of relatively recent robbing of the mound for hedge-building material or it may in fact have originally been a long mound extending west from a natural outcrop of rock, perhaps comparable with a long mound below the summit of Chapel Carn Brea in West Penwith. The southernmost cairn [90355], on the Beacon summit (Fig. 42), may also have been built around a natural outcrop: when erecting the trig point on the mound in 1937 the Ordnance Survey reported that they had excavated a base 3 ft by 3 ft (0.9m by 0.9m) and at a depth of 2 ft 3in (0.7m) had found a firm foundation, '*being mostly rock*' (Preston-Jones n.d., 10).

As with many other barrow groups in Cornwall, these structures are sited on a prominent hill and it is likely that views to and from them played a significant part in determining their locations. The large cairn [90355] on the southern summit of the Beacon is approximately 25m in diameter and more than 3m high and must originally have been visible from a wide area to the south. It can be compared with other large and similarly prominent barrows on, for example, Carburrow, Brown Gelly and Brown Willy, on Bodmin Moor, and Chapel Carn Brea in West Penwith. The other two cairns nearby ([90353], [90357]) may also have been fairly substantial prior to robbing in the late nineteenth century. The stony cairn at the northern end of the ridge [90359] is 15m in diameter but has been very considerably robbed and, although it was not noted by antiquarian writers, may formerly have been more prominent in the wider landscape than it now is. It appears to have been deliberately sited to achieve a *trompe l'oeil* effect whereby views from it to the north – perhaps focussing on the offshore Bawden Rocks – made it appear to be perched high above and surrounded by the sea with little or no intervening middle ground (Fig. 43).

Barrows were sometimes constructed as components of wider prehistoric ceremonial landscapes. Something of this kind could be implied by a local legend recorded by Tonkin in the early eighteenth century (1975-6, 203-4). He noted that the '*three great heaps of stones*' on the Beacon had been cleared from nearby fields by St Agnes,



compelled to the work by the giant Bolster. Agnes, in her journey across Cornwall from Perranarworthal, being

*'severall times tempted by the Devill on her way, as often she turned about to rebuke him, she changed him into a stone. And indeed there are still to be seen on the downs between that St Piran and St Agnes severall moore stones, pitched on end in a strait line, about a furlong distant one from another ....'*

The standing stones or stone row suggested by this account are no longer extant. A stone circle [90052] was reported to have been found on the coastal plateau to the north of the Beacon in 1936 but subsequent re-assessment of the site suggests that the stones may derive from post-medieval mining waste (Preston-Jones 1984) or be natural erratics.

As with other 'great hills' in Cornwall such as Rough Tor and Carn Galva, St Agnes Beacon may itself have been a significant element in the cosmology of earlier prehistoric communities and thus in the siting of barrows and other monuments in the surrounding landscape. It is notable, for example, that in travelling towards St Agnes from the south east, on the ridgeway route across the former open downs from Chiverton Cross (now the B3277), the full view of the northern side of the Beacon first comes into sight close to a junction with roads from Towan Cross and Goonbell (Seven Milestone garage); this point is the centre of a cluster of up to 15 possible barrows. Similarly, on the former Goonlaze Downs, a cluster of up to 13 barrows on a north-facing ridge may also have been sited for views to the Beacon, as further afield, may groups at Three Burrows and Two Burrows, near Chiverton Cross, and at Four Burrows. Further fieldwork is required to identify other barrow groups possibly located for views to the Beacon.

### **2.10.2.3 Prehistoric settlement and field systems**

Charles Henderson reported that he had seen fields and terraces on the southern side of the Beacon [90354]. These have not been identified on air photographs and no traces were seen during the present survey. It is possible, although perhaps unlikely, that Henderson took the remains of some of the substantial lodeback workings in this area for lynchets. Alternatively he may have seen post-medieval pasture and croft boundaries (for example, [190066] and [190129]) as elements of a field system.

Although this area is broadly similar in terms of aspect, exposure and soils to other coastal areas of Cornwall where evidence for prehistoric farming and settlement have been found, the survey results suggest that the elevated plateau backing this west-facing coast was traditionally open coastal grazing ground and was not enclosed or settled in prehistory. Settlements of individual or clustered round houses (and subsequently of either open or closed settlements) no doubt existed not far inland, but have left no trace in the archaeological record. Open rough grazing was an important resource during this period, however.

At two locations to the south of Chapel Combe, however, there are paired, as yet undated and somewhat enigmatic features which, it has been suggested, might represent the remains of prehistoric round houses, those near Towan Cross being associated with banked enclosures and possibly also with a small adjacent field system (Fig. 38).

The western pair [190582] and [190585] consist of two almost identical low annular earth banked features 25m apart, the banks being 12m in diameter, 2.2m wide and 0.65m high. Their similarity in size and construction and their proximity strongly suggest that they are contemporary and linked in function. Rose and Preston-Jones' 1:1000 scale plane table survey undertaken in 1985 (HE GRE 92, Fig. 137) planned their arrangement and surroundings, additionally recording three small earthwork mounds nearby. No trace of any revetting stonework was found within these banks, nor any signs of entrances into their interiors. Examination of the 1946 RAF aerial

photographs (Fig. 19) showed that they were not, as had been suggested, the sites of wartime anti-aircraft guns. Whilst these might be the remains of rather atypical (perhaps timber-walled) round houses, there remains a possibility that they were small pounds associated with nearby post-medieval mining activity. No evaluative excavation of these features has been undertaken.

The eastern pair near Towan Cross (Fig. 38) are rather more substantial, but also considerably more overgrown. Again, they are closely set, being 35m apart and appear to be both contemporary and similar in function. The westernmost [190723] takes the form of a sub-circular bank 8.0m in diameter, 3.5m wide and 1.0m high enclosing a pit measuring 1.75m by 1.25m in plan and 0.6m deep. There appears to be an 'entrance' into this central area from the south-east. An encircling enclosure defined by a bank 2.0m wide and 0.7m high is attached to the south-eastern edge of the inner feature, which it encircles at an average distance of 7.0m, before heading to the south-east, where it fades out. There are two gaps in the bank; the first, almost immediately adjacent to the point where it joins the central feature is 4.0m wide; the second, to the east of the central feature, is about 1.5m wide. External to the enclosure bank is a ditch 1.75m wide and 0.25m deep. The easternmost [190724] is a sub-ovoid embanked feature 10m in diameter, there being a 5.0m gap in its circuit. The low, rather flat-topped banks defining this feature average 3.0m wide and 0.6m high and the area they enclose is level and featureless. A small elongated enclosure is attached to the south-east, the north side being a slight scarp and the south side a low and rather spread bank 10m long, 1.2m wide and between 0.3m and 0.15m high.

Neither has the appearance of a typical round house, and again, neither appears to incorporate any significant amount of stonework in the enclosing banks. Equally, neither appears to be a mining structure and they did not appear as freshly-created features on the 1946 RAF aerial photographs. They appear to be too small to be mine pounds.

The two enclosures lie immediately to the north-east of a small rectilinear field system [190719] made up of four enclosures (extensions of the boundaries to the north-east plotted by the NMP were not found). The banks are typically 1.5m wide and 0.65m high, accompanied in places by shallow ditches. Unfortunately the dense Western gorse covering the two enclosures prevented any physical relationship between them and the field system being established during the 2009 survey.

Other possible evidence for prehistoric farming on this coastline was suggested by Johns (1998) at St Agnes Head, where he identified fragmentary sections of earthwork banks and scattered clearance cairns, and by Dudley (2007) near Cameron Camp, although in both cases the field evidence was not clear-cut. A low sinuous bank [190371] surveyed at Wheal Coates by Sharpe and Smith in 1986 and originally thought to be part of a prehistoric field system has now been reinterpreted as an early leat.

### **2.10.3 Later prehistory**

#### **2.10.3.1 Tubby's Head**

Tubby's Head [96054] (Fig. 60) has been proposed as an example of a promontory fort or cliff castle since 1967 (Warner 1967). The site, occupying a small promontory protruding to the west of the coastline between St Agnes Head and Chapel Porth has been cut off by a single bank and ditch, the bank being 20m long and 2.3m wide and 0.9m high, the accompanying ditch being 3.0m wide. However, if this is a promontory fort it has a very poor defensive position which is completely overlooked by steep ground to its east. In addition there seems to be little within the enclosure to protect and no clear adjacent landing place. The NT survey (1985) identified a possible hut circle within ramparts [96800] whilst a layer of shell fragments exposed on the north-west side of the promontory [96799] may represent an eroding midden. On present

evidence, the feature at Tubby's Head resembles an Iron Age cliff castle, but in the absence of secure dating evidence this identification must remain hypothetical.

### **2.10.3.2 Sites on and around St Agnes Beacon**

The 'parochial checklist' of antiquities in the parish of St Agnes published in the first volume of *Cornish Archaeology* in 1962 (Warner 1962, 114) listed a hillfort sited on the northern slope of the Beacon, identified from air photographs. This was a mis-interpretation of a vegetation mark visible on an RAF vertical photograph taken in 1946 (RAF 3G/TUD/UK 222/5182, Fig. 18) and has subsequently been explained as the results of the burning of furze (gorse) around the perimeter fence of the World War II military installation on this site (Preston-Jones 1990, 8).

The checklist (Warner 1962, 114) also suggested an Iron Age – Romano-British round or defended enclosure on the summit of the Beacon [90351]. This was based on a reference to the summit barrows by Tonkin (1975-6, 203): '*That these three Stony Barrows were erected to the memory of some notable persons here interred, there is no doubt, for to the west of that, which serves now for a beacon, is still the remainder of a small square fortification ....*' William Borlase (1754, 314) was unable to find this feature, '*although I have examined the ground pretty closely*'. However, a local guide published in 1925 noted this feature as 'almost obliterated at present', and suggested that it may have been a 'Roman watch house or camp' (Anon 1925, 19). The ground immediately to the west of the southernmost cairn falls steeply and this exposed slope would, in any case, be an unlikely location for a round. The only earthworks visible in the area are those recorded by Preston-Jones (n.d., 24-5), immediately below the west side of the summit cairn. She identified and planned a sub-rectangular hollow cut into the slope forming a platform approximately 9.0m across and suggested that it may be the remains of the feature noted by Tonkin. The present survey observed a probable low bank on the western side of the hollow, reinforcing this possibility.

The Beacon and much of the wider study area lies within the area enclosed by a substantial linear earthwork now known as the Bolster Bank. This survives over a distance of about 850m but may originally have been up to 2.5 km long, between the upper ends of Chapel Coombe and Trevaunance Coombe (Johnson 1980). The bank was formerly known locally as the '*Gorres*'; Tonkin noted it by this name in the early eighteenth century and suggested that it derived from a Cornish word, *guriz*, meaning girdle, '*because, as it were, it girds the hill round on one side as the sea does on the other*' (Tonkin 1975-6, 203).

Antiquarian writers, from Tonkin onwards, have attributed the earthwork to the Roman period and the 2nd edition Ordnance Survey 1:2500 scale map of c 1907 labelled it '*Roman dike*'. There is, though, currently no direct archaeological evidence for its date or of its purpose. Comparable linear earthworks in southern Britain are generally dated to either the later Iron Age or to the early medieval period. For the late Iron Age, examples include the earthworks defining both regional, tribal centres such as Chichester, Silchester and Bagendon (Cunliffe 1991, 153-5, 173-4), or enclosing larger areas as with the North Oxfordshire Grim's Ditch (Copeland 1988), and their sub-regional equivalents in the form of multiple-ditched enclosure complexes (Corney 1989). Substantial linear earthworks usually attributed to the early post-Roman period include Bokerley Dyke and the east and west Wansdykes (Cunliffe 1993, 294-6).

The Bolster differs from these site-types in terms of what it encloses – the apparent focus is the Beacon hill and the surrounding coastal promontory bounded by spectacular cliffs – and in form: it is a single linear bank and ditch enclosing an area rather than one of a number of such features, as at many *oppida* sites, but it is not a major cross-country territorial boundary as with the probable post-Roman dykes. It is sometimes considered with two other linear earthworks in Cornwall – the 15km long Giant's Hedge, running between Lerryn and Looe and enclosing a substantial area

between the Looe and Fowey rivers – and the less well attested Giant's Grave in Ludgvan, now only 350m long, which has been suggested as part of an earthwork which once ran across the neck of land between the Hayle estuary and the northern shore of Mount's Bay, isolating the whole of West Penwith (HER PRN 29118). A closer parallel may be the Dodman promontory fort in Gorran parish, where a substantial linear earthwork roughly 800m long encloses a headland bounded on its southern side by a spectacular cliff forming the highest point on the southern coast of Cornwall; here too there are Bronze Age barrows within the enclosed area, although not conspicuously sited (Parkes 2008). Again, there is an assumption that the earthwork dates from the Iron Age, based on comparisons with other promontory forts, but no direct dating evidence.

What is clear is that a major earthwork project such as the Bolster Bank must have been created at the demand of a specific political entity, in the sense of a ruler or ruling group. It seems probable, therefore, that at some time probably during either the later Iron Age or the early medieval period the area enclosed by the earthwork was the focus for some form of political authority. This may itself have been located within the enclosed area or, alternatively, it is possible that the Beacon and surrounding area were being marked as having a particular significance, perhaps symbolic, for the particular ruling group. A possible (although altogether speculative) parallel may be found in some early medieval royal sites in Ireland, where substantial earthwork complexes were created or enhanced from earlier prehistoric monument clusters to define and enhance distinctive topographical locations used for ceremonies associated with kingship (Waddell 1998, 325-44). In the case of one of these, Tara, the views from the focal high point over the surrounding landscape appear to have been of particular significance (Bhreathnach 1999, 2). Early medieval Irish literature records a rich store of legendary associations for many of these locations and it is possible that the tales of the giant Bolster and St Agnes associated with the Beacon may also derive from the former political or ceremonial importance of the site.

An alternative interpretation is that the earthwork was intended to control access to the rich mineral area around the Beacon (*c.f.* Tonkin 1975-6, 204); again this suggests some form of political authority. Specific evidence of prehistoric or early medieval exploitation of these resources is tantalisingly rare (see above) but the relative accessibility of mineral lodes outcropping in the cliffs in the enclosed area – commented on by several post-medieval sources – and the presence of alluvial tin deposits around the lower slopes of the Beacon (Hawkins 1832, 137; *West Briton*, 10 May 1839) suggest this as an area which is highly likely to have been worked for minerals from an early period (*pace* Johnson 1980, 87). There are no obvious parallels elsewhere in the late prehistoric, Roman or early medieval periods for such an enclosure of mineral resources, however, and it is difficult to envisage anything other than a symbolic function for an earthwork boundary in this respect.

There is no clear-cut evidence for the existence of a late prehistoric or early medieval polity with a focus in the area between Chapel Combe and Trevaunance Coombe. No settlements dating to the later prehistoric period are known within it and the tiny cliff castle at Tubby's Head – if indeed it is a prehistoric feature – is more likely to have been of ceremonial or ritual significance rather than a military or political site. The paucity of apparently early medieval place-names within this area, other than Trevaunance, first documented in 1302, similarly gives little hint that this area was a focus of settlement or had an elite presence in the post-Roman period. On the other hand, two gold coins dating to the late Roman period have been found within the area enclosed by the Bolster – both came from the New Downs – Carn Golla area – and another has come from about 1 km outside it to the east. The presence of these highly unusual finds could hint at some relationship in the late Roman period between the Roman state and a local elite which may itself have been the forerunner of, or successor to, the authority responsible for construction of the Bolster Bank. Such coins are not common – only six fourth-century AD gold coins are known from Cornwall and only about 700 Roman gold coins of all periods from the whole of Britain – and they

most frequently occur elsewhere in urban or military contexts (the authors are indebted to Roger Bland of the Portable Antiquities Scheme for information from his forthcoming catalogue of Roman gold coins from Britain.) The other Cornish finds of gold coins of this period came from the foot of Carn Brea and from Lanyon in West Penwith and it may be significant that all three find spots are in areas known for mineral working in the medieval and later periods and where access to alluvial if not lode mineral sources is likely to have been relatively easy in antiquity. High-value coins such as these are unlikely to have been used in the normal course of trade – gold coins appear not to have circulated as part of the monetary economy but rather to have been a way of storing accumulated wealth – but they could also, perhaps, represent gifts from the Roman state to local political 'clients' involved in a trade in minerals.

Evidence for Roman-period activity in the wider St Agnes area is rather limited. Roman coins are known from Mithian to the east and the cliffs above Porthtowan to the south of the study area (Penhallurick, forthcoming), and several fragments of distinctive stone bowls have come from around Mawla (Royal Cornwall Museum TRURI: 1936.162, 163; 2006.98; Quinnell 1993). There are relatively few of the Iron Age and Roman-period defended enclosures known as rounds within the surrounding area; those closest to the study area lie several hundred metres south east and south west of Towan Cross, and there is also a poorly understood cluster of rounds and other earthworks approximately 3.5 km south of the Beacon around Coosewartha and Menagissey.

From the area within the Bolster, in addition to the gold coins discussed above, an illegible Roman bronze coin was found with a metal detector near the trig point on the Beacon in the early 1970s (Penhallurick, forthcoming). This may have been a casual loss but the item could also conceivably have been deposited on or into the barrow formerly on the site during the Roman period, probably as a votive act (*c.f.* Hartgroves *et al*, 2006, 104). Johnson (1980, 87) referred to '*several separate coins and an hoard*', all of the third to fifth centuries AD, having come from the area within the Bolster, but details of these finds are not now available. Additionally, William Wynne, during a tour through Cornwall in 1755, noted that '*several Quantities [sic] of Roman Coins have been found on and about St Agnes Ball, which is a very high Hill ....*' (Edwards 1981, 343). Wynne's source for this information is not apparent and it is certainly possible that he was confusing St Agnes Beacon with Carn Brea where Iron Age and Roman hoards had been found only a few years earlier. These had been reported by William Borlase in his *Antiquities*, published the year before Wynne's visit, which Wynne had evidently perused in some detail, for he continues: '*From Redruth we passed by Carn brê on the left, a very long and high hill where there appeared to be immense stones, supposed by Mr Borlase to be the seat of the Druids and that they were Used for their Sacrifices having large Cavities for receiving and holding rain Water, which was very necessary for their Lustrations and purifications....*' (*ibid.*, 343-4).

A worn 'stone figure' found among material from a demolished hedge on the east side of the Beacon and subsequently reported as a possible Romano-Celtic votive figure, has more recently been identified as almost certainly of modern origin (Preston-Jones 1991; Burrows 1994, 8; Ann Preston-Jones, pers. comm.).

### **2.10.3.3 Prehistoric mining**

The search for the sites of prehistoric copper and tin mining activity in Cornwall has proved problematic, though sites with what would have been readily visible and accessible coastal lode outcrops have generally been accepted as those which would have been most likely to be tried. Elsewhere in Britain, a combination of evidence for firesetting and the presence of a range of stone tools (including hammerstones and anvil stones) have drawn the attention of researchers to a number of sites at which detailed archaeological investigation subsequently identified well stratified datable

contexts associated with Bronze Age mining activity (Crew and Crew 1990).

In 1993, Budd and Gale (1994) undertook an assessment of the content of the abandonment wall constructed from mine waste around the eastern part of the Wheal Coates openwork (Fig. 77), identifying approximately 100 rounded stones within associated mine spoil and within the fabric of the wall itself. Whilst most of these showed no evidence of use or modification and were considered to be of natural origin, a number had markings consistent with use as tools. Three mortar stones and a cupped stone were also noted within the wall fabric.

Budd and Gale noted that the whole area of the mineworking was covered by eluvium, the larger clasts of which occurred in the area of the clay pits immediately south-east of the surveyed area. Well-rounded, smoothed, pebbles and cobbles were present in relative abundance: a phenomenon recorded by Thomas Hogg in the early nineteenth century (cited in Jenkin 1962, 25) and most were incorporated into stone scatters on the south side of the openwork, most commonly on the margins of the clay pits. They consisted of greenstones and altered granitic rocks, the former being highly smoothed while the latter were more rounded and commonly fractured and damaged. A total of nine pieces of worked stone were identified, consisting of three mortars, one cupped stone, three anvils and an undiagnostic piece.

The mortars had been derived from natural boulders rather than quarried rock. They would have been portable and were most likely used for hand cobbing ore. The anvil stones were locally derived cobbles of such a size to have been comfortably held in one hand and exhibit small, dimple-like patches in the centre of one face which result from pounding. These pounded dimples are similar to those on implements described as 'cobbing stones' which were used as hammers to dress tin ore and which are thought to date to the medieval period (Buckley and Earl 1990). Their description as anvil stones does not preclude the possibility that they may have been used to dress small quantities of ore, perhaps in connection with assaying.

One of the stones examined had been clearly modified as a hammerstone. This locally derived sub-angular stone had a centrally positioned, deep, notched edge. The more rounded underside was grooved having a surface waisting produced by pounding whilst the more angular edge had been pounded to form a shallower notch. One of the anvils had evidence for abrasion on one end suggesting that it may have been used as a hammerstone, but the evidence was felt to be inconclusive.

Despite the broad similarity of these finds to others on firmly dated early mining sites elsewhere in Britain, Budd and Gale (1994) were unable to conclusively affirm that these artefacts provided evidence for prehistoric mining at Wheal Coates, noting that some bore similarities to objects found on Cornish mines with documented medieval activity. The possibility of earlier mining activity here nevertheless remains a possibility, the presence of apparently fire-set workings on the coastal outcrop of the Towanroath Lode (Figs. 80-81, 83) strengthening this possibility.

#### **2.10.4 Medieval**

Evidence for the history of the survey area during the early medieval and medieval periods is sparse. In 1337 pasture in the *lande* [downs, rough pasture] of *Goyubre* [Goonvrea] was recorded as part of the Manor of Tywarnhaile and was then in the hands of 12 tenants who paid 2s annually (Hull 1971, 83). The farm settlements exploiting this resource were located outside the survey area and probably included Trevaunance, Penwinnick and Mingoose, all first recorded in documentary sources in the thirteenth and fourteenth centuries although probably originating at some time in the early medieval period (HER PRN 19147, 19425, 19451).

Towan is also a medieval settlement (HER PRN 25029), for which Towan Common and Wheal Charlotte Moor provided the rough ground resource. Part of the coastal rough ground was occasionally used for outfield cultivation [190743], with crops, probably of grain, taken at long intervals when local demand – and consequently prices – were

high. Traces of the low stony banks which separated the cultivation strips have been plotted from air photographs on part of Wheal Charlotte Moor which was improved in the later twentieth century and now falls within the enclosed land; two of these banks ([190747] and [190748]) survive, defining a strip approximately 16m wide. Pasture boundaries [190737] and [190741] divided the grazing on the coastal rough ground in this area and may also be medieval in origin.

Chapel Porth takes its name from a medieval chapel [190468] which was referred to as in ruins in the early eighteenth century (Tonkin 1975-6, 204) but survived until about 1780 when it appears to have been demolished (Lysons 1814, 11). The Cornish antiquarian William Borlase described the site in about 1750 (quoted in Warner 1965, 41):

*'Keeping down Porth Chapel Coom we came to the chapel which gave its name to the bottom. Its walls are in ruins and nothing worth seeing; a little Chapel yard there was round it the fences of which are still to be traced, and the ground being very loose and the turf soft you may thrust a cane down easily a foot and more makes me think there are graves here.'*

The 1st and 2nd edition Ordnance Survey 25 in: 1 mile maps (c 1880 and 1907) placed the site of the chapel close to the beach at Chapel Porth. More recently, however, a site which better fits what is known of the location of the former chapel has been located in the small side coombe which runs into the lower end of Chapel Combe from the north east. R B Warner (1965) identified a small three-sided earthwork enclosure on the south side of the deeply-incised stream which follows the base of the small valley, the fourth side on the south west being made up by the steeply-sloping valley side. He concluded that extant masonry walling within the enclosure was probably the remains of a small miners' powder or tool store built on the site after the chapel was dismantled; Warner noted squared stones among those making up the structure and suggested that they may have come from the chapel (*ibid.*, 43). He also sketch-surveyed a possible platform on the northern side of the stream, opposite the chapel, together with an adjacent shell midden under a covering of blown sand, and proposed that these might represent an occupation area associated with the chapel. Loose blown sand and maritime vegetation are the probable context for Borlase's observation that a cane could be pushed down easily 'a foot and more'.

Warner concluded that the earthwork remains suggested a chapel building lying approximately east-west and between 20 and 30 feet (6-9m) long and 10 to 15 feet (3-4.5m) wide (*ibid.*). He suggested that a tenth-century date was likely for the structure, based on the potential range of ratios between the length and breadth dimensions and comparisons with a somewhat similar site at Troon, although allowing that an earlier date was possible.

The Chapel Porth well [190469] has been the subject of a study by Joanna Mattingly (n.d.), who suggests that it was probably built about 1500 in a style which she terms porch-type wells, of which there are a number of other examples in Cornwall. Borlase visited the site of the chapel in the mid eighteenth century and noted that '[A] few paces below' it was St Agnes well, which he sketched (Fig. 119) and described:

*'The water is very smooth and pure and has done wonderful cures as most of our saints wells have done, but this water is better rewarded than that of most other holy wells for it has a neat little chapel or room built over it. The water comes out from the niche A into a little square bowl of stone 16 to 17 inches [approximately 0.4m] the sides, in a plentiful little stream. Before the well are two triangular stones f.h. with holes in them to secure a covering for the holy water and to lock? it up. The water, passing through a neat channel cut in the pavement, discharges it self over the threshold B - on each side the well is a stone bench D, D, between which benches the stone pavement is 3' 7" [3ft 7in - 1.1m] wide to 6 feet [1.8m] long. Above the well are niches C, C, one likely*

*for St Agnes, the other for the holy virgin. This chapel is 7' 1" [7ft 1in – 2.13m] high within, the roof form'd of stone, but so cemented that it does not at all take water – tis plaster'd also against the stonework which plaister has I think some thousand initial letters of ye names of persons who though to leave some memorandum behind them, but were much mistaken /so . . . neare upon another are the letters/ on the right side of the well are cut in the stone 1612, but this cannot be ye date of ye building for it must have been built before the Reformation – the dor case was prettily shaped & molded in moor stone, but wanton fools have torn down the sides of it and pieces of it were lost. The door case rested on a handsome plinth, and being made of a coarse moorstone which has soft par[t]s inter-mix'd with it's [sic] hard tis eaten into holes by the spray of the sea which it faces and lying on ye brim of the cliff . . . On each side of the front there is a little buttress A G . . . which have a very good effect . . . The front without, exclusive of the buttresses is 7' 3" [7ft 3in – 2.15m] wide and 9' 1" [9ft 1in – 2.7m] high – the outside country is all stone so that but /for/ folly and spite it might have lasted entire many years'*

[Borlase *Parochial Memoranda*, quoted in Mattingly n.d., 4-5; the reference numbers in Borlase's text do not appear on the accompanying drawing].

Tonkin (1975-6, 204), writing some 40 years before Borlase, noted the 'Well of excellent water', and added that 'the pavement of which well, they tell you, is coloured with her [St Agnes] own blood, and the more you rub the more it shows, it being indeed the nature of the stone, which is some of the hardest, of the Wrath's Hole, a very pretty naturall piece of curiosity well worth a seeing.' Tonkin's description suggests the use of metamorphosed killas as found nearby at Towanroath for the pavement in the well-house, the red staining in which added credence to tales of the Giant Bolster having been bled to death through the cliff-edge cave of that name (Rose 2000-1, 110). Borlase, however, described the standing parts of the structure as being of 'a coarse moorstone', a term usually used for weathered granite boulders found on the surface. Borlase's description of the pitted and eroded surface of the stone used in the well-house suggests a material described locally as 'St Agnes granite' (possibly an elvan) which occurs in the late fifteenth century tower of St Agnes church, close to the probable date of the well-house, and in other local structures (Ann Preston-Jones, pers. comm.). Preston-Jones (1985, 8) noted that on the densely overgrown cliff-top plateau just north of Tubby's Head, '[R]ugged boulders of the distinctive, pitted St Agnes granite rise above this hostile vegetation in places' [90052]. Some of these stones may be mining waste (*ibid.*), but granite occurs within bedrock only 300m north of the site of the well and there may in the past have been surface exposures: the stone known as St Agnes Foot or the Giants Footprint some 200m from the well appears to be of granite or elvan. Hawkins (1832, 140-1) noted the presence in the Wheal Coates area of a rock similar to both elvan and growan, but locally known as growan, and a granite quarry has been worked at Wheal Bungay, about 1200m to the north east of St Agnes well, during the twentieth century (Radcliffe 1987, 1).

Mattingly (n.d., 7) suggests that the well structure is likely to have been decommissioned at the time of the Reformation and images removed and wall paintings obliterated. The generally good state of repair described by Borlase and the date of 1612 cut in a stone indicates that that it had probably undergone some repair subsequently. Although damaged by the mid eighteenth century the well structure survived into the nineteenth century – the Lysons (1814, ccxlvii) described it as a 'plain Gothic building of stone, about eight feet wide in the front, where is an opening with an obtuse arch' – but was reported to have been demolished about 1820, the supply of water to it having previously been diverted by mining activity (Quiller-Couch 1894, 2). 'It is said that the principal depredators, who carried away the stone to build a hedge, said, when remonstrated with, 'What's the good of a well without water?' (*ibid.*).



Borlase also referred to '*[T]he pit beneath the well on ye edge of ye cliff into which the holy water now runs design'd for curing madniss'* (quoted in Mattingly nd, 7). In his *Natural History of Cornwall*, published in 1758, Borlase noted that '*[A]t the foot of St Agnes Holy-well, a place formerly of great resort, I think, the remains of such a pool are still to be discovered, though the sea has demolished the walls'* (Borlase 1758, 302-3 [quoted in Polwhele 1816, 4, 653]).

Several other wells in Cornwall had facilities for 'bowsenning', the dialect term for the sudden immersion of people held to be mad, including St Gundred's well at Roche, Nantswell near Newquay and wells at St Cleer and Gulval (Head 2005). William Hals, writing about 1700, also described the pool of St Nun at Altarnun as '*much frequented for the cure of mad people'* (Lake 1867, I, 16). Carew (2004, 123r), writing c. 1600, described the procedure undertaken for a cure at the Altarnun well, which perhaps hints at the activities which formerly took place at the pool adjoining St Agnes' well and chapel:

*'The water running from S. Nunnes well, fell into a square and close walled plot, which might be filled at what depth they listed. Upon this wall was the franticke person set to stande, his backe towards the poole, and from thence with a sudden blow in the brest, tumbled headlong into the pond : where a strong fellowe, provided for the nonce, tooke him, and tossed him up and downe, alongst and athwart the water, untill the patient, by forgoing his strength, had somewhat forgot his fury. Then was hee conveyed to the Church, and certaine Masses sung over him; upon which handling, if his right wits returned, S. Nunne had the thanks : but if there appeared small amendment, he was bowssened againe, and againe, while there remained in him any hope of life, for recovery was left.'*

The legends of St Agnes associated with these sites included her disposal of the '*Wrath or Giant, called Bolster'* (Tonkin 1975-6, 203) by persuading him to fill a hollow on the cliff edge with his blood, the hollow in fact emptying into a sea cave, and thereby bleeding him to death (below). According to Tonkin, this was known as the

*'Wrath's Hole, which is on the top of the cliff, not far from her Chappel and Well, and enlarging itself as it goes downwards, opens into a cave fretted in by the sea, to be seen only at Spring tides; and from the nature of the stone, being streaked all over with bright red streaks like blood, this no doubt gave occasion to this fiction'* (Tonkin 1975-6, 204).

This cave is approximately 500m north of the chapel and its name, Towanroath, from the Cornish *toll an gruah*, hole of the 'wrath' or giant (Padel 1985, 124, was commemorated in the name of Towanroath shaft at Wheal Coates (Rose 2000-1, 110). An alternative site for the end of Bolster is the roofless sea cave (one of the Two Vugs, Fig. 118) immediately below the well site into which its waters would formerly have run (*ibid.*).

Tonkin (1975-6, 204) also noted that St Agnes '*left the mark of her foot on a rock, not far from it [the well], still called St Agnes Foot, which they tell you will fitt a foot of any size, and indeed it is large enough so to doe.'* This element of the tradition appears to have undergone some alteration: the 1st edition Ordnance Survey 25in: 1 mile map of c 1880 marks a stone about 220m higher up the narrow coombe in which the chapel and well were set as the 'Giant's Footprints' [sic] (Fig 121).

Tonkin noted that '*monckish stories'* of St Agnes and the giant of Bolster '*caused a great resort here in former days, and many cures were pretended to have been done by the water of this well, so blessed by her miraculous blood, which in truth is good drying water, and usefull for rheums in the eyes, or any running sores, or ulcers'* (Tonkin 1975-6, 204). Borlase also commented that the water of the well was '*very smooth and pure and has done wonderful cures...'* (quoted in Mattingly nd, 4-5). These hints of the site having formerly been well visited, taken with the suite of elements present at Chapel Porth – a chapel, covered well structure and bowsenning

pit, associated stories of the saint and giant, mixing both classical tales of the trials and martyrdoms of early saints and localised folklore elements, together with a variety of natural features incorporated into the resulting legend – suggest that it was originally the focus of a medieval cult of St Agnes. Supplicants may have visited the chapel and well in a prescribed order with the rock 'footprint', the giant's fingerprints on the stonework and the red-streaked sea cave into which the giant was reputedly bled pointed out to support the authenticity of the site and thereby reinforce its sanctity. Prior to the Reformation, local sponsorship would have funded construction and maintenance of the relatively elaborate well house, and probably also the chapel, and may again have been evident during the brief revival of Catholic observance during the reign of Queen Mary: in 1558 Thomas Payne of Perranzabuloe left 8d to '*St Agnes ys fote*' and 12d to her '*store*' (Mattingly n.d., 9). The latter may refer to a fund for maintenance of a church or chapel, or of images within them, or to the resources of one of the social organisations for parishioners known as guilds (Orme 2007, 17-18); in this instance it is perhaps more probable that whichever of these was intended was associated with the church in St Agnes, where the survival of fragments of window glass carrying elements of the saint's life into the early eighteenth century suggests that there may have been a cult of the saint (Orme 2000, 60). Cures were recorded at medieval saints' shrines in Cornwall and a similar mix of religious and folk elements is evident in many of the accompanying stories of saints' lives (Mattingly 2003). The significance of St Agnes' well persisted after the Reformation, despite the loss of its formal religious status, as a place reputed for the cure of serious ailments, and may have been expressed through continued maintenance of the site, perhaps indicated by the 1612 date stone. Borlase's reference to the multitude of initials incised in the plaster inside the well suggests that this was not solely a place of resort for the poor.

Over time the regard for such sites declined substantially, allowing the demolition of the site about 1820. By this stage the religious element of former practice at the site had disappeared, leaving only a residual folk belief in the powers of the well. The Cornish dialect writer J. T. Tregellas, born in St Agnes in 1792, published testimony attributed to a local miner called Tom Chynoweth: '*I knawed when St Agnes old will [sic] was standin; down to Chapel-po'th, and a stream of waeter runnin' out of un, and we used to throw pins into un because we wudn't ha' the cramp*' (Tregellas 1868, 54).

A similar process of secularisation and a shift of emphasis can be seen in Thomas Quiller-Couch's note on the holy well, based on information given to him by a woman who had known the site prior to its destruction: 'The name of 'Giant's Well' was given to it by the country folk, in memory of a giant who once lived near it, and was accustomed to drink of the fountain. There were the marks of his thumbs indented on a stone in the well, and near it, on another, the print of his foot, very large, and very like a footmark. Pins were dropped in with wishes as in many other parts of Cornwall' (Quiller-Couch 1894, 2). However, Robert Hunt's account, based on stories collected long after the destruction of the well in c 1820, noted that

*'there still exists, in the valley running upwards from Chapel Porth, a stone in which may yet be seen the impression of the giant's fingers. On one occasion, Bolster, when enjoying his usual stride from the Beacon to Carn Brea, felt thirsty, and stooped to drink out of the well at Chapel Porth, resting, while he did so, on the above-mentioned stone'* (Hunt 1865, I, 56-8).

This appears to suggest the existence of another stone in the vicinity which was not part of the well structure; possibly Hunt's comments derive from an identification of the St Agnes Foot/Giant's Footprint stone with memories of the erosion marks described by Borlase on some of the stones at the well.

In recent years the cave at Chapel Porth and the site of the chapel and well have become a focus for activities by modern pagans (Straffon 2001; McCarthy 2006).

## 2.10.5 Post-medieval

### 2.10.5.1 The exploitation of rough ground

See Fig. 23.

The rough ground which extends along the coast north of Chapel Coombe and across the Beacon is the surviving element of a formerly much larger area of downs known as Goonvrea (also *Goonfre* or *Goonbre*). The name derives from Cornish word *goon*, meaning rough grazing, downs or commons, and *bre*, a hill (Padel 1985). The hill referred to is the Beacon: the settlement around St Agnes churchtown was known in the medieval and early post-medieval periods as *Briannick*, the place-name incorporating the same *bre* element referring to the distinctive hill under which it lay. Goonvrea originally extended from St Agnes Head and New Downs southwards across the Beacon to the present settlement of Goonvrea and the stream valley – known as Wheal Arrance or more recently Lawrence (Morrison 1986) – which runs south west around the southern side of the Beacon and into the southern end of Chapel Coombe. Pasture in the *lande* of *Goynvbre* was recorded in 1337 as part of the Manor of Tywarnhaile and was then in the hands of 12 tenants who paid 2s annually (Hull 1971, 83). An early seventeenth century document noted that the farm tenements of Trevenithick and Gover, more than 2 km south of the Beacon, had rights of common in 'Gowenvry' (CRO EN/189). In the mid seventeenth century Thomas Tonkin was recorded holding the 'landyoke called Goenfree' in the Manor of Tywarnhaile at an annual rent of 2s (Pounds 1982, 2, 213). (The words *lande* and *landyoke* were used in Cornwall to refer to rough ground, particularly that used for grazing (Picken 1950).) A rental of the Tonkin estates in 1705 noted 17 unnamed tenants paying conventional rents in 'Goonfrey' and a 'high rent' of 1s per annum was paid to the manor of Tywarnhaile Tyas for 'Port Chapel Coome' (Henderson MSS 6, 211-2).

The primary uses of such areas of rough ground in west Cornwall were for extensive grazing of cattle, sheep and goats, the harvesting of domestic fuel in the form of turf (peat) and furze (gorse), and the taking of other resources such as bracken for animal bedding, rushes for thatching and surface stone – moorstone – for building (Dudley, forthcoming). On occasion parts were cultivated, usually for only short periods (*ibid.*) The rights to exploit these resources were held by the various households making up the farm settlements associated with them. In 1823 a witness to a legal case over a disputed share of Wheal Charlotte stated that the farming hamlet of Towan consisted of 'six tenements divided, and the commons undivided. The commons belong alike to the six tenements.' Another witness was the customary tenant of one of the six tenements and reported that his tenant 'stocks the common' (*Royal Cornwall Gazette*, 29 March 1823).

Subdivision and enclosure of Goonvrea may already have been in progress by the mid seventeenth century: in 1650 a widow called Joan Cooke held 6 acres of waste in 'Goenbrey' together with 'a certaine house called Stowe Mill with a knocking mill there' (Pounds 1982, 2, 213). A series of leases made by the Tonkin family between the late 1660s and 1710s record the enclosure of small parcels of Goonvrea and the building of dwellings. Three of the earliest of these leases, executed in December 1668 and each for terms of 99 years or three lives, were for dwellings apparently recently built by the lessees, with gardens and two or three acres 'in Outer Goenfree'; the agreements also included rights to pasture, turf, furze and heath 'on the commons of Outer Goenfree' (CRO GP 215-7). (Inner Goenfree, known subsequently as New Downs, was also being enclosed at about this time, mostly as larger farm-sized holdings.) Other later agreements similarly refer to recently-built dwelling houses but in one case the lessee agreed to build a house on the land to be enclosed from Goonvrea (CRO GP 225) and in a small number of other cases the leases refer only to land to be enclosed without reference to a dwelling (for example, CRO GP 219, 222). In almost all cases the individual lessees were noted as tanners and it seems probable that the rise of the mining workforce in the St Agnes area during the later seventeenth century prompted

the creation of miners' smallholdings in this area rather earlier than the mid- to late-eighteenth century intensification of mining and associated rise in population which is usually held to have stimulated it in west Cornwall. A comparable process appears to have been taking place from the 1660s on rough ground at Mithian held by the Mohun family (CRO CF/1).

Many of these new smallholdings, generally of one to six acres, were in the area immediately south of the Beacon which subsequently became the settlement of Goonvrea, where there is a distinctive landscape of small enclosed fields and two-storey dwellings (Fig. 31). A nineteenth-century house in this area, now known as Rosemergy Farm (SW 70770 49521), incorporates a lintel inscribed 1702 on an external elevation (P Rose, pers. comm.). Martyn's map of Cornwall of 1748 (Fig. 20) showed 'Goonvre' as a distinct settlement lying along the road running west from St Agnes to Chapel Porth. Few of the holdings for which leases survive are closely located beyond being described as enclosed from the commons of Goonvrea or Outer Goonvrea, but a lease of 1672 was for a holding '*under the way that leads from the Beacon to Mingas [Mongoose] and Illogan*' and another of the following year included a plot '*on the east of the way that leads from the Beacon to Mingas*' (CRO GP 219, 222). One larger holding of 16 acres (possibly the present Beacon Cottage Farm) was set in 1683 on the '*west side of Beacon hill*' (CRO GP 232); this agreement, unusually, was made with an individual described as '*yeoman*'. A two-acre holding let in 1687 was described as '*on the south west side of Beacon Hill*', another of 1698 included land '*on Beacon hill*' and a lease by the Enys family in the early 1720s recorded 10 acres to be enclosed on '*Briannick Hill alias Beacon Hill downs*' (CRO GP 246, 257; EN 226). The Tonkin family also appears to have used Goonvrea to provide rough ground resources to new smallholding tenants elsewhere in the St Agnes area: two quarter-acre holdings in Chyton (probably Chytodden) Vean were let in 1677, the tenants covenanting to build houses and enclose gardens, and had rights of pasture on '*Goone Vrey*' (CRO GP 226, 227/1-2); other holdings described as in the manor of Trevaunance were also granted rights to pasture and turf there (CRO GP 265, 286).

The east-north-east to west-south-west alignment of many of the long boundaries of the new enclosures to both east and west of the Beacon is almost identical to that of the mineral lodes which traverse this landscape and raises the questions as to whether the new smallholdings were laid out in such a fashion to respect pre-existing tin bounds, if not the outcrop workings themselves. Centuries of improvement of these fields has now removed almost all surface evidence for early episodes of mining over most of the former downland, however, and this hypothesis remains conjectural in the absence of documents describing pre-enclosure mining activity.

The enclosure of miners' and other holdings from the commons both reduced the overall extent of rough ground and increased the number of tenants with rights to pasture animals and to harvest turf and furze there. It is likely that this potential pressure on the resources provided by the rough ground was relatively carefully regulated: leases of holdings on Goonvrea to Zephania Job, tinner, made in 1710 and 1713, specified in the first instance pasture for two horses, two bullocks and ten sheep, with one day cutting turf, and, in the second, pasture for two horses, three bullocks and 20 sheep, with two days cutting turf (CRO HL 2/1).

This kind of control may have required some form of physical demarcation of rights to grazing and to turf and furze. Later seventeenth century documents refer to Inner and Outer Goonfree, the former being equated with the area known as New Downs extending south from St Agnes Head. A bank and ditch [190001] running east-west across the northern flank of the Beacon may represent the physical division between these areas; this boundary appears to have been respected by and incorporated into – and therefore pre-dates – enclosures made between the late seventeenth century and the St Agnes tithe survey of c 1840. A further bank and ditch [190066] butts against this and runs south along the western flank of the Beacon to end on the boundary [190176] of land similarly enclosed between the later seventeenth century and

c. 1840 on the north side of the enclosed fields attached to the settlement of Goonvrea (Fig. 45). Other pasture boundaries have been identified dividing the coastal slope – [96792], [190225], [190737], [190741] – and on the northern slope of Chapel Combe [190478]. Some of these could be medieval in origin but are more probably associated with the growing requirement for control over the rough ground resource which accompanied post-medieval enclosure and population increase; [96792] is a substantial hedge and was probably constructed to prevent grazing animals belonging to the small farms in the New Downs area straying southwards into the area of intense mining activity around Wheal Coates.

The rough ground of Goonvrea continued to be a vital element in the domestic economy of part of the local population until at least the mid nineteenth century. J T Tregellas, writing around the 1850s, described a former St Agnes miner called Tom Chynoweth who had worked in most of the better known mines and streaming operations in the area. Chynoweth told of his own smallholding, evidently on or close to the rough ground, with its '*taty ground*' and a small pasture field, a turf rick and a cow grazed on the downs:

*' . . . at laast I goat a house weth a bit of taty ground, down there nigh the owld whem, where you can see : 'tes that white-washed house down theere weth a turv-rick to the punyan [gable] end of un, and a smaall field afore the door for the cow, but we mostly keep her out 'pon the downses, for she do love the haith moore betterer than our poor grass, and do make moore milk and craim from ut'* (Tregellas 1868, 52-3).

The cow had broken into a neighbour's crop of oats and Tom added that he was '*foaced to go down to town this hevenin to buy a fetter for her*' (*ibid.*, 53).

Settlement on rough ground may have been more extensive than is now apparent from historic maps or field evidence. Tregellas also related a story about '*Mazed Markey*', who, in the early nineteenth century, lived with his mother '*in a neat little cottage, one of several which, together, bore the same name as a mine near them, - Wheal-an-Coates.*' (Tregellas 1868, 138). The *West Briton*, in 1820, reported the drowning of a child gathering limpets, one of a family called Cowling living in '*a miserable hut at a place called Chapel-porth, within a mile of St Agnes*' (*West Briton*, 13 October 1820, reprinted in Barton 1997, 108), perhaps site [190473] (Fig. 106).

Evidence of the importance of grazing on the Beacon is evident in the form taken by some of the many access points onto the rough ground from the surrounding enclosed land: at least ten are shown on the 2nd edition Ordnance Survey 25in: 1 mile map of c 1907. Several of these incorporate funnel-shaped arrangements of boundaries into which animals being driven off the rough ground could be herded, and / or narrow '*crushes*' allowing animals to be examined and cut out as they passed through. Examples include the funnel-shapes created by the construction between c 1880 and 1907 of new enclosure boundaries at the south-west extremity of the Beacon survey area and again immediately north-east of the large cairn on the southern summit of the Beacon. A slightly earlier instance can be seen on the c 1880 map on the edge of the enclosed land adjacent to Beacon Cottage farm; this was made redundant by subsequent enclosure. An example of a '*crush*' is at SW 7110 5065 [190055], on the track onto the Beacon from the southern end of Higher Bal.

In addition to allowing access for grazing the many tracks across the Beacon served to link the scattered farms and smallholdings around it with each other, with mine sites, with Chapel Porth and with St Agnes churchtown. Early post-World War II air photographs show that there had been considerable pedestrian traffic across the Beacon during the war years (Fig. 18).

The process of enclosure of rough ground continued through the eighteenth and nineteenth centuries. An advertisement in the *West Briton* in the mid 1870s offered long leases on

*'several Pieces of Croft, on and under the Beacon of St Agnes. Terms of letting are easy. Parties might have any quantity from one to 30 acres. In several of the lots no preliminary expense except enclosing would be required previous to ploughing, and the adjacent ground shows that a quick return may be had for cultivation'* (West Briton, 29 October 1874, reprinted in Barton 1972, 255).

John Carter, who left St Agnes to go to Australia in 1856, observed during a return visit in 1884 that *'there is taken in for grazing and cultivation nearly the whole of the open land about the Beacon'* (Carpenter n.d.).

Historic maps provide an indication of the progress of the enclosure of rough ground during the nineteenth and twentieth centuries (Fig. 23). The Tithe map of c 1840 (Fig. 22) shows much of the area around the settlement of Goonvrea enclosed – it is probable that many of the new smallholdings of the late seventeenth century noted above were located there – with other areas of enclosure to the north, west and east of the Beacon. Part of the New Downs area to the north is also known to have been enclosed in the late seventeenth century (Tonkin 1975-6, 203; CRO GP/241; GP/242/1-2; GP/247). In the 40 years between the tithe map and the 1st edition Ordnance Survey 25 in: 1 mile map of c. 1880 there was new enclosure of substantial areas on the eastern, western and northern sides of the Beacon and of the area near Carn Gowla subsequently occupied by Cameron Camp (Fig. 31). Between about 1880 and the 2nd edition Ordnance Survey map of c. 1907 there was some further enclosure: approximately 6 ha (15 acres) on the south-west flank of the Beacon and 2.5 ha (6.5 acres) on the eastern side were enclosed and improved; a croft of a little under 4 ha (9 acres) on the eastern side was also enclosed during this period and improved after c. 1907. During the same period other enclosures were created and existing croft land improved to the north of Wheal Coates and west of Goonvrea.

The process of enclosure demanded substantial quantities of stone for hedge-building. Some of this is likely to have come from clearance of surface stone from the areas being enclosed, but also from small quarries opened close to the new boundaries being constructed (Figs. 47-48). A quarry [190156] on the southern flank of the Beacon was first shown on the 2nd edition Ordnance Survey 25 in: 1 mile map of about 1907 and lies immediately adjacent to land enclosed since the first edition of c 1880. The quarry was probably on the rock outcrop noted by Tonkin in the early eighteenth century as *Garder Wollas* (Tonkin 1975-6, 204). Some small-scale quarrying also appears to have been carried out on another outcrop in this area [190143], which lies about 50m from the nearest stone-faced boundary. A number of other regularly-spaced quarry pits have been identified close to the later enclosure boundaries on the eastern side of the Beacon (for example, [190112], [190113], [190120], [190139], [190143], [190156]) while others lie on Towan Common and in Chapel Combe.

There was also some robbing of older monuments for stone. In 1838 Penaluna (1838, I, 27) referred to

*'St Agnes beacon formed out of an ancient cairn or tumulus which during the late war with France was kept constantly in readiness to communicate intelligence in the event of any invasion [it] has since that time been greatly diminished by the removal of the stone for repairing the fences in the neighbourhood'*.

It is probable that he was referring to one or more of the group of three cairns at the southern end of the Beacon summit ([90353], [90355] and [90357]): there has been some confusion over the location of the Napoleonic period watch-site and beacon (Preston-Jones n.d.). Stone robbing has affected all three of these. The 1st edition Ordnance Survey 25 in: 1 mile map c. 1880 (Fig. 31) shows the central cairn [90353] as a mound 16-17m in diameter but on the 2nd edition (c. 1907) it is depicted as an irregular ring of stones approximately 10m across. In the period between the two maps a substantial area of former rough ground to the east and north of the cairn had

been enclosed with stone-faced hedges, the nearest of which is less than 50m from it. Both this site and the northern cairn [90357] are now very disturbed with clear traces of quarrying into the stony mound material (Preston-Jones n.d., 26-8).

Little is known of management methods on these areas of rough ground prior to the twentieth century. In modern times burning of heathland is often represented as a traditional form of management. In fact, it is likely that it was undertaken only relatively rarely and in a limited manner: furze and bracken were important resources, as was the underlying turf, and they would not have been burned unnecessarily, and then perhaps only in advance of clearance of areas of rough ground for temporary cultivation, for example, or to 'refresh' the grazing on areas of old heather growth (Dudley, forthcoming). Aerial photographs of the Beacon taken in 1946 (Fig. 18) show a substantial area of vegetation on the western flank of the hill in a lighter tone than the remainder, which appears dark. The area of lighter vegetation is likely to represent a new growth of grass after a fire. Much of the burned area was bounded by paths; these may have acted as firebreaks or have been used by those fighting the fire. Elsewhere, however, particularly on the south-eastern side, the edge of the burned area is not apparently bounded by specific features and there the fire may have burned itself out or have been contained. It is clear that the burned area does not coincide with any of the historic divisions of the Beacon rough ground and it is more likely to have been an accidental fire than a controlled burn, although a military origin is also possible. A local man, Arthur Roberts, noted in his diary after an air-raid in 1940 that incendiary bombs had set fire to furze on Wheal Coates Downs and New Downs cliff; the local fire unit was occupied so Truro fire brigade was called out (below). In May the following year, hundreds of incendiaries were dropped on Wheal Charlotte Downs and in the Chapel Porth valley during a major raid and Roberts (Burrows n.d., 7) commented afterwards that '*[I]t proves we must get all the Downs burnt off.*' Presumably the result of the raid was a fairly major heath fire.

#### **2.10.5.2 The beacon and summerhouse on St Agnes Beacon**

The earliest documentary reference to a beacon [190124] on St Agnes Beacon is by Tonkin (1975-6, 203, 204), writing in the early eighteenth century, who referred to one of the three '*Stony Burrows*' on the summit '*which serves now for a beacon*', and also to '*that Barrow (which serves for the Beacon)*'. It is quite possible that the initial placing of a beacon on the hill was considerably earlier, perhaps during the Elizabethan period or before (Preston-Jones n.d., 19).

A beacon may again have been sited on the hill during the Napoleonic Wars, but there is some confusion over its location and form. Lysons (1814, 11) noted that '*St Agnes Beacon, formed out of an ancient cairn or tumulus of stones, was kept ready for use a few years ago during the apprehension of invasion, and was attended by two soldiers.*' He added that a '*summer-house has been built near it, from which there is a fine view of St Ives, with a very extensive sea-prospect*' (*ibid.*). The *Cornwall Gazetteer*, of 1817 (quoted in Preston-Jones, n.d., 20), repeated the information given by Lysons, as did Gilbert (1820, 685) and Penaluna (1838, 27). The summerhouse [190125] was a circular, two-storey structure built on the summit of the most southerly of the summit cairns (below); the implication is that the beacon was not then on the southernmost cairn, which was occupied by the summerhouse. Preston-Jones (n.d.) suggests that the beacon may then have been sited on the middle [90353] of the group of three cairns on the southern end of the Beacon summit, but fieldwork for the current survey found that views from this cairn to Carn Brea, the nearest beacon site to the Beacon, were blocked by the large southern cairn, on which the summerhouse would have been standing. It is therefore more probable that the beacon was re-sited to the northern cairn of this group [90357], from where there is an unobstructed view to Carn Brea and a prospect in almost all other directions.

Preston-Jones (n.d.) has suggested that in the period after the Napoleonic Wars, the beacon quickly became a '*feature of romance and pseudo-history*', its function having

become associated with the ruinous remains of the summerhouse (below). Stockdale (1824, 96) noted the '*stupendous mountain*' of St Agnes Beacon and commented that the '*beacon on the top is greatly dilapidated; yet it is particularly valuable to vessels passing this coast*'; he was, presumably referring to the summerhouse, which seems for a few years to have been used as a daymark. In a long poem titled *Cornubia*, George Woodley (1819, 76-7) gave iconic status to the summerhouse (the 'war-pile') and beacon fire and its recent potential role in warning of French invasion:

*Here, on the summit of a lofty mound,  
That high above the rest its forehead rears ;  
Whose hoary brow, majestically crown'd  
By some rude monument of ancient years,  
Still in fantastic reverence appears ; -  
The war-pile - rais'd in that eventful time  
When Gallic treach'ry bath'd a world in tears, -  
Lifted its warning head, - erect - sublime ; -  
Waiting the Gaul's descent, his last and rashest crime.*

*And well I ween, had HE, whose lawless sway  
Depopulated Europe long shall rue,  
Here dar'd to trace his devastating way,  
And call'd the beacon's flashing fires to view, -  
He had but kindled, when his brand he drew, -  
His funeral pyre : Indignant British pride,  
And British loyalty , for ever true,  
Has chas'd his recreant legions far and wide,  
Or hurl'd them headlong down our rocks' exulting side.*

Ann Preston-Jones (n.d., 12-19; 1998) has brought together the available evidence for the former summerhouse [190125] on the southernmost cairn on the Beacon summit ridge. It was probably built about 1796 and took the form of a two-storey circular tower, with crenellations and windows. Tregellas (1868, 69n), who was born in St Agnes in 1792, recalled it as a '*round white tower*', and noted that it was called the '*Pleasure House; it was used by picnic parties.*' The structure was built in the late eighteenth century, probably not long before 1796, but was derelict by the later 1810s (although still standing in 1823) and had collapsed or been demolished by the mid nineteenth century (Preston-Jones n.d.; 1998).

It is not certain who built it, although the prominence of the Beacon in views from Trevellas, the house occupied by the Donnithorne family, who had substantial local mining interests during the eighteenth and early nineteenth centuries, suggests that it may have been erected by them as a landscape feature. Comparable structures are known to have been built in similarly spectacular positions elsewhere in Cornwall at about the same time; for example, Rogers' tower, on Castle-an-Dinas, Ludgvan, a 'Danish Castle' on Kit Hill and the Prospect Tower at Cotehele (*ibid.*, 17). The tower was referred to in 1812 as '*Donnithorne and Unwin's Castle*' (*ibid.*, 14), but the name may have been given satirically. In the late eighteenth and early nineteenth century Nicholas Donnithorne was chairman of the Cornish Association of Tinnerns. In the period immediately prior to 1812 he was associated with George Unwin and both were implicated in manipulations of sales of tin which resulted in difficulties for local miners (*ibid.*, 18). The context for the report of its name was an advertisement in the *West Briton* offering a reward for information on the '*persons who broke open the summer-house called Donnithorne and Unwin's Castle, broke and carried off the window frames, and broke floors and doors*' (*West Briton*, 13 and 20 March 1812, quoted in Preston-Jones n.d., 13-14).

As noted above for the beacon site, several commentators in the early post-Napoleonic War period appear to have assumed that the tower had been the location



for a watch and invasion beacon during the Wars, but there is no strong evidence for this.

### **2.10.5.3 Mining and mineral working**

Direct evidence of medieval and earlier mining is elusive: what were known as 'old men's workings' were routinely re-examined and re-worked by later miners and the extent of post-medieval surface disturbance and dumping makes it unlikely that any unmodified early mining site survives in the area. Some evidence of earlier mining has been found, however. Survey around a large openwork at Wheal Coates, itself conceivably having prehistoric origins but in its surviving form almost certainly post medieval in date, located a number of stone tools, including examples identified as mortarstones, cupped stones and anvil stones, which may have been utilised in small-scale ore processing operations until relatively recent times (Budd and Gale 1994). One stone, however, had been modified by a pounded groove around its waist, presumably to allow hafting and use as a hammerstone. Similar stones have been found in substantial numbers on prehistoric copper mining sites (*ibid.*, 18-21). A greenstone slab 120 x 80 by 45mm with shallow circular hollows about 35mm across in each of the larger faces was found in a garden in Goonvrea, approximately 400m south of the summit of the Beacon and about 120m outside the study area. This has been identified as a possible bucking stone, used for grinding and crushing small quantities of ore (*St Agnes Museum Newsletter* 19 (1992), 5). The stone is not closely datable and could plausibly date to any period between the prehistoric and medieval or early post-medieval eras. Part of a mould stone – used in the medieval period for casting ingots of tin – was found in hedge material about 600m south of the Beacon study area (*St Agnes Museum Newsletter* 40 (2004), 4). The form of the workings on the outcrop of the lode in the upper part of Towanroath Vugga strongly suggests the application of fire-setting to break the rock, this outcrop working clearly being the earliest exploitation of the Wheal Coates lodes (Figs. 81, 83). Elsewhere in Britain (Crew and Crew 1990) this method has been demonstrated by excavation to have been in use during the Bronze Age. Fire-setting of the same date has also been discovered in south-west Ireland (Jackson 1980, O'Brien 1990, O'Brien and Brindley 1994).

There are documentary references from 1512 and 1528 to named mineral workings in the St Agnes area (Orme 2007, 141, 178) and Norden, writing in the 1580s, referring to the Beacon as 'St Agnes Ball', noted it as a '*verie Riche hill in Tynn-workes*' (Norden 1728, 46). A little later, Carew (2004) referred to '*Saint Agnes, one of the high hills . . . by his entrails (like Prometheus) feedeth the Tynners pecking, or picking bils, with a long lived profit, albeit their scarce Eagle eyes sometimes mistake the shadow for the substance, and so offer up degenerate tears, as a late sacrifice to repentance*'. Hals, writing in the early eighteenth century, noted that '*well-known place called St Agnes' Ball, that is to say, St Agnes' pestis, or plague, so named from the hard, deep, and dangerous labour of the tanners there, out of which mountain hath been digged up, for at least 150 years' space, about ten thousand pounds worth of tin per annum ; which keeps daily employed about the same 1,000 persons....*' (Gilbert 1838, I, 6-7). These observations referred to the wider area around the Beacon rather than specifically to workings on the hill itself.

Gerrard (1986) identified from documentary sources a number of tinworks in the area during the late seventeenth century (by when the recording of bounds had become required under stannary law), these including Beacon Worke (late seventeenth century), Wheale Drunkard [190427] (1687, 1691, pre-1703), Goonvrey (1681), Wheal Goonvre (1676), Wheale an Peeber (1688), Wheal an Stamps (1688), Little Wheal Coates (1692), Porth Chaple Mine Bounds (1691), Porth Chaple Stream Bounds (1686 and 1691), Towan Downe (1691), Wheal Coates [190375] (1692), Wheal an Mulgrane (1673 and 1688) and Wheal Wrath or Wheal an Wrath (1676 and 1688). Whealan Carne, recorded in 1676, Whelan Creg and Wheale an Creug (1639, 1676),

Wheale an Gours (1678), Wheal an Nickan (1669, 1686, 1688, 1698/9) and Moses Chelly Bounds (1680) are likely to be the antecedents of small setts on the east side of the Beacon recorded at the end of the eighteenth century as Whealan Carne, Whealan Creage, Whealan Gorries, Whealan Knickan and Whealan Chelly (below).

In 1720, the Enys Papers again made reference to mine bounds in this area, these including Wheal Mapp, Wheal Coats, Good Fortune in Goonvrea, Wheal Uny, Mr. Pendarves and Mr. John Tonkin's Bounds, Mr. Worth's Bounds and Wheal Level, the majority of these being sited to the south-west of Wheal Coates. While some appear from the field evidence to have been little more than trials or speculations, Thomas Martyn's map of 1748 (Fig. 20) indicates extensive mining activity – his map convention may be intended to indicate lines of lodeback pits – at 'Wheal an Coates' and, outside the survey area, between St Agnes Head and Trevaunance Cove and perhaps also in the vicinity of St Agnes churchtown (Fig 20).

Tonkin noted of the Beacon in the early eighteenth century that '[N]otwithstanding the great heighth [sic] of this hill from the sea, it is observable that you cannot sinck [sic] two or three fathoms on the very summit of it without meeting with water' (Tonkin 1975-6, 204); some, at least, of the surface workings on the upper slopes of the Beacon may, therefore, date to at least the late seventeenth or early eighteenth century, although the description may refer to mineral deposits in the cliffland just to the west, some of which overlie beds of china clay. A 1770 map of mine setts in the St Agnes area held by the Enys family (CRO EN/1381, Fig. 28) shows the summit of the Beacon lying within a sett named as 'Bartell' or 'Wheal an Bartell' [190190]; at least one of the runs of lodeback workings [190154] on the southern flank of the Beacon is likely to lie on lodes shown within this sett on a map of 1793 (HER GRH 253/10). Part of the southern flank of the Beacon was recorded in 1793 as lying within 'Wheal Hendra' [190188], with a small isolated sett within it named as 'Whealan Toan' [190189]; the latter may equate with an area of complex but now very overgrown mining remains, including several shafts, located in the south-west corner of the surviving rough ground on the Beacon ([90346], [190183]). The northern part of the hill, adjacent to what is now Beacon Drive, lay within a small sett named in 1770 and 1793 as 'Whealan Peber', the name perhaps deriving from the Cornish word *pybor*, a piper (Padel 1985, 184-5), and possibly linked with that of an adjacent sett immediately to the north named 'Wheal Musick' (HER GRH 253/10). The map of 1793 also locates a series of small setts mentioned in seventeenth-century sources (above) along the eastern fringe of the Beacon, some of their shapes corresponding with those of the post-medieval enclosures in this area: from north to south these were 'Wheal Knicken', 'Whealan Gorries', 'Whealan Creage' (perhaps from Cornish *cruc*, a barrow (Padel 1985, 73-4)), 'Whealan Gows', 'Whealan Chelly', 'Whealan Carne' and 'Wheal Briannick' (HER GRH 253/10). The latter two names are close to the summit of the hill: both Hals and Tonkin, writing in the early eighteenth century, referred to this as 'Carn Breanick' (above). Most of these setts, together with others in the near vicinity, were cited in an advertisement in the *Royal Cornwall Gazette* in 1817 (15 March) and so were presumably still recognised at that time.

Few of these names can be tied to specific earthwork remains of mining activity and dates for these are for the most part regrettably imprecise. Pre-seventeenth century workings seem not to have been recorded. One series of lodeback workings [190184] on the southern flank of the Beacon cuts pasture boundary [190066], which is itself likely to be contemporary with or to postdate the early phases of enclosure of Goonvrea common in the later seventeenth century; there are also several prospecting pits ([190133], [190175], [190168]) cut into the ditch of [190066] and others – for example, [190152] – where the spoil overlies it. One of the pits in another chain of lodeback workings [190154] appears to respect the boundary and *may* again therefore post-date it. Such workings were liable to be re-worked, however, so these relationships may not indicate a date for the earliest exploitation of these lodes from surface.

The survey identified two horse whim platforms – [190162] and [190170] – and a possible leat [190171] (which may have served a waterwheel to drive pumping or other machinery) associated with the mining remains on the south side of the Beacon. No traces of buildings were located and the impression is that these were perhaps early and relatively small-scale operations; there is certainly no evidence for engine houses or mechanised dressing floors in this area. No activity is shown on Symons' 1870 map (CRO LC-XIII-6) and the 1st edition Ordnance Survey 25in: 1 mile map of c 1880 shows only linear spoil dumps on two lines of lodeback workings – [190154] and [190169] – and marks shaft workings [90346] and [190195] as 'Old Shafts', suggesting that these had already been disused for some time. Dines (1956) makes no reference to workings in this area, although it should be noted that most of Dines' report was based on abandoned mine plans, rather than on fieldwork.

Wheal Coates was again mentioned in bounds dating to 1791, the mine was marked (as 'Whealancoats') on the 1<sup>st</sup> Edition of the OS 1 in to a mile mapping dating to 1813 (Fig. 21), was mentioned as Wheal Coats in a sale of shares dating to 1815 and again in 1822, and as 'Whealancole' in Teesdale's Atlas of 1829. Wheal Coates continued to work sporadically throughout the 19<sup>th</sup> and early 20<sup>th</sup> centuries, work finally ceasing in 1913 or 1914, the only mine on this side of the Beacon to have been developed to any significant degree during the 20<sup>th</sup> century. Some small-scale later working is apparent on the Beacon, however. Spoil from prospecting pit [190159] overlies boundary [190129], which was probably constructed between c. 1840 and 1880, for example. There also seem to have been significant operations on the northern end of the Beacon. Shaft [190032] is shown on Symons' 1870 map (CRO LC-XIII-6) but it and shaft [190025] (Fig. 52), spoil heaps [190024] and [190022] (Fig. 50), probable quarry [190043] and trackway [190049], although all substantial features, are not shown on the large-scale Ordnance Survey maps of c. 1880 and 1907; all are present on an RAF vertical air photograph of 1946 (Fig. 18). Trackway [190049] is a substantial engineered feature but was out of use in 1946 and does not appear to date to World War II; spoil heap [190024] was un-vegetated in 1946 but not apparently 'raw' at that date, although a path to the adjacent shaft [190025] appears to have been recently used. Spoil heap [190022] and quarry [190043] lay within an area of apparent recent disturbance, possibly associated with the adjacent military buildings. Activity in the post-1907 period is known to have occurred nearby at Wheal Coates (Dines 1956, I, 477) and at East Wheal Charlotte (Thompson 2009). Shafts [190025] and [190032] and nearby prospecting features are likely to have been on a westward extension of Wheal Coit Lode, shown on Symons' 1870 map (CRO LC-XIII-6) (Fig 27). There are indications of late activity in a drive from the back of the stockwork on this lode at Higher Bal (Adam Sharpe, pers. comm.), so it is conceivable that these sites on the northern end of the Beacon relate to a contemporary venture in this area.

#### Wheal Coates

Surface indications near the clifftop at Wheal Coates [190375] make it seem almost certain that minerals have been extracted from this site over a very long period of time: currently the earliest documentary references date from 1692, when the records of the Enys family detail the sale of mining materials to local adventurers. Evidently underground mining was already in progress as the source specifically references the sale of 'candells', 'coales', and 'roape', materials which would not be needed if operations on the lodes were by openwork alone. A tin bound for Wheal Mapp [190396] just to the south in 1720 refers to *Wheal Coats old addit* (sic); it would seem that the mine was already considered relatively ancient by this date. There are also sketch maps of 1792 showing the inter-relationship between Wheal Bungay and Wheal Coates (CRO WH-2090, 2091-1 and 2091-2, see Fig. 30) which suggests that there was a need at the time to more accurately determine the exact location of what seems to have been a modified boundary between the two mines. Unfortunately, it is difficult to reconcile these with the modern mapping, though the 1792 plan suggests that the mine was drained via two adits, a second opening lying on the cliffs well to the north of Towanroath Vugga, probably somewhere just to the north of Tubby's

Head. A late 18<sup>th</sup> century bounds map CRO EN/1381 (Fig. 28) marked Wheal an Nithan, Little Wheal Coates [190275] and Sherrick's Bounds to the north of the openworks and outcrop workings, Wheal Coates in the area of the openworks together with Good Fortune [190366], Wheal Level [190419], Wheal an Nap [190396], Wheal Uny [190406], Wheal Drunckard [190427], Wheal Rock [190411] and Wheal Hope [190452] between Wheal Coates and Chapel Combe.

In 1791 a sett agreement was drawn up between the then mineral lord: Sir William Lemon, Bar<sup>t.</sup>, and a gentleman from St Agnes: Mr. John Tregollas Jun<sup>r</sup> and in 1804 the mine appeared on maps as *Wheal an Coates tin mine*. The mine appears to have been active in 1815 together with others, as is evinced by a sale of shares published in the *West Briton* at the end of March for that year and was again mentioned seven years later. By 1828 the mine had acquired a steam engine, and the workings were down to 135m; accounts continued to be kept for the period 1839-42. In 1844, however, the mine was sold up, together with the 60" pumping engine and the remainder of the equipment, and it is evident that all the sub-surface materials were recovered, and the mine was allowed to fill with water.

Some work seems to have continued above the natural drainage level until 1847, when 133 persons were recorded as still at work on the mine. The engine appears to have remained unsold until at least December 1849, for it was again advertised for sale in that year. Work appears to have continued in a desultory fashion above the water table through to 1856, and in 1858 the sett was taken over by John Taylor and Sons. Spargo's map dating to 1870 suggests that the mine was functioning at this date, the main focus of works being adjacent to Beacon Drive, where a surviving chimney marks the location of the original pumping engine house. The dressing floors were located near the western end of the rock-cut section of the openwork at the northern end of the site.

The mine was once more restarted on 19th of October, 1872 with a 36" pumping engine on Towanroath Shaft [190390]; a 24" combined stamping and winding engine [190381] was started in the following year in a new engine house at the top of the cliff. The OS 1st Series 1:2500 mapping (dating to *circa* 1877) indicates an extensive dressing floor [190384] to the west of the stamps engine house incorporating a large number of buddles and other unspecified buildings, as well a small 'burning house' with a short flue [190348]. Work stopped at about this date, however, operations being curtailed in March 1877. The mine was suspended in February, 1879, and the company liquidated. Work, however, resumed in January of the following year, a new all indoor beam whim [190378] being installed in 1880. This period of reworking appears to have lasted only three or four years, and that rather intermittently, the lease being again for sale after the liquidation of the company in late 1881. The mine was taken over by a new cost book company in 1882, but seems to have been poorly run during a time of declining tin prices, and work lapsed during 1883. With the exception of a 'call' on shareholders in August 1884 for funds to purchase a new and larger pumping engine, a few reports from 1888 were the last that was heard of the company. The mine was advertised for sale on 2nd June 1887 with its machinery as a going concern. Dines (1956) mentioned some small-scale work on site until 1889 and there are output figures for both 1888 and 1889. A very small scale working of the mine (very likely of dump material) took place between 1901-2, probably associated with the small-scale waterwheel, stamps and buddle floor [190340] at the northern end of the site (Fig.173).

In 1906, prospecting was undertaken on the site, and in 1910 an attempt was made to unwater the workings using a steam pump [190391] brought from Wheal Merth, Lelant, sited inside part of the old boiler house [190392] attached to the Towanroath pumping engine house (Fig. 159). A 12" twin cylinder horizontal steam winder was installed in a new winder house [190376] at the top of the cliff slope (Figs. 90-91, 95-96, 162-163), whilst a Tangye producer-gas 32 hp engine [190379] was set up to drive ten heads of Californian stamps, though these were apparently never used, all ore dressing being undertaken at a water-powered dressing floor and mill in Chapel Combe. A small

calciner [190346] (Figs. 97-98, 172) was constructed to burn off the arsenical content of the ores, and other buildings were refurbished or rebuilt.

The mine was bedevilled by problems throughout this period of working, most of the company's capital being spent on unwatering the flooded workings. By 1914, the accumulation of a number of adverse factors coupled with a fall in the price of tin and the outbreak of the Great War finally closed the mine, the Duchy of Cornwall as landlords seizing the majority of the equipment as distraint for arrears. The mine was allowed to fill with water, and all the machinery was cleaned and left ready for a possible future reworking. Within a couple of months, however, all the remaining materials were salvaged. Unsuccessful efforts by Mr. Sawle, the former manager, to raise interest in a reworking of the mine continued until 1929.

#### Wheal Charlotte or Great Wheal Charlotte

Sited on the cliffs just to the south of Chapel Porth, Great Wheal Charlotte [190548] exploited a copper lode known as Main Lode, exploitation being from relatively near surface down to the 82 fathom level, the 22 and 32 fathom levels extending a small distance westwards under the seabed. Dines (1956) records outputs of 2,600 tons of 7¼% copper ore between 1834-6 and 1840. The mine is mentioned as returning dues to the mineral lord from 1806 to 1848, is shown on a plan dating to 1859 and is mentioned as at work in 1860; there are reports from 1863-66 and the mine was shown on a plan dating to 1870, though must have closed shortly after this date, being depicted as '*Wheal Charlotte, disused*' on the 1<sup>st</sup> Edition of the OS 25" mapping dating to about 1878. Substantial amounts of spoil spread around the clifftops to the south and south-east of Mulgram Hill attest to the scale of working which took place here (Fig. 124); the absence of indications for the sites of buildings associated with the mine being fairly typical of early 19<sup>th</sup> century copper mines, though as well as the dressing floors there would have been a coal yard, smithy, parts store and mine office, as well, perhaps, as a miners' change house. The surface of Great Wheal Charlotte was acquired by The National Trust in 1956.

#### Charlotte United, otherwise New Charlotte or North Towan.

This mine was centred about half a mile from the coast on the southern side of Chapel Combe. Archive plans of the mine are thin on detail, though Charlotte United appears to have worked three parallel copper lodes. Charlotte United is recorded (Dines 1956) as having produced 23,100 tons of 8½ % copper ore between 1820 and 1856. New Charlotte or North Towan [190698] is recorded as having produced 3 tons of black tin in 1870, when it was shown on a plan. There is a prospectus for the opening of Charlotte United dating to 1875.

The names used for this mine are the subject of some confusion, the Trevithick Society website suggesting that the mine was known as North Towan in 1806, when it was the subject of a short period of working, the steam engine and mine materials being offered for sale in the Royal Cornwall Gazette on the 17<sup>th</sup> March 1807 and again in the following March. It was re-opened in the 1830s as New Charlotte (though was shown as North Towan Mine on a map of the Manor of Tywarnhaile dating to 1846 – CRO AD-145-32) and was renamed Charlotte United in 1877, though was shown as '*Charlotte United Mine (tin and copper disused)*' on the 1878 1<sup>st</sup> Edition OS 25" mapping (Fig. 35). Almost all of its buildings were dismantled in the following years and their sites are now very overgrown. The property was acquired by the National Trust in 1956.

#### Wheal Bungay

Dines (1956) had little to say about Wheal Bungay, which lies to the south of Wheal Devonshire and to the north of Wheal Coates. Dines mentions three shafts at this mine: Engine Shaft 400 yards south-east of White Rocks, another 300 yards south-east of Engine Shaft and a third 400 yards south-south-west of Engine Shaft. The adit was reported as starting 300 yards west by south of Engine Shaft and extending 17

fathoms east towards a line of old surface workings trending south-east about 130 yards south of Engine Shaft. Rouse's Lode courses east 23 degrees north and passes just north of Engine Shaft. There are no records of output, though material in the waste dumps suggest that it is likely to have been predominantly of copper. Other shafts are plotted on OS maps and noted during fieldwork.

Wheal Bungay [190257] was recorded on the 1880 25" scale OS map but few known records of its output or history are known. Wheal Bungay is shown on bounds plans dating to 1792 (CRO WH-2090 and CRO WH 2091), the information recorded on these includes a long drainage adit at 30 fathoms depth suggesting that the mine had been in operation for some time. A tin bound known as 'Bungey Wicket' was registered in the following year and a report in December 1798 recorded that Wheal Bungay had sold 21 tons of copper ore for £202.2s 6d (Johns 1998, 34). The workings seem to have been incorporated into the setts of Wheal Devonshire, and the later Wheal Polberro (Dines 1956, 475).

The mine workings to the east of Tubby's Head are associated with the Wheal Owles sett [190264]; by 1870 this was being worked as part of Wheal Coates (see PRN 41374, info from Dudley 2007).

#### Other mine working activity

The southern part of the project area includes the northern part of the Wheal Towan sett [190759], where three closely-set north-east to south-west trending parallel lodes have been worked from surface by means of outcrop workings [190752], [190756] and [190757] (Fig. 138). There is no evidence of deep mining in this part of the Wheal Towan sett, unlike the area to the south which formed the core of this rich copper mine.

The Wheal Towan lodes near Towan Cross were worked as East Wheal Towan [190733] by means of a pair of shafts. Production seems to have been small-scale, the mine leaving scant traces in the documentary record or at surface.

Two other small-scale early workings within the area can be inferred from sett agreements dating to 18<sup>th</sup> century. The first refers to an adit sett (let to Benj. Hingeston) 'from Porthgwiddon Cove to Porthchapell water through Towan Common' (CRO EN/1483 dating to 1736), possibly equivalent to the small-scale shallow adit in the back of Porthgwidden Cove, later incorporated into Great Wheal Charlotte. The second was a 21 year sett let by Francis Gregor Esq., to Peter Oxenbury of Redruth, tobacconist, for 'Wheal Sampson adit at Porth Chapel in St Agnes to be carried into Mingus Downs (copper)' (CRO G/1588 dating to 1761). The location of this adit is unknown, though it must lie in Chapel Combe, and may be the East Wheal Charlotte adit, which lies just outside and to the north of the project area.

#### Ore dressing

Various documentary sources record the presence of water-powered stamps in Chapel Coombe from perhaps the sixteenth until the late nineteenth century. A mill at 'Portchapel' was listed in a conveyance of 1560 (CRO CF/1/61) and in a series of property documents between the 1590s and 1660s (CRO BRA1026/1); these may have been grain mills but it is also possible that they were dressing tin ore. In December 1683 Hugh Tonkin of St Agnes leased to Nicholas Frances, described as yeoman, also of St Agnes, two stamping mills and tin houses in 'Porth Chapel Combe' then held by Noell Kator, for a term of 21 years at £10 per annum (CRO GP233). Frances may have relinquished the lease, however, for in August 1685 Tonkin made a lease to Noell Cater of the Lower Stamps at £6 per annum (CRO GP239). Cater was noted as 'of Nuland'; the manor of Nuland Preeze is in Cardinham parish, on Bodmin Moor, and he may therefore have been a migrant to St Agnes from the Foweymore stannary. In 1684 Tonkin set a lease to John Nettle of Agnes, tinner, of one acre in Outer Goonvrey 'with liberty to erect a stamping mill, tinhouse, buddleplaces and other buildings for stamping and dressing tin' (CRO GP236). The location of these

stamps is unknown but may have been in the Wheal Arrance valley. The arrangement was clearly intended to encourage Nettle in establishing the new facility because the annual rent asked was only 15s.

The Enys Papers, formerly in Cornwall Record Office, include an agreement dated 1728 to let to an individual named White the 'Polbreen' stamping mill at Porth Chapel Coombe (CRO EN/230). In May 1742 James Tonkin Esq. of Trevaunance leased the Porth Chapel Coombe stamping mills to James Donnithorne of St Agnes, gent., at an annual rent of only 50s but with an advance 'consideration' of £157 10s (CRO GP/306). More than half a century later, in 1796, the remaining term of a 99-year lease on the 'tin stamping mill, situate in Porthchapel Coombe', occupied by Mr Thomas Hoblyn at an annual rent of £25, was advertised for sale (*Sherborne Mercury*, 25 January 1796). In 1814 a stamping mill known as 'James's Stamps, situate in Porth Chapel Coomb' was advertised for lease, together with a 'burning house'; that is, a tin smelting house (*Royal Cornwall Gazette*, 26 November 1814). It is not clear which of the stamps sites in the Coombe this referred to, or whether the 'burning house' was also located there.

In September 1847 the lower and higher stamping mills at Chapel Porth, both 'now or lately occupied by the Wheal Rock adventurers', were advertised for lease, with the taker of the higher stamps required to covenant to 'put up a new Wheel within one year' (*Penzance Gazette*, 22 September 1847). An advertisement during the previous year for the Chapel Coombe stamps indicated that they were then in the hands of the 'Wheal Charlotte or North Towan Adventurers' and the 'Wheal Coates Adventurers' (*Royal Cornwall Gazette*, 23 January 1846).

In May 1867 localised heavy rainfall produced a flood in the Coombe which

'broke in on the stamping mill premises of Messrs Bryant and Waters so suddenly that those employed had great difficulty to make their escape without being washed down with the flood. From these premises about a ton of tin, together with some hundreds of tons of *debris*, were in a few minutes washed away . . .'

 (*Royal Cornwall Gazette*, 16 May 1867).

The higher and lower stamps at Chapel Coombe are marked on Symons' 1870 map (CRO LC-XIII-6, Fig. 29) and as clusters of buildings on the Ordnance Survey 1st edition 25in: 1 mile map of c 1880 (Fig. 33). The lower stamping mill was advertised for lease in 1885, at which time it was said to have been 'recently worked, and is in good condition' (*Royal Cornwall Gazette*, 19 June 1885). However, the advertisement also suggested that in addition to stamping ore the mill could be used for 'bone crushing, or for any similar industry' and it seems probable that it finally ceased operation at about this time. Both stamps sites appear to have been out of use by the time the 2nd edition Ordnance Survey map of c 1907 was surveyed. Those in mid-point of the Combe [190510] were the last to work, being named as the 'Old Century Works' on a postcard in the Benney Archive (Fig. 109).

#### **2.10.5.4 Coastguard lookout**

The 2nd edition Ordnance Survey 25in:1 mile map of c 1907 shows a small rectangular enclosure on the northern summit of the Beacon ridge labelled 'Lookout' [90348]. A smaller rectangular structure (with an internal feature) and a flag staff are depicted within it (Fig 53). An undated photograph in the Clive Benney collection appears to show a similar layout: the rectangular enclosure is shown to be a wooden fence and the smaller structure a wooden hut; a vegetated hedge is also visible within the outer enclosure (Fig 54). Coastguard records note that a 'Lookout House' was erected on the site in 1914, but there was clearly a presence there by c 1907 and the 1914 structure may have been a replacement. The lookout is recorded as having been moved from this site to its present clifftop location on St Agnes Head in 1926, the land

having been surrendered to the Hancock estate, from whom it had been leased, in 1927 (information from Clive Benney; Johns 1998, 45).

The surviving earthwork [190070] on the site differs from that shown on the c 1907 map in that it is polygonal rather than rectangular. Within it is a quantity of broken concrete and at least one piece of upstanding angle iron. It is not clear whether this material represents the remains of a former structure or has been dumped on the site, but it may be that the site of the former lookout was re-used during World War II as part of the radar station.

#### **2.10.5.5 Measuring the land**

In 1796 St Agnes Beacon was the site of one of the triangulation points for the first mapping of Britain undertaken by the recently created Ordnance Survey (Preston-Jones n.d., 5-11). The initial survey point [190128] was not on the summit cairn, where the present trig point [190127] stands, but somewhere on the apron of relatively level ground below it immediately to the south. It is probable that the survey station was not on the summit because this was occupied by a recently built summerhouse [190125] in the form of a tower (above). From this point 'major triangles' were measured to Trevoise Head and Hensbarrow, to Hensbarrow and the Dodman, in Gorran parish, to the Dodman and Carnmenellis in Wendron, and to Carnmenellis and Trendrine Hill in Zennor (*ibid.*). 'Interior triangles' were then surveyed to other points including Probus, Camborne and Gwinear churches, Veryan Beacon and Carn Brea. A new survey point was established on the top of the southernmost cairn before the survey of the 1st edition 25" scale map of c 1880 but the 1796 point was re-used in 1912, at which time it was marked by a drilled brass bolt set in a 2ft (0.6m) concrete cube within an iron protective box, buried 2ft (0.6m) below the ground [190128]. Its precise position is not now known.

The trig point [190127] marking the survey point on the southern cairn was erected in 1937. A base 3ft (0.9m) square was dug and a brass bolt set in a 1ft (0.3m) concrete cube was set in the ground at a depth of 2ft 3in (0.66m). The 4ft tall concrete pillar was then erected over this mark. The trig point was subsequently re-used by the Ordnance Survey every few years and they also carried out maintenance: in 1958; this included filling an erosion hollow around the trig point with stones, soil and turf (*ibid.*). Trig points are no longer used by the Ordnance Survey for regular survey purposes and at some time in the late 1990s the one on the Beacon was encased in stonework and a topograph was located on it, giving distances and directions to local and more distant landmarks (Fig. 42).

The height of the Beacon was a topic of survey and experiment during the late eighteenth and early nineteenth centuries. The anonymous author of an account of the St Agnes mining district printed in the *West Briton* in 1839 noted that 'Mr Thomas, by direct levelling, found the elevation of this hill to be 612 feet above high water; the ordnance surveyors under Col. Mudge, give 599; Mr De la Beche states 621, and Dr Berger (by barometric measurement) 661 feet' (*West Briton*, 10 May 1839). Penaluna (1838, I, xv, 27) noted the height variously as 621 feet and 664 feet.

#### **2.10.6 World War II**

A cluster of concrete building bases on the northern summit of the Beacon and down its northern slope represents the remains of a World War II Chain Home Extra Low (CHEL) radar station [190060] - 'K-series' K181 (Dobinson 2000, **7, 2**, 172) - which used newly-developed short wavelength 'centimetric' radar to track low-flying aircraft. This was being planned during the second half of 1942 but may not have come into operation until 1943 (Dobinson 2000, **7, 1**, 130). It is probable that this station replaced Chain Home Low (CHL) radar station M113 recorded on St Agnes Head in February 1942 (Dobinson 2000, **7, 1**, 116; **7, 2**, 168). Official lists of July and December 1942 suggest that the St Agnes Beacon installation was planned to have



either a type IV mobile unit or a type V system known as a Gibson Box (Dobinson 2000 **7, 1**, 127-8). These CHEL sites subsequently incorporated a variety of types of structures, however, including block-built concrete structures, Nissen huts protected by blast walls with radar gantries mounted over them and in some instances large towers supporting antennae.

It is clear both from air photographs taken in 1946 and the surviving physical evidence that there were at least ten buildings on the northern slope and summit: [190020], [190021], [190039], [190046], [190047] (two structures), [190048], [190057], [190069] and [190074]. Those on the northern summit were enclosed by a double perimeter fence [90352]. This shows on the 1946 photographs as a dark irregular polygon up to 160m across (Fig. 18). In the early 1960s this feature was proposed as the remains of an Iron Age hillfort surviving solely as a vegetation mark (Warner 1962, 114). The dark band is remembered locally as the result of vegetation having been burnt along the fence circuit (Preston-Jones 1990, 8). Preston-Jones (1990, 8) was told that the double perimeter fence on the Beacon lay around a 'Royal Observer Corps lookout'. There is no record of an ROC post on the Beacon, however; the St Agnes ROC post was established in 1941 some 2 km south east of the Beacon (Lawrence Holmes, pers. comm.). It has been suggested that personnel working on experimental radar stations were sometimes issued ROC uniforms in order not to attract attention.

One of the buildings on the northern slope [190046] appears on the 1946 photographs to be a structure in the form of a laterally reversed letter G; this resembles a blast wall around a building or technical equipment although only a levelled platform with concrete edges survives on the site. The form of most other buildings is unclear but Benney (1988, 47) has published a photograph of a group of servicemen standing outside a building of Nissen-hut type with a brick-built porch on the end, identified as their 'billet' on St Agnes Beacon; this is probably the structure represented by building base [190074] (Fig. 57). A similar building, probably [190069], is visible in the background. The 1946 RAF air photographs (Fig. 18) show various tracks linking the military buildings with the road skirting the northern edge of the Beacon and with access routes on the eastern side of the hill.

The roadside along the northern flank of the Beacon may have been defended, although no traces of this were identified during the survey. A wartime reminiscence by S Edwards (n.d., 34) recalls walking from Cameron Camp to Higher Bal after entertainments at the Camp: *'The Beacon in the night light looked aggressive on the right of us with rolls of barbed wire coiled around the foot of it.'*

During World War II a platoon of the Local Defence Volunteers (Home Guard) was based in an unidentified farm building on Beacon Road. Eddie Tredinnick was a member and his duty included Thursday-night patrols on the Beacon:

*'accompanied by a young man (whom Eddie called a boy) he had to watch for any suspicious activity and send a verbal report by the boy to HQ – the farm shed. What was supposed to happen if an emergency arose is not known – fortunately none ever did'* (Tredinnick n.d., 29).

A possible defensive position [190157] within a quarry [190156] on the southern flank of the Beacon may conceivably have been associated with the Home Guard or might have served for a military picket on the approach to the radar station from the south; more probably it is a recent children's 'den'. Several other earthworks across the Beacon, while probably originating from mining or small-scale quarrying, could have been adopted for military use during World War II.

With Royal Air Force airfields nearby at Trevellas and Nancekuke, and the light anti-aircraft training camp at St Agnes Head (Cameron Camp), St Agnes and the surrounding area received enemy air attacks from time to time. The police war diary for Cornwall (copy held by Cornwall Council Historic Environment Record) for 15 September 1940 recorded bombs dropped during the previous evening along the coast

at Perranporth and Bolingey, on St Agnes churchtown and eight high explosive bombs on the Cameron Camp boundary. Arthur Roberts, who lived at the house immediately south of the Beacon now known as 'Breanoc' and kept a wartime diary, recorded a variety of incidents which took place in and around the study area. On this occasion he noted the location of the bombs falling on and around the Camp: '*[A]bout 4 H.E.s [high explosive bombs] landed in Walter Tonkin's field and in Doble's field. One failed to go off in Doble's field down Hill Head Lane. One landed in Camp – no damage'* (Burrows n.d., 4).

Three days later the police diary recorded 11 incendiaries which had fallen in '*grass fields and gorse 1½ miles NW St Agnes P[olice] house. Gorse fire started – extinguished by Fire Brigade and helpers. No cas[ualties]*'. Again, Roberts' diary (Burrows nd, 4) provides additional information:

**18 September 1940** '*I was with Mr and Mrs King at Chapelporth [sic] about 7 p.m. We saw a plane at about 600 foot coming in dead over the Porth, altho' we thought it was one of ours it proved to be a Jerry, he turned slowly and made for the Camp, I saw probably 5 bombs leave the plane. It was lovely weather and no A.A. fire, he circled round for a minute or two then went up behind high clouds making for the north-west. We followed him for a short distance behind light clouds until he finally made off south-west. Our Spitfires got him I hear about Penzance, they came back (two) flying low, made a figure eight over the Camp, meaning I presume that they had got him. I hear one H.E. went off on a waste piece of land at the Camp doing no damage, some fell in Doble's sand pit. Several fire bombs set fire to furze bushes on Wheal Coates Downs and out on the cliff beyond New Downs, there was one in Mr Vellanoweth's Beacon field and on the opposite side of road, Bungay side; and one in around Sawle's I hear, no damage done with any fire or H.E.s. Our own fire brigade was out on a call so Truro Brigade came out about 9 o'clock.'*

During the night of 20-21 May 1941 an air raid noted locally as '*our big blitz*' (Burrows n.d., 7) was probably targeted on RAF Portreath (Nancekuke). The police war diary recorded '*several H.E.s and many I.B.s*' (incendiary bombs) falling on the airfield but there were also reports of bombs falling around 1 am in the St Agnes – Goonvrea – Mongoose – Towan Cross area. Ten or 12 high explosive bombs and six further unexploded bombs were reported around Towan Cross and nearby 'cliff land', with damage to the Victory Inn, dwelling houses and outbuildings; the St Agnes – Porthtown road was closed temporarily. Several hundred incendiary bombs were reported falling at the same time at '*Chapel Porth Valley, setting Gorse on fire*'. Seven further craters made by high explosive bombs and a number of unexploded bombs were located in the Chapel Porth valley in subsequent days.

Arthur Roberts' diary (Burrows n.d., 7, 11) recorded the events and their aftermath vividly. He estimated that 150-200 HE bombs had been dropped between St Agnes and Porthtown during the night, including about 20 between Penwinnick, just south of St Agnes village, and Mongoose:

**20 May 1941** '*Heard Jerry close around. He dropped maybe 200 firebombs on Wheal Charlotte Downs. We all got up and came down, I went outside, they made several runs over the Downs with H.E.s, there might have been 4 or 5 planes . . . several unexploded bombs – Towan Cross around Albert Hooper's place and in G. Wonocott's (Jimmet's) yard I believe. I hear no cars are allowed down Towan Cross or Mongoose Hill that side . . . I went over next morning and looked at some of the craters, the one in Stan William's field towards Cuba [behind Mongoose Chapel] didn't look like the rest – I have since found it was unexploded. Also there is one not gone off in Stile Fields [near Penwinnick]. Tom Hocking has fifteen craters in his fields about 6 feet and 3 feet deep. It proves we must get all the Downs burnt off. I don't know how many H.E.s failed to go off. I know of several more on and around Wheal Charlotte Downs'*

**11 June 1941** 'Three weeks after our big blitz – I noticed a Bomb Disposal gang have made 15 (maybe more) craters on Wheal Charlotte Downs where they have dug out unexploded bombs.'

**12 February 1942** 'Went down [Chapel] Porth and Wheal Charlotte wrecking . . . Saw four more bomb craters, one right on Wheal Charlotte point, another two up top I didn't know were there'.

**14 March 1942** 'I see Bomb Disposal men over the Downs digging up H.E.s left from the May blitz last year'.

Other incidents recorded by Roberts provide information on both physical features and military incidents in the study area but also the day-to-day experiences of the local population.

**9 July 1941 (night of)** 'Heard Jerry had machine gunned Lew Strongman's house at Towan Cross. They had the blinker [aircraft navigation beacon] going on the Downs near the Towan Cross pub.' (*ibid.*, 8)

**28 November 1941** 'The target towing plane [for anti-aircraft training at Cameron Camp] made a forced landing on Wheal Charlotte Downs near the mine burrows at Towan Cross. The plane was burnt out, the 2 men made a good and safe landing' (*ibid.*, nd, 10)

**14 July 1942** 'A soldier asked me to move over to Wheal Charlotte when I was going down fishing on Chapelorth [sic] beach. Wonder we don't get shot, practice firing going on up Wheal Coates Downs. Target plane skimming the beach over our heads only 10ft up. Spitfires machine gunning very often, using Bawden Rock as a target, sometimes they let a blast go into the sea' (*ibid.*, 14)

**15 July 1942** 'Went down fishing but Police and Coast Guards had the beach shut off. Mine in Wheal Coates vugga, I knew it was there several days ago' (*ibid.*).

On 29 September 1941 Roberts recorded that the heavy anti-aircraft battery at Nancekuke had fired at a plane and that shells were bursting 'just North of the Beacon. Fred Rogers said shrapnel fell in his garden' (*ibid.*, 9). At the end of March 1942 he was told that a Spitfire had crashed into the sea off Chapel Porth and in January the following year noted that there had been a 'boat just off Chapelorth [sic] with Coast Guards on board firing at a mine with rifles' (*ibid.*, 11, 16). On other occasions he was able to watch air attacks on convoys off the coast.

In December 1942 Roberts started work at Cameron Camp, having already noted the arrival there of American forces (*ibid.*, 14, 16) In September 1943 he recorded that American engineers had been building additional accommodation (Nissen huts) there in advance of the arrival of more troops (*ibid.*, 19). When these arrived in the middle of the month he reported that they were 'fully fitted out with amphibious jeeps, six heavy tanks and scores of mechanical equipment, there are nine heavy mobile machines that look like Sherman Tanks. I have since been informed they are known as a "Tank Destroyer Outfit" ' (*ibid.*). In mid-October he noted further that the 'U.S. 5th (part of) our camp [sic]. Lot of mechanical stuff, about 15 Sherman tanks. Keep on coming in with lots of stuff' (*ibid.*).

These troops are likely to have been in training for the invasion of France the following summer. Less than a month before D-Day, however, Roberts noted a new American encampment:

**15 May 1944** 'Some U.S. trucks spaced out on Wheal Charlotte Downs, the men are in pup tents. Some troops arrived there last night and moved on the next morning' (*ibid.*, 22).

**6 June 1944** *'It is very quiet around here – several hundred U.S. coloured soldiers over on Wheal Charlotte Downs from Towan Cross to the cliffs in pup tents' (ibid.)*

**11 June 1944** *'The U.S. coloured troops on Wheal Charlotte Downs have graded out a wide road from a point up the valley from Chapel Porth [sic] to the top of Mulgram Hill to connect with the road at old Wheal Charlotte to Towan Cross and built a very good wooden bridge over the bottoms' (ibid., 23).*

In early October 1944 Roberts recorded the departure of the *'U.S. coloured soldiers'*, probably referring to the Wheal Charlotte Moor site (*ibid.*).

Air photographs taken in 1946 show extensive disturbance around the former Wheal Charlotte mine workings together with a series of features set out in a straight line at approximately 100-yard intervals which seems likely to have been the test firing range for the field trials of the Holman Projector in 1940/41 [190634] (Figs. 141-3). This was also used for training merchant seamen whose ships were equipped with this compressed air (and sometimes steam-powered) anti-aircraft mortar, the men spending three days on the range for familiarisation (Carter 2001). However, the function of the new track [190526] constructed up the side of Chapel Coombe to Mulgram Hill by the American troops (Figs. 139-140) remains obscure. It links to an engineered track running onto Wheal Charlotte Moor/Towan Downs from Towan Cross, suggesting some form of training circuit may have been intended, or that it was itself intended as a training exercise; however, it was not apparently completed until after D-Day, by which time the extensive use of sites in southern Britain for training was at an end. Additionally, it is evident that the alignment of the northern end of the track running down into Chapel Combe would only have allowed traffic to enter it from, or to leave it, the downhill side towards Chapel Porth. Charlotte and Towan Downs are also notable for the large number of slit trenches left here by the troops encamped in this area prior to D-Day. Fig. 39 shows their arrangement, suggesting that they may have been excavated as part of an exercise.

Most potential landing points on the Cornish coast were equipped with invasion defences of some kind. A 1941 air photograph shows a curving wall [190486] extending across the beach at Chapel Porth and this is likely to be a tank barrier of a type known from other beaches such as Porthluney, at Caerhayes (HER PRN 170560), and at Kennack Sands on the Lizard (HER PRN 166881, 166883). Research for the Defence of Britain project in 1987 noted that the remains of an anti-tank wall were visible at low tide at Chapel Porth; this was reputed to have been built in the summer of 1940 and to have washed away that winter (DOB ref S0011823). (It is unclear whether this represents an additional feature or is the wall shown on the 1941 air photograph.) An undated but probably wartime photograph of a group on the beach at Chapel Porth shows what appears to be a largely destroyed concrete barrier topped by barbed wire entanglements on metal uprights (Benney 1988, 47). Behind this, just within the present car park, a flat-roofed rectangular building constructed of concrete blocks is visible, and it is possible that this was of military origin [190487]. In the post-war period this building was used as a refreshment kiosk (Fig. 113).

Many similar locations in Cornwall, where beaches are backed by narrow valleys, were additionally defended by an array of pill boxes, often laid out in threes. No pill boxes are now apparent at Chapel Porth and none are visible in early post-war photographs but the National Mapping Programme plotted a polygonal feature approximately 7.5m across on the seaward side of the north-eastern end of the possible anti-tank wall which could represent a pill box under construction (Fig. 111). There are no physical remains.

#### **2.10.6.1 Maritime**

The place name Chapel Porth suggest that the beach may have been a traditional launching and landing site for local fishing boats, although no documentation to

support this hypothesis has been found. A child was drowned while limpet picking at the Porth in 1820 (*West Briton*, 13 October 1820, reprinted in Barton 1997, 108) and in 1847 a young miner was lost while fishing there with a friend. He had waded out at low water with a line of 20-30 hooks, baited with sprats, 'intending to drop the hooks as far out as he could, and there to leave them until the next low water' (*Royal Cornwall Gazette*, 30 July 1847)

A local guide published in 1925 noted that a German submarine had sunk off the coast between Wheal Coates and St Agnes Head during World War I. '*Salvage boats have visited the spot but so far have been unable to move it, and each year it gets more deeply embedded in the sand*' (Bulkley 1925, 30). British submarine E43 was also recorded lost off St Agnes Head during World War I (*St Agnes Museum Newsletter* 27 (1997), 4-5). In November 1928 the 687-ton Liverpool coaster S.S. Eltham was wrecked at Chapel Porth while en route from Swansea to Rouen with coal. The vessels' boiler is visible at low tide on the Porthtown side of Chapel Porth beach (Benney 1988, 22).

#### **2.10.6.2 Popular beliefs: St Agnes and the giant**

Thomas Tonkin of Trevaunance recorded some elements of the legends associated with the St Agnes area in the early eighteenth century. He noted that the Bolster Bank

*'the countrey people call the Gorres, perhaps from guriz, a Girdle, because it, as it were, girds the hill round on one side, as the sea does on the other, and fable it to have been the work of a famous Wrath or Giant, called Bolster, who lived at a place of the same name [Bolster Farm], through which this vallum passeth . . . [A]nd, who, they tell you, obliged St Agnes to lease or gather up the stones of this tenement of Bolster, which in three apron fulls she carried up to the top of the Hill, and made with them the three burrows before mentioned. For they will have it she escaped out of the prison at Rome, and taking shipping, landed at St Piran Arwothall [sic], from whence she travelled on foot to St Agnes parish . . . At last the Wrath attempting her chastity, she pretended to yield to him, provided he would fill a hole (which she showed him) with his blood, which he having consented to do, not knowing it opened into the sea, she bled him to death, and then tumbled him over the cliff. This they still call the Wrath's Hole, which is on the top of the cliff, not far from her Chappel and Well, and enlarging itself as it goes downward, opens into a cave fretted in by the sea, to be seen only at Spring tides; and, from the nature of the stone, being streaked all over with bright red streaks like blood, this no doubt gave occasion to this fiction. After this she lived to a good old age, and then dyed here, having first built her Chappel (now in ruins) and Well of excellent water; the pavement of which well, they tell you, is coloured with her own blood, and the more you rub it the more it shows, it being indeed the nature of the stone, which is some of the hardest, of the Wrath's Hole, a very pretty naturall piece of curiosity well worth a seeing. She likewise left the mark of her foot on a rock, not far from it, called St Agnes Foot, which they tell you will fitt a foot of any size, and indeed it is large enough so to doe'* (Tonkin 1972, 203-4)

A précis of Tonkin's account was included in Fortescue Hitchins' *History of Cornwall*, published in 1824, with the comment that '*[M]any monstrous stories are still preserved in the popish legends of this giant and of St Agnes which were formerly believed in Cornwall but of these it will be unnecessary to give any detailed account*' (Hitchins 1824, 19-20). Such stories were presumably still current in Cornwall in the early nineteenth century for the young Barclay Fox, of the Falmouth Quaker family, visited St Agnes in July 1833 during a walking tour and, en route between Perranzabuloe and Portreath, noted that:

*'Near St Agnes there are 2 curious wells & some tradition connected with them, also a hole in the rock which communicates with the sea. The story goes that a certain giant Boulster, an inhabitant of these cliffs, fell desperately in love with St Agnes, who wearied with these importunities, at length consented to accept him on condition that he would allow her to bleed him into the aforesaid hole till she filled it. The giant not aware of the secret channel, accepted the proposal & consequently bled to death.'* (Fox 2008, 51).

The folklore collector Robert Hunt published longer, more detailed versions of the tales concerning St Agnes and the Giant Bolster (Hunt 1865, I, 56-8) (Fig. 58), but it is unclear whether this was material he had recorded from tradition-bearers or simply re-told with some embellishment from Tonkin or other sources. The giant, Hunt noted,

*'must have been of enormous size : since it is stated that he could stand with one foot on St Agnes Beacon and the other on Carn Brea ; these hills being distant, as the bird flies, six miles, his immensity will be clear to all. In proof of this, there still exists, in the valley running upwards from Chapel Porth, a stone in which may yet be seen the impression of the giant's fingers. On one occasion, Bolster, when enjoying his usual stride from the Beacon to Carn Brea, felt thirsty, and stooped to drink out of the well at Chapel Porth, resting, while he did so, on the above-mentioned stone. We hear but little of the wives of our giants; but Bolster had a wife, who was made to labour hard by her tyrannical husband. On the top of St Agnes' Beacon there yet exist the evidences of the useless labours to which this unfortunate giantess was doomed, in grouped masses of small stones. These, it is said, have all been gathered from an estate at the foot of the hill, immediately adjoining the village of St Agnes. This farm is at the present day remarkable for the freedom of its stones, though situated amidst several others which, like most land reclaimed from the moors in this district, have stones in abundance mixed with the soil. Whenever Bolster was angry with his wife, he compelled her to pick stones, and to carry them in her apron to the top of the hill. There is some confusion in the history of this giant, and of the blessed St Agnes, to whom the church is dedicated. They are supposed to have lived at the same time, which, according to our views, is scarcely probable, believing as we do, that no giants existed long after their defeat at Plymouth by Brutus and Corineus. There may have been an earlier saint of the same name; or may not Saint Enns or Anns, the popular name of this parish, indicate some other lady?*

*Be this as it may, the giant Bolster became deeply in love with St Agnes, who is reputed to have been singularly beautiful, and a pattern woman of virtue. The giant allowed the lady no repose. He followed her incessantly, proclaiming his love, and filling the air with the tempests of his sighs and groans. St Agnes lectured Bolster in vain on the impropriety of his conduct, he being already a married man. This availed not; her prayers to him to relieve her from his importunities were also in vain. The persecuted lady, finding there was no release for her, while this monster existed, resolved to be rid of him at any cost, and eventually succeeded by the following stratagem: —Agnes appeared at length, to be persuaded of the intensity of the giant's love, but she told him she required yet one small proof more. There exists at Chapel Porth a hole in the cliff at the termination of the valley. If Bolster would fill this hole with his blood, the lady would no longer look coldly on him. This huge bestrider-of-the-hills thought that it was an easy thing which was required of him, and felt that he could fill many such holes, and be none the weaker for the loss of blood. Consequently, stretching his great arm across the hole, he plunged a knife into a vein, and a torrent of gore issued forth. Roaring and seething, the blood fell to the bottom, and the giant expected in a few minutes to see the test of his devotion made evident, in the filling of the hole. It required much more blood than Bolster had supposed; still it must in a short time be filled, so he bled on.*

*Hour after hour the blood flowed from the vein, yet the hole was not filled. Eventually the giant fainted from exhaustion. The strength of life within his mighty frame enabled him to rally, yet he had no power to lift himself from the ground, and he was unable to stanch the wound which he had made. Thus it was that, after many throes, the giant Bolster died!*

*The cunning saint, in proposing this task to Bolster, was well aware that the hole opened at the bottom into the sea, and that as rapidly as the blood flowed into the hole it ran from it, and did*

*"The multitudinous seas incarnadine,  
Making the green one red."*

*Thus the lady got rid of her hated lover ; Mrs Bolster was released, and the district freed from the presence of a tyrant. The hole at Chapel Porth still retains the evidence of the truth of this tradition, in the red stain which marks the track down which flowed the giant's blood' (Hunt 1865, I, 56-8).*

The folklorist William Bottrell also published folktales about St Agnes and the Giant but is clear that his text derives directly from Hunt's. He may have visited the site, however, for he adds: '*As a proof of the truth of the tradition respecting the way in which the giant Bolster came by his death, the inhabitants of these parts still show the red stains in the hole at Chapel Porth, marking the track of the giant's gore which fell in torrents and flowed for hours down the hole ...*' (Bottrell 1870, 47-8). Bottrell (1873, 287-8) also recalled St Agnes Beacon as one of the west Cornwall hilltops where there were midsummer bonfires, accompanied by dancing in a ring.

Rose (2000-1, 110) summarises the tale of the Giant Bolster and St Agnes, and identifies the site of the Wrath's Hole with the mineral-stained sea cave below Towanroath Shaft (*toll an gruah*, the hole of the wrath) 500m to the north of the site of St Agnes' Chapel (Fig. 78), although he also notes that there are a series of caves immediately below the site of the nearby well which Hunt (1865) considered to be the site of the Wrath's cave (Fig. 118). At least two of these caves ('*The Two Vugs*') evidently developed on a copper lode, green staining being evident in a roof pillar representing an unworked section of the lode, whilst the southernmost cave has an adit driven from near its roof which appears to head towards openworks on the hillslope inland.

The folklore associated with the Beacon and Chapel Coombe has attracted new interpretations from modern pagans, proposing St Agnes as a Christianised version of an earlier female deity and suggesting that the Bolster legend 'may contain echoes of the pagan motif of the sacrifice of the consort lover to the Goddess' (Straffon 2001, 15; McCarthy 2006). Straffon (*ibid.*, 16; 2005, 11, 13) has also suggested that the Beacon, when viewed from the cliff-top above Tubby's Head, has the form of '*the body of a sleeping woman or Goddess in the landscape. Her head is the Southern Cairn on the Beacon, her body the long north-south slope of the Beacon, and her thighs and legs the lower northern slopes of the Beacon.*'

### **2.10.6.3 Leisure, tourism and celebration**

Over a long period the topographic prominence of the Beacon and views from it, the cliff scenery and the scale of the local mining industry contributed to making the St Agnes area a focus of interest for travellers and topographical writers. In the 1580s Norden noted a '*greate hill called St Ann's Ball, one of the higheste hills in Cornwall : A verie Riche hill in Tynn-workes*' (Norden 1728, 46) and Carew, in about 1600, referred to '*Saint Agnes, one of the high hills ...*' (Carew 2004, 148v). The local historian Thomas Tonkin, writing in the early decades of the eighteenth century, observed the '*great heighth [sic] of this Hill from the sea*', noting that '*on a clear day you may see from it part of Devon, the north and south Channells, and 24 parish churches and chapels*' [later writers claimed up to 34 churches; see below]. *The*

*country people for some miles round make their observations when it will be fair or fould weather . . . in its top being covered or free from clouds . . .'* (Tonkin 1975-6, 204).

Hals, writing before 1730, described 'St Agnes' Ball' [the Beacon] as a 'stupendous and amazing high mountain, abutting upon the Irish Sea, or St George's Channel, rising pyramidally from the same at least 90 fathom above the sea and contiguous lands'. He noted that for at least the previous 150 years tin to the value of £10,000 had been extracted there every year. Overall, he found the 'natural circumstances' of the hill 'a subject as worthy the consideration of the most sage virtuosos, or natural philosophers' (Gilbert 1838, I, 6). Bishop Richard Pococke, visiting Cornwall in 1750, noted in his journal of his travels that he

*'went to St Agnes Hill, where within these few years the richest tin-works have been discovered. There is a remarkable hill of this name, which is much worked, and so all down to the North Sea, to which the foot of it stretches. The veins are seen in the sea cliffs, and they have follow'd one down near the sea cliff, through which there is a descent by steps [into the top of Towanroath Vugga] not very inconvenient (see Fig. 80), and they have work'd it about fourteen fathom under the sea. Some of the veins hereabouts are in some places fourteen feet broad and the ore so rich that they call it grain tin, and might send it to the blowing houses (but they choose the smelting houses) without stamping it. . . . The mines of St Agnes are so rich that Mr. Donithorn, to whom they belong, pointed to one out of which he said he got the value of twelve thousand pounds in six months . . .'* (Pococke 1888, 123-4).

The new appreciation of spectacular natural scenery which emerged in the later eighteenth and early nineteenth century brought an additional interest in the St Agnes coastline and the Beacon. Stockdale (1824, 96) noted of the area that the

*'lover of the picturesque, will . . . be highly pleased at the grandeur of the rocks, which face the shore at this part of the coast; and here is a remarkably stupendous mountain, called St Agnes Beacon, rising pyramidacally to the height of more than 600 feet above the level of the sea.'*

Penaluna (1838, I, 27) similarly emphasised the coastal scenery – 'The rocks on this part of the coast are precipitous and the character of the scenery for the greater part boldly picturesque' – and followed Hals, Stockdale and others in noting the 'pyramidal rocky eminence' of the Beacon.

The scenic delights of the area were already attracting visitors. A description of the geology of the St Agnes area in 1839 concluded by noting that

*'[A] great part of this district is without cultivation, and is most wild and desolate. But the sea coast, with its pleasant coves and level sandy beaches, is much resorted to by those to whom it would be inconvenient to take a distant journey to more fashionable, though not more healthful watering places; whilst its lofty and caverned cliffs, whose decomposing rocks assume an endless variety of tints, attract many summer pleasure parties and lovers of romantic scenery' (West Briton, 10 May 1839).*

The 15-year old Barclay Fox of the Falmouth Quaker family, climbed the Beacon in July 1833 during a walking tour through Cornwall, 'from whence the view is remarkably fine & extensive. We could see Pendennis from it & equally far in the opposite direction' (Fox 2008, 51). Ten years later Cyrus Redding reported in his *Illustrated itinerary of the county of Cornwall* (1842, 196) that from the summit 'thirty-four parishes, a part of Devonshire, and the North and South Seas may be seen'.

The St Agnes-born Cornish dialect writer J T Tregellas wrote a short anecdote about a local character, 'Mousey Cock' of Vicarage, St Agnes, describing him meeting visitors



to St Agnes and offering to show them the attractions of the area. Among these were a walk

*' . . . up to Bickin Hill, and there you can see oal the world to waunce a'moast, and see the ships swemmin' in the say, and see the great round pleasure house there; and then we can come through Uncle Nick's clay-pits, and see um cutting clay, and digging whit', yellow, and rud sand . . . '* (Tregellas 1868, 68-9)

A further story about Mousey Cock noted him being hired by a visitor to carry a box containing a telescope to the summit of 'Bickin Hill' (Tregellas 1868, 83).

Murray's *Handbook for travellers* (1859, 173) mentioned the sand and clay deposits at the northern foot of the Beacon, *'in some places 40 ft. in thickness'*, adding that *'the clay is extensively employed by the miners, who throughout Cornwall use a lump of this substance for a candlestick.'* The guidebook also noted that the *'cliff-scenery between Perran Porth and the Beacon is highly interesting. Guarded by immense rocks of killas, the coast seems to defy the impetuosity of the sea itself'* (*ibid.*). In the same year a correspondent to the *Royal Cornwall Gazette* (3 June 1859) lauded the *'purity and salubrity of the atmosphere'* around the Beacon and Chapel Porth, adding that *'railway communication will bring thousands into the county this summer who never previously visited it, and every spot should be commended to their inspection which may command their admiration.'*

The Beacon and the cliff scenery around Chapel Porth provided a leisure resource for local people, not least children, as well as visitors. Eddie Tredinnick, born in Mongoose in 1889, recalled playing on Chapel Porth beach, *'tobogganing'* down the steep slope from Mulgram Hill on pieces of driftwood and being with a group of older children who used sticks of explosive taken from their miner fathers to blow up rocks on the cliffs (Tredinnick nd, 13)! As an adult, he would go ground-line fishing from Chapel Porth. *'On a good night he would catch turbot and bass as well as the sand-eels (sprat) used as bait but also a very tasty fish'* (*ibid.*, 14). John Carter, returning to St Agnes in 1884 after almost 30 years in Australia, noted in his diary how in mid-September he had been invited by friends to Chapel Porth: *'we had some very pleasant hours together on a green up over the beach in a hollow . . . we had tea together in picnic style and after tea there was some very good singing'* (Carpenter n.d., 29). Ten days later he *'took a stroll in the afternoon up to Beacon and from there out to Wheal Coates, a very rough place, down in the side of the cliff . . . The Wheal Coates Mine is all knocked [knacked], everything there looks depressed'* (*ibid.*, 29). In late October he noted an afternoon walk to Chapel Porth and the cliffs and two days later

*'went after dinner [lunch] on the Beacon and was very refreshed with the delightful views of sea and land . . . we went down by the Well of St Lawrence at Goonvrea [Wheal Lawrence = Wheal Arrans; cf Morrison 1986, 12], and thence by way of Chapel Coombe out to Wheal Charlotte Mine and along the cliffs to Porthtowan, then back by way of Towan Cross through Mongoose'* (*ibid.*, 41).

Finally, just before his return to Australia and sorrowing after receiving news of the death of his wife there, Carter noted on 9 December 1884 that he *'went upon the dear old Beacon for the last time . . . took my parting look over the many thousand small fields before me and on all sides from Perranporth away across country to Gwennap and Camborne, looked down on the town and its villages [sic] of my birth'* (*ibid.*, 45).

In 1891 a picnic for 80 people was held at Chapel Porth to celebrate the recently instituted weekly half-day closing of St Agnes shops. After tea the party *'indulged in explorations of the immediate vicinity, dancing and games of various descriptions'*. It was proposed that the picnic be made an annual event although it is unclear whether this occurred (*Royal Cornwall Gazette*, 20 August 1891).

The Beacon has been a site for local celebrations over a long period. Bottrell (1873, 287-8) noted it as one of the west Cornwall hilltops where people lit midsummer bonfires, accompanied by dancing in a ring [190126]. In 1929 it was included in the midsummer hilltop bonfires lit in as part of the revival by the newly-founded Old Cornwall societies of the festivities associated with the feast of St John, with a chain of beacons extending from Chapel Carn Brea, St Just, to Kit Hill above Callington (Jenkin 1970, 440). Fires have also been lit there on other special occasions. After a 'setting . . . for tribute' at the newly re-opened Polberro Consols mine in September 1844 'a number of tar barrels were burned on the top of the Beacon Hill, which, from the great height of the Beacon, being 600 feet above sea level, must have been seen at an immense distance. Other manifestations were made testifying the joy all feel in the re-working of so important a mine' (*Royal Cornwall Gazette*, 29 September 1844). This tradition persisted into the twentieth century: a local guide published in 1925 noted that on 'several occasions in late years during times of national rejoicing a huge fire has been made there, the last occasion being during the Peace celebrations of 1919, when bonfires blazed from every important hill top in Cornwall' (Anon. 1925, 23). In 1988 a very large fire was lit on the Beacon to mark the four-hundredth anniversary of the Spanish Armada (*St Agnes Museum Newsletter*, **11**, 2). Since about 1990 it has been the site [190117] of a fire lit as part of the annual Bolster Festival each May. In the weeks before Bolster week local children make paper lanterns and clay models of houses. The lanterns are used in a procession to the bonfire on the Beacon, and the clay houses are fired under the bonfire. The next day there is a Bolster pageant at Chapel Porth by St Agnes' chapel (Fig. 59). The audience sits on the gorse slopes south-east of the chapel, a chorus stands in the chapel enclosure to recite the story of St Agnes and Giant Bolster, and the action takes place on the opposite slope of the little valley. The clay houses now form a little village next to which St Agnes stands, Bolster comes over the brow of the hill led by a drum band. Waiting below, as well as St Agnes, there is also Bolster's wife, carrying a huge boulder, the Mayor, who tries unsuccessfully to arm wrestle the Giant, and St George, whose head is knocked off. Bolster's blood is represented by red ribbons, led towards the top of the sea cave by schoolchildren. The dead giant is loaded onto a bier and processed down to Chapel Porth, led by the drummers (Peter Rose, pers. comm.).

#### **2.10.6.4 The rise of popular leisure**

The opening of the railway through St Agnes in 1903 (Redfearn 1985) and the rise of motor tourism in the inter-war years prompted provision of additional facilities for visitors. Postcards and photographs of Chapel Porth from the beginning of the twentieth century show a sequence of tea rooms on or near the former dressing floor; the earliest of these, dated 1908 (Fig. 114), shows a small wooden building, constructed in about 1900 as a tea room and boarding house by Joe Tremewan for his niece Winnie Rickard (Benney n.d., 19) [190151]. Other contemporary photographs of Chapel Porth show a network of eroded paths mounting the cliff to the north of the cove, suggesting that there were already a significant number of visitors to this cove.

In 1904 it was proposed that a golf course be established at St Agnes: 'a club house will be erected on the Beacon and the links laid out on the ground below' (*Royal Cornwall Gazette* 10 March 1904, re-printed in *St Agnes Museum Newsletter*, **41** (2004), 6). Fortunately, nothing appears to have come of the proposal.

The *West Briton* reported of the August Bank Holiday weekend in 1907 'that St Agnes grows in popularity year by year and besides those on the beaches on Monday many were to be seen on surrounding hills. Perfect weather brought together a record number . . . Many are camping out at Chapel Porth . . .' (*West Briton*, 8 August 1907, reprinted in *St Agnes Museum Newsletter*, **49** (2007), 7). In 1922 a formal notice was placed at Chapel Porth warning of the dangers of swimming at low tide (Tredinnick n.d., 24).

A contributor to the *St Agnes Guide* in the mid 1920s recommended a walk from St Agnes churchtown to the Beacon and then, *'by tracks down the rough hillside to the shore'*, to Chapel Porth, but noted that it was possible to walk directly across the fields to the Beacon and Chapel Porth from St Agnes station, *'which is useful for visitors who come over for the day by train'* (Bulkley 1925, 35-6). The rise of tourism also led to some small-scale residential development. The same author enthused about the view to the sea from the upper part of Chapel Coombe when descending by the lane from Mongoose to Chapel Porth, but commented *'it is rather a shock to the imagination to come upon half a dozen wooden bungalows a little further on'* (*ibid.*, 31). The Sunholme guest house at Goonvrea, approximately 200m east of the Beacon, was purpose-built in 1932 with an additional wing constructed in 1936 (Tredinnick n.d., 28)

In the final years of the nineteenth century the St Agnes Jubilee Committee discussed placing seats on the Beacon and resolved to continue the 'Jubilee Path' to Chapel Porth, *'provided the consent of the landowners through whose property the road would have to be made could be obtained'* (*Royal Cornwall Gazette*, 8 June 1899). This does not appear to have been successful and in 1935 George Coulter Hancock, heir to the lands on and around the Beacon (Morrison nd), dedicated a *'right of passage on foot'* on a path between the road east of the Wheal Coates complex and Chapel Porth, recording that he was *'desirous of benefiting the public who might wish to use the said way'* (CRO/ PC AGN/3/10/1). The following year he provided land at Chapel Porth for construction of a public convenience (CRO/X 399/1) (Fig 110). Chapel Porth has long been a popular beach with visitors, as can be seen from the postcards reproduced in this report (Figs. 110-111) and the cafes built to serve them (Figs. 113-116).

Pre-World War II Ward Lock guidebooks for Cornwall recommended a route for motorists which *'skirts the base of the Beacon and then turns inland'*, en route to Porthtowan (for example: Anon n.d. a, xxvi; Anon n.d. b, xxviii; Anon n.d. c, xxviii). An early post-War guide, however, included both the Beacon and Chapel Porth as points on a touring route for motorists between Perranporth and St Ives (Anon n.d. d, 40, 107), and suggested a detour via Beacon Drive, noting it as *'a good motor road .... as the road itself is some hundreds of feet above sea-level, grand panoramic views are obtained along the coast . . .'* (*ibid.*, 44). It is probable that the earlier road around the western and northern sides of the Beacon had been improved for military use during World War II but it was presumably a local initiative to re-name the route 'Beacon Drive' as a visitor attraction. The same guide noted Chapel Porth as a *'miniature rocky cove'*, with caves, a sandy beach, car park and café (*ibid.*, 44); of the Beacon it was said that the *'ascent is quite easy at one or two points and will well repay the effort for the unique and extensive views in all directions. On a clear day it is possible to pick out over 30 church towers from the summit ....'* (*ibid.*)

It should also be mentioned that the group of mine buildings at Wheal Coates were probably amongst the first industrial structures in Cornwall to be visited and appreciated for their rugged beauty and dramatic location. The numbers of photographs taken over the past half century of the Towanroath engine house with a background of turquoise sea and golden sand must run into the tens of thousands.

### **3 Archaeological summary**

The project area can conveniently be divided into seven areas, each distinct from one another in terms of their topography and archaeology:

- St Agnes Beacon
- Tubby's Head
- Wheal Coates
- The downs between Wheal Coates and Chapel Combe
- Chapel Porth and Chapel Combe
- Charlotte and Towan Moors
- The coast southwards to Porthtowan

#### **3.1 St Agnes Beacon**

Sir Richard Carew described the Beacon in about 1600 as 'one of the high hills' of Cornwall, and it is undoubtedly one of the most distinctive topographical features in the central zone of the county, visible and easily recognisable over substantial areas. Many later writers commented on its pyramidal form, standing above the surrounding countryside. This topographical distinctiveness may have given it significance in earlier prehistory, when it was the location for the construction of four large stony cairns ([90353], [90355], [90357], [90359]). In later prehistory or the early medieval period the Beacon formed the focus of the area enclosed by the substantial linear earthwork known as the Bolster Bank. At a later date the Beacon summit was the site of both a beacon [190124], part of an extensive military communication network in the early modern period, and, at the end of the eighteenth century, a Gothic-style summerhouse [190125], a place for leisure with wide views and a landscape feature to be viewed from afar.

The Beacon was also the location of substantial pre-industrial mining activity, and its slopes, now cloaked by a uniform heathland vegetation of low furze and heath, are pitted and scarred by clusters of prospecting pits and trenches, chains of lodeback pits, shafts and spoil heaps, together with a few associated features such as horse whim platforms ([190162], [190170]).

The open ground of the Beacon is now enclosed by stone-faced Cornish hedges bounding improved arable and pasture fields. These fields were taken in from the former extensive area of rough downland known as Goonvrea, within which the Beacon was located, between the mid seventeenth and early twentieth century. Many small quarries, now overgrown, testify to the quantity of hedging stone required to create these enclosures, which are a distinctive element of the wider St Agnes landscape.

During World War II the Beacon was the location for a Chain Home Extra Low radar station [190060], based on advances in technology which enabled low-flying aircraft to be located and tracked. A variety of remains, mainly in the form of concrete building bases and a network of tracks and paths, remain as testimony to a significant contribution to the defence of Britain.

#### **3.2 From White Rocks to Wheal Coates**

The section of coastland from White Rocks southwards to the northern boundary of Wheal Coates is narrow, level and open, backed by agricultural fields enclosed by straight-walled boundaries, the products of one a series of phases of heathland intake which took place between the 16<sup>th</sup> and 19<sup>th</sup> centuries. To the west, the cliff slopes are steep, the cliffs high and vertical, interrupted only by the small promontory of Tubby's Head, where there are the remains of a small cliff castle [90054]. To the north lay the former Cameron Camp, the site of a Royal Artillery training establishment, later

accommodating US Army troops prior to their embarkation to Normandy. Crumbling reinforced concrete fence posts and a network of abandoned slit trenches mark its southern boundary. The vegetation within this area is almost all wind-clipped coastal heath, the archaeology almost all relating to mining activity which was small-scale and peripheral in character. The area fell within the mine setts of Wheal Owles and Wheal Bungay (later reworked as part of West Polberro), though the centres of Wheal Bungay and West Polberro lay to the north-east. Most of the features here consist of scatters of prospecting pits; the small groups of outcrop workings subsequently developed on a pair of lodes crossing the area seem not to have amounted to much. On the coastal slope there are several small-scale high level adits (for instance [96771], [96770], [96768] and [90052]) driven to access and drain mine workings developed from a small number of later shafts, only one of which seems to have developed to any depth and scale [90048]. Surviving lengths of contouring leats on the lip of the coastal slope (for example [190221] and [96788] suggest the use of water power, but the few mine buildings found here are small and rudimentary, probably late 18<sup>th</sup> or early 19<sup>th</sup> century in date (for example [96780], [96778] and [96764]).

The only other features within this area consist of a small group of low mounds of unknown date and function ([96740], [190233] and [96746]) and a pillow mound [96740] which indicates the use of part of this coastal land as a rabbit warren. This area seems always to have been marginal, peripheral, used for coastal grazing, its extent gradually reduced over time by enclosure from the east, eventually leaving only this exposed, poor ground still in heathland.

### **3.3 Wheal Coates**

Amongst the most complex of all of the areas examined within the survey, the landscape at Wheal Coates has been fashioned by centuries of mining. Large numbers of prospecting pits scattered across this area (for example [190357]) testify for early attempts to locate the outcrops of a group of parallel west-east trending lodes which outcrop in the cliffs in the northern part of this area. This initial phase of prospecting by pitting and hushing [190334] and [190335] (a rarely-employed technique in Cornwall, and one which, here, predated at least one phase of prospecting by pits) seems to have been particularly intensive here, probably reflecting the patchy nature of the underlying lodes and the difficulty of predicting their strikes as they headed inland. The outcrop workings here (for example [190321]) are striking in their complexity, workings on a closely-set group of lodes in the northern part of this area creating a landscape of pits and spoil dumps which are so closely-set that they often overlap. A spectacular rock-cut openwork ([190287], [190289], [190305], [190306]) defines much of the northern boundary of the area, extending far inland from the cliffs, whilst the coastal outcrop of the Towanroath Lode [190393] appears to have been worked by fire setting; the roof of the sea cave here has been extensively stoped away.

Some of the leats paralleling the coast seem likely to have been used in the operation of the openwork, possibly assisting in the removal of overburden; others are likely to have powered tin stamps and fed small-scale dressing floors. The first centre for industrialised mining on site lay just outside its north-eastern corner, and is marked by the truncated chimney which served its beam engine. Little else remains of this working, which seems to have been concentrated on the inland extension of the lodes developed in the openworks and outcrop pits, though a scatter of small mine shafts set within the area previously developed by outcrop workings probably date to this period. By the mid 19<sup>th</sup> century, however, attention had returned to the coastal section of the mine sett, and in a development typical of the optimism characterising that period pumping, winding and stamping engine houses, together with a smithy, calciner, miners' dry, dressing floors and other buildings were set up with the intention of exploiting unworked sections of the lodes below sea level and out beyond the coast. Whilst the surface development was impressive, the returns fell short of expectations,

however, though showed sufficient promise to attract new investors to the mine for an early 20<sup>th</sup> century reworking. On this occasion, although new machinery was purchased and new buildings constructed, some older buildings were cannibalised or adaptively re-used. Once again, however, the exploitation of the Wheal Coates lodes proved problematic, the results were poor and the mine eventually forced into closure in part by international events. The southern part of the Wheal Coates area is open, almost completely featureless downland, though this is known to have been the site of a number of small (and evidently unsuccessful) mining ventures, evidence for which consists almost wholly of documentary records rather than features on the ground.

The only other type of archaeological features within and bordering this area consist of some of the distinctive clay and sand pits which border St Agnes Beacon to its west. One of these (Doble's Pit to the north of the project area) is still functioning, mining Pliocene beds of clay, sand and gravels. At Wheal Coates, the pits (for example [190420]) tend to be small, shallow and long abandoned, some evidently re-used as reservoirs for the water needed for engine boilers at the mine on the coast. Their outwash channels funnel into the narrow coombe leading down to Chapel Porth, whilst the heathland surrounding them is dotted with prospecting pits which may be associated with their early stages of development, or may have been excavated in a search for eluvial tinstone.

### **3.4 Between Wheal Coates and Chapel Combe (the south part of Goonvrea)**

This area is bordered to its north by the narrow valley which heads south-westwards to Chapel Porth, to the south by Chapel Combe, whilst the land to the east consists of blocks of recently enclosed land – former downland in Goonvrea whose enclosure seems to have begun during the 16<sup>th</sup> century and which was still in progress at the end of the 19<sup>th</sup> century. Like other areas of land near the coast, this seems to have always been open, rough grazing land. The bulk of this area is almost completely bereft of archaeological features; small groups of prospecting pits are found here and there, there is a small rock-cut openwork [190455] on the brow of the hill and the landscape is crossed by the routes of former trackways linking the local mines to Chapel Combe, but it is mostly empty, undivided land. At its northern margin the shallow valley running to the sea seems likely to have been tried as a tin streamwork [190428], whilst just to the west, a linear cross-contour hollow which joins its downslope [190433] is almost certainly an early eluvial working of this type. This now dry valley was also the source of a contouring leat [190474] which led water eastwards to the head of a narrow ravine [190485] cutting through the hillside to Chapel Combe – again probably an early streamwork, though one of an unusual form.

Small shafts, run-in adit portals and other small excavations in the valley forming the northern side of this part of the project area mark the sites of a number of small-scale unidentified mining prospects, none of which seems to have developed to any significant degree, though an adit driven from the back of one of the sea caves known as the 'Two Vugs' [190470] probably drains a significant section of the land adjoining the valley, probably accounting for the current almost complete absence of water in the stream bed. Close to Chapel Porth were the sites of St Agnes' Chapel [190468] and St Agnes' Well [190469], the former now marked by low earthworks, the second having been deliberately and completely destroyed to allow its stonework to be re-used. The site of the chapel is scheduled, and is the focus for a number of myths and ceremonies linked to St Agnes and to Giant Bolster.

### **3.5 Chapel Porth and Chapel Combe**

One of the few valleys on this stretch of coast, the water in its stream was for many centuries an important source of power for the tin stamps and associated dressing floors serving the local mines, these being documented at a number of locations along its length and in the spur valley to the north, the most westerly establishment being almost on the beach itself. Given that the valley base is in places densely vegetated,

little can now be seen of the networks of leats which tapped the streams which fed sequences of water wheels stepped down the contour as the valley approached the sea. Almost invisible, too, lost under dense scrub or largely demolished to make way for the car park at Chapel Porth are the sites of the dressing floors themselves (for example [190510]), whilst the valley bottom has been buried beneath deep accumulations of the fine silts which were their waste product. Chapel Porth has, since the beginning of the 20<sup>th</sup> century, become a favoured spot for beach tourists (and most recently for surfers), and its current form reflects the recent development of a supporting infrastructure – the latest in a series of refreshment huts [190500], a lifeguard hut [190488] and a car park, but the sign picked out in white painted cobbles [190523] on the southern side of the cove is at least a century old. On the opposite side of the cove, a small square enclosure [190472] marks the boundary of an area which formerly sited a small cottage [190473] housing a family who worked at the dressing floor, and who are recorded as having eked out their diet with limpets gathered from the nearby rocks.

### **3.6 Charlotte and Towan Moors**

Stretching from Chapel Porth inland to Towan Cross, and bordered to its north by Chapel Combe, this section of coastal heathland, like its neighbours to the north seems to have served as undivided coastal rough grazing for centuries, though at two locations enigmatic (and as yet not fully understood) 'round houses' ([190582] and [190585] to the east and [190273] and [190274] to the west survive. At Towan Cross, their associated earthwork enclosures and a possibly associated field system [190721] hint at some encroachment into this area, as do a group of small, low mounds (for example [190575] and [190577]) scattered throughout the moors, these apparently not having a mining origin. A small enclosure at Mulgram Hill [190525] was probably contemporary with mining activity at Great Wheal Charlotte or its predecessors.

However mining for copper from the late 18<sup>th</sup> century until the mid 19<sup>th</sup> century radically altered the appearance of this formerly relatively featureless area. The sprawling, almost completely unvegetated coastal shaft dumps to the south and east of Mulgram Hill relate to the operations of Great Wheal Charlotte [190548], a relatively successful copper mine whose workings stretched out under the sea for a short distance at Porthgidden Cove, whilst inland are the equally substantial (though now scrubbed over) spoil dumps of North Towan [190698] (later Charlotte United). Near Towan Cross, a pair of reservoirs, two shaft sites and a thin spread of mine waste mark the site of East Towan [190733]. A network of mine roadways linked these sites to one another, provided connections between their components, and allowed access to Towan Cross and to Chapel Porth.

Time has not been kind to the remains of these ventures. At Great Wheal Charlotte the only remaining standing structure consists of the bob wall of the pumping engine house [190567], the rest of this building, together with the earlier pumping engine, winding engine, smithy and count house having been obliterated. Its shafts were regularly used as rubbish disposal sites until the mid-20<sup>th</sup> century, its dumps quarried for hardcore, whilst during the 1980s shaft safety works further blurred what remained. North Towan/Charlotte United suffered a similar fate, all but one of its engine houses [190616] and mine buildings being demolished on the closure of the mine, its shaft being subjected to efficient but unsympathetic mine safety works during the 1980s. Scrub development over what remains has been substantial. The lower valley sides site four adits [190612], [190613], [190655] and [190660], none of which can now be accessed to any great distance. East Wheal Towan suffered from its proximity to the main road, one of its reservoirs [190734] becoming infilled, the shafts [190731], [190732] and [190735], surrounding areas being used for rubbish disposal, its dumps removed for hardcore, travellers eventually occupying parts of its site.

During World War II, the beach at Chapel Porth was mined and closed off with a barbed wire entanglement. Parts of the downs nearby were leased by Holman Brothers of Camborne for a firing range used for field trials of its compressed air powered mortar (the Holman Projector), and subsequently for training the seamen who were to use it [190364 and 190707]. Unexploded bombs dropped on Trevellas and Portreath airfields were brought here to be disposed of, as were those dropped on the commons and in the nearby Combe and during the closing stages of the war, the downs was the site of an extensive encampment of US Army troops awaiting embarkation to the Normandy beaches. During their stay they seem to have engaged in manoeuvres which entailed the digging of hundreds of slit trenches (for example [190581]) (see Fig. 39). They may also have done some live firing, as some of the pits on the periphery of the downs have the appearance of mortar bomb craters. Perhaps their most significant impact on the landscape was the re-cutting of an early road leading from Chapel Combe to Mulgram Hill [190256], the construction of a bridge across the stream in Chapel Combe [10504] and the surfacing of part of the section of this track leading towards Towan Cross with mine waste. Whilst the bridge has gone, the track cutting up the southern side of Chapel Combe remains a dramatic feature of the local landscape, especially considering the very short time during which the troops were stationed here.

### **3.7 Charlotte Moor to Porthtowan**

To the south of Charlotte Moor there is little evidence for mining except at the southern end of the project area, where a small group of closely set lines of outcrop working pits [190752, 190756 and 190757] and their associated prospecting pits strike inland from the coast, fading in disturbed land to the north-east. Aerial photographs taken in 1946 suggest that mining activity (probably as part of or a precursor to Wheal Towan) continued further inland, marked by a series of now ploughed out shafts.

The rest of the area consists of a relatively narrow strip of coastal heathland within which a substantial area of reverting arable land marks the site of what appear from aerial photographic evidence to have formerly been the site of medieval outfielders [190743] relating to Towan Farm not far inland. A few sections of the boundaries associated with these fields have survived.

## **4 Discussion**

### **4.1 Prehistoric features**

Prehistoric activity within the project area is generally poorly represented, in part because this area was apparently almost wholly open grazing, hunting and fuel-gathering land during this period. In common with other coastal areas of Cornwall, chance finds of small scatters of flint by walkers hint at a presence which probably spans the period from the Mesolithic onwards. Although at least one significant assemblage has been recorded not far away, those within the project area represent small-scale chance finds only.

The Beacon would have dominated the local landscape throughout the whole of prehistory however, and would have formed a special 'place' in the landscape, not simply a reference point for navigation but a distinct locus which was visible from far and wide and from which many other significant points in the landscape could be seen. It is not surprising therefore, that during the Bronze Age a group of four highly visible barrows or cairns (these now significantly diminished in height) were added along its crest, reinforcing and reinterpreting its importance. As noted above (Section 3.9), the Beacon may have formed part of a wider ceremonial landscape which seems to have included a stone row to its east, and probably also other now-lost sites in its vicinity. The girdling Bolster Bank around the eastern flank of the hill, probably of Iron Age or early medieval date, may have reinforced a long-standing sense that this is special



place in the landscape. The small and as yet undated field system near Towan Cross may have been laid out during this period (though may be a post-medieval feature).

## **4.2 Medieval features**

As with the prehistoric period, little remains to illustrate medieval activity within the project area, and the area would have consisted of open downland, part of the Manor of Tywarnhaile, most of which would have continued to provide useful rough grazing, hunting and fuel gathering land, although a small section of Charlotte Moor was enclosed to form outfields for Towan Farm. Sadly almost nothing survives of St Agnes Chapel and its associated well, formerly an important religious and cult site typical of the period, and one to which legends relating to Giant Bolster became attached; however its site can still be appreciated through its landscape context.

## **4.3 Post-medieval features**

Much of the project area made up the area of downland known as Goonvrea or Goonbrea, and in 1705 17 tenants had customary rights over the downs, allowing them to graze it, and to gather fuel, bedding and moorstone. By the mid 17<sup>th</sup> century, however, parts of Goonvrea had started to be enclosed, almost all of the tenants of these new smallholdings of between 1 and 6 acres being tanners. As noted above (Section 3.9) the resulting increased pressure on the Downs led to a need to regulate grazing levels and to physically demarcate different areas, a bank and ditch across the northern part of the Beacon demarcating the boundary between Inner and Outer Goonvrea, whilst another along the western flank of the Beacon presumably separated further subdivisions of the Downs. Tracks and paths would also have developed during this period, as well as the many small quarries required to provide stone for new hedges. Many of these features survive.

The top of the beacon became the site for a number of constructions, none of which survive, including a fire beacon possibly originally constructed on the summit cairn during the Elizabethan period, but subsequently relocated to the northern cairn, and a short-lived summerhouse, also sited on the southern cairn.

## **4.4 Mining structures**

Documentary sources, including mine maps and plans, the St Agnes Tithe Map and the 1<sup>st</sup> and 2<sup>nd</sup> Editions of the OS 25" to the mile County Series mapping record the sites of a range of buildings and structures relating to the activities of the later mines which worked within the project area. Many of these have disappeared without trace, including a number at Wheal Coates and Charlotte United, whilst a group of buildings shown as part of North Towan (on plan CRO AD-145-32) have left no indications in the landscape that they ever existed. At Great Wheal Charlotte, no plans have been found which indicate the original number and arrangement of its mine buildings (with the exception of the pumping engine house), nor have any traces of their sites been located through field survey.

By the late 1870s, when the Ordnance Survey mapped this section of coastal land at 1:2500 scale, both Great Wheal Charlotte and Charlotte United had been disused for some while. It appears that many of the structures associated with them had already been demolished. At Great Wheal Charlotte (Fig. 34), the pumping engine house and its associated boiler house were already roofless, whilst no other structures were shown on the mine. At Charlotte United (Fig. 35), the pumping engine house and its boiler house were still roofed, as were some of the cluster of mine structures to its south-east, this area possibly siting a pumping and a whim engine, together with the powder magazine and other service buildings and a series of tanks, reservoirs and ponds. By 1908 (OS 2<sup>nd</sup> Edition 1:2500 mapping), the Charlotte United engine house was roofless, its boiler house, like all of the other mine buildings, was no longer depicted on the mapping, and had evidently been demolished.

Those mine buildings which survive are generally of relatively late (mid to late 19<sup>th</sup> century or early 20<sup>th</sup> century) construction, the majority being clustered at Wheal Coates, where, with the exception of a count house, evidence for most of the range of buildings which would be found on a mine of this date have survived. At Wheal Bungay/Wheal Owles to the north, however, the buildings are smaller in scale (Fig. 61-63), and appear to represent rather earlier constructions.

The following surviving buildings were recorded during the survey: See Section 8.6.3 for specific management recommendations for these structures.

#### Wheal Bungay/Owles

- Mine structure near Bungay Shaft [96760]
- Mine building [96780]
- Mine building with fireplace [96778]
- Mine building with footway shaft [96764]

#### Wheal Coates

- Pumping engine house and chimney on Towanroath Shaft [190390]
- Boiler house to pumping engine house [190392]
- Building to north of Towanroath Shaft [190385]
- Stamps engine house [190381]
- All indoor whim engine house [190378]
- Whim boiler house [190377]
- Reservoir [190394]
- Horizontal whim engine house [190376]
- Sub-divided chimney [190373]
- Smithy [190343]
- Reverberatory calciner [190346]
- Gas engine house [190379]
- Dressing floor terraces [190383]
- Tributers' water wheel pit and stamps site [190340]
- Early dressing floors [190342]
- Remains of 20<sup>th</sup> century stone crushing plant [190294]

#### Chapel Porth and Chapel Combe structures

- Former stamping mill [190495]
- Tinner's building on site of St Agnes Chapel [190467]
- Dressing floors in Chapel Combe [190510]

#### Charlotte Moor structures

- Charlotte United pumping engine house [190616]
- Charlotte United pond [190647]
- Charlotte United reservoirs [190699]
- Great Charlotte pumping engine house (bob wall) [190567]
- South Charlotte dressing floors [190659]
- Mine pond in East Towan [190729]

#### **4.4.1 Mine shafts, adits, openworks and other surface workings**

Not all of the mine shafts within the project area were mapped by the OS or described by Dines and other writers, casting some doubt over previously written interpretations of the underlying lode structures at the three principal constituent mines, most particularly in relation to early operations at Wheal Coates and Wheal Bungay, and of the early history of operations on what was to become Great Charlotte, where poorly-documented 18<sup>th</sup> century workings as Wheal Mulgram seem to have taken place.

Following their abandonment, few mine shafts were hedged, fenced or otherwise closed off as landowners would have wished for stock safety and many of the examples in this area remained open and were used for informal rubbish disposal, in

particular those near Towan Cross and the shafts of Great Wheal Charlotte, which in one case, was 'filled up with old cars almost to surface' (Peter Robinson, pers. comm.). The owners of the mineral rights within this area were only too keen to cooperate with Carrick District Council's Operation Minecap Project undertaken in the early 1980s. This ambitious, grant-aided scheme had the aim of securing, closing off or otherwise making safe all possible mine shafts within Carrick District. Unfortunately, the potential archaeological and ecological importance of mine shafts were all but ignored at the time, with the result that all but a very small number of shafts within the project area have been covered with two part Clwyd Caps (Figs. 65-66) or plugged with concrete. Undoubtedly much archaeological detail and potential habitat was lost as a result of this work.

In contrast, the project area contains some of the best-preserved evidence in Cornwall for earlier stages of early mining activity, including prospecting pits and trenches, chains of shallow shafts (lode back workings) and openworks, as well associated spoil dumps, hushes and leats. These features, representing the earliest stages of true underground mining are mostly now choked with backfilled spoil. Some are readily accessible, or can be safely appreciated from nearby paths and tracks. Aerial photographs of the project area (for instance Figs. 36-37) clearly demonstrate the nature, scale and layout of these early operations.

#### **4.4.2 Mine waste dumps**

At the end of the 19<sup>th</sup> century the landscape where Great Wheal Charlotte had operated was still dominated by the massive 46,000m<sup>2</sup> area of dump material on the summit of the ridge running south-east from Mulgram Hill. Individual shaft dumps were depicted within what was shown on the OS mapping as a generalised spread of material, representing areas of sorted waste adjacent to dressing floors. Despite recent dump removal and disturbance, much of this material away from the principal shafts is of no great depth, and was probably barrowed away from the dressing floor for disposal, rapidly making large areas unavailable for further waste disposal using this method. In a few areas (as to the south-west of the engine house at Great Wheal Charlotte), some remnant barrow dumps still survive reasonably intact. Aerial photographs (Fig. 124) suggest that some of the spreading of the dump material was the result of the disposal of enemy bombs during World War II, though dump removal for hardcore and dump disturbance during shaft safety works is also documented in NT archives.

At Charlotte United, the dumps covered less than a third of this area (just over 13,700m<sup>2</sup>) and most appear to be directly associated with individual shafts, representing shaft sinking waste. These areas of waste material would have included the sites of their once busy copper dressing floors, though dump removal and disturbance at Great Wheal Charlotte appears to have obscured any traces of these, whilst at Charlotte United, vegetation obscures the area within which these are likely to have lain.

At Wheal Coates, an area of just under 40,000m<sup>2</sup> was shown as covered by dump spreads at the end of the 19<sup>th</sup> century, the majority of this representing the relatively low primary spoil dumps associated with the outcrop workings in the northern part of the site, only a relatively small proportion being waste from the dressing floors themselves, though it might be that considerable amounts of secondary waste were disposed of over the cliff edge.

In Chapel Combe, around 10,000m<sup>2</sup> of the valley base (almost the whole of the western section) was shown as covered with mine waste – in this instance the fine silts and sands which derived from the stamping mills and their associated dressing floors, these being laid down onto streamworking waste (Figs. 108 and 125). This silty, waterlogged material has now almost completely revegetated. This waste material is likely to contain appreciable concentrations of residual minerals as a result of many years of mineral processing and siltation processes. An application by

Medway Tin in 1985 to sample this material prior to proposed re-working was resisted by the National Trust and abandoned in the face of low tin prices following the International Tin Crash in October of that year. Waste dumps such as these have mineralogical and ecological importance, in addition to their archaeological significance, and despite evidence for some phases of post-abandonment disturbance, remain important landscape features.

#### **4.4.3 Quarries and clay pits**

The Ordnance Survey recorded a number of excavated features within the project area as either 'quarries' or 'clay pits'. Although some of these features are indeed the sites where stone was sourced for mine buildings and other uses, or where Quaternary clays and sands were extracted, some of the sites, including a number of shafts, openworks and at least one mine reservoir, were misidentified on these maps. Many of the quarries are on the crest of the valley slope at the northern edge of Charlotte Moor, overlooking Chapel Combe, or along the southern base of the Combe, and it is assumed that this was principally determined by geological conditions. A second group are clustered at and to the south of Wheal Coates along the northern side of Chapel Combe. It is assumed that the northern group were sited for convenience when building mine structures at Wheal Coates, whilst the southern group probably provided stone for the stamping mills in the Combe. The clay pits within the survey area are all at the eastern edge of Wheal Coates and are part of a group which flank St Agnes Beacon on its western side, one of these to the north-east of Wheal Coates still being actively worked as Doble's Pit. St Agnes Beacon also sites a number of small stone quarries on prominent outcrops which would have supplied some of the stone for the construction of the new hedges parcelling up the Downs. The clay/sand pits within this area are geologically unusual, and served an important function for the mining industry, providing, amongst other materials, the sticky clay prized by Cornish miners for attaching candles to their hats when underground.

#### **4.4.4 Roads and tracks**

Almost all of the project area consists of open coastal heathland, and the majority of the present day path and track system which has developed within it reflects formerly important places in this local landscape.

On Wheal Charlotte Moor, the sites of Great Wheal Charlotte and Charlotte United can be seen to have long been linked to Chapel Porth, to Porthtowan and to Towan Cross by mine roads, that running from Chapel Combe to Mulgram Hill and on to Towan Cross being extensively re-engineered (and slightly re-aligned) by US Army troops in 1944 (Figs. 139-140). Wheal Coates is similarly linked to Wheal Bungay, to Beacon Drive (and thus to St Agnes) and to Chapel Combe. A traction engine road, designed to allow ore and materials to be hauled between Wheal Coates and Chapel Combe, remained incomplete when the mine closed. The track running up through Chapel Combe would probably have been an important early link between Mingoose, Goonvrea and the sea, and would almost certainly have been used to transport sea sand – an important agricultural resource - inland to sweeten fields, particularly those recently enclosed from heathland.

On St Agnes Beacon, existing paths and tracks which gave access either to the Beacon summit, or to some of the mine workings which cross the hill were later augmented by the slag-surfaced road constructed to provide access to the WWII radar station, this now forming the path around the northern side of the Hill from Beacon Drive.

#### **4.4.5 Military features**

Lying between two WWII airfields (Portreath and Trevellas), and adjacent to a radar station on the beacon which may have been undertaking secret research, a military training camp (Cameron Camp), and an area of cliffland used for anti-aircraft gun practice, it is not surprising that the beach at Chapel Porth was defended with barbed wire entanglements, a possible pill box and a minefield. Similar barbed wire

entanglements also blocked off access points onto the Beacon whilst a double fence surrounded much of the military radar station established at its northern end. As would be expected, the local airfields attracted enemy attention, as was recorded by Arthur Roberts, whilst the local commons were used for the disposal of unexploded bombs which had fallen in the surrounding area. This has created a number of craters which are now difficult to distinguish from shaft hollows, though in a few cases the annular lip of spoil around their openings thrown up by the blast makes the distinction clear (for example bomb crater [190672]). Charlotte Common was also used to field trial the Holman Projector – a compressed air powered anti-aircraft mortar which was taken up as a defence for merchant shipping with some success, many of the sailors who were to use the weapon coming to the Common for training. Live ammunition was used during a recreation of the trials for a later BBC documentary.

In 1944 Wheal Charlotte was used as one of the many temporary encampments for the troops awaiting the D-Day embarkation to Normandy, in this instance the men being segregated black infantrymen. During their short stay on the St Agnes coast the men seem to have spent some of their time digging numerous slit trenches – probably as part of field exercises, and they may have set up temporary live firing ranges. Army engineers improved the road system between Towan Cross and Chapel Porth, surfacing the old mine road with mine waste and bulldozing out an old track to the valley base, where they set up a temporary road bridge. There would also have been cook houses, latrines, stores and other temporary facilities, but like the bell tents the men were provided with, none of these have left any trace today. Following the end of the war the radar station was stripped of its equipment and the buildings demolished, leaving only a scatter of concrete base slabs. The beach defences at Chapel Porth were taken away, and the pillbox, temporarily converted into a café, was eventually demolished.

## **5 Ecological summary**

### **5.1 Desktop review**

#### **5.1.1 Desk top review**

The Chapel Porth property (NGR SW 697496) is a section of coastal cliff-top between St Agnes and Porthtowan, including Tubby's Head and Mulgram Hill. The 148.5 hectare property comprises the cliff line, coastal heathland and grassland, and a large area of inland heath including the Wheal Coates, Wheal Charlotte and Charlotte United mines.

The St Agnes Beacon property (Grid Ref SW 710 504) occupies the western side of an isolated hill rising above the coastal platform between St Agnes and Chapel Porth. The 24.7 hectare property comprises an area of inland heath surrounding the summit beacon, and incorporates mined areas, particularly on its southern margin.

The proposed works on the historical sites in the area will impact upon certain features of ecological interest. There are areas of scrub and dense Bracken as well as tall ericaceous shrubs covering sites of potential archaeological value that will need to be cut so that the archaeological survey can be completed. At other sites the vegetation will need to be cleared around the derelict mine buildings, shafts etc to permit conservation work and consolidation of the structures. Ivy will also need to be removed from some structures. A limited number of new or improved access tracks will be necessary so that the historical features can be reached by machinery and workers. Materials and machinery will need to be stored on compounds nearby.

The purpose of this desk top review is to inform the issues which may result from the additional survey work and the planned consolidation work to the mining features across the site on the National Trust properties at St Agnes Beacon, Wheal Coates, Chapel Coombe and Charlotte Moor.

## 5.2 Features of ecological importance

### 5.2.1 Features listed on the SSSI/SAC citations

The area concerned with this archaeological survey forms part of the Godrevy Head to St Agnes Site of Special Scientific Interest (SSSI) 19, which was designated as a Special Area of Conservation (SAC) in 2005. The land at St Agnes Beacon is not included in the SSSI/SAC but does support an extensive area of comparatively species-poor heathland. Figure 10 in the Appendices shows the boundaries of the SSSI and SAC. The details of the SSSI and SAC citations are also included in Appendices 1 & 2.

Natural England identifies the following features of significance in the SSSI:

- Coastlands: sand dunes, hard cliffs, maritime heaths.
- Lowland heaths: Atlantic, coastal, *Erica* spp, *U. gallii*
- Assemblage of vascular plants
- Rich invertebrate fauna
- Colony of kittiwakes
- Breeding bird community of rocky coasts and islets

However, these features are identified for the whole of the SSSI of which this property forms only the southern part. No breakdown of the features by area has been made by Natural England. The proposed archaeological work in the current project will not impact upon the breeding Kittiwakes and is unlikely to affect the breeding birds of rocky coasts and inlets. The maritime and lowland heaths will be affected and consequently some of the less common species of vascular plants and invertebrates are at risk of disturbance.

The SAC designation is in part recognition of the outstanding examples of **European dry heaths** and **temperate Atlantic wet heaths** with *Erica ciliaris* and *Erica tetralix*. This site is considered to be one of the best areas in the United Kingdom for dry heathland and the heathland at Chapel Porth represents typical examples of wind-pruned, 'waved' H4 *Ulex gallii-Agrostis curtisii* and H8 *Calluna vulgaris-Ulex gallii* heath, with some maritime features. These communities are present at several locations on the coastal heaths in the project area, particularly on the cliff slopes near Chapel Porth.

This site is one of only four known outstanding localities in the United Kingdom for temperate Atlantic wet heath. This habitat is considered to be rare as its total extent in the United Kingdom is estimated to be less than 1000 hectares and it is designated a Priority Feature within the EU Habitats Directive. At Chapel Porth, Dorset Heath *Erica ciliaris*, occurs on drier substrates than in much of its range in the southwest; it is found on the plateaux near Towan Cross, and on the north-facing valley sides above the Chapel Coombe valley.

In southern Britain, sequences of maritime to less-maritime communities are generally terminated not far from the cliff-top by agricultural reclamation. Chapel Porth is remarkable in that it not only displays good transitions from one habitat to another with decreasing maritime influence on the cliffs and cliff-slope, but this succession of vegetation types continues within the cliff-top area.

The SAC designation is also partly in recognition of the outstanding example of the population of NT Early Gentian *Gentianella anglica*, a UK BAP priority species. Although not one of the largest populations, this site is considered to be important because it is representative of Early Gentian on a non-calcareous substrate in the extreme west of its range.

## 5.2.2 Other notable habitats and species

Species present on the property have been assessed for their significance according to the following sources:

### International significance

- European Habitats and Species Directive (CEC, 1992)
- European Red Data lists (IUCN, 2000)
- European Council Birds Directive (CEC, 1979)

### National significance

- Wildlife and Countryside Act 1981 and amendments
- Countryside and Rights of Way Act 2000
- Natural Environment and Rural Communities Act 2006
- Protection of Badgers Act 1992
- The Hedgerow Regulations 1997
- UK Biodiversity Steering Group reports Tranches 1 and 2 (UKBSG, 1995) and updates
- British Red Data Books and Lists (various authorities)
- Species of Conservation Concern (birds) (BTO, RSPB and others, undated)
- Guidelines for Selection of Biological SSSIs (NCC, 1989 and updates)

### Regional, county and local significance

- Southwest Regional Biodiversity reports (Cordrey, 1997)
- Cornwall Biodiversity Initiative Volume 3 (CBI, 2004)
- Red Data Book for Cornwall and the Isles of Scilly (Spalding, 1997)
- Flora of Cornwall (French, Murphy and Atkinson, 1999)

In addition to the SAC qualifying habitats, the following types of vegetation are of ecological significance at this site (ELP, 2007):

- Maritime cliffs and slopes, including *Molinia* flushes.
- Areas of bare and sparsely vegetated spoil in the vicinity of mines.
- Mosaic of wetland vegetation in Chapel Coombe valley
- Arable flora in reversion fields

The areas of species-rich coastal grassland and open heath on the cliff tops and slopes support a good diversity of higher plants and invertebrates with many uncommon and rare species. BAP habitats present on the site are maritime cliff and slopes, lowland heath, hedgerows (though these are principally populated with gorse within the study area, so their value is relatively low) and very small areas of wet woodland dominated by Grey Willow in Chapel Coombe stream valley. Arable field margins are also listed as a BAP habitat and arable fields supporting uncommon arable plant species are currently under consideration. The arable field at SW 695 485 could qualify as it supports a good diversity of arable species including EN Scarce Small-flowered Catchfly *Silene gallica* var. *anglica*.

Although not part of the SSSI/SAC St Agnes Beacon supports a large area of lowland heath - a BAP habitat. This heathland is comparatively species-poor but does support the Red-listed VU parasitic Common Dodder *Cuscuta epithimum* and Nationally Scarce invertebrates also occur here.

The re-vegetation of the toxic and disturbed substrate around mine workings is restricted to a weak ling *Calluna*-dominated cover, with large areas of bare ground.

Surveys of similar post-mining sites with extensive open ground show these as some of the most valuable areas for invertebrates (e.g. aculeates, UK BAP Grayling butterfly *Hipparchia semele* etc) and BAP reptiles. These areas could, in time, also support rare metallophyte lichens or bryophytes such as VU Greater Copperwort *Cephaloziella nicholsonii*.

Unfortunately, little is known of the current lichen and bryophyte interest of the sites and there have been no recent surveys. The lichen flora of the cliffs in the Porthtowan area was investigated by Lambley in 1976. No lichens of interest were found on the mine tips. The Godrevy Head to St. Agnes SSSI is also considered to be a site of secondary importance for mosses and liverworts in the Bryophyte Site Register for Cornwall (Hodgetts & Newton, 1987), having a good number of species recorded and also one locally rare species.

This is a key area for Greater and Lesser Horseshoe bats (both UK BAP priority species) *Rhinolophus ferruquinum/hipposideros*. All open shafts and adits are either confirmed or probable bat roosts. Access to these must be maintained for bats. The Cornwall Bat Group monitors population levels here annually. There are more Greater Horseshoes hibernating in this area than any where else in Cornwall and it is essential they are not disturbed during any remedial works. Daubenton's bats *Myotis daubentonii* have also been found hibernating in the mine shafts (Daniel Eva, Cornwall Bat Group, pers. comm.).

This coast is not an important area for nesting seabirds, with only low numbers of Fulmar *Fulmarus glacialis* present (NCC Seabird Colony Register). Peregrine *Falco peregrinus* are known to nest in the vicinity. Also, Wheatear *Oenanthe oenanthe* have been seen along the northern cliffs of the property and may nest in disused rabbit burrows here. The open heath and gorse scrub mosaic areas are known to be used by BAP Linnet *Carduelis cannabina* for nesting and overwintering. BAP Skylark *Alauda arvensis* nest commonly on the heath.

UK BAP reptiles Adder *Vipera berus* and Viviparous Lizard *Zootoca vivipara* have also been recorded on the site and are likely to use the heathland and areas of Bracken and scrub.

The ecological importance of this area for invertebrates has been known for a long time, particularly for spiders. The spider data feature prominently in the Chapel Porth Invertebrate Site Register (Nature Conservancy Council) entry together with a note on the presence of a colony of Silver-studded blue butterfly *Plebejus argus* (a UK BAP priority species) and Small Pearl-bordered fritillary *Boloria selene*. It is doubtful that Small Pearl-bordered still survive in the area as they have not been recorded since 1990. Similarly BAP Pearl-bordered Fritillary *Boloria euphrosyne* has not been formally recorded since 1990. Another BAP species, the money spider *Tapinocyba mitis*, found here in 1968/69, is important as a species requiring mature heath and therefore at risk from management by fire. The property is now known to be of national significance for invertebrate conservation generally and supports five species of British Red Data status are known plus twenty-one of Nationally Scarce status, as well as many uncommon species. Twelve of these are listed in the Cornwall Red Data Book. The most significant invertebrate assemblage types present are the early successional heath, the open vegetation and lowland ericaceous woody growth. The next most significant invertebrate assemblages present are the maritime therophyte and coastal rock ledge assemblages along the cliff line, together with open vegetation and dense grassland areas.

The species listed in Table 1 below are of particular national significance. It should be noted that full lists of rare or notable plant and invertebrate species known from the project area are included as Appendices 3 & 4. Table 2 lists the legislation relevant to the site. Figures 24-26 highlight features of ecological importance.



**Table 1: Species of particular national significance recorded in the project area**

This list includes BAP/EN, NT, VU plants (based on IUCN data) and Red Data Book/BAP invertebrates as well as other BAP fauna.

<u>Vascular Plants</u>	
Wild Asparagus <i>Asparagus officinalis</i> ssp. <i>prostratus</i> .	The population numbers of this Endangered species recorded in 2001 confirmed that the population north of Tubby's Head was the second largest in the UK. This is also a UK BAP priority species.
Dorset Heath <i>Erica ciliaris</i> .	This species is classed as Least Concern but it has a limited UK distribution and is rare in the UK. It is the characteristic species of the SAC temperate Atlantic wet heath, a priority feature of the SAC. The population at Chapel Porth is noted as occurring in a notably dry habitat. It occurs on the southern slopes above Chapel Coombe and on the plateau between Charlotte United Mine and Towan Cross
Vigur's Eyebright <i>Euphrasia vigursii</i> .	This Endangered species has particular habitat requirements and occurs in short grassland within <i>Ulex gallii</i> heaths south of Chapel Porth.  This is a UK BAP priority species.
Hairy Greenweed <i>Genista pilosa</i> .	This Near Threatened species is an abundant constituent of maritime heathland and grassland from Chapel Porth to St Agnes Head and around Porthtowan and is particularly well represented in the vicinity of Mulgram Hill, forming a notably extensive population in association with maritime grass-heath.
Pale Dog-violet <i>Viola lactea</i>	UK BAP priority species. This Vulnerable species is less frequent than it used to be, possibly due to loss of habitat and changes in management. It is a plant of drier heaths and is often found growing along tracks. Sometimes it appears in great numbers after heathland and gorse fires (French et al 1999). This species occurs in open areas of heathland around Chapel Porth.
Common Dodder <i>Cuscuta epithymum</i>	This Vulnerable species is parasitic usually on <i>Ulex</i> spp and <i>Calluna vulgaris</i> . It is frequent on heathland at this site particularly on St Agnes Beacon.
Small-flowered Catchfly <i>Silene gallica</i> var. <i>anglica</i>	UK BAP priority species present in the arable field at SW 695 485. This Endangered plant is a very local and declining arable species usually found on disturbed ground near the coast.
Corn Chamomile <i>Anthemis arvensis</i>	This Endangered arable species is present on the arable field at SW 695 485.
Corn Marigold <i>Chrysanthemum segetum</i>	This Vulnerable arable species is present on the arable field at SW 695 485.
Dwarf Spurge <i>Euphorbia</i>	This Near Threatened arable species is present on the arable field at SW 695 485.
Night-flowering Catchfly <i>Silene noctiflora</i>	This Vulnerable arable species is present on the arable field at SW 695 485.
Early Gentian <i>Gentianella anglica</i>	A UK BAP priority and a Schedule 8 species protected from picking, uprooting and destruction (Wildlife and Countryside Act). It is also protected by the Habitat and Species Directive. This species is also a designated feature of the Godrevy to St Agnes SAC and is present in low numbers in short grassland on the cliff tops recorded from the coastal slope near Porthtowan at SW 693 481 (south of the property) and in clifftop grassland at SW 693485 in 1995. A single plant of the hybrid with Autumn gentian <i>G. x davidiana</i> was located in 2007 at SW 69267 48663 growing in species-rich grassland on windblown sand and could occur in

	other similar areas.
<b>Fauna</b>	
A dictynid spider <i>Lathys stigmatisata</i> (syn. <i>puta</i> )	Recorded c. 40 years ago, but not since. This RDB3 species is generally found beneath loose rocks, among heather and grass and among sparse vegetation on shingle.
Thyme Lace Bug <i>Lasiacantha capucina</i>	Found at the southern end of Chapel Porth on 1990 NT Biosurvey. This RDB3 species is only known in GB from western Cornwall. Associated with herb-rich grassland and grass heath where rocky outcrops are covered in mats of the foodplant, Thyme
A money spider <i>Tapinocyba mitis</i>	Nationally Scarce and a UK BAP Priority Species. This 40 year old siting at Chapel Porth is the only Cornish record and there are no UK records post 1979. It has been found in deep litter and moss on dry heath, and is most numerous in mature heather.
Silver-studded Blue <i>Plebeius argus</i>	UK BAP Priority Species; very local & declining in Cornwall since 1995. Larvae feed on a wide variety of ericaceous and leguminous plants, including <i>Calluna</i> , <i>Erica</i> and <i>Ulex</i> spp on heathlands, requires short or sparse vegetation, caused by thin soils or fires. The St Agnes coast has one of key Cornwall populations and it has been recorded in the Chapel Porth area (although not since 1999).
Pearl-bordered Fritillary <i>Boloria euphrosyne</i>	UK BAP Priority Species; rare & declining in Cornwall recorded in 1990 at Chapel Coombe and St Agnes' Well. The larvae mainly feed on Common Dog-violet but may also use other violet species; requires abundant food plants growing in short, sparse vegetation, where there is abundant leaf litter perhaps maintained through rough grazing/periodic clearance work.
Grayling <i>Hipparchia semele</i>	UK BAP Priority Species; a good population of Grayling butterfly is present in the patchy heath areas on the property.
A micro-moth <i>Phyllonorycter staintonella</i>	pRDB1; Cornwall RDB: Restricted in Britain to the St Agnes area of Cornwall where it was discovered in 1983; larvae feed in leaf mines on Hairy Greenweed. Only three localities known including Chapel Porth.
Golden Samphire Fruit Fly <i>Myopites eximius</i>	RDB3; scattered on North Cornwall coast. The larvae feed on the developing seeds in the flowerheads of Golden Samphire where it grows on rocky seacliffs. Recorded in 2007 at Tubby's Head.
A ground weevil <i>Cathormiocerus maritimus</i>	RDB3 (Rare); Cornwall RDB: very local on north Cornwall & Lizard coasts. Recorded in 2007 on the north cliffs at Chapel Porth and at Tubby's Head. A ground-living species in sparsely-vegetated places on sea cliffs in Cornwall, Devon, Dorset & Hampshire; known outside of Britain only from western France.
Greater Horseshoe <i>Rhinolophus ferrumequinum</i>	UK BAP Priority Species, also protected by European and UK legislation. A colony of Greater Horseshoe Bats was found in a shaft near Wheal Coates (7014.5013) in 1984 (NT files). There are also Greater Horseshoe bats in adits in Chapel Combe and other mineshafts.
Lesser Horseshoe <i>Rhinolophus hipposideros</i>	UK BAP Priority Species, also protected by European and UK legislation. There are Lesser Horseshoe bats in audits in Chapel Coombe and other mineshafts.
Common Linnet <i>Carduelis cannabina</i> subsp. <i>autochthona/cannabina</i>	UK BAP Priority Species. The open heath and gorse scrub mosaic areas are known to be good for Linnet and this species is likely to nest there.
Skylark <i>Alauda arvensis</i>	UK BAP Priority species and Red Listed. Skylark is known to nest on the

	ground in open areas of heathland or grassland.
Adder <i>Vipera berus</i>	UK BAP Priority Species; likely to occur in scrub, heathland, sparsely vegetated areas and piles of stones.
Viviparous Lizard <i>Zootoca vivipara</i>	UK BAP Priority Species; likely to occur in scrub, heathland, sparsely vegetated areas and piles of stones.

**Table 2: Legislation relevant to the site**

Species	<b>Main legislation or policy</b>	<b>Significant habitat and recommended timing</b>
Bats	Conservation (Natural Habitats etc) Regulations 1994 Wildlife and Countryside Act 1981 and amendments (Schedules 5 & 6) <i>Countryside &amp; Rights of Way Act 2000</i>	Mine shafts, adits, tunnels, flues as well as crevices in derelict mining structures. Dense Ivy over buildings and mature trees with holes and crevices at all times. Work should ideally be carried out in May or September. Work during the hibernation period should be avoided.
Badger	Protection of Badgers Act 1992	Possibly along hedgebanks, in dense scrub and in adjacent landscape to 30 metres distance, at all times. However, recent changes in legislation reflect the tolerance of this species to vegetation clearance.
Adder & Common Lizard	<i>Wildlife and Countryside Act 1981 (and amendments)</i> <i>Countryside &amp; Rights of Way Act 2000</i>	<i>Scrub/grass/ open dry vegetation mosaic and piles of stones. Scrub clearance should take place in the active season.</i>
Breeding birds	<i>Wildlife and Countryside Act 1981 (and amendments)</i> Countryside and Rights of Way Act 2000	<i>Scrub, hedgebanks, trees and built structures during the nesting season March to August.</i> <i>Skylark nesting on ground in heathland and grassland.</i>
<i>Early Gentian</i>	Wildlife and Countryside Act 1981- Schedule 8: <i>Habitat and Species Directive – Annex 2 and 4:</i> Conservation (Natural Habitats etc) Regulations 1994 (SAC designated feature)	<i>Cliff top grasslands and coastal slopes. If disturbance (machinery/trampling) necessary in these areas then the dormant period in winter would be preferable.</i>
<b>Habitats</b>		<b>Location</b>
<i>The streams</i>	<i>Water Resources Act 1993; the stream constitutes controlled waters; it is an offence to deliberately or accidentally pollute any controlled waters in England</i>	<i>The stream in Chapel Coombe at all times. Cliff top flushes and flushes in Chapel Coombe</i>
<i>Temperate Atlantic wet heaths</i>	<i>Countryside &amp; Rights of Way Act 2000</i> Conservation (Natural Habitats etc) Regulations 1994 (SAC designated priority feature)	<i>Scattered areas in Chapel Porth valley with Dorset Heath and Cross-leaved Heath</i>
<i>European dry Heath</i>	<i>Countryside &amp; Rights of Way Act 2000</i> Conservation (Natural Habitats etc) Regulations 1994 (SAC designated feature)	<i>Widespread on site including St Agnes Beacon.</i>

## **5.3 Impacts of proposed activities on features of nature conservation interest**

### **5.3.1 Clearance of scrub and Bracken**

The original survey of archaeological features is incomplete as areas with dense scrub and Bracken could not be accessed; some scrub clearance – mostly European Gorse and Bramble - and possibly Bracken clearance will be necessary so that these features can be examined, logged and consolidated if necessary. It is possible that open shafts exist in these areas and these need to be made safe from a public health and safety angle. Figs. 13-15 show the areas where archaeological survey was incomplete or impossible.

Some scrub clearance around archaeological features requiring conservation works will also be necessary to gain access to the site.

Vegetation clearance could impact upon nesting birds, reptiles and uncommon lichen and bryophyte communities. Rare lichens (and possibly bryophytes) could grow on the oldest stems of Gorse (Giavanni, 2002) and rare bryophytes and lichens could also grow on areas of contaminated spoil. Communities with interesting or rare vascular plants and invertebrates could be affected.

### **5.3.2 Access tracks**

Access tracks may need to be improved or widened through scrub and possibly small areas of heathland and grassland. Nesting birds in scrub or on the ground could be affected, and reptiles could also exist in these areas. Communities with interesting or rare vascular plants and invertebrates could also be affected by access improvement works.

### **5.3.3 Storage compounds**

Communities with interesting or rare vascular plants and invertebrates such as heathland or species rich grassland could be affected by the siting of compounds and storage areas during conservation works to buildings.

The sparsely vegetated or unvegetated areas of contaminated spoil are an essential ecological feature on this site and are of value for invertebrates in particular. Although no rare plant species grow in these areas special care must be taken not to disturb the surface. Rare metallophyte bryophytes and lichens may colonise these areas and the slow growth of heathland here could eventually result in the colonisation of these areas by uncommon species that are usually out-competed on better soils. The siting of storage compounds should avoid these areas.

### **5.3.4 Clearance of Ivy on historical structures**

Birds could nest in dense Ivy and bats have been known to roost behind mature dense Ivy. Ivy on structures could also conceal crevices or holes where bats may roost.

### **5.3.5 Building consolidation work**

Consolidation work entails re-pointing masonry, wall capping and occasional limited reconstruction. Some timber lintels need treating for woodworm and may need replacing. This work could affect roosting bats, nesting birds as well as lichens and bryophytes growing on thin, possibly contaminated soils around the features and growing on the masonry.

Communities with interesting or rare vascular plants and invertebrates could be affected if close to the feature.

### **5.3.6 Renewing/clearing mine shaft entrances and adits**

The entrances to mine shafts are generally capped with bat-friendly grilles, some of which may need repair or replacement. Other entrances to mine shafts could be

discovered when scrub/Bracken is cleared from unsurveyed areas. All such features should be assumed to be used by bats, particularly Greater and Lesser Horseshoe - this is a key area for these species. It is a known hibernation site but could also be used at other times of the year.

## **6 Archaeological significance**

### **6.1 Importance and rarity**

Given their coastally outcropping lodes, the coast between St Agnes and Perranzabuloe, like that at St. Just in Penwith, is likely to be one of the earliest parts of Britain where true mining for tin and copper took place. These earliest workings, which may have taken place in prehistory, are undocumented. However, the oldest available records, dating from the 17<sup>th</sup> century, suggest an already developed industry, though one which was developing rapidly at that time. Whilst the subsequent history of the coastal landscape to the west of St Agnes included significant episodes of downland enclosure and improvement which clearly resulted in the obliteration of some early mining features, the retention of large areas of open rough grazing on and to the west of St Agnes Beacon reflected the economic importance of this resource to local farmers, and ensured the survival of abundant evidence for prospecting activity and for the initial exploitation of the outcrops of the lodes discovered through such processes. These features are undated, but many will date to the 16<sup>th</sup> century or earlier. The survival of such features over extensive areas is particularly rare in Cornwall's coastal landscapes; the examples on St Agnes Beacon and between White Rocks, Charlotte Moor and Towan Cross being some of the best preserved in Cornwall, and are of regional, if not national significance.

Wheal Coates provides a particularly good example of a Cornish copper and tin mine where it is possible to demonstrate, through surviving archaeological features, earthworks and buildings, the development of hard rock mining from its earliest days through the period of mechanisation to eventual failure in the early 20<sup>th</sup> century. Fire-set cliff workings, hushes, prospecting pits and trenches, leats, outcrop working pits and openworks, some with small contemporary tool stores or accommodation buildings which would have developed within small tin bounds or setts can be seen to have been succeeded by more substantial ventures which were initially powered by water and subsequently by early steam engines. These in turn developed into larger, deeper mines pursuing tin and copper lodes beneath the sea bed, though supplies of copper and tin from rapidly-developing international orefields during the later 19<sup>th</sup> century made these local mines increasingly uneconomic. The early 20<sup>th</sup> century reworking of Wheal Coates, in common with other mines elsewhere in Cornwall, was speculative, short-lived and unsuccessful. Wheal Coates is also notable for being one of the first mine sites in Cornwall whose importance was recognised and where active conservation measures were carried out to its most vulnerable structures.

The process of downland enclosure between the later seventeenth century and the late nineteenth or early twentieth century is relatively well-documented in the former extensive area of rough ground known as Goonvrea, on and around St Agnes Beacon. The creation of miners' smallholdings was widespread in Cornwall from the mid eighteenth century, but in this area this process is documented as taking place almost a century earlier, families involved in mining obtaining leases on small areas of downs on which they built cottages and enclosed a few small fields. The still distinctive area around Goonvrea and Higher Bal preserves part of the landscape created at this time. These smallholdings lie within a setting of blocks of upland rough ground and coastal rough ground which, although formerly very much more extensive, remains important, and contains evidence (in the form of flint finds) of early human activity; the open, undeveloped character of this rough ground also points up the importance of this resource throughout prehistory and into the medieval period.

The value of many of the sites within the project area is enhanced by the historical documentation relating to them which is available in local archives, and their

associations, including folklore, especially in relation to the cult sites of St Agnes Chapel and Well, and their associations with legends of Giant Bolster.

Given its transitory nature, the short-lived occupation of areas of Cornwall by the US Army during mid 1944 has left few physical traces in the landscape, but at Charlotte Moor scatters of slit trenches, the deep scar of the military road down to Chapel Combe and a scatter of bomb craters bear witness to a short-lived but vital part of Britain's history which is rarely preserved elsewhere.

## **6.2 Landscape significance**

The quality of survival and spectacular location of the coastal mining remains within the St Agnes western coastal properties provide an important opportunity for local people and visitors to experience something of the internationally-important industrial history of the Region. Any loss or diminution of these coastal structures through structural failure or lack of maintenance would have a significant impact on the Outstanding Universal Value of the Cornish Mining World Heritage Site (of which they are an important constituent part), as well as a major impact on this stretch of coast, and the story of coastal copper mining – something of particular importance within the development of mining technology worldwide.

As well as having technological importance, these dramatically-located engine houses and associated structures are also distinctive landscape features – much photographed, much visited, and located immediately adjacent to the Cornwall Coast Path.

The properties also include a large area of coastal heathland which is of considerable ecological importance in its own right, a popular and very attractive section of the South West Coast Path, a network of well-used local paths, a viewpoint from the Beacon which is unparalleled anywhere else in Cornwall, and a much-valued bathing and surfing beach at Chapel Porth.

## **6.3 Contributions to local character**

A report recently commissioned by the Cornish Mining World Heritage Site Team (Sharpe forthcoming) concerning the Outstanding Universal Value of its constituent Areas identified the landscape of St Agnes Beacon and the coast to its west as making a very important contribution to the character of the Site. The engine houses at Wheal Coates, set as they are at the head of rugged cliffs fronted by golden sand and turquoise sea and backed by swathes of heathland have, for many, become icons of Cornish mining. It is indisputable that this particular mine has long been the most photographed anywhere in Cornwall, and the particularly attractive views of Towanroath engine house set against a backdrop of cliffs, sea and sand has been used on many postcards and in advertisements (for instance by Ginsters in the early 1990s) as an icon of Cornish mining.

Whilst the clifftop buildings at Wheal Coates are visible from many points in the surrounding landscape, clearly identifying this as a former mining area, the Towanroath pumping engine house is best seen from the Coast Path, being visible from the south from Mulgram Hill across Chapel Porth. At Chapel Porth itself the site of the engine house is masked by cliffs, but again comes into view on the Coast Path to the north as the headland is rounded. Approaching from the north, the engine house only comes into sight when the walker is 300m away. From the east, exiting the nearby car park, the clifftop engine houses are silhouetted against the sea and sky, and an obvious destination at the end of the path leading to them, but the Towanroath engine house remains hidden until the visitor reaches the head of the cliff slope beyond the stamps engine house, when it suddenly comes into view, set dramatically against a wide expanse of sea and the coast to the south.

The remains of the Great Wheal Charlotte pumping engine house, whilst reduced to a truncated bob wall, punctuate the skyline to the south of Chapel Porth, again marking out this landscape as the site of former mining activity. It is visible along much of the path leading from Towan Cross. Charlotte United engine house, on the other hand, remains substantially hidden from the surrounding area, tucked away as it is in the base of the Combe.

From the air the extent of pristine heathland which survives along this section of coast is impressive, and makes a substantial contribution to its landscape character, which has elsewhere been eroded by piecemeal, often inappropriate development. The contrast between the 'natural' landscape and that changed by obvious human intervention is made all the more stark given this sea of heathland onto which engine houses, sprawling spoil dumps, and the pock-marks of tinner's pits, shafts and workings have been imposed.

The strongly recognisable form and wide visibility of St Agnes Beacon, topped by a substantial Bronze Age barrow, makes it one of the most distinctive landscape features in mid Cornwall. The Beacon is visible across as a prominent landscape feature from much of mid-Cornwall and Cornwall's north coast as far west as the moors above St Ives.

## **6.4 Educational, academic and recreational potential**

As a resource through which the development of the mining landscape in its broadest sense - that is, one which includes evidence for allied economic, social and landscape development - can be explored, St Agnes' western coast is particularly rich in potential. Good examples of many of the elements of this landscape can be safely accessed, are well documented and have been recorded in detail.

### **6.4.1 Education and academic potential**

This report, commissioned principally to inform the future management of the project area, contains a considerable amount of detail relating to the sites and features it contains. In order for this to be usable by local schools and educational establishments, the report contents would have to be synthesised into forms suitable for target age groups, and relating to specific subjects or areas of interest.

Topics for which the project area has educational potential include:

- The progressive development of mining technologies from the development of the earliest true underground mining to the industrial period and their impacts on the landscape
- Early mining activity in Cornwall
- The enclosure of downland and the pattern of establishment of miner-smallholdings
- Water power and mining
- The ecological impacts of copper mining
- Military communications and defence from the Elizabethan era to WWII
- The importance of the Beacon in the development of this landscape, including the siting of the summit barrows and the Bolster Bank, and the associations with cult sites associated with St Agnes and the legends of Giant Bolster.
- The relationships between enclosed and unenclosed land from prehistory into the medieval period.

### **6.4.2 Access and recreation**

St Agnes Beacon is accessed by eight paths around its periphery, the majority of which are public rights of way. By far the most heavily used access point is that to the

north-west, where a lay-by provides parking space for about a dozen cars. This access point is the principal one used by visitors, though is also used by dog walkers, and is noted as experiencing dog fouling problems. Some of the other routes lead in from St Agnes settlement and are mainly used by local people.

The principal recreation uses of the Beacon are for walking and as a viewing point, the panorama from the summit being one of the best available anywhere in Cornwall, with extensive views. The Beacon is also the site of seasonal bonfires and is associated with folklore connected to Giant Bolster.

Erosion is a problem on several parts of the Beacon, notably the section of footpath next to the radar station on the north-western corner of the Beacon, the path leading south off the Beacon and around the summit cairn. The regular use of the Beacon summit for siting a bonfire has created an 8.0m diameter bare area which is presumably contaminated with heavy metals deriving from paints and the tanning chemicals in the wood burnt here. Sections of some paths would benefit from the installation of water breaks.

The coastline between Cameron Camp and Wheal Coates is traversed by the much-used South West Coast Path, but is otherwise little explored or used for other recreational purposes.

Wheal Coates is already popular with visitors, being a well-known, very attractive, readily-accessible mine site whose shafts have been made safe, whose buildings have been consolidated, which has a dedicated car park linked to the site by a levelled, wheelchair friendly track, and which is adjacent to the South West Coast Path. Wheal Coates is popular with both visitors and local walkers, offering a range of circular walks of varying lengths to both the north and south of the site. The car park is also used by dog walkers, resulting in some dog fouling issues on the adjacent stretches of path. In relation to other activities, Wheal Coates is popular with landscape photographers, has, at times, been used as a launching site for hang gliders and provides an access point (Towanroath adit) for underground exploration. There is evidence for the regular use of some paths by horse riders and mountain bikers.

Surface erosion by visitor activity is currently the most serious problem at Wheal Coates, as is shown by aerial photographs (for example Fig. 68), the site being crossed by a series of paths following desire lines; around the head of the coastal slope near the mine buildings erosion of the very thin soils is widespread and in places has been extreme producing significant gulying. Rationalisation of the path network and the closure and repair of the most damaged sections will be essential if the effects of run-off, destruction of ecological habitat and erosion of sub-surface archaeological deposits are to be avoided. It will be necessary to record and assess the routes used by visitors moving between the clifftop sites and Towanroath Shaft, to reduce the number of tracks in use and to repair the remainder. Other areas of significant erosion damage exist in and around the coombe leading from Wheal Coates to St Agnes Chapel and from there to Chapel Porth.

Chapel Porth is a popular swimming and surfing beach, its car park often being completely full by early morning during the high season. It is staffed by RNLI lifeguards during the main holiday season. The carpark also provides a popular starting-off point for walkers heading up the Combe or onto the South West Coast Path to the north and south. The toilets are a useful and relatively rare facility on the South West Coast Path, whilst the café, which is open for much of the year, is popular with beach-users and walkers alike.

The popularity of the beach and car park can cause some problems, however, most notably high levels of traffic at the beginning and end of the day during the season, and heavy footfall on the paths leading from it to the north and south. Erosion levels are considerable in places, given the restricted number of routes linking to the beach.



Paths within Chapel Combe are constrained by the steep valley sides, and most walkers follow the valley bottom path to Mongoose. A small number of break-out paths have developed southwards from the valley bottom, particularly near Charlotte United engine house.

Towan Moor is popular with local dog walkers, though inevitably this has led to some unpleasant fouling problems on some stretches of path, particularly adjacent to Towan Cross. Horse riders and mountain bikers (legally) use the bridleway linking Towan Cross with Porthtowan, though were also regularly observed on other designated and undesignated paths. Horse riding on cross-contour paths leading from the bridleway into Chapel Combe is causing erosion and funnelling surface run-off. Some of the clifftop paths are used as training circuits by local joggers.

The paths on Towan and Charlotte Moors are accessible from a lay-by and a small carpark at their eastern end, adjacent to Towan Cross (though neither seem currently to be much used by visitors), and from Chapel Combe via the US Army road and via some informal, steeper paths. The principal paths linking Towan Cross with Chapel Porth and Porthtowan are capable of being incorporated into circular walks,

It is felt that the recreational potential of the project area is, by and large, fully exploited, though there remains some potential for the development of additional recreational activities based around the provision of high quality interpretation of accessible archaeological sites and perhaps by the development of discreetly-waymarked trails.

## **7 Recommendations**

### **7.1 Guiding principles for management and conservation**

The dominant historic character of the properties are as valuable blocks of coastal rough ground containing nationally important mining landscapes, sites and features and as such, they are included as components of the St Agnes District of the Cornish Mining World Heritage Site.

Within this report, section 7.4 outlines generic management recommendations for the main archaeological site types found on the National Trust's St Agnes coastal properties.

The philosophy underpinning the future management of the St Agnes western properties will inevitably have to attempt to balance a range of interests in the property (or parts of it) which may, at times, be conflicting. It is likely that any proposals to effect widespread change to the property (as for instance through control of scrub encroachment) will be viewed as contentious. It is therefore recommended that where large-scale change is envisaged, this should be preceded by effective consultation with a wide range of stakeholders, in particular with local people and users of the property.

Underpinning any works undertaken to the property there must, therefore be an understanding not only of its historical character and development, but the ecological and other significances it possesses. Where works intended to have a positive outcome for one aspect of the property are proposed, potentially negative impacts on other aspects must always also be considered, and, where possible, appropriate mitigation measures identified and acted upon.

#### **7.1.1 Heathland management**

The most problematic aspect of the future management of these properties relate to its extensive areas of heathland. This was traditionally managed by a combination of grazing and, where necessary, burning, gorse 'stogs' (wood) and branches additionally having been a valuable source of firewood. Well-managed heathland formed an important resource for rough grazing, allowing enclosed land to be used for the production of valuable crops or for fattening stock, and most farms near heathland

would have an agreed access to it. Such approaches both created and maintained a mosaic of heathland and maritime grassland habitats which was of considerable economic importance. The maintenance of these habitats required continual, low-level attention, however.

These practices effectively died out during the early decades of the 20<sup>th</sup> century as farming methods changed, and as a result areas of heathland and maritime grassland began to evolve, scrub becoming established as the first stage in the development of a climax vegetation which would eventually consist of woodland, except on the most exposed coastal locations, where wind clipping and salt exposure naturally retards these changes. Inland, however, the lack of traditional maintenance over many decades is now beginning to become apparent, as European gorse, brambles, bracken and scrubby thorn trees are becoming established in the drier more exposed areas, willow being the successional vegetation in more sheltered or damper areas.

As a result, often subtle yet nonetheless important archaeological features are becoming lost beneath the encroaching scrub. In many areas they are becoming increasingly difficult to access and in some areas scrub development has already rendered them inaccessible. The gradual blanketing of much of these properties in dense heath/developing scrub habitat also results in greater pressure on pathway routes as the open heath becomes too scrubby for walkers. Perhaps the most significant impact, however, is the visual simplification and loss of character of the archaeological landscape within which the more frequently visited individual monuments stand. Left unchecked, the process of scrub development will inevitably have a significant negative effect on the historical character of this landscape, a considerable part of the value of which lies in the exceptional preservation of many small-scale features like prospecting pits, outcrop workings or leats, which provide the historical and operational context for the much-visited industrial monuments.

This situation needs to be re-appraised and an approach found which balances natural processes with the need not to allow a significant degradation of the archaeological resource. The reintroduction of low-level grazing is an approach which might well be successful in some areas, though it would probably need to be preceded by reduction of the scrub cover by flailing, brush-cutting or strimming, and temporary stock fences would need to be set up to ensure that the impact of this approach was not so diluted as to be ineffective. Such approaches would be controversial, however, and extensive consultation would need to be carried out so that users of the heathland did not feel themselves excluded from the decision-making process.

Scrub should be cut outside the bird nesting season which starts in mid-March and finishes in mid-August. If scrub must be cleared in the bird-nesting season then a breeding bird survey of the areas concerned should be undertaken before work starts.

To avoid injury and killing of reptiles clearance of scrub should be done in the active season when these species can move to escape injury. During the active season individual animals should retreat from areas that are being disturbed; care should be taken when working through heathland/grassland/scrub/bracken/open vegetation to ensure any individual animals can hear the approach of machinery. This limits the opportunities for scrub clearance to late summer and early autumn, i.e. mid-August to late September.

When cutting scrub stands with large stems of Gorse over 25-30 cms diameter should be left if possible as rare lichens and bryophytes are known to grow in such places particularly where they are in relatively sheltered, long undisturbed habitats such as hollows and field boundaries where the levels of humidity are high. Scrub and bracken clearance at the edge of heathland will help to slow down their colonisation of these areas. This was not considered to be a major problem at the site in the ELP 2007 survey and it was thought that there had been no substantive changes in the areas occupied by bracken and gorse stands since the earlier survey in 1990 (ELP, 2007). However, comparison with earlier historical reports of the area carried out by CCRA in

1986 show that scrub and Bracken have increased around Wheal Coates, Old Century workings in Chapel Coombe. Evidence from aerial photographs taken in the mid-20<sup>th</sup> century (Figs. 18-19) shows that scrub has spread on Towan Moor and St Agnes Beacon. The central area of Wheal Charlotte Moor is covered by dense European Gorse/thorn/bracken scrub and this has spread into areas of heathland. The edges of the scrub and bracken stands here should be cut to prevent further encroachment onto the areas of heath.

Cutting scrub and areas of mature heath including Western Gorse will increase the structural diversity and be beneficial for wildlife. However, it should be remembered that scrub is a valuable habitat for nesting birds and also provides sheltered areas for invertebrates so should be controlled rather than eliminated (ELP, 2007).

Cutting small areas of mature dense stands of heathland and tall Western Gorse will help to create a more varied age structure increasing the value of the heathland habitat for invertebrates. Management recommendations made by the 2007 ELP team include small scale burning or cutting in the more extensive mature areas of heathland followed by light grazing to restore a more varied habitat structure.

The woody growth along the stream in Chapel Coombe supports a range of widespread invertebrates more typical of 'woodland' situations. The large old willows have been colonised by wood-decay fungi and invertebrates (ELP, 2007). Clearance of willows and other scrub here should be carefully considered. The younger growth could be cut, particularly at the edges to prevent further encroachment onto open wetland areas and nearby historical features.

No mention has been made for the presence of badger on the sites concerned in the proposed works programme. Dense scrub may conceal setts and if signs of badgers are found during the works then further survey work may be necessary.

### **7.1.2 Structures**

The majority of works to historic structures within the property have already been undertaken, and (with a few exceptions) these elements of the property currently require little more than low-impact, minor repairs. Any works undertaken should be a close match in terms of detail and materials, pointing should be consistent with that currently existing and repairs should be intended to blend in and be consistent with the overall existing finish of the structures. Appropriate and traditional materials and methods of workmanship should be used throughout the works. Non original materials will not be used except in those limited areas where repairs are to be undertaken on structural grounds alone. These will be small scale and, where possible, rendered invisible.

Where such works are proposed adequate pre-works surveys should be undertaken to guide the proposals and to ensure that they do not damage significant features or habitats. Archaeological and ecological consultants should be involved in the finalisation of any decisions relating to groundworks, vegetation clearance or other works which would impinge on archaeological features or on habitats, and allowance should be made for appropriate watching briefs for the duration of any significant programme of works.

Ivy on structures should be cut at the base by hand at the earliest opportunity. The foliage will die and the leaves will fall off discouraging nesting birds and roosting bats. This will also expose crevices and holes in the structure which may need examining for occupation by bats.

When the Ivy is to be removed it should be carefully pulled off by hand in late summer or autumn (mid-August – late October) to avoid disturbance to bats and nesting birds. It is unlikely that bats breed in the walls and structures at this site but non-breeding bats could be present at any time of the year. Bats could hibernate in the built

structures between November-April and are particularly vulnerable; disturbance at this time of year would threaten their survival.

Emergence bat surveys should be carried out on structures with crevices and holes suitable for bats where these features are to be re-pointed. Because bats are so mobile it will also be necessary to examine these features just before building consolidation work starts. Ideally a visual inspection with an endoscope should be undertaken when scaffolding is in place. Any crevices that cannot be fully examined and declared free of bats should be left open or have an exclusion device fitted so that bats can emerge but cannot re-enter. Where possible potential bat roosts should be preserved.

Although there is no evidence to suggest that this site is of importance for lichens or bryophytes, if these taxa are present on the areas where repointing or similar works are to be carried out a survey for these species should be undertaken prior to work.

The siting of storage compounds should be considered carefully to avoid habitats of ecological interest such as species-rich heathland/grassland, open vegetation and contaminated spoil. Materials should be storage on a non-permeable membrane and protected from rain to avoid the leaching of potentially damaging substances.

### **7.1.3 Works to access tracks**

See above recommendations for scrub clearance. New access tracks should avoid areas of nature conservation interest such as species-rich heathland, wet heath, the fragile flora on contaminated soil, species-rich grassland and wetland areas including flushes and wet woodland. Figures 24-26 show the location of rare vascular plant species; if these sites are to be impacted upon then a survey will be necessary to ensure that access tracks will avoid destruction to these populations.

To minimise damage to fragile areas of heathland, open vegetation, species-rich grassland and contaminated spoil Geotextile matting or something similar should be laid down before machinery passes through. The matting should be removed at the earliest opportunity to allow the vegetation to recover. Light machinery should be used.

### **7.1.4 Mine shafts**

Works to mine shafts carried out by Operation Minecap and the Duchy of Cornwall during the 1980s have addressed almost all significant safety requirements relating to these features; whilst the impacts of these works were, in some cases, major and negative, these have already occurred, and are beyond mitigation. Any future proposals for works to mine shafts or adits should, wherever possible, retain their existing archaeological and ecological significances, and where possible, seek to enhance these where this is consistent with public safety.

The timing of any work to open shafts or adits should avoid the bat hibernation period as these features are very important for rare species of hibernating bats. Work should be carried out in May or between late August and the end of September. This allows a safe margin avoiding the breeding season (Horseshoe bats occasionally breed underground) and an extended period on either side of hibernation to avoid disturbance to torpid bats before and after the core hibernation period. Bat friendly grilles should be considered for all open adit mouths to allow uninterrupted access and freedom from disturbance for all species of bat particularly Greater and Lesser Horseshoe.

### **7.1.5 Impacts of climate change**

In line with National Trust policy, an appraisal should be made of the impacts of climate change on these properties, and in particular, of the potential effects of more extreme weather events and for sea level rise. In relation to the former, archaeological features within the base of Chapel Combe are clearly at risk of flood

erosion damage resulting from locally extreme rainfall events such as those which occurred at Lynmouth in 1952, Boscastle in 2004 and Zennor in 2009. The present stream channel is small, heavily silted, partly choked by willows and wetland vegetation, and is unlikely to be readily able to discharge large volumes of rainwater. Structures like the dressing floors at South Charlotte [190659] or the Old Century Works [190510] would be put at risk, whilst the earthwork abutments of the US Army bridge [190504] would impede drainage.

Pathways and tracks on coastal or valley slopes may be destabilised or significantly eroded by increased rainfall, especially where they have been constructed on inherently unstable substrates. Some mine spoil dumps will also be vulnerable to extreme rainfall, leading to the possibility of erosion and the wash off of mineralised fine material which may cause pollution events. Some areas of the cliff (for instance at Porthgidden Cove) are inherently unstable and at risk of collapse through the effects of wave action undermining their bases or increased rainwater surcharging fractures within the cliff faces. Effects on the vegetation cover of the properties may include the acceleration of the development of scrub through enhanced rainfall.

The structures at Chapel Porth including the car park, the café [190500] and the remains of the stamps and dressing floors [190495] are clearly those most at risk from the effects of sea level rise given their proximity to the sea, their relatively slight elevation above normal high tide level and the combination of gently shelving beach profile and the profile of the local coastline, which tends to produce large, powerful waves which are funnelled in towards the Porth.

## **7.2 Scheduled Monuments**

The survey area includes scheduled monument 29668, scheduled as 'Cliff Castle at Tubby's Head', a prominent barrow on the summit of St Agnes Beacon (SM 29667 [90355]) and the site of St Agnes' Chapel (SM 32924 [190468]). For the extent of relevant scheduled areas, listed buildings, Cornish Mining World Heritage Site and St Agnes to Godrevy SSSI see Figs 3 - 10.

It is an offence for anyone to use a metal detector on a Scheduled Monument without the written consent of the Secretary of State for the Department of Culture, Media and Sport. A further, more serious offence is to remove, without permission, an object found by a metal detector on a Scheduled Monument and any damage caused in removing a find may constitute a third offence. All such cases should be reported to the Police.

Enquiries concerning Scheduled Monuments should be addressed to:  
English Heritage, 29 Queens Square, Bristol BS1 4ND

Application forms for Scheduled Monument Consent are available from:  
The Dept of Culture, Media and Sport, 2-4 Cockspur Street, London SW1Y 5DH Tel. 020 7211 6000

Any planned management works within the scheduled area should be carried out following consultation with the English Heritage Historic Environment Field Advisor for the area. Work that involves disturbing the ground will require Scheduled Monument Consent. The present field monument warden is Ann Preston-Jones (contact: ann.prestonjones@english-heritage.org.uk, tel. 01872 323603).

## **7.3 Monitoring**

The condition of the archaeological sites and features on the Trust's properties should be monitored regularly by the Trust's staff. To help undertake the monitoring the Trust's Archaeological Site Monitoring Surveillance Report forms should be used. These are available from the NT Regional Archaeologist.

## **7.4 Recommendations for the principal archaeological site types found within the property**

### **7.4.1 Mining features**

#### **7.4.1.1 Mine shafts**

Shafts provide important access connections between the surface of a mine and its underground workings. Visually they help visitors to 'read' mining landscapes. Where left open they provide potentially significant roost sites for Greater and Lesser horseshoe bats as well as habitats for other species, they enable mineralogical and other research into the development of mining technology to take place, as well as continuing to ventilate underground workings, keeping timbers and stonework underground in good condition.

The risk of accidents is acknowledged, and landowners have a duty of care to visitors, especially in open access land, or where shafts are adjacent to paths. HE prefers the use of signed surface barriers (walls, hedges or fences) to minimise the possibility of accidents involving open shafts, rather than permanent closures (plugs, caps or slabs). Backfill should never be employed, as this has the potential to dam up underground watercourses leading to problems elsewhere and to block the circulation of air underground, leading to the rapid deterioration of structural timberwork, which can lead to subsidence. Where shafts have been covered by Clwyd Caps, these require regular inspection to ensure that they continue to provide a safe closure to the shafts they cover. It should be noted that 'choked' shafts are very unlikely to be completely backfilled, and in most cases the chokage will be resting on rubbish, rubble or timberwork at no great depth. Eventual subsidence to some degree or another is likely.

Where choked shafts are adjacent to paths or areas regularly used by the public they should be signed, and fenced or walled. Where areas exist containing large numbers of shafts and mine openings which are away from public access routes and where the costs or effects of intervention would be judged to be too high, notices alerting the public of the potential hazard should be put up along access routes recommending that visitors keep to established paths. All fences, hedges, walls, Clwyd Caps and signs should be monitored on a regular basis to ensure that the site manager is discharging the appropriate duty of care.

Guidance on these issues and on shaft treatment methods has been produced by a partnership of professionals and organisations (CUAAG 2002).

#### **7.4.1.2 Adits**

Adits served important functions in the drainage of mines, particularly during their early development, and also provided walkable access routes into them. In general, whilst they may lead to shafts within the mine, these are unlikely to occupy the whole of their floor areas. Winzes (small shafts within mines connecting levels) may be found in their floors, however. The entrance areas of adits beyond their open lobbies may be cut through overburden and loose material, and may originally have been timbered, leading to the potential instability of their roofs. Many adits in coastal locations were cut from near sea level in order to maximise the potential drainage of the workings and these are often inaccessible without specialised access equipment.

Adits remain important for the ventilation and drainage of mines, as access points for bats, and, near their entrances, provide important semi-shade habitats for Maidenhair fern and other plants. They are also significant access points for mine explorers or when access for survey or rescue is required. In practice, the dark, confined conditions experienced almost immediately inside adit mouths deters all but the experienced and well-equipped explorer, and accidents to casual visitors are almost completely unknown. On this basis, access barriers are almost never required except where adits

host significant bat colonies which should not be disturbed as a result of casual access. Periodic inspection of adit entrances should be undertaken to monitor the condition of the adit roof in its initial section, though this should always be undertaken by those with appropriate experience and equipment.

#### **7.4.1.3 Prospecting features**

During the early stages of development of mines, prospecting activity would generally be undertaken to establish the outcrop of the lodes within a sett. This usually took the form of chains of small, hand-dug pits or trenches at right angles to the expected outcrop. These were generally excavated down to bedrock, where the outcrop could be exposed, and were thus on the whole a maximum of 2.0m deep. The associated spoil dumps are small and adjacent to the pits, and have usually partially backfilled the pits over time. These pits present only minor hazards to the public, but are important in helping to demonstrate the early development history of a mine. They require no management, though in order for them to remain visible the areas within which they lie should not be allowed to scrub in.

#### **7.4.1.4 Outcrop workings**

During the pre-industrial period, the earliest stage of mine development often consisted of mining of the outcrops of the lodes. Although ore values would be likely to be poor near surface, these would increase in depth, and the working of the lode as a narrow, quarry-like feature open to the air allowed ready recovery of ore and clearance of waste. Spoil was generally dumped close to the openwork, which might range in scale from no more than a metre wide where individual lodes were worked, or many metres where 'swarms' of lodes were separated from one another by short distances and the ground was taken out wholesale, though the width at surface would be related to the width of the angle of repose of the slope which would result from the subsidence of loose overburden, and hence its depth

Where the overburden was deeper, small, closely-set access and ventilation shafts would be sunk – in many cases an average of ten metres apart, reflecting the difficulty of moving excavated waste rock along the narrow stopes (working areas on lodes) excavated underground. At surface, these take the form of medium sized (4.0m to 7.0m diameter) conical depressions or pits aligned along the strike of the lode, each accompanied by a modest spoil heap. They are often choked with spoil which has slipped back from the dumps into them, though this material may well overlie deliberate near-surface chokages, in some cases no more than ancient spanning timbers or stone lintels. The stoping beneath them may be open, and they often overlie deeper, later workings which are likely to extend to considerable depths.

These features are important elements of the early mining landscape, and have often been obscured by later activity. The roofs of the stopes and levels to which they connect may be at no great depth, presenting some limited potential for subsidence, though this is very uncommon. Periodic monitoring will establish whether these features present public hazards and safety fencing or other similar measures may be required in some cases.

#### **7.4.1.5 Mine spoil dumps**

Mine spoil dumps are an important resource, indicating as they do the scale of work undertaken underground, the minerals worked, and, given that they are almost always deposited sequentially from the shaft outwards and upwards, the nature of the underlying geology. Spoil dumps may provide foundations for structures, including horse whims, and may bury the remains of earlier structures, preserving them.

As well as being important landscape components, they are a valuable reserve for present and future mineralogists, containing examples of mineral types found only within them and in now-inaccessible underground workings. The majority of new

mineral types found in Cornwall during the 20<sup>th</sup> Century were recovered from mine spoil dumps, some of these being the first discoveries of these species anywhere in the world.

Spoil dumps (including tailings dumps) also provide very unusual habitats. Given that they are made up of loose, voided rock, compacted fine sands, or a combination of these, much of which has an elevated mineral content, they tend to revegetate only very slowly, and provide niches for mineral tolerant pioneer species which are often crowded out away from these locations where nutrient levels are higher and the presence of phytotoxic minerals far less prevalent. They also provide important habitats for insects, including burrowing species, as well as basking and hunting areas for lizards and other species.

The removal or disturbance of mine spoil should be resisted wherever possible. The habitats which they provide are fragile and may take many decades to renew themselves even after what may appear to be only limited damage.

#### **7.4.1.6 Engine houses**

The Cornish beam engine house is the acknowledged symbol of Cornish mining, the development of the powerful pumping engine it housed placing Cornwall at the forefront in the development of modern mining technology, revolutionising the industry worldwide. More than 3000 engine houses were constructed across Cornwall from the mid-18<sup>th</sup> century until the early years of the 20<sup>th</sup> century; somewhere around 200 still survive and around half of these have been conserved in recent decades.

Attitudes towards these now-iconic buildings were very different in the past, however. To be sure, the building and the equipment it housed represented the most complex and expensive single investment which a mine would make, they were, nevertheless, workhorses with a vital task to perform. When mines failed the engine would usually be sold with the rest of the assets, though in the later years of the 19<sup>th</sup> century the market was so glutted with second hand engines that they were often blown up for scrap. The engine houses were sometimes retained by the mine owners, awaiting the restarting of the mine, but others were torn down to supply building materials, something which happened rather frequently during the 20<sup>th</sup> century. During WWII, some engine houses in mid-Cornwall were used by the US Army for demolition practice in the run-up to D-Day. Others gradually became more and more derelict and were pulled down for safety reasons, or collapsed of their own accord. The National Trust were amongst the first to recognise their importance in helping to tell the story of the evolution of Cornwall's distinctive industrial landscape and, at Towanroath Shaft, Wheal Coates, to restore what was fast becoming a derelict and dangerous ruin. Many Cornish engine houses are now Listed Buildings, some are Scheduled Monuments and a large number lie within the Cornish Mining World Heritage Site.

Whilst St Agnes itself retains representatives of its original stock of engine houses, there are few in the project area and its surroundings, although those that survive make a significant contribution to the local landscape. All the rest have been demolished.

In the past four decades, ideas about the means through which engine houses can be retained as landscape features have evolved; conservation rather than restoration is now the preferred approach, and a range of preferred techniques to achieve this in a sensitive and sustainable manner are now well understood and almost always followed. These approaches ensure that the distinction between new work and original fabric is apparent (through detailed pre-works surveys rather than the use of non-original materials), important technical detail like the positions of fixings, floor timbers and the like are retained, access is provided wherever possible and all materials used are sympathetic to the structure – timber lintels rather than mass concrete, lime-based pointing mixes rather than those based on Portland cement, the stabilisation of associated structures like boiler houses, minimum attachment points for stairways and



guard rails where these are deemed necessary, carefully designed and sympathetically-sited interpretation, safety measures which retain the link between the engine house and its associated mine shaft, whilst stabilising the ground adjacent to the building.

Nevertheless, whilst every attempt is made to give these structures greatly extended lives, all will require some attention in the future as their pointing degrades under harsh weather conditions or as structural timber rots or is attacked by woodworm. Periodic inspection is important, particularly in the case of engine houses which were conserved some decades ago, as within the property, and which might have been consolidated with pointing or building mixes which do not meet today's standards, or which would now be considered inappropriate.

#### **7.4.1.7 Mine dressing floors**

Mine dressing floors have an important part to play in telling the story of Cornwall's mining sites, encapsulating as they do information about the technological resources available to the miners at the time in which they were in operation. Although most if not all of the above ground structures – many of timber or iron – may have been removed, the arrangements of buddles, tanks, pits and channels on most dressing floors can still be discerned. The presence of areas of cobbling often indicates parts of the site where copper ore was prepared, or where tin ore was broken up for nearby stamps; material such as sands, slimes or clays infilling tanks and buddles not only indicates the stage in the dressing process which they occupied, but will also preserve their below ground elements. In many cases, this material contains appreciable quantities of finely crushed metallic elements, whose phytotoxic nature not only inhibits vegetation growth except by pioneer species (some of which may be exceptionally rare, like certain bryophytes), but also renders them inherently prone to erosion or foot damage.

Wherever possible, paths within these areas should be kept to a minimum to reduce the effects of erosion. Control of water run-off into dressing floor areas should also be considered, both to minimise erosion and to reduce contamination of any water courses downslope. Deliberate revegetation of dressing floors should be avoided both to reduce visual and archaeological impacts and to avoid damaging habitats occupied by or potentially available to rare lower plants and pioneer species.

Water-powered stamps (where the ore was crushed by water-driven hammers or stamps before fine processing) were formerly commonplace in the Cornish mining landscape, but are now relatively rare and important features, and their sites survive in only a few locations. They are important in showing the central place of water in mining activities, particularly before the development of steam technology. The wheelpits and associated stamps structures were generally solidly built, but exposure to the weather, lack of maintenance over many decades and stone robbing may have led to potential structural instability. Following structural assessment, most will require the removal of intrusive vegetation, repointing and, in some cases, limited rebuilding to enhance structural stability.

#### **7.4.1.8 Arsenic calciners, flues and chimneys**

Due to the complex nature of the ore deposits worked on Cornish mines, tin was often accompanied by a range of sulphide minerals, including iron and arsenic, which had to be removed to make the dressed ore saleable. To this end, once the ore had been stamped, retrieved and concentrated using buddles, it was fed into a stone-built oven (a calciner) where it was roasted to high temperatures. The arsenic and sulphur were driven off as gases or 'fumes' and were drawn along a stone flue to a chimney where it would then be vented to the atmosphere and dispersed. The calcined ore was then washed to remove any iron, and after drying, was ready for sale. During the later 19th century, arsenic became a valuable by-product, and was condensed in stone chambers

attached to the flue (labyrinths), following which it would be removed for sale. These small-scale arsenic works used to be common on Cornish mines, but few now survive. Those that do are generally of two forms – the earlier, simpler reverberatory kilns like those at Trevellas and Wheal Coates or the more complex, continuous treatment variety developed by William Brunton during the mid-19th century, of which there are two nearly complete examples at Tolgus and Geevor and a number of other incomplete examples elsewhere in Cornwall and West Devon. Surviving arsenic condensing chambers are also rare these days, most having been demolished on the closure of mines for safety reasons.

In general, a century or more of weathering has removed the majority of the arsenical compounds deposited within the calciners, flues, chambers and chimneys, whilst the volatility of arsenic has resulted in it being converted to relatively inert compounds. Nevertheless, it is also possible that pockets of contamination will survive below ground where it has not been subjected to weathering. Periodic monitoring should be undertaken to ensure that the ruins of calciners, flues and chimneys are not disturbed by visitor activity or structural instability; footpaths and tracks should be routed away from any flue remains to prevent exposure of un-weathered contaminated material.

## **7.4.2 Other site types**

### **7.4.2.1 Cliff castles**

Cliff castles, also known as coastal promontory forts, are thought to date from the Iron Age, and typically have one or more substantial banks and ditches across the landward end of a narrow headland. Such places may have had a range of functions, including defence (though their fortified appearance probably owed more to prestige and display than to military purposes). During the Late Bronze Age and Iron Age strong religious and ceremonial beliefs were focused on 'natural places', including sites associated with water (Dudley, forthcoming, and Sharpe 1992).

The enclosing earthworks are susceptible to erosion by people and by burrowing animals and should be monitored regularly. It is also possible that previously unidentified prehistoric features and finds survive within the cliff castle. As impressive later prehistoric sites, most cliff castles are protected as scheduled monuments.

### **7.4.2.2 Barrows and cairns**

The summit barrows or cairns on top of St Agnes Beacon have suffered damage through stone robbing and quarrying, modification to site beacons and a summer house, and, more recently, through foot erosion. It is uncertain whether they have been the subject of antiquarian investigation, though there is no record of such activity. In their present form they are generally stable, though are vulnerable to erosion and, if unexcavated, any stratigraphically intact material within them would be degraded by extensive scrub root or bracken rhizome infiltration. The best preserved cairn on the Beacon is a scheduled monument. Other smaller mounds were identified on the downland and may represent small cairns or barrows. These should be protected from the effects of scrub growth; tracks or paths should be routed away from them to prevent damage by erosion.

### **7.4.2.3 Boundary works (Cornish hedges, stone faced banks, revetment walls and stone walls, banks)**

Field and other boundary features – consisting of earth-cored Cornish hedges or stone-cored walls – are the most abundant archaeological feature to be found in Cornwall. Whilst some may be of recent origin, many have medieval or prehistoric origins and are thus of considerable importance in telling the story of the development of agriculture in the rural landscape, their layout, inter-relationships and phasing allowing sequences of land clearance and enclosure for agriculture to be read. They

are thus important not only visually (as landscape features), but also archaeologically. Hedging and walling styles vary widely across the County, reflecting the nature and availability of the stone available for their construction and local cultural traditions.

Any repair works to hedges, walls or stone faces should be limited to as short lengths as possible, with repairs maintaining the existing boundary style and using similar materials in order to retain the historic character of the boundary. Stone facing should be of local stone, or from dislodged material nearby. By using traditional methods the historic character and ecological interest of the boundary should be retained and any repairs rendered subtle and visually less obtrusive.

#### **7.4.2.4 Military and allied structures**

The archaeology of war and defence is, at present, a relatively under appreciated resource within Britain. Many of its structures were constructed relatively hastily, intended to be temporary, and sometimes incorporated prefabricated components; they were sometimes set within earthworks and on mass concrete bases. At the time of their construction, national interest was paramount, other sensitivities being ignored. Many were cleared away or dismantled on the cessation of hostilities leaving few indications of their former presence. Some survive, however, but they may be viewed as intrusive or ugly. Features like the remains of the radar station on St Agnes Beacon have an important part to play in telling the story of the development of this landscape however, and should not be removed. Other military activities have left less of an obvious mark on the landscape, but should certainly be explained within site interpretation – good examples here being the occupation of Charlotte Downs by a large number of segregated US Army troops in the run-up to D-Day, or of the use of this area for the development of the Holman Projector.

#### **7.4.2.5 Paths, tracks and roadways**

Such features are common in the Cornish landscape, reflecting the need to access areas and sites by a variety of users over time. Whilst some may be the result of modern activities, many follow traditional routes, and may have existed for centuries, sometimes much longer. Specialised tracks and roadways designed to withstand the wear and tear associated with frequent usage are a common feature of mining landscapes, where roughly cobbled (metalled) surfaces may be present, as on primary routes between farmsteads and outlying fields or cliffland. The maintenance of such features is generally straightforward, providing that modern uses do not unduly erode their surfaces, as for instance where off-road motorcycles regularly use paths intended for foot traffic or motor cars use tracks designed for horses and carts. Some others which have lost their original function (as with the mine tracks on Charlotte Moor) have grown in and become lost. Tracks and paths tend to erode over time, and their original surfaces are therefore gradually worn away, but their routes may persist for a long time. New paths tend to follow desire lines between features and, where unsurfaced, are prone to wash off or other erosional forces, which may quickly lead to loss of surface vegetation and the underlying soils, and eventually to gullying and other damage, including erosion of archaeological sites. Good examples of this can be seen at Wheal Coates, where the coastal soils are thin, slopes are steep and the underlying material often unstable. A web of paths has developed along desire lines between structures and areas within the site, some leading down the coastal slope between the upper sites and Towanroath Shaft. Despite previous efforts by The National Trust to rationalise the path network, the principal route down the cliff slope is eroding badly, as are others near the calciner. The closure of the track linking Beacon Drive and Wheal Coates to vehicles and the provision of a car park at the east of the track has certainly reduced erosion considerably in some areas, but paths on the coastal slope need considerable attention if they are not to develop into more extensive, ugly scars on the landscape, incorporating potentially dangerous trip hazards.

## **7.5 Ecological recommendations**

The survey by ELP in 2007 noted that there had been only a low level of management of the project area for many years. Small areas were mapped as "cleared scrub" in the 2003 survey by WES but this had evidently re-grown by the time of the 2007 survey; firebreaks and small areas of mature heath have been cut helping to improve the structural diversity. Unplanned burns occurred prior to the 2003 survey but such incidents are not ideal as they are unpredictable and could damage large areas of heathland and scrub, threatening the survival of invertebrates that depend on mature stands of ericaceous shrubs. Very intense burns could severely limit the regeneration of heathland for many years and may adversely affect the quality of the resulting heath. The low level of management on the inland heaths has tended to produce large areas of closed canopy stands which are suitable for a limited number of invertebrate assemblages. The 2007 survey recommended that no more than 50% of the inland heath should be covered by mature ericaceous scrub and that a rolling programme of cutting and perhaps controlled burning should ideally be followed by light grazing to encourage structural and biological diversity. The creation of more firebreaks would help to prevent the spread of accidental fires as well as promoting the growth of early successional heath.

Comparison with aerial photographs from the mid-20<sup>th</sup> century shows the increase in areas of European Gorse and Bracken at the edges of heathland areas and around the areas disturbed by mining activities. Both the WES 2003 and the ELP 2007 survey recommended the formulation of a management plan to maintain a diverse heathland age and structure and the 2003 report also recommended monitoring the spread of Bracken and spraying with a herbicide such as Asulam if it encroaches onto areas of heathland. Although the present levels of scrub and Bracken are acceptable and even desirable as they offer valuable habitat for nesting birds, reptiles etc. their spread onto heathland, particularly the temperate Atlantic wet heathland supporting NS Dorset heath (a priority feature of the SAC) south of Chapel Porth and inland to Towan Cross, should be arrested and these stands should be cut back. The 2007 report points out that scattered stands of Gorse/Blackthorn are of more value for wildlife generally and suggests winter cutting of 'leggy' stands of gorse removing the cut material to maintain the species at different stages of re-growth and avoid nutrient accumulation in the soil.

Erosion and trampling of fragile plant communities has resulted in large areas of almost unvegetated substrate around the mining sites particularly at Wheal Coates and Wheal Charlotte and erosion on the north-east facing slopes above Chapel Porth. It should be noted that scrub/Bracken and bare ground is a very valuable feature of the site for wildlife and should not be eliminated completely. However, where the scrub/Bracken is encroaching onto heathland some control is recommended. Erosion of fragile substrates such as the sparsely vegetated areas of mine spoil by excessive public use should be restricted to allow slow natural regeneration of areas of open heath a habitat that could support an interesting flora and fauna including the establishment of metallophyte bryophytes and lichens. The eroded northeast facing slopes above Chapel Porth may need more active management to promote revegetation.

Most rare and notable species are found within the habitat mosaic of the heaths and grasslands close to the cliff tops. They would not require individual management as long as these habitats are maintained with a diversity of structure and the overgrowth by scrub, bracken and bramble is held in check.

## **7.6 Summary of principal management recommendations and prioritisation of works**

### **7.6.1 Further survey and research**

#### **7.6.1.1 Limitations imposed by present vegetation cover and requirements for further survey**

Within some parts of the project area, the development of scrub vegetation is blanketing low-lying archaeological features or making areas increasingly inaccessible and as a result, some features identified from documentary sources proved unsurveyable (Figs. 13-15). The vegetation over much of the project area consists of coastal heath – this taking the form of a mosaic of Western gorse and heathers, mixed with maritime grasses and herbs. This form of ground cover is characteristically low-growing, achieving a height averaging 300mm, though in the coastal zone is kept shorter than this by wind clipping and salt exposure. Inland, where unmanaged by grazing or periodic burning, features like slit trenches, prospecting pits, low mounds, leats or the evidence for early cultivation become blanketed and blurred, and on St Agnes Beacon, where the heath cover has not been actively managed for many decades, it is probable that a fair proportion of small archaeological features were either not recognised or could not be fully surveyed.

Pits and other hollowed features such as shallow streamworks tend to retain moisture and to provide shelter from the prevailing maritime winds; these conditions tend to promote the growth of denser, taller vegetation, including brambles and small scrubby bushes which can then in turn provide shelter for other successional species in the surrounding area. One of the clay/sand pits at Wheal Coates has now become totally choked with willow growth as a result. In the south-eastern part of Charlotte Moor, Western gorse and heather have been supplanted by European gorse, bramble and other taller scrub species and a substantial area is now completely inaccessible, whilst the northern central area of Charlotte Moor around Charlotte United and North Towan has become infested with bracken, which for much of the year renders features more or less invisible. Gorse and bramble scrub has also spread considerably across large areas of the central part of Wheal Coates since this area was surveyed by Sharpe and Smith in 1986, and the area of outcrop workings in the northern part of the site could not be accessed during the present survey. The vegetation in Chapel Combe becomes increasingly dense to the east, maritime grasses and heath vegetation giving way to bracken, gorse and brambles and then to thorn bushes and tree cover (often Willow, but also Sycamore). The boggy valley base sustains dense stands of Hemlock water dropwort and similar species. As a result sites such as the Old Century Works proved difficult to access and almost impossible to survey.

The types of vegetation cover found in various parts of the project area therefore to a considerable degree determined the effectiveness of the field survey. Although most areas could be accessed, it should be recognised that many smaller features remain un-surveyed even where their locations were indicated from archive sources such as maps and aerial photographs. This applies most particularly to the many small pits which show up on the 1946 aerial photographs of Charlotte Moor, fieldwork indicating that these consist of an intermixture of slit trenches, prospecting pits and bomb or mortar craters. Whilst the majority of these features could be located and surveyed in the more open areas of the heathland, many of those within areas dominated by bracken or dense scrub could not be located or their types determined, though have been included within the inventory as documented sites.

The area which formed the core of the surface of North Towan and Charlotte United Mines is currently dominated by very dense European gorse, brambles and bracken within which are a large number of small capped mine shafts and stope collapses, there being a strong possibility that other similar features remain untreated within this largely inaccessible area (pers. comm. former Operation Minecap staff). Although

several groups of mine buildings and structures were documented here in 1878 (OS map evidence), most had apparently been demolished by 1908 (OS map evidence); no building remains were identified during the field survey, and the complex surface arrangements of the mine remain unsurveyed. Dense vegetation in Chapel Combe is almost certain to similarly obscure leats and early dressing floor features.

Further survey following scrub clearance is recommended as follows:

- Detailed survey of the enclosures and field system near Towan Cross at a scale of either 1:500 or 1:1000.
- Large scale survey of the remains of the radar station on St Agnes Beacon.
- Survey of documented mine features associated with North Towan/Charlotte United.
- Sketch survey of documented pits and probable slit trench sites on Towan Moor.

#### **7.6.1.2 Early mining activity**

Fieldwork has revealed considerable evidence for early mining activity on and around the Beacon, this taking the form of prospecting pits, costeaning and hushing trenches, extensive chains of outcrop pits, tin streamworks, linear openworks and cliff workings, some of the last showing evidence for possible fire setting. The documentary archive provides some early dates whilst Norden and Carew (amongst others) indicate a high level of early mining activity within the area on and surrounding the Beacon. Some documents provide lists of mine or streamwork bounds, though these tend to be poorly-located, and it has proved difficult to correlate surveyed field remains with the names of what may have been in some cases trials or short-lived undertakings. Given the importance of the St Agnes mining district in the early stages of the development and use of underground mining techniques in Cornwall, further documentary research into this aspect of the development of this landscape would be valuable. The stone mining tools found by Budd and Gale at Wheal Coates are an intriguing hint at very early mining on these lodes and would warrant further field survey amongst the spoil dumps in this area, but encroaching scrub at present makes this very difficult. At the other end of the time spectrum, survey revealed some apparently late, but undocumented, mining activity at the north end of the Beacon.

- Further investigation of the spoil dumps at Wheal Coates should be undertaken to build on the work undertaken by Budd and Gale in relation to the distribution of early mining tools.
- More detailed recording of the workings on the outcrop of the Towanroath Lode should be undertaken to investigate the possibility of evidence for working by fire setting.

#### **7.6.1.3 Military uses of the area**

Perhaps inevitably, documentation for military and allied activity during World War II on and around St Agnes Beacon has not been readily available, contemporary records relating to this activity having been closed to public access. This situation is likely to change, however, given the passage of time. At present, it has proved very difficult to identify which units of the US Army were encamped at Charlotte Moor and how they occupied their time there, though there is ample evidence of their presence in the form of a large number of slit trenches and some possible mortar bomb and HE bomb craters. The reasons why the 'Army Road' from Chapel Combe to Charlotte Moor was created is also unclear – was it an engineering exercise or did it have some practical function? Why was the bridge demolished so soon after the War?

There are also unanswered questions about quite what went on at the radar station on St Agnes Beacon. The field remains hint at one or more underground structures on the site.

- Further documentary research into WWII military activity within the project area would prove fruitful.

#### **7.6.1.4 Downland enclosure**

Perhaps rather surprisingly, evidence has emerged for an early (post-medieval) phase of enclosure of the downs around the Beacon by miner-smallholders, this occurring at a rather earlier date than is generally considered typical for such activity. In the time available for archive research it was not possible to do much more than establish the existence of some of the documentation for this. In terms of the study of the evolution of the Cornish landscape, and in particular of the enclosure of the formerly large area of heathland that once extended between St Agnes, Redruth and Truro, this would appear to be an under-researched area of study at present.

- Further documentary research in the Cornwall Record Office would help considerably in developing an understanding of this major change in the development of the Cornish landscape.

#### **7.6.1.5 The area in prehistory**

The apparent absence of evidence for prehistoric activity in the coastal landscape of St Agnes (in contrast to West Penwith in particular) seems to have been confirmed during this project. This in itself raises intriguing questions about the differences between this part of the landscape and what are, in terms of climate, soils and other factors, very similar areas elsewhere in Cornwall.

#### **7.6.1.6 Bird survey**

Scrub clearance and removal of Ivy from buildings anywhere on the site should be carried out when birds are not breeding. If this is not possible then a breeding bird survey should be carried out in the areas concerned before work starts. It may be possible to continue without disturbing nesting birds, otherwise work will have to be postponed until outside the breeding season.

The consolidation work on the buildings should also only be carried out if birds are not nesting in or on the structures. If work has to be timed during the breeding season then breeding bird surveys need to be undertaken first. It should be noted that Natural England issue a general licence permitting disturbance of nesting pest species such as Herring Gull, Feral Pigeon, Crow and Jackdaw for health and safety reasons.

#### **7.6.1.7 Bat survey**

A walkover survey is recommended to identify features of potential interest to bats. Ideally this should be undertaken after Ivy growing over the buildings has died back.

Bats are already known to roost in workings accessed by some open mine shafts within the project area and it should be assumed that every open mine shaft or adit is similarly used. It is also possible that bats roost in flues, chimneys and in crevices or holes in the masonry of the derelict buildings and in lintels. Bat roosts are protected whether bats are present or not so bat emergence surveys should be carried out on any structures with these features if they will be affected by the proposed works. Ideally two emergence surveys should be carried out during the active season (May to late September).

Because bats are so mobile and move between a network of roosts depending on the time of year, food availability etc. it will also be necessary to carry out a visual survey

of all potential bat roosting sites immediately prior to the commencement of work using scaffolding and an endoscope if necessary.

#### **7.6.1.8 Bryophyte and lichen surveys**

No rare bryophytes or lichens have been recorded at this site so far and a records search was carried out by ERCCIS in 2007 for ELP. It is possible, however, that only four figure grid references were provided for bryophytes and if more precise details are required then a further records search should be undertaken. If bryophytes and lichens on buildings will be affected by the proposed works then a survey should be undertaken before work starts.

Metalliferous bryophytes and lichens could grow on contaminated soils and masonry. If these areas are to be disturbed then they should first be surveyed for these two taxa. If very old stems of Gorse with a diameter of more than 25-30cms are to be cleared these should also be examined for rare epiphytic bryophytes and lichens.

#### **7.6.1.9 Badger surveys**

Dense scrub may conceal setts and if signs of badgers are found during the works then further survey work or a watching brief may be necessary.

#### **7.6.1.10 Pre-works surveys at sites proposed for storage compounds and access tracks**

A walkover survey is recommended to identify suitable sites for storage area and the route of any new access tracks in order to avoid habitats and species of ecological interest. This should be done following discussions with HE project staff and National Trust representatives to establish which works are to be carried out.

### **7.6.2 Vegetation management**

(HLS codes HO1 (maintenance of lowland heathland), H02 (restoration of lowland heathland on neglected sites), HR4 (management of invasive species where severe), HR5 (Bracken control), HD4 (management of scrub on archaeological sites), SS (scrub management base payment).

The uncontrolled spread of scrub across many of the inland parts of the properties needs to be addressed if its archaeology is not to become progressively blanketed, invisible and inaccessible. Parts of St Agnes Beacon are no longer accessible except along existing footpaths. The Western gorse cover over most of the hill is all at a similar, advanced stage of development, whilst European gorse and bramble scrub is developing around the periphery of the hill. Phased scrub management would not only open up the hill and make some of its features greatly more accessible, but would also enhance habitat diversity, creating a mosaic of mixed age heathland.

On Towan Moor, adjacent to Towan Cross, unmanaged scrub development has resulted in the development of large areas of inaccessible thorn scrub, as well as expanding stands of European gorse and successional willow. Many features recorded on mid-20<sup>th</sup> century aerial photographs have already become lost under this scrub and, as on St Agnes Beacon, the Western gorse cover is of a similar age. Phased flailing or cutting, burning, followed by compartmentalised grazing might be suitable methods of opening up this area, making its archaeology accessible and visible and enhancing habitat diversity.

The central area of Wheal Charlotte Moor containing the remains of North Towan and Charlotte United Mines has been rendered inaccessible through the development of European gorse/thorn/bracken scrub cover. This area is known to contain a significant number of mine shafts and similar features. Although a large number of these were secured by the shaft capping works undertaken by Carrick District Council's Operation Minecap during the early 1980s, there remains some uncertainty as to whether all hazards were addressed by these works, and whether this area retains the potential



for the collapse of shallow sub-surface features. As a result, scrub clearance and enhanced access to the whole of this area is probably not advisable. Nevertheless, it appears that the area covered by scrub and bracken is expanding, and has now spread into areas which contain archaeological features such as the sites of historic mine buildings but no significant hazards. It is recommended that the spread of scrub on the fringes of this area is controlled and that some of the peripheral areas are cleared and reverted to heath.

There is currently no access to Charlotte United engine house through scrub development, whilst scrub tree growth in and around the engine house and boiler house are beginning to obscure it. Selective clearance of scrub trees should be undertaken where these are damaging or significantly obscuring structures, whilst paths should be cleared from Charlotte Moor and Chapel Combe to allow safe public access to a viewpoint adjacent to the fence surrounding this site.

Within Chapel Combe the waterlogged silts which make up the valley base have favoured the development of willow scrub in much of the upper valley, resulting in archaeological sites becoming both masked and inaccessible. Early views of the Combe (see Fig. 125) show that this occurred following the abandonment of industrial activity during the 20<sup>th</sup> century. In the middle section of the valley, the development of European gorse and bramble scrub has been extensive, rendering the Old Century Works [190510] and its surroundings now almost wholly inaccessible; as a result it did not prove possible to survey this site. Selective clearance of European gorse and bramble scrub from this site is recommended.

At Wheal Coates, significant development of European gorse and bramble over the outcrop workings and around the openwork in the northern part of the site has taken place since the CCRA 1986 survey, many parts of this area of the site now being completely inaccessible. Whilst it would probably not be advisable to fully open up this area to public access through the clearance of this material given the presence of so many choked mining features, the increasing scrub cover in this area is resulting in the degradation of this relatively rare mining landscape, and should be addressed by phased cutting. Similar scrub development is taking place within the streamworks and drainage channels running south-west from Wheal Coates car park, whilst the development of dense willow carr in the northern claypit has rendered it invisible and inaccessible.

In the southern part of the project area, a large area of former arable land is being reverted. It is understood (Bill Makin, pers. comm.) that the reversion processes currently occurring are intended to restore coastal lowland heath to this area. Documentary research suggests that during the Medieval period this area of the coastal landscape was enclosed and improved as outfields, which would have been used for a mixture of arable cropping and grassland. Following the abandonment of these outfields, this area would have reverted to a mixture of coastal grassland and heathland, but was probably taken back into cultivation during WWII. Reversion is currently at an early stage, the area being characterised by a variety of arable weeds and significant areas of bare ground. It is suggested that this area poses a valuable opportunity for the creation of semi-improved or rough grassland for target species (HLS code HK17), in particular for choughs, which are slowly becoming naturally re-established along Cornwall's coasts.

### **7.6.3 Management of standing structures**

(HLS codes HAP (ruined building) and HTB (roofed building))

As part of this assessment of National Trust properties between Tubby's Head and Porthtowan, the brief required a condition survey of the surviving structures to be carried out and future management requirements and management priorities to be identified. In particular, Section 5 of the Methodological recommendations within the Brief required the contractor to:

**"Undertake a condition survey of the features (to National Trust Level 3) and comment on the feasibility of management, highlighting good points as well as looking at defects and recommending the remedies required. The survey should prioritize work areas into "immediate, (1-2 years) necessary (2- 5years) and desirable (5-10 years)".**

The structures within the survey area fall into five groups:

- Tubby's Head
- Wheal Coates
- Chapel Porth
- Chapel Combe (Old Century Works and Charlotte United)
- Charlotte Moor (Great Wheal Charlotte).

### 7.6.3.1 Tubby's Head

Only four mine buildings ([96760], 96764], [96778] and [96780] survive within this section of the property – each are small, rectangular structures which have been reduced to low walls. No conservation works have been undertaken to these structures to date.

#### Mine building [96760]

Wall footings of a building survive at the eastern edge of the platform surrounding shaft [90048]. These are situated slightly above the platform and the southernmost quarried scoop [96759]. The building was not recorded on any historic maps. It is rectangular, and measures internally approximately 6.0m long (N-S) and 3.0m wide (E-W). Its rear (eastern) wall is cut into the ground surface. The traces of the wall are clearest on the eastern and western sides where they have been exposed by walkers and stand between 0.1m and 0.3m high, are 0.5m wide and are built of horizontally laid stone rubble. It may have once been an office or storage building associated with the use of Wheal Bungay but has clearly been deliberately demolished down to its foundations. Footpath erosion is slowly destroying the last surviving remains of this structure.

- Desirable works.
  - Undertake survey of structure.
  - Undertake any necessary consolidation works including repointing masonry and relaying wall top stones in lime mortar.

#### Mine building [96764]

This consists of a small rectangular structure with low surviving walls to between 0.3m and 1.6m high, at the northern end of which is a small blocked shaft [96765]. The building is orientated north-south built on a platform [96766] cut into the cliff slope. It was first recorded (as unroofed) on the 1<sup>st</sup> Edition 1:2500 OS mapping (*circa* 1878) when it was shown with a small recess at its south eastern end and a possible external chimney on its south western corner. The walls are constructed of horizontally laid stone rubble; the eastern side is a revetment face, the other walls are 0.5m wide. At the south eastern end of the building is a square recess, perhaps another room or structure. No trace of the chimney survives, though a hollow representing a small choked shaft [96765] lies within the northern end of the building. This was probably a small miners' dry with an enclosed footway shaft within its northern end. The upper sections of the walls of the building have been lost and parts of the remaining walls are becoming unstable.

- Necessary works.
  - Monitor probable shaft for subsidence.
- Desirable works.
  - Undertake survey of building.
  - Repoint masonry elements and relay wall top stones in lime mortar.

#### Mine building [96778]

At the southern end of the openwork [96779], set into the cliffslope, are the remains of a building orientated east-west. Internally it measures 5.0m long and 3.0m wide, its eastern and southern walls being cut into the cliffslope. The clearest sections of walling are on the northern, southern and western sides. The eastern wall retains only small amounts of masonry, and survives mainly a stone and earth bank, 1.3m high. The walls survive between 0.3m high to 1.3m high and are constructed of horizontally and vertically laid stone rubble, approximately 0.8m wide. There is a possible entrance in the north western corner of the building. In the rear wall of the building there is a recess built into the wall, which represents the remains of a very small chimney flue. The building, which was probably a small crib house and tool store, has lost the upper parts of its superstructure, but what remains is reasonably stable.

- Desirable works.
  - Undertake a survey of the building.
  - Undertake any necessary consolidation of the remains of the structure, including repointing and re-setting wall capping stones where appropriate.

#### Mine building [96780]

The remains of a building at the northern end of openwork [96779]. The building is rectangular and measures 4.0m long (N-S) and 2.0m wide. All the walls are intact, although there is some damage to the southern wall. The eastern wall is cut into the hillslope and is a 1.3m high revetted face of vertically laid stone. The northern, western and southern walls are 0.7m wide, and survive internally between 0.7m to 1.0m high and externally between 0.1m to 0.6m high, constructed of vertically and horizontally laid stone. At the south western corner of the structure, in the southern wall, is a very narrow gap, now reduced by collapse to 0.4m wide, originally forming the entrance to the building. The structure, like building [96764], is likely to be associated with the working of Wheal Owles.

- Desirable works.
  - Undertake a survey of the structure.
  - Undertake any necessary consolidation of the structure through minor rebuilding, repointing (where appropriate) and re-setting wall cappings in lime mortar.

#### **7.6.3.2 Wheal Coates**

Structures on this site, which date from two principal periods of operation, were conserved in two stages. Towanroath Shaft pumping engine house [190390] was extensively consolidated in 1970, the work involving substantial reconstruction of damaged or modified elements of the building and the introduction of new structural elements. The records for this work could not be identified within the National Trust collection of property records at the Regional Office at Lanhydrock, the relevant folder being currently mislaid. The works appear to have involved the capping of the shaft, the setting of new brickwork in the cylinder arch, the infilling of lost areas of masonry (particularly on the lower section of the bob wall) and parts of the rear wall, the reconstruction of the cylinder plat surface and its leading face, the reconstruction of the upper section of the chimney, the incorporation of replacement structural softwood timbers and the repointing of most of the elevations of the structure in a fairly weak cementitious mortar. Some structural works were also undertaken to the horizontal engine house to the south of the pumping engine house.

Most of the remaining buildings in the upper part of the site, including the beam whim engine house [190378], stamps engine house [190381], boiler house [190377], horizontal whim engine house [190375], smithy [190343], chimney [190373] and calciner [190346] were conserved between 1986-7. Once again, the records for this

work could not be located in the Lanhydrock archives. In this instance, patch pointing and wall capping utilized a weak lime-based mortar; some reconstruction was undertaken where required for structural reasons and an 'honest repair' in white brick was used to support an inherently weak section of the western wall of the horizontal whim engine house, whilst fallen masonry was conserved *in situ* on the bob wall of the stamps engine house. The interior of the smithy and calciner were excavated under archaeological supervision prior to works. No works were undertaken to some of the peripheral buildings, or those which had been substantially reduced in height, including the gas engine house [190379], 20<sup>th</sup> century dressing floor walls [190383] and the waterwheel/stamps [190340] to the north of the clifftop complex.

The following summarises the condition of the Wheal Coates structures, highlighting any works for which there appeared to be a requirement at the time of survey.

#### Towanroath pumping engine house [190390]

Constructed for a medium sized beam pumping engine in the 1870s, this building was stripped of its machinery and fittings on the close of the mine. During the early 20<sup>th</sup> century reworking, a horizontal pumping engine was erected on a plinth within the remains of the boiler house, and masonry was removed from both the northern and southern walls of the building to allow a connection between the engine and the pitwork in the shaft. A network of timbers seem to have been inserted at three levels within the building at this time, these now indicated by their stubs, which have been cut off flush with the wall faces.

This building was one of the first industrial structures to be conserved by The National Trust, the decision being taken to undertake reconstruction of the elements of the building damaged or removed during the early 20<sup>th</sup> century. It is currently in fair condition, though it would be advisable to replace the cementitious pointing using a suitable hydraulic lime based mortar in the medium term. Cracking was evident on both the external and internal elevations of the bob wall, running from its head down to the arch springings on the western side of the plug door opening. A second crack was noted running from the head of the cylinder doorway crown up to the western side of the base of the middle floor window in the rear (southern) elevation. Taken together, this cracking suggests some movement within the building. Although the movement at present appears small-scale, it is recommended that this requires monitoring, and that tell-tales are fixed across both cracks as a matter of urgency. A structural engineer should be engaged to carry out a survey of the building to attempt to identify the reasons for this failure and the means by which it could be arrested.

Other works required in the short term include the installation of a safety barrier across the northern face of the cylinder plat, as there is presently an unguarded drop of 3.55m into the cataract pit from this relatively readily-accessible area. In the medium term, some of the timbers appear to be suffering from damp, with indications of woodworm and rot apparent in some areas. Some consideration should also be given to the replacement of the shaft grille. The original, installed in 1970, was constructed of round-section steel bars set on a concrete slab. These have corroded to some degree, and were forced apart by visitors wishing to drop small stones down the shaft. A Lionweld pattern galvanized steel grille was subsequently fixed down over the original grille, but this has, again, been vandalized in a similar fashion. A patch repair has been carried out recently to cover the central part of the grille, though this is now showing signs of attack. Given the clearly apparent desire for visitors to drop small stones down into the flooded shaft and the failure of all previous attempts to prevent this, it would probably be advisable to replace the present grilles with one of robust construction which incorporates a 150mm x 100mm opening at its centre to allow visitors to drop small stones down the shaft without having to damage the grille to achieve this. This opening does probably not have to incorporate a bat access, given the presence of openings into the workings accessed by the shaft from the cliffs to the west.

The structure is not fitted with lightning protection. In view of its proximity to the cliff slope this is probably not necessary.

- Immediate works.
  - Fit tell-tales to cracks on northern and southern elevations.
  - Install safety barrier to cylinder plat.
- Necessary works.
  - Treat woodworm and rot.
  - Replace shaft grille.
- Desirable works.
  - Repoint in lime mortar and re-cap walls.
  - Replace rotting timbers.

#### Horizontal engine house to the south of Towanroath pumping engine house [190391]

This structure appears stable, though has suffered some masonry damage from visitors clambering up its southern wall to gain access to the interior of Towanroath pumping engine house. It is recommended that the damaged masonry is made good; this would also help to prevent access by small children. Once visitors have gained access to the platformed area forming the floor of the horizontal engine house, they are exposed to an unguarded 2.0m high drop to the west between the central platform and the surrounding masonry walls and can access the interior of the pumping engine house (above). The upstanding concrete plinths on the upper surface of the structure pose minor trip hazards, though these probably are not significant enough to need to be addressed.

- Desirable works.
  - Make good minor damage to masonry at southern end of building.

#### Boiler house remains to the south of Towanroath pumping engine house [190392]

The majority of this structure was demolished during the re-arrangement of this part of the site in 1906, leaving only the eastern wall which revets the cliffslope to a height of 3.5m and a length of 14.4m. This walling appears to be stable and does not require any consolidation. The northern end of the building forms part of the surrounding walls to the horizontal engine house, and incorporates a partly rubble-choked stone-capped flue 1.1m high and 0.7m wide running to the base of the stack. The flue capping stones and side walls appear stable and do not require any works.

- Desirable works.
  - Stabilise flue masonry.
  - Re-set wall head masonry.

#### Building remains to the north of Towanroath Shaft [190385]

A 9.05m long x 4.2m wide building which was still roofless in 1878 and evidently dates from the mid-19<sup>th</sup> century phase of working on this site. It was roofless by 1907 and may not have been re-utilised in the working dating from 1906. It does not seem to have been conserved during the 1970 conservation works.

Its walls stand to between 1.2m and 1.5m high to the east where they revet the cliffslope; elsewhere the walls have by and large been reduced to less than 1.0m high, except in the south-west corner of the building which stands to 1.35m high. The majority of the wall pointing is original and in fair condition. In the medium term it would be advantageous to re-set the top courses of all wall head stonework in a lime-based mortar to prevent any deterioration through water ingress and to stabilize the walls, parts of which are climbed over by visitors. Some attention should probably be given to the masonry of the south-western corner of the building, where there has been some limited masonry damage.

- Desirable works.
  - Re-set wall head masonry in lime mortar and undertake minor repairs.

### Twin-flue chimney [190373]

This free-standing chimney, which served both the calciner and the boilers for the all-indoor beam whim engine, is unusually internally sub-divided. It is missing all of its upper brick capping courses. The structure was conserved in 1986/7 and is in good condition, not requiring any works in the short to medium term.

- Works.
  - None.

### Horizontal whim engine house [190375]

This structure was constructed in or just after 1906 to provide the means to wind ore from Towanroath Shaft via an inclined cliffside tramway, the nearby all-indoor beam whim having been scrapped some years previously. The structure consists of an uncoursed single storey gabled masonry structure whose interior is infilled to a depth of an average of 1.1m with a mass concrete plinth which incorporates the engine mounts and a series of machine pits.

The consolidation of the structure in 1986/7 included limited patch pointing where mortar loss had been significant, the construction of a panel of white brick in the western face of the building to support a potentially unstable overhanging section of this wall, the re-setting of some masonry cills, the capping of the wall tops and the replacement of decayed timber lintels.

The building is in good condition, though significant woodworm attack was evident in some of the replacement lintels over the eastern doorway. These timbers should either be treated in the short term with a proprietary insecticide or the timbers replaced in the medium term with hardwood equivalents.

- Necessary works.
  - Treat woodworm in timber components.

### All-indoor beam whim engine house [190378]

A hipped-roof building housing the whim engine installed in 1880 to take over one of the functions of the original stamps/whim engine house and standing just upslope from it at the head of the incline to Towanroath Shaft further down the cliff slope. This engine became redundant in 1884 and was sold, together with the rest of the machinery on the mine, in 1887. The building would have been unroofed at this time, whilst the removal of the engine components necessitated the demolition of a substantial section of its northern wall. The engine house was not re-used in the reworking dating from 1906, it being replaced by a new structure just upslope housing a twin cylinder horizontal winding engine. The whim axle loadings to the north of the building would have been demolished and the whim cage pit adjacent to the wall infilled at this time.

The structure was conserved during 1986/7, the works including the excavation of the interior of the building under archaeological supervision, wall capping, patch pointing where mortar loss had been significant, the replacement of small sections of missing masonry where required to reinstate structural stability and the replacement of a number of badly-decayed timbers using treated softwood.

The building is in good condition, requiring only minor works. Limited repairs are required to the cill of the window in the western elevation in the medium term, whilst the corroded iron plate supporting the small opening to the north of the building should be periodically inspected. Of greater urgency is the necessity to replace the timber baulk to which engine components were bolted down; this is sited on the northern side of the machine pit in the north-eastern part of the building and has rotted to the point where it is no longer supporting the masonry above it. The collapse of the northern wall of the pit is inevitable if these works are not undertaken.

- Necessary works.

- Replace timber baulk in machine pit.
- Desirable works.
  - Undertake minor masonry repairs.
  - Replace iron lintel to small opening to west of building.

#### Boiler house [190377]

The elongated boiler house (16.55m long x 3.55m wide) to the south of the all-indoor beam engine house not only served the original whim engine but was probably partly re-used to site the steam generation plant for the later horizontal winder. It is likely that the original eastern section of the northern wall of the boiler house was demolished during this phase of working of the site. The upper section of most of the walls of the boiler house have been demolished to between 0.95m high and 1.35m high, over most of their length on the southern side these revetting the cut into the ground in which the boiler house was set; the eastern wall is now only 0.5m high and incorporates the first 1.5m of the 0.45m wide flue path; the remainder of the flue running towards the nearby chimney cannot be traced and has either become buried or has been collapsed. A short section of low revetting walling runs east from the south-east corner of the all-indoor beam whim engine house and appears to date from the early 20<sup>th</sup> century re-working. This revets a rubble infill and is of markedly poorer construction than the remainder of the walls of the building, as well as being on a slightly different alignment.

No works were undertaken to this structure during the 1986/7 conservation works. The pointing is in good condition but would benefit from the re-setting of the wall head masonry in lime mortar to limit water ingress to the wall cores and to stabilize these elements of the structure which are walked over by visitors.

- Necessary works.
  - Re-set wall capping stones in lime mortar.
  - Stabilise flue masonry.

#### Stamps/whim engine house [190381]

Of conventional design and construction, this beam engine house was constructed in 1873 to provide both haulage power to draw ore from the mine and to power the stamps at the head of the dressing floor. In 1880 a new all-indoor beam whim engine took over the first of these functions. The mine effectively ceased operations in 1884 and the machinery was sold off in 1887. In 1906 the mine began a phase of re-working during which the new stamps were powered by a producer gas engine housed to the north of the old stamps engine house. It is suggested by some sources that the stamps engine house was converted into an ore bin serving the new stamps. Although the middle floor west windows of the building were remodelled and the flywheel loadings to the west of the engine house were removed at this time, there is little other physical evidence to support this notion.

The structure, which is of un-coursed mine waste rubble and killas (with the exception of the bob wall, which incorporates a high proportion of squared mine waste) and incorporates a chimney in its north-eastern corner was conserved in 1986/7, the works including minor structural repairs, patch pointing using a lime-based mortar, wall capping and the replacement of some structural timberwork. The stones representing the section of the northern wing wall which had collapsed onto the bob wall head were mortared in position to prevent them becoming a hazard to visitors, the alternative having been to remove them.

The majority of the building is in good condition, having been the subject of considerable attention in 1986/7, though some of the structural timberwork is beginning to deteriorate and it is now felt more appropriate that the fallen stonework on the bob wall should be removed.

- Necessary works.

- Survey and, if necessary treat indications of worm and rot in structural timbers.
- Desirable works.
  - Remove masonry from bob wall head.

#### Gas engine house and associated structures. [190379]

Constructed in 1906 to house a producer gas unit and the gas engine which powered the stamps and dressing floor machinery, this group of low ruins and concrete machinery bases lies to the north of the stamps engine house. Most of these structures would probably have been housed in a collection of timber and sheet steel buildings, though the producer gas unit stood within a building whose lower wall sections were of cement-mortared masonry revetting a rectangular cut in the ground. The only surviving remains of the buildings downslope now consist of a series of concrete plinths and low walls. On the closure of the mine all of the equipment would have been removed for re-use or scrapping, together with recoverable materials making up the covering buildings.

No works were undertaken on this area of the site during the 1986/7 works programme. The concrete plinths are massive and require no attention, whilst the revetting walls of the gas producer house require little more than wall capping and the removal of the loose rubble which has built up in its interior.

- Necessary works.
  - Reset top courses of wall masonry in lime mortar.
- Desirable works.
  - Remove rubble from the interior of the gas producer house.

#### Mine smithy [190343]

Originally thought to be the traction engine house, excavation under archaeological supervision during 1986/7 revealed the foundations of a forge at the southern end of this building, showing it to have been the mine smithy. The building dates from 1906/7 and replaced one used in the 19<sup>th</sup> century working, this having been a short distance downslope and immediately to the north of the site presently occupied by the reverberatory calciner. Although the southern wall and the southern ends of the western and eastern walls of the building survive in fair condition, the northern half of the building has been substantially demolished.

As well as the archaeological excavation of the building, wall capping and some pointing were undertaken in 1986/7. The wall capping has deteriorated in places and the top courses of the wall should be re-set in a suitable lime-based mortar.

- Desirable works.
  - Re-set top courses of wall masonry in lime mortar.

#### Reverberatory arsenic calciner. [190346]

A very well preserved gabled, masonry-constructed single storey structure housing a pair of reverberatory calcining beds with a gabled extension to the west which housed the mess room and rabbling facilities, this building was constructed in or around 1906-7 in order to remove the arsenic present in the tin ore concentrated on the nearby dressing floors. The fumes were not sent for collection in a condensing labyrinth, but fed directly to the northern half of the chimney near the winding engine houses, and discharged to the atmosphere. The flue connecting the calciner and the chimney runs just under the ground surface, one section of this being exposed where its brick arch has collapsed. This section of the flue has been covered with a protective steel grille.

The building was excavated under archaeological supervision during 1986/7 and some consolidation works undertaken, these including wall capping and patch pointing. The building is currently in good condition, though there has been some erosion of its fabric through visitor access and other uses, resulting in damage to the masonry cill of



one of the southern windows and the spreading of rubbish and the disposable barbecues around its interior. The iron lintel supporting the fireplace opening is now in poor condition and should be replaced.

- Necessary works.
  - Make good damage to cill of southern window in western extension.
  - Replace corroded iron lintel supporting fireplace opening in western extension.
  - Repair dislodged masonry, especially in hearth pits.
- Desirable works.
  - Survey interior of flue to check for structural stability.

#### Tributer's stamps and waterwheel pit [190340]

To the north of the main complex at Wheal Coates and set slightly downslope is a small masonry-constructed 6m long x 1.15m wide wheelpit, an adjacent masonry plinth which would have supported the drive to a set of stamps and a levelled area to the south which would have sited a buddle floor. This small works is undocumented, but might have dated to the period between 1884 and 1906, when a small scale dump recovery operation is known to have taken place at Wheal Coates, though might equally have been established and operated at an earlier date.

No works were undertaken to this group of structures in 1986/7.

Both the plinth and the wheelpit were constructed of lime-mortared mine waste and killas, and have suffered some significant deterioration due to weathering and root damage since their abandonment over a century ago. Masonry loss from the western face of the plinth is more pronounced than elsewhere, though both structures are structurally stable. Re-pointing and some limited replacement of lost masonry would be advantageous.

- Desirable works
  - Remove intrusive vegetation.
  - Repoint all external wall faces.
  - Lift and reset top coursing stones and re-lay in lime based mortar.
  - Undertake limited replacement of lost masonry from the western faces of the structures.

#### **7.6.3.3 Chapel Porth**

This area contains the group of structures associated with the present car park, lifeguard facilities, tea room, public toilets and service buildings; most of the original dressing floor structures documented here in the late 1870s had been demolished by 1908. Just to the north-west is the miner's building on the site of St Agnes' Chapel.

#### Lifeguard and car parker attendant's hut. [190488]

This modern, single storey structure has been built into the bank at the end of the road leading to the car park and is secured by plain unpainted tanalised timber doors and window shutters and red-painted gutters. The roof appears to be of mass concrete with a vegetated earth covering. No access was available to its interior.

- Necessary works.
  - The building has recently been the subject of refurbishment by the National Trust and is periodically maintained by its staff. However the lintel over the southern openings is suffering from woodworm attack and some rot at its eastern end. Treat woodworm or replace lintel.

#### Public toilets. [190495]

A single-pitch roofed structure built against the remains of the remains of the water wheel buttress masonry, this is internally divided to provide separate areas for male,

female and disabled toilets. Its masonry is a mix of recycled stone quoins and local shillet, laid in a lime mortar. The roof is of diminishing course scantle slate with lead flashings and two fixed rooflights, the doors, windows and lintels are of brown-painted tanalised timber, the soffits are red-painted timber, whilst the rainwater goods are a mixture of red painted cast aluminium and cast iron.

- Required works.
  - None. The building has recently been the subject of refurbishment by the National Trust and is periodically maintained by its staff.

#### Store and service buildings.

This structure is butted against the toilet block and incorporates a mixture of original masonry and new work, the latter having weak lime based pointing incorporating a rather coarse aggregate. An electrical switchroom is incorporated into the eastern end of the southern elevation of this structure; another small extension is butted against the eastern end of the building. The two doors are plain tanalised timber, whilst the roof is rough mass concrete with a vegetated earth cover.

- Required works.
  - None. The building has recently been the subject of refurbishment by the National Trust and is periodically maintained by its staff.

#### Tea room. [190500]

Occupying the site of a previous dressing floor building, this modern tearoom is only the latest of a series of buildings on or near this site, the first, constructed in 1958 replaced a privately-run timber-constructed facility. The 1958 structure was burnt down in 1985 and was replaced in masonry, only to be again badly damaged by fire in 2007, after which it was reconstructed. The present building has an L-shaped plan and is of mortared coursed killas construction under a diminishing course scantle slate roof with clay ridge tiles and fixed rooflights. Doors, windows and security shutters are unpainted tanalised timber, the lintels are brown painted tanalised timber, whilst the roller shutter closing the café service opening is of painted aluminium. The rainwater goods are ogival pattern cast metal and like the timber soffits are painted dark red.

- Desirable works.
  - The building has recently (2007) been substantially rebuilt by the National Trust. It was noted that the stonework is eroding more quickly than the mortar in which it has been laid in places, notably on the southern elevation of the new extension to the building. This suggests that a softer, lime-based mortar should be used when any repointing of the building takes place.

#### Building on the site of St Agnes' Chapel. [190467]

An earth-banked structure with some visible stone reinforcement on or near the traditional site of St Agnes' Chapel, the southern part of the building having been cut into the hillslope and having an entrance at the eastern end in the north wall. The building has a roughly levelled interior which has been used for small fires. The internal dimensions of the building are about 5.0m x 2.5m. The structure has the appearance of a tinner's building and has been at times described as a probable powder magazine, though as it lies at a distance from any mine this seems unlikely.

- Desirable works.
  - Monitor for erosion or damage to earthwork components, or for unwanted activities such as fires within the structure. The tinner's building is a scheduled monument by association with the Chapel site.

#### **7.6.3.4 Structures in Chapel Combe.**

##### Old Century Works [190510]

This small scale, water-powered dressing floor appears to have been operational during the final decades of the 19<sup>th</sup> century, and to have continued to expand to some degree before becoming abandoned in the early years of the 20<sup>th</sup> century.

Vegetation cover over the site of this complex hinders a clear interpretation of its features or a full assessment of its conservation requirements. Brown and Acton (1999) indicate that this situation has been long-standing, though the sites of a set of stamps, a wheelpit, parts of a dressing floor including at least one round buddle and the foundations for vanning tables can still be identified, but the 1878 OS mapping shows a number of other buildings, parts of which clearly survive, though under impenetrable scrub. Archive photographs of the site (for instance in Brown and Acton 1999) indicate that substantial parts of the buildings were originally of studwork and shiplap timber construction.

- Necessary works.
  - Undertake scrub vegetation clearance within the area documented as having sited elements of this complex.
  - Undertake site survey.
  - Undertake structural survey of remaining elements of buildings and other structures.
  - Undertake any urgently required remedial consolidation works.
- Desirable works.
  - Create public access to site.
  - Maintain vegetation management to keep site open.
  - Undertake other necessary consolidation works to structural elements of the site.

##### Charlotte United pumping engine house [190616]

The sole surviving standing structure associated with this mine, this pumping engine house was built in 1879-80 to contain the 36" pumping engine which had been transferred from Wheal Freedom just to the north. The working was short-lived and the engine was advertised for sale in 1873 as part of New Wheal Charlotte and in 1878 as part of Charlotte United. The engine was subsequently moved to New Polbreen Shaft at New Kitty, later part of West Wheal Kitty near St Agnes town. The engine house, together with the boiler house to the north, were shown as roofed structures on the OS 1<sup>st</sup> Edition 25" to the mile mapping (dating to *circa* 1878); by 1908 both structures were shown as intact but roofless.

Some unknown factor(s) have brought about substantial collapse of nearly half of the engine house since 1908, only the bob wall, the northern wall of the engine house and the incorporated chimney having survived, the other walls having been almost entirely lost. Brown and Acton (1998) reported that the engine house had recently been consolidated by the National Trust, though the relevant NT files had apparently been mislaid when they were requested (June 2009), and no record of the range of work undertaken could be located. The nearby shaft has coned out very extensively and may threaten the stability of the foundations of the bob wall of the engine house and is certainly undermining the remains of the balance bob loadings. The area containing this and the engine house, together with the site of the attached boiler house and associated surface balance bob mounting is enclosed within stock fencing topped by barbed wire. As a result there is no access to the building, and the area within the fence line has scrubbed in. An examination of the building suggests that most of the surviving walls have been patch pointed and that the majority of the structural timberwork is in fair condition, though its boiler house requires pointing, wall capping and some stabilisation works.

- Desirable works.

- Clear scrub vegetation within fence line surrounding engine house, boiler house and shaft.
- Undertake full measured survey of features within fence line, including measured photographic survey.
- Inspect surviving structural elements and assess requirements for further conservation measures.
- Repoint and wall cap boiler house walls in a lime-based mortar.
- Consider measures to stabilise the coned-out shaft throat.

#### **7.6.3.5 Charlotte Moor**

Although archive Ordnance Survey maps and plans in archive collections indicate the sites of a large number of buildings associated with Charlotte United Mine and whilst there would have been equivalent numbers at Great Wheal Charlotte within this area, only one structural fragment now survives – the bob wall remnant at Great Wheal Charlotte Engine Shaft.

##### Great Wheal Charlotte pumping engine house [190567]

Having the appearance of a rather battered Roman triumphal arch standing within a sea of mine waste and low heath, the bob wall of Great Wheal Charlotte pumping engine house is the only visible survivor of the range of mine structures which would have lain nearby. There are now no traces of the count house, whims, smithy, change houses, stores and magazine which would have been sited amongst the sprawling mine dumps which now characterise this area, nor of the equivalent range of structures which were documented as part of Charlotte United on the moor to the south.

The pumping engine house was erected in around 1828 for a 60" engine, but the mine was abandoned after 1840. It is probable that the engine house was partly demolished not long after this date to remove the machinery; the boiler house would probably also have been demolished at this date. A mass-concrete slab across the lower part of the plug door opening is a later addition, and probably relates to an undocumented phase of dump re-working operations during the 20<sup>th</sup> century, in common with two other concrete foundations elsewhere in the vicinity.

The engine shaft subsequently became popular as a local rubbish dump, apparently being a popular location at which to dispose of old cars. The remains of the engine house were consolidated in 1990, this including a small amount of masonry replacement at the base of the wall at the rear face of its northern end to enhance its stability. A CAU elevation survey of the structure was undertaken at the time, but the low remains of the rest of the engine house and the adjacent boiler house were not recorded at this time, nor were they conserved.

The remains are in fair condition, though would probably benefit from an inspection of the wall head capping and some reappraisal of the need to replace some of the failing pointing, as the stone from which this building was constructed is, in places, rather soft and prone to weathering.

- Desirable works.
  - Assess conservation needs of the inaccessible elements of the structure.
  - Re-set wall topstones in lime mortar.
  - Undertake patch pointing as required.

#### **7.6.4 Interpretation**

There is some potential for enhanced interpretation within the project area (HLS code OES). A number of key locations have been identified as suitable for the provision of fixed interpretation panels or boards. These could provide mapping and information about the archaeological and ecological interest of the area, as well as basic safety and public access information. The design and scale of the boards and the manner in

which they are to be fixed should be sensitive to their settings and not be unnecessarily intrusive. They should also be robust enough to have a reasonable life span, be DDA compliant and be capable of periodic maintenance and eventual replacement.

- Chapel Porth Car Park.
- Wheal Coates Car Park.
- Wheal Coates clifftop complex (to replace the existing interpretation panel, which is now two decades old).
- Towan Cross parking area.
- The north-western access point to St Agnes Beacon.

Other forms of interpretation could also be considered including:

- Updating the existing 'Coast of Cornwall' leaflets, either individually, or bound together in the form of a unified guidebook to NT properties. Local sale points accessible to visitors to the area should be identified for this material, and might include the car park hut or café at Porth Towan, the Victory Inn at Towan Cross, St Agnes museum and commercial outlets in St Agnes and Porthtowan.
- Commissioning a local author to produce an illustrated guide to the St Agnes NT properties.
- Producing web-based material for inclusion on the NT national or regional website to provide virtual access to the property for those who have limited mobility, as a resource for those intending to visit NT properties in the area, or for schools.
- Producing a resource park about the NT properties in the area for St Agnes junior and infant school.

#### **7.6.5 Other recommendations**

- When the opportunity presents, seek to re-route the overhead electricity supply line crossing the south side of St Agnes Beacon. Re-routing would be the preferred option by comparison with the potential damage to both buried and standing archaeological features in this area and the disturbance to the heathland vegetation which would result from trenching.
- Careful consideration of – with a presumption against – any additional proposed memorial seats or benches within the rough ground parts of the property. The presence of such features undermines the otherwise robust character of this area, based on the strong presence of industrial, military and prehistoric ceremonial features. Other than car parks and the Chapel Combe café, there are otherwise few overt signs of modern human activity and provision for leisure users. People who wish to have friends or relatives memorialised in favourite places might perhaps instead be asked to contribute to specific management works, with a discreet record of such donations placed at a car park or other visitor focus.
- Undertake minor resurfacing works to the pathway leading from Wheal Coates car park to the Wheal Coates clifftop buildings in order to restore this route to DDA compliance (HLS access management code FB or HN7 - upgrading CROW access for people with reduced mobility). This levelled route provides one of the very few opportunities for those who find it difficult to move around such landscapes to gain access to a conserved industrial site with such spectacular views along the coast.
- Undertake a series of prioritised repairs, surface drainage works and stabilisation works to the local path network to arrest locally significant levels of erosion caused by foot traffic. In some hot spots, particularly on the clifftops at Wheal Coates, a plethora of routes has developed and where these run cross-contour, foot and water erosion has produced significant gullying and soil wash-off. Other areas of concern about Chapel Porth to both its north and south,

where many paths have become braided and gullied, having lost all of their soil cover. The path network will need to be rationalised in some areas, with some routes having to be closed off, either temporarily to allow vegetation cover to become re-established, or permanently to prevent significant permanent damage.

- Path management works should also be considered on routes running north off Charlotte Moor into Chapel Combe where these are exhibiting signs of significant water erosion.

#### **7.6.6 Prioritisation of works**

##### **Vegetation management**

A phased 10-year programme of scrub management should be drawn up to cover not only the most problematic areas (as at Towan Cross), but for the whole of the project area. Given that this is likely to be a controversial aspect of the management of the property, it is suggested that the proposals, once developed, are made the subject of consultation with local interest groups and may require further specialist survey and evaluation of techniques before full implementation. The success of and the range of impacts resulting from the scrub management programme should be subject to periodic review and reassessment.

##### **Access works**

An assessment of current access arrangements should be undertaken as a priority. This should result in a comprehensive map of all parking arrangements, tracks used by vehicles, bridleways, public footpaths and other paths within the property. The condition of all of these routes should be recorded and any problematic areas identified, particularly where significant surface degradation is taking place, where drainage works are required, and where temporary or permanent path closures may be required. Works should be prioritised on the basis of this survey. At Wheal Coates, consideration should be given to the identification and formalisation of the preferred route for public access between the clifftop building complex and the coast path at Towanroath Shaft and the closure (whether temporary or permanent) of some of the other informal paths which have developed here and which are causing significant erosion. Minor resurfacing works are required to make the route from Wheal Coates car park to the clifftop buildings of Wheal Coates DDA compliant. To avoid disruption to visitors using these paths it would make sense to undertake the access works out of the visitor season, the works being undertaken as a phased programme undertaken over a three to five year period.

##### **Building works**

As requested by the brief, these have been divided into three priority groups: immediate works which should be treated as the highest priority, some being urgently required, necessary works which should be undertaken within a three to five year period at most and desirable works which should be undertaken when resources allow.

###### Immediate works

Wheal Coates pumping engine house [190790]. Install telltales on cracks in north and south elevations.

###### Necessary works

Wheal Coates pumping engine house [190790]. Treat worm and rot in timbers.

Wheal Coates horizontal engine house [190375]. Treat worm and rot in timbers.

Wheal Coates beam whim [190378]. Replace timber lintel.

Wheal Coates stamps engine house [190381]. Survey timberwork for rot.

Wheal Coates gas engine house [190379]. Minor conservation works.

Wheal Coates calciner [190346]. Replace iron cill, repair masonry cill, repair dislodged masonry.

Wheal Coates tributers waterwheel [190340]. Tackle encroaching vegetation, repoint, reset top stones, repair lost masonry to stabilise the structure.

Chapel Porth lifeguard hut [190488]. Replace or treat woodwormed lintel.

Old Century works, Chapel Combe [190510]. Clear vegetation, undertake structural survey, undertake remedial works.

Charlotte United engine house [190616]. Clear scrub vegetation, undertake structural survey, point and cap walls, stabilise shaft cone.

#### Desirable works

Wheal Bungay mine building [96760]. Survey and undertake minor conservation works.

Wheal Bungay mine building [96764]. Survey and undertake minor conservation works.

Wheal Bungay mine building [96778]. Survey and undertake minor conservation works.

Wheal Coates pumping engine house [190390]. Repoint in lime.

Wheal Coates lower horizontal engine house [190391]. Minor conservation works.

Wheal Coates lower boiler house [190392]. Minor conservation works.

Wheal Coates dry [190385]. Minor conservation works.

Wheal Coates beam whim [190378]. Minor conservation works.

Wheal Coates stamps engine house [190381]. Remove stones from bob wall head.

Wheal Coates gas engine house [190379]. Remove rubble from interior.

Wheal Coates smithy [190343]. Minor conservation works.

Wheal Coates calciner [190346]. Survey interior of flue.

Tinner's building at St Agnes Chapel [190467]. Monitor for damage.

Old Century works, Chapel Combe [190510]. Create access, maintain vegetation.

Great Charlotte engine house [190567]. Minor conservation works.

#### **Interpretation**

If the NT adopts the changes to the management of the property proposed above, it is strongly recommended that the underlying reasons for the very visible works which will take place are explained to local people and visitors. Whilst this could be achieved through consultations and to some degree through temporary signs and notices, the current lack of interpretative material at the key access points to the property should be seen as an opportunity to not only inform the public about the property but also the reasons why it needs to be positively managed to retain its special qualities. For this reason, it is suggested that the commissioning and installation of interpretation panels at (at a minimum) Chapel Porth and Wheal Coates car parks should precede any major vegetation and access management works.

## 8 References

### 8.1 Primary sources

- Cornwall County Council, 1999-2001 vertical aerial photograph data (GIS)
- Cornwall County Council, 2005 vertical aerial photograph data (GIS)
- Cornwall Council, 2009 aerial photograph data
- Environmental Records Centre for Cornwall and the Isles of Scilly (to 2008), *Erecords computer database*, Cornwall Wildlife Trust, unpublished.
- Gascoyne, Joel, c 1695, *Survey of Cornwall* (paper copy held at HES)
- Gerrard, G. A. M., 1986, *The early Cornish tin industry: an archaeological and historical survey*, unpublished D Phil thesis, University of Wales
- Gover, J G B, 1948. The place names of Cornwall, typescript at Courtney Library, Royal Institution of Cornwall; photocopy at HES
- Henderson, C., Manuscripts MSS 6, Courtney Library, Royal Institution of Cornwall, Truro
- HER GRH 253/10 Tracing (1996) from a map of tin bounds in the parish of St Agnes by William Terrill, 1793
- Geological Survey of Great Britain, 1981, *Newquay; Sheet 346 Drift edition 1:50,000 Map*
- Geological Survey of Great Britain, 2005, *1:50,000 Map (Digital transcription)*
- Institute of Cornish Studies, n.d., *Place-names index* (summary copy held at HES, Truro)
- National Trust Regional Archives, Section PS2
- Ordnance Survey, 1813 (surveyed c 1809), First edition, 1 in to 1 mile (paper copy at HES)
- Ordnance Survey, 1880, *25 Inch Map* First Edition (licensed digital copy at HES)
- Ordnance Survey, 1907, *25 Inch Map* Second Edition (licensed digital copy at HES)
- Ordnance Survey, 2003, *LandLine and MasterMap (post OEM) Digital Mapping at 1:2500*
- Police war diary, Cornwall (copy held by Cornwall Council Historic Environment Record)
- Soil Survey data, 2004, prepared by National Soil Resources Institute Soil Systems Group, 2004. Data Copyright (c) Cranfield University
- Symons, R, 1870, Map of the St Agnes mining district (CRO LC-XIII-6)
- Tithe map and apportionment, c 1841, *Parish of St Agnes* (a date of c. 1841 has been given as the map was surveyed in 1841 but the apportionment was completed in 1842. The original is held at CRO)

### 8.2 Publications

- Anon., 1925. *The book of St Agnes. Descriptive official guide*, St Agnes
- Anon., 1989a, Dicky Pool Downs – an update, *St Agnes Museum Newsletter*, **13**, 6
- Anon., 1989b, Lamorna House flint, *St Agnes Museum Newsletter*, **13**, 6
- Anon., n.d. a [c 1934-5], *A pictorial and descriptive guide to Looe, Polperro, Fowey, Falmouth and south Cornwall*, London (9th edition)



- Anon., n.d. b [c 1937]. *A pictorial and descriptive guide to west Cornwall*, London (13th edition)
- Anon., n.d. c [c 1938-9]. *A pictorial and descriptive guide to Penzance and west Cornwall*, London (13th edition)
- Anon., n.d. d [c 1952]. *Guide to Newquay, Perranporth and North Cornwall*, London
- Barton, D.B., 1967, *A history of tin mining and smelting in Cornwall*, Truro
- Barton, R.M., 1972, *Life in Cornwall in the late nineteenth century*, Truro
- Barton, R. M., 1997, *Life in Cornwall in the early nineteenth century*, Truro
- Benney, C, 1988, *St Agnes parish 1920-1950: a photographic record*, np (author)
- Benney, C., nd, *St Agnes parish 1850-1920: a photographic record*, np (author)
- Bhreachnach, E, 1999. Authority and supremacy in Tara and its hinterland c 950-1200, *Discovery Programme Reports*, **5**, 1-23
- Borlase, W., 1754, *Observations on the antiquities, historical and monumental, of the county of Cornwall*, Oxford
- Borlase, W, 1758, *The natural history of Cornwall*, Oxford
- Bottrell, W., 1870, *Traditions and hearthside stories of west Cornwall*, 1st series, Penzance (facsimile reprint, Felinfach, 1996)
- Bottrell, W., 1873, *Traditions and hearthside stories of west Cornwall*, 2nd series, Penzance (facsimile reprint, Felinfach, 1996)
- Brown, K., and Acton, B., 1999, *Exploring Cornish mines Volume 4: four guided tours*, Landfall Publications
- Brown, K., Morris, J.H., Sanchez, A.P., and Critchley, M., 2005, *Interpreting the ruins of Cornish design engine houses*, Europamines
- BTO (British Trust for Ornithology), RSPB (Royal Society for the Protection of Birds) and others, undated, *The population status of birds in the UK. Birds of conservation concern: 2002-2007*. [www.bto.org](http://www.bto.org)
- Budd, P., and Gale, D., 1994, Archaeological survey of an early mine working at Wheal Coates, near St Agnes, Cornwall, *Cornish Archaeol*, **33**, 14-21
- Bulkley, A. M., 1925, From the visitor's point of view, in Anon., 1925, 27-46
- Burrows, I, 1988, 7000 years ago . . . *St Agnes Museum Trust Newsletter*, **11**, 4
- Burrows, I., 1994, A sacred stone figure, *St Agnes Museum Newsletter*, **22**, 8
- Burrows, I., (ed), n.d. [1994-5], Arthur Roberts' wartime diary, *J St Agnes Museum Trust*, **10**, 3-24
- Carew, R., 2004, *The survey of Cornwall*, J. Chynoweth, N. Orme and A. Walsham, (eds), Devon and Cornwall Record Society, ns, **47**, Exeter (first published London, 1602)
- Carpenter, F., n.d. [c 1991], The Carters of St Agnes, Cornwall, *Jnl St Agnes Museum Trust*, **7**, 15-46
- Carter, C, 2001, Holman Brothers at war: the Holman Projector, *Jnl Trevithick Soc*, **28**, 13-23
- CEC (Council of the European Communities) 1992, 'Council Directive 79/409/EEC 92/43/EEC on the conservation of wild birds Annex I', *Official Journal of the European Communities*: **L103**

- CEC (Council of the European Communities) 1992, 'Council Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora', *Official Journal of the European Communities*: **L206**
- Cheffings, C.M., and Farrell, L., (eds) Dines, T.D., Jones, R.A., Leach, S.J., McKean, D.R., Pearman, D.A., Preston, C.D., Rumsey, F.J., Taylor, I., 2005, *The Vascular Plant Red Data List for Great Britain, Species Status 7*, Joint Nature Conservation Committee, Peterborough.
- Copeland, T., 1988, The North Oxfordshire Grim's Ditch: a fieldwork survey, *Oxoniensia*, **53**, 277-92
- Cordrey, L. (editor) 1997, *Action for biodiversity in the south-west: a series of habitat and action plans to guide delivery*, The South-west Biodiversity Partnership.
- Corney, M. C., 1989, Multiple ditch systems and Iron Age settlement in central Wessex, in Bowden, M., Mackay, D., and Topping, P., eds, *From Cornwall to Caithness: some aspects of British field archaeology*, Brit Arch Repts, Brit Ser, **209**, Oxford, 111-28
- Cornish Mining World Heritage Site Bid Team, 2004, *Cornwall and West Devon Mining Landscape: nomination for inclusion on the World Heritage List*, Cornwall County Council
- Cornish Mining World Heritage Site Bid Team, 2004, *Cornwall and West Devon Mining Landscape; World Heritage Site Management Plan 2005-2010*, Cornwall County Council
- Cornwall Biodiversity Initiative 2004, *Cornwall's Biodiversity Volume 3: Action plans 2004*, Cornwall Biodiversity Initiative, Cornwall Wildlife Trust, Truro.
- Cornwall Consultants 2008, *Mining Site Survey: Wheal Charlotte, Chapel Porth, St Agnes, Cornwall*, Report TSB/TDM/SI/2626.1.SV
- Crew, P., and Crew, S., 1990, *Early mining in the British Isles*, Proceedings of the Early Mining Workshop at Plas Tan Y Bwlch, Snowdonia National Park Centre 17-19 November 1989
- Cornwall County Council, 1996, *Cornwall: a landscape assessment 1994*, Truro (report by Landscape Design Associates in association with Cornwall Archaeological Unit)
- Cornwall Underground Access Advisory Group (CUAAG) 2002, *Preserving access to Cornwall's underground mining, geological and ecological heritage*,
- Cunliffe, B., 1991, *Iron Age communities in Britain: an account of England Scotland and Wales from the seventh century BC until the Roman Conquest*, London (3rd edn)
- Cunliffe, B., 1993, *Wessex before AD 1000*, Harlow
- Dines, H.G., 1956, *The metalliferous mining region of south-west England*, Volume One, reprint 1988, HMSO
- Dobinson, C.S., 2000, *Twentieth century fortifications in England: vol 7 acoustics and radar. England's early warning systems 1915-45*, York (Council for British Archaeology) (2 vols)
- Dudley, P., 2007, *Trevellas Coombe, New Downs Head and St Agnes Head, Cornwall: archaeological assessment*, HES report for the National Trust
- Dudley, P., forthcoming, *Goon, hal, cliff and croft; the story of west Cornwall's rough ground*, Cornwall Council Historic Environment and English Heritage
- Ecology Land & People 2007, *St Agnes - Chapel Porth and St Agnes Beacon Nature Conservation Evaluation*.

- Edmonds, E.A., McKeown, M.C., Williams, M., 1975, *British Regional Geology; South-West England, Fourth Edition*, Her Majesty's Stationery Office.
- Edwards, C., ed, 1981, A visit to Cornwall in 1755, by William Wynne, *Jnl Royal Institution Cornwall*, **8, 4**, 338-49
- Edwards, S., nd [1994-5], Wartime memories, *J St Agnes Museum Trust*, **10**, 33-5
- Folliot Stokes, A.G., 1910, *From Devon to St Ives: the cliffs, the coves, the moorland and some of the birds and flowers*, London
- Ford, T.D. and Willies, L. (ed's) 1994, *Mining before powder*, Peak District Mines Historical Society bulletin Vol 12, No 3
- Fox, B., 2008, *Barclay Fox's journal*, R L Brett, ed, Fowey
- French, C.N., Murphy, R.J. and Atkinson, M.G.C 1999, *Flora of Cornwall*, Wheal Seton Press, Camborne.
- Gilbert, D., 1838, *The parochial history of Cornwall*, 1838 (4 vols)
- Hartgroves, S., Jones, A.M., and Kirkham, G., 2006, The Eathorne menhir, *Cornish Archaeol*, **45**, 97-108
- Hawkins, J., 1832, On a very singular deposit of alluvial matter on St Agnes Beacon, and on the granitised rock which appears in the same situation, *Trans Royal Geological Soc Cornwall*, **4**, 135-44
- Head, S., 2005, Medieval madness: the role of the sacred well, *Meyn Mamvro*, **58**, 14-17
- Hitchins, F., 1824, *The history of Cornwall, from the earliest records and traditions, to the present time*, S. Drew (ed), Helston
- Hull, P.L., 1971, *The Caption of Seisin of the Duchy of Cornwall (1337)*, Devon and Cornwall Record Society, ns, **17**, Torquay
- Hunt, R., 1865. *Popular romances of the west of England, or the drolls, traditions, and superstitions of old Cornwall*, London (2 vols)
- Jackson, J., 1980, in Craddock, P.T, ed, *Scientific studies in early mining and extractive metallurgy*, British Museum Occasional Paper No 20
- Jenkin, A.K.H., 1970, *Cornwall and its people*, Newton Abbot (first published 1934)
- Johns, C., 1998, *St Agnes Head: an archaeological survey*, Truro (Cornwall Archaeological Unit) (HES report 1998R027)
- Johnson, N., 1980, The Bolster Bank, St Agnes – a survey, *Cornish Archaeol*, **19**, 77-88
- Johnson, N., and David, A., 1982, A Mesolithic site on Trevoze Head and contemporary geography, *Cornish Archaeol*, **21**, 67-103
- Johnson, N., Payton, P. and Spalding, A. (eds), 1996, *The conservation value of metalliferous mine sites in Cornwall*, Cornwall Archaeological Unit and Institute of Cornish Studies, ISBN 1 898166 71 4
- Kirkham, G., 2006a, *Chapel Porth, St Agnes, Cornwall: HEATH management assessment*, HES report for the HEATH Project.
- Kirkham, G., 2006b, *St Agnes Beacon, St Agnes, Cornwall: HEATH management assessment*, HES report for the HEATH Project.
- Kirkham, G., 2006c, *The Dodman, Cornwall: archaeological watching brief on trenching for installation of a replacement lightning conductor*, Truro (Historic Environment Service, Cornwall County Council)

- Lake, W., 1867, *A complete parochial history of the county of Cornwall*, Truro and London (4 vols)
- Laws, P., 1993, *Cornish engines: an illustrated souvenir*, The National Trust
- Lysons, D, and Lysons, S, 1814, *Magna Britannia, vol 3: a topographical and historical account of the county of Cornwall*, London
- McCarthy, G., 2006, St Agnes cave and holy well, *Meyn Mamvro*, **60**, 18-21.
- Martyn, T., 1748, *A new and accurate map of the county of Cornwall*, London
- Mattingly, J., 2003, Pre-Reformation saints' cults in Cornwall, with particular reference to the St Neot windows, in *Celtic hagiography and saints' cults*, J. Cartwright (ed), Cardiff, 249-70
- Mattingly, J., n.d. [c 1998], A well without water? The rise and fall of the holy well at Chapel Porth, St Agnes, *Jnl St Agnes Museum Trust*, **14**, 4-14
- Maurice, H.B., 1955, *Friendly Retreat: the story of a parish*, Netherton and Worth
- Morrison, B., 1986, Wheal Lawrence, *Jnl St Agnes Museum Trust*, **2**, 12
- Morrison, B., n.d. [c 1996], George Coulter Hancock, *Jnl St Agnes Museum Trust*, **12**, 27-35
- Murray, J., 1859, *A handbook for travellers in Devon and Cornwall*, London
- NCC (Nature Conservancy Council) 1989, *Guidelines for selection of Biological SSSIs and revisions of 1992, 1995, 1996, 1997, 1998*, NCC, Peterborough.
- Norden, J., 1728 [c 1584], *Speculi Britanniae Pars: a topographical and historical description of Cornwall*, London (facsimile reprint, Newcastle, 1966)
- O'Brien, W. 1990, Prehistoric copper mining in south-west Ireland: the Mount Gabriel type mines, *Proceedings of the Prehistoric Society*, **56**, 269-290
- O'Brien, W. and Brindley, A.L. 1994, *Mount Gabriel: Bronze Age mining in Ireland*, Galway University Press
- Orme, N., 2000, *The saints of Cornwall*, Oxford
- Orme, N., 2007, *Cornish wills, 1342-1540*, Devon and Cornwall Rec Soc, ns, **50**, Exeter
- Padel, O.J., 1985, *Cornish place-name elements*, English Place Name Society **LVI/II**, Nottingham
- Padel, O.J., 1988, *A popular dictionary of Cornish place-names*, Penzance
- Parkes, C., 2008, *The Dodman and St Austell Bay: archaeological survey for the National Trust of the Dodman and Penare, Lambsowden, Lamledra and Bodrugan*, Truro (Historic Environment Service, Cornwall County Council)
- Penaluna, W., 1838, *An historical survey of the county of Cornwall*, Helston (2 vols)
- Penhallurick, R.D., forthcoming, *Ancient and early medieval coins from Cornwall and Scilly*
- Picken, W.M.M., 1950, Landiok, *Old Cornwall*, **4, 11**, 418-23
- Pococke, R., 1888, *The travels through England: Dr Richard Pococke, successively bishop of Meath and of Ossory during 1750, 1751, and later years*, J J Cartwright, ed, London [online text at <http://www.archive.org/details/travelsthroengland00camduoft>]
- Polwhele, R., 1816, *The history of Cornwall, civil, military, religious, architectural, agricultural, commercial, biographical, and miscellaneous*, vol 4, London and

- Truro (7 vols) (first printed 1806 as *The civil and military history of Cornwall, with illustrations from Devonshire*, London)
- Pounds, N.J.G., 1982, *The Parliamentary Survey of the Duchy of Cornwall*, Devon and Cornwall Record Society, ns, **25**, Torquay (2 vols)
- Preston-Jones, A., 1985, Nine maidens dancing, *J St Agnes Mus Trust*, **1**, 7-10
- Preston-Jones, A., 1986, Prehistoric flints from Chapel Porth, *St Agnes Museum Newsletter*, **5**, 4
- Preston-Jones, A., 1990, St Agnes Beacon hillfort?, *St Agnes Museum Newsletter*, **15**, 8
- Preston-Jones, A., 1991, A pagan Celtic garden ornament, *St Agnes Museum Newsletter*, **17**, \$\$
- Preston-Jones, A., 1998, Tower on St Agnes Beacon – post script, *St Agnes Museum Newsletter*, **29**, 5
- Preston-Jones, A., nd [c 1997], St Agnes Beacon, *Jnl St Agnes Museum Trust*, **13**, 3-29
- Quiller-Couch, M., and L., 1894, *Ancient and holy wells of Cornwall*, London (facsimile reprint, Liskeard, 1994)
- Quinnell, H., 1993, A sense of identity: distinctive Cornish stone artefacts in the Roman and post-Roman periods, *Cornish Archaeol*, **32**, 29-46
- Radcliffe, R., 1987, Trevithick Society AGM weekend, *St Agnes Museum Newsletter*, **9**, 1-4
- Redfearn, J., 1985, The Chacewater and Newquay Railway (branchline). A preliminary survey, *Jnl St Agnes Museum Trust*, **1**, 14-23
- Rose, P, 2000-1, Shadows in the imagination: encounters with caves in Cornwall, *Cornish Archaeol*, **39-40**, 95-128
- Sharpe, A. 1986, *Engine houses in St Agnes: an archaeological survey*, CAU report for Carrick District Council
- Sharpe, A., 1992, Treryn Dinas: cliff castles reconsidered, *Cornish Archaeology*, **31**, 65-8
- Sharpe, A. 2005, *The conservation of historic mine buildings in Cornwall: practical guidelines to assist conservation of similar buildings internationally*, Europamines
- Sharpe, A., 2010, *The outstanding universal value of the Cornwall and West Devon mining landscape*, Cornish Mining World Heritage Site Office
- Sharpe, A., Johnson, N. and Lewis, R. 1996, *A guide to conserving historic mine buildings in Cornwall*, Cornwall Archaeological Unit for Cornwall Industrial Heritage Partnership, ISBN 1 898166 76 5
- Sharpe, A., and Smith, J.R., 1986, *Wheal Coates: an archaeological survey for the National Trust*, Truro (Cornwall Archaeological Unit) (HES report 1986R016)
- Stace, C. (1997), *New Flora of the British Isles*, 2<sup>nd</sup> edition, Cambridge University Press.
- Stockdale, F.W.L., 1824, *Excursions in the county of Cornwall*, London
- Stone, J., Alexander, K., Williamson, B., with Lister, J. and Makin, B. 2007, *St Agnes – Chapel Porth and St Agnes Beacon: Nature conservation evaluation*, ELP report for The National Trust.
- Straffon, C., 2001, Focus on St Agnes, *Meyn Mamvro*, **44**, 14-17

Straffon, C., 2005, The goddess in the land – goddess landscape figures in Cornwall, *Meyn Mamvro*, **57**, 8-11, 13

The National Trust, 1985, *The National Trust Archaeological Survey; Chapel Porth, Cornwall*, NT 'greyback report', a copy of which is held in HES library (external report 374).

The National Trust, n.d. [1980s], *St Agnes Beacon, Cornwall*, Grey-back NT archaeological survey (a copy of which is at HES offices, Truro, as external report 388)

Thompson, L., 2009, Our latest purchase, *St Agnes Museum Newsletter*, **53**, 8

Tonkin, T., 1975-6, The parish of St Agnes, *Jnl Royal Institution Cornwall*, **7, 3**, 197-210

Tredinnick, B., n.d. a [c 1992], Eddie Tredinnick – a St Ann's man 1889-1983, *Jnl St Agnes Museum Trust*, **8**, 10-35

Tregellas, J.T., 1868, *Peeps into the haunts and homes of the rural population of Cornwall*, Truro

UKBSG (UK Biodiversity Steering Group) 1995, *Biodiversity: The UK Steering Group Report, 1995. Volume 2: Action Plans*, HMSO.

UKBG (UK Biodiversity Steering Group) 1995, *Biodiversity: The UK Group Tranche 2 Action Plans*, volumes 1 – 6, English Nature, Peterborough.

*UK Biodiversity Action Plan: Species and Habitat Review, 2007 List of Priority Species and Habitats* [www.ukbap.org.uk](http://www.ukbap.org.uk)

Visitor Safety in the Countryside Group 2003, *Managing visitor safety in the countryside: principles and practice*

Waddell, J, 1998. *The prehistoric archaeology of Ireland*, Galway

Warner, R., 1962, Parochial check-lists of antiquities. Hundred of Pydar 1: Parish of St Agnes, *Cornish Archaeol*, **1**, 113-6

Warner, R.B., 1965, Rediscovery of the chapel at Chapel Porth, St Agnes, *Cornish Archaeol*, **4**, 41-3

Warner, R.B., 1967, Some new cliff castles, *Cornish Archeol*, **6**, 111

Wessex Environmental Associates, 2003, *An NVC survey of the Godrevy Head to St Agnes SSSI/SAC (Porthtowan to St Agnes)*.

Woodley, G., 1819, *Cornubia, a poem in five cantos, descriptive of the most interesting scenery, natural and artificial, in the county of Cornwall*, London

2009, *Red Data Book for Cornwall and the Isles of Scilly*, Croceago Press. Praze-an-Beeble.

### **8.3 Websites**

Defence of Britain: <http://ads.ahds.ac.uk/catalogue/specColl/dob/index.cfm>

English Heritage (listed buildings): <http://www.imagesofengland.org.uk/>

A comprehensive and technical introduction to the geology of Cornwall: <http://myweb.tiscali.co.uk/geologyofcornwall/>

The Cornish Mining World Heritage Site [www.cornish-mining.org.uk](http://www.cornish-mining.org.uk)

## **9 Project archive**

The HE project number is **2009041**

The project's documentary, photographic and drawn archive is housed at the offices of Historic Environment, Cornwall Council, Kennall Building, Old County Hall, Station Road, Truro, TR1 3AY. The contents of this archive are as listed below:

1. A project file containing site records and notes, project correspondence and administration.
2. Electronic drawings stored in the directory: R:\Historic Environment (CAD)\CAD Archive\Sites S\St Agnes Chapel Combe, Chapel Porth, Beacon Charlotte Moor and Wheal Coates
3. Digital photographs stored in the directory R:\Historic Environment (Images)\Sites.Q-T\ St Agnes Beacon, Chapel Porth, Coombe and Wh Charlotte Moor\
4. This report is held in digital form as: G:\Historic Environment (Documents)\HE Projects\Sites\Sites S\St Agnes Chapel Coombe, Wheal Coates and Beacon 2009\Report\St. Agnes western properties report combined sections.doc

## 10 Appendices

### 10.1 Appendix 1: SSSI citation

**County:** Cornwall      **Site Name:** Godrevy Head to St Agnes

**Status:** Site of Special Scientific Interest (SSSI) notified under Section 28 of the Wildlife and Countryside Act, 1981, as amended.

**Local Planning Authority:** Cornwall Council

**National Grid Reference:** SW 582423–SW 714518 **Area:** 627.4 (ha) 1,550.3 (ac)

**Ordnance Survey Sheet 1:50,000:** 2 0 3 **1:10,000:** SW 54 SE; SW 64 NW, SW, NE, SE; SW 75 SW; SW 74 NW, SW; 65 SE.

**Date Notified (Under 1949 Act):** 1 9 5 1 **Date of Last Revision:** –

**Date Notified (Under 1981 Act):** 1 9 8 9 **Date of Last Revision:** –

**Other Information:** Within Area of Outstanding Natural Beauty. Partly within Heritage Coast Area. Partly owned by National Trust. Site has been extended and has part deletions. A Nature Conservation Review site for coastlands and lowland heathlands.

#### **Description and Reasons for Notification:**

The site is located on the north Cornwall coast and extends for some 20 km from Godrevy Head to Polberro Cove just west of St. Agnes. It lies mainly on Devonian sandstones and shales although the northern part of the site is composed of Grampound Grit. This coastline exhibits extensive maritime heathland and grassland in addition to sand dune and scattered scrub communities. These habitats contain a number of rare plants, and the cliffs, together with the offshore rocks, support large breeding seabird colonies.

The coastline between Godrevy Towans and Godrevy Head provides classic coastal sections for studies of the Quaternary stratigraphy and geomorphology of southwest England. At the base of the sequence a shore platform with a shattered rock surface is overlain by raised-beach, sandrock and head deposits. The sections demonstrate both lateral and vertical facies variations in the raised beach and head. The full succession of shore platform and overlying deposits, together with the sedimentary detail of the latter, provide a valuable stratigraphical record of changing environmental conditions, sea-levels and geomorphological processes during the late Quaternary, although firm dating control has yet to be established. In addition Godrevy Point provides important exposures showing the complex sequence of fold structures produced during crustal compression at the time of the Variscan mountain building episode, at the end of the Carboniferous Period. Structures of four of the five main episodes of deformation of south Cornwall are present, affecting an alternation of slates, siltstones and sandstones of the Mylor Slate Formation. Variation in fold styles and attitudes reflects the variation of rock types throughout the section. At the northern end, small-scale tight, first generation folds can be seen in slates with thin siltstone beds. Further south a complex pattern of interfacing structures occurs involving three phases of folds and related structures. The main fold here belongs to the third generation of structures and is deformed by fourth and fifth generation structures. Third and fifth generation structures had not until recently been differentiated and this site provides important evidence of the temporal relationships between them.

The wind pruned, 'waved' maritime heathland is dominated by ling *Calluna vulgaris*, with bell heather *Erica cinerea*, bristle bent *Agrostis curtisii* and western gorse *Ulex gallii*. Common throughout are saw-wort *Serratula tinctoria*, spring squill *Scilla verna*, burnet rose *Rosa pimpinellifolia* and betony *Stachys officinalis*, together with the rare pale dog-violet *Viola lactea*, the nationally rare Cornish eyebright *Euphrasia vigursii* and hairy greenweed *Genista pilosa*. In addition, the heathland along the Chapel Porth



valley supports the nationally rare Dorset heath *Erica cicliaris*. Red fescue *Festuca rubra* dominates the species-rich, fringing maritime grassland. Typical associates are wild thyme *Thymus praecox*, kidney vetch *Anthyllis vulneraria* and thrift *Armeria maritima* with the rarities golden samphire *Inula crithmoides*, tall ramping fumitory *Fumaria bastardii*, Cornish gentian *Gentianella anglica* subspecies *cornubiensis* and autumn squill *Scilla autumnalis*. This cliff grassland also supports a number of nationally rare species including shore dock *Rumex rupestris*, wild asparagus *Asparagus officinalis* and carrot-broomrape *Orobanche maritima*, which is parasitic on wild carrot *Daucus carota*.

The dune system at Godrevy exhibits extensive species-rich dune grassland developed on wind-blown calcareous sand. The sward is dominated by red fescue with abundant wild thyme, lady's bedstraw *Galium verum* and eyebright *Euphrasia officinalis*. Pyramidal orchid *Anacamptis pyramidalis* and autumn lady's tresses *Spiranthes spiralis* occur and the nationally rare slender bird's-foot trefoil *Lotus angustissimus* has been recorded here. Dune scrub with wild privet *Ligustrum vulgare* and blackthorn *Prunus spinosa* is scattered throughout. Another more restricted area of calcareous grassland occurs on wind-blown sand, on the slopes north of Porthtowan. Herbs are abundant in the red fescue and sea fern-grass *Desmazeria marina* turf, with oxeye daisy *Leucanthemum vulgare*, wild clary *Salvia verbanaca* and the rare Portland spurge *Euphorbia portlandica*. Of particular note is the presence of a large colony of the nationally rare spotted cat's-ear *Hypochoeris maculata*.

The exposed rocky intertidal shore supports a varied flora and fauna including the scarlet and gold star coral *Balanophyllia regia*, a species rarely recorded on Cornish coasts. Grey seal *Halichoerus grypus* breed in inaccessible sea caves.

The Godrevy Head to St Agnes coastal section supports a rich invertebrate fauna. Twenty-five species of butterfly occur here including green hairstreak *Callophrys rubi*, small pearl-bordered fritillary *Boloria selene* and the nationally scarce silver-studded blue *Plebejus argus*. Ten species of dragonfly and damselfly *Odonata* have been recorded, including emerald damselfly *Lestes sponsa* and the nationally scarce blue-tailed damselfly *Ischnura pumilio*.

The cliffs and offshore rocks provide important nest sites for a number of breeding seabird species including guillemot *Uria aalge*, razorbill *Alca torda*, cormorant *Phalacrocorax carbo* and the largest breeding colony of kittiwake *Rissa tridactyla* in Cornwall. Peregrine *Falco peregrinus* and rock pipit *Anthus spinoletta* breed on the cliffs whilst stonechat *Saxicola torquata* nest in scattered cliff-top scrub.

## 10.2 Appendix 2: Godrevy Head to St. Agnes SAC citation

<b>Country</b>	England
<b>Unitary Authority</b>	Cornwall
<b>Centroid *</b>	SW700496
<b>Latitude</b>	50 18 02 N
<b>Longitude</b>	05 13 49 W
<b>SAC EU code</b>	UK0012549
<b>Status</b>	Designated Special Area of Conservation (SAC)
<b>Area (ha)</b>	128.07

\* This is the approximate central point of the SAC. In the case of large, linear or composite sites, this may not represent the location where a feature occurs within the SAC.

## General site character

Marine areas. Sea inlets (1%)  
Coastal sand dunes. Sand beaches. Machair (10%)  
Shingle. Sea cliffs. Islets (10%)  
Inland water bodies (standing water, running water) (2%)  
Bogs. Marshes. Water fringed vegetation. Fens (2%)  
Heath. Scrub. Maquis and garrigue. Phygrana (35%)  
Dry grassland. Steppes (35%)  
Other land (including towns, villages, roads, waste places, mines, industrial sites) (5%)

[Boundary map](#) and associated biodiversity information on the NBN Gateway. [Natura 2000 data form](#) for this site as submitted to Europe (PDF format, size 30kb). [Interactive map](#) from MAGIC (Multi-Agency Geographic Information for the Countryside).

### Note:

When undertaking an appropriate assessment of impacts at a site, **all** features of European importance (both primary and non-primary) need to be considered.

## Annex I habitats that are a primary reason for selection of this site

**4020 Temperate Atlantic wet heaths with *Erica ciliaris* and *Erica tetralix*** \* Priority feature

This site is characterised by maritime **4030 European dry heaths**, but along the Chapel Porth valley it supports stands of Dorset heath *Erica ciliaris*. At this site the species occurs on drier substrates than in Dorset.

### **4030 European dry heaths**

The dry heathland in this site represents typical examples of wind-pruned, 'waved' H4 *Ulex gallii* – *Agrostis curtisii* and H8 *Calluna vulgaris* – *Ulex gallii* heath, with some maritime features. Several noteworthy species occur in the site, including bristle bent *Agrostis curtisii*, red-flowered kidney vetch *Anthyllis vulneraria* var. *coccinea*, Portland spurge *Euphorbia portlandica* and hairy greenweed *Genista pilosa*. Scattered areas of **4020 Temperate Atlantic wet heaths with *Erica ciliaris* and *Erica tetralix*** also occur.

## Annex I habitats present as a qualifying feature, but not a primary reason for selection of this site

Not applicable.

## Annex II species that are a primary reason for selection of this site

**1654 Early gentian *Gentianella anglica***

Although not one of the largest populations, this site is considered to be important because it is representative of **early gentian *Gentianella anglica*** on a non-calcareous substrate in the extreme west of its range. Populations in Cornwall were formerly regarded as a subspecies, *G. anglica* ssp. *cornubiensis* (Pritchard 1959) but are now viewed as mixed populations of *G. anglica* ssp. *anglica* and *G. x davidiana*, its 'hybrid' with autumn gentian *Gentianella amarella* (Rich *et al.* 1997).

## Annex II species present as a qualifying feature, but not a primary reason for site selection

Not applicable.

*St. Agnes Beacon, Tubby's Head, Wheal Coates, Chapel Combe, Charlotte and Towan Moors, St. Agnes Cornwall: archaeological and ecological assessment.*

### 10.3 Appendix 3: Rare or Notable Plant Species previously recorded on the property that could be affected by proposed works.

Largely extracted from the Nature Conservation Review, carried out by ELP in 2007

1. Rare and scarce species (not based on IUCN criteria): Nationally Rare - Occurring in 15 or fewer hectads in Great Britain. Excludes rare species qualifying under the main IUCN criteria. Nationally Scarce - Occurring in 16-100 hectads in Great Britain. Excludes rare species qualifying under the main IUCN criteria.

2. Red listing based on 2001 IUCN guidelines: Endangered - A taxon is Endangered when it is not Critically endangered but is facing a very high risk of extinction in the wild in the near future. Vulnerable - A taxon is Vulnerable when not Critically Endangered or Endangered but is facing a high risk of extinction in the wild in the medium term future. Near Threatened - Taxa which do not qualify for Lower Risk (conservation dependent), but which are close to qualifying for Vulnerable. In Britain, this category includes species which occur in 15 or fewer hectads but do not qualify as Critically Endangered, Endangered or Vulnerable.

3. Biodiversity Action Plan Lists: Species for which Action Plans have been/are being written.

4. Bern Convention – Appendix 1: Special protection (‘appropriate and necessary legislative and administrative measures’) for the plant taxa listed, including prohibition of deliberate picking, collecting, cutting, uprooting and, as appropriate, possession or sale.

5. Wildlife and Countryside Act 1981– Schedule 8: Plants which are protected from: intentional picking, uprooting or destruction (Section 13 1a); selling, offering for sale, possessing or transporting for the purpose of sale (live or dead, part or derivative) (Section 13 2a); advertising (any of these) for buying or selling (Section 13 2b).

6. Habitat and Species Directive – Annex 2 and 4: Animal and plant species of Community interest (i.e. endangered, vulnerable, rare or endemic in the European Community) in need of strict protection. They are protected from killing, disturbance or the destruction of them or their habitat. Note that the contents of this annex have been updated in April 2003 following the Treaty of Accession ( English Listing).

Species	UK Status	Cornwall Plant Register (2006)	Location	Date of last record and source	Notes
<i>Anthemis arvensis</i> Corn Chamomile	2. Endangered	Rare (1-3 tetrads)	Chapel Porth –Porthtowan arable reversion fields	Bennallick 2004 ELP 2007	
<i>Asparagus officinalis</i> ssp. <i>Prostrates</i> Wild Asparagus	1. Nationally scarce 2. Endangered 3. Priority Species	Scarce (4-10 tetrads)	Cliff slopes north of Tubby’s Head  Ditto (SW69905057)	Bennallick 2001, in Rich et al (2002); WES NVC Survey 2003	220 plants in 2001 – second largest UK population. Large population recorded during the WES survey.

<i>Carex viridula</i> <i>ssp. Viridula</i> Small-fruited Yellow-sedge		Scarce (4-10 tetrads)	Chapel Coombe valley	Margetts and David 1981	
<i>Chrysanthemum segetum</i> Corn Marigold	2. Vulnerable	It is not included in the Cornwall RPR, but is part of a 'waiting list' as a potential candidate.	Chapel Porth - Porthtowan arable reversion fields	Benallick 2004 ELP 2007	
<i>Cuscuta epithymum</i> Common Dodder	2. Vulnerable	It is not included in the Cornwall RPR, but is part of a 'waiting list' as a potential candidate.	Chapel Porth and St. Agnes Beacon	ELP 2007	Very common on the maritime heaths of the north coast of Cornwall (French et al 1999)
<i>Daucus carota</i> <i>ssp. Gummifer</i> Wild Carrot	1. Nationally Scarce	Species to be included in the Cornwall RPR that occur in more than 20 tetrads	Chapel Porth; Tubby Head Cliff tops and slopes	ELP 2007	Coastal habitats
<i>Erica ciliaris</i> Dorset heath	1. Nationally Rare	Local (11-20 tetrads)	Southern slopes above Chapel Coombe At St Agnes, flushed moist heaths. Plateau between Charlotte United Mine and Towan cross	ELP 2007	A designated feature of the Godrevy Head to St Agnes SAC.
<i>Euphorbia exigua</i> Dwarf Spurge	2. Near Threatened	Local; not included in the Rare Plant Register.	Chapel Porth - Porthtowan arable reversion fields	Benallick 2004	
<i>Euphrasia vigursii</i> Vigur's Eyebright	1. Nationally Rare 2. Endangered 3. Priority Species	Local (11-20 tetrads)	Short grassland within <i>Ulex gallii</i> heaths South of Porthtowan SW687477	WES NVC survey 2003	An endemic species restricted to Devon and Cornwall; locally common along this stretch of the coast (French et al 1999)
<i>Genista pilosa</i> Hairy Greenweed	1. Nationally Rare 2. Near Threatened	Local (11-20 tetrads)	Chapel Porth - coastland. Abundant constituent of maritime heathland and grassland northwards from Chapel Porth to St Agnes Head	ELP 2007	It often grows near the cliff edge in heathland and maritime grassland (French et al 1999).

<i>Genista tinctoria</i> <i>ssp littoralis</i> Dyer's Greenweed	1. Nationally Rare	Frequent along north coast of Cornwall; Species to be included in the Cornwall RPR that occur in more than 20 tetrads.	On species rich grassland over Aeolian sand. Single population at SW69254855	WES NVC survey 2003	In clifftop vegetation
<i>Gentianella</i> <i>anglica</i> Early Gentian	3. Priority Species 4. Appendix 1 5. Schedule 8 6. Annex 2 and 4	Local (11-20 tetrads)	Coastal slope near Porthtownan SW693481 Also clifftop grassland SW693485 in 1995	French et al 1999; A single plant of the Cornish Early Gentian <i>G. x davidiana</i> found by ELP (2007) at SW 69267 48663	Rare and local species. It is now realised that the plant formerly known as <i>G. anglica ssp.</i> <i>cornubiensis</i> is a hybrid ( <i>G. x davidiana</i> ) between <i>G. amarella</i> and <i>G. anglica</i> (Rich et al 1997).
<i>Inula</i> <i>crithmoides</i> Golden Samphire	1. Nationally Scarce	Species to be included in RPR that occur in more than 20 tetrads	Chapel Porth - coastland	ELP 2007	Steep, often precipitous cliffs
<i>Limonium</i> <i>binervosum</i> agg. Rock Sea- lavender	3. Removed from Priority list 2007	Locally common (French et al 1999); not included in RPR.	Chapel Porth - coastland	ELP 2007	On cliff faces growing from crevices in the rock, on cliff ledges and steep slopes with a minimum of soil and little other vegetation
<i>Limonium</i> <i>britannicum</i> <i>ssp.</i> <i>britannicum</i> <i>var.</i> <i>britannicum</i>	3. Removed from Priority list 2007	This endemic taxon occurs on cliffs on the north Cornish coast at several locations (French et al 1999). Not included in RPR	Cliffs at Chapel Porth and Tubby's Head	?	Similar to above.
<i>Lotus</i> <i>angustissimus</i> Slender Bird's- foot Trefoil	1. Nationally scarce 2. Near Threatened	Local (11-20 tetrads) coastland	Chapel Porth - Coastal species which grows in thin, summer- dry soil by paths	?	
<i>Lotus</i> <i>subbiflorus</i> Hairy Bird's-foot Trefoil	1. Nationally Scarce	Species to be included in RPR that occur in more than 20 tetrads.	Chapel Porth - coastland	Unconfirmed record, 1990 survey	Coastal species which grows in short-turf and dry, gravelly areas along cliffs and by coastal footpaths

<i>Matricaria recutita</i> Scented Mayweed		Widespread – not included in the RPR	Chapel Porth – Porthtowan arable reversion fields	Bennallick (2004) ; LP 2007	
<i>Papaver hybridum</i> Rough Poppy		Local (11-20 tetrads)	Chapel Porth – Porthtowan arable reversion fields	Bennallick (2004); ELP (2007)	Normally found in areas affected by wind-blown calcareous sands, on the north Cornish coast
<i>Pinguicula lusitanica</i> Pale Butterwort		Not included in RPR	Chapel Porth – coastal flushes	Keith Alexander 2007	A species of bog vegetation; found alongside small streams, flushes or ditches.
<i>Polygonum urivagum</i> Cornfield knotgrass		Rare (1-3 tetrads)	Chapel Porth – Porthtowan arable reversion fields	Bennallick (2004); ELP (2007)	
<i>Silene gallica</i> var. <i>anglica</i> Small-flowered catchfly	1. Nationally Scarce 2. Endangered 3. Priority Species	Species to be included in RPR that occur in more than 20 tetrads.	Chapel Porth – Porthtowan arable reversion fields	Bennallick (2004); ELP (2007)	An arable weed and on disturbed ground near the coast.
<i>Silene noctiflora</i> Night-flowering Catchfly	2. Vulnerable	Rare (1-3 tetrads).	Chapel Porth – Porthtowan arable reversion fields	Bennallick (2004); ELP (2007)	An arable weed mostly of sandy soils; hence most of its records are coastal. It is recorded from mine waste at Wheal Uny (SW64, near Redruth). At West Pentire, Newquay, the species grows well in the arable fields, more than 100 plants being seen in 1997 by HM Meredith.
<i>Veronica polita</i> Grey Field-speedwell		It is not included in the Cornwall RPR.	Chapel Porth	Bennallick (2004); ELP (2007)	Regarded as rare in Cornwall by French et al (1999) and Bennallick's 2004 record was a new station for the species.
<i>Viola lactea</i> Pale Dog-violet	1. Nationally scarce 2. Vulnerable 3. Priority Species	Species to be included in Cornwall RPR that occur in more than 20 tetrads.	Chapel Porth	ELP (2007)	Less frequent than it used to be, possibly due to loss of habitat and changes in management. It is a plant of drier heaths and is often found growing along tracks. Sometimes it appears in great numbers after heathland and gorse fires (French et al 1999).

## 10.4 Appendix 4: Invertebrates - Rare and threatened invertebrates known from the NT Chapel Porth and St Agnes Beacon properties

Extracted from the Nature Conservation Review, carried out by ELP in 2007. CRDB Listed in Red Data Book for Cornwall and the Isles of Scilly (1997) A number of records received from ERCCIS require expert verification, and the species have been bracketed.

Species	Status & Legislation	Location	Date & Source	Ecology & Distribution
<b>Molluscs</b>				
Green Snail <i>Ponentina subvirescens</i>	Nat Scarce; CRDB: widespread along SW coasts	Mulgram Hill, Wheal Coates & Chapel Porth north cliffs	2007, 1990 & 1989 KNA Alexander	Amongst patchy vegetation of short grass or heath on well-drained non-calcareous soils developed over granite, sandstones or slates on coastal cliffs in extreme SW of Britain. SW European, confined to Atlantic coasts.
Heath Snail <i>Helicella itala</i>	Very local & increasingly scarce nationally.	South & North cliffs, Chapel Porth; Mulgram Hill	2007, 190 & 1989 KNA Alexander	Dry sunny calcareous places: either long-established short sward calcareous grassland, or coastal sites with shelly sand. Clear evidence for losses on the Chalk and Limestone, but sandy sites appear more stable. A west European speciality.
<b>Woodlice</b>				
A pill woodlouse <i>Armadillidium pulchellum</i>	Nat Scarce; CRDB: very local on north Cornwall coast	Wheal Charlotte area, Mulgram Hill & Chapel Porth north cliffs	2007 KNA Alexander	Dry well-drained soils, usually calcareous grasslands inland but seacliffs in north and west; ascends into heather canopy in wet periods. A north-west European speciality, with Britain & Ireland containing the greatest concentration of sites.
<b>Centipedes</b>				
<i>Lithobius pilicornis</i>	Nat Scarce	Wheal Charlotte	1979 KNA Alexander	A generalist hunter in open habitats. Widespread in native situations across Devon, Cornwall & Pembrokeshire, but synanthropic elsewhere in GB. SW Europe only.
<b>Spiders</b>				
A dictynid spider <i>Lathys stigmatisata</i> (syn. <i>puta</i> )	RDB3; CRDB: no Modern Cornish records	Heathland on seaward side of Wheal Charlotte	1968/69 P Merrett [ERCCIS also have another record dated 1974 but the details were not supplied]	Generally found beneath loose rocks, among heather and grass and among sparse vegetation on shingle. Originally discovered in GB in W Cornwall & Lundy, and subsequently found on Kent & E Sussex coast, & Ramsey, Pems.
A money spider <i>Walckenaera incisa</i>	Nat Scarce; CRDB: only Cornish record	Heathland on seaward side of Wheal Charlotte	1968/69 P Merrett	Found at ground level in a variety of situations, including grassland, heathland and woodland, with freely-draining soils and lack of disturbance the main common factors. Thinly scattered throughout England & Wales.
A money spider <i>Evansia</i>	Very local; Only	Heathland on seaward side of	1968/69 P Merrett	Usually found within ant nests beneath rocks or logs on dry peaty



<i>merens</i>	Cornish record	Wheal Charlotte		soils on open heaths and moors, across N & W Britain.
A money spider <i>Tapinocyba mitis</i>	Nat Scarce; UK BAP Priority Species; CRDB: only Cornish record	Heathland on seaward side of Wheal Charlotte	1968/69 P Merrett	Formerly frequent in lowland heathland areas in the New Forest, Dorset and West Sussex, but never particularly abundant and no UK records post 1979; an international rarity as only known elsewhere from Latvia. It has been found in deep litter and moss on dry heath, and is most numerous in mature heather; burning is undoubtedly damaging. Chapel Porth is the only known site away from the core population.
[A spider Tetragnatha - pinicola record requires expert confirmation]	Nat Scarce; CRDB; not confirmed in Cornwall but ERCCIS hold many records	Chapel Porth	ERCCIS have a 1973 record from this area but no Cornish records are recognized by the British Arachnological Society	Associated with young trees and tall herbage in open sheltered situations, including coppices recovering from cutting; widespread across central and south-eastern England, as far west as Devon; many old records are doubtful because of confusion with the widespread <i>T. extensa</i> . The Cornish records held by ERCCIS are all pre 1980 and require voucher material.
<b>Grasshoppers &amp; Bush-crickets</b>				
Lesser Cockroach <i>Ectobius panzeri</i>	Nat Scarce; CRDB: Locally common in W Cornwall	South & North cliffs, Chapel Porth; & Wheal Coates area	2007 & 1990 KNA Alexander; 1998 ERCCIS	A speciality of the mild humid conditions along southern coastal habitats, living amongst wind-pruned heather, gorse and dense grass mats.
		St Agnes Beacon	2007 KNA Alexander	
<b>Bugs</b>				
A plant bug <i>Globiceps fulvicollis cruciatus</i>	Nat Scarce; first Cornish record	Mulgram Hill	2007 KNA Alexander	Patchily distributed across Britain, very scattered in south-east, largely coastal in west and absent from large areas of the midlands and north. Usually associated with low-growing willows <i>Salix</i> spp, particularly creeping willow <i>S. repens</i> , and sites tend to be dune slacks or wet heath. Largely ground-living and omnivorous, feeding mainly on other invertebrates, but also climbing on plants such as creeping willow and bilberry to feed on plant material.
Thyme Lace Bug <i>Lasiacantha capucina</i>	RDB3; CRDB:	widely in W Cornwall Southern end of Chapel Porth	1990 NT Bio Survey	Only known in GB from western Cornwall. Associated with herb-rich grassland and grass heath where rocky outcrops are covered in mats of the foodplant, thyme. Light grazing pressure generally required to keep areas sufficiently open - absent where heavy grazing or no grazing. The Cornish population is flightless, so a poor coloniser, and assumed to be relict from an interglacial period.

<b>Butterflies</b>				
Silver-studded Blue <i>Plebeius argus</i>	UK BAP Priority Species; very local & declining in Cornwall since 1995	Chapel Porth area	1999 P Harris	Larvae feed on a wide variety of ericaceous and leguminous plants, including <i>Calluna</i> , <i>Erica</i> and <i>Ulex</i> spp on heathlands, bird's-foot-trefoil, rock-rose and horseshoe vetch on calcareous grasslands and sand dunes.; requires short or sparse vegetation, caused by thin soils or fires. Restricted distribution in southern Britain but may occur in large numbers in suitable heathland and coastal sites; however, major decline through most of its GB range. St Agnes coast has one of key Cornwall populations.
		Chapel Porth, large numbers	1994 M Edwards	
		Chapel Porth	1965 Invertebrate Site Register	
Pearl-bordered Fritillary <i>Boloria euphrosyne</i>	UK BAP Priority Species; rare & declining in Cornwall	Chapel Coombe & St Agnes' Well	1990 KNA Alexander	Larvae mainly feed on common dog-violet but may also use other violet species; requires abundant food plants growing in short, sparse vegetation, where there is abundant leaf litter – conditions maintained through rough grazing and/or by periodic clearance work. Once widespread but has declined rapidly in recent decades.
Small Pearl-bordered Fritillary <i>Boloria selene</i>	SOCC; National range declining; locally common and widespread in Cornwall	Chapel Porth	1990-1983 many records (ERCCIS); 1965 Invertebrate Site Register	Larvae feed on common dog-violet and marsh violet, where these grow in abundance in humid unshaded but sheltered situations, and where the vegetation structure is kept open either by rough grazing or periodic clearance of coarse vegetation. It remains widespread and locally abundant in the north and west of Britain, but is declining through habitat loss and degradation.
Grayling <i>Hipparchia semele</i>	UK BAP Priority Species.	Location unclear on the site	Unknown	This species tends to occur in more coastal areas with dry, sparse vegetation and sheltered sunny spots and is likely to occur on patchy heathland sites here.
<b>Moths</b>				
Thrift Clearwing <i>Bembecia muscaeformis</i>	Nat Scarce; local in Cornwall	Cliffs near Tubby's Head	1990 KNA Alexander	Larvae feed in the crowns and roots of thrift, favouring small stressed plants growing on almost bare rock; adult attracted to flowers of thyme and thrift. SW rocky coasts.
[Square-Spot Dart <i>Euxoa obelisca</i> ]	Nat Scarce	SW75A	1969 ERCCIS, but record not recognized in Smith (1997)	Ecology not known, but locally common on hard rocky sea cliffs around much of GB.
[A grass moth <i>Crambus pratella</i> ]	Nat Scarce	SW699505	1989 ERCCIS but record not recognized in Smith (1997)	Larvae feed on roots and stem bases of grasses growing in dry, sandy places; on dry grassy pastures where the turf is short; widespread across GB. Smith (1997) only able to repeat Cornish records from Victoria County History (1906) and says recent search has been unsuccessful.
A micro-moth <i>Phyllonorycter</i>	pRDB1; CRDB: St	Chapel Porth	1986, 1984, 1983 RJ Heckford;	Restricted in Britain to the St Agnes area of Cornwall where it was discovered in 1983; larvae feed in leaf mines on hairy greenweed

<i>staintonella</i>	Agnes area only		1985 JR Langmaid (Smith 1997)	<i>Genista pilosa</i> . Only three localities known despite extensive searching.
<b>Flies</b>				
A cranefly <i>Molophilus propinquus</i>	Nat Scarce	Chapel Porth	1983 AE Stubbs	Larvae probably develop in wet sandy soil along the banks of streams and ditches, either shaded or open. Widely scattered through GB but known from few modern records.
A cranefly <i>Tasiocera laminata</i>	Nat Scarce	Chapel Porth	1983 AE Stubbs	A poorly known species of wet woodland. Known from sites across N & W of England & Wales, including Devon and Cornwall.
A hoverfly <i>Eumerus sabulorum</i>	Nat Scarce; CRDB	SW6949	1935 ERCCIS but details not available	Larvae are thought to tunnel in bulbs or roots; an association with <i>Jasione Montana</i> has been suggested; adults attracted to bare ground and sunny banks, or else seen hovering over short vegetation; coastal species, from Hampshire and Dorset westwards and northwards to Anglesey. Widespread on north Cornish and Dyfed coasts in particular
A conopid fly <i>Zodion cinereum</i>	Nat Scarce	Heath south of Chapel Porth	1990 NT Bio Survey; 1983 ERCCIS	Larvae develop as parasitoids on adult solitary bees of the genera <i>Hylaeus</i> and <i>Halictus</i> ; adults may be found visiting blossom or near to colonies of the host bees. Widely across England and Wales but with a south-easterly bias.
Golden Samphire Fruit Fly <i>Myopites eximius</i>	RDB3; scattered on North Cornwall coast	Tubby's Head 2007	KNA Alexander	Larvae feed on the developing seeds in the flowerheads of golden samphire where it grows in coastal salt marshes in the Thames & Solent Basins and on rocky seacliffs in the SW.
<b>Bees</b>				
[A sand wasp <i>Ammophila campestris</i> ]	Not British	SW6951	1965 ERCCIS, but details not available	Only known in the British isles from the Channel Islands.
[A mining bee <i>Andrena nana</i> ]	RDB1 (Endangered)	SW697496; SW7150; SW7251	1990 ERCCIS, 1965 but details not available	Only five confirmed GB records, from Kent, Surrey and Suffolk; thought to favour open habitats with light sandy soils. Falk (1991) comments that old records other than the above are likely to be misidentifications.
A mining bee <i>Andrena nigriceps</i>	Nat Scarce; CRDB: Formerly widespread	Bare and short heath areas on the small col between the point at the north of the stream mouth and the	1994 M Edwards	A ground nesting bee associated with open situations on dry freely-draining soils. Formerly widespread across Cornwall but only 4 sites were known between 1980 and 1997.

		main coast		
Four-spotted Flower Bee <i>Anthophora quadrimaculata</i>	Nat Scarce	SW7251	1965 ERRCIS, but details not available	Nests in small aggregations in sandy banks and head cliffs, clay and stone walls, and mortar in walls; adults gather pollen mostly from Lamiaceae. Widespread in southern counties, especially in south-east where favours gardens with cat-mint and lavender - no longer regarded as nationally scarce as a result.
<b>Beetles</b>				
<i>Harpalus attenuatus</i>	Very local; scarce in Cornwall	Chapel Porth	1990 KNA Alexander	A southern species of coastal dunes and dry sandy places generally; widely along southern coasts. Phytophagous as larvae and probably also so as adults.
A leaf beetle <i>Chrysolina haemoptera</i>	Nat Scarce; local on Cornish coast	Sandy slopes just north of Chapel Porth	1989 KNA Alexander	Adults and larvae feed on plantains where they grow in base-rich or calcareous situations. Widespread in southern England and especially coastally.
A leaf beetle <i>Calomicrus circumfusus</i>	Nat Scarce; CRDB: widespread on heaths	Chapel Porth St Agnes Beacon	1983 AE Stubbs 2007 KNA Alexander 1989 NT Bio Survey	Adults feed on the foliage of gorse and western gorse, while the larvae probably feed at the roots; mostly found in heathland situations. Widely scattered across southern Britain but concentrated in SW.
A ground weevil <i>Cathormiocerus maritimus</i>	RDB3 (Rare); CRDB: very local on north Cornwall & Lizard coasts	North cliffs, Chapel Porth & Tubby's Head	2007 KNA Alexander	Ground-living in sparsely-vegetated places on sea cliffs; Cornwall, Devon, Dorset & Hampshire. Atlantic SW European species, known outside of Britain only from western France.
A seed weevil <i>Polydrusus confluens</i>	Nat Scarce; widely in Cornwall	Chapel Porth	2007 & 1990 KNA Alexander	A flightless species which feeds on gorse and broom in a wide variety of situations; southern within GB.
A weevil <i>Acalles ptinoides</i>	Nat Scarce; local in Cornwall	St Agnes Beacon; Numerous amongst heathers	2007 KNA Alexander	Adults flightless and confined to primary woodland and old heathland, where the larvae are thought to develop in woody stems.
[A weevil <i>Anthonomus ulmi</i> ]	Nat Scarce	SW697496	1990 ERRCIS, details unavailable - almost certainly a transcription error	Almost invariably found on elm <i>Ulmus procera</i> ; larvae develop in flowerbuds, hollowing them out; widely distributed
A weevil <i>Limobius borealis</i>	Nat Scarce	SW6949	1905 ERRCIS, but details not available	Feeds on large and vigorous patches of native <i>Geranium</i> growing in open rocky situations or at the edges of woodlands; very local but can be abundant when found; widespread across England and Wales.



Fig 3. The extent and boundaries of the Cornish Mining World Heritage site. The project area lies wholly within the World Heritage Site.

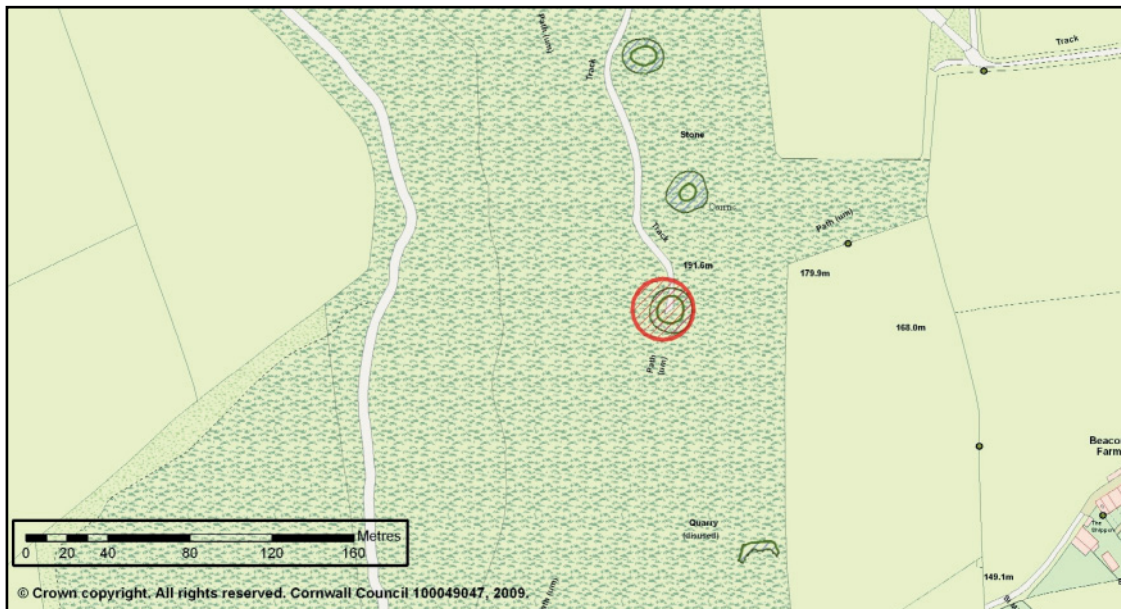


Fig 4. The extent of the scheduled area for Barrow [90355] on St. Agnes Beacon. Scheduled Monument 29667.

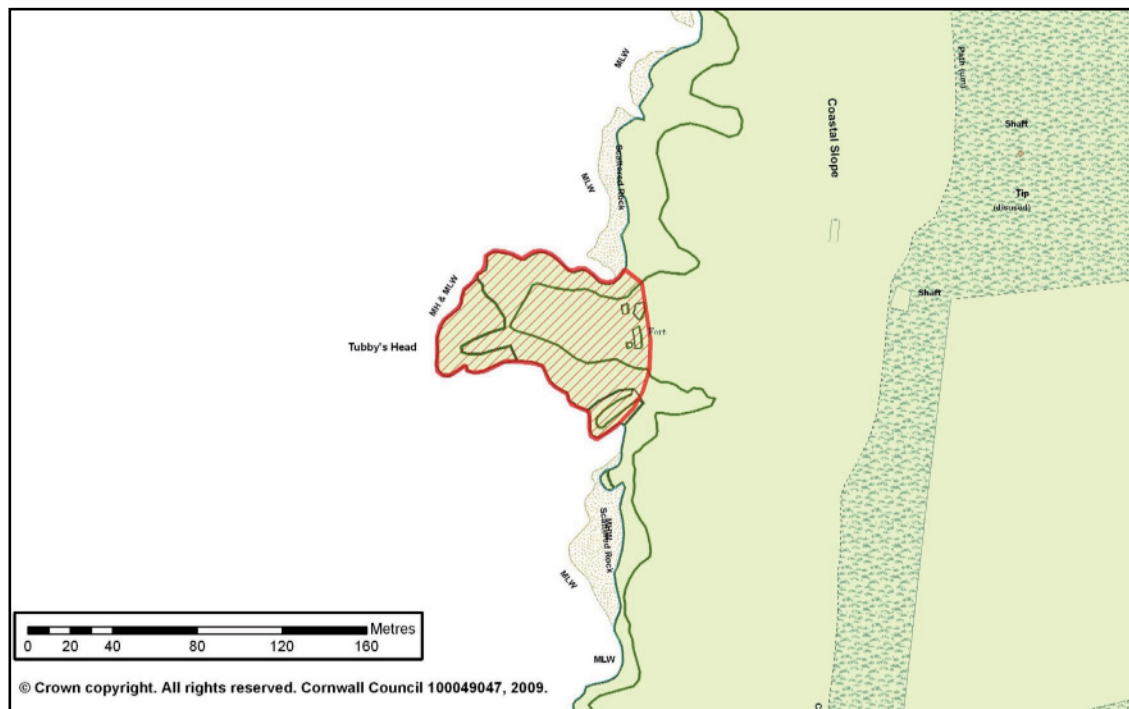


Fig 5. The extent of the scheduled area at the Tubby's Head cliff castle [90054], scheduled monument Cornwall 726.

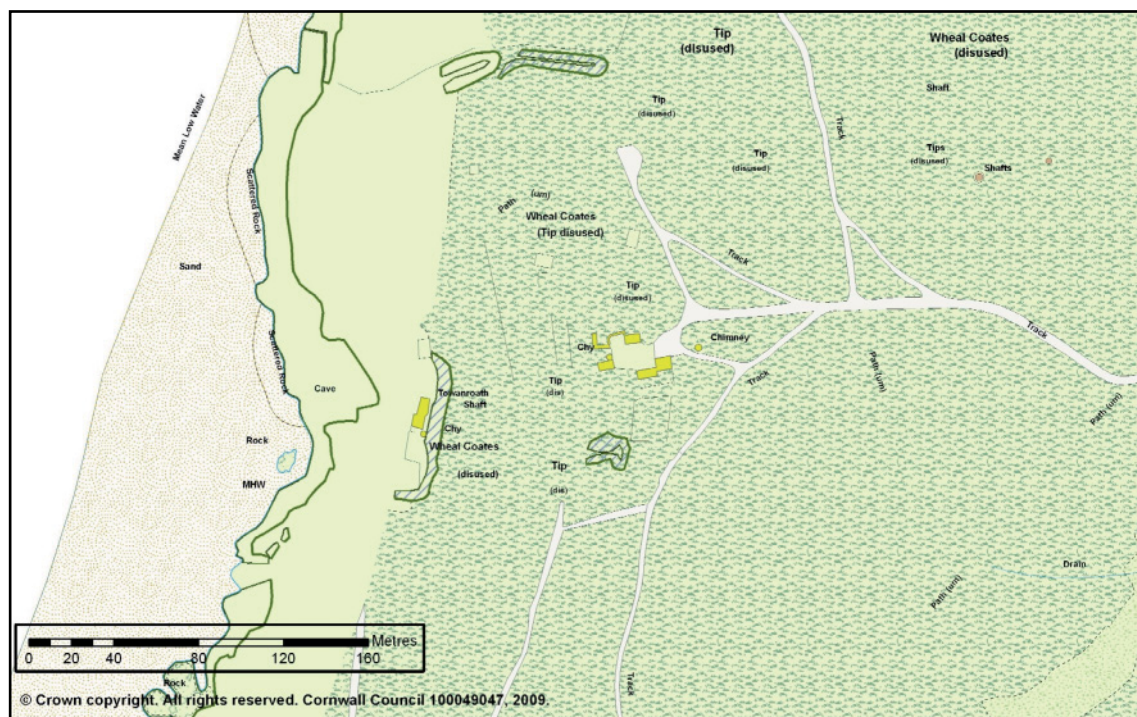


Fig 6. Listed buildings (yellow) at Wheal Coates.

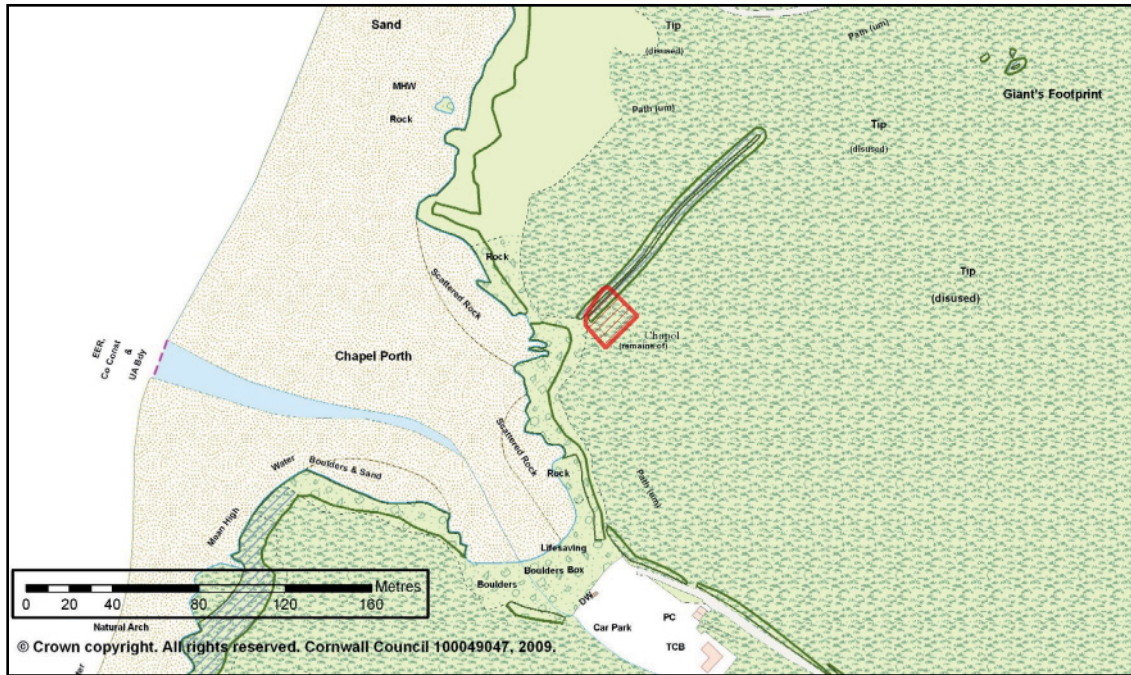


Fig 7. The extent of the scheduled area at St. Agnes Chapel, Porth Towan [190468], scheduled monument Cornwall 940.

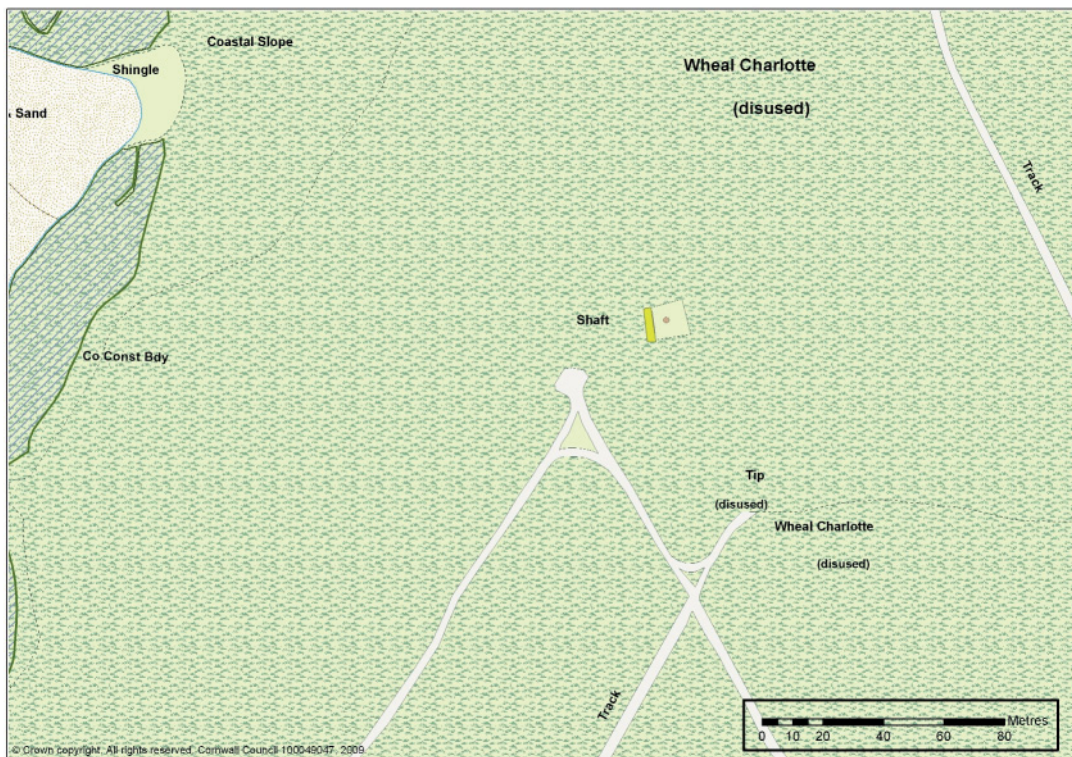


Fig 8. The Grade II listed pumping engine house bob wall at Great Charlotte, Charlotte Moor.

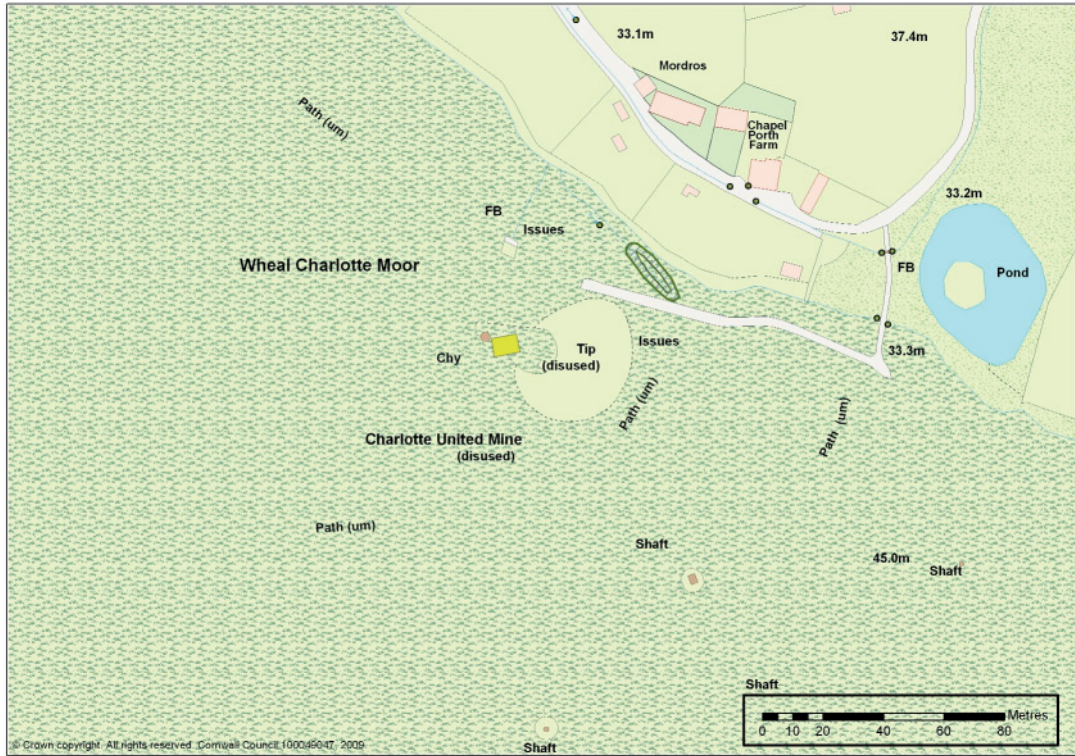


Fig 9. The Grade II listed pumping engine house at Charlotte United, Chapel Combe.



Fig 10. The extent of the Godrevy Head to St. Agnes Site of Special Scientific Interest (SSSI) (hatched) in relation to the project area.



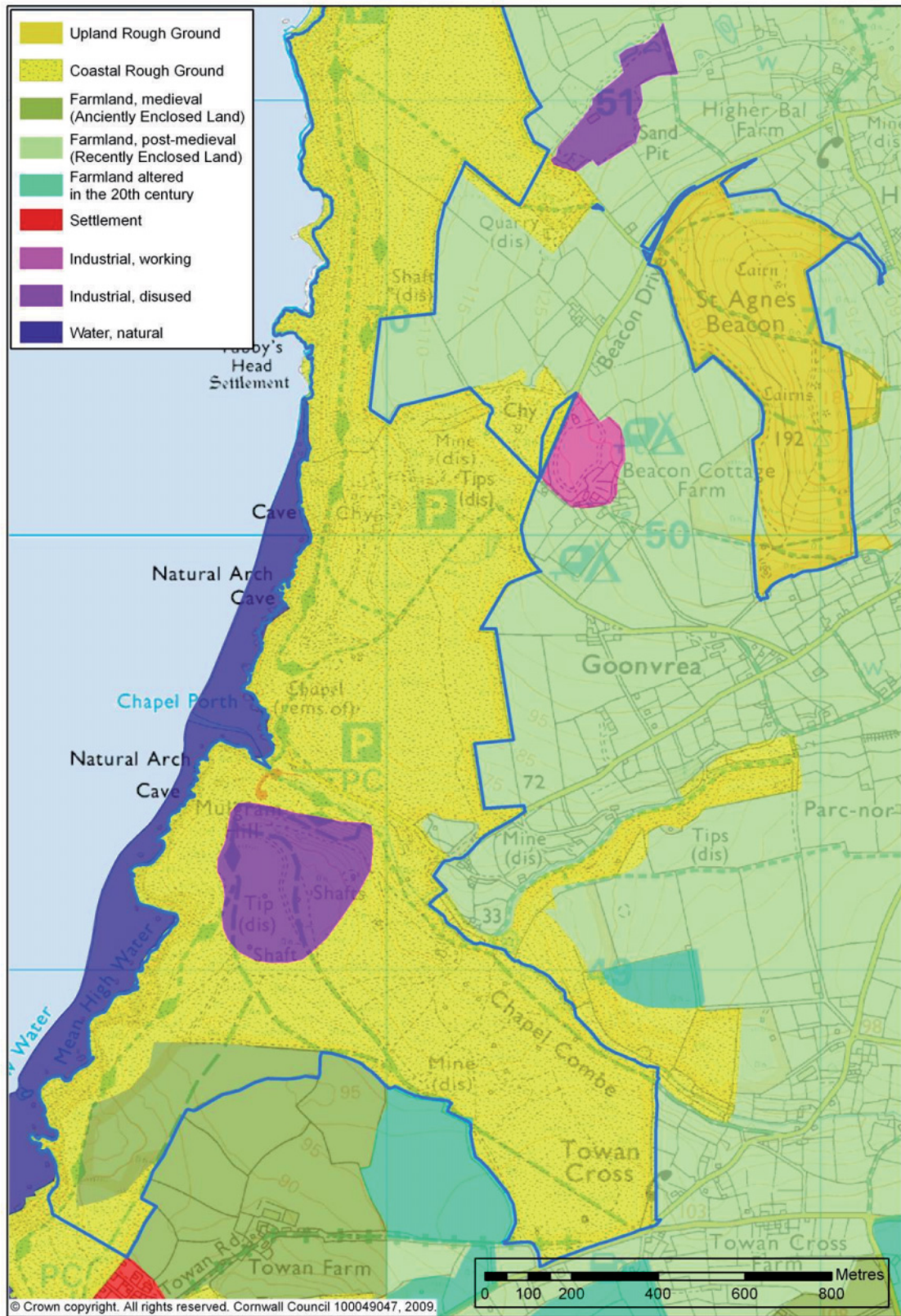


Fig 11. Historic Landscape Characterisation within the project area.



Fig 12. Public rights of way within and surrounding the project area. The whole of the project area is open access land under the CROW Act 2000.

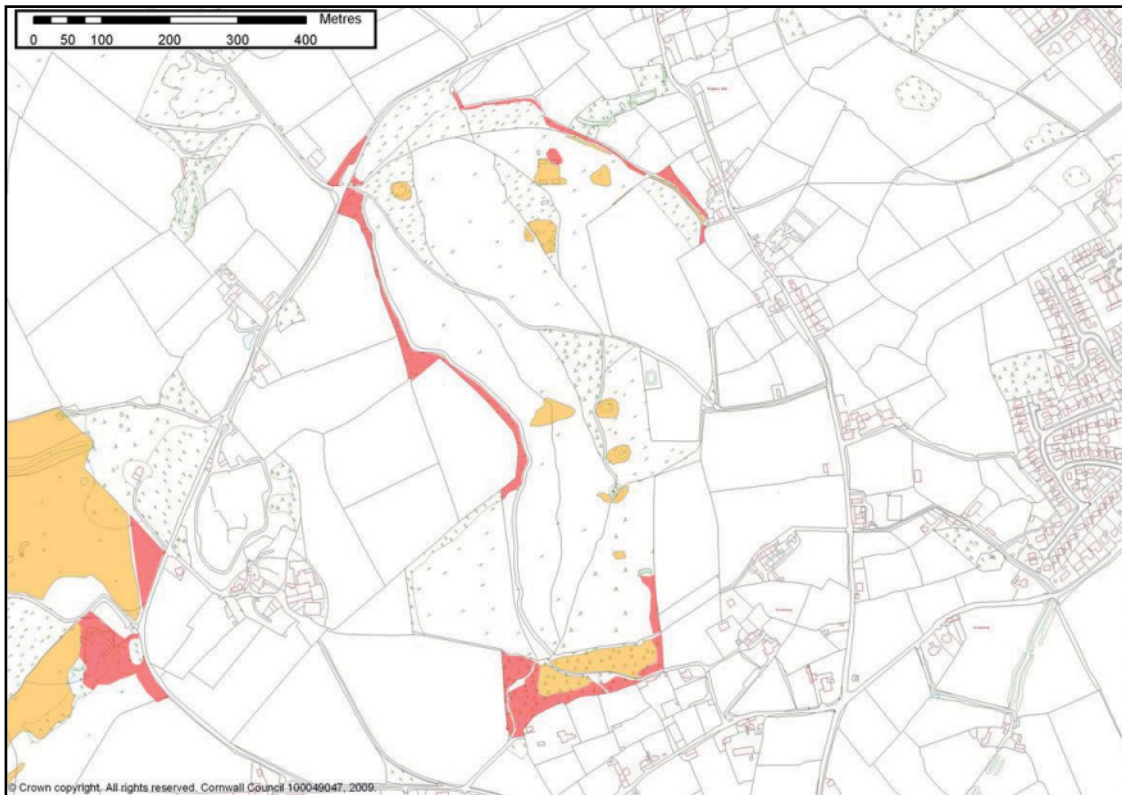


Fig 13. Accessibility for survey on St. Agnes Beacon. Red – no access, Orange – restricted access.

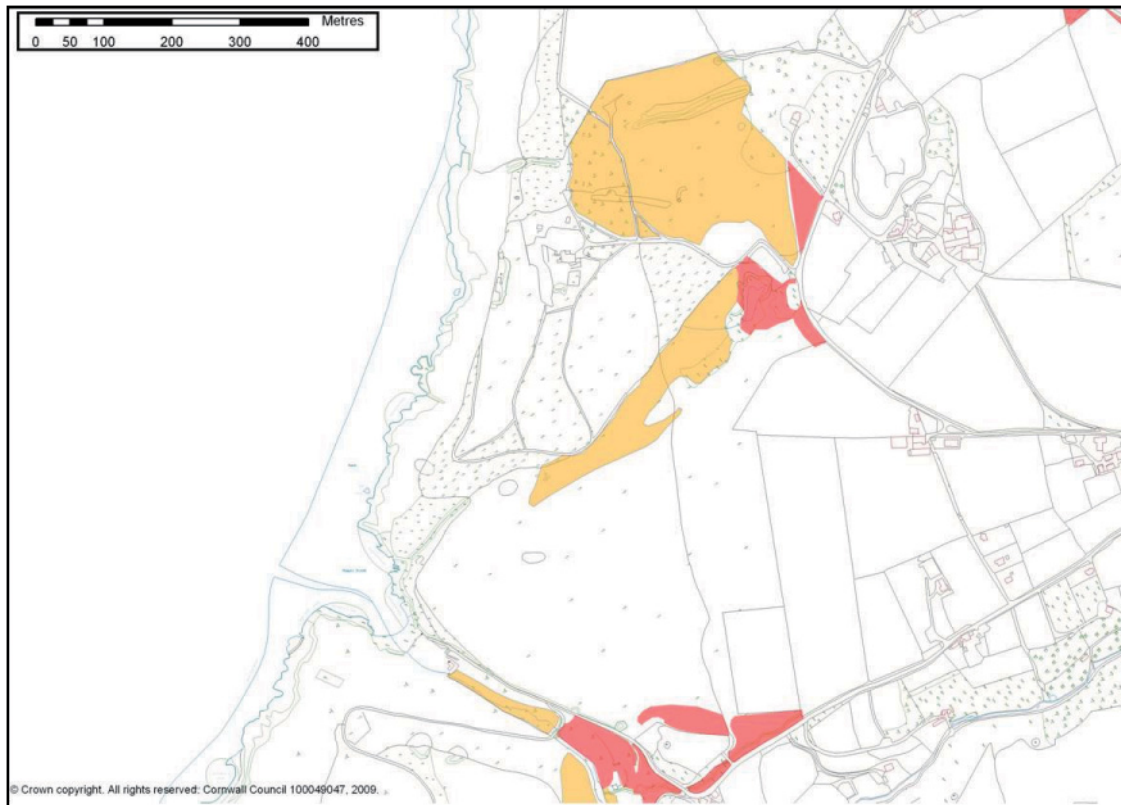


Fig 14. Accessibility for survey at Wheal Coates and Chapel Combe. Red – no access, Orange – restricted access.

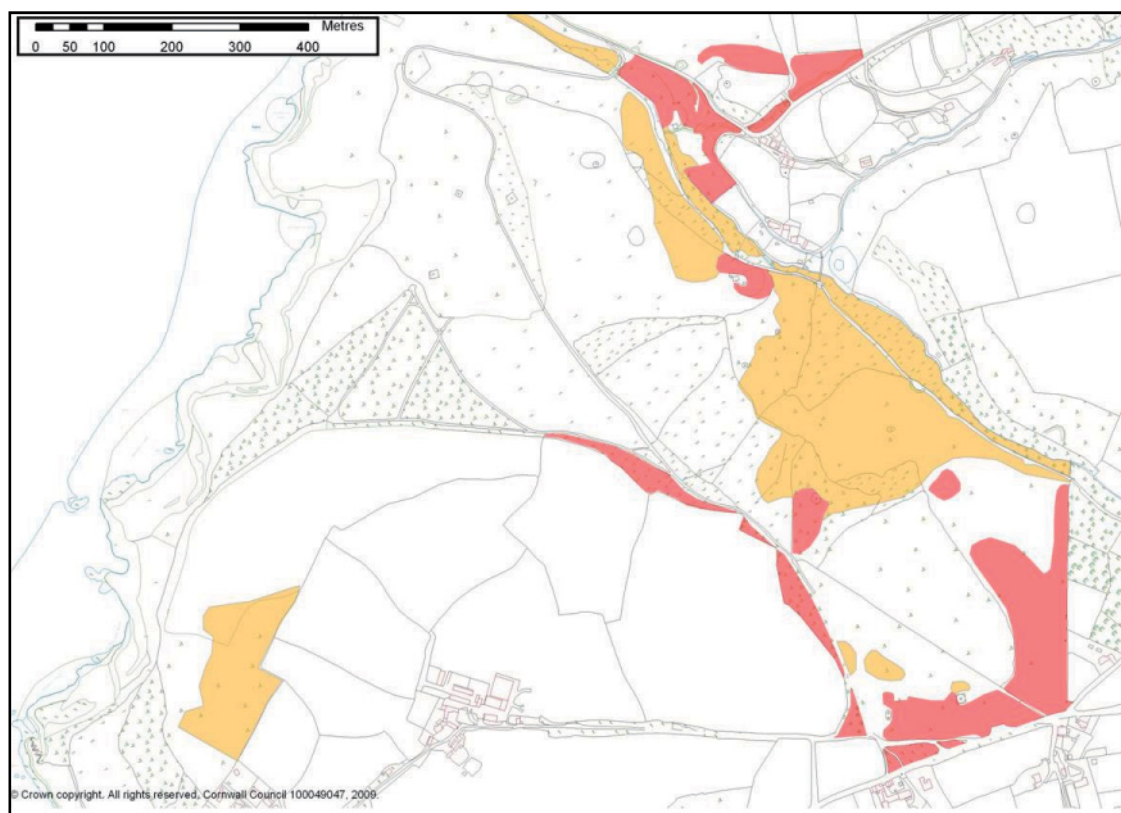


Fig 15. Accessibility for survey on Charlotte Moor and Wheal Towan. Red – no access, Orange – restricted access.



*Fig 16. An aerial view of the central part of the project area from the sea, with St. Agnes Beacon in the distance (upper left), Wheal Coates (left), Chapel Porth and Chapel Combe (centre) and Great Wheal Charlotte (right). HE Photograph F69-011.*



*Fig 17. An aerial view of St. Agnes Beacon and its surrounding landscape from the north, showing its setting of post-medieval enclosures. Adam Sharpe Collection.*



*Fig 18. An RAF vertical aerial photograph of St. Agnes Beacon dating to 1946. The oval fenced enclosure around the radar station is particularly clear. (RAF 3G-TUD-5182).*



*Fig 19. An RAF vertical aerial photograph of Charlotte Moor and Towan Cross dating to 1946. The Holman Projector range is visible as a series of parallel lines near the centre of the view. Many of the small white dots represent slit trenches excavated during 1944 by the GIs encamped here in the run up to D Day. (RAF 106G-UK 1663-3380).*



Fig 20. An extract from Martyn's 1748 *New and Accurate Map of the County of Cornwall* covering the project area. The map depicts evidence for tin mining at Wheal Coates, as at Polberro to the north of the Beacon.



Fig 21. Ordnance Survey 1in: 1 mile mapping, published c 1813, showing Wheal ancoates and Goonvrea Common, the latter distinguished from Mingise [sic] Downs to the south.



Fig 22. An extract from the 1840 Tithe Map for the area of the parish of St. Agnes covering the Project area. Whilst this provides a useful snapshot of the extent of enclosure which had taken place on the Downs, only limited information is given relating to mining on this map – buildings at North Towan being labelled (lower centre), whilst at Wheal Coates some disturbed ground and spoil dumps are shown (upper centre left).





Fig 23. The developing enclosure of Goonvrea and adjacent former open land from 1840 to the present day. Data derived from the St. Agnes Tithe Award mapping (1840), the 1<sup>st</sup> and 2<sup>nd</sup> Editions of the 25" to the mile mapping (circa 1880 and 1908) and CC 2005 aerial photographs.

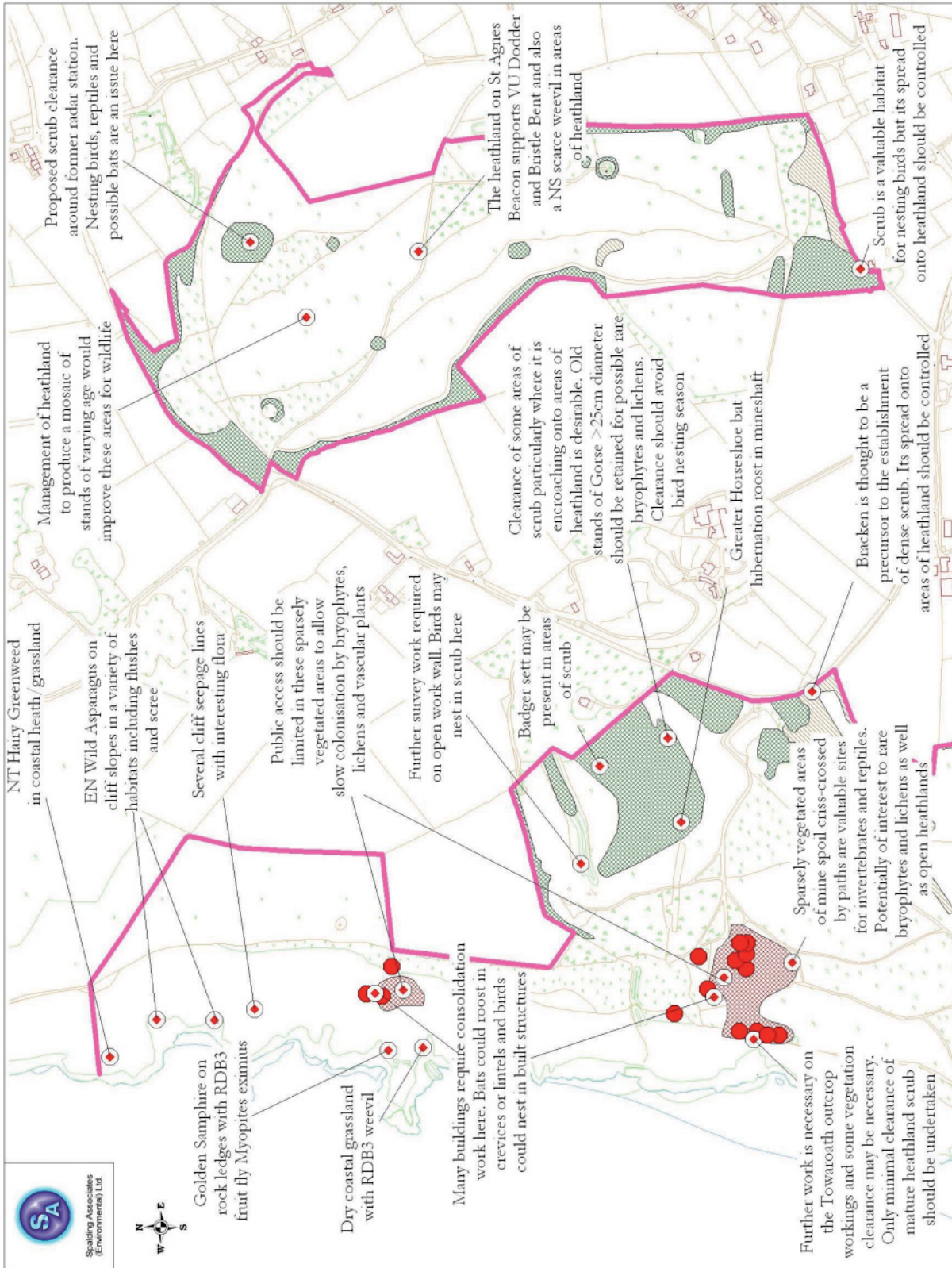


Fig 24. Features of ecological importance on St. Agnes Beacon and the northern part of the project area. Spalding Associates/

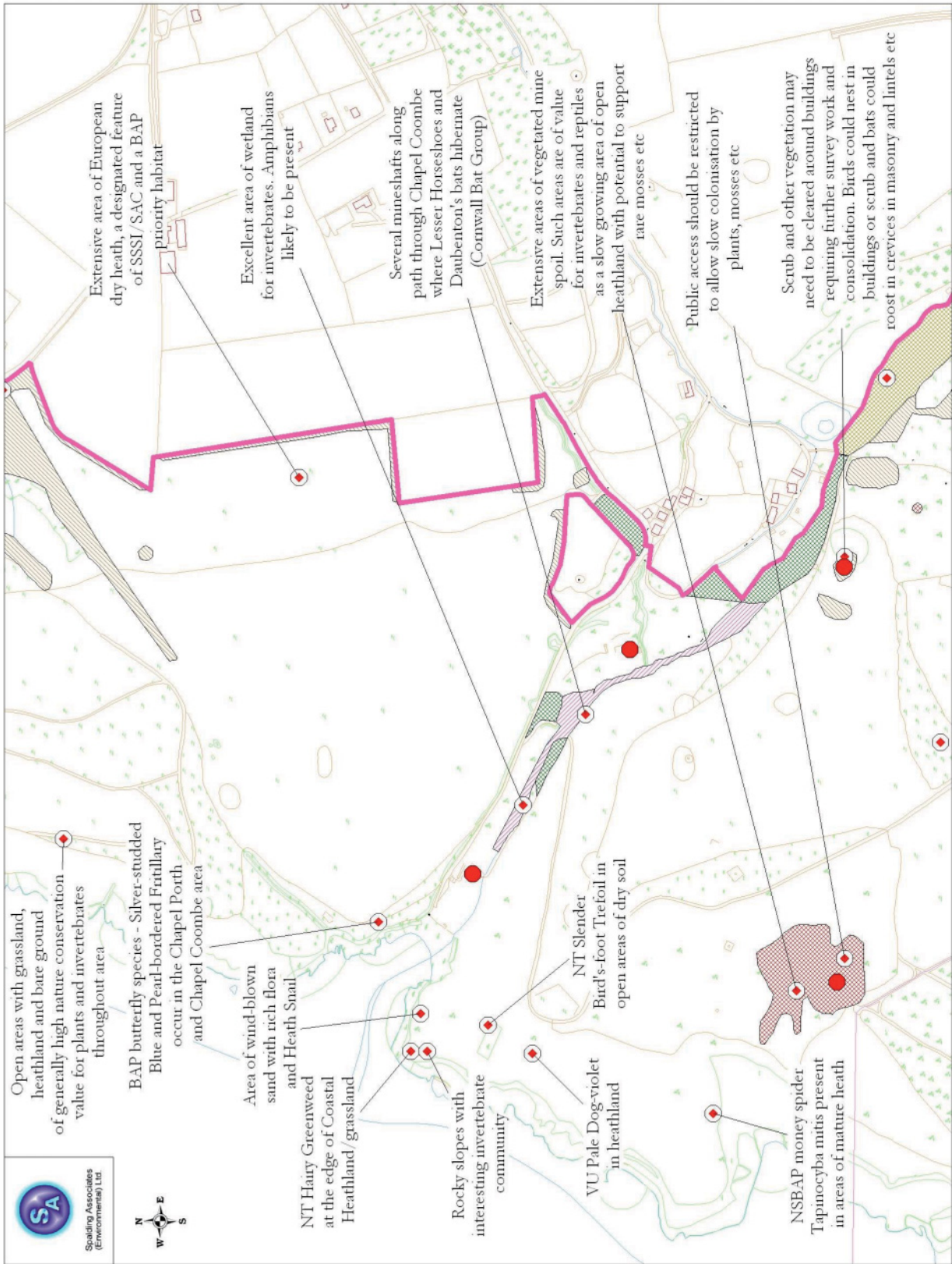


Fig 25. Features of ecological importance in the central part of the project area. Spalding Associates.

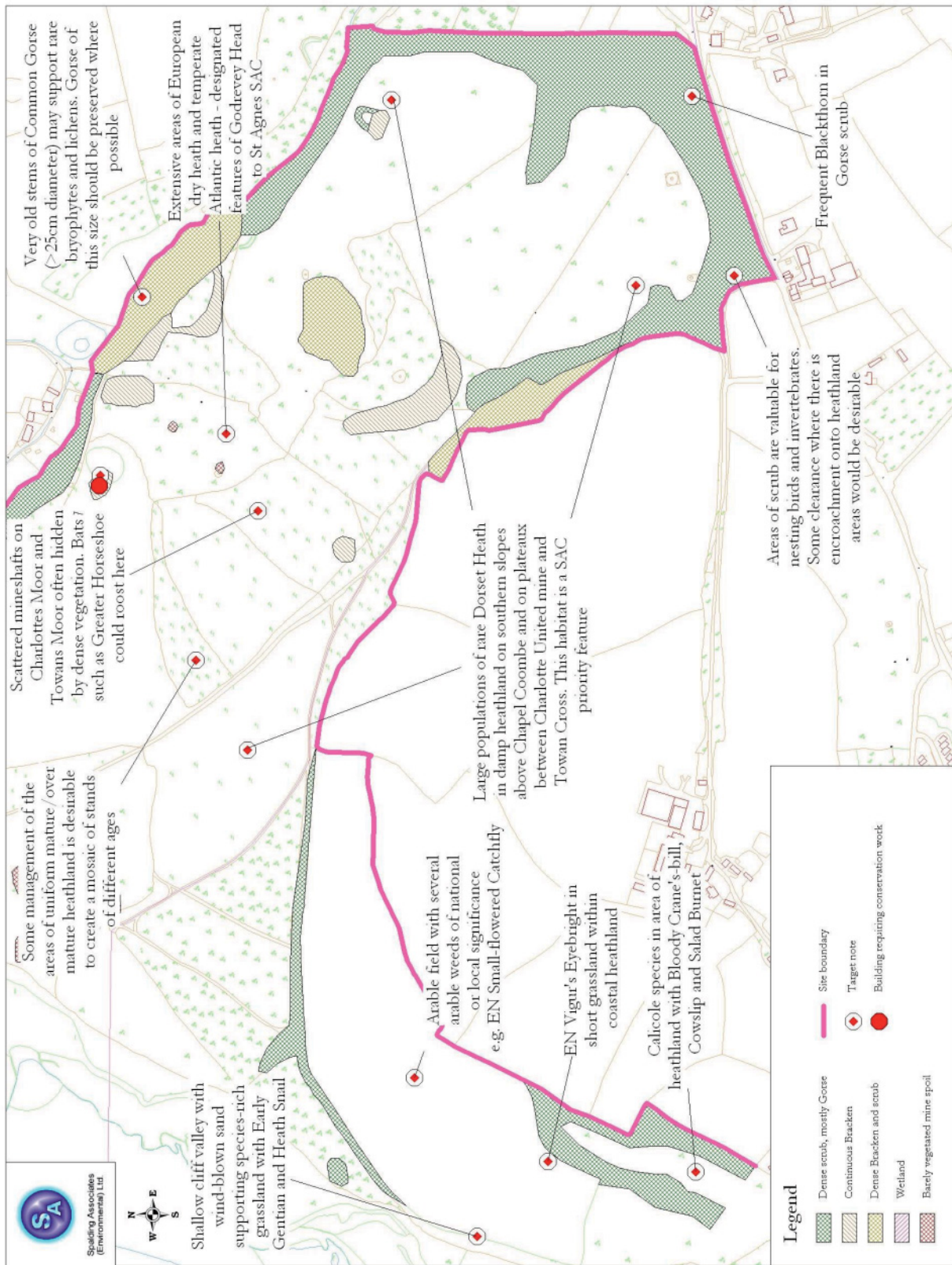


Fig 26. Features of ecological importance in the southern part of the project area. Spalding Associates.

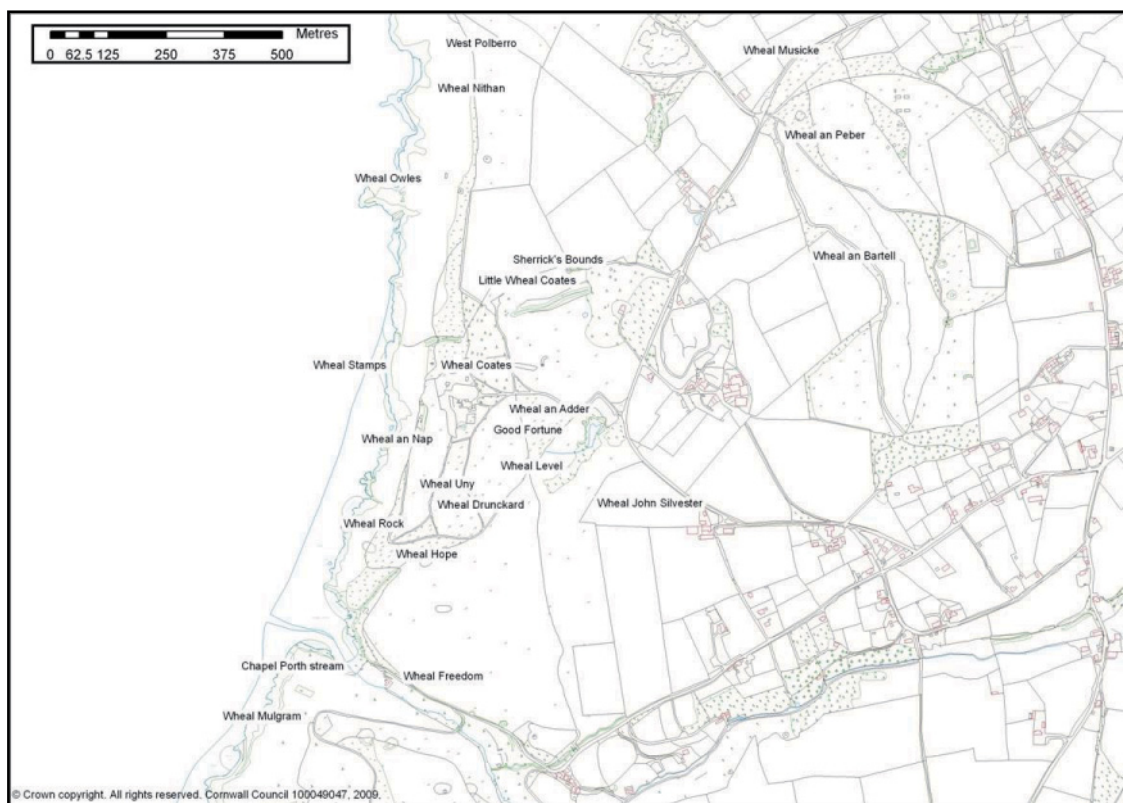


Fig 27. Some of the early tin bounds recorded in the northern part of the project area.

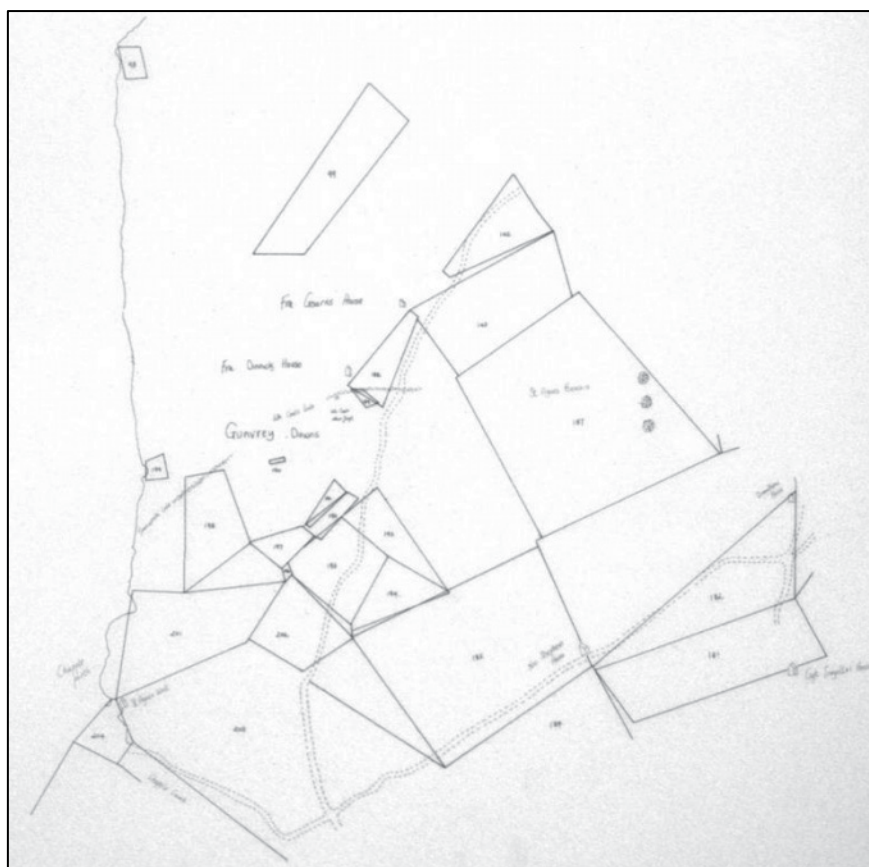


Fig 28. A late 18<sup>th</sup> century Enys Estate bounds map (copy as HE GRH 253/10) showing the area between Chapel Porth (bottom), Tubby's Head and St Agnes Beacon (right centre). The complexity of the mine setts within this area at the time is immediately apparent.

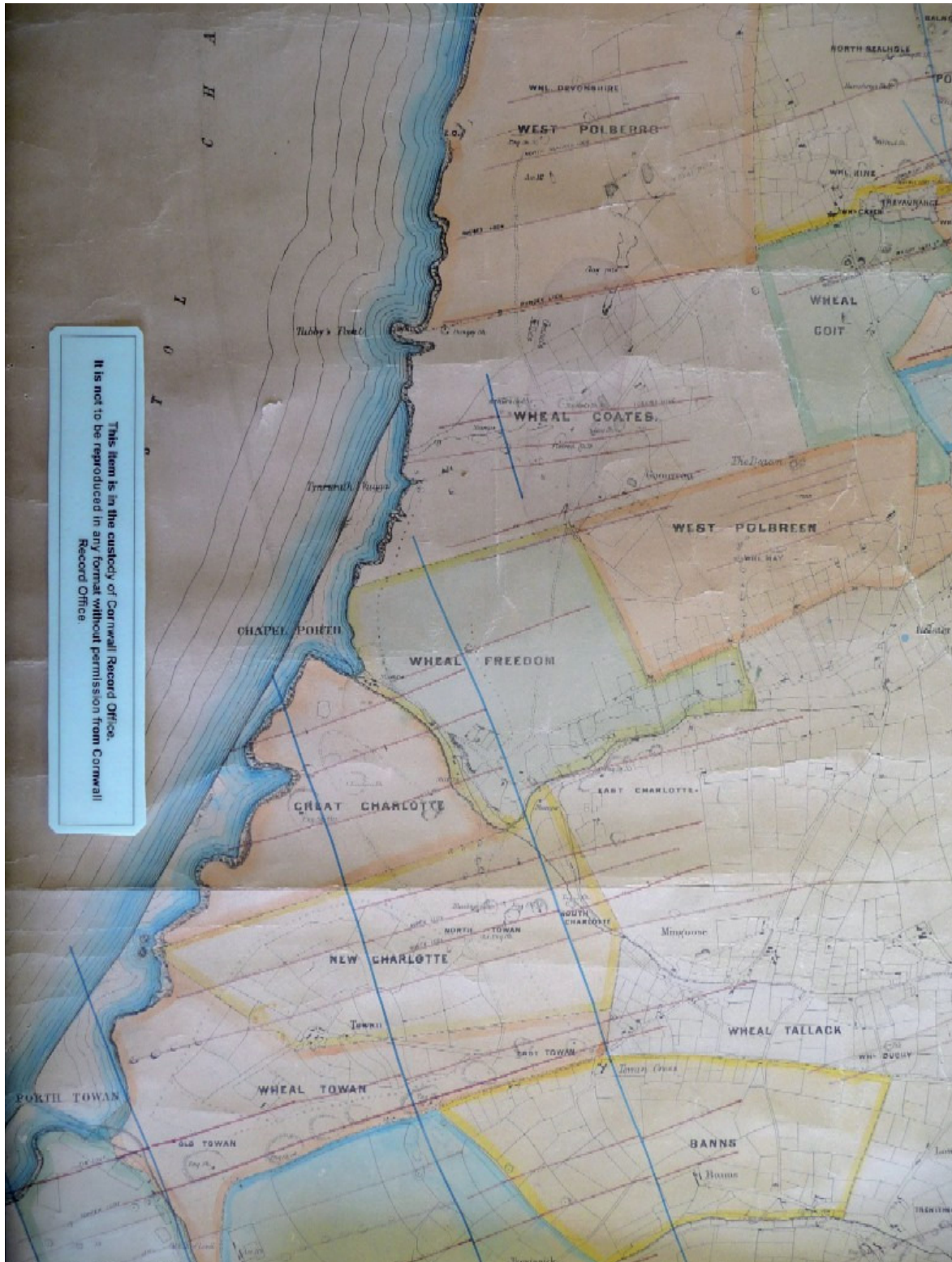


Fig 29. An extract from Robert Symons' 1870 map of the St. Agnes Mining District, showing how many of the smaller early mine setts had been amalgamated into much larger concerns by that date. Names within smaller typefaces within the setts reflect some of the earlier mines which had been incorporated. CRO LC-XIII-6, copyright Cornwall Council.

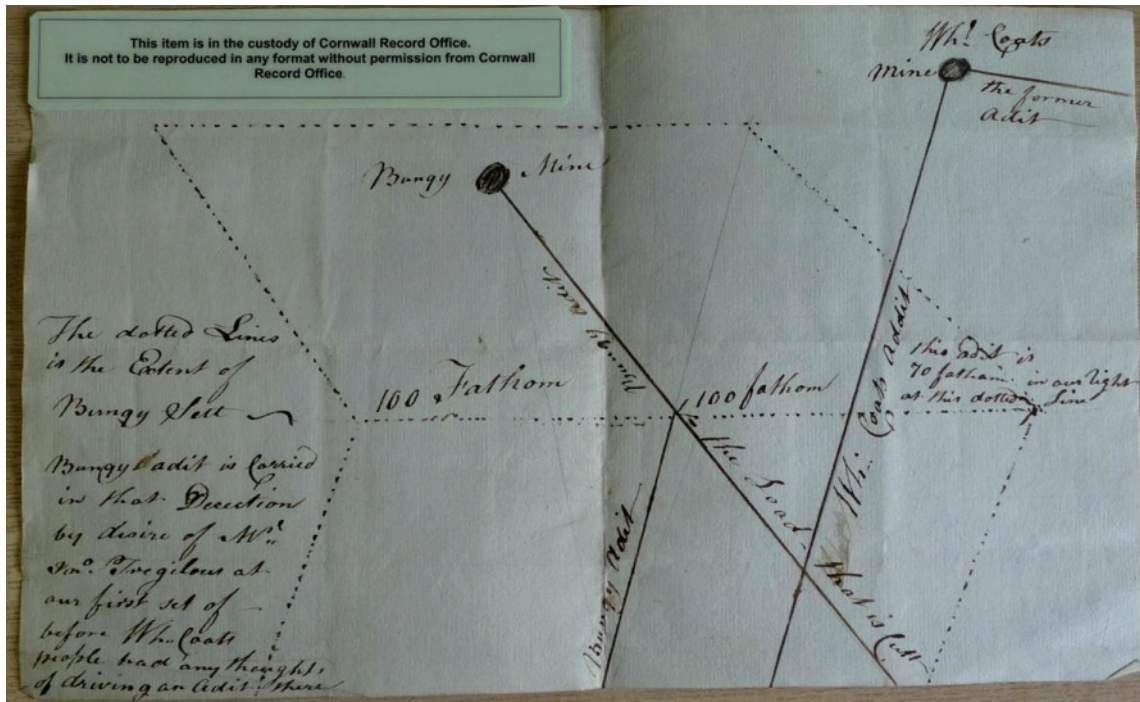


Fig 30. One of the plans of Wheal Bungay dating to the 18<sup>th</sup> century relating to a dispute between it and the neighbouring Wheal Coates to the south. This is one of the few plans which plots two adits serving Wheal Coates, one to the west (right) and another to the north-west, passing through the Wheal Bungay sett. CRO WH-2090, copyright Cornwall Council.

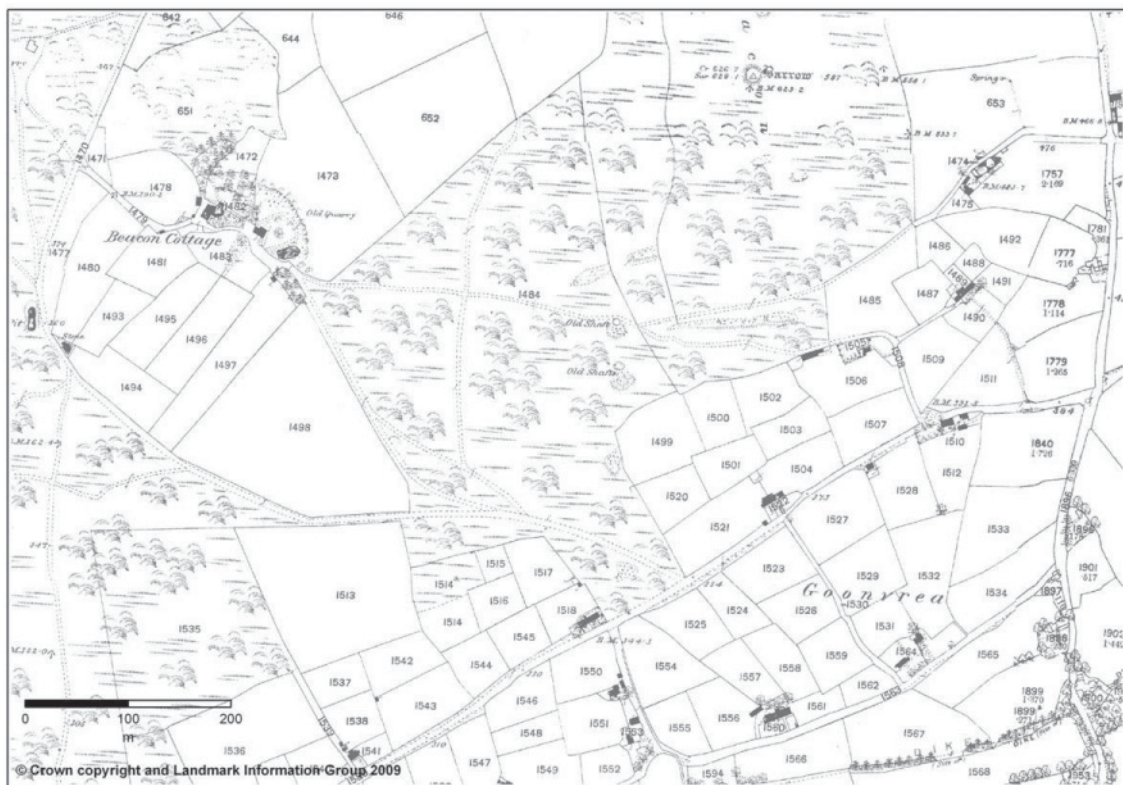


Fig 31. The southern end of the Beacon and part of the settlement of Goonvrea, depicted on the 1st edition Ordnance Survey 25in: 1 mile map of c 1880. The distinctive landscape includes the fields associated with smallholdings and new farms created from the later seventeenth century by enclosure from the large area of rough ground known as Goonvrea.

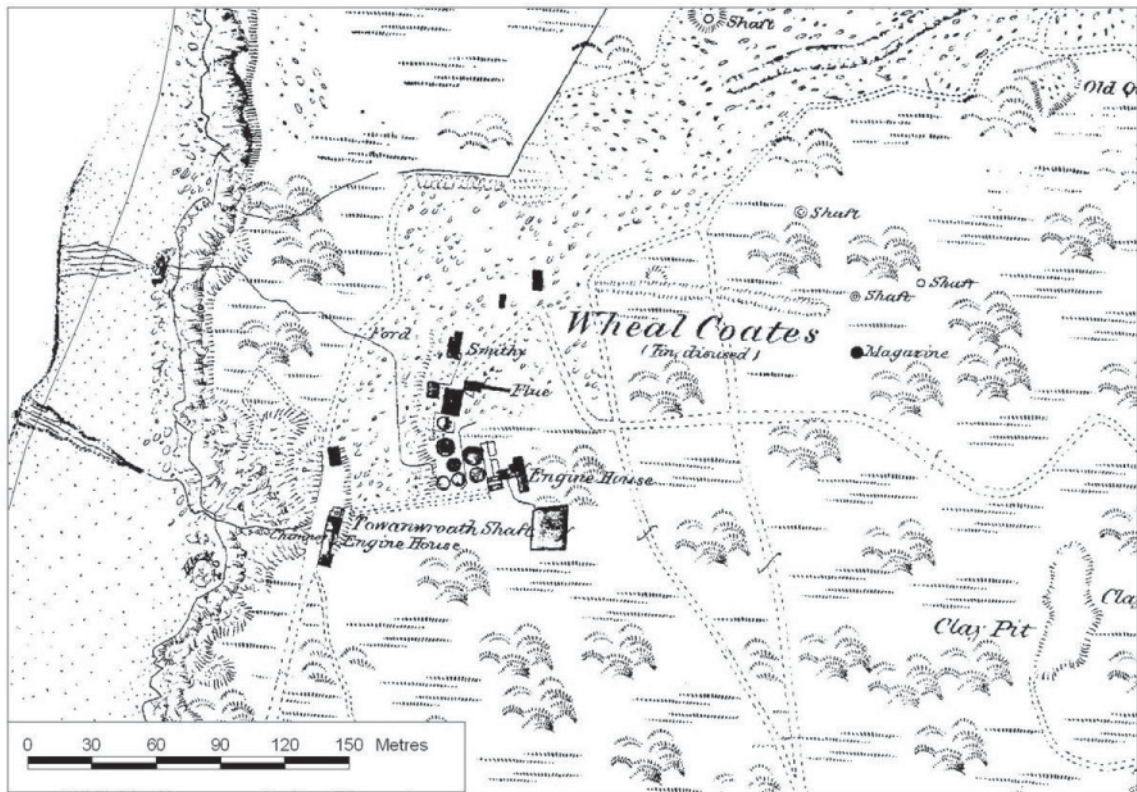


Fig 32. An extract from the 1<sup>st</sup> Edition 25" to a mile OS mapping showing Wheal Coates shortly after its late 19<sup>th</sup> century closure. At this stage all of the buildings were intact and roofed, and the map is particularly useful in showing the earlier layout of the structures on the site.

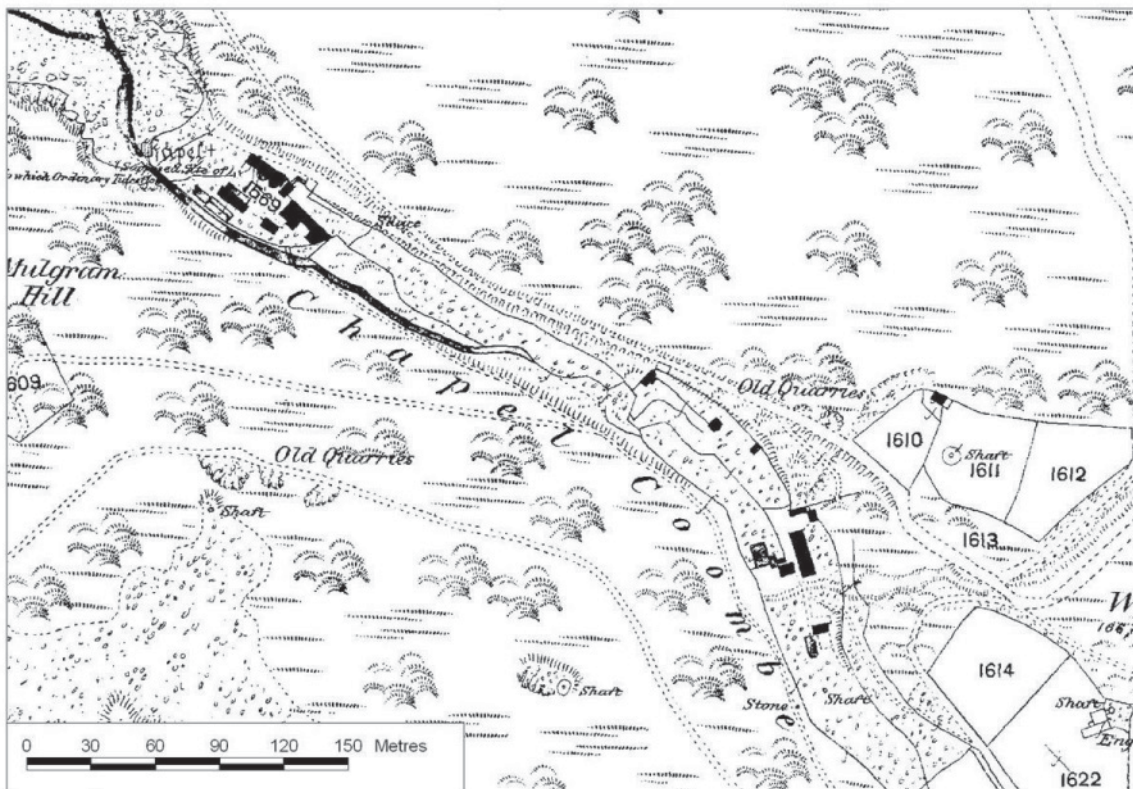


Fig 33. An extract from the 1<sup>st</sup> Edition 25" to a mile OS mapping showing the western part of Chapel Combe, including the water powered tin dressing floors at Chapel Porth and at intervals up the valley, together with the leats which fed them.



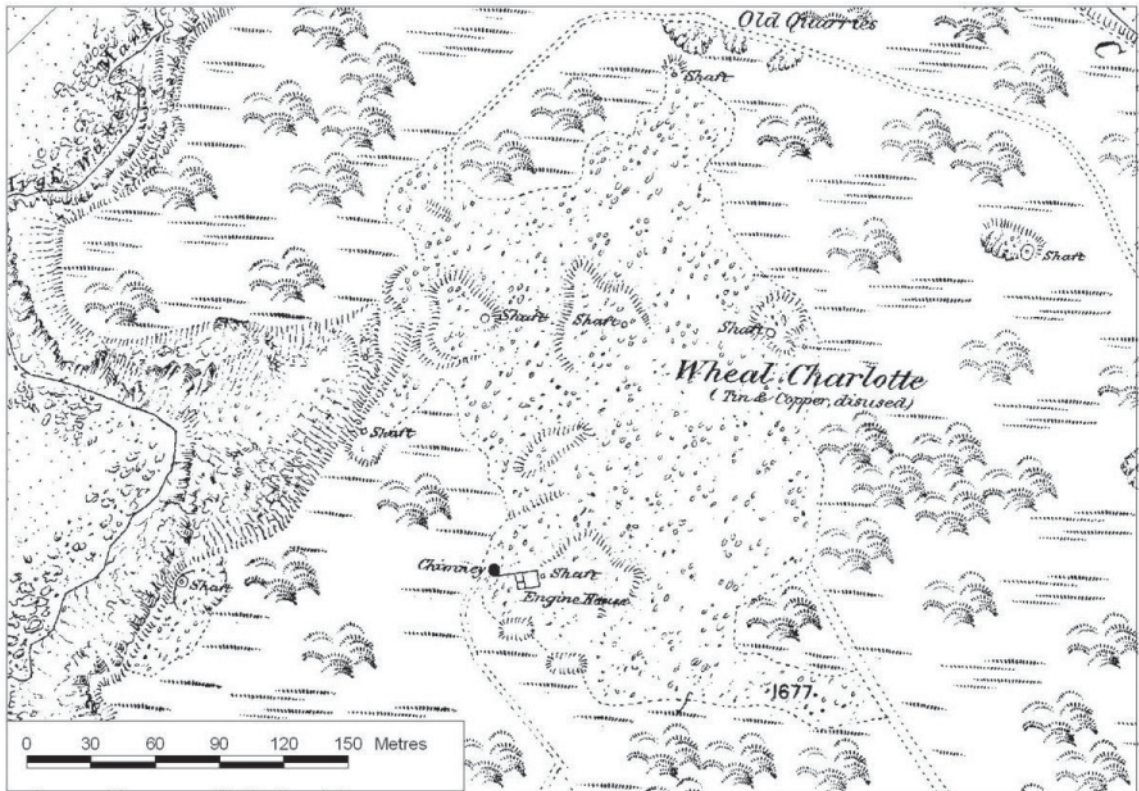


Fig 34. An extract from the 1<sup>st</sup> Edition 25" to a mile OS mapping showing the landscape of Great Wheal Charlotte. The only structure shown was the pumping engine house and its associated boiler house and chimney, the former being unroofed by this date. All other mine buildings had been swept away.

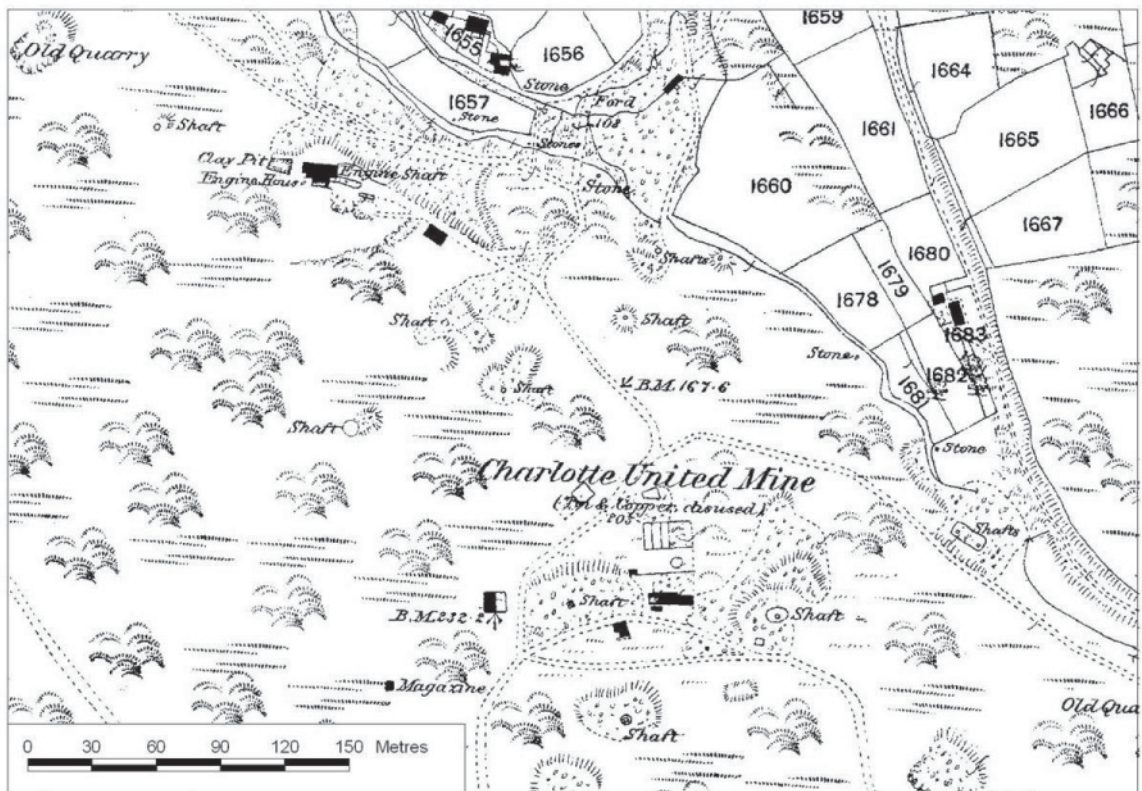


Fig 35. An extract from the 1<sup>st</sup> Edition 25" to a mile OS mapping showing North Towan Mine (by this date called Charlotte United, and clearly disused). The engine houses and other structures in the central area of the mine still survived at this date, though were demolished not long after.



*Fig 36. An aerial view of Wheal Coates showing the building complex at the clifftops, the openwork (left), outcrop working pit (left centre), leats (centre) and clay pits (top centre). Also visible is the extensive path network and the considerable erosion around the building complex. HE F68-041.*



*Fig 37. The inland section of Wheal Coates showing the modern visitor car park, overgrown clay pits (lower centre), streamworks (centre), groups of prospecting pits (left centre) and outcrop workings (right centre). HE F68-038.*



Fig 38. A recent NT aerial photograph of Towan Moor adjacent to Towan Cross, showing the enigmatic enclosures (just left of centre), field system (upper left centre), quarry (right centre) and the spread of gorse and blackthorn scrub from the peripheries of the area. Copyright National Trust.

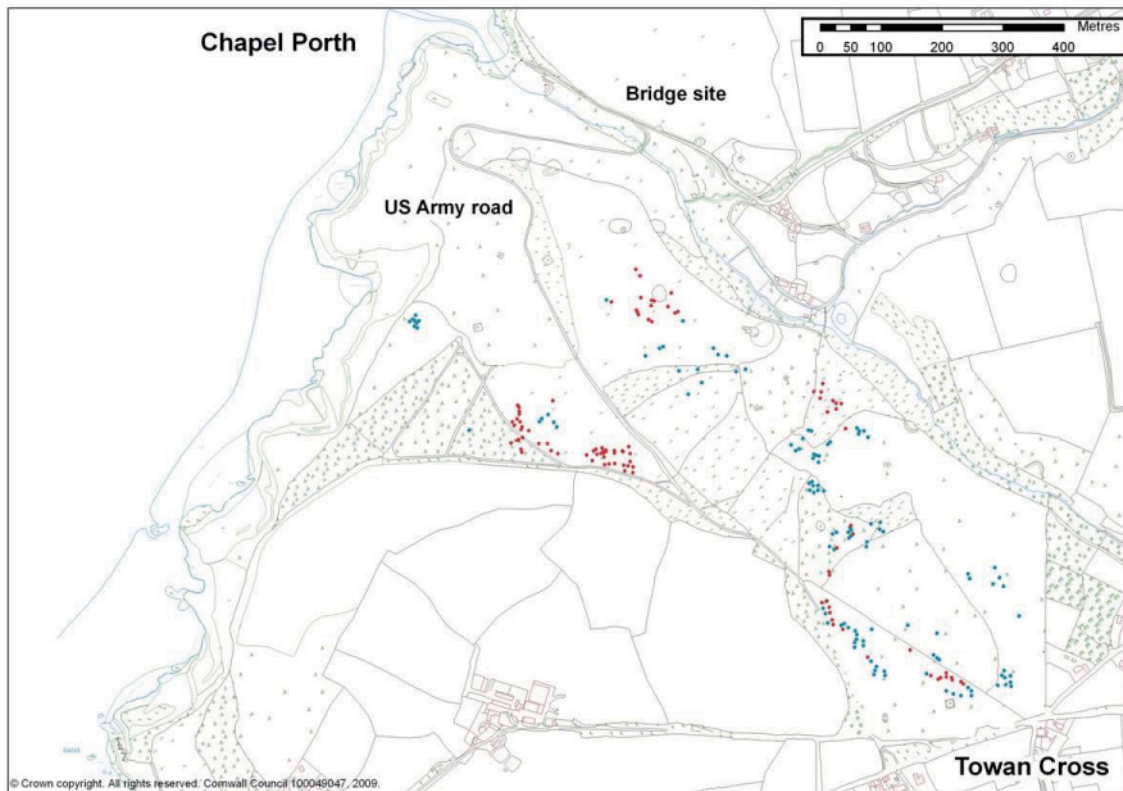


Fig 39. WWII military features on Charlotte Moor. Shown here are the many slit trenches (Red extant, Blue plotted from the 1946 aerial photograph, see Fig 19) and the modified mine road leading to the bridge across Chapel Combe.



*Fig 40. St Agnes Beacon from the south. Cairn [90355] is prominent on the summit above the quarried natural rock outcrop known in the eighteenth century as Garder Wartha [190143]. The well-settled and distinctive landscape created by the enclosure of smallholdings from the former rough ground of Goonvrea is evident in the middle ground. HE Archive.*



*Fig 41. Cairn [90353], the middle of three on the southern ridge of the Beacon, with cairn [90357] on the skyline beyond. Both have been much reduced in size by 'quarrying' of stones for nearby enclosure boundaries. HE Archive.*



*Fig 42. The summit cairn [90355] on St Agnes Beacon, viewed from cairn [90353] to the north. This has been the location not only of the cairn itself but also of a beacon, a late eighteenth century summerhouse and an Ordnance Survey triangulation point. HE Archive.*



*Fig 43. The view seawards from cairn [90359] focuses on the prominent Bawden Rocks, also known as Man and his Man, offshore to the north north east. The siting of the cairn also achieves an interesting trompe l'oeil effect whereby none of the plateau between the Beacon and the coastal cliffs is visible, making it appear that the northern end of the Beacon summit is itself surrounded by water. HE Archive.*



*Fig 44 Cairn [90359] has been much damaged by the removal of material from its core, probably for construction of parts of the World War II radar station. HE Archive.*



*Fig 45. Pasture boundary [190066] follows a sinuous course along the western flank of the Beacon. It is probably of post-medieval origin, aiding in management of grazing and other resources on Goonvrea Common. HE Archive.*



Fig 46. A stone-faced hedge [190101] bounding enclosed land on the east side of the Beacon. Stone for these boundaries would have been obtained from clearing the land but also from the prehistoric cairns on the Beacon and from a number of small quarries. HE Archive.



Fig 47. Quarrying [190143] on the southern face of the rock outcrop named by Thomas Tonkin in the early eighteenth century as Garder Wartha, 'the higher seat'. HE Archive.



*Fig 48. A substantial linear quarry [190113] cut into the slope on the east side of the Beacon. This is likely to have provided hedging stone for the enclosures created from former rough ground in this area in the later nineteenth century. HE Archive.*



*Fig 49. A bank and ditch which may have formed a leat [190171] carrying water to pumping equipment in lodeback workings [190169] on the southern slopes of St Agnes Beacon. HE Archive.*





Fig 50. Prospecting pits [190023] on the northern slope of St Agnes Beacon, with spoil heap [190022] in the background. These features are likely to be associated with workings on Wheal Coit lode. HE Archive.



Fig 51. The chain of pits and spoil heaps forming lodeback working [10154] running east-west across the southern slopes of St Agnes Beacon. HE Archive.



Fig 52. A substantial spoil heap [190024] downslope from shaft [190025], viewed from the south west. This and some of the other mining features at the northern end of the Beacon may be of twentieth-century origin. HE Archive.

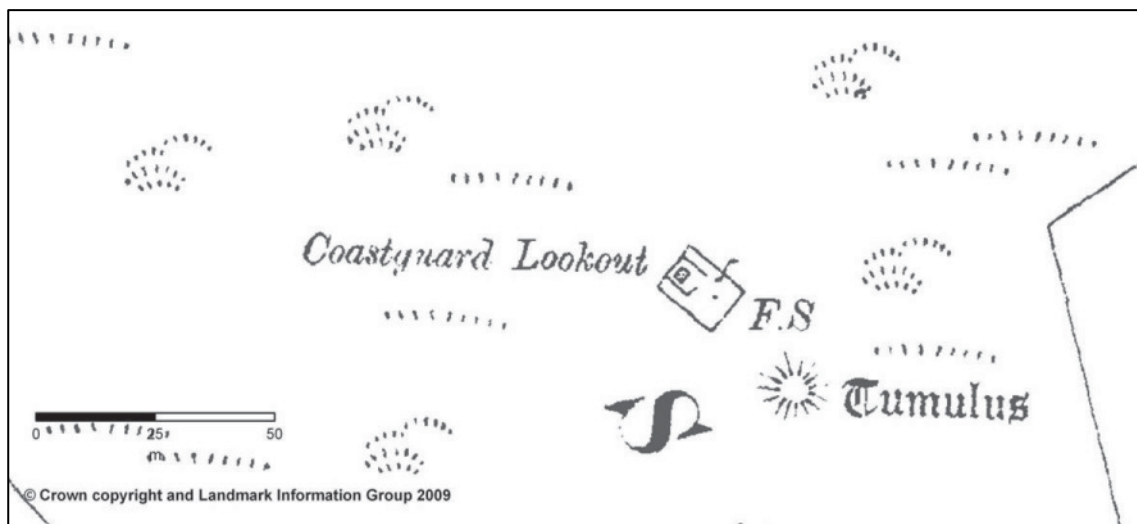
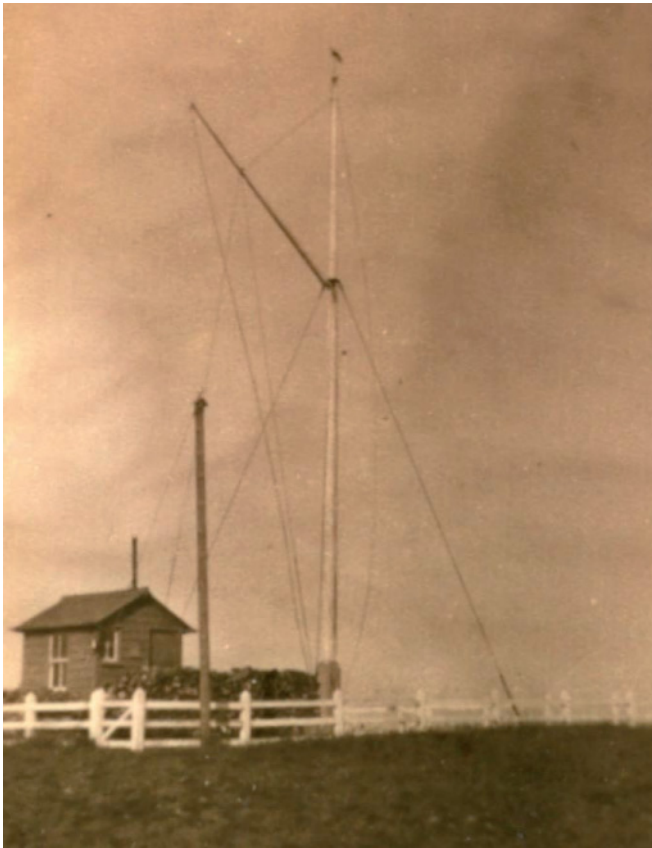


Fig 53. The coastguard lookout and flagstaff on St Agnes Beacon, shown on the Ordnance Survey 25in: 1 mile 2nd edition map of c 1907.



*Fig 54 An undated photograph of the coastguard lookout on the northern summit of St Agnes Beacon. (Photograph courtesy of Clive Benney.)*



*Fig 55. The concrete base of building [190039]. What were probably the cement bases of three shower stalls are evident, suggesting that this was accommodation for personnel stationed on the Beacon. HE Archive.*



*Fig 56. The concrete base of a building [190069] forming part of the World War II radar installation on the Beacon. The central plinth, on which fixing bolts are still visible, is likely to have been the base for some form of machinery. HE Archive.4*



*Fig 57. Servicemen, including at least two NCOs, outside a Nissen-type building on the Beacon during World War II. This is probably the structure represented by building base [190074] and the building in the background is probably [190069]. Clive Benney (1988, 47) has identified the third soldier from the left as George Langford, a local man; the identities of the others are not known. (Photograph courtesy of Clive Benney.)*



Fig 58. *The Giant Bolster*, by George Cruikshank, from the frontispiece to Robert Hunt's *Popular Romances of the West of England* (1865). Cruikshank noted that he had depicted the giant with a perspective appropriate to his size, estimated from his ability to span with one stride the six miles from St Agnes Beacon to Carn Brea.



Fig 59. Part of the modern *Giant Bolster* celebrations held in St. Agnes. In this view St. Agnes confronts the giant before tricking him into draining his life blood into an opening into a nearby sea cave. HE Archive.



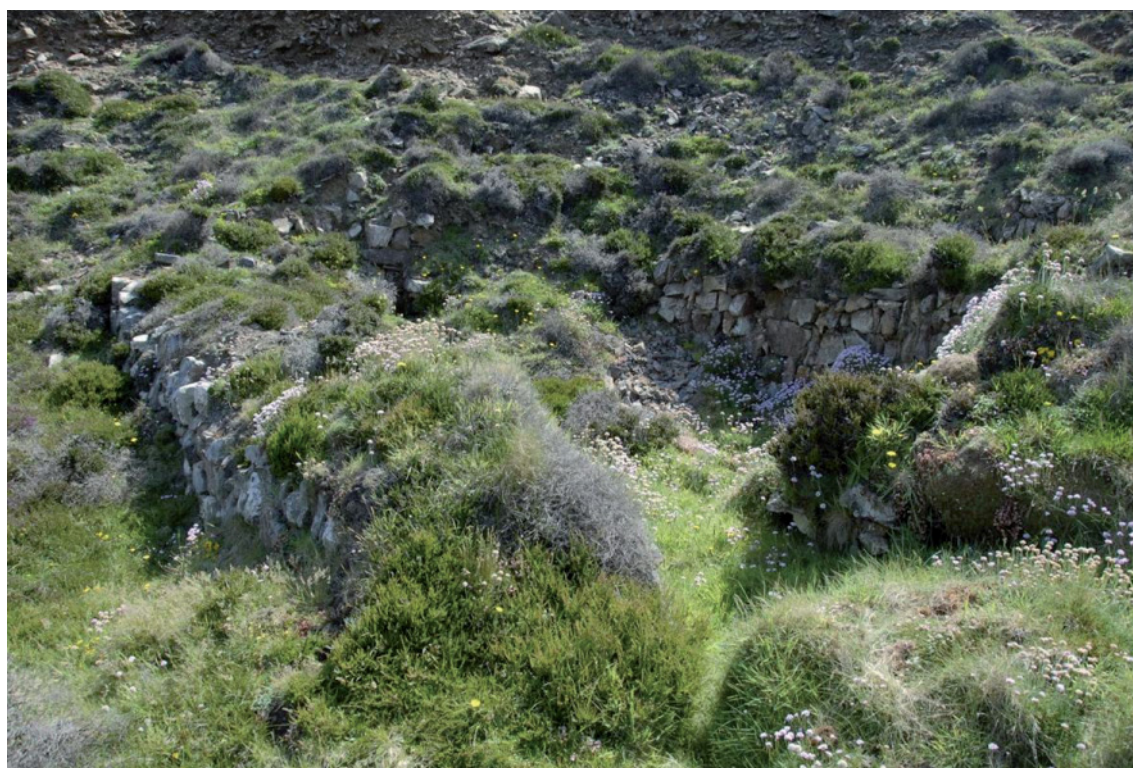
*Fig 60. Tubby's Head cliff castle [96054] seen from the north. The rampart is just visible at the inland end of the promontory. The degree to which the cliff castle is overlooked from the land is readily apparent. HE Archive.*



*Fig 61. The small miners' building [96780] adjacent to an openwork [96799] and small dressing floor [96777] to the north of Tubby's Head. This small and early building may have been part of Wheal Owles. HE Archive.*



*Fig 62. The remains of the early mine building [96764] to the north of Tubby's Head. The probable footway shaft [96765] lies at the northern (furthest) end of the building. HE Archive.*



*Fig 63. The small and early miners' building [96778] to the immediate south of openwork [96779] on the cliffs near Tubby's Head. The entrance to the building was in the near wall whilst its fireplace was at the far end. HE Archive.*



Fig 64. The openwork [96779] on the cliffslope near Tubby's Head. Small early buildings [96780] and [96778] lie to the north and south of the excavation (left and right in this view), whilst dressing floors [96779] lie on the cliffslope to the right. HE Archive.



Fig 65. The backfilled Chyd Cap on shaft [96749] in the inland section of Wheal Bungay. HE Archive.





*Fig 66. The large Chmyd Cap over open shaft [90048] in Wheal Bungay. The cobbled dressing floor [96758] is in the foreground. HE Archive.*



*Fig 67. The elongated rock-cut lobby and tall stoped entrance to adit [90052] on the cliffside to the north of Tubby's Head. This adit probably served West Polberro to the east-north-east. HE Archive.*



*Fig 68. An aerial view of the Wheal Coates complex in the late 1980s showing, in addition, the extensive network of paths and tracks including those leading to Towanroath Vugga, several leats (top right), the lower part of the openwork [190305]/[190306] (left) and the considerable erosion scarring around the buildings. Adam Sharpe Collection.*



*Fig 69. Looking towards St. Agnes Head past Wheal Coates from Mulgram Hill above Chapel Porth. The Wheal Coates buildings are prominent landscape features. HE Archive.*



*Fig 70. The Wheal Coates complex from the north, looking across the site of the original water-powered dressing floors [190299]. Again the buildings are prominent in the landscape. HE Archive.*



*Fig 71. Towanroath shaft pumping engine house from the north, with Mulgram Hill and Charlotte Moor in the background. Two roadways can be seen running diagonally up from the left towards the summit of Mulgram Hill, the lower of these having been re-cut by the US Army in 1944. HE Archive.*



*Fig 72. The clifftop buildings at Wheal Coates as seen from the summit of St. Agnes Beacon form a distant skyline group of features. HE Archive.*



*Fig 73. The buildings at Wheal Coates seen from the south at the top of the climb up the coast part from Chapel Porth, from where they form an obvious destination point for walkers. HE Archive.*



Fig 74. The cliff-top group of buildings at Wheal Coates as seen from the western end of the path from the visitor car park on Beacon Drive. This path is virtually DDA compliant. HE Archive.

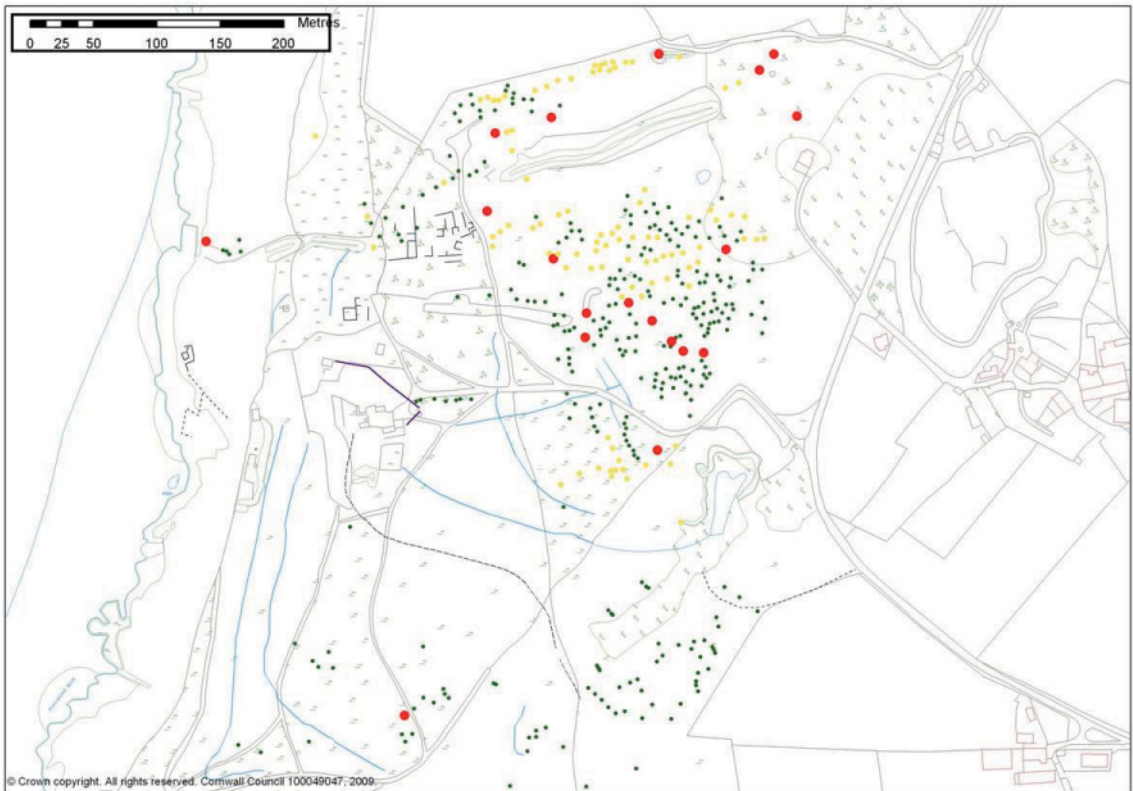


Fig 75. Mining features at Wheal Coates. Red – shafts, Orange – outcrop working pits and small shafts, Green – prospecting pits, Blue – leats.



*Fig 76. The central part of the openwork in the northern part of Wheal Coates [190289][190287] showing the point at which it bifurcates, following the splitting of the lode outcrop. HE Archive.*



*Fig 77. The stock barrier wall around the openwork in the northern part of Wheal Coates [190286] which has been found to incorporate a number of possibly prehistoric mining tools. HE Archive.*



*Fig 78. The cliff-face outcrop workings on the Towanroath Lode, showing its south-dipping nature. Towanroath Vugga is at its base, whilst the vertical upper section of Towanroath Shaft intersects the lode below sea level. HE Archive.*



*Fig 79. The upper part of the outcrop workings on Towanroath Lode (crossing the view from lower right to upper left) are accompanied by the remains of an early miners' building [190387] (left of centre) set on a quarried platform. HE Archive.*



*Fig 80. The lower end of the miners' path [190386] where rock-cut steps lead to the early outcrop workings on the Towanroath Lode [190393]. HE Archive.*



*Fig 81. Nigel Smith preparing to abseil into Towanroath Vugga via a hand-cut shaft at the lower end of the miners' path [190386]. Adam Sharpe Collection.*

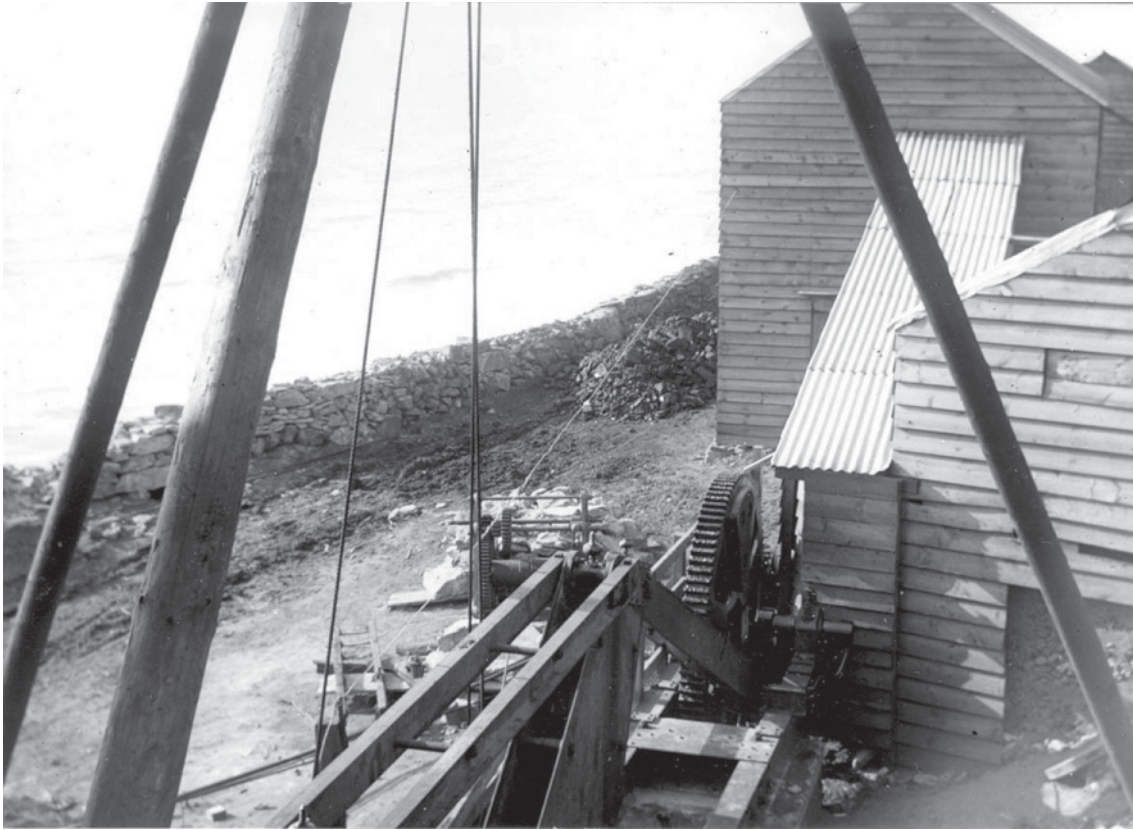




*Fig 81. John Smith examining apparently fire-set workings on the upper part of the outcrop of the Towanroath Lode. Adam Sharpe Collection.*



*Fig 82. Narrow hand-cut stopping on the upper part of the outcrop of the Towanroath Lode in the cliffs above Towanroath Vugga. Adam Sharpe Collection.*



*Fig 84. The temporary plant erected on Towanroath Shaft during the early years of the 20<sup>th</sup> century reopening of Wheal Coates. The concrete bases of the two buildings survive. NT Photo Archive.*



*Fig 85. Towanroath pumping engine house viewed from the coast path approaching it from the south, the first view of the site gained by most visitors to the site. HE Archive.*



Fig 86. Towanroath pumping engine house and a section of the path (lower left) which leads to it from the clifftop buildings of Wheal Coates. HE Archive.



Fig 87. Towanroath pumping engine house from the south, with the remains of the boiler house eastern wall (right) and the walling around the concrete base for the 20<sup>th</sup> century horizontal pumping engine (lower centre). A comparison with Fig 86 indicates the extent of the rebuilding of this elevation. HE Archive.

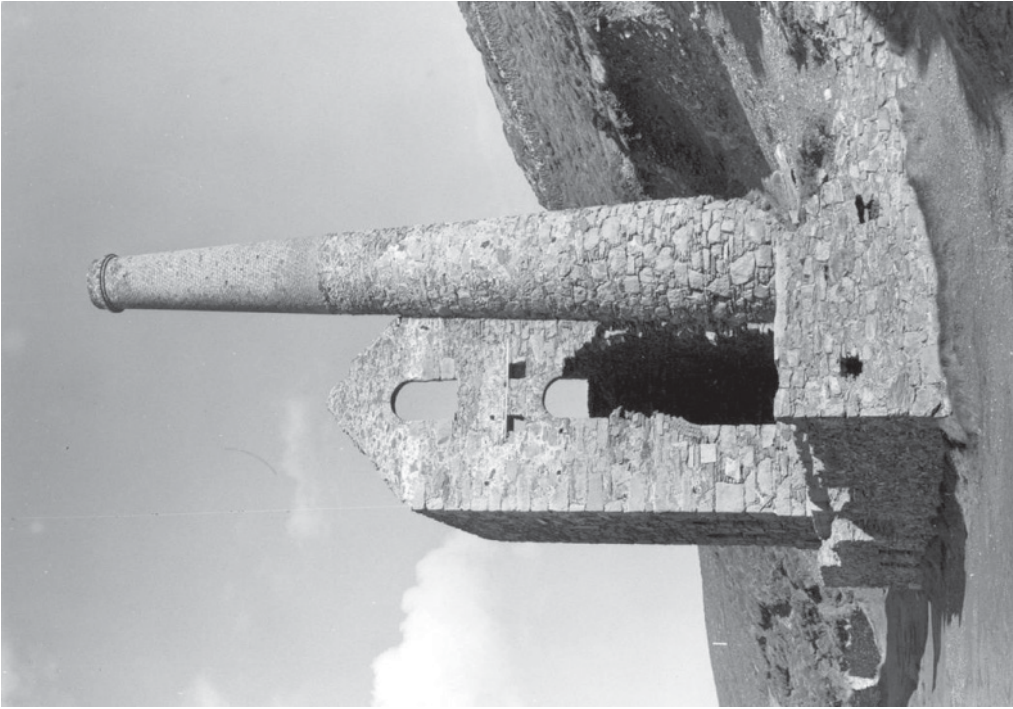


Fig 89. The southern elevation of the Tonanroath pumping engine house [190390] circa 1973. The extent of masonry reconstruction in this elevation can be seen by comparison with Fig 84. NT Photo Collection.

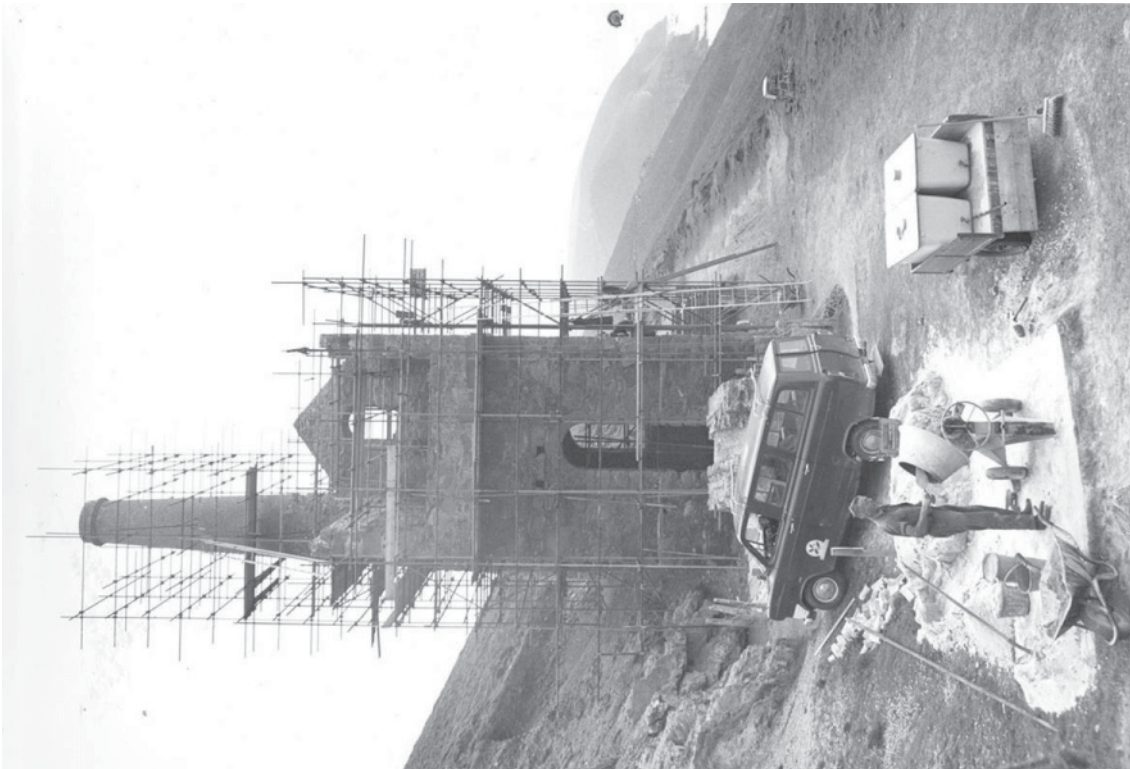


Fig 88. Reconstruction of the Tonanroath pumping engine house under way in 1973. NT Photo Collection.



Fig 90. The clifftop building group at Wheal Coates, including (right to left) the boiler house [190377], all-indoor beam whim engine house [190378], chimney [190373], the horizontal whim engine house [190376] and the stamps engine house [190381]. HE Archive.



Fig 91. The clifftop buildings of Wheal Coates from the north, including (left to right) the chimney [190373], the horizontal whim engine house [190376], the all-indoor whim engine house [190378], Smithy [190343], the stamps engine house [190381], calciner [190346] and pumping engine house [190390]. HE Archive.



Fig 93. The stamps engine house [190381] following its conservation. On this elevation the replacement of some failed pointing and minor rebuilding of the cable were all that were undertaken. HE Archive.



Fig 92. A view of the stamps engine house [190381] prior to its conservation in 1986. Adam Sharpe Collection.



Fig 94. The boiler house [190377] (foreground), the all-indoor beam whim engine house [19037] (immediately behind) and the chimney [190373] seen from the reservoir [190394]. HE Archive.



Fig 95. Conservation work under way to the horizontal whim engine house [190376] (left) and all-indoor whim engine house [190378] (right) during 1986. Adam Sharpe Collection.



Fig 96. Conservation work under way on the horizontal whim engine house [190376] (foreground) and all-indoor beam whim engine house [190378] (behind) during 1986. Adam Sharpe Collection.



Fig 97. The reverberatory arsenic calciner [190346] seen from the north-west. The nearest section of the building housed the stoking area, whilst the calcining beds are in the farther section of the structure. The arched opening at the rear gives onto one of the twin hearths, whilst the nearer arch is the discharge opening. Matching openings are found on the opposite side of the building. HE Archive.





Fig 98. Volunteers excavating the interior of the northern part of the calciner [190346] prior to its conservation during 1986. Adam Sharpe Collection.



Fig 99. The collapsed near-surface section of the brick-arched calciner flue [190349] with the galvanised grille placed over it to protect visitors from injury. HE Archive.



*Fig 100. The mine smithy [190343] with its forge base (inside rear wall) seen from the north, with the stamps engine house [190381] in the background. HE Archive.*



*Fig 101. The producer gas generator house [190379] viewed from the east with the loadings for the gas engine (centre) and the site of the stamps and 20<sup>th</sup> century dressing floors (upper right centre). HE Archive.*



*Fig 102. One of the granite bound stones [190405] set up around the southern periphery of Wheal Coates. This view was taken in 1986 –vegetation now almost completely covers the feature. Adam Sharpe Collection.*



*Fig 103. The mortared masonry base of the 20<sup>th</sup> century stone crushing plant [190294] set up to rework the dumps deriving from the Wheal Coates openwork [190289]. The material produced here was probably used as hardcore or as gravel for roads. HE Archive.*



*Fig 104. Water Shaft [190332] at Wheal Coates, one of the few shafts on this site to have been maintained as an open feature, in this case having been fitted with a bat castle. HE Archive.*



*Fig 105. The lower, western section of the Wheal Coates openwork [190306] with the stock protection wall [96792] to its left. A modern path crosses the openwork (upper centre). HE Archive.*



*Fig 106. Chapel Porth seen from the upper south-western slopes of Chapel Combe, just above quarry [190531]. On the slopes above the car park can be seen enclosure [190472]. St. Agnes Chapel [190468] was sited a short distance up the narrow coombe debouching at the lower end of the beach on its far side. HE Archive.*



*Fig 107. Chapel Porth from the north, looking across the site of St. Agnes Chapel [190468] on the platformed area (lower left of centre) and St. Agnes Well [190469] on the cliff edge at the end of the coombe. HE Archive.*



Fig 108. A probably early 20<sup>th</sup> century archive view looking down Chapel Combe across the Old Century tin works [190510]. The disturbed nature of the valley bottom indicates abandoned tin streaming activity. In the background (left) can be seen the bungalow [198501]. Clive Benney Collection



Fig 109. An archive view of the Old Century tin works in Chapel Combe, showing the typically rather ramshackle appearance of these tin salvage works. Clive Benney Collection.



Fig 110. A post-war view of a crowded car park at Chapel Porth. The bungalow [198501] is to the right centre, whilst the early café [190487] is at the head of the beach (lower left). The toilet block had been constructed on the sit of the former waterwheel by this date. Clive Benney Collection.



Fig 111. A hand-tinted post-war postcard of Chapel Porth showing surfers enjoying a small beach break. The remains of the wartime beach defences can be seen just right of lower centre. Clive Benney Collection.



*Fig 112. A view of the remains of the stamps and waterwheel at Chapel Porth taken during the early decades of the 20<sup>th</sup> century prior to the construction of the toilet block. Whitworth Collection, St. Agnes Museum.*



*Fig 113. The blockwork-built café [190487] at the head of Chapel Porth beach, possibly adapted from a wartime structure. NT Photo Archive.*





Fig 114. Winnie Rickard's bungalow at Chapel Porth [198501] which served for a while as a tearoom, and which was demolished by the NT in 1959. Clive Benney Collection.



Fig 115. The first purpose-built café [190499] constructed at Chapel Porth in 1957 by the NT. This was destroyed by arson in 1984. NT Photo Archive.



*Fig 116. The modern café at Chapel Porth [190500] constructed in 1984 and partially rebuilt after a fire in 2007. HE Archive.*



*Fig 117. Enclosure [190472] on the lower northern hill slopes at Chapel Porth, the site of a tin-worker's cottage [190473] which was probably sited in the hollowed area on its right hand edge. HE Archive.*



Fig 118. The site of St. Agnes Chapel [190469] was probably over the non-eroded top of one of the two sea caves at Chapel Porth called the Two Vugs [190470]. HE Archive.

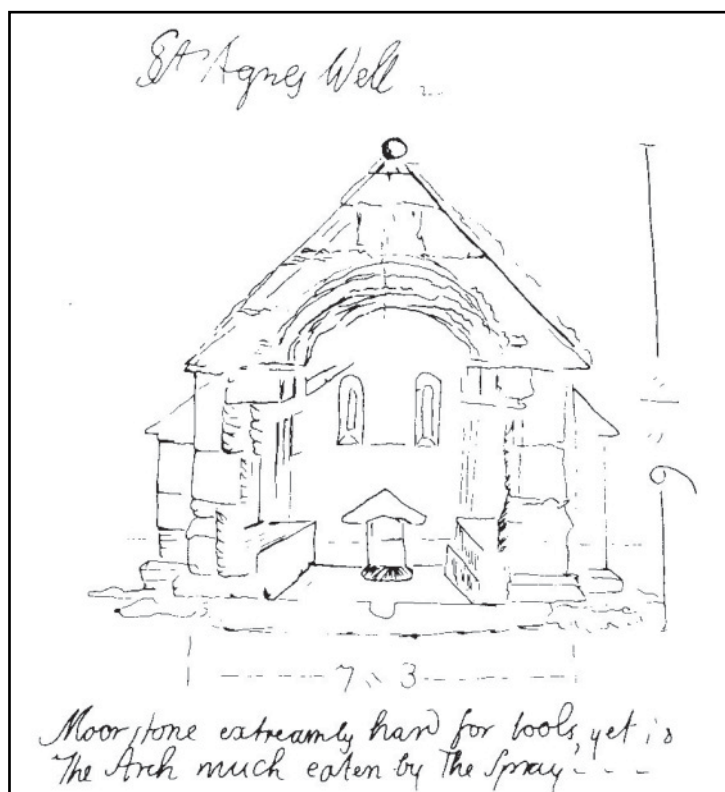


Fig 119. A sketch by William Borlase of St Agnes' chapel [190469], on the north side of Chapel Porth (reproduced from Mattingly nd). Borlase visited the chapel in about 1751.



*Fig 120. The sea caves known as the Two Vugs [190470] on the northern side of Chapel Porth. Mineral workings extend from the back of the right hand cave, whilst St. Agnes Well [190469] was sited above the central cave. HE Archive.*



*Fig 121. The Giant's Footprint [190451] – a natural erosion hollow in a surface boulder in base of the narrow Coombe running north-eastwards from Chapel Porth, and associated with the legend of Giant Bolster. GPS unit included for scale. HE Archive.*



Fig 122. An extract from a map of the manor of Tywarnhaile dating to 1848 and showing a pair of buildings on Mulgram Hill which might have been set within enclosure [190525] and the buildings of North Towan Mine [190651]. CRO AD-145-32, copyright Cornwall Council.

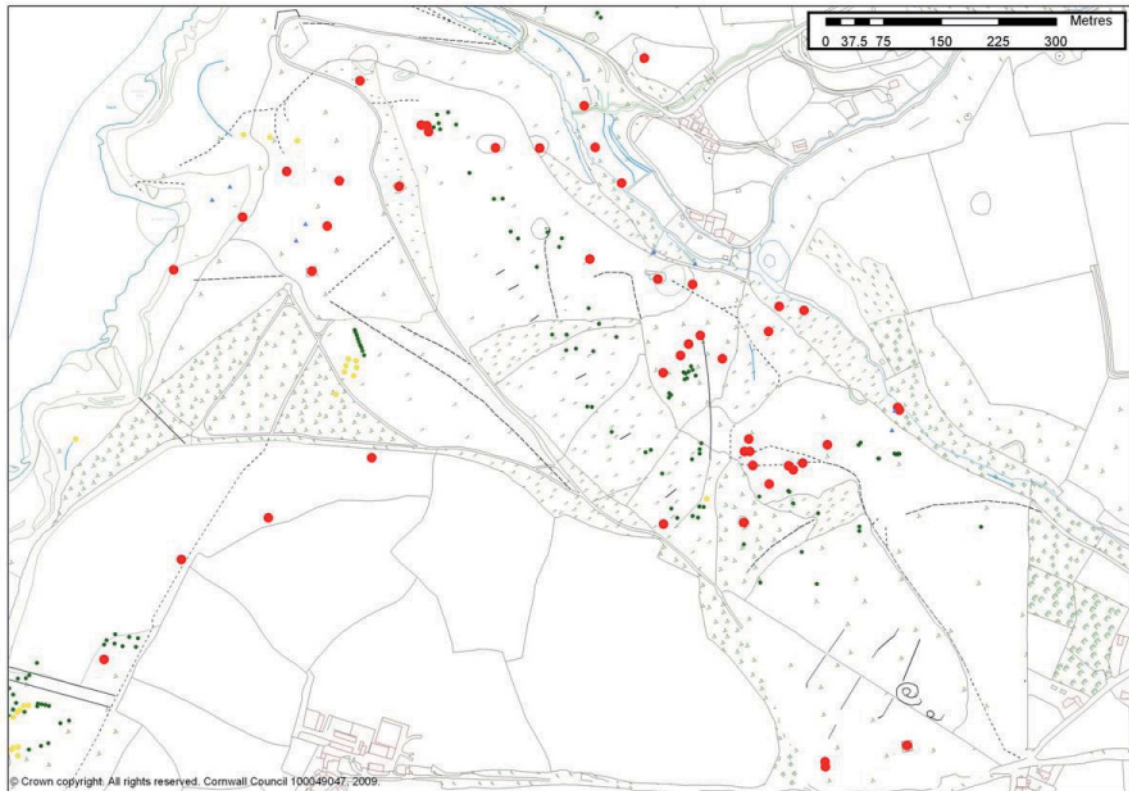


Fig 123. Mining features on Charlotte Moor and Towan Moor. Red – shafts, Orange – outcrop workings, Green – prospecting pits, Blue triangles – adits.

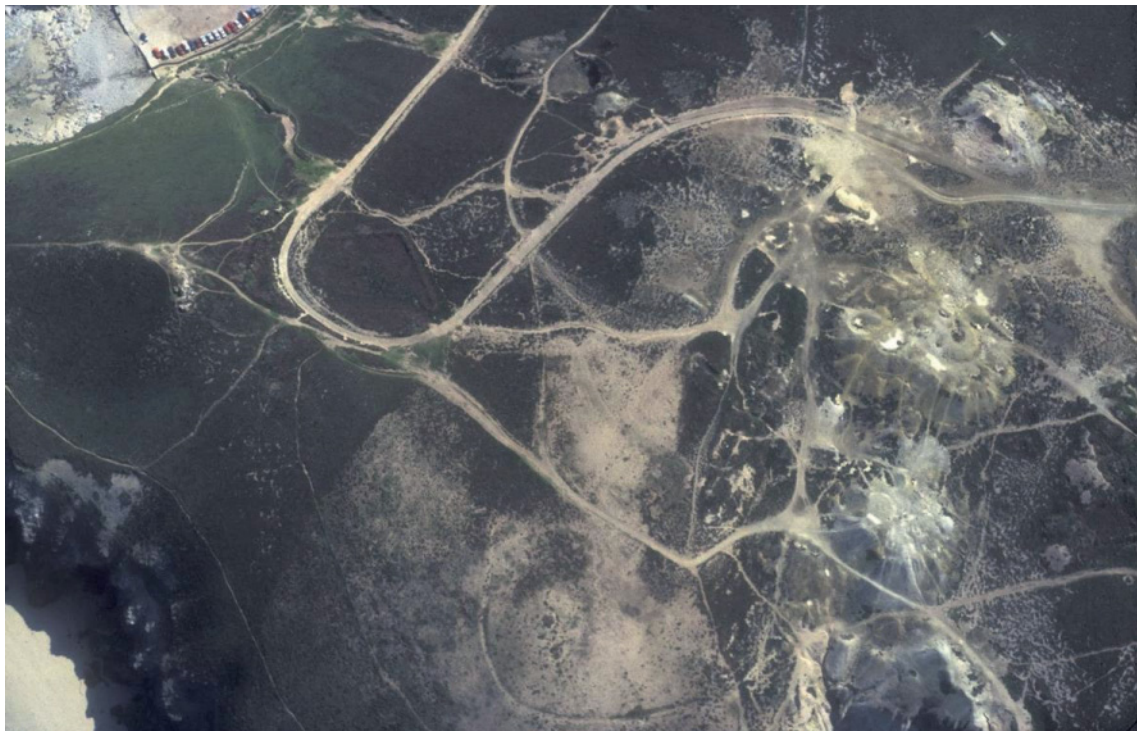


Fig 124. An aerial view of Mulgram Hill and Great Wheal Charlotte taken in the late 1980s showing the extensive disturbance to the area resulting from mining, dump re-working, military activity including the disposal of unexploded bombs during WWII and shaft capping in 1983. Adam Sharpe Collection.



*Fig 125. A late 19<sup>th</sup> century or early 20<sup>th</sup> century archive view looking westwards down Chapel Combe showing the abandoned pumping engine house on Charlotte United Mine. A comparison with the view today makes it clearly evident how much willow and scrub vegetation has subsequently developed in the valley base. Clive Benney Collection.*



*Fig 126. Midwinter's Shaft and its Chyd Cap set right on the edge of the cliff above Porthgwidden Cove. The shaft is open to at least adit level below. HE Archive.*



*Fig 127. A view across Porthgwithden Cove from Midwinter's Shaft. Two small shallow adits [190546]/ [190547] can be seen centre and above right of centre in the cliff face. HE Archive.*



*Fig 128. The almost completely blocked stone-arched portal to a high level adit [190557] in Great Wheal Charlotte, not far to the west of the remains of the pumping engine house. This adit might have channelled water pumped by the engine to dressing floors sited just down slope. HE Archive.*





*Fig 129. One of the small coastal barrow dumps at Great Wheal Charlotte, this example consisting primarily of quartz, suggesting that it derived from a nearby copper dressing floor. HE Archive.*



*Fig 130. West Shaft [190555] in Great Wheal Charlotte, set on the cliff edge above Porthgvidden Cove, and fitted with a two part Clwyd Cap. HE Archive.*



*Fig 131. A recent aerial view of Porthgwidden Cove and the remains of Great Wheal Charlotte. Much of the spoil deriving from mining operations seems likely to have been dumped over the cliff into the back of the cove. HE F68-043.*



*Fig 132. A view of the coastal section of Great Wheal Charlotte seen from the coast path, the bob wall of the pumping engine house [190567] being a prominent skyline feature. HE Archive.*



Fig 133. The mysterious concrete base [190552] in the north-western part of Charlotte Moor. HE Archive.



Fig 134. Looking south across Chapel Combe towards the site of North Towan Mine, marked by a series of substantial spoil dumps, as well as by the overgrown mine roadways which linked up areas of the site. Bracken obscures many of the features within this area. HE Archive.



*Fig 135. The bob wall of Great Wheal Charlotte pumping engine house in 1987 during conservation works undertaken by the NT. Adam Sharpe Collection.*



*Fig 136. Great Wheal Charlotte engine house bob wall today, the remains of the engine house and boiler house, together with the associated shaft site having been recently enclosed within a post and barbed wire fence. HE Archive.*

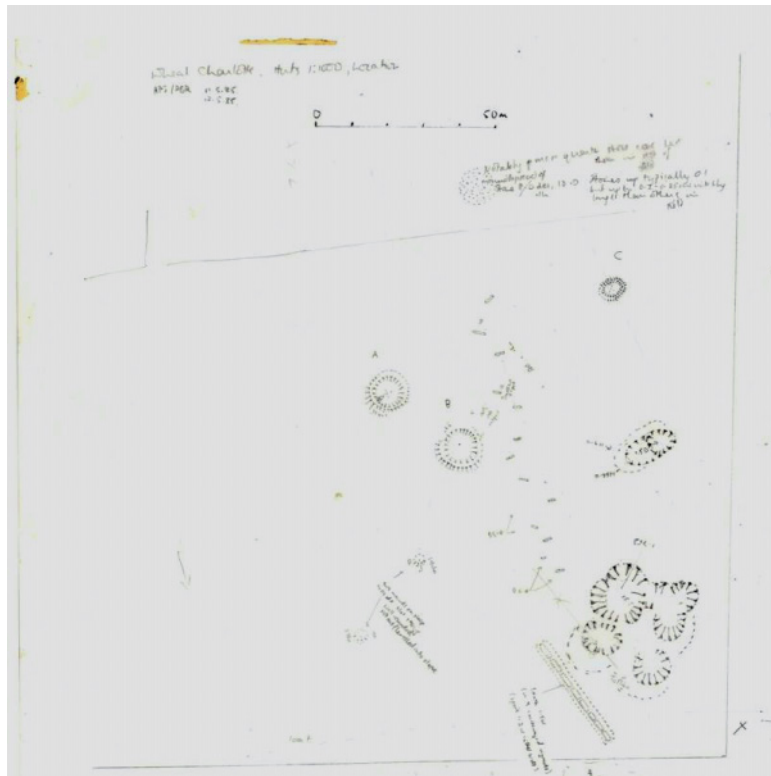


Fig 137. A plane table survey drawn up at 1:1000 by Peter Rose and Ann Preston Jones in 1985 showing possible round houses [190582]/[190585] (centre) together with outcrop workings [190578]/[190579] and prospecting pits [190580] (bottom right) and stony mound (possible shaft) [190736] top right of centre). HE Graphic Record Archive.



Fig 138. A series of closely-set outcrop workings [190758], part of Wheal Towan or one of its predecessors on the southern boundary of the property. HE Archive.



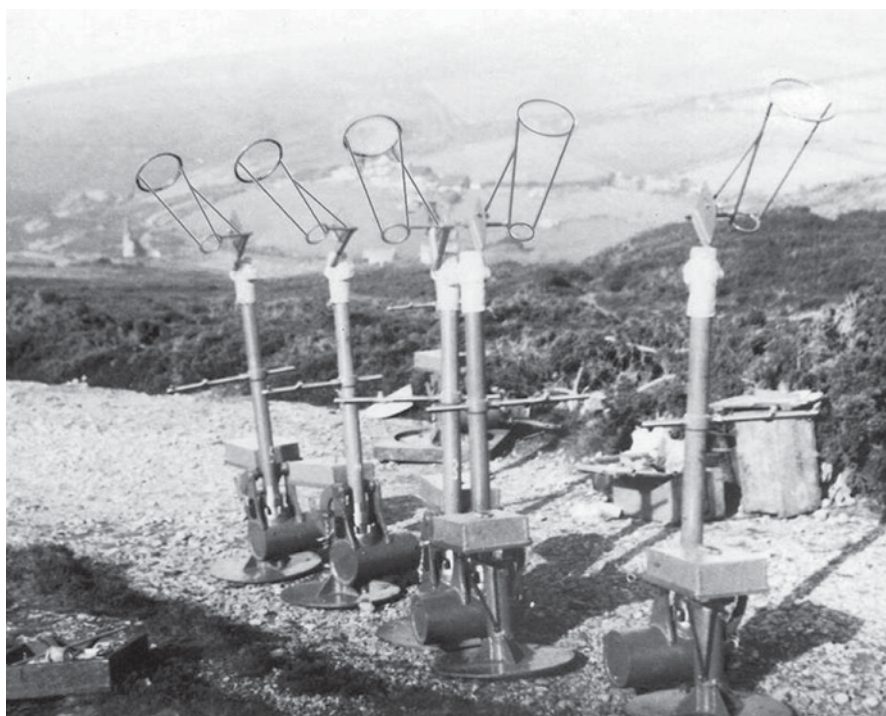
*Fig 139. Looking down the lower end of Chapel Combe, showing the US Army Road [190526] cutting up the hillside towards Mulgram Hill. Immediately to its right at its lower end is part of the original track route [190527], whilst in the valley bottom are the abutments for the bridge built in 1944 [190504]. HE Archive.*



*Fig 140. A section of the roadway linking Great Wheal Charlotte (on the skyline) with Towan Cross, most of this route having been upgraded by US Army Engineers in June 1944 to allow the downs to be used for the temporary accommodation of troops awaiting embarkation to the Normandy beaches on D Day. HE Archive.*



*Fig 141. Treve Holman standing behind a prototype Holman Projector at the eastern end of the Charlotte Moor test firing range. Goonvrea and the Beacon can be seen in the background. Holman Archive, Trevithick Society Collection.*



*Fig 142. A group of Holman Projectors at the eastern end of the test range on Charlotte Moor, with Charlotte United engine house in the background (mid left). Holman Archive, Trevithick Society Collection.*



*Fig 143. Cooking up a Mills Bomb in an experimental steam-powered Holman Projector. No-one gathered round seemed particularly perturbed by the possible consequences. Holman Archive, Trevithick Society Collection.*



*Fig 144. A view southwards across the reverting arable land at the southern end of Charlotte Moor, formerly the site of medieval outfield, but now archaeologically blank. HE Archive.*





*Fig 145. Charlotte United pumping engine house [190616] from the south-west prior to its conservation between 1989 and 1993. Although the building has now been stabilised, its boiler house [190617] still requires attention, and the expanding shaft cone threatens to undermine the bob wall. Adam Sharpe Collection.*



*Fig 146. The banks defining field system [190719] (lower left centre), together with the two undated enclosures [190723] and [190724] (upper right centre) near Towan Cross show up well in this recent aerial photograph. However European gorse and blackthorn scrub is encroaching onto surrounding sites such as the shafts and reservoirs of East Towan [190733] masking sites associated with the mine, such as reservoir [190729]. HE F68-044.*



*Fig 147. Post-medieval quarrying on the rock outcrop on the southern flank of the Beacon, named by Thomas Tonkin in the early eighteenth century as Garder Wollas, 'the lower seat' [190156]. The prominent overhead power cables and poles diminish the strong visual amenity and historic character of the landscape. HE Archive.*



*Fig 148. Thin, metal-contaminated soils are common on the former mine sites within the project area, and are particularly vulnerable to erosion and the loss of vegetation cover. HE Archive.*



*Fig 149. The effects of visitor pressure on thin soils can be found at many points within the project area, but are particularly evident in this aerial photograph of Wheal Coates. Multiple, braided paths have developed on thin soils, removing the vegetation and topsoil and promoting erosion. HE Archive.*



*Fig 150. On Charlotte Moor, Towan Moor and St. Agnes Beacon, many relatively subtle archaeological features have become swamped by unmanaged growth. In this view of Towan Moor a relatively substantial earth bank and ditch defining the western boundary of field system [190719] runs across the view from top left to bottom right. For other examples of this issue see Figs 45 and 49. HE Archive.*



*Fig 151. Dense growth of furze and scrub masks significant remains of both industrial and military activity on the northern end of the Beacon ridge. HE Archive.*



*Fig 152. Much of the complex of historic mining activity in the south-west corner of the Beacon rough ground is concealed under dense furze and scrub, and furze and bracken are also encroaching around the fringes of the NT property. NT Archive.*

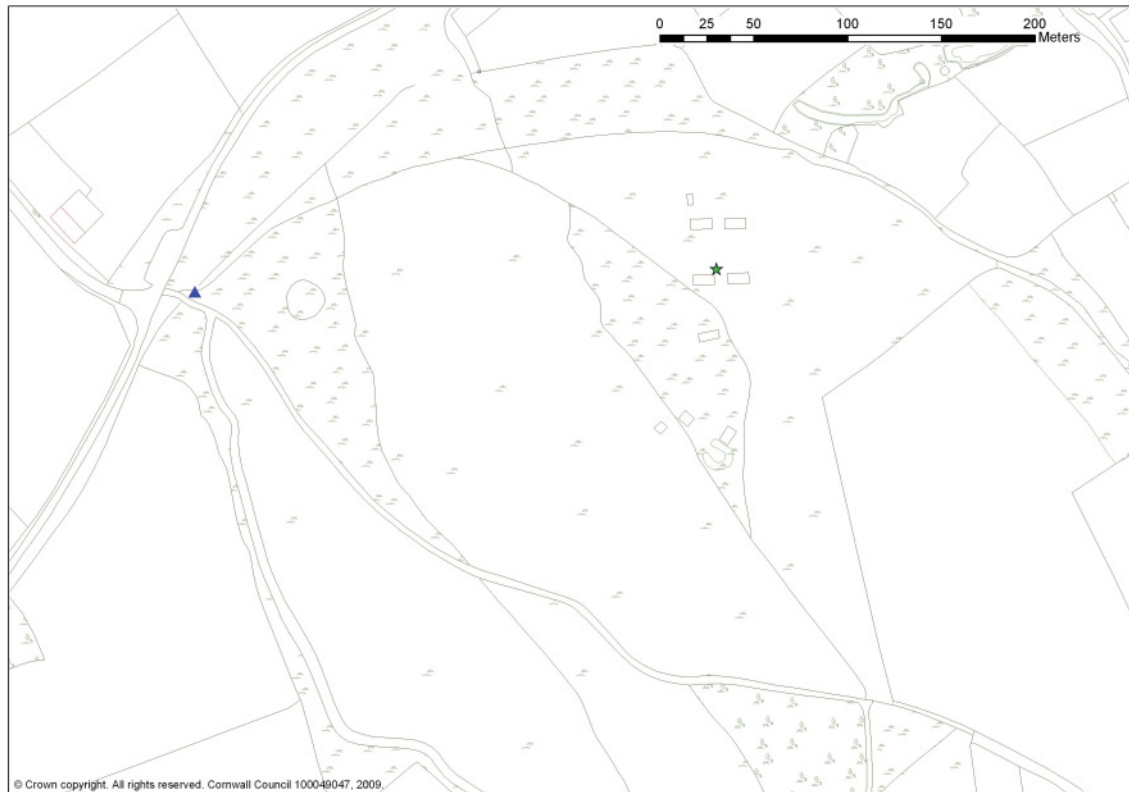


Fig 153. Specific management actions on St. Agnes Beacon. Blue triangle – interpretation board; Green star – survey radar station.

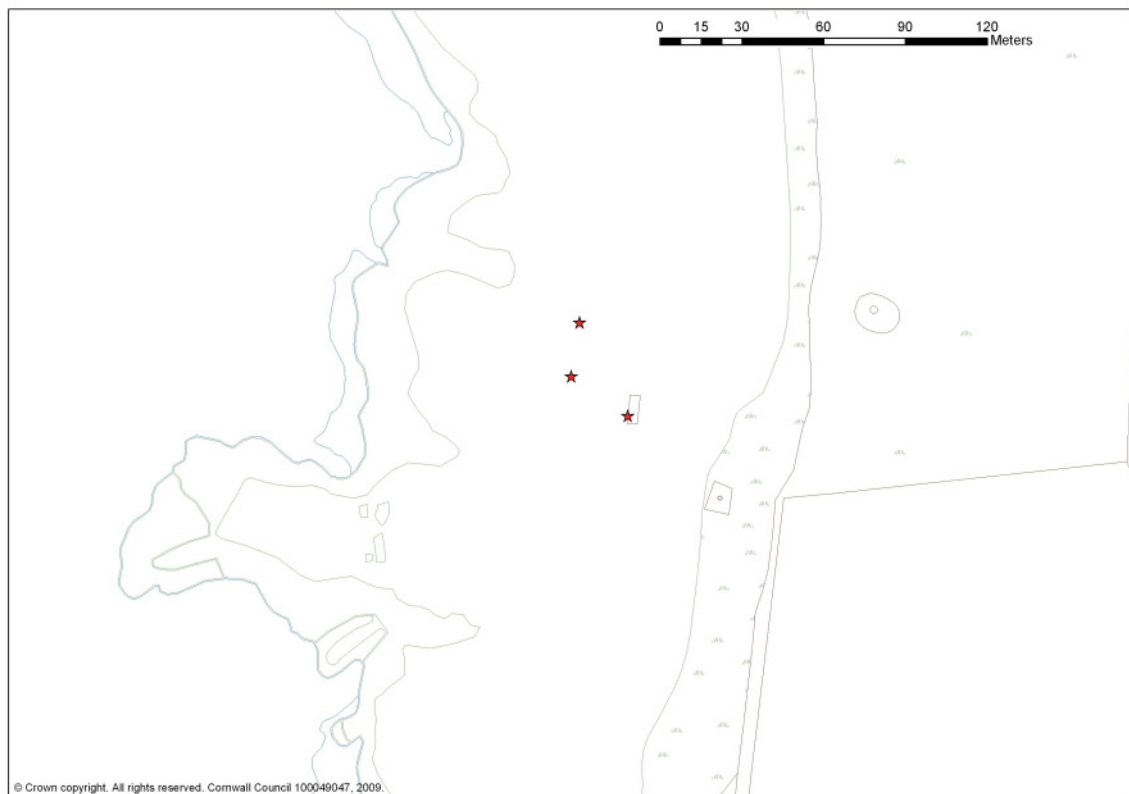


Fig 154. Specific management works at Tubby's Head. Red stars – survey mine buildings and undertake minor building works.

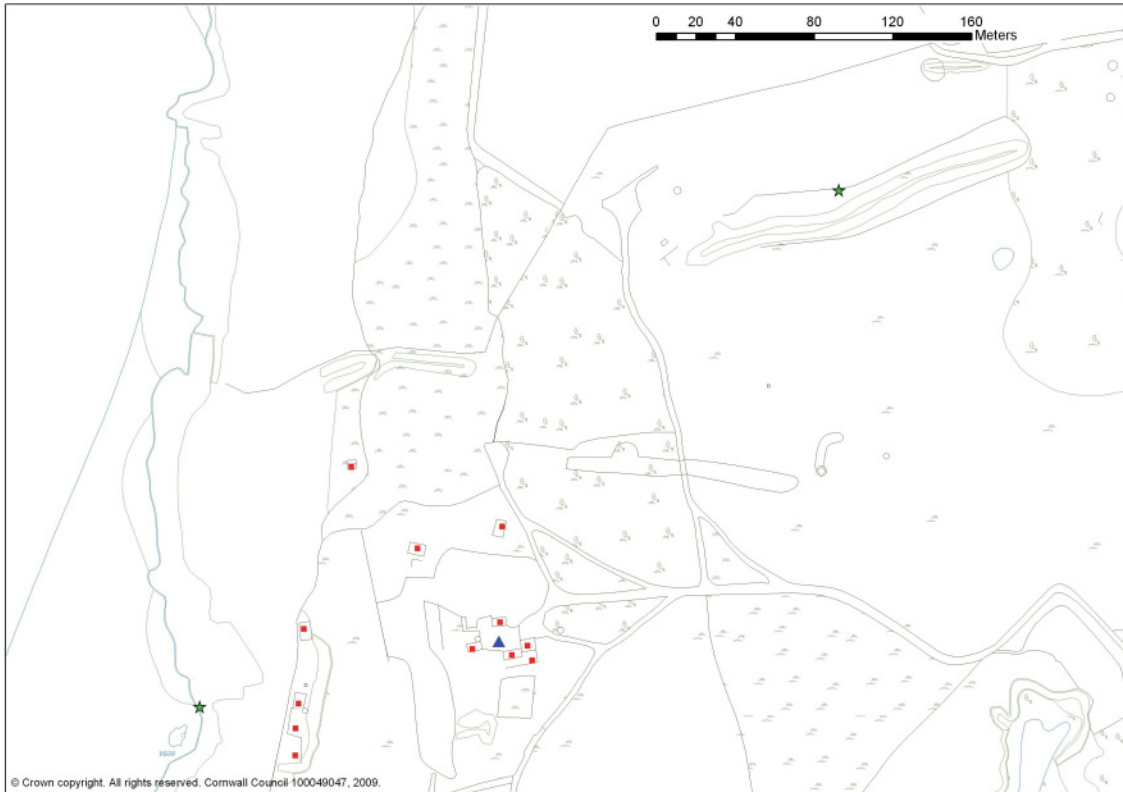


Fig 155. Specific management works at Wheal Coates. Red square – minor conservation works to buildings; Blue triangle – Interpretation panel; Green star – further surveys needed on Towanroath outcrop workings and openwork wall.

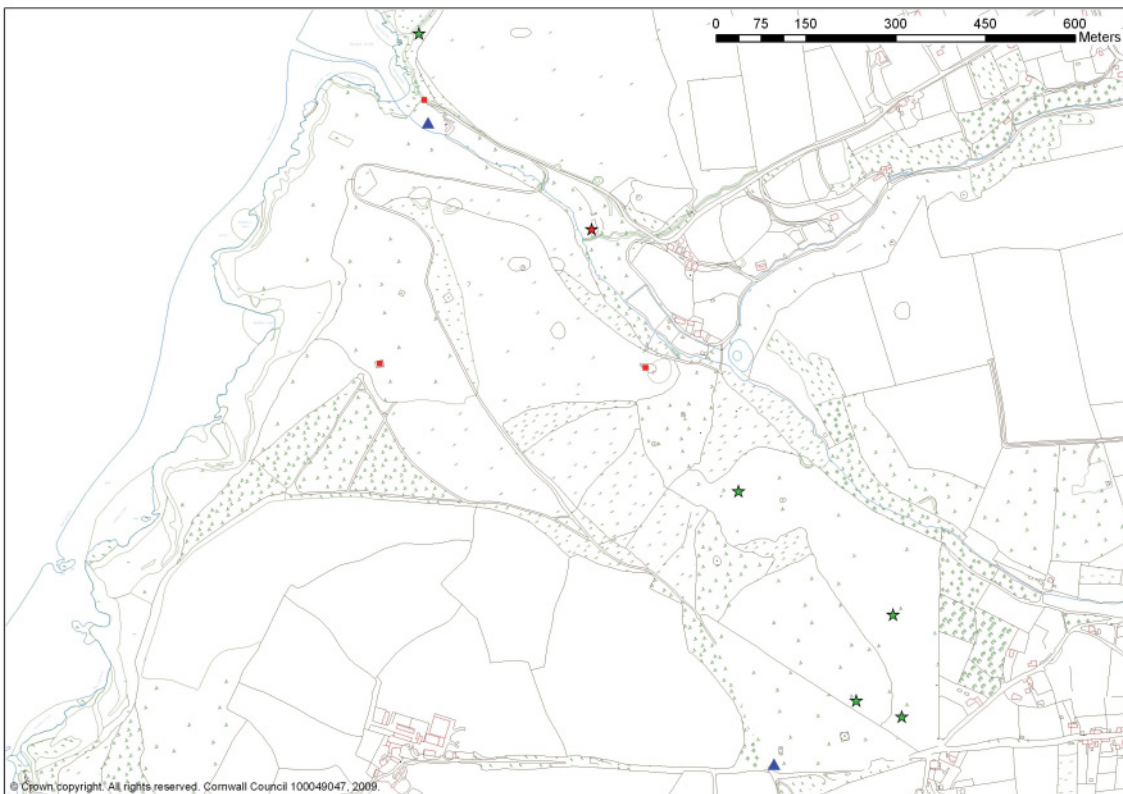


Fig 156. Specific management works at Chapel Porth and Charlotte Moor. Red squares – minor building conservation works; Green stars – further survey required; Blue triangles – new interpretation panels.

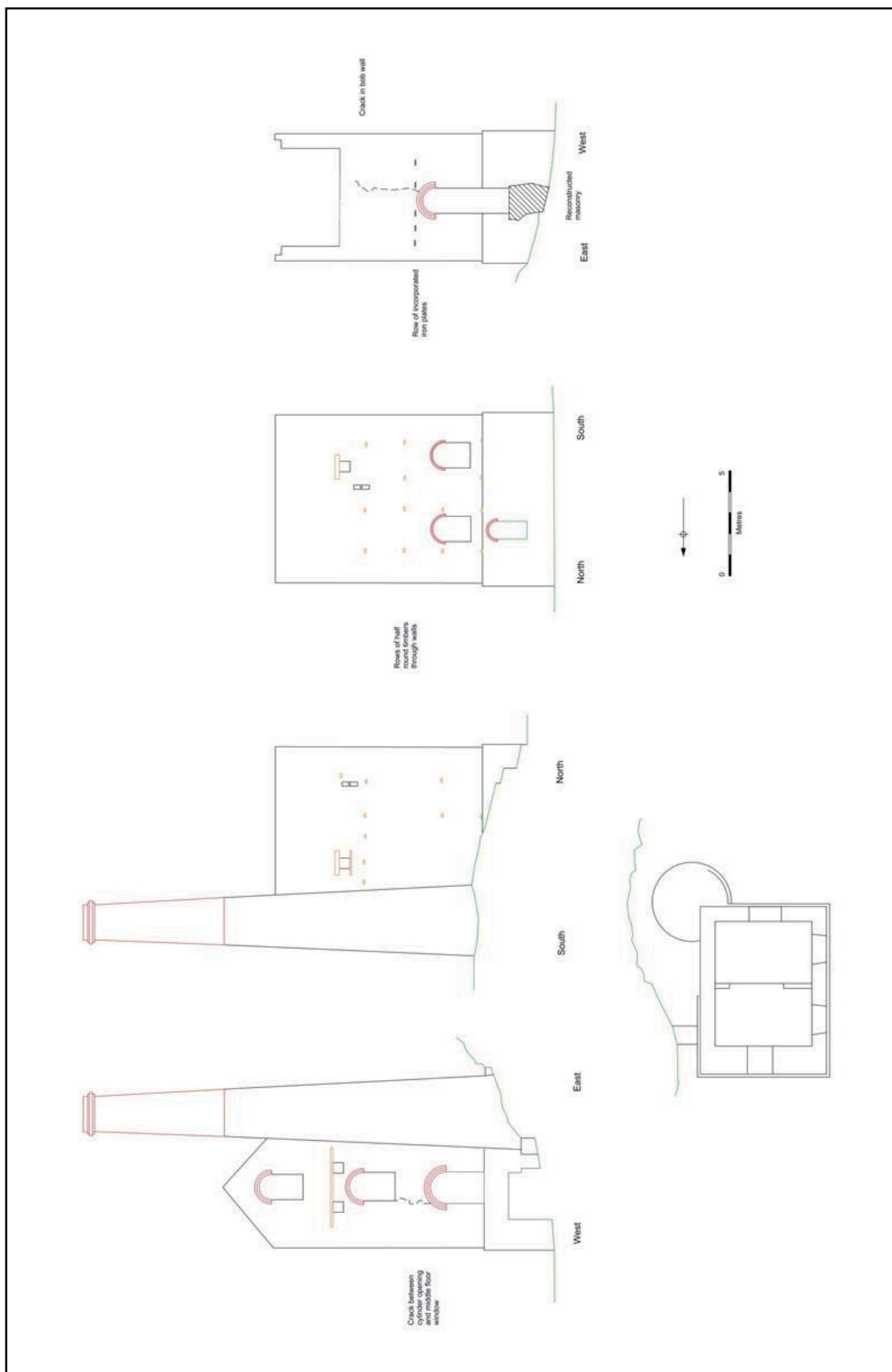


Fig 157. Plan and external elevations of Towanroath pumping engine house, Wheal Coates [190390].

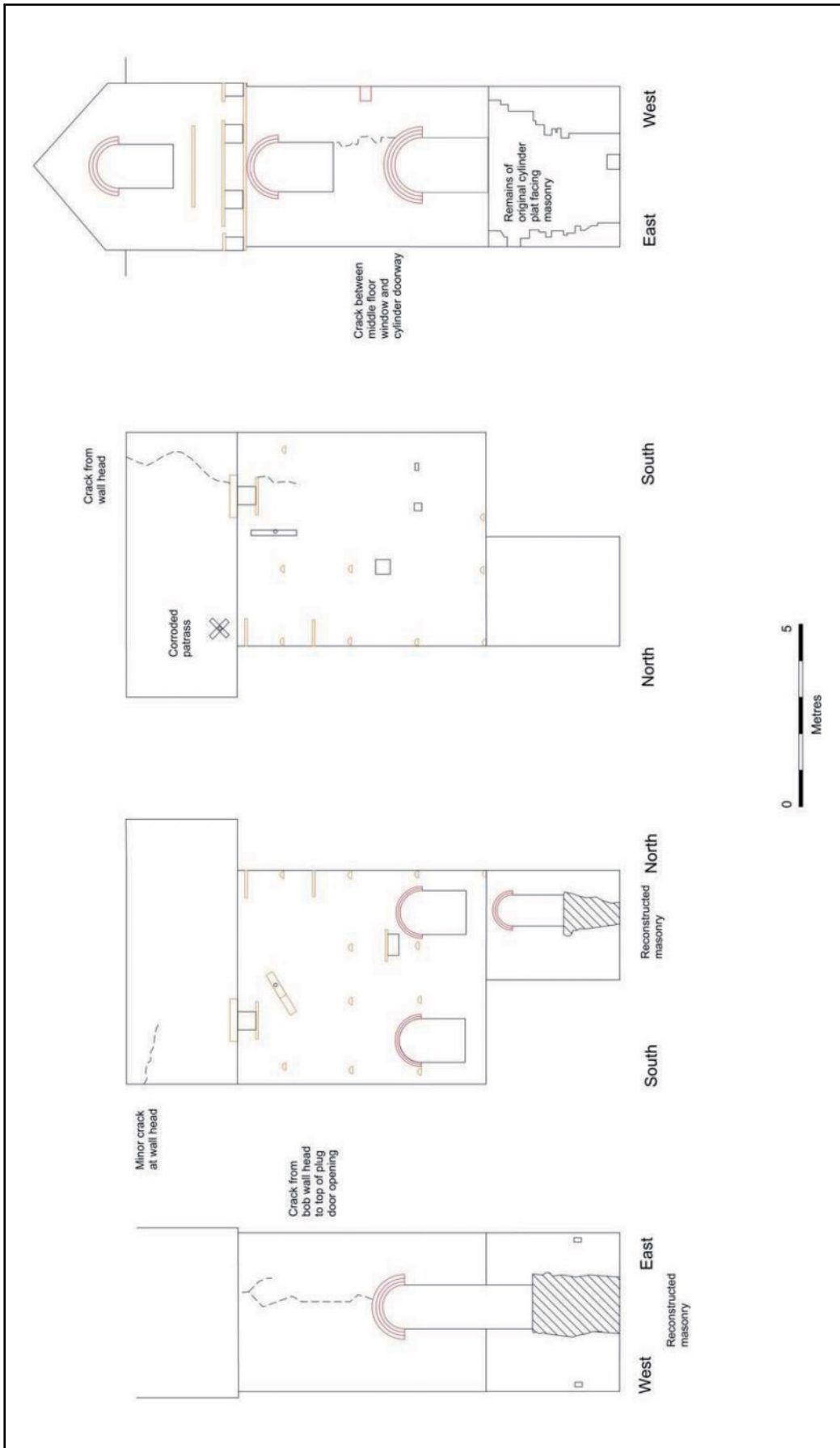


Fig 158. Internal elevations of Towanroath pumping engine house [190390].



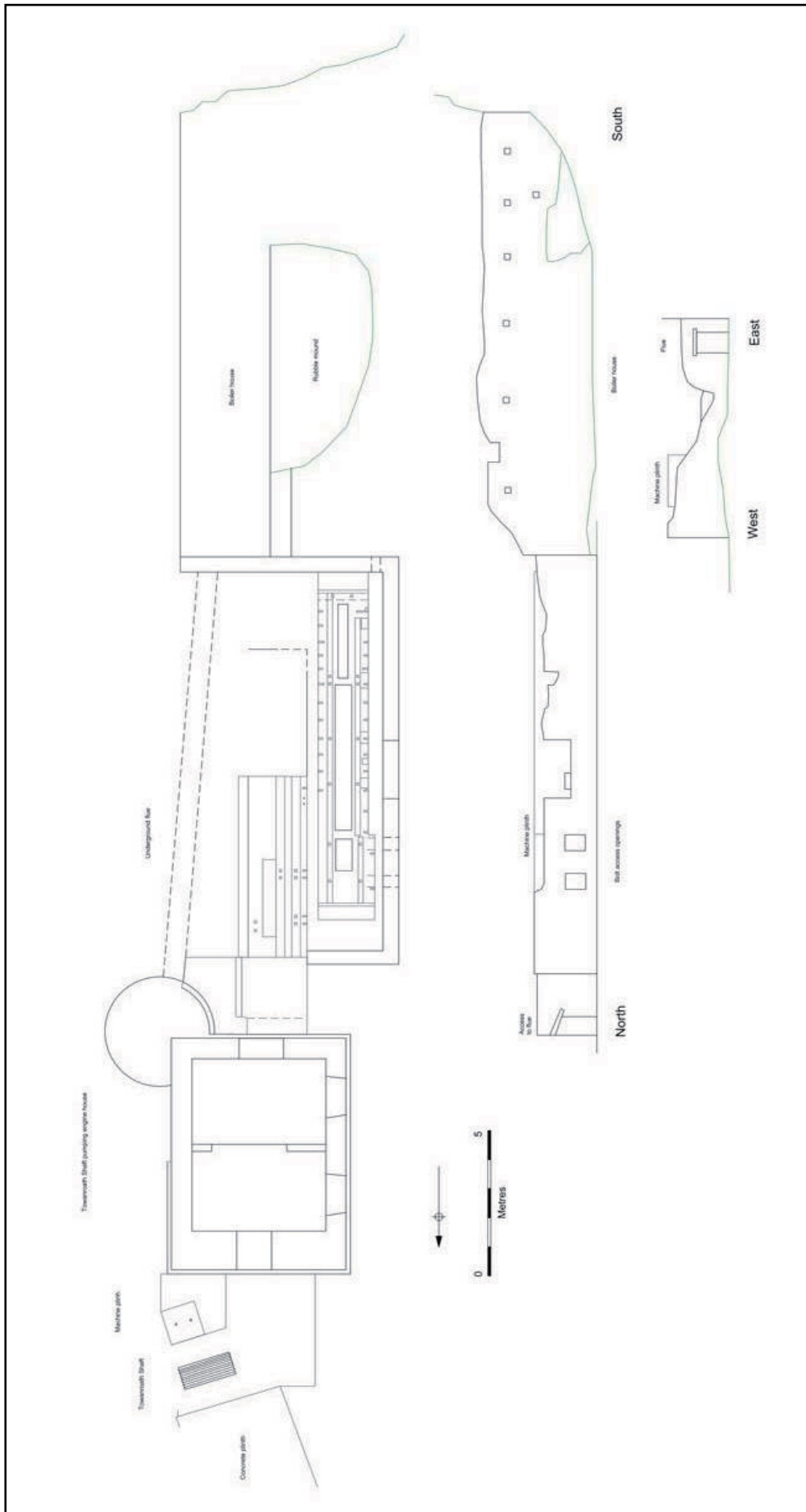


Fig 159. Plan of Tonanroath beam pumping engine house, horizontal pumping engine house and remains of boiler house. Western and southern elevations of horizontal pumping engine house and boiler house.

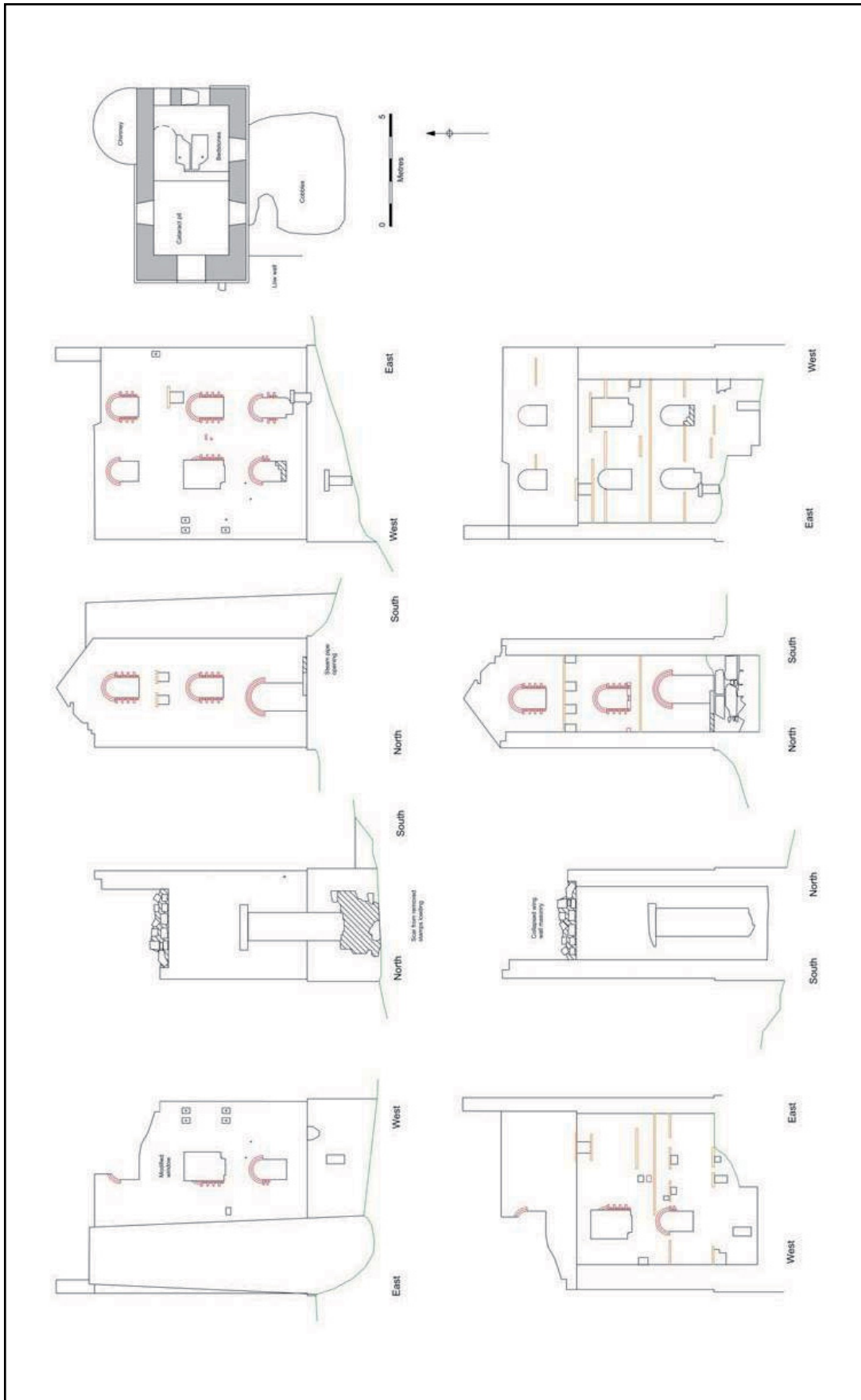


Fig 160. Plan, external and internal elevations of Wheal Coates stamps engine house.

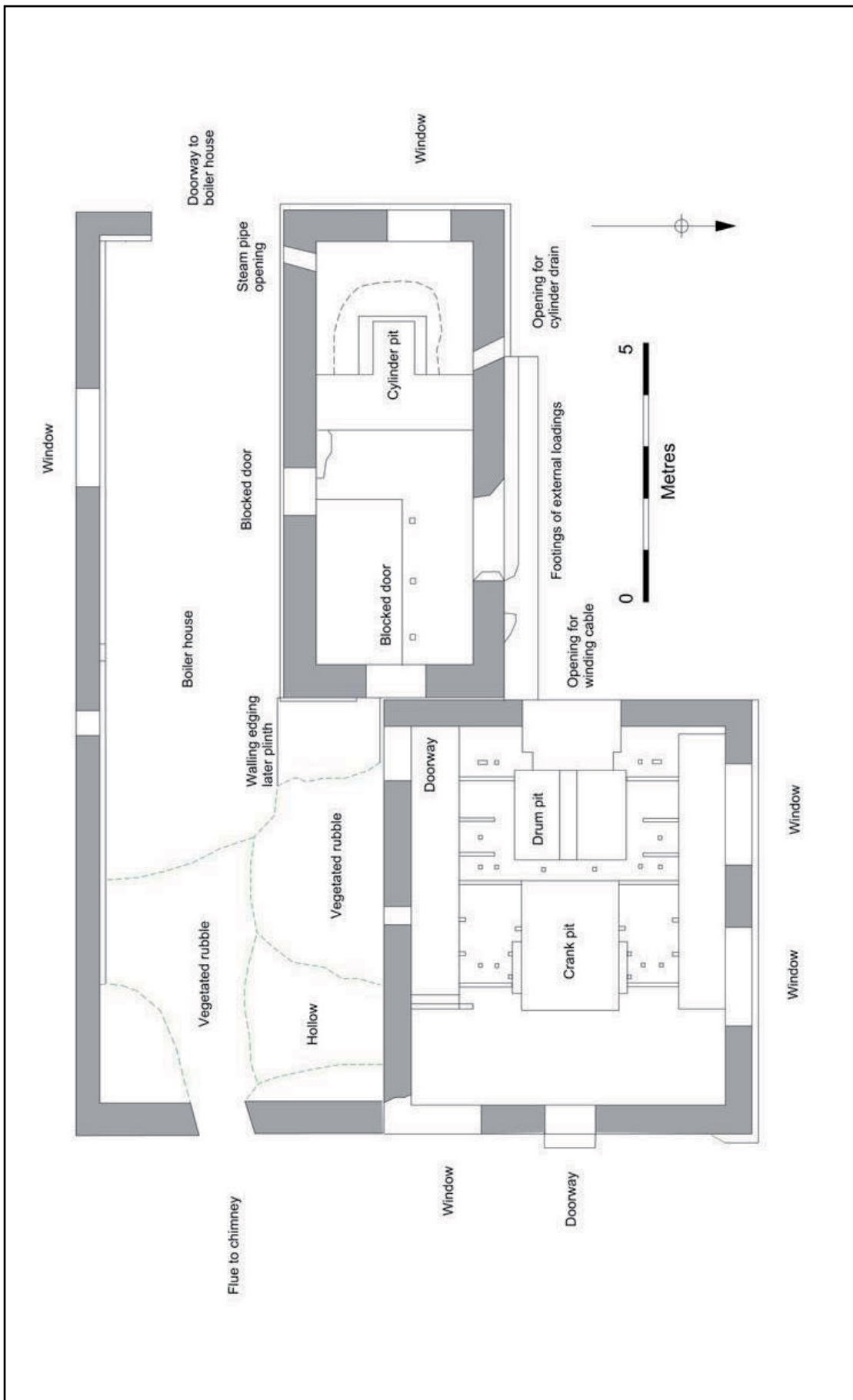


Fig 161. Plan of horizontal winding engine house [190376], boiler house [190377] and all-indoor beam whim engine house [190378] at Wheal Coates.

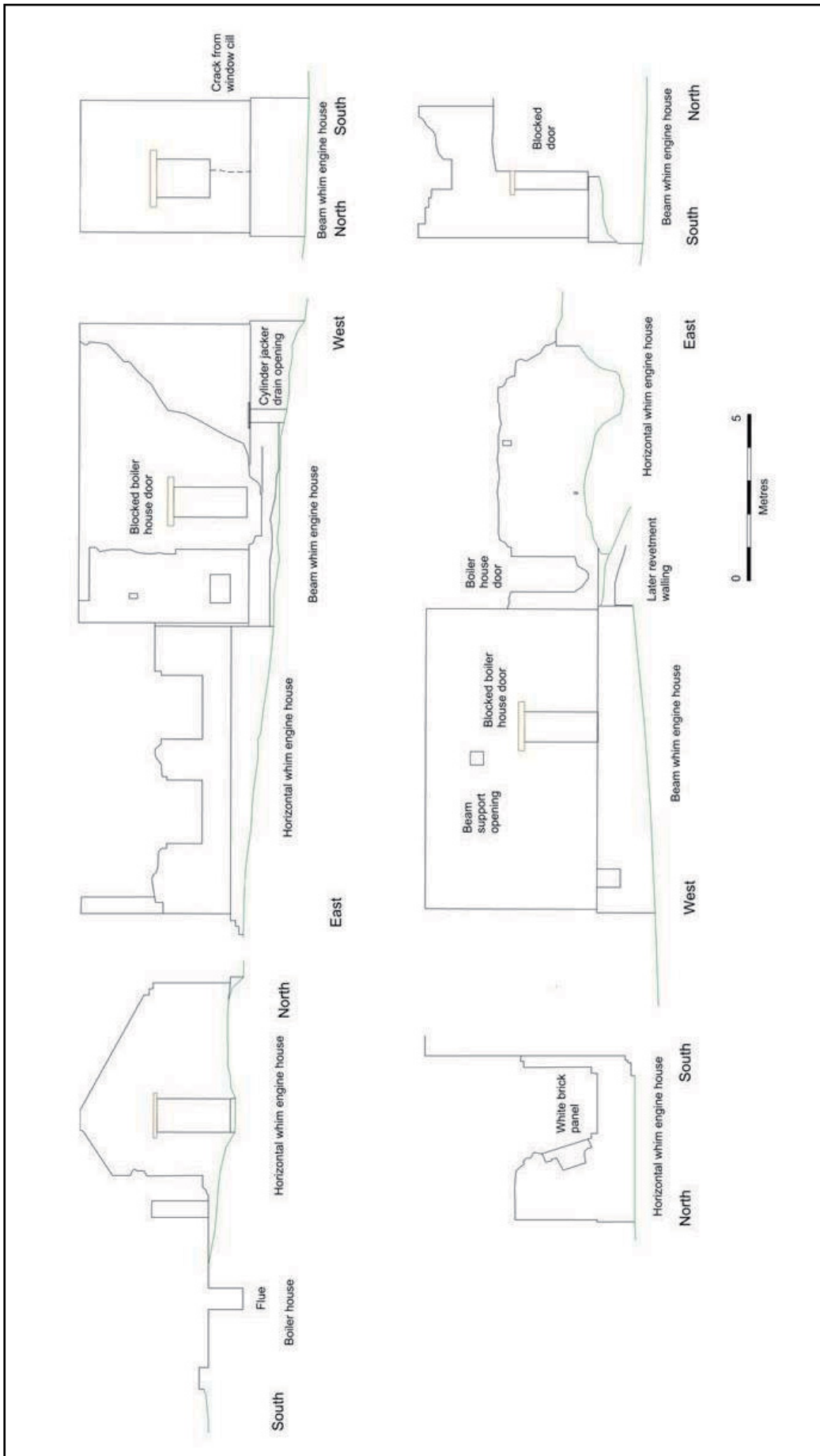


Fig 162. External elevations of horizontal whim engine house [190376] and all-indoor beam whim engine house [190378] at Wheal Coates.

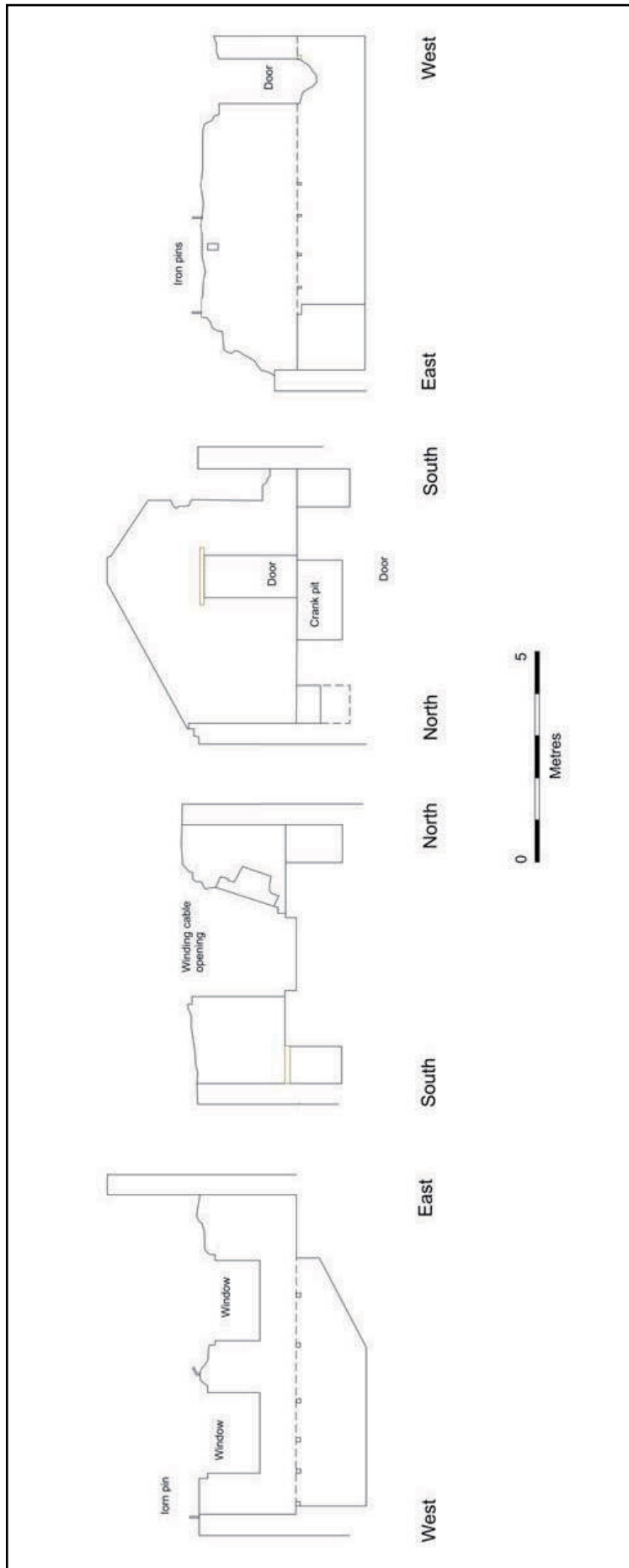


Fig 163. Internal elevations of horizontal winding engine house [190376] at Wheal Coates.

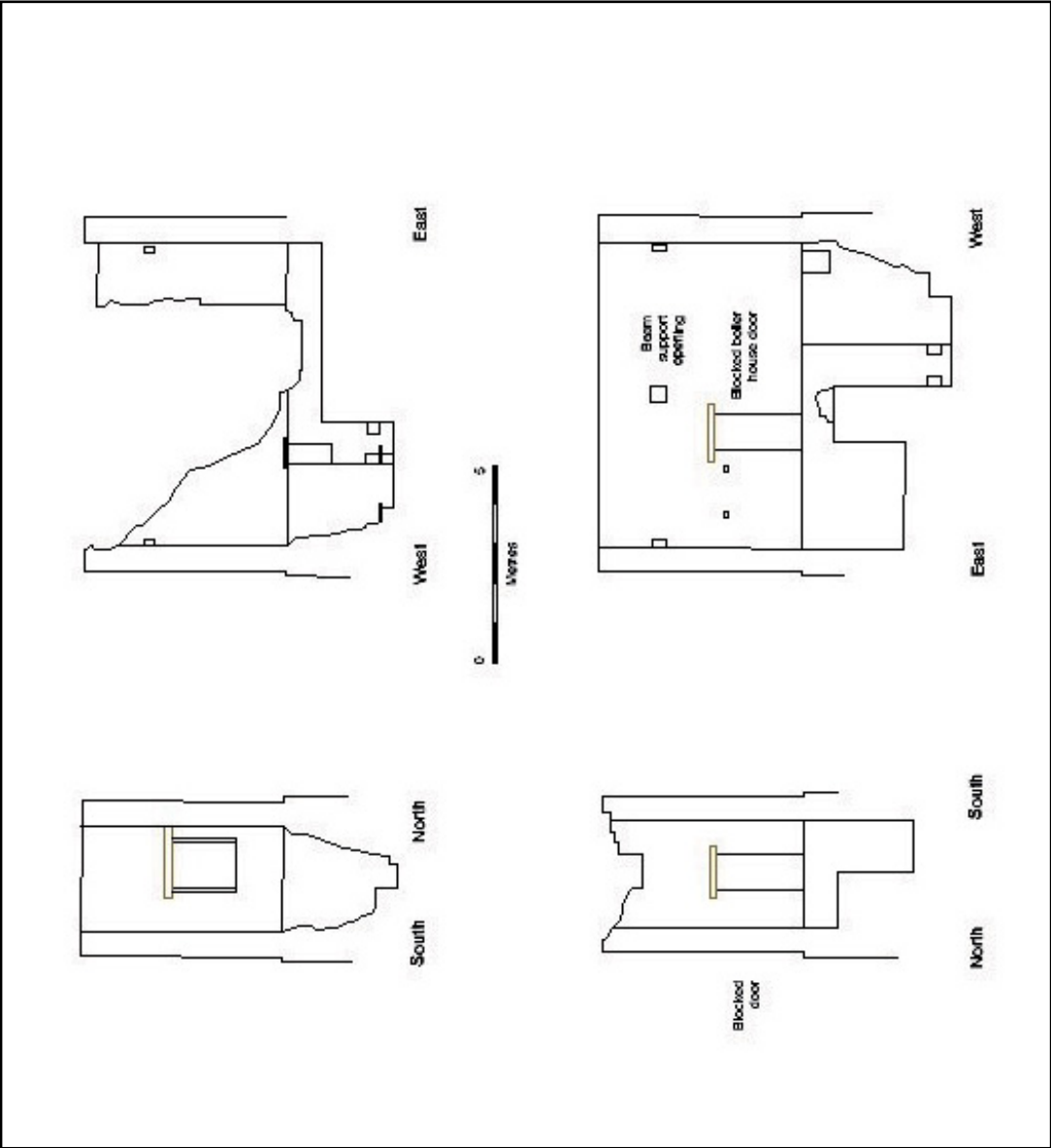


Fig 164. Internal elevations of Wheal Coates beam whim engine house [190378].

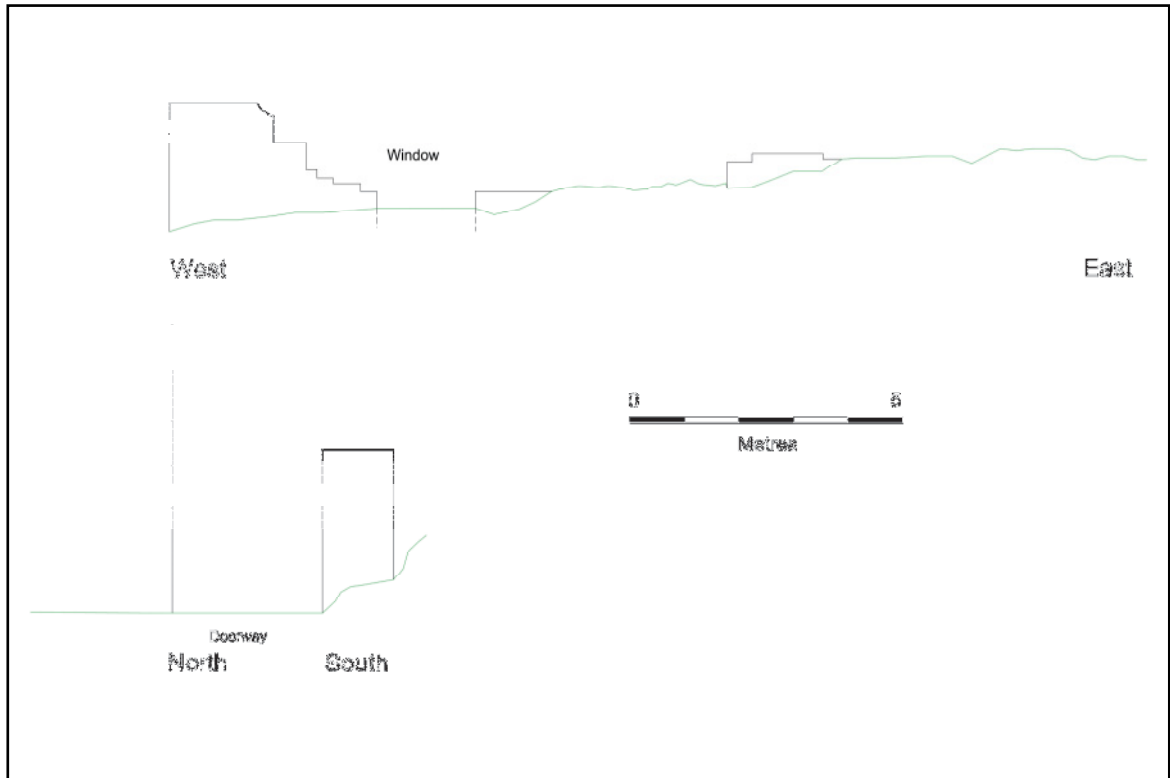


Fig 165. Wheal Coates boiler house [190377] external elevations.

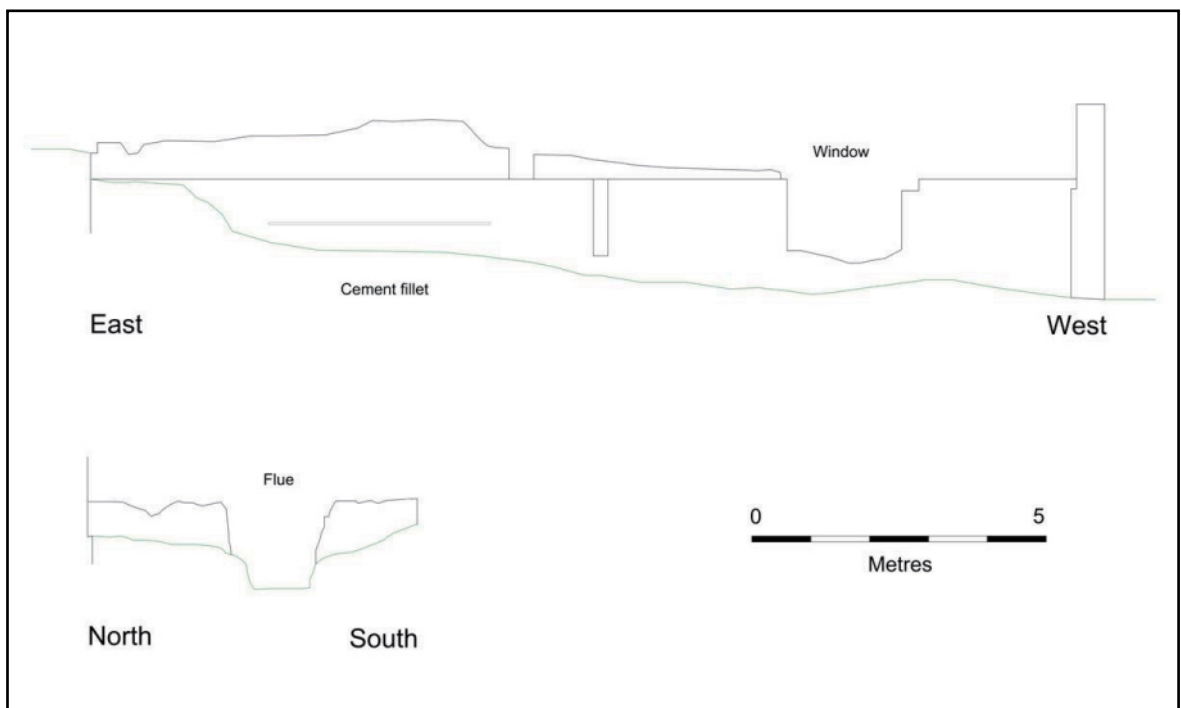


Fig 166. Wheal Coates boiler house [190377] internal elevations.

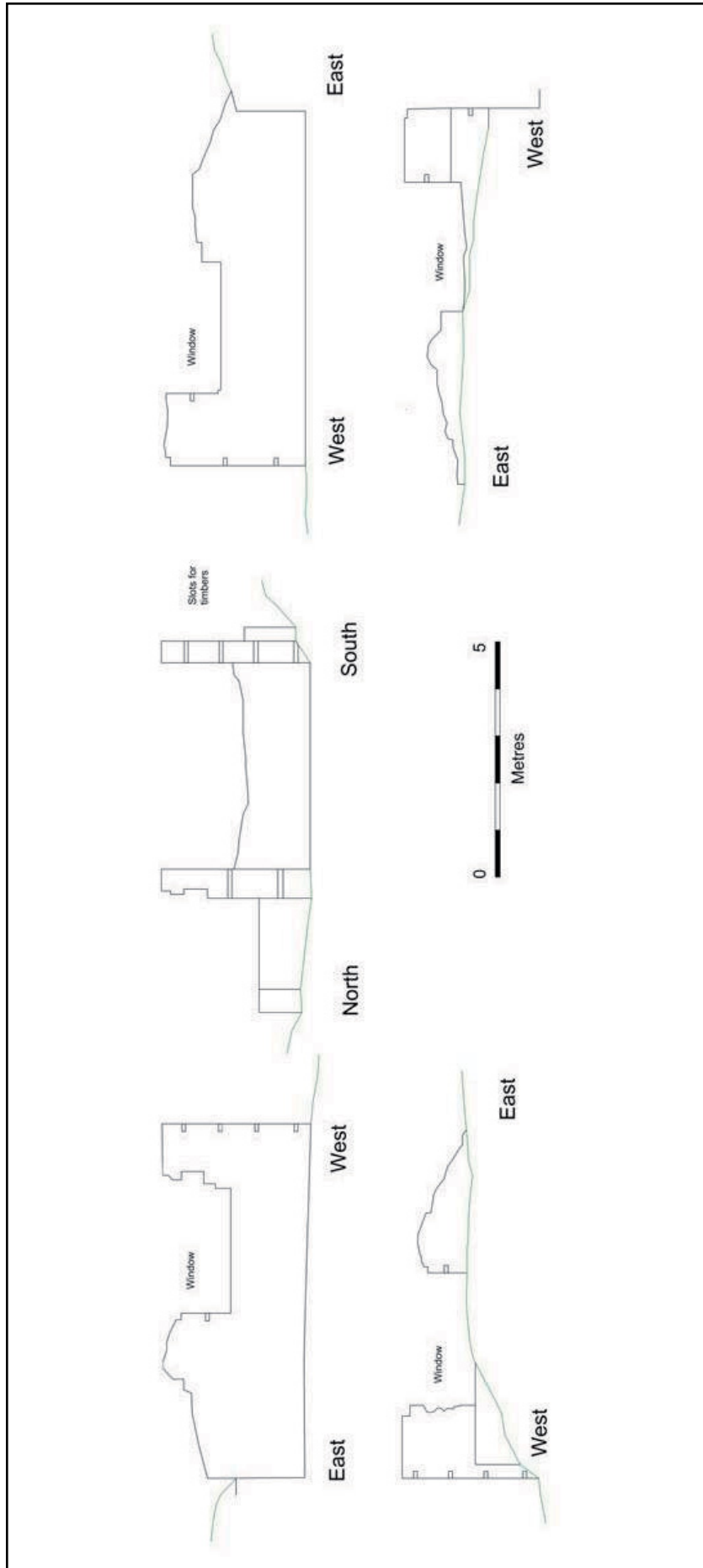


Fig 167. Wheal Coates gas engine house [190379] external and internal elevations.



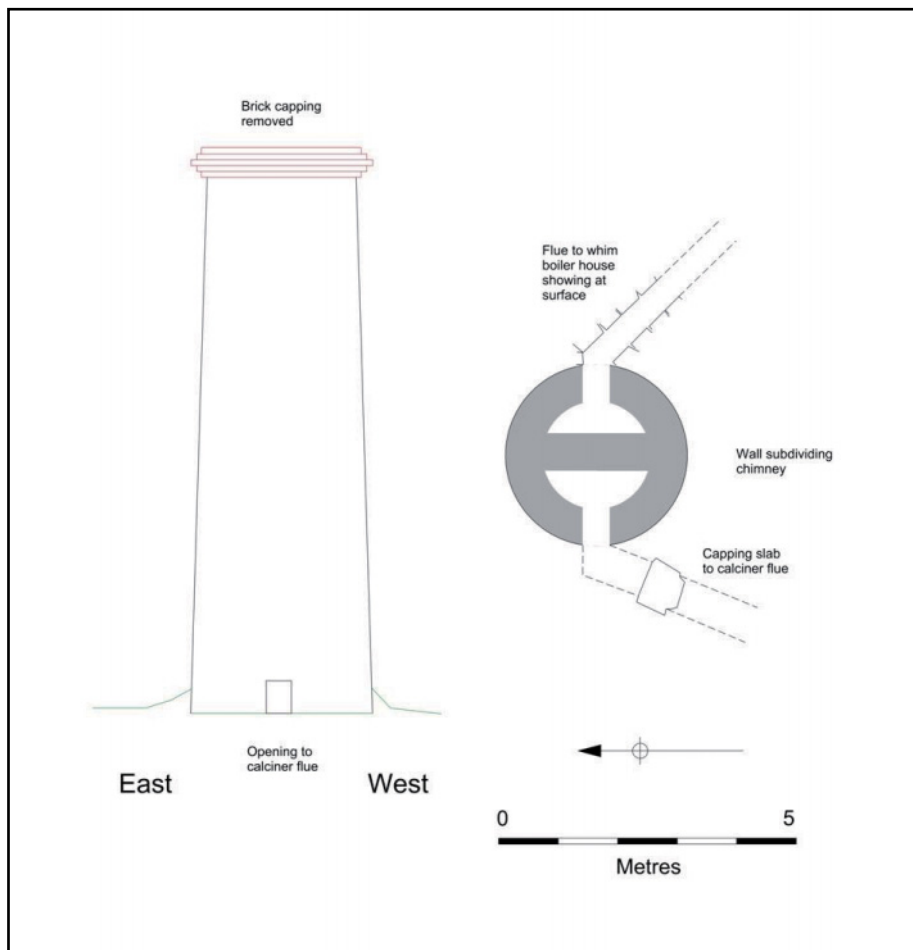


Fig 168. Wheal Coates chimney [190373] sample elevation and plan.

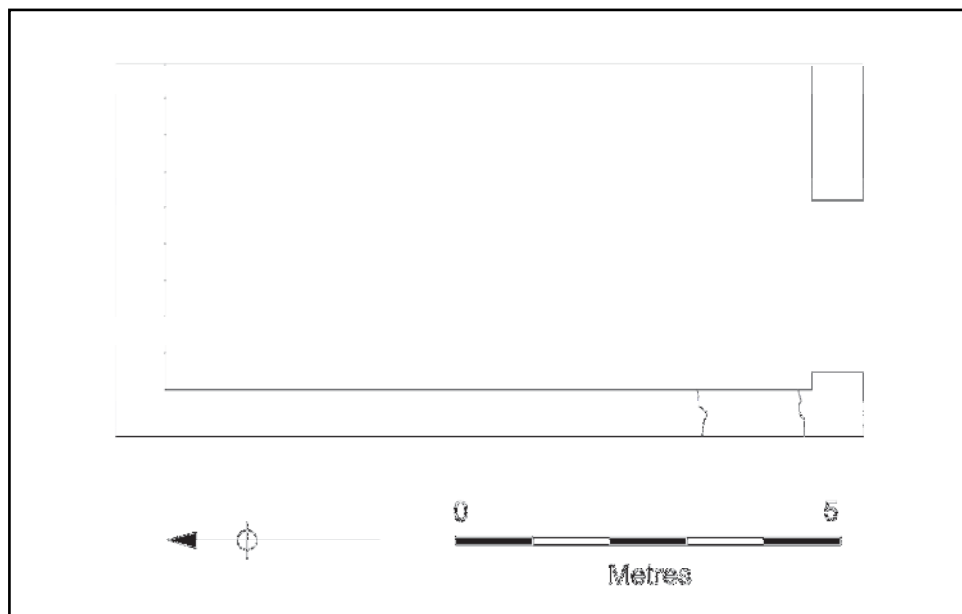


Fig 169. Wheal Coates dry [190385] near Towanroath Shaft plan.

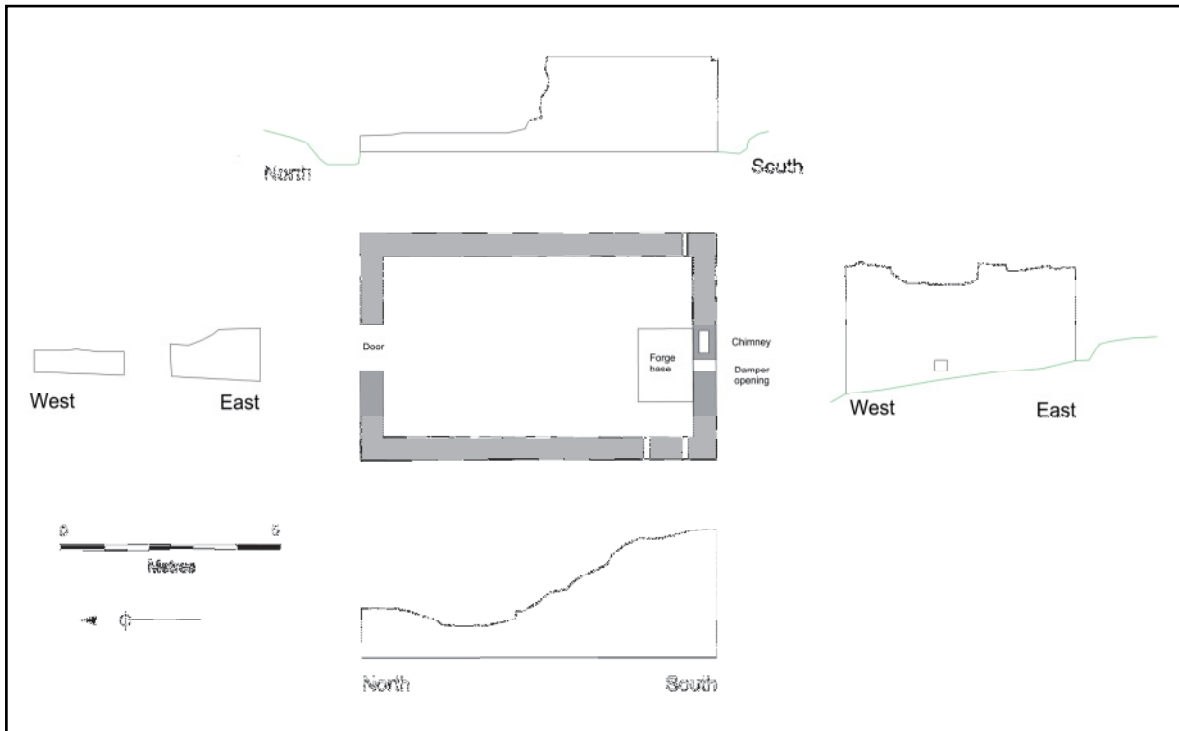


Fig 170. External elevations of the Wheal Coates smithy [190336].

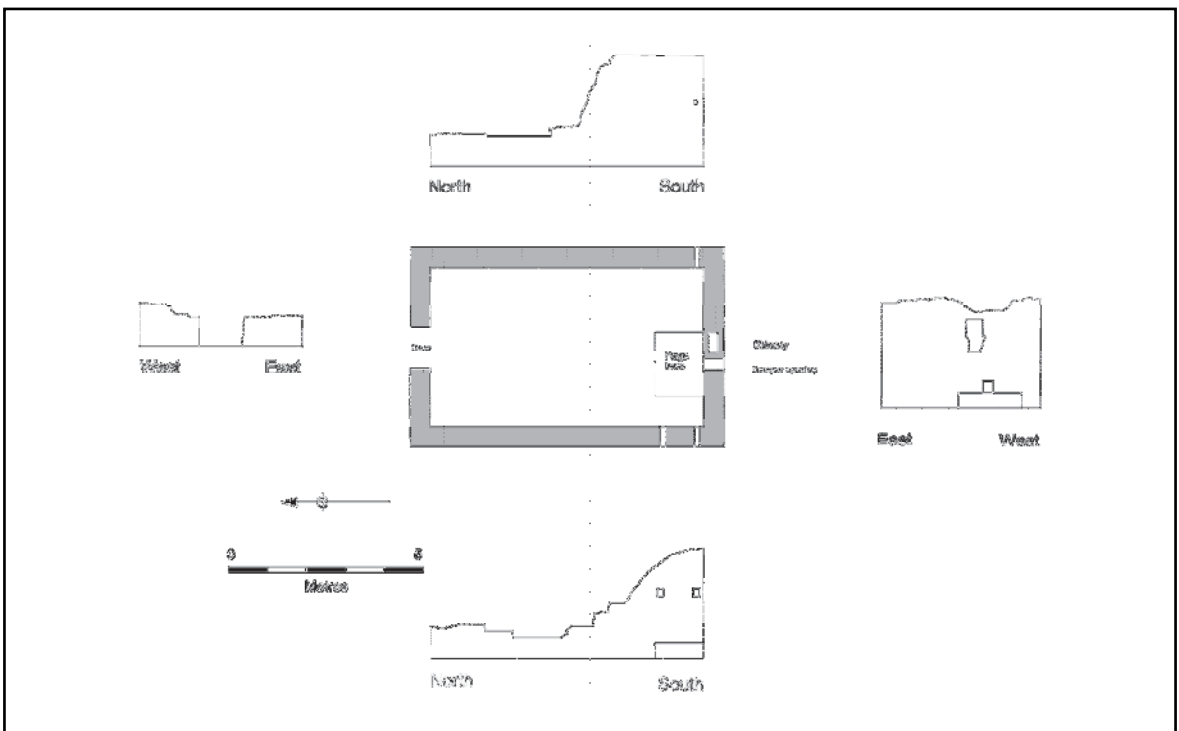


Fig 171. Internal elevations of the Wheal Coates smithy [190336].

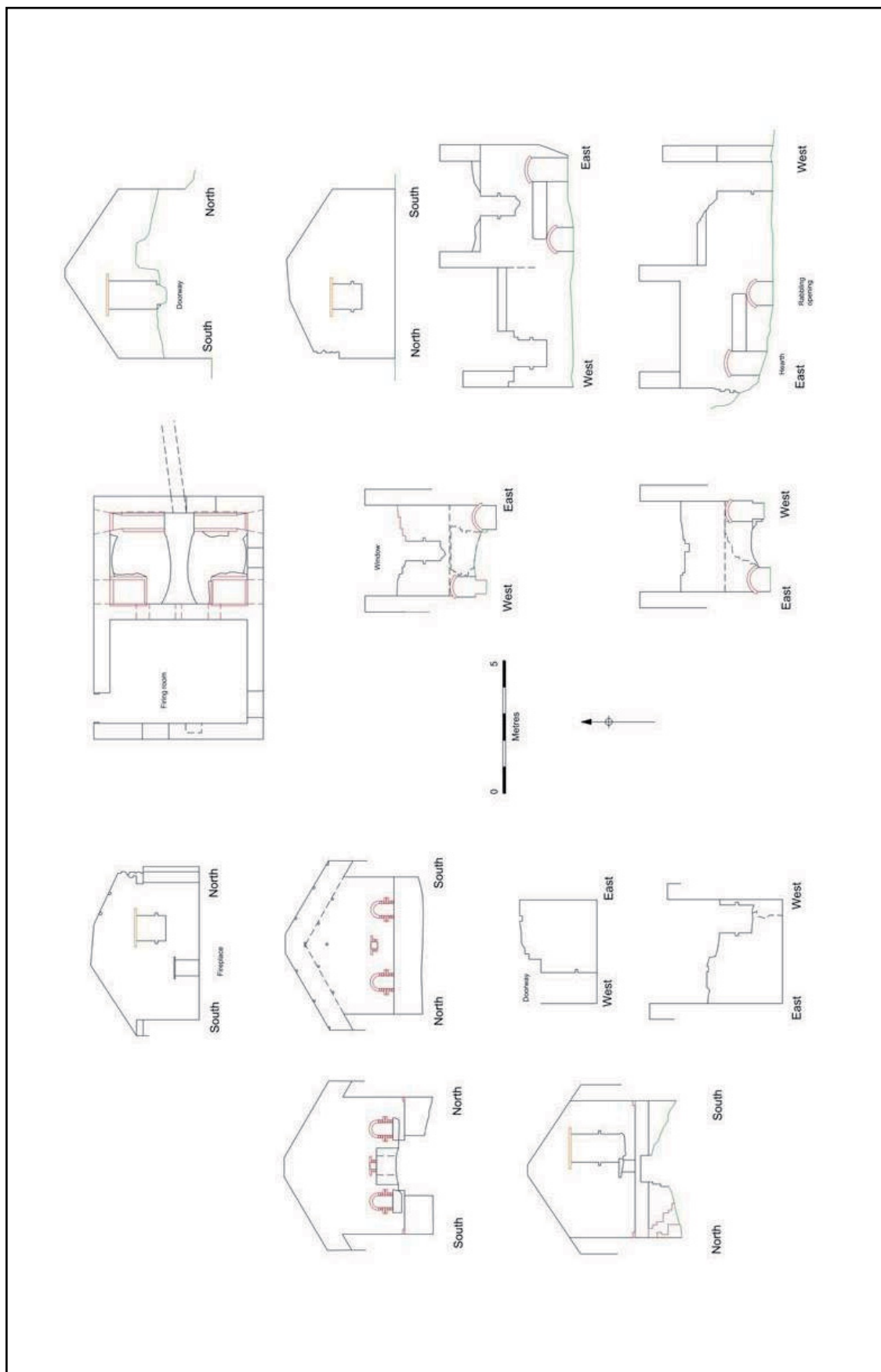


Fig 172. Plan, external and internal elevations of the Wheal Coates calciner [190346].

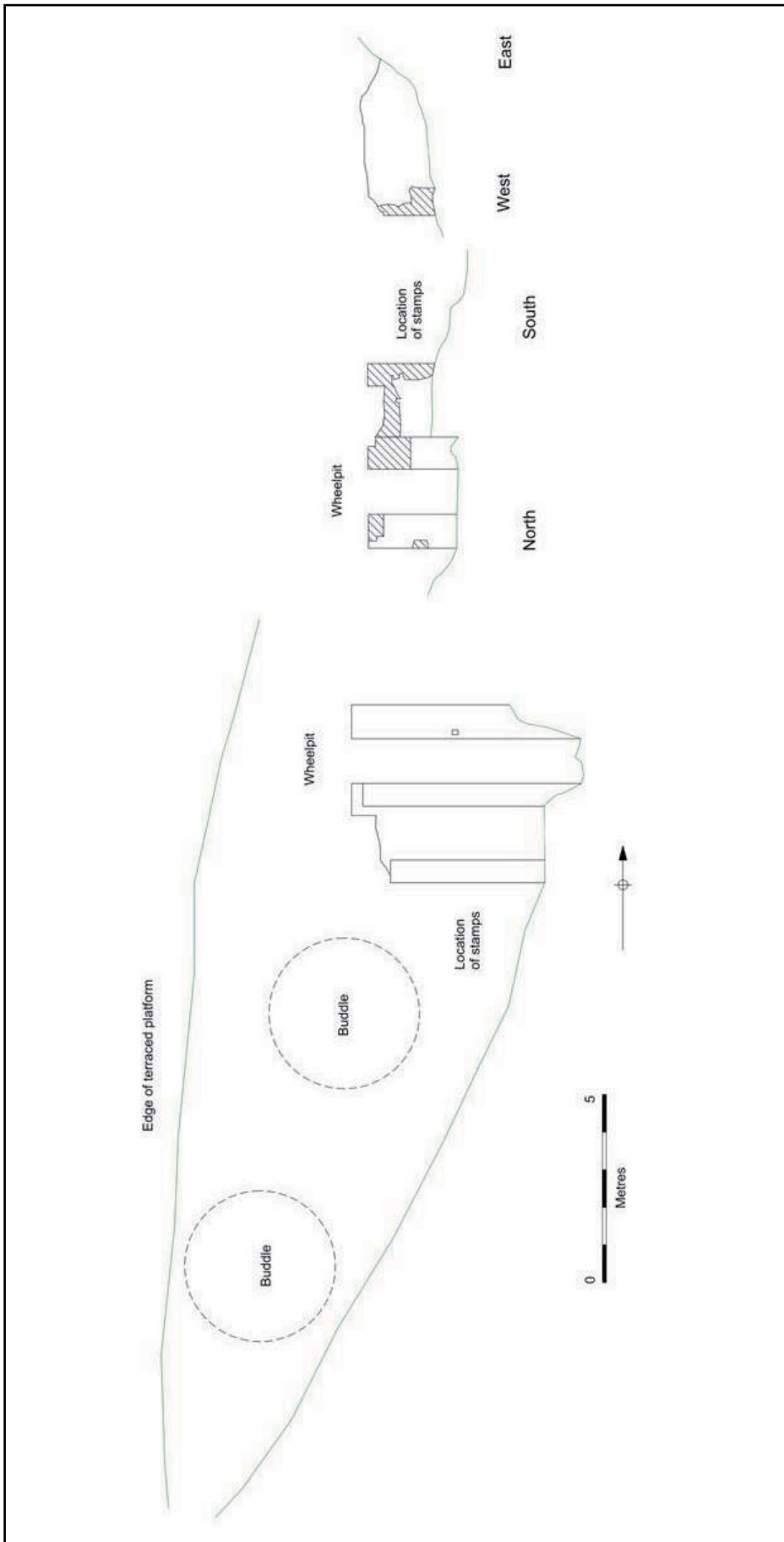


Fig 173. Plan and elevations of the Wheal Coates tributers' stamps, waterwheel pit and dressing floors [190340] / [190341].

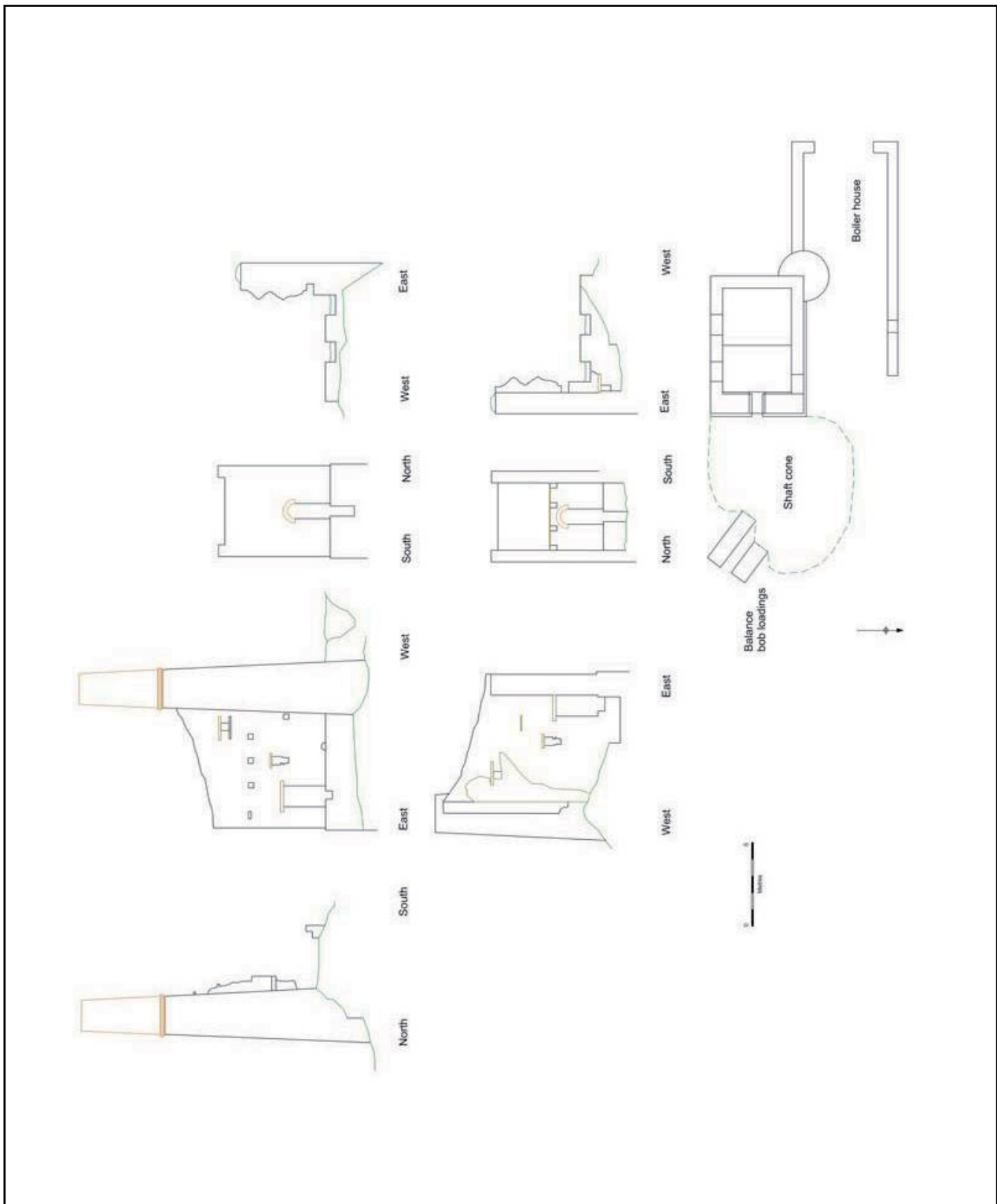


Fig 174. Plan, external and internal elevations of Charlotte United pumping engine house and boiler house [190616]/[190617], together with plan of shaft [190618] and balance bob mountings [190619].

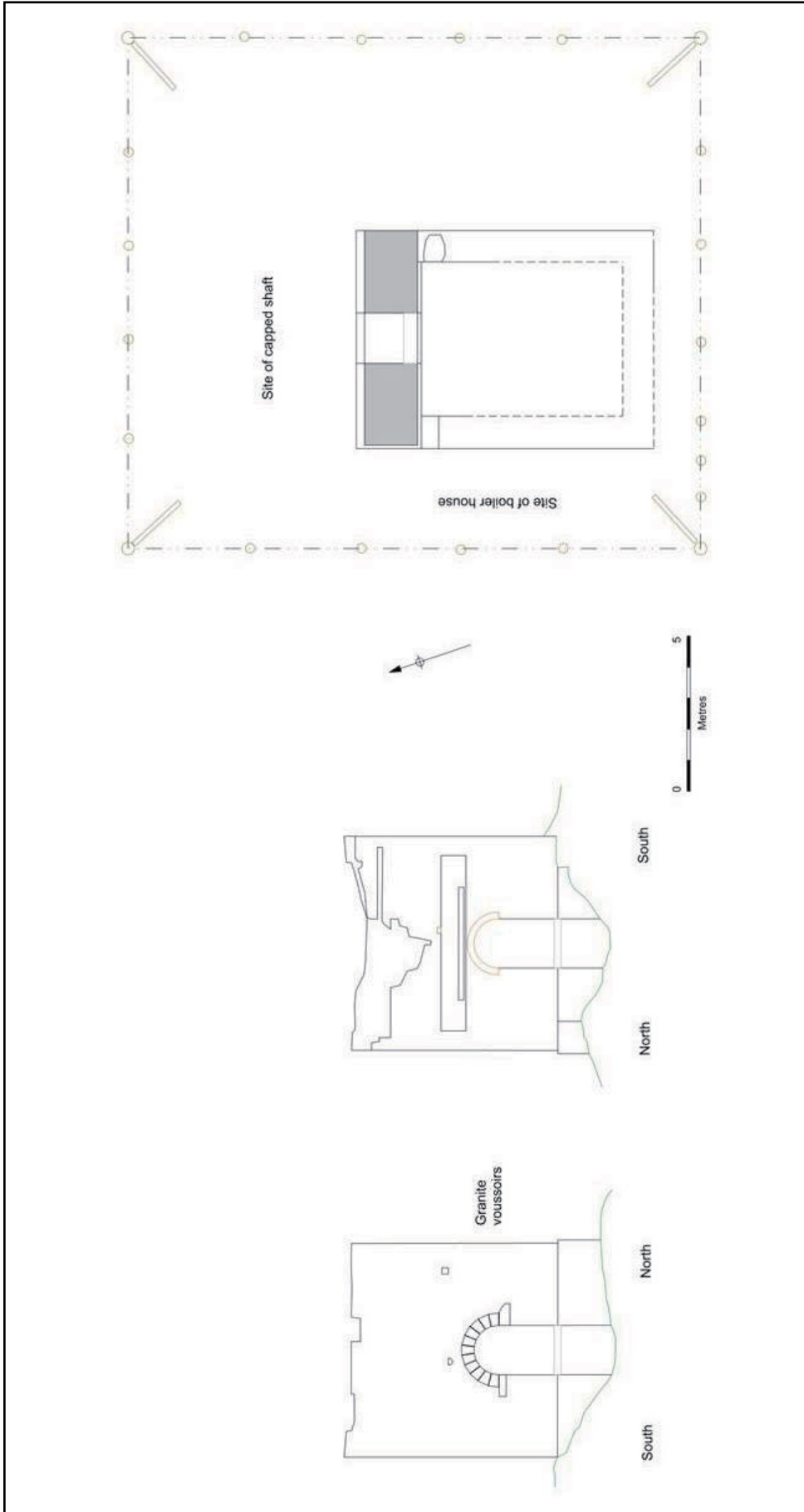


Fig 175. Plan and principal elevations of Great Wheal Charlotte pumping engine house [190567].

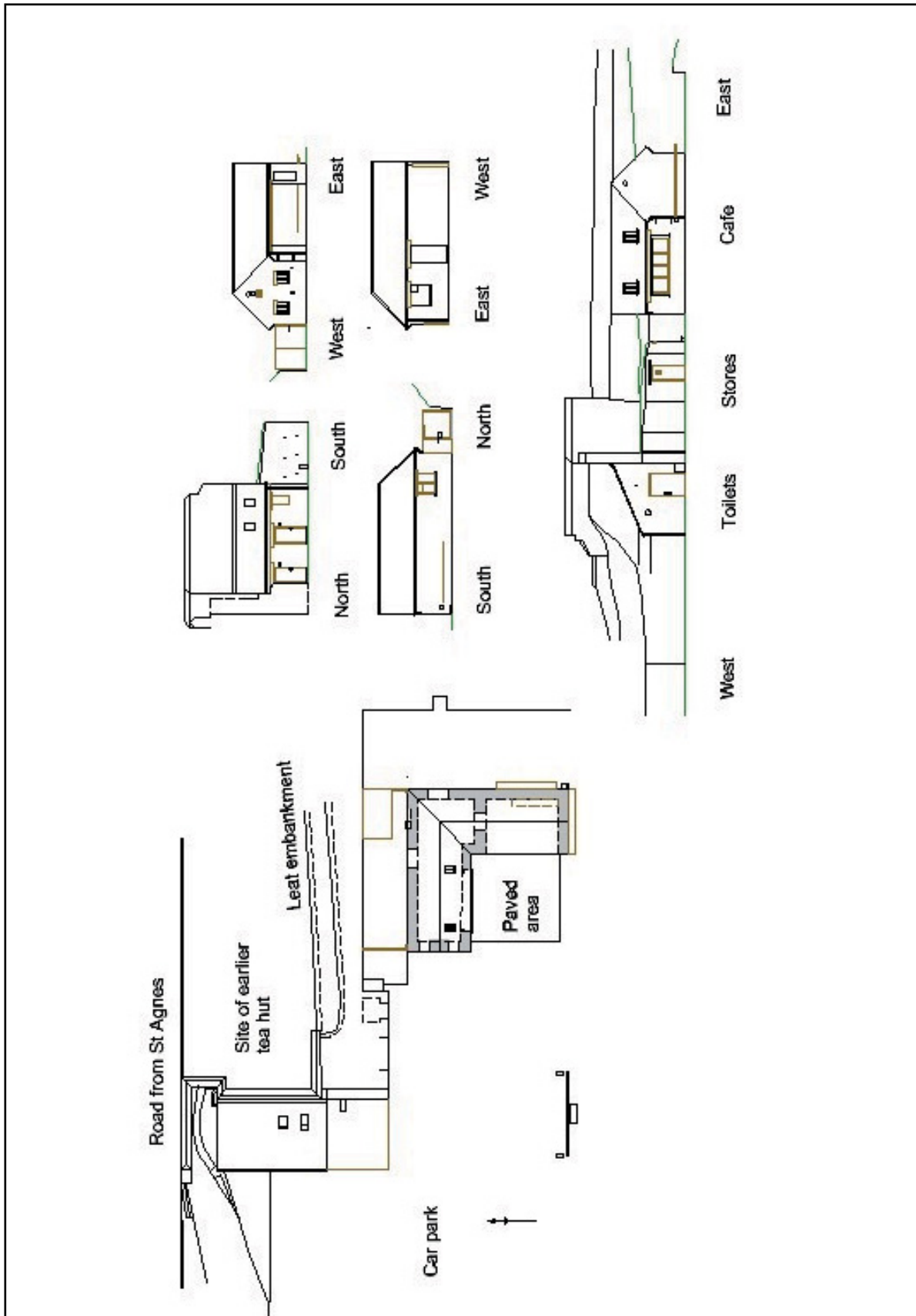


Fig 176. Plan and elevations of features in Chapel Porth car park, including café [190500] and toilet block [190495].

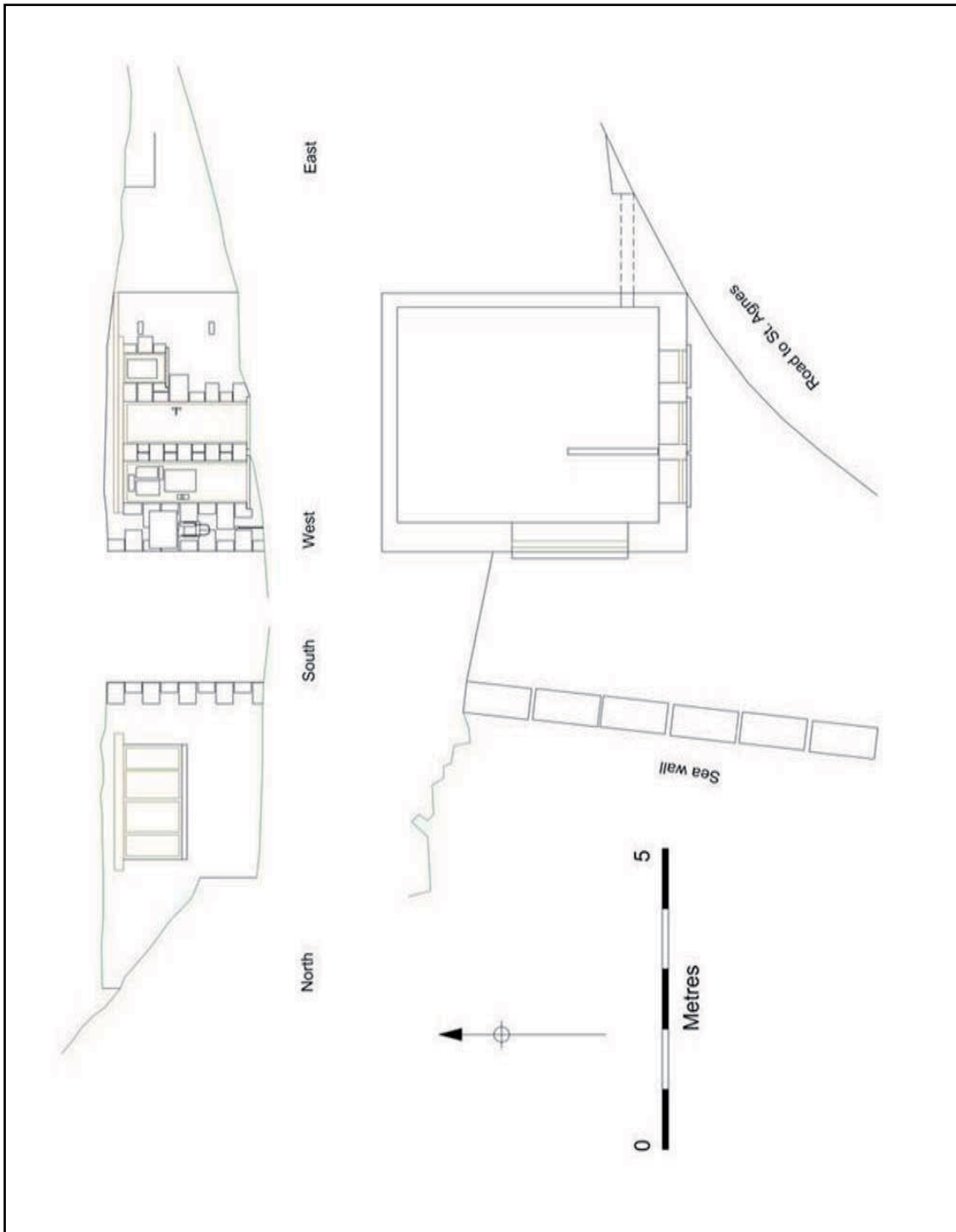


Fig 177. Plan and external elevations of lifeguard/ car parker bunker at Chapel Porth [190488].



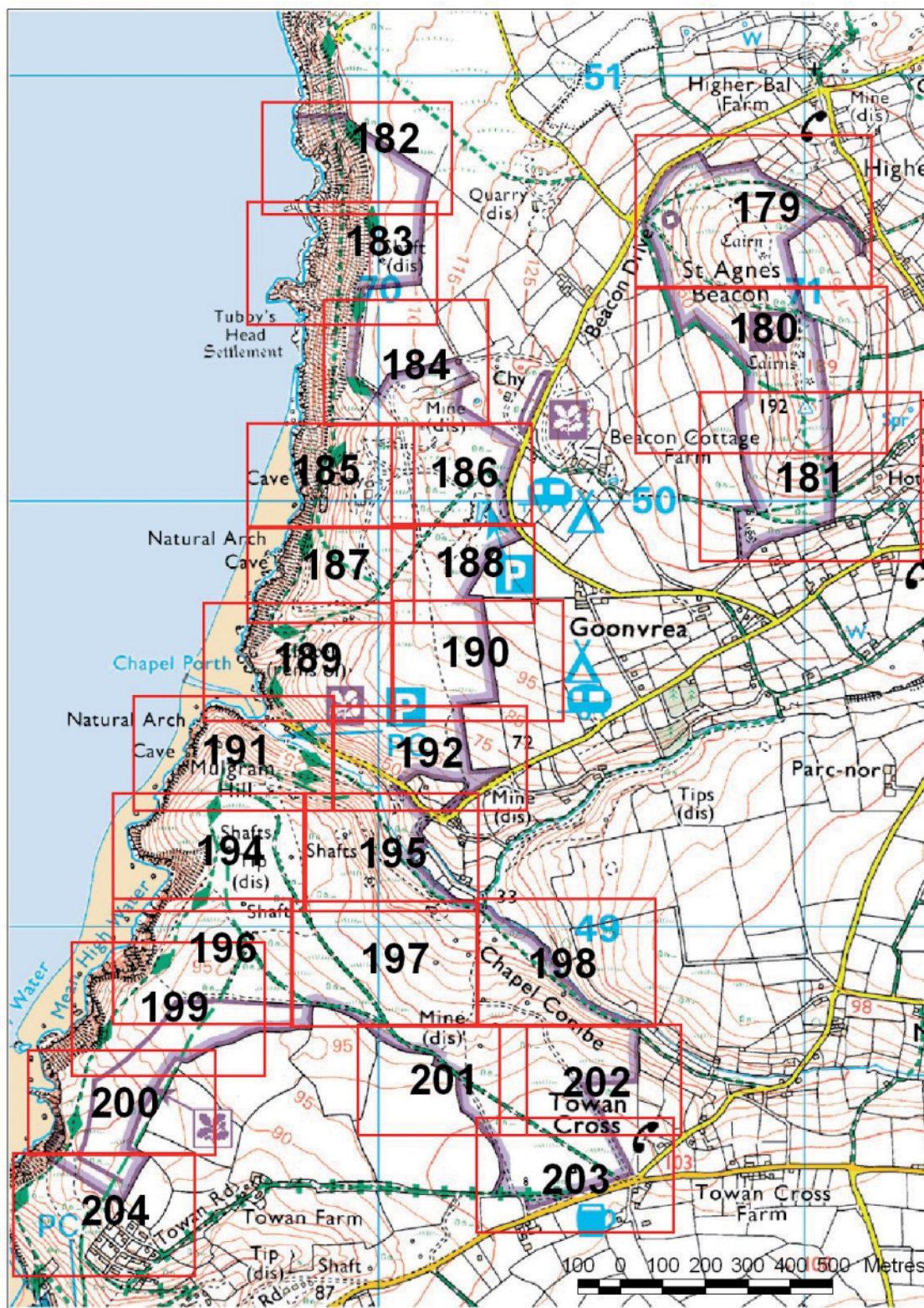


Fig 178. Key to inventory map figure numbers. Fig 193 (inset map of structures at Chapel Porth) not shown. Leading '190' of newly assigned NT HBSMR numbers have been omitted on the inventory key maps for clarity. Pre-assigned HBSMR numbers are shown in full.

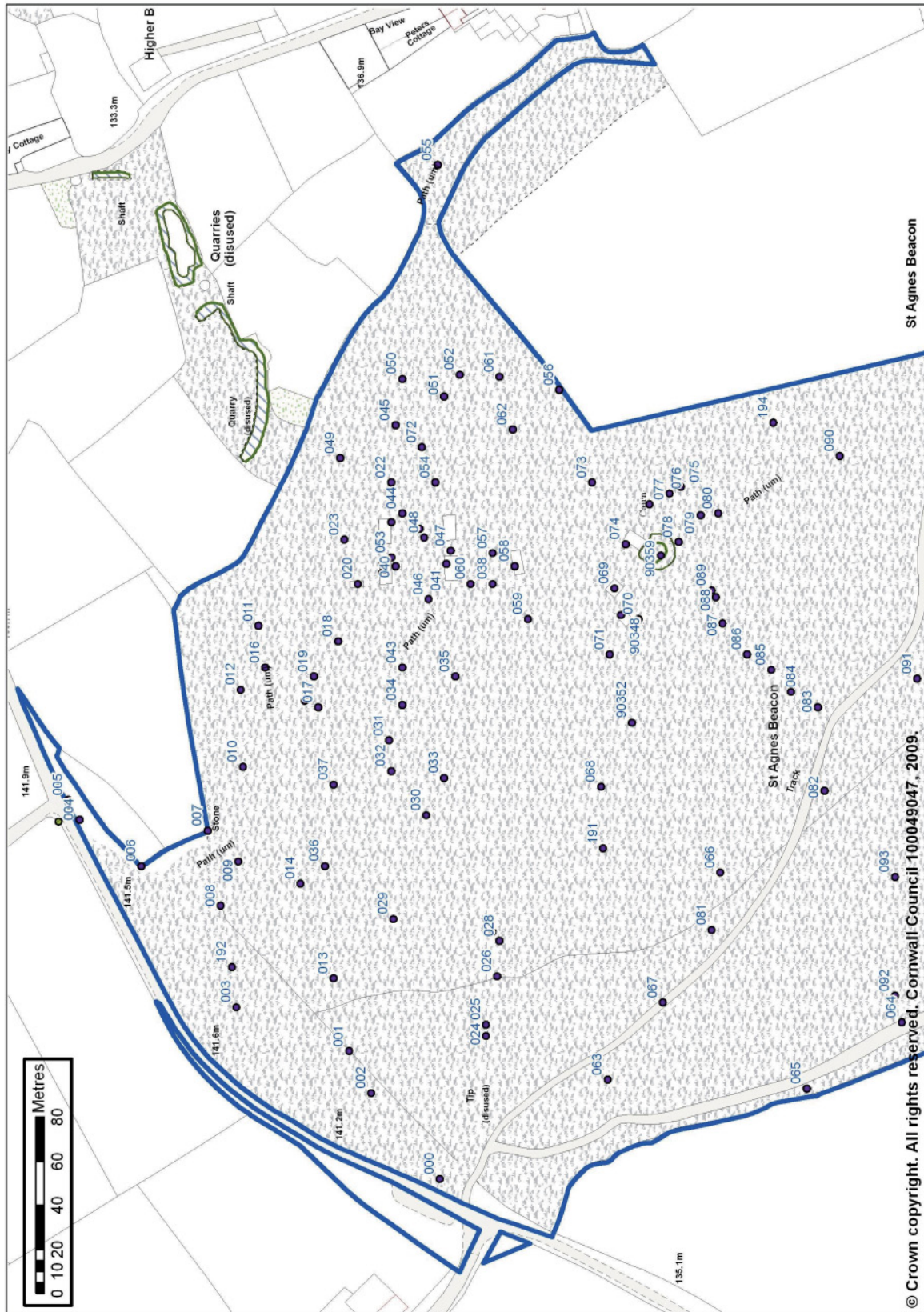


Fig 179. Locations of inventory features on the northern section of St. Agnes Beacon.

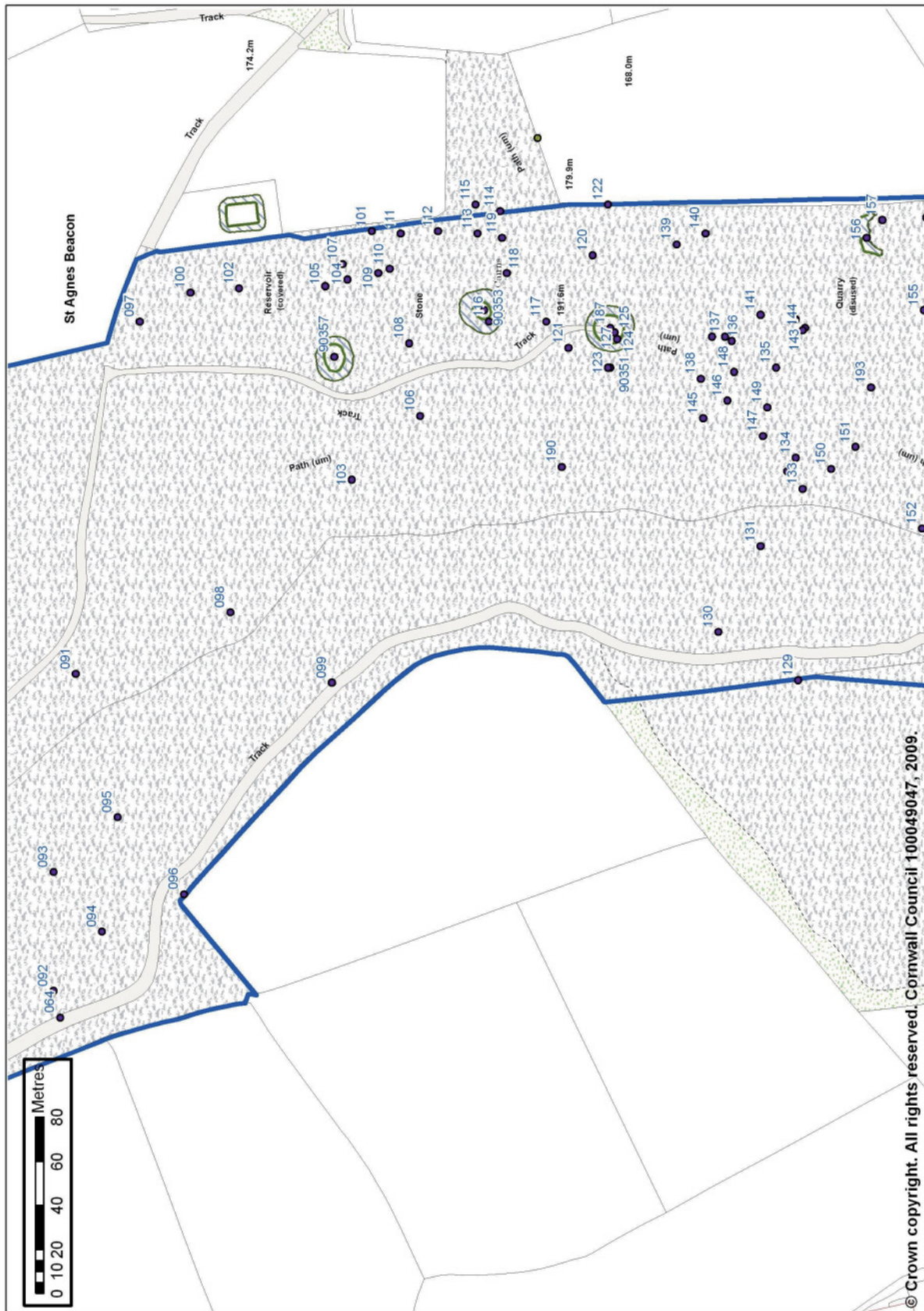


Fig 180. Locations of inventory features in the central part of St. Agnes Beacon.

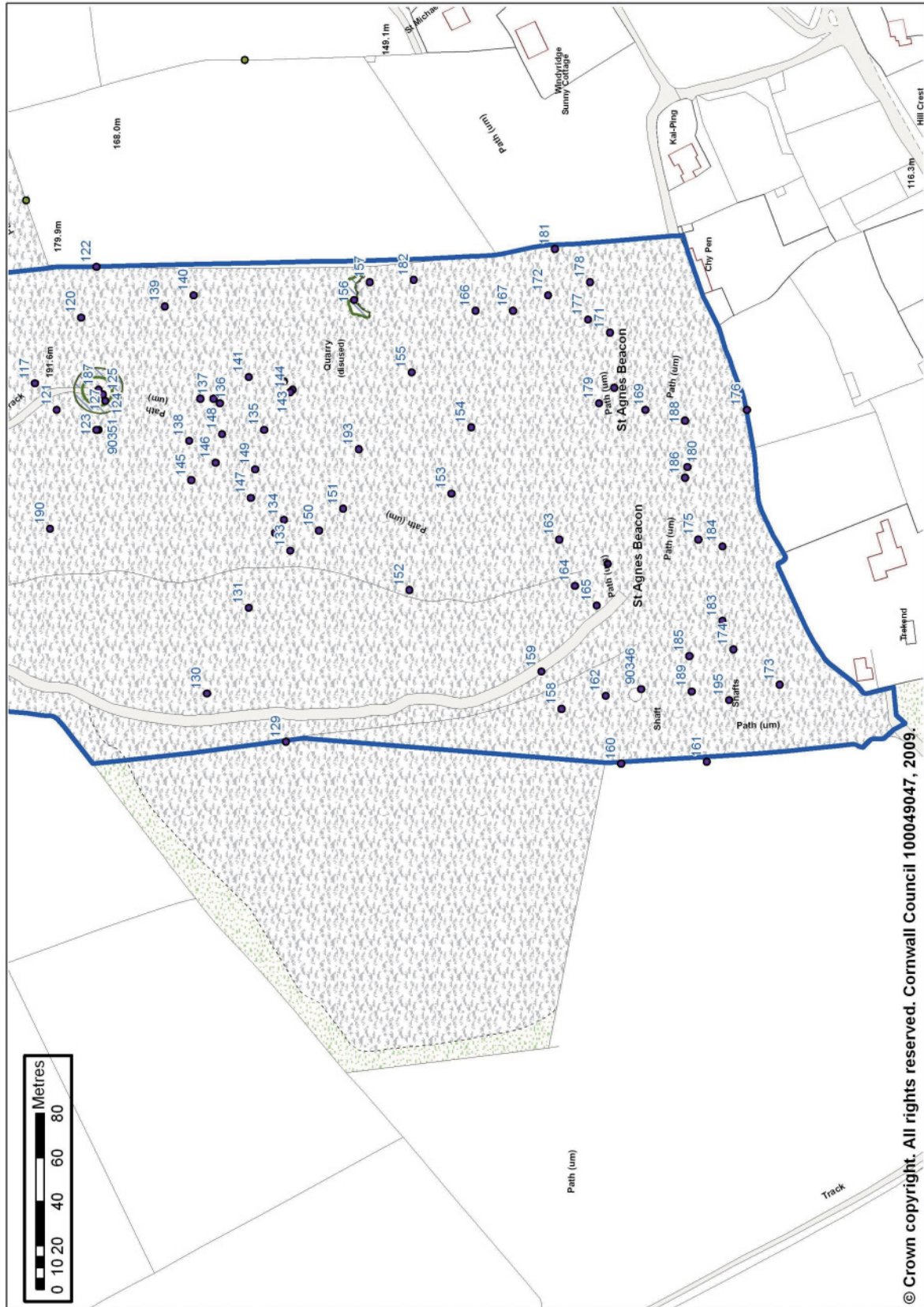


Fig 181. Locations of inventory features in the southern part of St. Agnes Beacon.

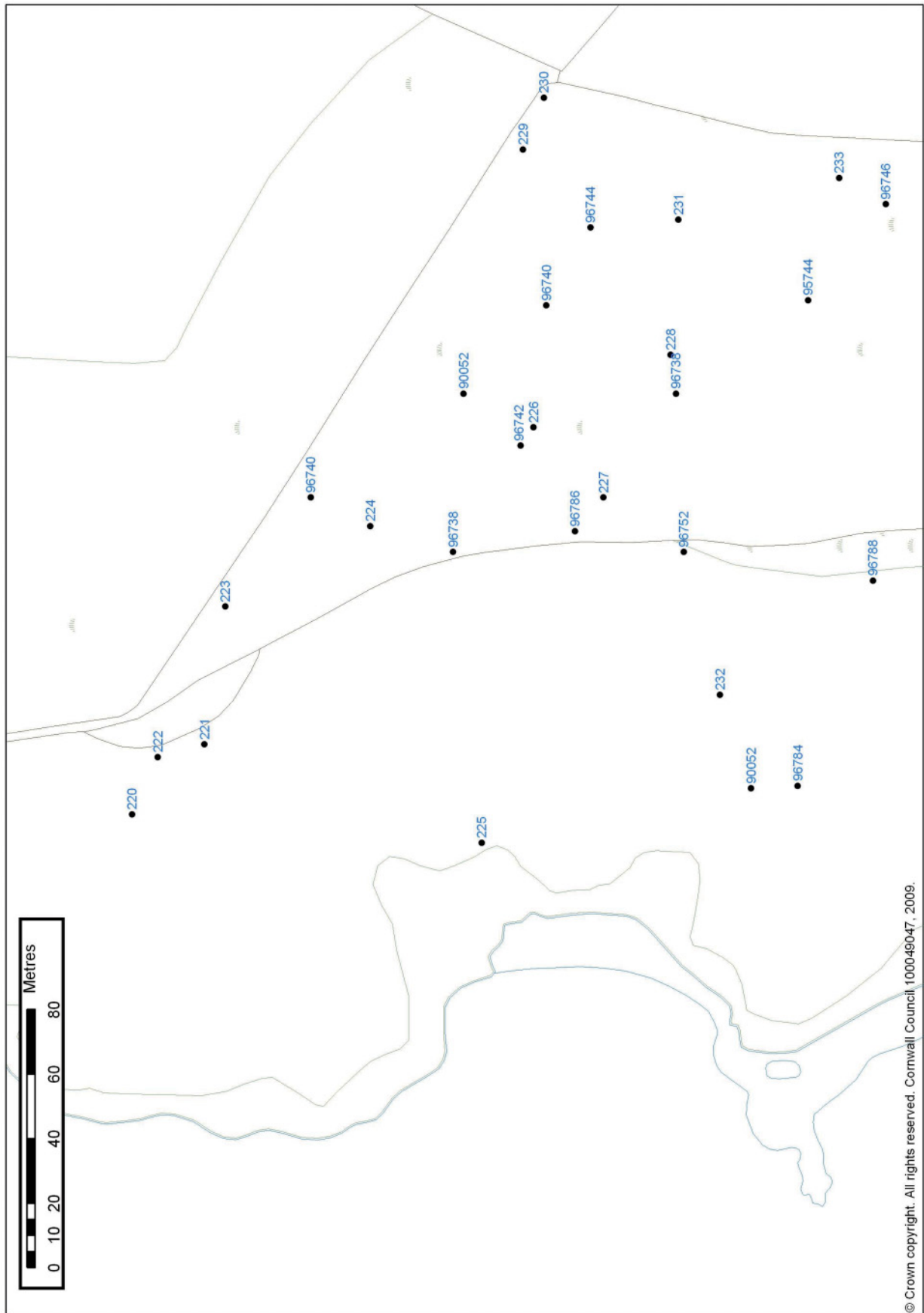


Fig 182. Locations of inventory features north of Tubby's Head.

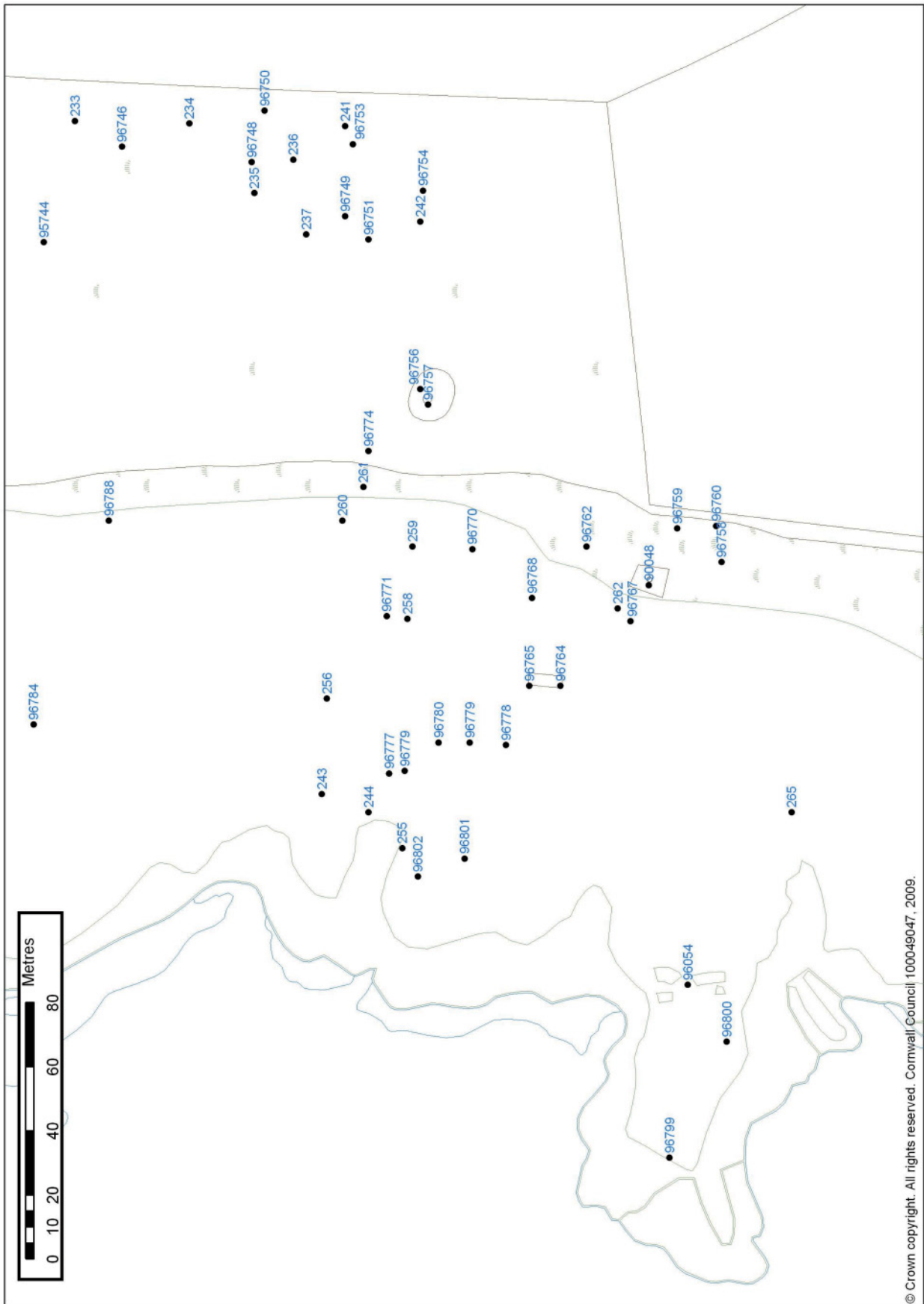


Fig 183. Locations of inventory features inland from Tubby's Head.

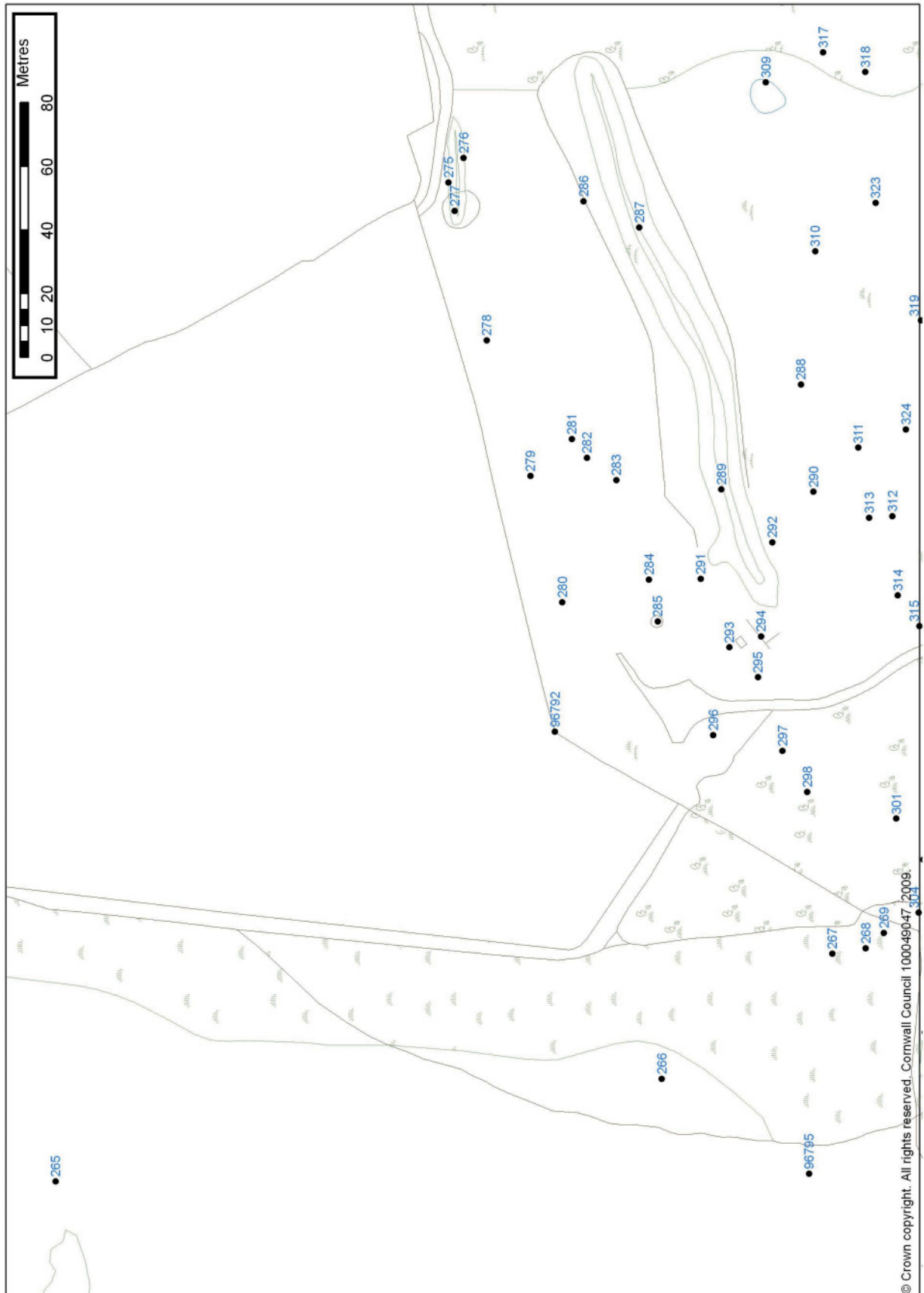


Fig 184. Locations of inventory features to the south of Tubby's Head and at the northern end of Wheal Coates.

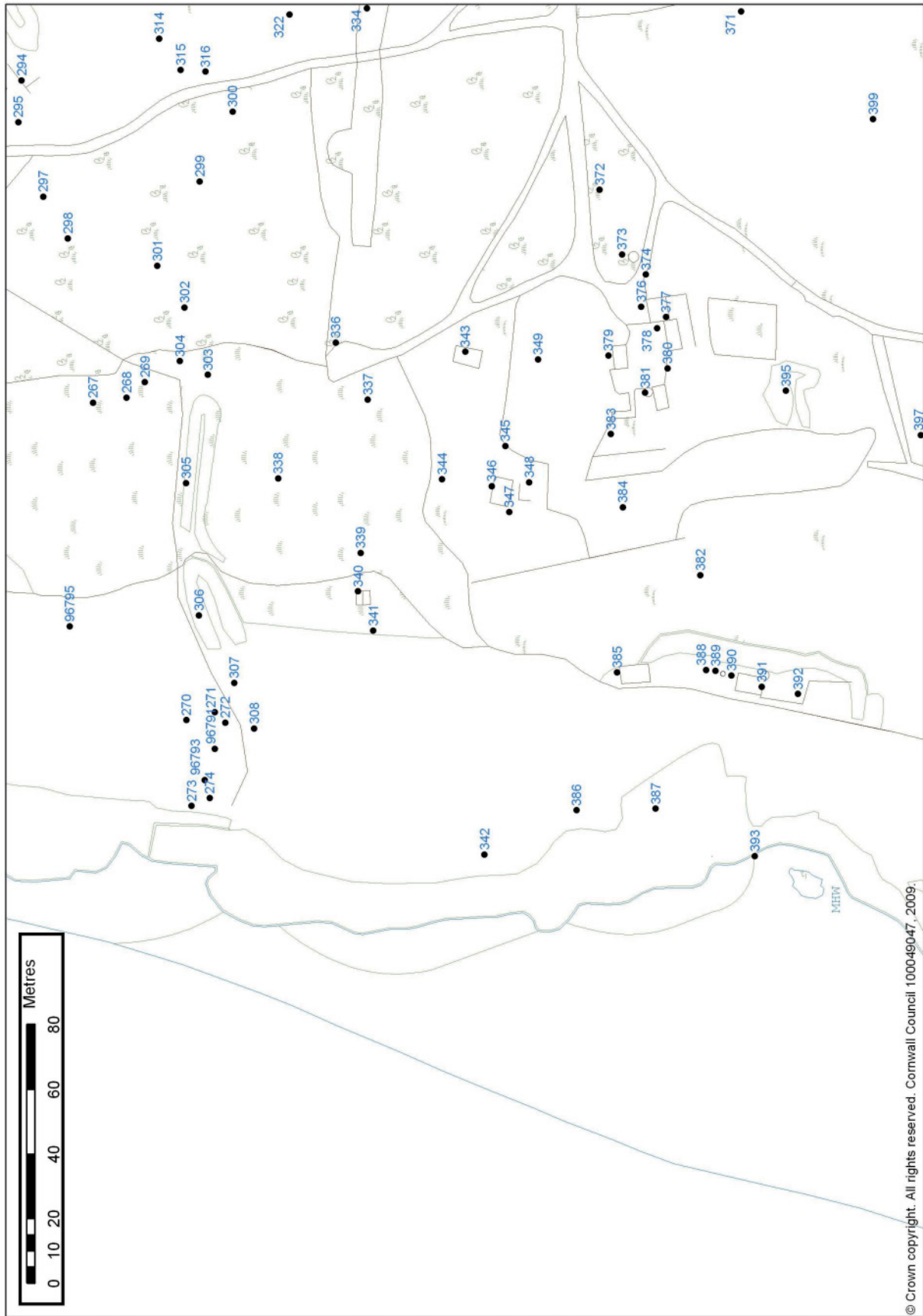


Fig 185. Locations of inventory features at the north-western end of the Wheal Coates site.



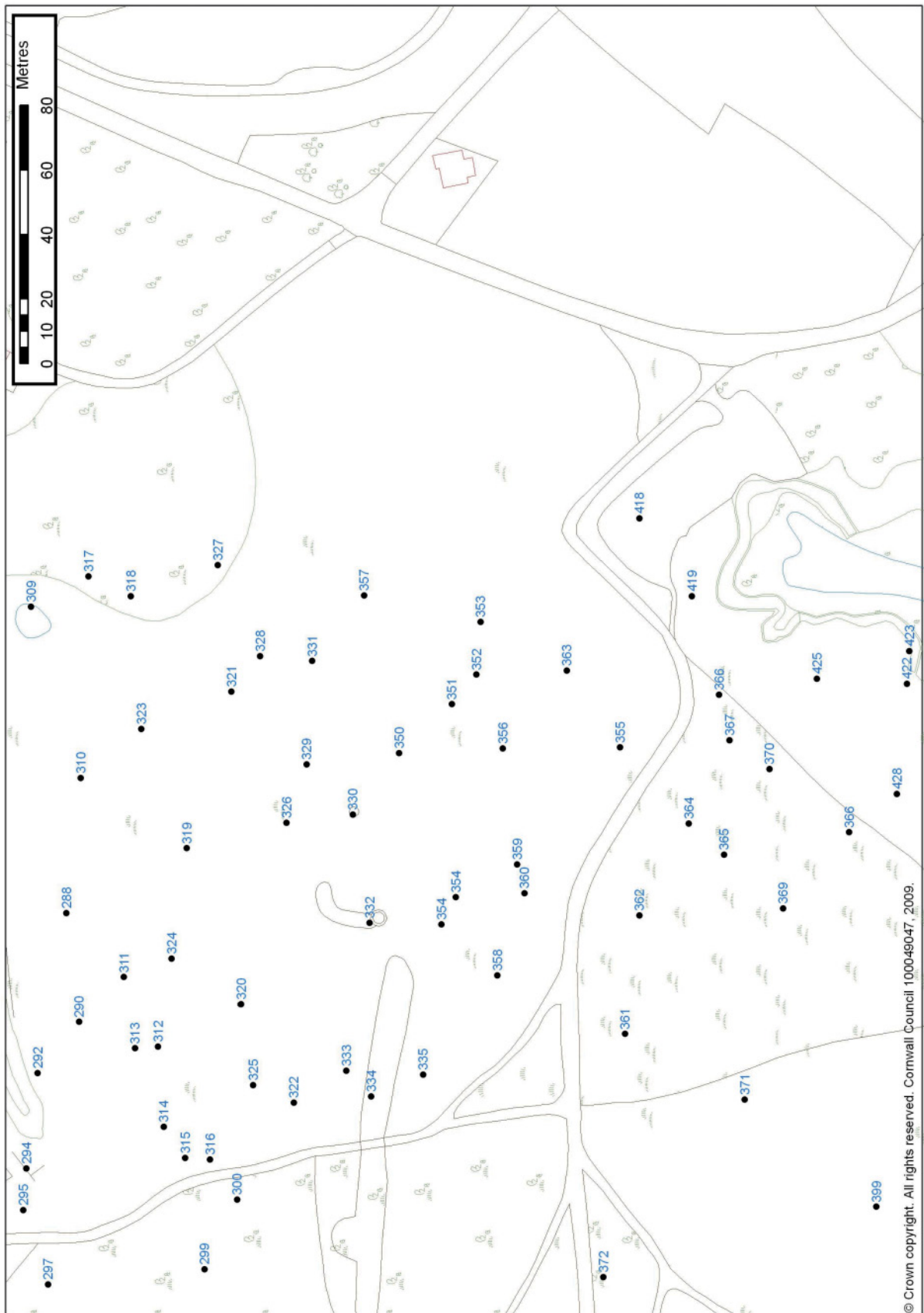


Fig 186. Locations of inventory features at the north-eastern end of the Wheal Coates site.

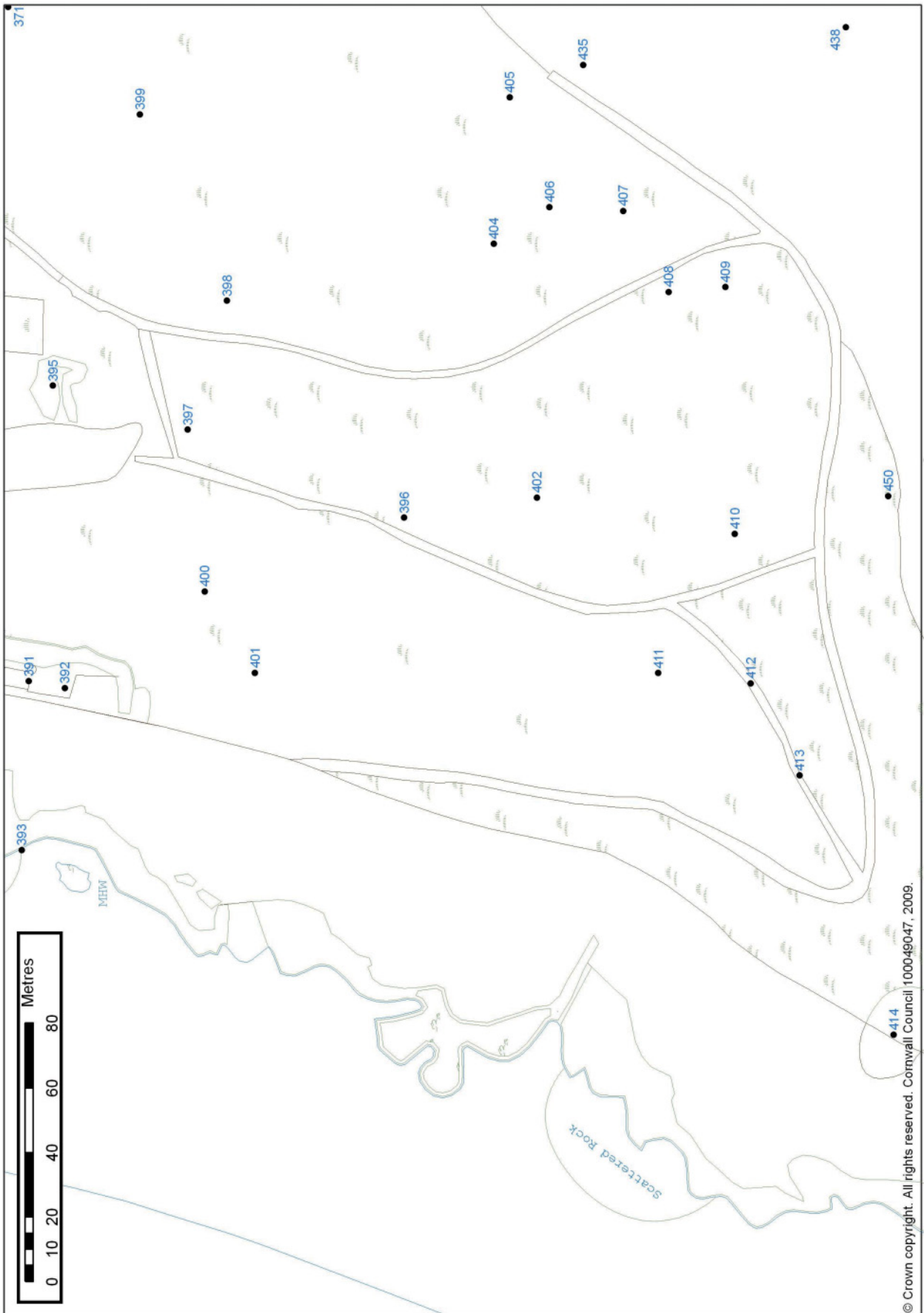


Fig 187. Locations of inventory features in the south-western part of the Wheal Coates site.

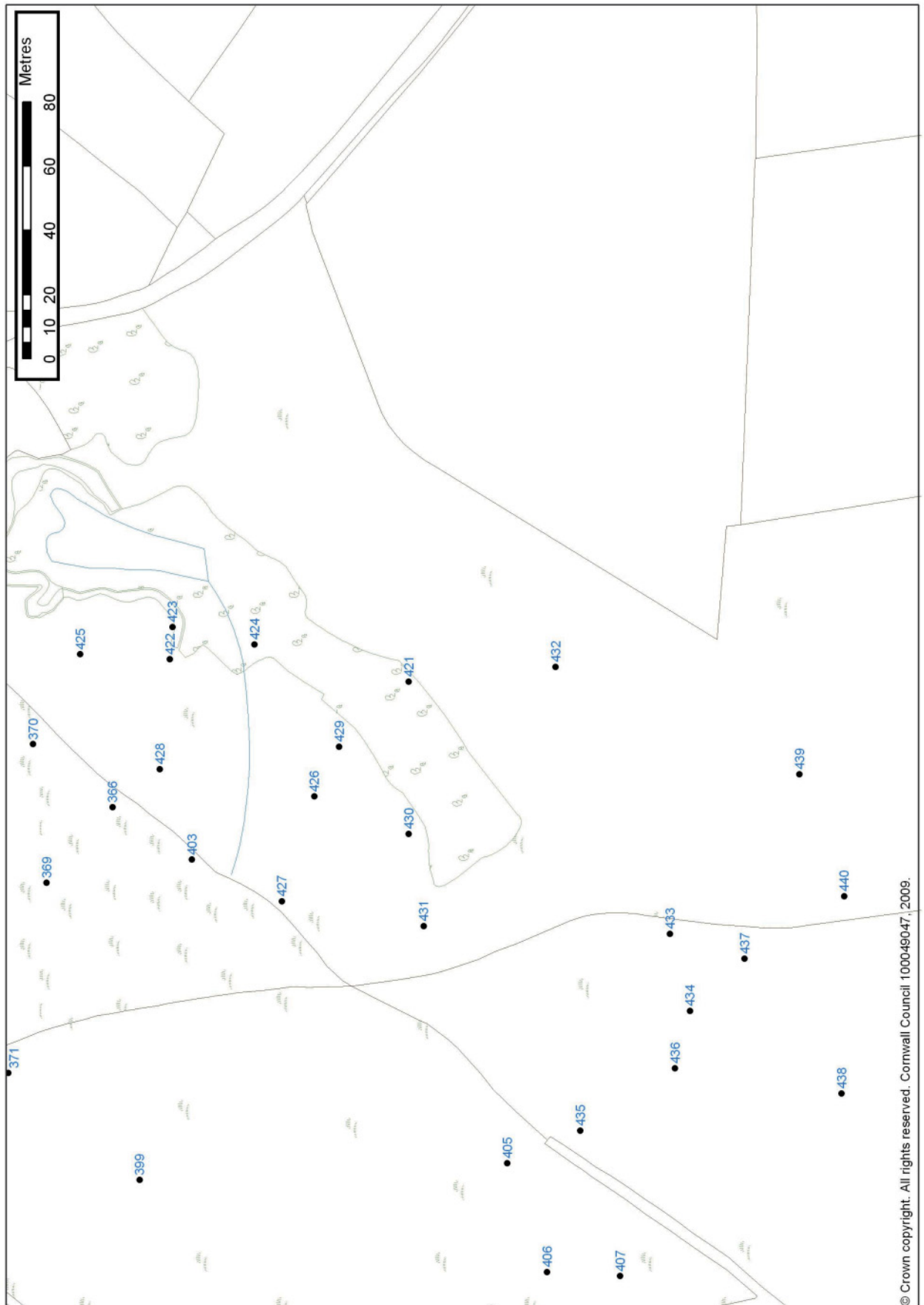


Fig 188. Locations of inventory features in the south-eastern part of the Wheal Coates site.

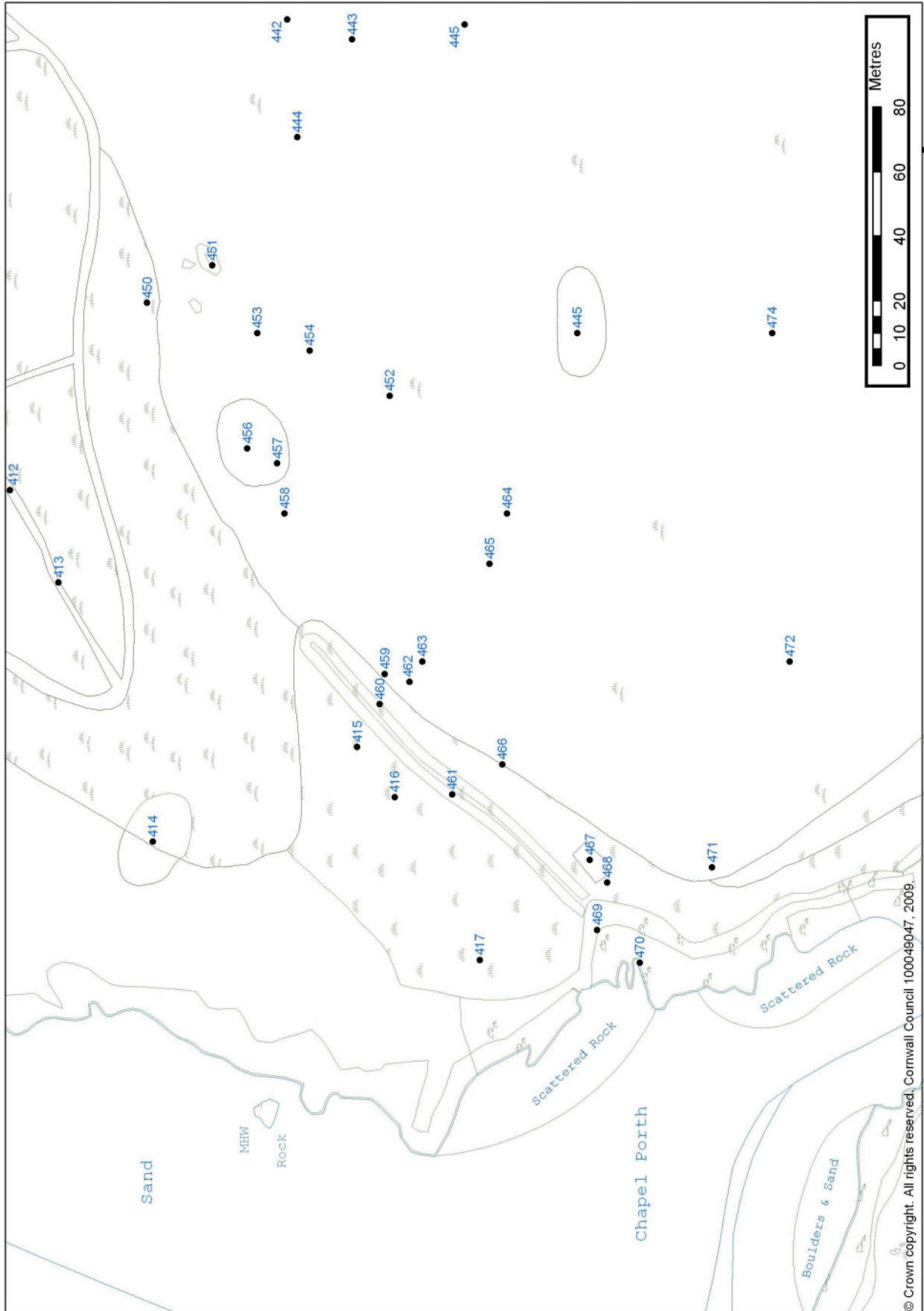
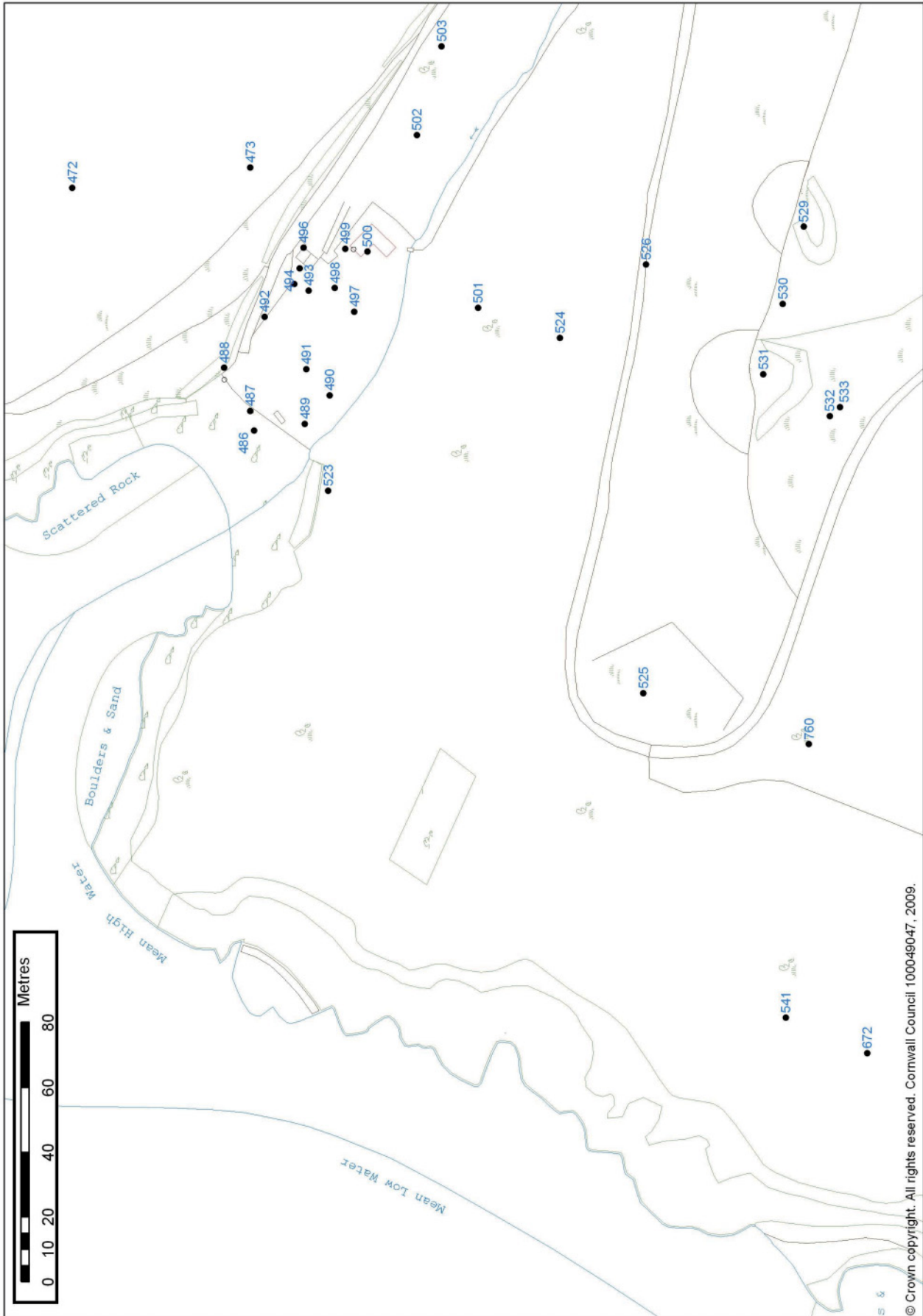


Fig 189. Locations of inventory features to the north-west of Chapel Porth.



Fig 190. Locations of inventory features to the north-east of Chapel Porth.



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Fig 191. Locations of inventory features at Chapel Porth and Mulgram Hill.

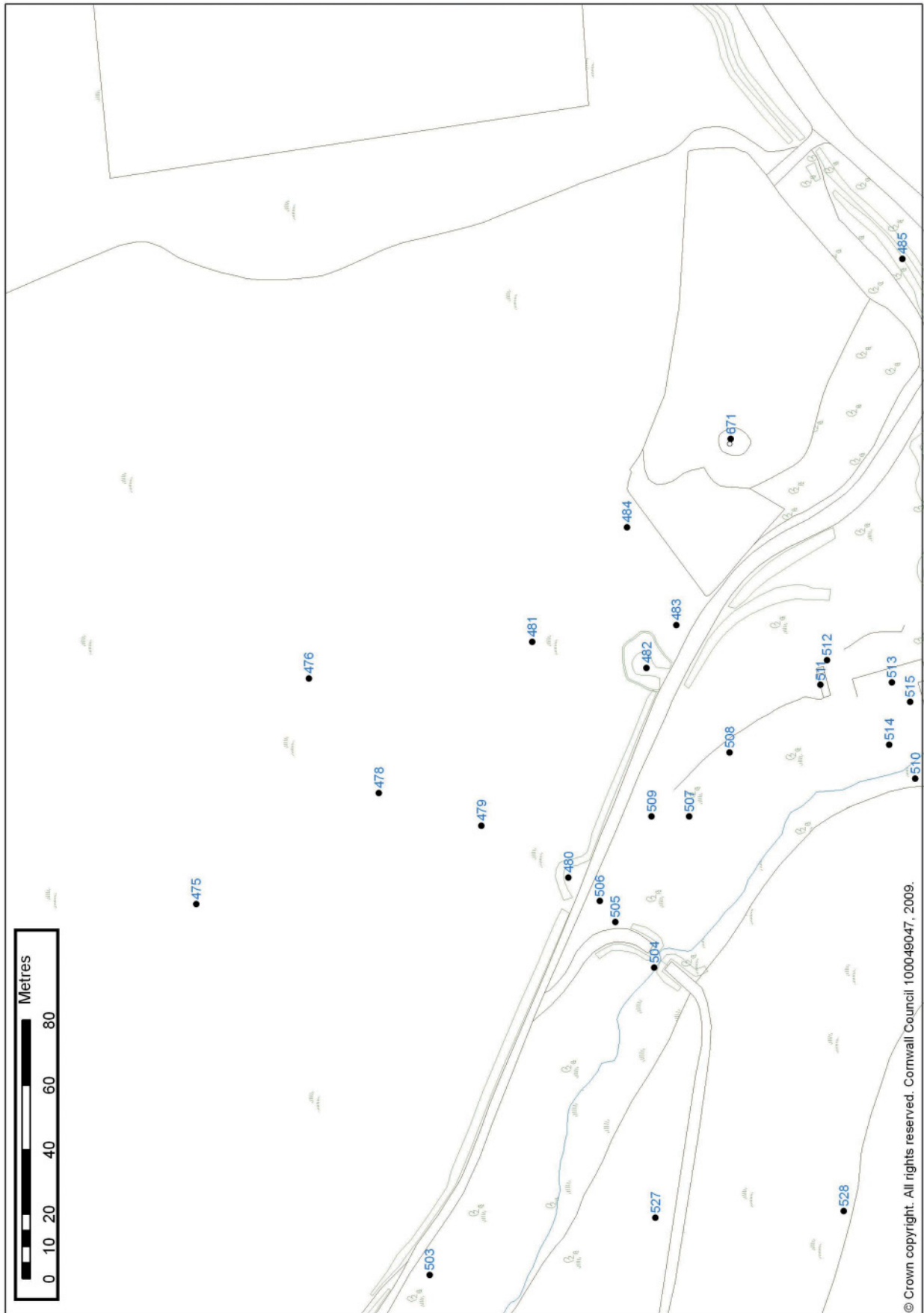
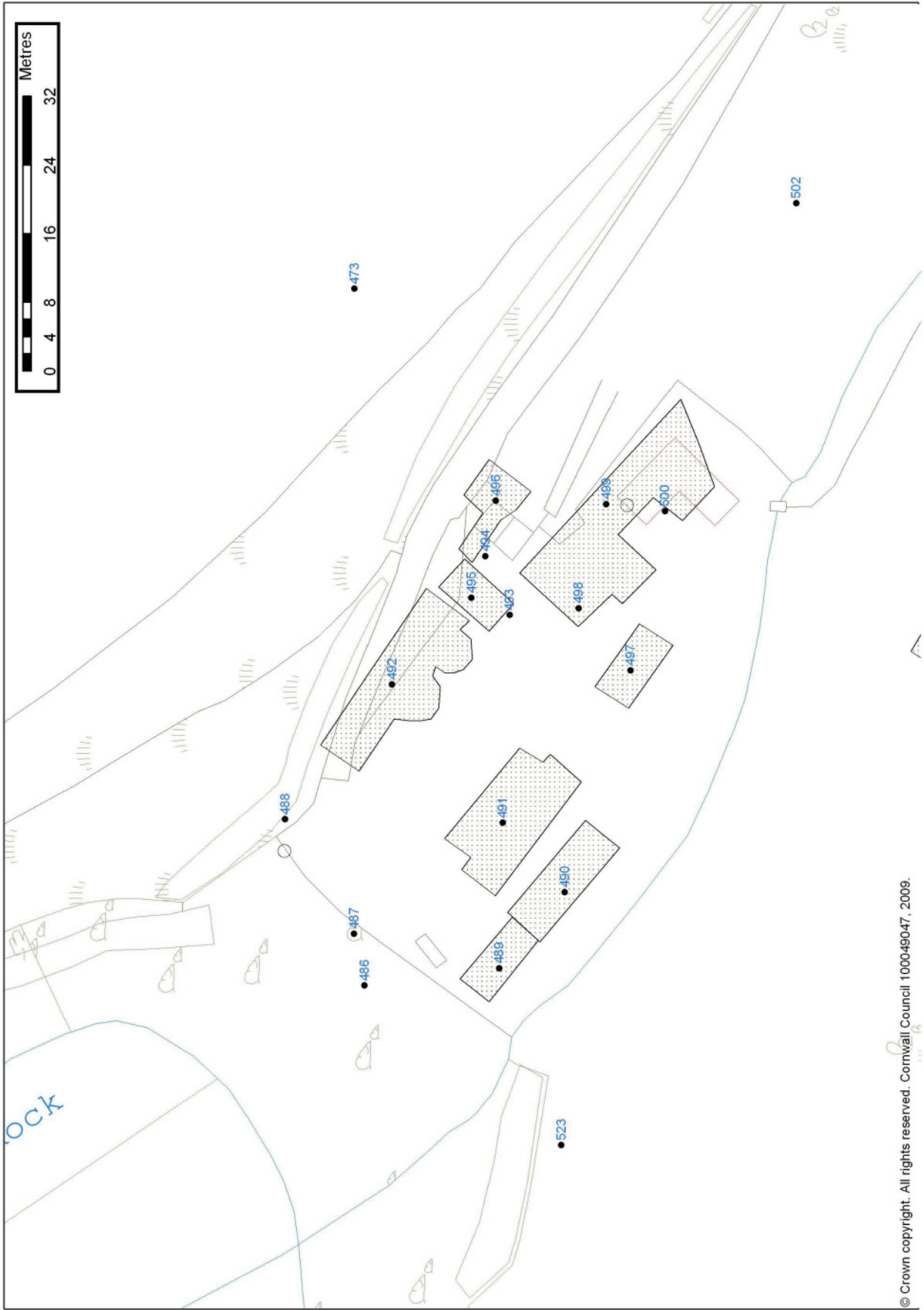


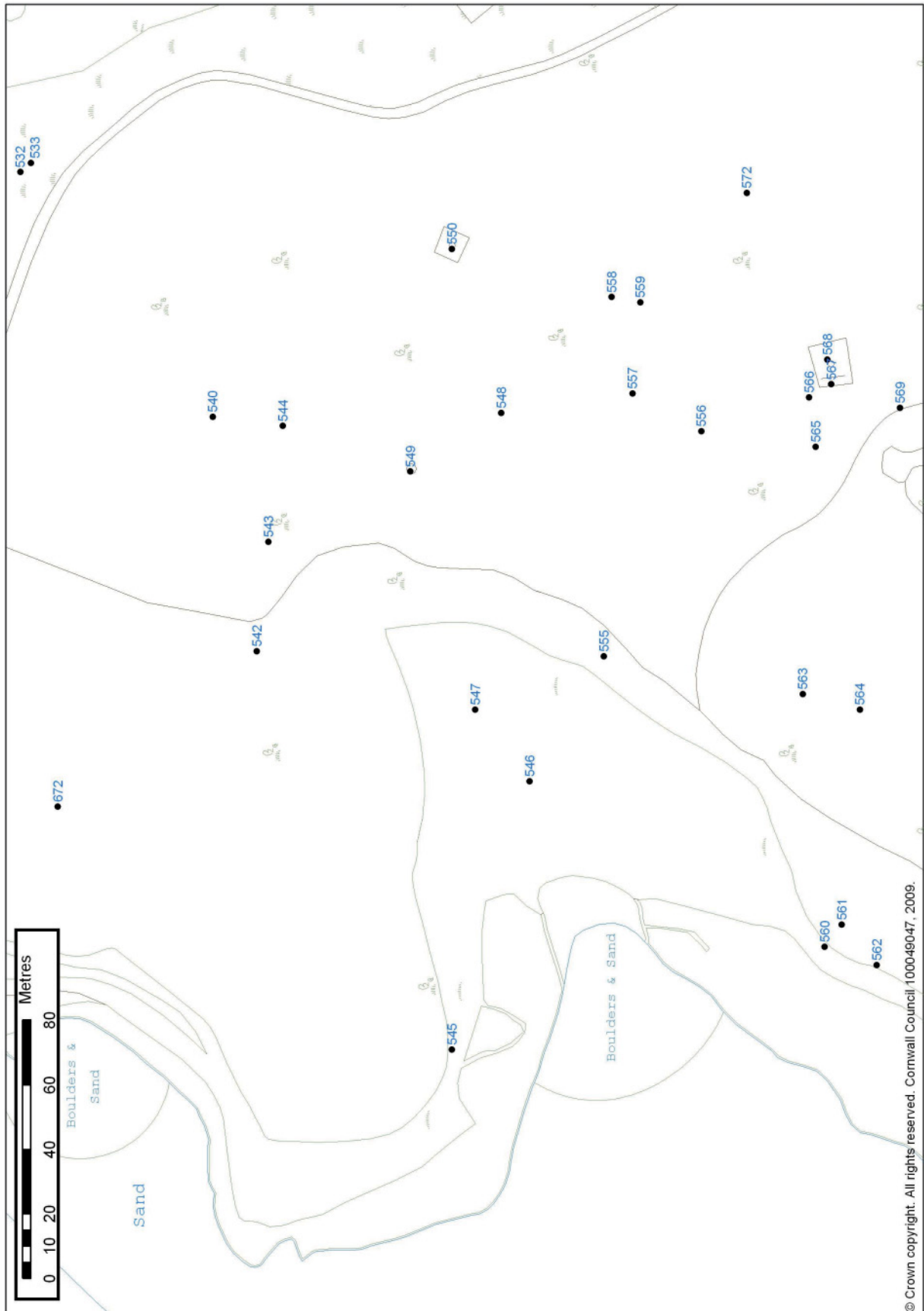
Fig 192. Locations of inventory features to the east of Chapel Porth within and adjacent to Chapel Combe.



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Fig 193. Locations of inventory features at Chapel Porth.





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Fig 194. Locations of inventory features on Charlotte Moor (north-west).

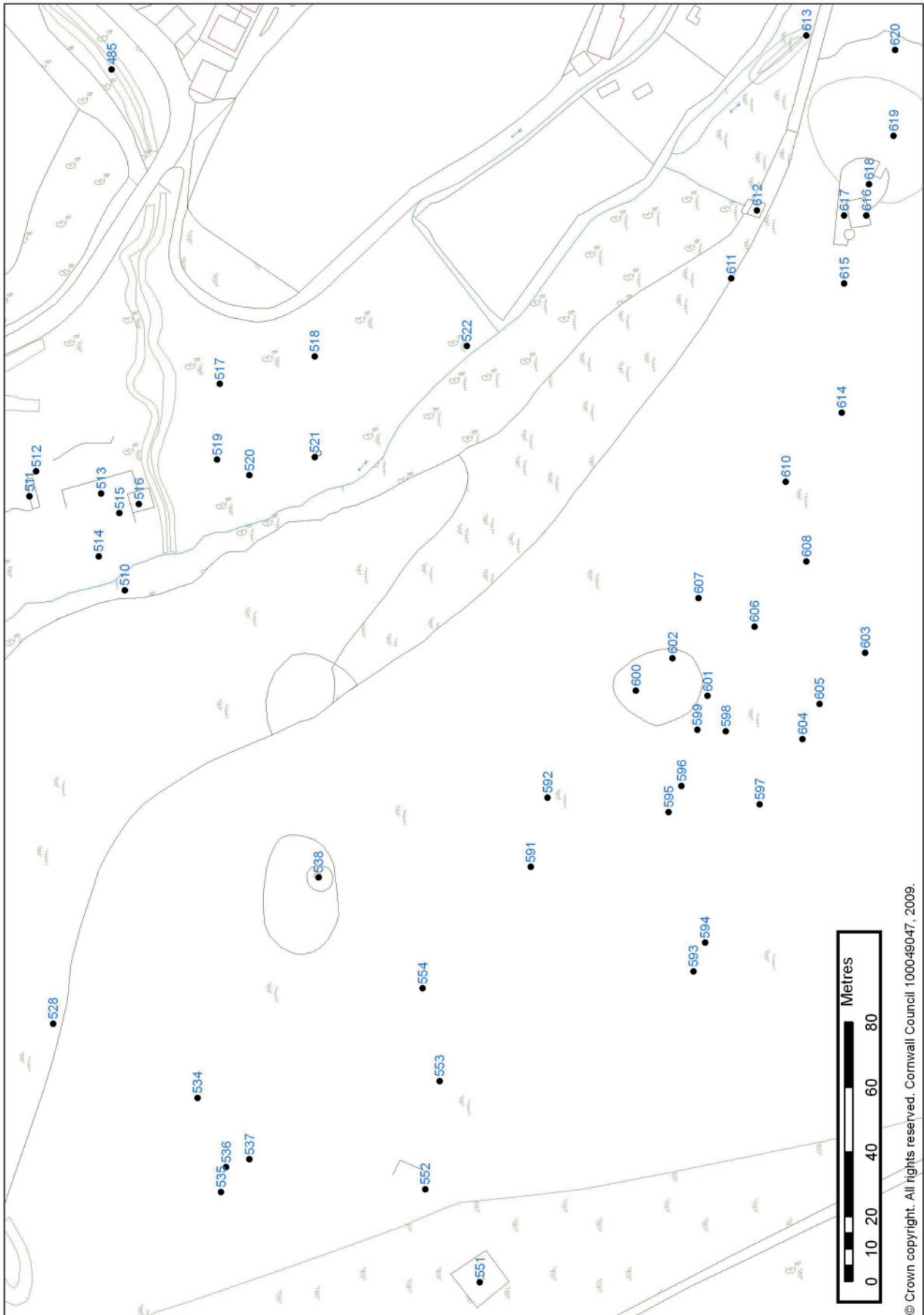


Fig 195. Locations of inventory features on Charlotte Moor (north east).



Fig 196. Locations of inventory features on Charlotte Moor (centre west).

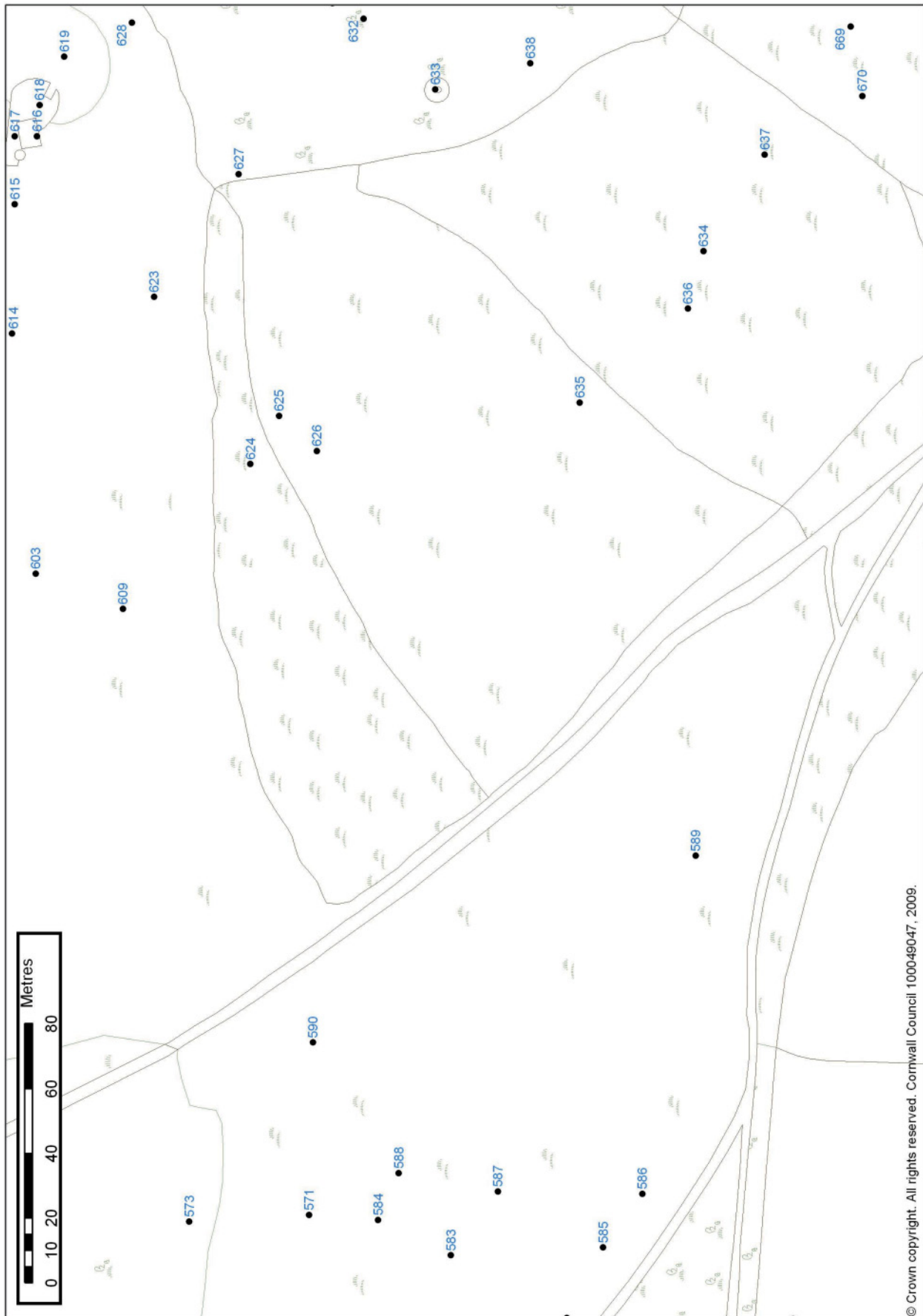


Fig 197. Locations of inventory features on Charlotte Moor (centre).

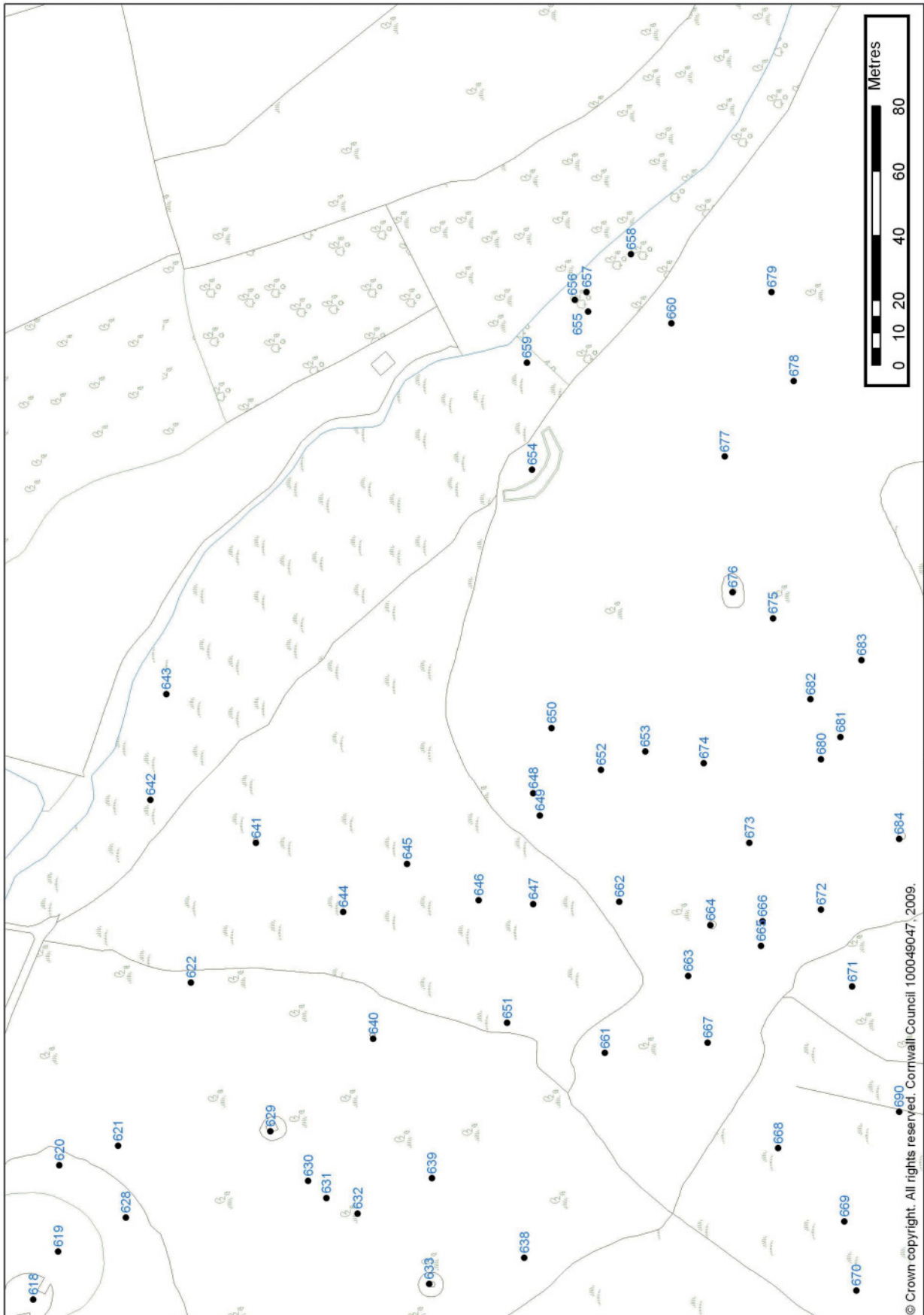


Fig 198. Locations of inventory features on Charlotte Moor (centre east).

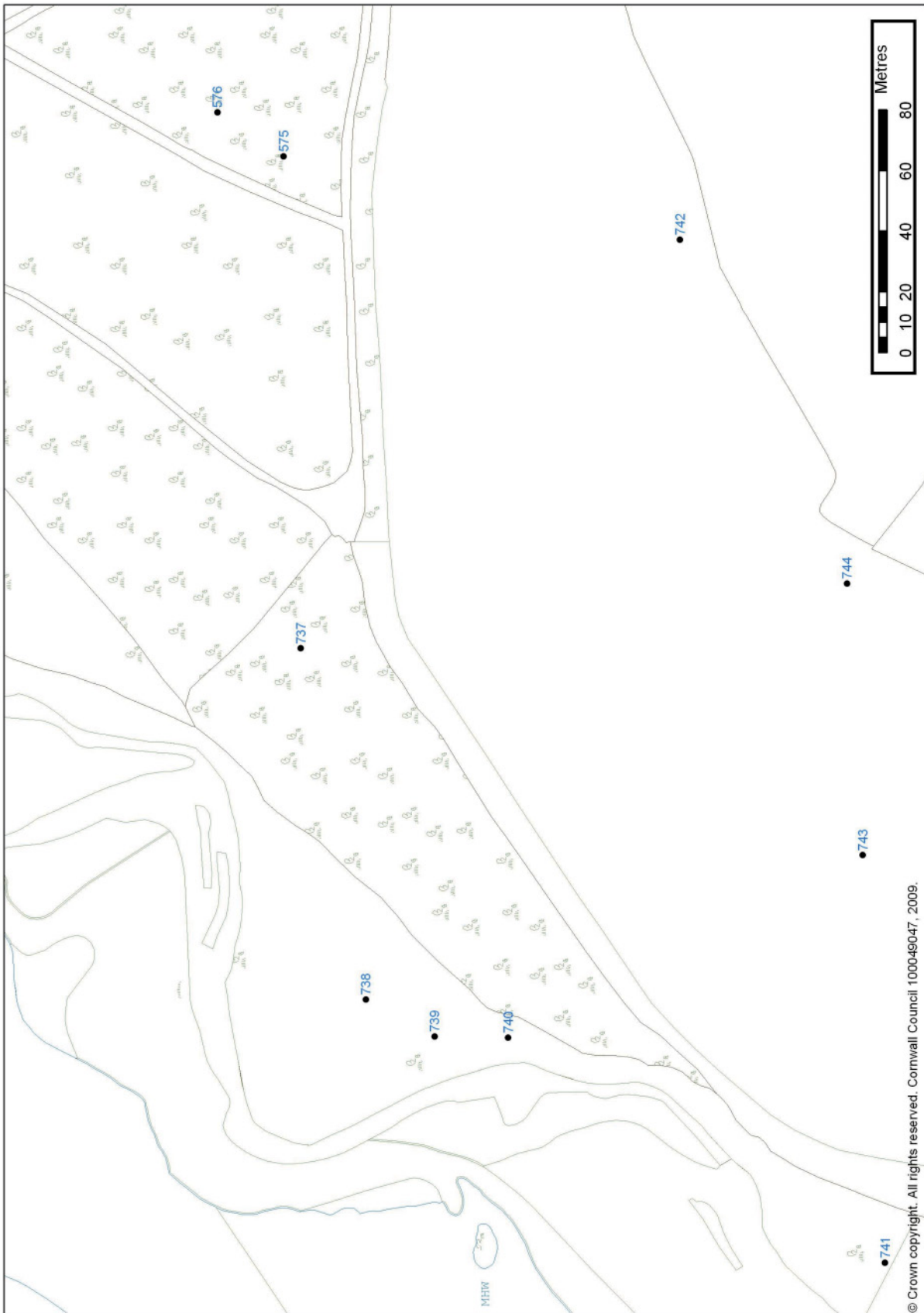


Fig 199. Locations of inventory features on Charlotte Moor's south-western coast.

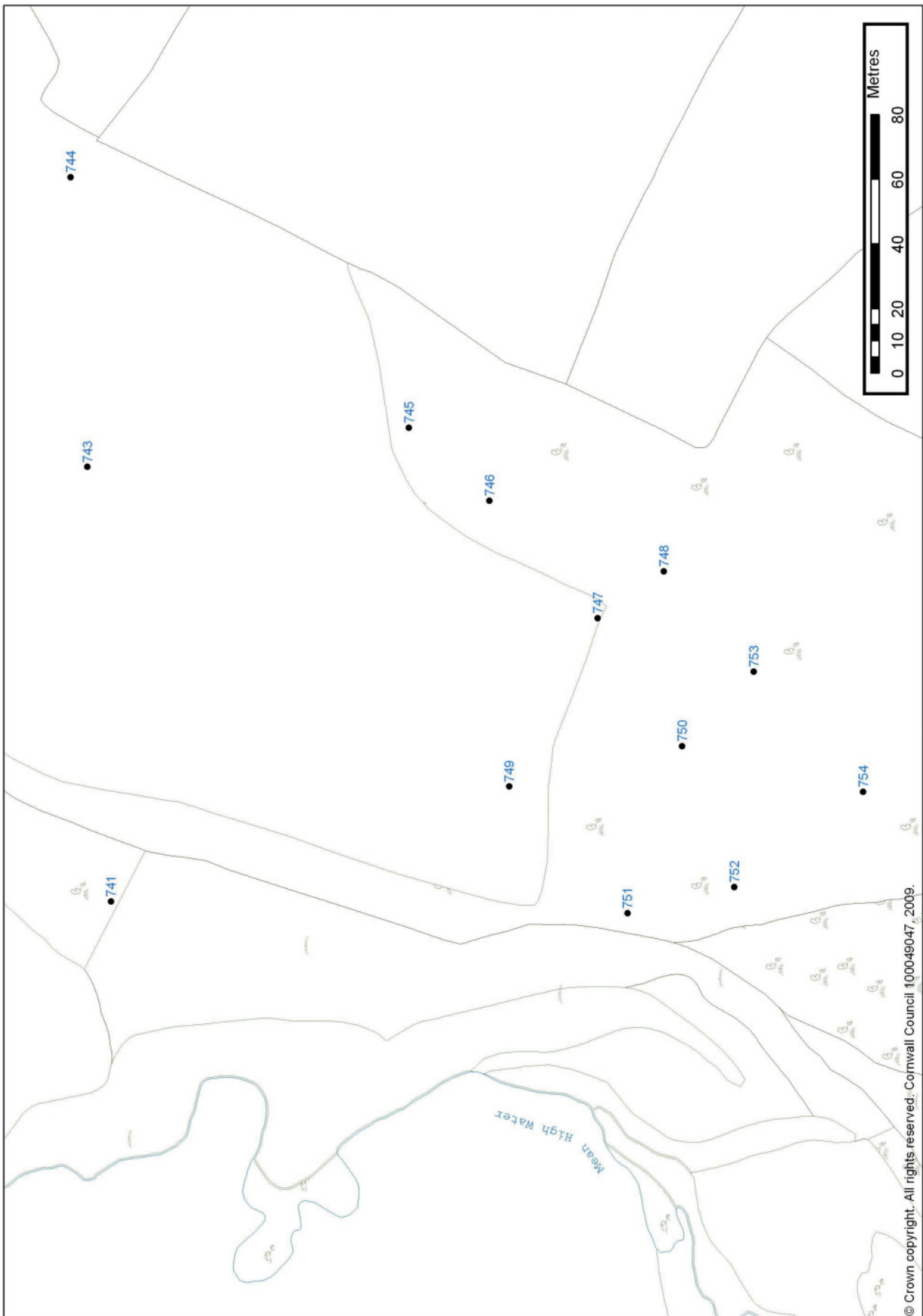


Fig 200. Locations of inventory features on Charlotte Moor (lower centre west).

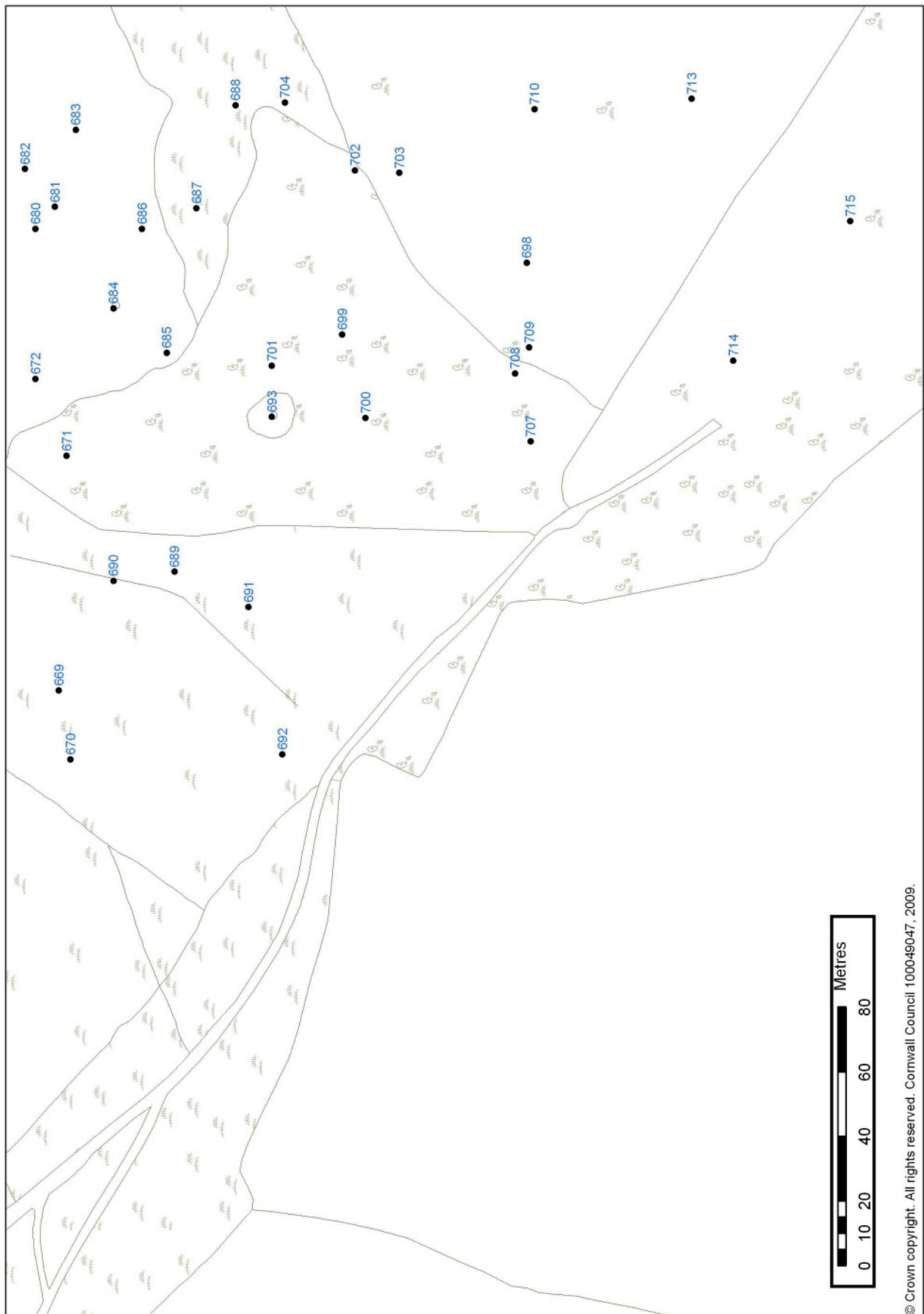


Fig 201. Locations of inventory features on Charlotte Moor (lower centre)



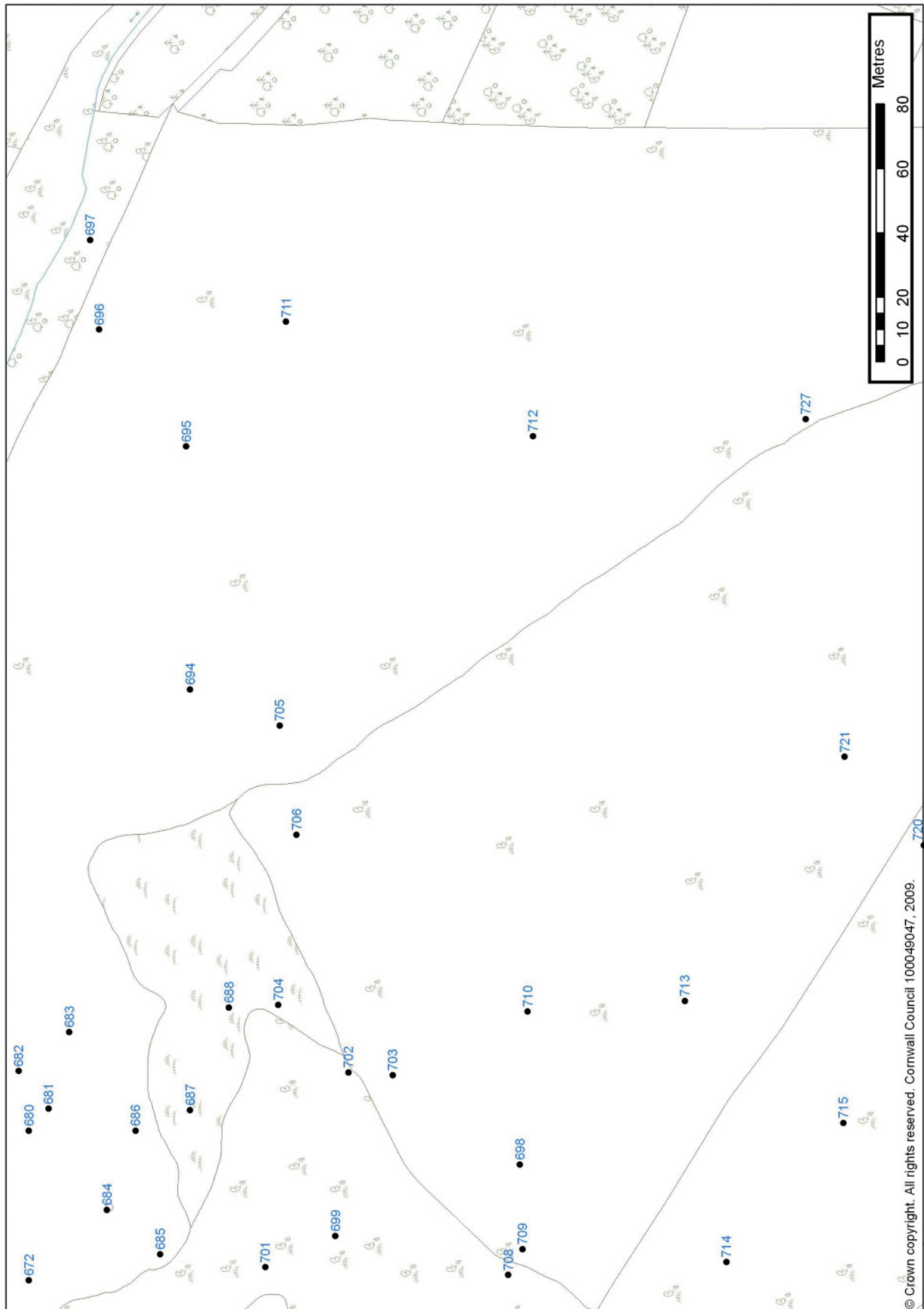


Fig 202. Locations of inventory features, Charlotte Moor (lower centre east).

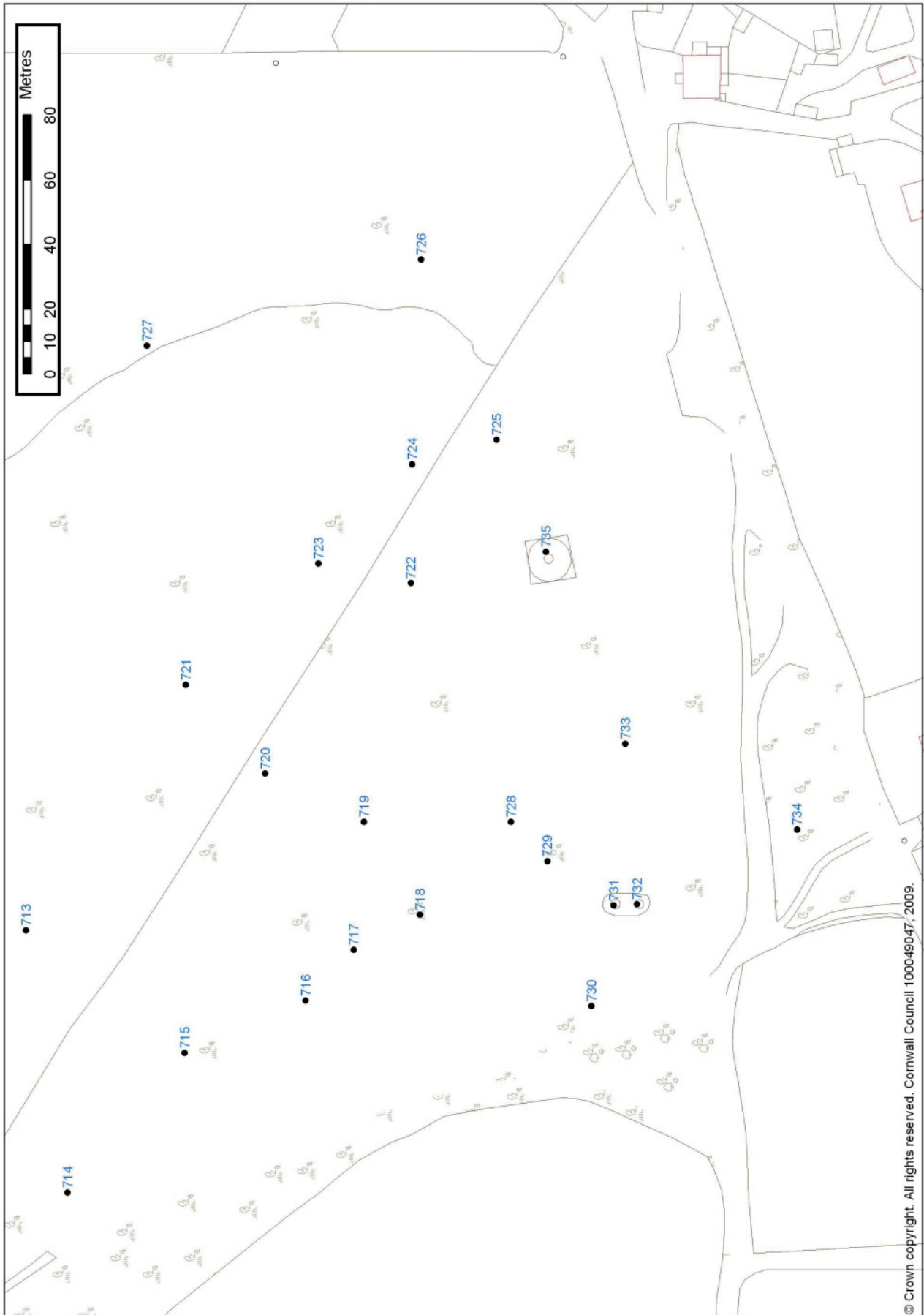
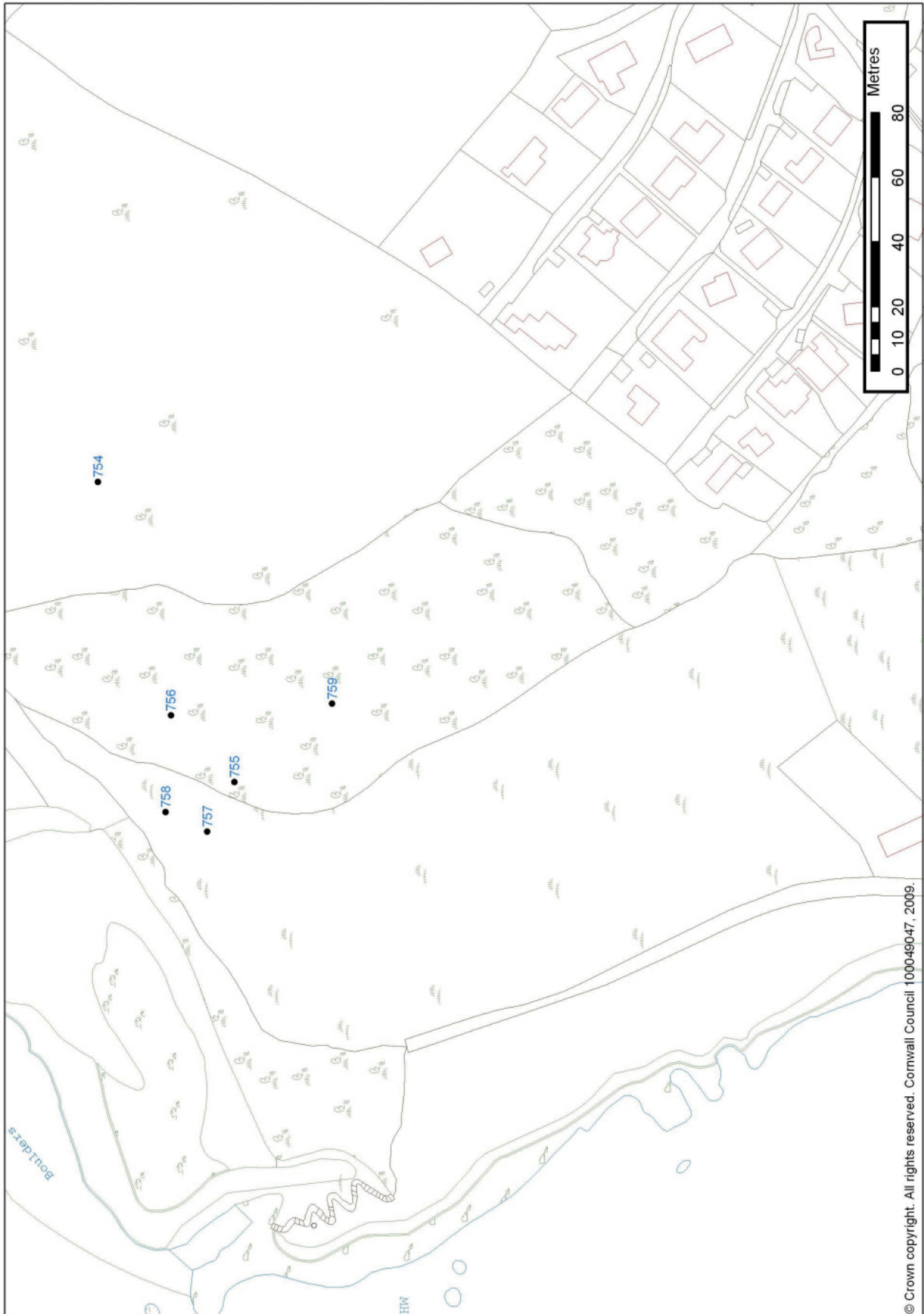


Fig 203. Locations of inventory features on Towan Moor.



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Fig 204. Locations of inventory features at Wheal Towan.

## 11 Inventory

Each site or monument or building recorded by the National Trust is assigned a unique Historic Buildings and Sites and Monuments Record number. Information on all sites on Trust property or property subject to covenant is to be included in the Trust's computer-based HBSMR. This inventory will form the basis for the archaeological site descriptions on the properties. Where HBSMR numbers have already been assigned these have been used. All new numbers are in the range 190000 to 190999. Where PRNs exist in the Cornwall and Scilly HER, these are appended.

NT HBSMR No; Cornwall HER No	Name	Description / Interpretation	Management Rec's	Grid Ref (8 figure)
90346; PRN 53656	Capped shaft, south side of St Agnes Beacon	A Clywd shaft cap with a substantial spoil heap immediately to the S can be seen in dense vegetation. Neither was accessible at the time of survey. The shaft and spoil heap are shown on the 1st edition Ordnance Survey 25in : 1 mile map (c 1880) and marked 'Old Shaft'. They fall at the west end of lodeback workings [190169]. Symons' 1870 map of the St Agnes mining area marks 'Wheal May' in this location, within a larger sett shown as West Polbreen, at the northern end of a line of shafts extending S into Goonvrea.	Monitor Clwyd Cap for indications of significant corrosion or for subsidence of shaft throat	SW 7088 4997
90348	Coastguard lookout, northern summit of St Agnes Beacon	The 2nd edition Ordnance Survey 25in : 1 mile map of c 1907 shows a rectangular enclosure approximately 14m by 11m at this location, aligned NW-SE and labelled 'Lookout'. A smaller rectangular structure (with an internal feature) and a flag staff are depicted within it. An undated photograph appears to show the same layout, where the rectangular enclosure is shown to be a wooden fence and the smaller structure a wooden hut; a vegetated hedge is also visible within the outer enclosure (Clive Benney collection) (Fig 55) Coastguard records note that a 'Lookout House' was erected on the site in 1914, but there was clearly an earlier presence there and the 1914 structure may have been a replacement. The lookout is recorded as having been moved from this site to its present clifftop location on St Agnes Head in 1926 and the site was surrendered to the Hancock estate, from which it had been leased, in 1927 (information from Clive Benney). The surviving earthwork on the site differs from that shown on the 1907 map and may be a World War II feature [190070].	Re-survey site after vegetation is reduced to assess whether there are surviving elements of the earlier enclosure.	SW 7089 5059
90349; PRN 19414	Unlocated find of flint scraper, St Agnes Beacon	Charles Henderson noted having found a worked flint on the Beacon but did not give a precise location.	None	
90350; PRN 19416	Unlocated find of Roman coin, St Agnes Beacon	The find of a Roman gold coin was erroneously located to the Beacon (Warren 1962) but is now known to have been found elsewhere in the St Agnes area. Another Roman coin has subsequently been reported from the Beacon, however [190187].	None	
90351; PRN 19405	Small enclosure, west side of southern summit of St Agnes Beacon	A small sub-rectangular hollow approximately 16m by 14m, with a low bank on its west side up to 0.15m high and 1.4m wide, cut into the slope immediately below cairn [90355]. Preston-Jones (nd) suggests this may be the earthwork referred to by Tonkin (1975-6, 203) in the early eighteenth century as 'the remainder of a small square fortification' sited W of the barrow 'which now serves for a beacon'.	Re-survey site after vegetation is reduced to get a better understanding of the surviving earthwork remains.	SW 7100 5022
90352; PRN 19403	Radar station boundary on northern summit of St Agnes Beacon	A 1946 RAF vertical air photograph shows a polygonal boundary around a number of structures forming part of the World War II radar establishment [190060] on the northern summit of the Beacon. The boundary appears as two parallel dark lines, except on the NE side where there is only one. This may represent either burning or cutting of vegetation on either side of a fence, probably in the form of posts and barbed wire or wire netting. A concrete setting for a fence post [190041] may have been part of this boundary. The line of the boundary broadly followed the break of slope at the northern end of the Beacon ridge on its W, N and N	None	SW 7084 5059

*St. Agnes Beacon, Tubby's Head, Wheal Coates, Chapel Combe, Charlotte and Towan Moors, St. Agnes Cornwall: archaeological assessment.*

NT HBSMR No;  Cornwall HER No	Name	Description / Interpretation	Management Rec's	Grid Ref (8 figure)
		sides. That it broke through hedge [190056] suggests an intention to place the boundary at a certain minimum distance from what it enclosed, or enclose an area of a particular size. Entrances are visible on the air photograph on the N and S sides of the enclosure, the latter with a slight inturn in the line of the boundary. On the basis of the air photograph the site was published as a possible Iron Age hillfort (Warner 1962).		
90353; PRN 19404.4	Bronze Age cairn, southern summit ridge of St Agnes Beacon	The middle of three Bronze Age cairns on the southern summit ridge of the Beacon. This survives as an irregular low stony mound, 10-11m across and up to 1m high, much of which is covered by furze and brambles. There is a hollow in the stony top of the mound about 3.5m in diameter and up to 0.3m deep, and low stony 'tails' extending south from the E and W edges of the monument. These features, and the generally irregular form of the cairn, are likely to derive from past stone robbing, probably to build nearby enclosure boundaries. Preston-Jones (nd, 26) has suggested that this cairn may have been the site of a beacon fire [190116] at a time when the summit cairn [90355] to the south was occupied by a summerhouse [190125]. However, views from this site to Carn Brea, the nearest beacon site to St Agnes Beacon, are blocked by cairn [90355], and it is perhaps more probable that the second beacon site was cairn [90357] to the N. Reported marks of fire on stones making up the surface of this cairn may derive from more recent informal bonfires.	Clear vegetation to improve access and increase visibility. Re-survey if new features become apparent. Monitor for visitor disturbance	SW 7102 5027
90354; PRN 19407	Field system, south side of St Agnes Beacon	Charles Henderson noted a system of fields and terraces on the southern side of the Beacon but these have not been identified on air photographs and no traces were seen during the present survey. It is possible, although unlikely, that Henderson took the remains of substantial lodeback workings for lynchets. Alternatively he may have seen pasture and croft boundaries (for example, [190066] and [190129]) as elements of a field system.	None	
90355; PRN 19404.30	Bronze Age cairn, southern summit of St Agnes Beacon	A large Bronze Age cairn, now a sub-rectangular mound 27m by 22m and more than 3m high, set on the highest point of the Beacon. The stony make-up is visible on the sides and top. The summit of the mound is sub-rectangular, roughly 10m by 9m and near level. It has been surfaced with gravel over the eroded area around the trig point / topograph. The steep flanks are covered by short turf with extensive erosion on pathways ascending from the N, S, NE and W; the lower flanks on the E and W sides bear dense furze, heather and montbretia. Erosion on the N side has revealed one, possibly two, lines of stonework, but it is not clear whether these are part of the original cairn, of the beacon or summerhouse, or possibly recent steps. The edges of the eroded hollowed path on the N side may also have been revetted although it is unclear how recent this may be. On the S side erosion has revealed a large slab at least 0.9m by 0.5m apparently set horizontally within the make-up of the mound but it is not clear whether this is part of a structure. The cairn is a Scheduled Monument: 29667.	Clear vegetation from around lower flanks of the monument. Monitor for erosion and stability. Consult English Heritage Historic Environment Field Advisor re repairs or other management works.	SW 7101 5021
90357; PRN 19404.20	Bronze Age cairn, southern summit ridge of St Agnes Beacon	The northernmost of three cairns on the southern ridge of the Beacon summit. It has been considerably disturbed, most probably by stone robbing for construction of nearby boundaries, and survives as an irregular stony mound up to 30m long on its E-W axis with a greatest width of about 19m N-S. It is up to 2m high at its E end but over much of the rest of its extent is considerably lower. The E end of the N side forms a relatively steep scarp but there is no indication that represents the cairn's original form. An outcrop of bedrock is visible at the E end of the mound. Much of the mound is covered by furze and brambles. Preston-Jones (nd, 28) has suggested that the monument may originally have been a long mound or a series of conjoined or adjacent mounds. The robbing of stone has created small quarry cuts into the sides, giving the impression of a series of mounds, but it may in fact have been a single long mound running W from a natural outcrop at its E end (cf Chapel Carn Brea long mound, St Just). There is no indication of the original height.	Clear vegetation to allow better access and increase visibility. Re-survey if new features become apparent. Monitor for visitor disturbance	SW 7100 5034

*St. Agnes Beacon, Tubby's Head, Wheal Coates, Chapel Combe, Charlotte and Towan Moors, St. Agnes Cornwall: archaeological assessment.*

NT HBSMR No;  Cornwall HER No	Name	Description / Interpretation	Management Rec's	Grid Ref (8 figure)
90359; PRN 19404.10	Cairn, northern summit of St Agnes Beacon	A mound is shown at this location on the 1st and 2nd edition Ordnance Survey 25in : 1 mile maps of c1880 and 1907, labelled 'barrow' on the former and 'tumulus' on the latter. The feature survives as a horseshoe-shaped bank of stony material approximately 15m in diameter and up to 1.4m high, open to the NNW. The hollow within the mound is roughly 4m across with steep sides up to 1m high. Low amorphous spoil dumps and disturbance lie just outside the opening on the N side of the mound, which opens towards the sites of the former coastguard lookout [90348] and radar station building base [190069], both less than 25m distant. It is likely that the cairn was used as a quarry for material for one or other of these features. It was not referred to by antiquarian writers and there are no records of its former form or of any finds from it.	Re-survey after vegetation reduction.	SW 7091 5057
190000	Pit, north side of St Agnes Beacon	A pit approximately 5m across, vegetation filled and depth therefore uncertain, with spoil heaps up to 1m high on its N, S and W sides. The scale of the pit suggests that it may be a lodeback rather than a prospecting pit.	None	SW 7063 5067
190001	Pasture boundary, north side of St Agnes Beacon	A low bank of earth and stone, 0.25m high, 1.5m wide at base and 0.5m wide at the top, with a ditch on the upslope (SE) side, typically 1.2m wide and 0.2m deep. Towards its eastern end the bank is up to 0.75m high, 0.5m wide at the top and 1.75m at the base, with the ditch up to 1.4m wide and 0.2m deep. The boundary terminates approximately 40-50m short of the enclosed fields to the NE. The final 10-15m at its eastern end is only 0.15m high and appears to divert slightly south of the previous alignment. (The OS 25in map of c 1880, however, depicts it as a dotted line, continuing to the E.) It may have been robbed in this area when the fields to the E were enclosed. This may represent an historic division between the areas of commons to N and S known respectively in the late 17th century as Inner and Outer Goonfree and may have originally extended further to both E and W, where its general alignment appears to be fossilised in post-medieval field boundaries.	None	Extends from SW 7064 5067 to SW 7075 5077
190002	Prospecting pits, north side of St Agnes Beacon	A cluster of 4 prospecting pits with spoil cast downhill, partly under dense vegetation. The most northerly of the group is approximately 2m across and 1m deep on its upslope side, cut into the slope, with spoil up to 1m high downslope. One of the group cuts and therefore postdates ditch [190001].	None	SW 7067 5071
190003	Track, north side of St Agnes Beacon	A trackway running SW-NE approximately 2m wide and terraced into the slope by up to 0.7m on the uphill side. This may have been the former route of the road now running parallel to the N.	None	Extends from SW 7067 5074 to SW 7074 5079
190004	Roadside platform, north side of St Agnes Beacon	A levelled platform alongside public road, up to 0.75m high, approximately 35m long and up to 12m wide. The platform has a stony make-up and the surface is more irregular under vegetation on its S side, away from the road and adjacent to a field boundary. A modern seat with a memorial plaque is sited on the platform. The original purpose of the feature is unclear, although it is possible that it represents landscaping of dumped mine waste.	None	SW 7079 5084
190005	Pit, north side of St Agnes Beacon	A small pit 2.5-3m wide and up to 0.75m deep has been cut into the N side of platform [190004], adjacent to the road edge. It is located opposite the entrance to the farm lane on the N side of the road and may represent small-scale quarrying of surfacing material for the lane.	None	SW 7080 5084
190006	Stone-faced Cornish hedge, north side of St Agnes Beacon	A stone-faced earth bank (Cornish hedge) up to 1.5m high on the downslope side. The fields enclosed by this hedge were recorded on the tithe map of c 1840 but are likely to date from some point between that date and the later seventeenth century when enclosure in this area began.	There is some erosion and stone slippage and patching would prevent further deterioration	SW 7077 5081

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190007	Boundary stone, north side of St Agnes Beacon	A 'stone' is marked on the 1st edn 25 in : 1 mile OS map (c 1880), on the SE corner of the enclosed field projecting into the rough ground from the E, and on current OS mapping. This may be a surviving bound stone between the areas of commons to N and S, subsequently marked by boundary [190001]. Alternatively it may have marked a division between mining setts. The location now lies within dense vegetation and the stone was not found during fieldwork.	Vegetation reduction across the area. If the stone is still present, it should be treated to appropriate archaeological recording.	SW 7079 5078
190008	Prospecting pit, north side of St Agnes Beacon	A prospecting pit in the form of a cut into the slope about 1.8m across and 1m high on its upslope side. A mound of spoil up to 0.75m high has been cast downslope to the N.	None	SW 7075 5077
190009	Prospecting pits, north side of St Agnes Beacon	A linear group of at least three prospecting pits aligned NNW-SSE and running up- and down-slope; the lower part of the area is very overgrown and other pits extending the alignment may be present. The pits are approximately 2.5m in diameter and 0.4m deep with spoil cast downslope to the E.	None	SW 7077 5077
190010	Prospecting pits, north side of St Agnes Beacon	Two adjacent prospecting pits, less than 2m apart. Each is approximately 2m across and up to 0.6m deep. Spoil has not been cast downslope to the N but rather to the SE, forming heaps up to 0.6m high on the lower side.	None	SW 7082 5076
190011	Linear feature, north side of St Agnes Beacon	A linear feature 25-30m long running transversely across the slope, evident only as a sinuous low 'bank' up to 2.5m wide of heather and furze 0.1 to 0.15m taller than that immediately adjacent. Moor grass, which forms part of the vegetation mix in the immediate vicinity, is much less frequent on this feature than in the surrounding area. The feature is visible as a vegetation difference on recent air photographs, extending from SW 70857 50751 70891 50772. This may represent some form of past disturbance - a backfilled trench, for example - which has resulted in differential vegetation growth, but could be related to drainage or other natural factors.	Re-visit after vegetation reduction.	Extends from SW 7088 5076 to SW 7088 5077
190012	Prospecting pit, north side of St Agnes Beacon	A pit 2.5m by 1.5m and up to 0.5m deep with spoil cast downslope to the NE up to 0.6m high on the downslope side. There are hints of further ground disturbance extending NE from the pit but no clear features.	None	SW 7085 5076
190013	Prospecting pit, north side of St Agnes Beacon	Two prospecting pits, approximately 7m apart on a N-S alignment. Both are approximately 2m across and 0.6m deep, with a crescent of spoil up to 0.3m high on the downhill side.	None	SW 7072 5072
190014	Prospecting pits, north side of St Agnes Beacon	Two prospecting pits, rather overgrown, each approximately 2-3m across and 0.4m deep with spoil cast downslope up to 0.7m high.	None	SW 7076 5074
190015	Prospecting pits, north side of St Agnes Beacon	Three adjacent prospecting pits, roughly 1m apart, aligned roughly NW-SE. The pits are up to 2m across and 0.5m deep. The spoil heaps from each have merged to form a bank to the N up to 0.5m high downslope. A further pit, similar to the others, lies approximately 3m E from the SE, upslope, pit of this group.	None	SW 7085 5074
190016	Prospecting pit, north side of St Agnes Beacon	A prospecting pit approximately 3m by 1.7m and 0.55m deep. Spoil lies to the NE and is up to 0.5m high.	None	SW 7086 5075

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190017	Two prospecting pits, north side of St Agnes Beacon	Two prospecting pits roughly 3m apart, both about 2.5m by 1.8m and 0.6m deep, with spoil cast downslope to the NE up to 0.5m high. A third pit lies about 5m to the SW. This is approximately 2m by 1.5m and only 0.25m deep, with a low spoil heap to the NE.	None	SW 7084 5073
190018	Prospecting pits, north side of St Agnes Beacon	Four prospecting pits aligned roughly N-S up- and down-slope. All are around 2.5m by 1.8m and up to 0.7m deep. The upper two pits have spoil cast downslope to the N but the lower two have it cast to the E.	None	SW 7087 5072
190019	Prospecting pits, north side of St Agnes Beacon	Two adjacent prospecting pits, only 1m apart, cut into the slope. Both are roughly 2m by 1.5m but only 0.15m deep, with low spoil heaps to the NE (not directly downslope).	None	SW 7086 5073
190020; PRN 19403	Building base, north side of St Agnes Beacon	A rectangular concrete building base, about 6m by 3m, lying N-S and partly covered by vegetation. The N end of the building floor shows traces of a former internal partition constructed of concrete blocks and a slot along the W and E sides is likely to have held timber or metal framing for the structure. The base is set in a terrace cut into the slope approximately 1.5m deep on the uphill side; spoil from the cut has been cast to the W, forming a bank up to 1m high and 2m wide. The building would have formed part of the WWII radar station on the Beacon.	Clear vegetation over the site.	SW 7090 5071
190021	Building base, north side of St Agnes Beacon	A rectangular concrete building base, approximately 12m by 5-6m, oriented E-W, under dense vegetation. Concrete block wall bases approximately 0.3m high are visible on the N and S edges but the form of the E and W sides is not apparent, nor is it clear whether there is a concrete floor. The structure is terraced into the slope with a scarp up to 1.5m high on the S upslope side, topped by an earthwork platform [190042]. This building is adjacent to building [190020].	Clear vegetation over the site.	SW 7092 5068
190022	Spoil heap, north side of St Agnes Beacon	An irregular spoil heap measuring approximately 20m E-W and 15-20m N-S and up to 3.5m high on its N, downslope side. The upper part of the mound and the area immediately upslope to the S from which the spoil has presumably come is covered by dense vegetation and not accessible. The origin of the spoil, conceivably a shaft, is not apparent. This feature is not shown on the 1st or 2nd edition Ordnance Survey 25in: 1 mile maps of c1880 and 1907 and may therefore date to some time in the first half of the 20th century, although an earlier origin is also possible.	Re-visit after vegetation reduction to identify whether a shaft is present and requires safety works.	SW 7095 5070
190023	Prospecting pits, north side of St Agnes Beacon	Three adjacent prospecting pits. Two pits lie one above the other on the slope, oriented NNE-SSW, with a third approximately 11m to the W. All three are similar, roughly 3.5m by 2-2.5m and up to 0.8m deep, with spoil cast downslope up to 0.8m high.	None	SW 7092 5072
190024; PRN 53654	Spoil heap, north side of St Agnes Beacon	A substantial stony spoil heap, approximately 35m along the contour by 20m downslope; up to 6m high on its downhill side and 0.5m on the uphill. The spoil is predominantly fractured killas, mostly covered by heather, furze and scrub. The material almost certainly derives from shaft [190025] on the uphill side of the feature. This feature is not shown on the 1st or 2nd edn OS 25 in : 1 mile maps (c1880 and 1907) but does appear on a 1946 air photograph. It therefore probably dates to some time in the first half of the 20th century.	None	SW 7069 5065
190025	Shaft, north side of St Agnes Beacon	A metal cover approximately 1m square in a concrete setting on the NE (upslope) side of spoil heap [190024] is likely to cover a shaft. The location is on a SW continuation of the alignment of Wheal Coit lode from shaft [190032]. The shaft does not appear on Symons' map of 1870 or the 1st or 2nd edition Ordnance Survey 25in: 1 mile maps (c 1880 and 1907). A footpath to the shaft is visible on a 1946 RAF vertical air photograph.	Monitor metal cover for indications of corrosion and subsidence of shaft throat	SW 7070 5065



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190026	Prospecting pit, north side of St Agnes Beacon	A pit, 3m by 2m, 0.6m deep, cut into the slope, with spoil downslope to the W up to 0.3m high. The pit lies very close to the E side of pasture boundary [190066] but there is no clear chronological relationship between the two.	None	SW 7072 5065
190027	Two prospecting pits, north side of St Agnes Beacon	Two prospecting pits, 2m apart, oriented NW-SE. That to the NW is 2m across and 0.5m deep with spoil downhill up to 0.5m high. The second is similar but the spoil is not cast downslope to the NW but rather to the SW and NE.	None	SW 7074 5065
190028	Prospecting pit, north side of St Agnes Beacon	A prospecting pit, possibly associated with the pair to the N [190027]. It is 1.8m in diameter and 0.25m deep with spoil apparently cast upslope.	None	SW 7074 5065
190029	Track, north side of St Agnes Beacon	A track is visible on a 1946 RAF vertical air photograph running around the NW flank of the Beacon for a distance of about 150m, from the W end of track [190045] to the main pedestrian access point on the NW side of the Beacon, with a branch running to shaft [190025]. The track had evidently been recently used in 1946 and is likely to have served during WWII as a route between Cameron Camp and St Agnes; there may have been some additional function associated with the shaft (rubbish disposal?). The track is now completely overgrown and was not found during the survey.	None	SW 7083 5071 to SW 7062 5066
190030	Costeaning trench, north side of St Agnes Beacon	A crescent-shaped trench, probably a costeaning trench cut to intercept the roughly ENE-WSW Wheal Coit lode but possibly an isolated lodeback pit. It is approximately 12m long, 1.2m wide and 0.5m deep, lying roughly E-W. A linear spoil dump up to 3m wide and 0.75m high lies on the S side.	None	SW 7080 5068
190031	Granite block with iron fittings, north side of St Agnes Beacon	A granite block approximately 10m E of shaft [190032]. The block is 0.5m by 0.47 by 0.42m and has been roughly dressed on two of the visible sides. An iron eye bolt is set into the NNE face, the eye projecting 0.16m from the stone and its shaft set into a drilled socket approximately 35mm in diameter. A single iron chain link 120mm in length is attached to the eye. It is not apparent whether the block is set into the ground and its former function is uncertain: it may have been associated with the adjacent mining activity.	Make further enquiries on the former function of the feature; consider chemical protection of the iron components.	SW 7083 5070
190032	Shaft, north side of St Agnes Beacon	A Clywd Cap indicates the position of a shaft. It is set in a hollow approximately 6m across and 0.5m deep bounded by a bank of spoil up to 0.5m high and 2-3m wide forming an elongated C-shape open to the SE. The shaft is shown on Symons' map of 1870 close to the alignment of Wheal Coit lode but does not appear on the 1st or 2nd edition Ordnance Survey 25in : 1 mile maps (c 1880 and 1907). The relatively small amount of spoil suggests that either the shaft is not deep, was partly infilled with spoil or that material has been removed subsequently; a 1946 vertical air photograph (Fig \$\$) shows signs of apparently recent disturbance and it may be that spoil was removed during the construction of the World War II radar station. Operation Minecap records (sheet 7/55) note that the shaft was 'coned and filled' and fitted with a 4m diameter Clywd Cap, the work being completed on 28 June 1983, the cone having been topped up in March 1985.	Monitor Clywd Cap for indications of significant corrosion and site for subsidence of shaft throat	SW 7082 5070
190033	Prospecting pit, north side of St Agnes Beacon	Two adjacent prospecting pits. One is approximately 3m in diameter and 0.5m deep with spoil cast downslope to the W up to 0.7m high and 3m wide. The hillslope rises from the east side of the pit and into this, immediately adjacent, is cut a further pit approximately 2m across and 0.7m deep, spoil from which has been cast to the N (i.e., not downslope into the other pit).	None	SW 7081 5067
190034	Prospecting pit, north side of St Agnes Beacon	A prospecting pit 3m by 2.5m and 0.45m deep, with spoil cast downslope to the NW up to 0.5m high. This pit may have formed part of group [190035]	None	SW 7085 5069

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190035	Prospecting pits, north side of St Agnes Beacon	A linear group of 7 prospecting pits aligned approximately NW-SE and running up- and down-slope over a distance of approximately 35m, intended to find the course of a lode. The lowest pit, to the north, lies approximately 15m upslope from pit [190034], which it resembles and which may have formed part of the same group. The next five pits are sub-rectangular and steep-sided, all roughly 2.5m by 1.5m and 0.8m deep, with spoil cast to the NE up to 0.4m high. The highest of the pits, upslope to the SE, is slighter than the others and displaced E from the line. It is 3m by 2m and 0.45m deep, with spoil to the N up to 0.25m high.	None	Extends from SW 7085 5068 to SW 7088 5065
190036	Track, north side of St Agnes Beacon	The OS 1st and 2nd edition 25in: 1 mile maps of c 1880 and 1907 show a track running across the rough ground on the north side of St Agnes Beacon. The track links at its east end with footpaths to St Agnes churchtown and is likely to have formed part of a route between the settlement and the Wheal Coates area. The western portion of the track subsequently formed part of an access track [190037] to the World War II radar establishment on the Beacon. The route of the track is still in use.	Monitor for erosion and 'drift'.	Extends from SW 7063 5066 to SW 7115 5060
190037	Track ascending north side of St Agnes Beacon	A track, up to 2m wide and partly terraced into the slope, runs from the entrance to the Beacon from Beacon Drive (NGR SW 7062 5066) to the northern summit of the hill, partly following the line of track [190036]. Numerous small fragments of metallic slag lie on the eroding surface of the path over a distance of approximately 300m. These are very unlikely to derive from any activity on the Beacon and were probably brought onto the site to surface the access track to the World War II radar establishment. The original source of the slag, possibly derived from copper or iron smelting, is unknown.	Monitor for erosion and 'drift'.	Extends from SW 7068 5070 to at least SW 7090 5067
190038	Prospecting pits, north side of St Agnes Beacon	A line of 4 closely spaced prospecting pits aligned approximately WNW-ESE, with only 1-2m between pits. All are sub-rectangular and 2.5m by 1.7m, steep-sided and 0.5m deep, with spoil cast downslope to the N up to 0.45m high.	None	SW 7090 5065
190039; PRN 19403	Building base, north side of St Agnes Beacon	A rectangular concrete building base, lying E-W, measuring 11.9m by 5.8m. A concrete platform 1.1m by 0.95m projects on the E side, almost certainly the base for a porch, with concrete steps descending to the N. Concrete wall bases up to 0.4m high survive along the N, S and W sides and the bases of some internal concrete block partitions also survive. The remains of a three-sided rectangular feature in brick may represent the base of an internal chimney. Towards the W end of the former building are the bases of three rectangular concrete features, each 0.92m by 0.83m, with rounded internal angles and circular holes set off centre. These are likely to be shower stalls and it is therefore probable that the building formed part of the domestic accommodation for the personnel manning the World War II radar station. The building base lies in a cut terraced into the slope and stands about 1m below the ground level on the S side and roughly 0.7m above to the N.	Manage vegetation on and around the site.	SW 7091 5070
190040	Prospecting pit, north side of St Agnes Beacon	A pit, probably a prospecting pit, but conceivably associated with the World War II radar station, lies approximately 8m SW of the SW corner of building [190039]. It is 3m by 2m and 0.5m deep, with spoil 0.5m high cast downslope to the N.	None	SW 7091 5069
190041	Post support, north side of St Agnes Beacon	A concrete setting 0.56m across is exposed in the eroded surface of the footpath at this location. Within it is an earth-filled socket 150mm by 100mm (6 in x 4 in) which is likely to have accommodated a vertical post, probably part of the perimeter [90352] of the World War II radar station.	Monitor for erosion around the feature.	SW 7091 5067
190042	Platform and possible ramp, north side of St Agnes Beacon	A level, rectangular platform, 8m by 3m, formed from spoil probably derived from quarry [190043] and located above the cut into the slope at the rear of the platform on which building base [190021] is situated. It is unclear whether this platform was functional or is essentially landscaping of spoil. A further mound of spoil, apparently pushed upwards from the W side, lies at the E end of the platform. This presents a smooth 'ramp'-like surface on its W side with a drop of 1.4m to the E. This could be associated with military activity or with operations around quarry [190043].	None	SW 7093 5070

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190043	Quarry, north side of St Agnes Beacon	A substantial linear cut, probably a quarry, up to 12m wide and 5-6m deep at its upslope end and extending approximately 25m into the hill slope, with spoil cast downslope as a large bank on the N side. A quantity of broken concrete building material lies at the base of the pit on its S side, presumably dumped after demolition of World War II structures in the near vicinity. Further spoil from the feature may have been used to create platform [190042]. This feature is not shown on the 1st or 2nd edition Ordnance Survey 25in: 1 mile maps of c 1880 and 1907 and may therefore date to some time in the first half of the 20th century, although an earlier origin is also possible. The location of the quarry, distant from stone-faced boundaries, and the probable association with track [190049], suggests that building stone rather than hedging material was being quarried. Alternatively, the feature may have been associated with mining.	If the concrete rubble, probably deriving from demolition of the World War II radar station [190060], is to be removed at any time for safety or amenity reasons it should be monitored for archaeological significance	SW 7086 5069
190044	Prospecting pit, north side of St Agnes Beacon	A prospecting pit, 3.5m by 2.5m and 0.3m deep, with spoil cast to the N approximately 0.4m high.	None	SW 7093 5069
190045	Track, north side of St Agnes Beacon	A track, apparently then in recent use, is visible on a 1946 RAF vertical air photograph. It runs around the northern flank of the Beacon for a distance of about 200m, continuing in the enclosed fields to the SE. The track split from the main route from the W up to the northern summit [190036-7] and ran E along the N side of buildings [190039] and [190021] and through boundary [190056]. It is likely to have been used during WWII as a route between Cameron Camp and St Agnes. The route of the track is visible on recent vertical and oblique air photographs as a vegetation feature but was not identified on the ground.	None	SW 7085 5070 to SW 7103 5066
190046	Building base, north side of St Agnes Beacon	A rectangular platform approximately 7-8m long by 5m wide, oriented E-W and levelled into the slope. A concrete wall base is visible along the S side but it is unclear whether a concrete building base survives under the heathland vegetation. A 1946 RAF vertical air photograph shows a structure on the site resembling a laterally-reversed letter G in plan, with an apparently open central space. This may have been some form of blast wall. Nothing resembling this can now be seen on the site.	Manage vegetation on and around the feature. Re-visit after vegetation reduction.	SW 7089 5068
190047	Building bases, north side of St Agnes Beacon	Two rectangular concrete building bases with cement floors, both aligned E-W and 11.8m by 5.8m. The building to the W is very overgrown but concrete wall bases survive on the N, W and S sides. The wall base on the N side shows the imprint of corrugated shuttering or walling material, with corrugations at 0.15m centres. The building base to the E is apparently similar. Here the wall base around its NE corner (also showing corrugations) has collapsed onto the ground surface below. A flight of concrete or cement steps rises to the S (up the slope) between the two building bases. The buildings were located in a cut terraced into the slope, roughly 1m high to the rear (S) and the building floors up to 0.7m above the ground surface on the N side. These are likely to have been buildings of 'Nissen-hut' type, part of the World War II radar station.	Manage vegetation on and around the platforms.	SW 7092 5067
190048	Possible building platform, north side of St Agnes Beacon	A small, levelled platform, 5m by 2.5m, cut into the slope, with a 1m high scarp on the upslope side. It may have been the site of a small building. Proximity to other remains suggests that this may be associated with the World War II radar station.	None	SW 7092 5068
190049; PRN 53663	Track, north side of St Agnes Beacon	An engineered track, terraced into the slope and following the contour, runs for more than 100m across the Beacon and formerly continued to the SE through improved pasture (now ploughed out). The track is about 6m wide overall, including the scarps on its up- and down-slope sides; the cut on the upper side is up to 1.5m high. It has a level surface 3m wide; this appears to be stony but now lies under dense heathland vegetation and it is not clear whether this represents a metallised surface. Dense furze at the SE end masks the relationship between the track and boundary [190056]. The track is	None	Extends from SW 7093 5069 to SW 7102 5065

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		not shown on the 1st or 2nd edition Ordnance Survey 25 in : 1 mile maps of c 1880 and 1907, or on the tithe map of 1840. It is visible on RAF vertical air photographs of 1946 but does not appear to have been used recently at that time. It was probably associated with mining operations, perhaps short-lived, adjacent to its NW end (features [190022] and perhaps [190043]), probably during the first half of the twentieth century but conceivably earlier.			
190050	Prospecting pits, north side of St Agnes Beacon	Two adjacent prospecting pits, both approximately 2.5m by 2m and 0.7m deep with spoil cast downslope up to 0.7m high. The two pits lie one above the other on the slope, aligned roughly E-W	None		SW 7099 5069
190051	Prospecting pits, north side of St Agnes Beacon	A cluster of probably 5 or 6 prospecting pits, densely overgrown with tall furze and brambles, just to the S of pits [190050].	Revisit vegetation reduction.	after	SW 7099 5067
190052	Prospecting pit, north side of St Agnes Beacon	A prospecting pit 4-5m in diameter and up to 0.9m deep with spoil downslope to the N and NW up to 0.6m high.	None		SW 7100 6067
190053	Prospecting pits, north side of St Agnes Beacon	Two prospecting pits, one above the other on the slope. Both are 3m by 2-2.5m and up to 0.75m deep, with spoil cast downslope up to 0.75m high. There is probably at least one more pit approximately 10m downslope under dense tall furze.	Revisit vegetation reduction.	after	SW 7091 5070
190054	Prospecting pit, north side of St Agnes Beacon	A prospecting pit, approximately 3.5m by 3m and 0.65m deep, cut into the steep slope. The spoil has been cast downslope and is up to 0.8m high. The pit is overgrown with tall furze.	Revisit vegetation reduction.	after	SW 7095 5068
190055	Linear enclosure on track approaching St Agnes Beacon from the north east	Enclosure of an area of croft on the E side of the Beacon between c1880 and 1907 created an enclosure roughly 110m long and 15m wide, with constricted 'bottlenecks' at each end, between the new croft and the enclosed land to the NE recorded on the c1840 tithe map. A track leading onto the Beacon from the east runs through this elongated enclosure and it is possible that it was created in this form to aid in managing animals being brought onto or driven off the rough grazing on the Beacon. The boundary on the NE side is a stone-faced Cornish hedge up to 1m high on the upslope side to the S with a poorly defined ditch present in places on the upslope (Beacon) side. The boundary on the SW side of the enclosure, dating between c 1880 and 1907 was not visible in dense vegetation.	Revisit vegetation reduction.	after	SW 7109 5075
190056	Earth bank forming field boundary, north-east side of St Agnes Beacon	An earth bank up to 1m high on its NE-SW portion, but only about 0.6m on the N-S portion and the return to the SE, dividing the enclosed field to the E from the rough ground of the Beacon. The bank is topped by wooden posts and broken barbed wire. In places a ditch is visible on the W side of the boundary (towards the rough ground) approximately 1.5m across and 0.15m deep. A 10-11m length of the NE-SW boundary near the angle with the N-S portion has been faced on the side towards the rough ground with coursed edge-set stone, at a point where the earth bank appears to have been broken down. This is likely to mark the point at which the perimeter fence [90352] of the World War II radar establishment cut through the boundary. Similar stone facing can be seen on the N-S section of the same boundary close to the angle; a break here can be seen on a 1946 RAF vertical air photograph. This boundary is first shown on the 2nd edition Ordnance Survey 25 in: 1 mile map of c 1907, and then enclosed a large area of croft taken in from the Beacon. This has subsequently been converted into improved pasture.	Patching appropriate.	as	SW 7099 5062

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190057	Building base, north side of St Agnes Beacon	A rectangular concrete building base roughly 11.8m by 4.5m, aligned E-W. A concrete platform approximately 1m square, probably the base of a porch, is attached to the E end of the building, which forms part of the World War II radar establishment. A modern wooden bench has been sited close to the E end of the building, adjacent to the footpath.	None	SW 7091 5065
190058	Quarry, north side of St Agnes Beacon	A sub-rectangular hollow 12m by 8m and up to 1.8m deep cut into the slope, with a small lip of spoil to the N. This lies adjacent to one of the World War II buildings and it is conceivable that it was excavated to provide material for the construction of the building bases. Alternatively, it may be an earlier mining-related feature.	None	SW 7091 5064
190059	Spoil heap, north side of St Agnes Beacon	An irregular, broadly kidney-shaped spoil heap approximately 9m by 5m and up to 1.4m high stands on the W end of the terrace created for building [190057]. It is unclear whether this material derives from the creation of the terrace for the building or from the probable small quarry [190058] immediately adjacent to the W.	None	SW 7088 5063
190060; PRN 19403	Radar station, northern summit and slopes of St Agnes Beacon	A Chain Home Extra Low radar station is recorded as having been planned for St Agnes Beacon in the second half of 1942. Surviving remains include a number of concrete building bases and other associated features - [190020-1], [190039], [190046-8], [190057] [190069-71] and [190073-4] - and one or more metal tracks [190037]. Part of the site lay within a perimeter fence [90352].	Vegetation management to improve visibility and legibility and to reveal further features currently hidden. Appropriate recording should be carried out if and when new features are identified.	Centred on SW 7090 5066
190061	Prospecting or lodeback pit, north side of St Agnes Beacon	A large, steep-sided, pit, 4.5m by 3m and 1.1m deep, with spoil downslope to the NE forming a steep-sided mound up to 1m high. The size, depth and sharp profile of this feature suggests that it may be an isolated lodeback pit rather than for prospecting.	None	SW 7099 5065
190062	Prospecting pit, north side of St Agnes Beacon	A prospecting pit 2.5-3m by 1.75m, 0.3m deep, with spoil downslope up to 0.3m high. Unfinished?	None	SW 7097 5064
190063	Prospecting pit, north-west side of St Agnes Beacon	Two prospecting pits aligned NNW-SSE, transversely across the slope. The larger, to the SSE, is 5-6m by 2.5m, and 0.6m deep, with spoil cast downslope to the W up to 1.1m high. The other pit is much slighter and overgrown with deep and dense heather and furze.	None	SW 7068 5060
190064	Track, west side of St Agnes Beacon	The present footpath running N-S along the W side of St Agnes Beacon is not shown on historic mapping but does appear on RAF vertical air photographs of 1946. Air photographs of c 2000 show it as narrow and partly overgrown, particularly at the southern end. It has apparently been subject to substantial clearance and possibly earthmoving during the past decade, establishing a new line over parts of its route. It is now one of the main footpaths on the Beacon.	None	Extends from SW 7064 5065 to SW 7092 4998
190065	Track, west side of St Agnes Beacon	The OS 1st and 2nd edition 25in: 1 mile maps of c 1880 and 1907 show a track running across the rough ground on the north-west side of St Agnes Beacon between the road (Beacon Drive) to the north and a field gate in the enclosed land on the west side of the Beacon. The line of the track is now under dense vegetation for the most part and was not identified in the field.	None	Extends from SW 7061 5064 to 7071 5038

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190066; PRN 53652	Pasture boundary, running along west flank of St Agnes Beacon	A ditch with an earth bank on its W, downslope side, runs for almost 900m along the western flank of the Beacon. It depends from (and is therefore secondary to) pasture boundary [19001] at its northern end; the southern end is now lost in dense vegetation but probably runs to a boundary [190176] recorded on the tithe map of c 1840 and likely to date to the late seventeenth century. The bank varies between 0.3m and 0.5m high and 1.2-2m wide; the steep-sided ditch is 1.5-2m wide and 0.4-0.6m deep on its eastern, upslope, side. It is cut by, and therefore predates, lodeback workings [190184] and [190169], and, in the same area, a number of prospecting pits ([190175], [190168], [190133]) have been cut into the ditch. The function of the boundary is uncertain, although it was probably intended to divide pasture and other rights between the east and west sides of the area of rough ground known in the seventeenth century as Outer Goonvrea. The current Cornwall HER record identifies it as a probable holloway but this is not the case.	None	Extends from SW 7071 5073 to SW 7096 4992
190067	Track, north side of St Agnes Beacon	A track running roughly W-E across the northern ridge of St Agnes Beacon, between SW 70621 50661 and SW 71049 50419. It is shown on the OS 1st edition 25in: 1 mile map (c 1880) but is likely to be earlier, linking St Agnes churchtown with Wheal Bungay and other workings in this area. It is now one of the main footpaths across the Beacon.	None	Between SW 7062 5066 and SW 7105 5042
190068	Concrete utility marker, north side of St Agnes Beacon	A small concrete utility marker, 0.4m high, 0.17m wide and 70mm thick, with a rounded top. It lies E-W and has a small, empty slot on the N face of the kind which often accommodates a reference number on such markers. Mounded vegetation on the S side of the feature suggests possible disturbance.	None	SW 7081 5060
190069	Building base, north side of St Agnes Beacon	A rectangular concrete building base aligned NE-SW and measuring 6.45m by 5.75m. It has concrete wall bases 0.4m high along the SW and NE sides, both showing corrugations from shuttering or walling material set into the upper part ( <i>cf</i> building [190047]). A rectangular concrete plinth 4.13m by 2.35m and 0.1m high is set on the floor in the centre of the structure, on which is a further concrete platform 2.92m by 1.13m and 0.12m high. This has four pairs of projecting threaded metal bolts set into it in cement plugs, presumably for mounting some kind of machinery; there is also a channel 0.6m long, 80mm wide and 60mm deep cut into it. The building almost certainly formed part of the World War II radar establishment.	None	SW 7090 5060
190070	Small polygonal enclosure, northern summit of St Agnes Beacon	A polygonal enclosure, approximately 7.5m NW-SE and 9.5m NE-SW, defined by an earth and stone bank 1.5m wide at its base, 0.5m wide at the top and 0.75m high externally. A longer, straight side faces NW. There is a probable entrance to the SSW but the bank on the SE side is broken down in places creating further gaps. At least two courses of killas stonework, the upper rebated from the lower, are visible within the external face of the bank on the SW side, although it is unclear what type of structure this may have been part of. Within the interior of the enclosure is a quantity of broken concrete and at least one piece of upstanding angle iron. It is not clear whether this material represents the remains of a former structure or has been dumped on the site. The most probable context for the feature is as part of the World War II radar establishment.	Reduce vegetation over the site and revisit. Consider removing rubble from within the site; this would require archaeological monitoring.	SW 7089 5058
190071	L-shaped trench, northern summit of St Agnes Beacon	An L-shaped trench with rectilinear arms 2.5m long, 0.8m wide and more than 0.5m deep, with one arm aligned NW-SE and the other projecting NE at right angles from its NW end. The site is overgrown and there is no indication of a surface between the two arms. A quantity of broken concrete lies in and around the trenches. The feature is visible on a 1946 RAF vertical photograph and is likely to have formed part of the World War II radar establishment.	The site is under heathland vegetation and not easily visible; potential hazard, although this would be reduced by vegetation reduction.	SW 7087 5060

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190072	Prospecting pit, north side of St Agnes Beacon	A prospecting pit 3m by 2.5m and 0.55m deep, with spoil cast to the W up to 0.3m high.	None	SW 7096 5068
190073	Possible building platform, northern ridge of St Agnes Beacon	A roughly rectangular area approximately 8m square defined by the near absence of heather and dense growth of coarse grasses and possible garden escapes. The ground surface is stony beneath the vegetation but it is not apparent whether this is a metalled surface. RAF vertical photographs of 1946 show an area of disturbance in approximately this location and proximity to other components of the World War II radar establishment raise the possibility that this was the site of a further associated building.	Reduce vegetation over the site and revisit.	SW 7095 5061
190074	Building base, north side of St Agnes Beacon	A rectangular concrete building base aligned roughly NNE-SSW and measuring approximately 6m by more than 6.5m, perhaps as much as 9m; much of it is densely overgrown. Steps or a porch base project from the NNE end. The visible WNW-facing edge of the concrete plinth shows a chamfer and a number of iron eye bolts are set into it. There are concrete wall bases on the E and W sides of the base. The SSW end of the building butts against the base of cairn [90359]. The structure was almost certainly part of the World War II radar station and is probably the building shown in Figure 54.	Manage vegetation on and around the platform.	SW 7092 5059
190075	Pit, northern ridge of St Agnes Beacon	A pit 4m in diameter and 0.6m deep with a lip of spoil up to 0.7m high around the perimeter on all sides except the S. Filled with dense heath vegetation. In form this excavation appears rather different from most apparent prospecting pits and lodeback workings on the Beacon and it is conceivable that it is military in origin (anti-aircraft position?). On the other hand, it appears to form a NNW-SSE alignment with features [190076] and [190077] and together they may well represent a further string of prospecting pits.	Reduce vegetation over the site and revisit.	SW 7094 5057
190076	Prospecting pit, northern ridge of St Agnes Beacon	A sub-rectangular pit 4m by 2m and 0.45m deep. Spoil lies to the W and is up to 0.25m high. With features [190075] and [190077], it forms part of a NNW-SSE alignment and together they may well represent a string of large prospecting pits.	None	SW 7094 5057
190077	Prospecting pit, northern ridge of St Agnes Beacon	A sub-rectangular pit roughly 3.5-4m square and 0.5m deep, with spoil to the NE and SW up to 0.4m high. Infilled with dense heathland vegetation. With features [190075] and [190076], it forms part of a NNW-SSE alignment and together they may well represent a string of prospecting pits.	None	SW 7094 5058
190078	Small sub- rectangular mound, northern summit of St Agnes Beacon	A steep-sided sub-rectangular mound, 6m long by 4m wide and 0.6m high, aligned NW-SE lies immediately adjacent to the S side of cairn [90359]. No ditch is apparent and the make-up of the mound, as far as can be determined by probing, is stony. It may represent further material removed from the cairn.	Reduce vegetation over the site and revisit.	SW 7092 5057
190079	Prospecting pit, northern ridge of St Agnes Beacon	A prospecting pit approximately 4m by 2.5-3m and at least 0.8m deep. Spoil up to 0.7m high has been cast to the E. The pit is filled with dense vegetation but also contains a quantity of broken concrete, presumably derived from demolition of the World War II radar establishment.	The pit lies beside a well-used footpath and could represent a safety hazard. Assess for possible risk. If the rubble is removed it should be subject to archaeological overview in the hope that it might offer additional information on adjacent World War II structures.	SW 7093 5056

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190080	Prospecting or lodeback pit, northern ridge of St Agnes Beacon	A substantial prospecting or lodeback pit 6m by 3m and 0.75m deep, with spoil mounded in an arc from SE through E to N.	None	SW 7093 5055
190081	Prospecting pit, north-west slopes of St Agnes Beacon	A prospecting pit 2.5m by 1.75m and 0.3m deep, with spoil cast downslope up to 0.4m high.	None	SW 7074 5055
190082	Prospecting pit, north-west slopes of St Agnes Beacon	A prospecting pit 4m by 2.5m and 0.35m deep, with spoil cast downslope forming a mound up to 0.6m high. A further pit may lie in dense vegetation nearby, downslope to the W.	None	SW 7081 5050
190083	Modern seat, W side of St Agnes Beacon	A modern wooden seat close to a footpath with two memorial plaques, the earlier of which suggests that the seat was installed after 1978.	None	SW 7084 5050
190084	Probable prospecting pit, W side of St Agnes Beacon	A pit approximately 4m by 3m and more than 1m deep lies in dense vegetation approximately 15m downslope from pit [190085]. Spoil up to 0.85m high lies downslope to the SW. The feature may lie in a shallow gully running downslope from [190085] but this is not confirmed. This is likely to be a prospecting pit, one of a group of features forming a rough line up and down the slope on the west side of the Beacon.	None	SW 7085 5052
190085	Probable costeaning trench, W side of St Agnes Beacon	A sub-rectangular pit 13m long, 6-7m wide and more than 1.2m deep, aligned NE-SW and running up and down the slope. The deepest point is at the low end of the feature, which becomes shallower as it ascends the slope. There is some spoil on the NW side and downslope to the S but relatively little in view of the size of the cut. The pit is covered with dense vegetation. A shallow gully may extend downslope from it, but this is not clearly defined in fairly thick vegetation (see [190084]). This is likely to be a costeaning trench or possibly a prospecting adit, one of a group of features forming a rough line up and down the slope on the west side of the Beacon.	None	SW 7086 5052
190086	Probable costeaning trench, W side of St Agnes Beacon	An elongated hollow 12m by 2.5m and 0.3m deep aligned up- and down-slope, approximately NE-SW. An irregular bank of spoil has been cast to the SE. The feature lies 4-5m NW of pit [190085]. This is likely to be a costeaning trench, one of a group of features forming a rough line up and down the slope on the west side of the Beacon.	None	SW 7087 5054
190087	Probable costeaning trench, W side of St Agnes Beacon	A hollow approximately 8m by 4m and 0.75m deep, with spoil mounded on three sides up to 0.3m high. The long axis lies NE-SW, up- and down-slope, with the gap in the spoil bank on the downslope, SW end; a small mound of spoil lies in the middle of the opening. This is likely to be a costeaning trench, one of a group forming a rough line up and down the slope on the west side of the Beacon.	None	SW 7088 5055
190088	Trench, northern ridge of St Agnes Beacon	A curving trench roughly 6m long, 0.8m wide and 0.45m deep, follows the edge of the spoil around the SW corner of pit [190089]. The function is unclear but it may have been associated with the perimeter boundary [90352] of the World War II radar site, which appears to have passed close to this point.	None	SW 7090 5055
190089	Hollow, northern ridge of St Agnes Beacon	A sub-rectangular hollow 5.5m by 4m and 0.8m deep; spoil is mounded around the hollow up to 0.4m high on all sides except for a narrow gap on its long axis to the SSE. The function of this feature is not apparent: it could represent a small surface quarry or be related to mining, but might also conceivably have had a military function.	None	SW 7090 5055



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190090	Track, northern plateau of St Agnes Beacon	The footpath on the northern plateau of St Agnes Beacon is up to 2m wide, straight and has a level, stony surface. Most other paths on the Beacon are narrower, sinuous and have uneven surfaces. The track is visible in this form on a 1946 air photograph and it is likely that the route was constructed during World War II to provide access to the radar station [190060]. No metalworking slag was observed, however, as on the extension of this path to the N [190037], or other evidently imported surfacing material.	None	SW 7093 5053 to SW 7100 5044
190091	Two prospecting pits, W side of St Agnes Beacon	Two prospecting pits, one above the other on a steep W-facing slope. Both are about 6m long and 3-4m wide, and up to 0.8m deep, with spoil banks downslope to the SW up to 1m high. The lower pit may cut the upslope end of track [190093]. A possible further pit may lie a short distance downslope close to boundary [190066] but is masked by vegetation.	None	SW 7086 5046
190092	Track, W side of St Agnes Beacon	A hollowed and terraced trackway, now disused and vegetated, running N-S across the W flank of the Beacon. Where most clearly evident it is 1.5m wide with a scarp on the upslope side up to 0.4m high. The track is not shown on the 25in: 1 mile Ordnance Survey maps of c 1880 and 1907, but can be seen - although it does not appear to have been in use - on 1946 RAF vertical photographs. It is likely to have been one of a number of routes running across the open rough ground of Goonvrea, in this instance probably linking the settlement of Goonvrea to the S with the New Downs and St Agnes Head area.	None	Extends from SW 7071 5052 to SW 7072 5044.
190093	Track, W side of St Agnes Beacon	A hollowed and terraced trackway, now disused and overgrown, running approximately ESE-WNW up the western slope of the Beacon. The track is generally 1.5-2m wide and for the most part made visible by lower vegetation growth along its line. In places the track is marked by a scarp into the slope up to 0.2m deep on the upslope side. It passes through pasture boundary [190066] via a gap about 2.5m wide at SW 7083 5046. The upper part of the track has been somewhat obscured in the vicinity of prospecting pits [190091] but air photographs suggest that it continued eastward to join the modern path at or near SW 7088 5046. The track is not shown on the 25in: 1 mile Ordnance Survey maps of c 1880 and 1907, but can be seen on 1946 RAF vertical photographs, although it does not appear to have been in use at that date.	None	Extends from SW 7068 5202 to SW 7085 5055, and probably continued originally to SW 7088 5045
190094	Prospecting pits, west side of St Agnes Beacon	Two slight hollows, terraced into the slope, 8-10m apart. The larger of the two, to the SE, is 1.5-2m by 1.2m and 0.3m deep on its upslope side, with no obvious spoil. The other feature, to the NW, is slighter. These may be prospecting pits, either unfinished or originally very slight.	None	SW 7074 5045
190095	Track, west side of St Agnes Beacon	A track is visible on vertical air photographs taken by the RAF in 1946 and on others taken for Cornwall County Council in 2005 running from SW 70761 50417 up the steep western slope of St Agnes Beacon to join track [190093] at a gap in pasture boundary [190066] at SW 70830 50457. The combined path continues to the E and probably joined the modern path at or near SW 7088 5046. The line of the track was not identified on the ground.	None	SW 7076 5042 to SW 7088 5046
190096	Stone-faced Cornish hedge, west side of St Agnes Beacon	A stone-faced Cornish hedge 0.75m high and 1m wide at the top. A ditch 1.25m wide and 0.4m deep lies on the rough ground (E) side of the boundary. The field to the W was enclosed between c 1840 and 1880.	Assess for necessary patching	SW 7071 5038 to SW 7085 5022
190097	Prospecting pits, east side of St Agnes Beacon	Two prospecting pits roughly 10m apart, aligned NE-SW. Both are approximately 2.5m by 1.5m and 0.7m deep. That to the SW has spoil 0.25m high cast downslope to the N; spoil from the other was cast upslope to the N.	None	SW 7102 5043
190098	Costeaning, trench, lower western slopes of St Agnes Beacon	A vegetation-filled costeaning trench approximately 15m long, up to 2m wide and at least 0.75m deep lies NNW-SSE along the contour. A bank of spoil up to 0.5m high lies along the SW, downslope, side of the trench.	None	SW 7089 5039

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190099	Group of stones on surface, lower W side of St Agnes Beacon	At least four substantial boulders of grey killas and quartz lie in dense furze and brambles, the largest approximately 1m by 0.6m by 0.5m. Others may be concealed by the vegetation. They do not appear to be set in the ground surface and lie approximately 10m from a stone-faced hedge; they could therefore have been left over after this was constructed. The adjacent footpath surface shows substantial outcropping of similar rocks and the stones now on the surface may have been raised in the immediate area but not removed.	None	SW 7085 5034
190100	Prospecting pit, east side of St Agnes Beacon	A prospecting pit, densely overgrown with heather and furze. It is approximately 2m by 1m and 0.25m with spoil cast downslope to the E up to 0.2m high. It may form a pair with prospecting pit [190102].	None	SW 7103 5041
190101	Stone-faced bank, east side of St Agnes Beacon	A stone-faced Cornish hedge enclosing a small field which was taken in from the Beacon rough ground between c 1880 and 1907. It is up to 0.7-0.8m high on its W side towards the rough ground, although in places only 0.5m high, 1m high on the downslope side to the E and for the most part 1.2m wide at the top; at the rounded field corner at SW 71066 50290 the hedge is approximately 2.75m wide. Quantities of loose stones on the top of the hedge suggest that it has been used as a convenient place to deposit stones 'leazed' from the enclosed field. When mapped on the 2nd edition Ordnance Survey 25in: 1 mile map of (c 1907) tracks onto the Beacon ran along the northern and eastern side of the field.	Assess for necessary patching	SW 7105 5042 to SW 7107 5029
190102	Prospecting pit, east side of St Agnes Beacon	A prospecting pit 1.8m by 1m and 0.2 deep, with spoil cast downslope to the E up to 0.25m high. It may form a pair with prospecting pit [190100].	None	SW 7103 5038
190103	Natural rock outcrop, west side of St Agnes Beacon	A natural rock outcrop up to 3m high and 5m wide on the W-facing flank of the Beacon, in an area of dense vegetation. There are few other outcrops on the Beacon and this therefore forms a minor local landmark. Vegetation is dense around the outcrop but there are no indications of quarrying or other activity in the immediate vicinity.	None	SW 7095 5034
190104	Costeaning trench, east side of St Agnes Beacon	Roughly crescent-shaped costeaning trench approximately 12m long, up to 3m wide and 0.8m deep lying NW-SE along the contour. Spoil was cast downslope to the NE, forming a bank up to 0.6m high.	None	SW 7104 5034
190105	Prospecting pits, east side of St Agnes Beacon	Two hollows cut into the slope, approximately 4m long by 3m wide and 0.6-0.8m deep. These resemble the many prospecting pits on the Beacon and a number of other prospecting features lie in the immediate vicinity. However, there is little indication of spoil and they may instead be small-scale quarry pits: a stone-faced hedge [109101] lies only 30-40m to the E.	None	SW 7103 5035
190106	Costeaning trench, southern ridge of St Agnes Beacon	A vegetation-filled pit 8-10m long, 5m wide and more than 1m deep with spoil mounded downslope to the W up to 1.4m high. It is likely to be a costeaning trench.	None	SW 7097 5030
190107	Prospecting pit, southern ridge of St Agnes Beacon	A prospecting pit 2-2.5m in diameter and 0.7m deep, with spoil downslope to the E up to 0.75m high. A number of other prospecting features lie in the immediate vicinity.	None	SW 7104 5033
190108	Stone on historic maps, southern ridge of St Agnes Beacon	The 1st edition Ordnance Survey 25 in: 1 mile map (c 1880) marks a 'stone' roughly midway between cairn [90357] and cairn [90353]; it is also shown on the 2nd edition of c 1907 and on modern OS mapping. This was not identified during fieldwork although vegetation in the area is not particularly dense or deep. The form and function of the stone are unknown. It has not been mentioned in accounts of the features on the Beacon and none of the known mine sett bounds runs close to this location.	None	SW 7101 5031

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190109	Prospecting pit, southern ridge of St Agnes Beacon	A prospecting pit 3m by 2.5m and 0.6m deep, with spoil cast downslope to the E up to 0.8m high. It lies between prospecting pit [190102] and trench [190110]. A number of other prospecting features lie in the immediate vicinity.	None	SW 7104 5032
190110	Costeaning trench, southern ridge of St Agnes Beacon	A costeaning trench lying SSE-NNW, 13m long, 2.5m wide and 0.9m deep, with a bank of spoil downslope to the NE up to 0.9m high. A number of other prospecting features lie in the immediate vicinity.	Monitor animal burrowing	SW 7104 5032
190111	Prospecting pit, southern ridge of St Agnes Beacon	A prospecting pit approximately 3m by 2m and 0.5m deep with spoil cast downslope to the E up to 0.7m high. A number of other prospecting features lie in the immediate vicinity.	None	SW 7106 5031
190112	Quarry, east side of St Agnes Beacon	A cut into the slope approximately 6m long, 2m wide and up to 0.5m deep, opening at the downslope end. Spoil was cast downslope to the E up to 0.45m high. This is likely to have been a small quarry opened for stone for building hedge [190101] immediately adjacent to the E. Alternatively it could be a further prospecting feature, perhaps a costeaning trench.	None	SW 7106 5029
190113	Quarry, east side of St Agnes Beacon	A quarry with two distinct phases. The first is represented by a levelled cut into the slope surrounded by an irregular bank of spoil (this may conceivably represent prospecting). A second phase consists of a substantial trench aligned SSW-NNE cut into the slope, which slights the earlier working. This trench is approximately 30m long, 8-10m wide and 3.5-4m deep. Spoil was cast downslope to the SE forming a bank up to 3.5m high. The site is heavily overgrown with heather, furze and scrub. This lies close to the enclosed fields to the east and is likely to have been a quarry for hedging material.	None	SW 7106 5028
190114	Prospecting pit, east side of St Agnes Beacon	A pit 3m in diameter and 0.5m deep cut into the slope, with spoil downslope to the E up to 0.6m high. This may be a prospecting pit - a number of other prospecting features lie in the immediate vicinity - but could also be a small quarry for hedging stone.	None	SW 7107 5027
190115	Prospecting pit, east side of St Agnes Beacon	A pit 4-5m in diameter and 0.75m deep, with spoil downslope to the E up to 0.9m high. The feature is located just below the spoil from the rather slighter [190113].	None	SW 7107 5028
190116	Possible beacon site, southern ridge of St Agnes Beacon	Preston-Jones (nd, 26) has suggested that cairn [90353] was the site of a beacon fire at a time when the summit cairn [90355] was occupied by a summerhouse [190125]. However, views from [90353] to Carn Brea, the nearest beacon site to St Agnes Beacon, are blocked by the summit cairn [90355], and it is more probable that the second beacon site was cairn [90357].	None	SW 7102 5027
190117	Modern bonfire site, St Agnes Beacon	The site of the bonfires lit on the Beacon in recent years at midsummer and as part of the Giant Bolster and other celebrations is approximately 8m across and appears as a roughly circular spread of burnt stone, charcoal and metal fittings. An area around the fire site has been cleared of vegetation.	Maintain the bonfire in this position	SW 7102 5025
190118	Prospecting pit, southern ridge of St Agnes Beacon	A pit 5m by 3m and 0.9m deep with spoil downslope to the E up to 1m high. This is likely to be a prospecting pit.	None	SW 7104 5026
190119	Prospecting pits, east side of St Agnes Beacon	A linear group of six prospecting pits running NW-SE across the slope for a distance of approximately 35m. All are 2-3m in diameter and up to 0.6m deep; spoil heaps downslope to the E are up to 0.7m high	None	Extends from SW 7106 5025 to SW 7105 5028

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NT HBSMR No; Cornwall HER No	Name	Description / Interpretation	Management Rec's	Grid Ref (8 figure)
190120	Quarry, east side of St Agnes Beacon	An elongated pit more than 20m long, 7-8m wide and up to about 3m deep is cut into the slope, aligned roughly NE-SW and open at the downslope end. A bank of spoil up to 1.4m high has been cast downslope to the E. A further spoil heap about 1m high and 5m across lies to the NE of the open lower end of the pit, butting against the adjacent stone-faced hedge [190122], suggesting that the feature continued to be worked, or was reworked, after the hedge was built between c 1880 and 1907. It was probably worked, and later reworked, to obtain hedging stone for nearby boundaries.	None	SW 7105 5022
190121	Possible building platform, southern summit of St Agnes Beacon	A sub-rectangular area roughly 7m by 6m, raised up to 0.15m from the surrounding surface, is visible in the short grass covering the track on the north side of cairn [90355]. A very slight bank appears to define the S side of the feature. This may represent the former site of a structure. There is no indication of its date.	Monitor for indications of any structural elements revealed by erosion.	SW 7100 5024
190122	Stone-faced Cornish hedge, east side of St Agnes Beacon	A stone-faced Cornish hedge up to 0.7m high on its W side (towards the Beacon). A ditch on the W side, where visible in dense vegetation, is up to 1m wide and 0.1m deep. To the S, in the vicinity of quarry [190156], it is faced with fairly substantial stones, almost certainly from the quarry, and is up to 1m high on its downslope side to the E and 1.3m wide at the top. In this area, however, the hedge is very dilapidated, with considerable damage by animal burrowing. This boundary was constructed between c 1880 and 1907 to enclose former rough ground on the east side of the Beacon.	Assess for necessary patching	SW 7107 5024 to SW 7108 4996
190123	Modern bench, southern summit of St Agnes Beacon	A modern granite bench bearing the inscription ET IN ARCADIA EGO is set within enclosure [90351] on a base of granite setts.	None	SW 7100 5022
190124; PRN 19404.5	Beacon site, southern summit of St Agnes Beacon	The earliest documentary reference to a beacon on St Agnes Beacon is by Tonkin (1975-6, 203, 204), writing in the early eighteenth century, who referred to one of the three 'Stony Burrows' on the summit 'which serves now for a beacon', and also to 'that Barrow (which serves for the Beacon)'. It is quite possible that the initial location of a beacon on the hill was considerably earlier, perhaps during the Elizabethan period or before (Preston-Jones nd, 19). After construction of a summerhouse [190125] on this site, it is likely that the beacon moved to a site elsewhere on the Beacon summit ridge [190166].	None	SW 7101 5021
190125; PRN 19434	Site of late eighteenth-century summerhouse, summit of St Agnes Beacon	A two-storey, circular tower probably with Gothic details, was constructed on the southern cairn on the Beacon in c 1796, as a summerhouse and landscape enhancement feature (Preston-Jones nd). It was probably derelict by c 1817 and was not recorded on maps of the 1840s, although its ruins were apparently visible c 1850. Tregellas (1868, 69) referred to it as a 'round white tower . . . which was called the Pleasure House; it was used by picnic parties'.	Monitor for any structural remains revealed by erosion.	SW 7101 5021
190126	Folklore site, St Agnes Beacon	The Giant Bolster is said to have had his home on or near St Agnes Beacon, and to have compelled, variously, his wife and / or St Agnes to collect stones from land at the foot of the hill and carry them up to the summit in her apron, thus forming the cairns on the summit (Tonkin 1975-6, 203-4; Hunt 1865, I, 56-8). Bottrell (1873, 287-8) noted St Agnes Beacon as the site of a midsummer bonfire, accompanied by dancing in a ring.		
190127	Ordnance Survey triangulation point, summit of St Agnes Beacon	An Ordnance Survey concrete trig point was erected in 1937 on the site of a survey point used from at least 1878 (Preston-Jones nd, 9-11). It has recently been given a stone and cement cladding and now has a 'topograph' set on it, indicating directions and distances to points in the surrounding landscape. The topograph is identified as having been erected by the St Agnes Local Improvement Committee. A modern survey point in the form of a small metal plate with mounting points is set into the ground surface on the NW corner of the summit of cairn [90355], adjacent to the former trig point.	Monitor	SW 7101 5021

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190128	Ordnance Survey survey station, south of summit of St Agnes Beacon	The first Ordnance Survey station on the Beacon was established in 1796 at a point just to the south of the southernmost cairn [90355], although the precise site is not now known (Preston-Jones nd, 5-11). When re-used in 1912 the site was marked with a brass bolt set in a concrete cube in an iron box, buried 2 ft (0.6m) below the ground.	None	Approximately SW 7101 5017
190129	Croft boundary, south-west side of St Agnes Beacon	A N-S earth and stone bank 1m wide and up to 0.25m high, with a ditch on the E side 1m wide and 0.1m deep, runs through the rough ground on the SW side of the Beacon. The boundary is first depicted on the 1st edition OS 25in : 1 mile map of c 1880, enclosing an area of about 8ha (20 acres) of furze and rough pasture, probably as an individually held area of croft land. The northern end of the boundary butts against the hedge of a field first enclosed between c 1840 and 1880 (Fig \$\$). The 2nd edition map of c 1907 shows much of the southern extent of this boundary effaced by mining activity, but it can be traced on the ground in much of this area and becomes 'lost' only in the area of dense vegetation and complex mining earthworks close to the S boundary of the Beacon rough ground.	None	Extends from SW 7084 5022 to 7094 4991
190130	Prospecting pit, southern slope of St Agnes Beacon	A prospecting pit 3.5m by 3m and 0.6 deep, with spoil cast downslope on the NW, W, SW and S up to 0.4m high.	None	SW 7088 5017
190131	Prospecting pit, southern slope of St Agnes Beacon	Two adjacent prospecting pits and accompanying spoil within dense vegetation.	None	SW 7092 5015
190132	Prospecting pit, southern slope of St Agnes Beacon	A prospecting pit 3.5m by 2.5m and 0.85m deep, with spoil downslope to the W up to 0.4m high	None	SW 7095 5014
190133	Prospecting pit, southern slope of St Agnes Beacon	A vegetation-filled prospecting pit approximately 4m in diameter and up to 1m deep. It is cut into the ditch of boundary [190066] and the spoil to the W appears to overlie its bank, indicating that the prospecting pit is later.	None	SW 7094 5013
190134	Prospecting pit, southern slope of St Agnes Beacon	A prospecting pit 3m in diameter and 0.5m deep, with spoil downslope to the W up to 0.35m high.	None	SW 7096 5013
190135	Prospecting pits, southern slope of St Agnes Beacon	A line of three prospecting pits 8-10m apart oriented SW-NE. The pit upslope to the NE is 4m by 3m and 0.75m deep, with spoil mounded to the SW up to 0.75m high. The downslope pit to the SW is 7m long, 3m wide and 0.8m deep, lying along the contour on the slope. Spoil forms a bank downslope to the W up to 0.7m high. The centre pit is rather slighter than the other two.	None	SW 7100 5014
190136	Prospecting pit, southern slope of St Agnes Beacon	A prospecting pit 5-6m by 4m and 0.75m deep with spoil to the SW up to 0.6m high.	None	SW 7101 5016
190137	Prospecting pit, southern slope of St Agnes Beacon	A prospecting pit 2m in diameter and 0.2m deep. Spoil is mounded to the S up to 0.2m high	None	SW 7101 5016

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190138	Prospecting pits, southern slope of St Agnes Beacon	Two prospecting pits about 8m apart, aligned SE-NW. That to the SE is 5-6m in diameter, 1m deep, with spoil to the W. The pit to the NW is infilled and covered by deep furze but is about 6m by 3.5m with spoil to the W up to 0.7m high.	None	SW 7100 5018
190139	Quarry, east side of St Agnes Beacon	A quarry more than 15m long, 3m wide and 0.75m deep, aligned E-W and cut into the slope at the W end. Spoil has been heaped to N and S up to 0.5m high. This is likely to have been worked for hedging stone for the adjacent field boundaries.	None	SW 7105 5019
190140	Prospecting pit, east side of St Agnes Beacon	A prospecting pit 3m by 2m and 0.5m deep, with spoil mounded downhill to the SE up to 0.4m high.	None	SW 7105 5017
190141	Prospecting pit, southern side of St Agnes Beacon	A prospecting pit roughly 6m in diameter and 0.9m deep, with spoil to the W 0.5m high. The present footpath runs through the pit.	Monitor footpath erosion; realistically further erosion to the feature is not a major risk.	SW 7102 5015
190142	Natural rock outcrop, south side of St Agnes Beacon	A prominent natural rock outcrop more than 20m long and up to 4m high, on the break of slope at the southern end of the Beacon summit ridge. It was referred to by Tonkin (1975-6, 204) in the early eighteenth century as <i>Garder Wartha</i> , the 'higher seat'. There is evidence of quarrying [190143] on the south side.	None	SW 7102 5013
190143	Quarry, south side of St Agnes Beacon	The higher, south-facing side of outcrop [190142] shows traces of quarrying, including two drill holes in an area of undercutting. A 3m-wide terrace of stony material fronting the quarried face is likely to represent spoil from the quarrying activity, subsequently levelled to accommodate a path and a seat located to take advantage of the shelter afforded by the rock and the splendid views. Quarrying activity here is likely to have been associated with the creation of nearby enclosures on the eastern flank of the Beacon in the late nineteenth or early twentieth century.	None	SW 7101 5013
190144	Modern seat, south end of St Agnes Beacon summit	A modern seat placed on a levelled terrace on the south side of a natural rock outcrop [190142]. The concrete ends of the seat are marked St Agnes Local Improvement Committee, the lettering cast into the bench end.	None	SW 7101 5013
190145	Prospecting pit, southern side of St Agnes Beacon	A prospecting pit 4m by 2.5m and 0.6m deep, with spoil downslope to the W up to 0.6m high.	None	SW 7097 5017
190146	Prospecting pit, southern side of St Agnes Beacon	A vegetation-filled prospecting pit lying close to pit [190145], approximately 4m by 3m and 0.5m deep with spoil downslope to the W up to 0.6m high.	None	SW 7098 5016
190147	Prospecting pit, southern side of St Agnes Beacon	A prospecting pit 3m by 2.5m and 0.5m deep, with spoil downslope to the SW up to 0.5m high	None	SW 7097 5015
190148	Natural rock outcrop, south side of St Agnes Beacon	A natural rock outcrop 10-12m long, 6m wide and up to 1.8m high. There are no evident traces of quarrying or other activity.	None	SW 7100 5016
190149	Prospecting pit, southern side of St Agnes Beacon	A vegetation-filled prospecting pit approximately 6m by 4m and more than 1m deep, with spoil downslope to the W 0.7m high.	None	SW 7098 5015

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190150	Prospecting pit, southern side of St Agnes Beacon	A prospecting pit 4m in diameter and 0.8m deep, with spoil downslope to the SW up to 0.5m high.	None	SW 7095 5012
190151	Prospecting pit, southern side of St Agnes Beacon	A prospecting pit 4m by 3m and 0.7m deep, with spoil downslope to the SW up to 0.6m high.	None	SW 7096 5011
190152	Prospecting pits, southern side of St Agnes Beacon	Three prospecting pits in a rough alignment E-W, each roughly 3m by 2.5m and 0.5m with spoil downslope to the W up to 0.6m. The central pit lies just to the E of boundary [190066] and its spoil overlies the ditch.	None	SW 7092 5008
190153	Prospecting pits, southern side of St Agnes Beacon	Three adjacent prospecting pits, each 3-5m by 3m, aligned parallel to lodeback working [190154] and 4-5m N of it.	None	SW 7097 5006
190154	Lodeback workings, south side of St Agnes Beacon	An E-W line of closely-spaced lodeback and prospecting pits more than 200m long. The largest pit (SW 7091 5003) is 20m long, 4-5m wide and at least 2-3m deep, with spoil to the S to 2m high. Others are up to 5m long and 4m wide; all are steep-sided and most filled with dense vegetation. Spoil forms a near-continuous bank up to 1.6m high on the downslope side (S). Some pits are offset from the principal alignment; a gap in the lodeback pits is accompanied by prospecting pits offset to N and S. The remains are relatively slight at the E end of the alignment, near boundary [190122], and spoil may have been used to build the hedge. Features at the W end of the line are masked by vegetation. The relationship between these workings and boundaries [190066] and [190129] is unclear: the largest lodeback pits lies immediately W of [190066], hinting that it may be secondary to it. Spoil dumps at the W end of the workings are shown on the OS 1st edition 25in: 1 mile map of c 1880. Clive Benney (pers comm) recalls a side tunnel from one of the pits, with an entrance about 3ft (0.9m) high but expanding within to 6ft (2.7m) high and 3-4ft (0.9-1.2m) wide and extending for about 15ft (4.5m); this may have been a prospecting tunnel or a tinnerns' cache.	Future vegetation reduction is likely to make an assessment of potential hazards necessary.	Extends from SW 7106 5006 to SW 7085 5002
190155	Prospecting pit, southern side of St Agnes Beacon	A prospecting pit 2.5m in diameter and 0.5m deep with spoil to the NE 0.4m high. It lies 10m N of a line of lodeback pits [190154].	None	SW 7102 5007
190156	Quarry, south side of St Agnes Beacon	A quarry on a substantial natural rock outcrop, almost certainly that noted by Tonkin (1975-6, 204) in the early eighteenth century as <i>Garder Wollas</i> , the 'lower seat'. The exposed rock face is stepped and irregular, but extends for up to 20m E-W and is up to 4m high. A scree of broken rock extends for more than 10m downslope to the S. This butts against boundary [190122] to the E. The quarry was first recorded on the 2nd edition Ordnance Survey 25in: 1mile map (c 1907). It is likely to have been worked to provide hedging stone for boundary [190122] and other post-medieval hedges in the vicinity.	None	SW 7106 5010
190157	Children's play structures, south side of St Agnes Beacon	Two structures have been constructed of loose stone on the floor of the quarry. That to the W is a sub-rectangular 'house' shape outlined with placed stones, and is likely to be a children's den. That to the E is more substantial and takes the form of a breastwork with a roughly-faced dry-stone wall on the inside and mounded loose quarry waste piled against it on the outside. There is no local memory of this having been a military site (Clive Benney, pers comm) and, despite the substantial nature of the construction, it is most likely that it was also built by children.	The features are vulnerable to further episodes of play. If future research indicates that the more elaborate structure is of military origin it should be recorded appropriately.	SW 7106 5009

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Cornwall HER No				
190158	Prospecting pits, south side of St Agnes Beacon	Two prospecting pits about 10m apart, both approximately 4m by 3m and 0.7m deep with spoil cast downslope to the W up to 0.45m high	None	SW 7090 5001
190159	Prospecting pit, southern side of St Agnes Beacon	A prospecting pit, similar to and possibly continuing the alignment of [190158]. Spoil cast downslope overlies boundary [190129], indicating that prospecting activity in this area continued into the period after the mid nineteenth century. 3.5m by 3m and 0.6 deep, with spoil cast downslope the NW, W, SW and S up to 0.4m high.	None	SW 7090 5002
190160	Stile, south side of St Agnes Beacon	A stone stile constructed of substantial killas slabs through boundary [190161]. The boundary in which the stile is located dates from between c 1880 and 1907.	Monitor and repair as required.	SW 7084 4998
190161	Stone-faced bank, south side of St Agnes Beacon	A stone-faced Cornish hedge bounding the south-west side of St Agnes Beacon. The boundary was built between c 1880 and 1907 to enclose an area of former rough ground.	Patch as required	SW 7085 4994
190162; PRN 53657	Whim platform, south side of St Agnes Beacon	The circular platform of a horse whim, 14m in diameter. It is terraced into the slope with a scarp up to 0.7m high on the upslope side and built up by up to 0.5m from the adjacent ground surface downslope. There is a circular hollow in the centre 2m in diameter and 0.35m deep and a sharp-sided triangular cut into the slope on the N side of the perimeter of the platform approximately 1.5m on each side and 0.4m deep. The whim is likely to have worked in conjunction with shaft [90346] immediately to the S.	None	SW 7088 4999
190163	Prospecting pits, south side of St Agnes Beacon	Two prospecting pits 10m apart aligned NE-SW, approximately 3m in diameter and 0.6m deep, with spoil downslope to the SW up to 0.5m high.	None	SW 7095 5001
190164	Prospecting pits, south side of St Agnes Beacon	Two relatively slight prospecting pits 4m apart and aligned N-S. They are 3.5-4m in diameter and 0.4m deep, with low, spread spoil heaps downslope to the W up to 0.2m high.	None	SW 7093 5000
190165	Prospecting pit, southern side of St Agnes Beacon	A steep-sided, sub-rectangular prospecting pit 3.5m by 2m and 0.5m deep, with spoil downslope to the W 0.4m high.	None	SW 7092 4999
190166	Area of disturbed ground surface, south side of St Agnes Beacon	An area of disturbed ground under thick heathland vegetation. Amorphous hollows and accompanying low banks or spoil dumps lie in a band 5-6m wide and up to 0.15-0.2m high running roughly SW-NE for at least 15m before being lost in dense vegetation at the NE end, adjacent to boundary [190122]. The feature appears as a disturbed area on a 1946 vertical RAF air photograph but its origin or function is unclear. The modern footpath skirts around the W side of the area; the 1946 air photograph shows a path passing around or over its E end, adjacent to boundary [190122]. It may be associated with [190167], adjacent to the N, which appears similar on the 1946 photograph.	None	SW 7105 5006
190167	Possible boundary, south side of S Agnes Beacon	A shallow linear hollow 0.1-0.15m deep and up to 3m wide with a low bank 1.5-2m across on its S side runs roughly SW-NE for 10-12m but is then concealed by vegetation. It does not appear to extend further to the SW than the modern footpath. It appears on an RAF vertical air photograph of 1946 as an area of disturbance, and a faint linear feature appears to continue its alignment to the SW for a further 150m (not identified on the ground within the survey area); this in turn appears to continue the line of a field boundary built between c 1880 and 1907 dividing the enclosed land to the E of [190122]. It is possible that these features derive from setting out of a boundary across the southern flank of the Beacon, with a portion of it having been built at the NE end but	None	SW 7105 5003



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		subsequently removed. This interpretation is unproven, however.		
190168	Prospecting pits, southern side of St Agnes Beacon	Several poorly defined prospecting pits appear to be cut into the ditch of pasture boundary [190066] in this area. The area is vegetated with deep heather and furze and the overall number and dimensions are uncertain.	None	SW 7094 4999
190169	Lodeback workings, south side of St Agnes Beacon	A series of substantial lodeback pits aligned roughly E-W extends almost continuously for about 120m across the southern flank of the Beacon. Individual pits are steep sided and typically 8-10m long and 4-5m wide; they are infilled with dense vegetation but appear to be at least 2m deep. Spoil is cast downslope to the S forming discrete banks up to 1.4m high alongside the pits. In places, the workings take the form of a near-continuous trench with low spoil banks to the S, but with substantial pits up to 6-7m across, possibly shafts, cutting the N side of the working. The scale of the workings diminishes towards the E end, where a small group of prospecting pits clusters around the E side of the most easterly lodeback pit. The workings are shown on the 1st edition Ordnance Survey 25in: 1 mile map of c 1880 and probably pre-date this by some time. They may have formed part of Wheal Hendra sett recorded in 1793. Clive Benney (pers comm) recalls that as a child he explored a tunnel connecting adjacent pits roughly 6ft (1.8m) by 6ft and 30ft (9m) long.	Any future vegetation reduction is likely to make an assessment of potential hazards necessary.	Extends from SW 7093 4997 to SW 7105 4998
190170	Whim platform, south side of St Agnes Beacon	A crescent-shaped scarp up to 1m high cut into the slope with a levelled area approximately 13-14m in diameter to the S is likely to be a horse whim platform associated with the adjacent lodeback workings [190169].	None	SW 7102 4998
190171	Leat, south side of St Agnes Beacon	A bank and ditch approximately 50m long running downhill across the slope on the N side of [190169] may be the remains of a leat originally carrying water to water-powered pumping machinery in the lodeback workings. The ditch is 1.75m wide and 0.6m deep with the bank on the downslope side to the S 1.8m wide and 0.6m high on its downslope side. At its lower end, to the WSW, the leat debouches into a lodeback pit; the upper end lies under dense vegetation but it appears that the feature does not continue to the boundary [190122] on the E side of this part of the Beacon. It may have been robbed for construction of the boundary and levelled in the improved fields to the NE. Alternatively water may originally have been carried to this point on a launder. A spring is shown on the 1st edition Ordnance Survey 25in: 1 mile map (c 1880) approximately 150m along the contour to the NE from the upper end of the leat.	None	SW 7104 4998
190172	Prospecting pits, south side of St Agnes Beacon	Two prospecting pits, 8m apart, aligned NE-SW across the slope. Both are 3-5m in diameter and 0.7m deep, with spoil downslope to the S up to 0.7m high.	None	SW 7106 5001
190173	Shaft and spoil heap, south side of St Agnes Beacon	A substantial spoil heap, 2-3m high, is visible in dense vegetation approximately 25m S of shaft [90346]. The 2nd edition Ordnance Survey 25in: 1 mile map (c 1907) shows a shaft in this area and a wooden post of the type which elsewhere on the Beacon carries shaft warning signs is planted in the top of the mound. The area was not accessible at the time of survey.	Future vegetation reduction is likely to make an assessment of potential hazards necessary.	SW 7089 4991
190174	Shaft and spoil heap, south side of St Agnes Beacon	A pit 8-10m in diameter, vegetation filled but at least 1.7m deep with a bank of spoil to the S and SW at least 2m high. It may be a shaft.	Future vegetation reduction is likely to make an assessment of potential hazards necessary.	SW 7090 4993
190175	Prospecting pits, south side of St Agnes Beacon	At least two prospecting pits are cut through pasture boundary [190066]. The pits are approximately 3.5m by 2m and 0.7m deep, with spoil cast upslope to the E up to 0.4m high.	None	SW 7095 4994

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190176	Stone-faced bank, south side of St Agnes Beacon	A stone-faced Cornish hedge up to 0.7m high on its N side (towards the Beacon), and 1m wide at the top. The area adjacent to the hedge on the N side is densely vegetated and the hedge itself was only visible at the point where a footpath passes through a gateway to the field to the S; dimensions and description elsewhere may differ. This boundary was shown on the tithe map of c 1840 and may date to the late seventeenth century enclosure of smallholdings in this area.	Patching required.	as SW 7101 4992
190177	Spread of stony spoil, south side of St Agnes Beacon	A level spread of unvegetated broken stony material 18m long and up to 5m wide on and beside the present footpath appears to be spoil from some form of extractive activity, but it is not apparent where it derives from: no pits or other forms of ground disturbance are visible in the immediate vicinity. The feature is visible on an RAF vertical photograph of 1946 and is therefore unlikely to be a modern repair to the footpath itself.	Reassess in the light of any further information on the significance of the feature.	SW 7105 4999
190178	Prospecting pits, south side of St Agnes Beacon	A line of three or four prospecting pits running SSE-NNW up- and down-slope, across the alignment of [190169] and presumably intended to locate a continuation of the lode. The pits are up to 4m by 2.5m and 0.7m deep with spoil downslope to the S up to 0.65m high.	None	SW 7106 4999
190179	Track, south side of St Agnes Beacon	The present footpath running W-E across the southern flanks of St Agnes Beacon between stile [190160] and stile [190181] is shown on the OS 1st edition 25in: 1 mile map of c 1880. However, as the route between St Agnes churchtown and Beacon Cottage, probably of later seventeenth century origin, and beyond to the Wheal Coates and Chapel Porth area, the track is likely to be substantially earlier in date.	None	Between SW 7084 4998 and SW 7108 5001
190180	Track, south side of St Agnes Beacon	The present W-E footpath across the southern flanks of St Agnes Beacon diverges from track [190179] and runs to an access lane to the rough ground at SW 71083 49955 adjacent to the house known as Chy Pen. It is shown on the OS 1st edition 25in: 1 mile map of c 1880 but is likely to be earlier in date.	None	Between SW 7091 4997 and SW 7108 4996
190181	Stone stile, south side of St Agnes Beacon	A stone stile 0.7m high in boundary [190122] constructed of substantial killas slabs and incorporating one large piece of granite on the E side, presumably re-used from a nearby structure. The boundary in which the stile is located dates between c 1840 and 1880, but the 2nd edition Ordnance Survey 25in : 1 mile map (c 1907) shows access at this point, presumably for horse-drawn vehicles, to quarries [190143] and [190156] upslope and the stile is therefore likely to be a 20th century structure.	Monitor and repair as required.	SW 7108 5001
190182	Track, south side of St Agnes Beacon	The 2nd edition Ordnance Survey 25in: 1 mile map (c 1907) shows a track running down a steep slope linking quarries [141] and [161] with E-W trackway [190179]. The track does not appear on earlier maps and is likely to have been associated with moving stone from the quarries for enclosure of rough ground on the E side of the Beacon between c 1880 and 1907. Much of the track was still in use, presumably for access from the Goonvrea area to the Beacon, in 1946, when it is visible on an RAF vertical photograph. Most of its route now lies within dense vegetation and it was not identified on the ground.	Re-visit after any future reduction in vegetation in this area.	SW 7106 5007
190183	Prospecting pits, south side of St Agnes Beacon	A tight cluster of four steep-sided pits, probably prospecting pits, 4-5m in diameter, vegetation filled, with spoil heaps downslope to the S up to 0.6m high.	None	SW 7091 4993
190184	Lodeback pits, south side of St Agnes Beacon	A line of four lodeback pits aligned E-W, extending over a distance of about 40m. The pits are steep-sided, 5-6m long, up to 4m wide and more than 1m deep, with spoil to the S up to 1.6m high. The alignment extends to the W to incorporate pit [190174] and prospecting pits [190183], and to the E to include prospecting pits [190186]. The second lodeback pit from the E cuts through, and therefore postdates, pasture boundary [190066]. These workings are not shown on the Ordnance Survey 25in : 1 mile maps of c 1880 or 1907, although they are likely to pre-date both. These may be part of the Wheal Hendra sett [190188] recorded on a map of 1793.	None	Centred on SW 7094 4993

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190185	Prospecting pits, south side of St Agnes Beacon	An irregular ESE-WNW alignment of at least six large prospecting pits to the N of lodeback working [190184]. All are 3-5m in diameter and up to 1m deep, with spoil to the S 0.5-0.75m high.	None	Centred on SW 7089 4995
190186	Prospecting pits, south side of St Agnes Beacon	Two prospecting pits 3m apart, continuing the line of [190184] to the E. The larger of the two is 4m by 3m and 0.6m deep, with spoil downslope to the SE 0.6m high. The other is rather slighter.	None	SW 7097 4995
190187	Find of Roman coin, summit of St Agnes Beacon	An illegible Roman bronze coin is reported to have been found with a metal detector near the trig point on the Beacon in the early 1970s (Penhallurick, forthcoming). Its present whereabouts is not known	None	SW 7101 5022
190188	Mining sett, St Agnes Beacon	A map of 1793 showing mining setts in the St Agnes area depicts a sett named 'Wheal Hendra' extending onto the southern slopes of St Agnes Beacon. Lodeback workings [190184] and probably also [190169] are likely to have been on this sett. The bounds of Wheal (an) Hendra were advertised in the <i>Royal Cornwall Gazette</i> on 15 March 1817.	None	SW 7100 4995
190189	Mining sett, St Agnes Beacon	A map of 1793 showing mining setts in the St Agnes area depicts a small sett named 'Whealan toan' isolated within Wheal Hendra sett on the southern slopes of St Agnes Beacon. Pits and shafts [90346] and [190183] may have been on this sett.	None	SW 7088 4995
190190	Mining sett, St Agnes Beacon	A map of 1770 showing mining setts in the St Agnes area depicts a sett named as 'Bartell or Whealan bartell' on the central and northern parts of the rough ground of St Agnes Beacon. The same bounds are shown on a map of 1793. Lodeback workings [190154] and other mining activity on the summit and western flanks of the Beacon are likely to have been within this sett. The bounds of Wheal Barkle, advertised in the <i>Royal Cornwall Gazette</i> on 15 March 1817, may refer to this site.	None	SW 7095 5024
190191	Mining sett, St Agnes Beacon	A map of 1770 showing mining setts in the St Agnes area depicts a sett named as 'Whelan Peber' on the northern slopes of St Agnes Beacon. The same bounds are shown on a map of 1793. The bounds of Wheal an Peber were advertised in the <i>Royal Cornwall Gazette</i> on 15 March 1817.	None	SW 7078 5060
190192	Mining sett, St Agnes Beacon	A map of 1770 showing mining setts in the St Agnes area depicts a sett named as 'Wheal Musick' on the northern slopes of St Agnes Beacon. Wheal Musick was referred to in newspapers numerous times between 1779 and 1840.	None	SW 7073 5077
190193	Mining sett, St Agnes Beacon	Symons' 1870 map of the St Agnes mining district shows a mine sett named West Polbreen extending across the southern part of the Beacon, the boundary with the Wheal Coates sett to the north lying just to the north of the summit cairn [90355].	None	SW 7099 5010
190194	Mining sett, St Agnes Beacon	Symons' 1870 map of the St Agnes mining district shows a mine sett named Wheal Coit extending onto the eastern part of the Beacon, with Wheal Coates sett lying to the west.	None	SW 7097 5052
190195	Shaft and spoil heap, south side of St Agnes Beacon	A large open pit, 12-15m in diameter and more than 3m deep, infilled with vegetation. A large spoil heap is visible immediately to the S and there may be further spoil in an adjacent area of dense vegetation. The pit and spoil heap are shown on the 1st edition Ordnance Survey 25in : 1 mile map (c 1880) and marked 'Old Shafts' [sic]. This and adjacent features may be workings on a sett named as 'Whealan toan' on a map of 1793. Symons' 1870 map of the St Agnes mining area shows shafts in this location, within a larger sett shown as West Polbreen, at the northern end of a line of shafts extending S into Goonvrea. [This site was formerly incorporated within NT 90346.]	Monitor subsidence	for SW 7087 4993

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190220	Prospecting pit north of Tubby's Head	An isolated prospecting trench on the upper cliff slope adjacent to the northern boundary of the NT Tubby's Head property. The trench is 4.0m long, 1.0m wide and 0.6m deep and has a small spoil dump on its western side.	None	SW 69909 50893
190221	Leat north of Tubby's Head	A narrow, contouring linear feature 0.25m wide and 0.1m deep at its southern end, 0.35m wide and 0.25m deep in its central section with a bank 1.0m wide and between 0.15m and 0.25m high on its western side. The vegetation growth in its base is notably different from that on either side, suggesting that the feature has become backfilled. This seems most likely to be a high level leat, though the source of the water which would have run in it, its destination and its direction of flow are unknown. It is possible that it represents a continuation of leat [96788] to the south on about the same contour.	None	SW 69920 50901 to SW 69949 50850
190222	Prospecting pit north of Tubby's Head	A relatively large prospecting pit on the coastal slope at the northern end of the Tubby's Head property, this being 2.5m in diameter and 0.7m deep with a very overgrown spoil dump on its western side. Leat [190221] appears to respect and skirt this feature.	None	SW 69925 50886
190223	Prospecting pits north of Tubby's Head	A group of four prospecting pits on a south-west to north-east alignment in the northern part of Wheal Bungay and straddling the Coast Path. All are about 2.0m in diameter; the pair on the coastal slope, are 0.6m deep and have spoil dumps to their west; those inland have been substantially backfilled.	None	SW 69948 50841, SW 69954 50845, SW 69965 50854, SW 69969 50862
96740	Pillow mound north of Tubby's Head	A low pillow mound 9.0m long, 2.5m wide and 0.4m high with a rounded top profile. There are some indications of stone revetment around its perimeter.	None	SW 70007 50839
190224	Prospecting pits north of Tubby's Head	A pair of prospecting pits on a south-west to north-east alignment. Both are near circular and 2.0m in diameter, the easternmost pit being 0.25m deep and having a prominent spoil dump 0.7m high on its western side.	None	SW 69975 50812, SW 69997 50820
190225	Grazing boundary north of Tubby's Head	A cross -contour ditch 0.6m wide and 0.3m deep accompanied by a slight upcast bank 2.0m wide and 0.2m high extending down the slope from the lower coastal path towards the edge of the cliff may represent a grazing boundary or possibly an early mine sett boundary.	None	SW 69951 50797 to SW 69989 50784
96738	Prospecting trench north-east of Tubby's Head	A north-south aligned prospecting trench averaging 1.3m wide which was cut to pick up the outcrops of any east-west aligned lodes in Wheal Bungay. At its southern end this takes the form of discrete pits which average 4.0m long, 1.0m wide and 1.1m deep, but to the north these become smaller. The upcast bank is to the west of the trench and is up to 4.0m wide and 0.6m high; there is also a much more slight upcast bank to the east of the trench. At its northern end the trench bears to the west and fades out where it meets the coast path.	None	SW 69986 50795 to SW 70031 50749
96742	Lithic find north-east of Tubby's Head	Ann Preston Jones (pers. comm.) reports that walkers have found fragments of worked flint of apparent Mesolithic date on the ground surface at this location.		SW 70024 50773
190226	Prospecting pit north-east of Tubby's Head	A prospecting pit measuring 1.8m x 1.4m and 0.5m deep with a spoil dump to the south-west sited in open ground just to the east of costeaning trench [96738].	None	SW 70029 50769
96786	Prospecting trench north-east of Tubby's Head	A 13m long prospecting trench adjacent to the coast path, this being up to 1.4m wide and 0.6m deep with a low spoil mound on its western side measuring 1.5m wide and 0.5m high.	None	SW 69997 50763 to SW 69997 50750
190227	Prospecting pits north-east of Tubby's Head	A group of three north-south aligned prospecting pits to the east of the Coast Path in the northern part of Wheal Bungay. These average 2.0m in diameter, have been backfilled with their spoil material and would have been excavated in order to pick up the outcrop of an east-west aligned lode.	None	SW 70008 50753, SW 70007 50748, SW 70009 50740

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90052		A group of six pieces of elvan stone in an L-shaped arrangement 200m long. These have been posited as the remains of a stone circle and as part of a denuded field boundary or mine sett boundary. It seems most likely, however, that the stones are natural in origin and do not form part of a constructed feature.	None	SW 70018 50785
96740	Mound north-east of Tubby's Head	A 5.0m diameter mound of negligible height and unknown origin.	None	SW 70066 50765
190228	Prospecting pits north-east of Tubby's Head	A group of five prospecting pits on a general north-east to south-west alignment, probably serving to extend prospecting trench [96738] to the north-west and excavated to detect the outcrop of any east-west trending lode in this part of Wheal Bungay. Most of these pits have been partly backfilled and are 2.2m x 1.8m in plan, 0.3m to 0.5m deep, with spoil dumps to their west.	None	SW 70027 50745, SW 70032 50732, SW 70048 50722, SW 70051 50726, SW 70058 50721, SW 70059 50729
96738	Prospecting pit or extractive pit north-east of Tubby's Head	A pit measuring 3.0m long x 1.2m wide and 0.4m deep to the south of prospecting trench [96738] which is either a large prospecting pit or a small outcrop pit. It has a 1.25m wide, 0.2m high dump to its west.	None	SW 70040 50726
96774	Leat east of Tubby's Head	A leat serving West Polberro to the north of Wheal Bungay, a 300m long section running north-south through the NT property. The leat is defined by a bank 1.0m wide and 0.25m high on its western side. The leat itself is about 1.0m wide and 0.15m deep, its bed having become substantially infilled. It continues beyond the northern NT boundary towards the site of West Polberro mine. To the south it is truncated at an enclosure boundary, beyond which it has been ploughed out.	None	SW 70030 50500 to SW 70112 50851
95744	Leat east of Tubby's Head	A branch of the principal leat serving West Polberro [96743], diverting from it near its northern end. This section is 50m long, 1.0 m wide and 0.3m deep. Its upcast bank is poorly defined though averages 1.3m wide and 0.75m high.	None	SW 70078 50737 to SW 70107 50780
190229	Pit north-east of Tubby's Head	A sub-triangular pit 2.2m x 2.0m in plan and 0.3m deep. A spoil bank 0.2m high extends 7.0m to the west. This does not seem likely to be a prospecting pit and may have been dug to remove a small boulder for use in the construction of the nearby boundary.	None	SW 70015 50713
190230	Pit north-east of Tubby's Head	A pit 2.2m in diameter and 0.7m deep adjacent to a boundary wall. The surrounding area has evidence for pitting to remove near-surface boulders to provide material for wall building, and this pit was probably excavated for the same purpose.	None	SW 70131 50766
190231	Prospecting pit north-east of Tubby's Head	A small isolated prospecting pit measuring 1.8m x 1.2m in plan, 0.3m deep with a small spoil dump to its south-west.	None	SW 70095 50725
90052	Adit north of Tubby's Head	An open, rock-cut adit on the cliff slope with a substantial spoil dump spilling down the cliff slope to the west. The entrance to the adit is 5.0m high and 1.5m wide, indicating that it was developed on a lode outcrop worked in this first section of the adit. Beyond this point the adit roof lowers, heading north-east and thus probably accessing West Polberro mine to the east. The adit is approached by a 15m long rock-cut lobby.	None	SW 69916 50703
96784	Prospecting pit north of Tubby's Head	A small prospecting pit on the lower cliff slope measuring 2.25m x 1.8m and 0.6m deep with a substantial spoil dump on its western side.	None	SW 69946 50712
190232	Prospecting pit north of Tubby's Head	A possible prospecting pit or small quarry on the mid part of the cliff slope in the northern part of Wheal Bungay. The pit is 3.5m in diameter and almost wholly backfilled with stony rubble. A spoil dump 8.0m long spills down the cliff slope to the west.	None	SW 69917 50688

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96752	Lithic find north-east of Tubby's Head	Ann Preston Jones (pers. comm.) reports that walkers have found fragments of worked flint of apparent Mesolithic date on the ground surface at this location.	Monitor the path surface for further indications of worked flint.	SW 69992 50723
96788	Leat north-east of Tubby's Head	A 50m section of contouring leat just to the west of the Coast Path, possibly a continuation of [190221] to the north. The leat is 1.0m wide and 0.15m to 0.2m deep with a low spoil dump on its western side. The leat channel shows as a clear line of differential growth. The leat fades at both its northern and southern ends. Its source, direction of flow and destination are unknown.	None	SW 69983 50694 to SW 69985 50635
190233	Mound north-east of Tubby's Head	A 6.0m diameter rather amorphous mound 0.3m high with a slightly hollowed centre, the hollow being 1.5m in diameter and 0.25m deep.	None	SW 70106 50674
96746	Mound north-east of Tubby's Head	A mound 7.0m x 4.0m in plan and 0.3m high with a rather indistinct outline and a slightly hollowed centre. This is probably a backfilled prospecting pit.	None	SW 70097 50659
190234	Prospecting pits north-east of Tubby's Head	A curving bank 16m long, 2.5m wide and 0.8m high probably represents the upcast from a north-south aligned chain of eight closely-spaced prospecting pits immediately to its east. The pits have been substantially disturbed by animal burrows, which has blurred their outlines and partially backfilled them.	None	SW 70105 50640 to SW 70106 50636
190235	Prospecting pit east of Tubby's Head	An isolated prospecting pit to the north of an east-west alignment of extractive pits on the main lode in Wheal Bungay. The pit measures 1.6m x 1.4m and is 0.4m deep, with a spoil dump to its west.	None	SW 70085 50619
96748	Prospecting pits east of Tubby's Head	A pair of closely-set prospecting pits on an east-west alignment just to the north of the pits developed on the outcrop of the Wheal Bungay lode [96748]. The pits measure 1.7m long x 1.4m wide and are 0.3m deep. They have spoil dumps to their south and west.	None	SW 70092 50619, SW 70094 50620
190236	Extractive pits east of Tubby's Head	A group of five extractive pits on an east-west alignment on the outcrop of the principal lode in Wheal Bungay. The pits range from 3.0m to 4.5m in diameter and 0.6m to 1.25m deep; they have spoil dumps to their south and west.	None	SW 70066 50596, SW 70081 50607, SW 70091 50607, SW 70095 50607, SW 70098 50601, SW 70101 50613
96750	Prospecting pits east of Tubby's Head	A pair of prospecting pits on an east-west alignment, these being 1.7m long, 1.4m wide and 0.3m deep with spoil dumps on their south-western side. The pits continue the alignment of outcrop working pits [96748] immediately to their west.	None	SW 70104 50612, SW 70109 50616
190237	Prospecting pits east of Tubby's Head	A cluster of seven prospecting pits excavated to pick up the outcrop of the principal lode in Wheal Bungay. The pits average 2.4m x 1.7m in plan, 0.4m deep and have spoil dumps to their southern and western sides.	None	SW 70068 50602, SW 70069 50601, SW 70071 50596, SW 70072 50601, SW 70072 50605, SW 70076 50601, SW 70078 50603
190238	Prospecting pits east of Tubby's Head	A pair of prospecting pits at the western end of a line of outcrop working pits. These would have been excavated to identify the location of the outcrop of the principal lode in Wheal Bungay. They measure 1.7m x 1.5m in plan and are 0.4m deep with spoil dumps on their western sides.	None	SW 70060 50590, SW 70061 50591
190239	Prospecting pit east of Tubby's Head	A single prospecting pit to the south of the western end of a line of outcrop workings. This pit, measuring 1.6m x 1.5m in plan and 0.35m deep would have been cut to determine the location of the outcrop of the main lode in Wheal Bungay.	None	SW 70066 50598
96751	Extractive trench east of Tubby's Head	An elongated trench 9.0m long, 1.6m wide and 1.2m deep aligned south-west to north east on shaft [96749] is probably a partly-backfilled outcrop working trench. There are no significant spoil dumps associated with this feature.	None	SW 70066 50582 to SW 70073 50589

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96749	Shaft east of Tubby's Head	A small choked shaft in Wheal Bungay fitted with a Clwyd Cap and sited within a 8.0m diameter hollow which is 1.25m deep. The shaft was probably sunk on a lode outcrop. Small spoil dumps lie to both the north and south of the shaft. Operation Minecap record Sheet 7/39 notes that the shaft was fitted with a 3.0m Clwyd Cap and filled in June 1983, being topped up in March 1985.	Monitor Clwyd Cap for indications of significant corrosion or for subsidence of shaft throat	SW 70076 50590
190240	Prospecting pit east of Tubby's Head	An isolated prospecting pit measuring 1.6m x 1.4m and 0.3m deep with a spoil dump to its west.	None	SW 70075 50580
96753	Extractive pit east of Tubby's Head	An isolated outcrop working pit, originally 7.0m in diameter. The interior of the pit has been extensively disturbed by animal burrowing and it is now only 0.5m deep. There is an associated spoil dump on the western and southern sides of this feature.	None	SW 70098 50589
190241	Prospecting pits east of Tubby's Head	A closely-set group of three backfilled prospecting pits with a north-south aligned spoil dump 8.0m long, 3.0m wide and 0.7m high immediately to their west.	None	SW 70101 50595, SW 70103 50591, SW 70104 50589
190242	Extractive pit east of Tubby's Head	An isolated outcrop working pit 5.0m in diameter and 1.5m deep with an associated small spoil dump to its west.	None	SW 70075 50565
90053	Group of stones near Tubby's Head	A group of six pieces of elvan stone resting on the ground surface and in an apparent oval arrangement 23m x 12m in plan. These have been posited as the remains of a stone circle though it is most likely that the stones are natural in origin.		SW 70081 50566
96754	Prospecting pit east of Tubby's Head	An isolated prospecting pit measuring 2.2m x 1.75m in plan and 0.25m deep, with a low spoil dump immediately to its west.	None	SW 70084 50566
190243	Miner's path north of Tubby's Head	A narrow path leading from an openwork [96779] to a small dressing floor [96777] downslope to the northern side of a zawn where it seems likely that the lode worked by Wheal Bungay outcropped. The path zig-zags into the upper part of the zawn and this section possibly represents a track used by miners to access an adit in the cliff face, probably the later northern adit to Wheal Coates. The lower part of the path in the zawn has been lost through erosion. Wheal Coates new adit is documented as lying in this general area in plans dating to 1792 (CRO WH-2090, WH-2091-1 and 2), though could not be seen and may lie down the cliff slope in an area which was not accessible in 2009.	None	SW 69903 50539 to SW 69880 50602
190244	Prospecting pit north of Tubby's Head	A prospecting pit near the cliff edge to the north of Tubby's Head, probably excavated in an attempt to locate the outcrop of the southern lode in Wheal Bungay. The pit measures 2.0m x 1.5m x 0.4m deep.	None	SW 69891 50583
96777	Copper dressing floor north of Tubby's Head	A small dressing floor measuring 8.0m x 4.0m and sited on a levelled platform cut into the cliff slope and backed by a drystone wall 4.0m long and 1.25m high made up from coarse waste from the openwork upslope [96779]. Another section of the mine dump 8.0m to the north-east is also revetted, this section being 5.0m long and 1.5m high. These two sections were probably originally joined, and may have revetted the upslope side of an access path from the openwork nearby [96799] to this dressing floor, probably continuing on downslope to the cliff edge as path [10241]. There is some fragmentary evidence for a low revetting wall along the western face of the dressing floor. Finely-crushed mine waste has been disposed of on the cliff slopes to the west of the platform.	None	SW 69903 50577
96779	Prospecting pit north of Tubby's Head	A prospecting pit near the cliff edge to the north of Tubby's Head, probably excavated in an attempt to locate the outcrop of the southern lode in Wheal Bungay. The pit measures 2.0m x 1.6m x 0.6m deep.	None	SW 69903 50574

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190255	Prospecting pit north of Tubby's Head	A small, mostly backfilled excavation near the cliff edge to the north of Tubby's Head was probably a prospecting pit, part of a cluster in this general area. The pit measures 2.0m x 1.7m and is 0.3m deep.	None	SW 69879 50573
96802	Prospecting pit north of Tubby's Head	A prospecting pit near the cliff edge to the north of Tubby's Head, probably excavated in an attempt to locate the outcrop of the southern lode in Wheal Bungay. The pit measures 4.0m x 2.0m x 1.0m deep.	None	SW 69871 50568
96801	Prospecting pit north of Tubby's Head	A small, mostly backfilled excavation near the cliff edge to the north of Tubby's Head was probably a prospecting pit, part of a cluster in this general area. The pit measures 2.6m x 2.0m and is 0.3m deep.	None	SW 69877 50554
96780		A small earth-bonded masonry structure just to the north of a small openwork in Wheal Bungay [96779]. The building is contour aligned, measuring 5.0m x 3.0m externally, with walls 0.7m wide and up to 1.3m high where they revet the cliff slope. There is a doorway originally 0.6m wide which opens to the south. The proximity of this structure to the openwork [96779], to small dressing floors not far downslope [96777] and to another rather larger mine building of similar construction [96778] to the south of the openwork suggests that this was the centre of a small mine, possibly Wheal Owles [190264], which is documented in this area.	Monitor periodically for signs of erosion or damage.	SW 69912 50561
96779	Outcrop working north-east of Tubby's Head	An outcrop working driven onto a quartz vein; this is aligned north-west to south-east and heads upslope towards the shafts upslope [96765] and [90048]. Downslope, it is aligned on an eroded zawn where the lode probably outcropped in the cliff face. The outcrop working is 8.0m wide and 12.0m long. The excavation is 4.0m deep to the west and up to 7.0m deep to the east. Its base is covered with voided rubble which probably hides the entrance to an adit or possibly a backfilled shaft. A substantial spoil dump spills down the cliff slope to the west, where there is a small dressing floor [96777].	None	SW 69910 50556 to SW 69917 50544
96778	Mine building north-east of Tubby's Head	A small building set on a roughly levelled area just to the south of an openwork [96779]. The building measures 5.0m x 4.0m and is defined by roughly-constructed earth-set mine waste which stands to a maximum of 1.25m high, though averages 1.0m. There is a 1.0m wide doorway in the south-western wall and the remains of a fireplace 0.3m square in the north-eastern wall, suggesting that this was a miner's shelter or dinner house.	Monitor periodically for damage	SW 69911 50540
190256	Miner's path north-east of Tubby's Head	A miners' path 1.0m wide and cut into the slope by 0.25m on its eastern side leading northwards from building [96765] and shaft [96764]. The path terminates at a point on the cliff slope where there is a substantial spill of mine waste both above and below the path, suggesting that there may be a backfilled adit at this point.	None	SW 69933 50535 to SW 69925 50596
96764	Mine building east of Tubby's Head	An elongated, contour-aligned drystone-walled mine building on the lower cliff slope in Wheal Bungay. The building is essentially rectangular, 10m x 3.5m in plan, though widening slightly at its southern end. The OS 1st Edition 1:2500 mapping shows what appears to be a small circular chimney attached to its south-western corner, though no trace of this has survived. The walls on the eastern side of the building, where they revet the cliff slope are up to 2.0m high and to the south they are 1.6m high; to the west, where they are free standing, they are 0.6m high. The interior of the building is part filled with rubble, but at its northern end is a circular depression [96765] which is almost certainly a small shaft. Beyond the northern end of the building is a levelled platform measuring 9.0m x 5.0m in plan [96766], from the northern end of which a path leads away along the contour [190256]. The shaft probably sited a ladderway or footway into the mine, and the building may therefore have been a small change house.	Monitor for erosion of walls. Undertake detailed survey of structure. Consolidate walling.	SW 69930 50528



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96765	Mine shaft north-east of Tubby's Head	In the northern end of building [96764] is a small circular rock-cut depression 2.5m in diameter and 1.25m deep, now choked with rubble. There are indications of stone collaring (revetment) around parts of the upper edges of this feature, which was probably a footway or ladderway shaft within a small change house, and which would given under-cover access to the workings of Wheal Bungay. The building was shown as roofless on the 1st Edition OS 1:2500 mapping suggesting that the shaft was in use during the earlier part of the 19th century.	Monitor feature indications of subsidence	SW 69931 50533
96766	Platformed area east of Tubby's Head	Beyond the northern end of mine building [96764] in Wheal Owles or Wheal Bungay is a levelled platform measuring 15m x 5.0m in plan, from the northern end of which a path leads away along the contour [190256]. This was probably a small yard associated with the nearby shaft and used for storing materials.	None	SW 69908 50655
190257	Mine east of Tubby's Head	Dines (1956) appeared to believe that Wheal Devonshire, Wheal Bungay and West Polberro (as probably also Wheal Owles) were workings of the same lodes, the earliest workings being those of Wheals Bungay and Owles, the final working being that of West Polberro. The mines worked lodes outcropping on the cliffs which carried a mixture of tin and copper ores, though the few reports available suggest that values were patchy and outputs limited. None of these workings seem to have been on anything but a relatively small scale. A tin bound known as Bungay Wicket was registered in 1793, whilst a report dating to 1798 recorded that Wheal Bungay had sold 21 tons of copper ore in that year (in Johns 1998, 34). Wheal Devonshire was active in 1832/3, when the mine sold 35 tons of 5.5% copper ore, whilst West Polberro raised 205 tons of 4.75% copper ore between 1855 and 1859. The centre of Wheal Devonshire seems most likely from the information in Dines to have been to the east of White Rocks (outside the project area to the north); an engine house is shown in 'Wheal Bungay, tin and copper, disused' on the 1 <sup>st</sup> Edition OS 1:2500 mapping at SW 70160 50836 (just to the north-east of the project area). The shaft locations provided by Dines do not correspond with those found on the ground, Dines noting three shafts and a short cliff adit, together with surface workings on Rouse's Lode, which outcrops just to the north of Engine Shaft. The group of shafts to the east of Tubby's Head which seem to have been developed on two lodes: one trending south-east from the cliffs just to the north of Tubby's Head, the second on a lode outcropping immediately to the south of Tubby's Head and trending north-east may have been developed as part of Wheal Bungay, or as part of Wheal Owles, whose documentation seems to amount to little more than a name.	None	SW 70046 50598
96771	Adit north- east of Tubby's Head	A small high level adit in Wheal Bungay, having a lobby 8.0m long, 2.0m wide and 3.5m deep driven into the upper cliff slope and apparently heading south-east towards shaft [190259]. The adit is choked internally, though the crown of its entrance is just visible. A substantial dump of coarse mine waste spills down the cliff slope to the west for a distance of 30m.	None	SW 69952 50578
190258	Extractive pit north-east of Tubby's Head	A pit with a diameter of 1.25m and a depth of 0.8m with a small spoil dump on its western side is likely to be a small extractive pit on the outcrop of a lode.	None	SW 69952 50573
190259	Shaft north- east of Tubby's Head	A probable small backfilled shaft 3.0m diameter and 1.6m deep, mostly cut into bedrock but with indications of drystone collaring on its western side. A substantial spoil dump spills down the cliff slope to the west.	Monitor for subsidence of fills.	SW 69974 50570
190260	Prospecting pits north- east of Tubby's Head	A chain of four north-south aligned prospecting pits just to the west of the Coast Path, the southernmost possibly being a small outcrop working, being 3.5m long, 2.0m wide and 1.0m deep with a small spoil dump to its south-west, the remainder being 2.0m long, 1.5m wide and 0.5m deep with spoil dumps to their west. These would have been excavated to pick up the outcrop of an east-west aligned lode.	None	SW 69982 50591, SW 69984 50588, SW 69990 50586, SW 69993 50584

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190261	Prospecting pits north-east of Tubby's Head	A pair of prospecting pits aligned east west adjacent to the Coast Path. Neither has a well-defined spoil dump. The pits average 1.8m x 1.6m in plan and 0.5m deep.	None	SW 70002 50585, SW 70003 50578
96774	Prospecting pits north-east of Tubby's Head	A pair of north-south aligned prospecting pits just to the east of the Coast Path, both being 2.0m in diameter and 0.6m deep with crescentic spoil dumps to their south-west. These, like [190260] and [190261] to the west, would have been excavated to try to pick up the outcrop of an east-west aligned lode.	None	SW 69985 50576, SW 69985 50569
96757	Mine shaft north-east of Tubby's Head	A small shaft on the outcrop of a lode in Wheal Bungay, this shaft lies within a 2.0m deep, 4.0m diameter hollow and has been fitted with a Clwyd Cap. There is little evidence for the associated spoil dumps, though some remnants survive to the north and west of the shaft. Operation Minecap record Sheet 7/8 noted that this shaft was fitted with a 3.0m diameter Clwyd Cap and backfilled in June 1983, and was topped up in March 1985.	Monitor the shaft fills for indications of subsidence. Monitor Clwyd Cap for signs of significant corrosion.	SW 70015 50562
96756	Prospecting pit north-east of Tubby's Head	An isolated prospecting pit to the north-east of shaft [96757], excavated to determine the outcrop of the principal lode in Wheal Bungay. The pit measures 2.5m x 1.75m in plan, is 0.6m deep and has a small spoil dump to its south-west.	None	SW 70022 50568
96770	Adit north-east of Tubby's Head	A small, high-level adit in Wheal Bungay, probably serving shaft [96757] 45m to the east. The adit lobby is 6.0m long, 2.0m wide and 1.75m deep, but has been blocked off at its south-western end with a substantial bank of spoil. The adit entrance has mostly been blocked off, though its top is just open.	None	SW 69973 50551
96768	Adit north-east of Tubby's Head	A hollowed area 3.0m long, 1.5m wide and 0.6m deep cut into the cliff slope. 5.0m to its west and continuing its line is another similar feature, whilst immediately upslope is an outcrop working or small shaft, suggesting that this feature is either a shallow outcrop working or perhaps a collapsed adit.	None	SW 69955 50532
96762	Quarry east of Tubby's Head	A small quarry-like excavation cut into the cliff slope, exposing rather quartzite killas. The quarry has a back wall 2.25m high and a levelled floor, with a spoil dump on the cliff slope to the west. A narrow track extends upslope to the north-north-east to the head of the coastal slope. The quarry may have been excavated to provide material for mine buildings in Wheal Bungay, though its size and location suggest that it could well have sited a horse whim serving the nearby shaft [90048].	None	SW 69972 50515
190262	Outcrop working east of Tubby's Head	A substantially backfilled narrow linear excavation 7.0m long, 0.75m wide aligned north-west to south-east up the cliff slope towards shaft [90048] and terminating in its spoil dump. This may be an outcrop working or the lobby to a shallow adit. It is paralleled just to the south by a similar but slightly larger feature on the same alignment.	None	SW 69951 50507 to SW 69955 50502
96767	Outcrop working east of Tubby's Head	A narrow south-east trending trench driven into the cliff slope below the mine dumps from shaft [90048], the trench being 14m long, 2.0m wide and 1.5m deep. There is a prominent spoil dump at the lower end of this feature, suggesting that there may be a shallow adit entrance at its upper end. The base of the trench is partly backfilled with rocky rubble from the spoil dump upslope.	None	SW 69945 50511 to SW 69954 50499
90048	Mine shaft east of Tubby's Head	The principal shaft of Wheal Bungay, this is open under a Clwyd Cap and is surrounded by a barbed wire and stock fence on tanalised timber posts. The shaft is 5.0m square, rock-cut from surface and aligned north-east south-west with indications of the lode outcropping in its eastern corner. The spoil dump extends to the west over the cliff slope, to the north where it spills into a shallow quarry and to the south, where it has been levelled and sited a dressing floor. There are no indications within the shaft throat or the surrounding area that any engine was sited here.	Maintain shaft fence. Monitor Clwyd Cap for signs of significant corrosion.	SW 69962 50492
96759 41374	Mine structure east of Tubby's Head	A platformed area adjacent to the shaft at Wheal Bungay is sub-triangular in shape measuring 15m x 8.0m and has been cut into the slope by 2.0m. This is probably a working platform or mine yard.	None	SW 69978 50487

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190263	Prospecting pit near Tubby's Head	A 3.5m wide, 0.5m deep hollow with a 0.4m high bank of waste on its western side. The feature is covered with heather.	None	SW 70078 50552
96758	Copper dressing floor east of Tubby's Head	A 15m x 15m area of the levelled waste dump to the south of Wheal Bungay main shaft is partly occupied by an area of cobbling, probably representing the site of an open-air copper ore dressing floor.	Monitor damage to cobbles through removal by visitors	SW 69969 50474
96760	Mine building east of Tubby's Head	The low footings of a rectangular building measuring 7.0m x 5.0m and standing to a maximum of 0.3m high are set to the south-east of the principal shaft of Wheal Bungay. The north-west corner of the building is obscured by gorse growth. There is no obvious doorway into the structure. Its function is unknown.	Monitor walling for damage. Consider consolidating remaining masonry.	SW 69979 50476
190264	Mine east of Tubby's Head	A mine named Wheal Owles (Cornish 'Als' = cliff) is understood to have been located in this general area. There appears to be little documentation for this mine, which is likely to have worked parts of the area inland and to the south of Tubby's Head, probably during the 18th or early 19th centuries.	None	SW 69921 50526
90054	Cliff Castle at Tubby's Head	A possible cliff castle at Tubby's Head was first suggested by Warner (1967), it being described as univallate with a simple entrance. Padel (1985, 236) notes that the place name Tubby's Head may include the element <i>tuban</i> , 'mound, bank', noting Welsh <i>to men</i> and Cornish dialect <i>tubban</i> , a turf. The alleged cliff castle The possible cliff castle has a poor defensive position, being completely overlooked by the steep ground to east and is made up of a short west-projecting promontory cut off by approximately 20m of bank 2.3m wide and 0.9m high, backed by a ditch; there is a causewayed entrance near its north end. To the south of the causeway the ditch extends for approximately 13m, ending on a steep cliff slope. This section of ditch averages 5.0m wide, and is 1.5m deep on its outside face, 0.4m on its inside face. The accompanying bank is 7.0m wide and is markedly asymmetric in profile, being up to 2.5m high on its inner face and 1.1m on its external face. This portion of the ditch and bank appears to have been subject to some disturbance, showing several small and irregular spoil heaps. On the northern side of the causeway the ditch extends for 12m, turning westward down the cliff slope at its outer end; it appears to be of similar proportions to that on the south side of the entrance although is rather more eroded on its landward face. The 'bank' here, however, is lower and apparently somewhat truncated. Both banks appear to be of dump construction, made up of gritty soil and small pieces of shillet. One stone is visible at the southern end of the ditch and two further ones in the northern portion which could conceivably represent the line of a revetted inner face to the ditch or the outer face of the bank. The causeway is 2.0m wide with a slightly wider accompanying gap through the bank. The relatively substantial form of the causeway is at least in part due to the significant quantities of material which have eroded onto it from the cliff slope to the east. Within the enclosed area are a sub-rectangular platform cut into the slope which has been interpreted as a possible hut stance [96800] and a putative shell midden [96799].	None	SW 69835 50496 to SW 69835 50474
96800	Pit within cliff castle at Tubby's Head	A shallow sub-rectangular pit measuring 4.0m x 4.0m and 0.5m deep near the southern edge of the presumed cliff castle. The centre of the pit is occupied by a large flat rock.	None	SW 69819 50475
96799	Possible shell midden within cliff castle at Tubby's Head	A collection of sea shells in a sandy matrix up to 0.08m deep is reported at this location at the western end of the probable cliff castle at Tubby's Head [90054]. It is possible, however, that this feature represents no more than an accumulation of shells deposited by sea birds over a long period of time.	Consider small- scale evaluative excavation to determine whether or not this is a midden.	SW 69795 50501

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190265	Prospecting pit east of Tubby's Head	A small backfilled prospecting pit on the lower cliff slope near Tubby's Head measuring 2.0m x 1.6m and 0.3m deep. Its rather spread spoil dump lies to the west.	None	SW 69690 50452
190266	Extractive pit south-east of Tubby's Head	A probable outcrop working pit or large prospecting pit measuring 5.0m in diameter and 0.8m deep with a small spoil dump on its western side. Whilst its dimensions suggest an extractive pit on the outcrop of a lode, its location suggests that it was a prospecting feature.	None	SW 69924 50263
190267	Prospecting pit south-east of Tubby's Head	A small, partially backfilled prospecting pit 2.0m in diameter set just to the north of the Wheal Coates boundary wall. There is a relatively substantial spoil dump on its western side. The pit was probably excavated to determine the outcrop of the lode worked in the openwork to the south [190305] and thus is likely to predate it.	None	SW 69963 50208
190268	Extractive pit south-east of Tubby's Head	A pit 3.5m in diameter and 0.8m deep immediately adjacent to the Wheal Coates boundary wall which probably represents an attempt to work the nearby outcrop. Its substantial spoil dump lies on its south-western side.	None	SW 69964 50198
190269	Prospecting pit south-east of Tubby's Head	A small prospecting pit immediately adjacent to the Wheal Coates northern boundary and almost certainly excavated as part of a chain of similar pits extending to the east-north-east [190298], its creation therefore probably predating the construction of the boundary [96792]. The pit is 2.0m in diameter and 0.5m deep and has a spoil dump on its western side.	None	SW 69968 50194
96795	Coastguard rescue practice pole south of Tubby's Head	A section of telegraph pole 3.5m high set into concrete. Equipped with step irons to allow it to be climbed, this was set up and used by Coastguards in order to practice rescues. It replaced another just to its south, where there is another concrete base.	None	SW 69893 50224
190270	Prospecting pit south of Tubby's Head	A small backfilled prospecting pit just to the north of openwork [190307] and probably predating it.	None	SW 69863 50180
190271	Prospecting pit south of Tubby's Head	A small backfilled prospecting pit just to the north of openwork [190307] and probably predating it.	None	SW 69865 50171
190272	Adit south of Tubby's Head	The entrance to a very shallow rock-cut adit driven just to the north of east towards the immediately-adjacent openwork [190307]. The adit is substantially backfilled near its entrance, only 0.15m of its mouth remaining open.	None	SW 69862 50168
96791	Prospecting pits south of Tubby's Head	Three conjoined prospecting pits aligned west-north-west to east-south-east, continuing the line of trench [96793]. These measure 1.5m x 1.0m, 3.0m x 2.0m and 2.0m x 2.0m and average 0.8m deep.	None	SW 69855 50169, SW 69854 50171, SW 69851 50172
96793	Outcrop working south of Tubby's Head	A shallow gully aligned west-north-west to east-south-east, running eastwards from shaft [190273] on the cliff face. This is 8.0m long, 1.0m wide and 0.7m deep and has been cut down on the outcrop of the lode.	None	SW 69839 50178 to SW 69847 50173
190273	Shaft south of Tubby's Head	A 2.0m square shaft cut into the cliff face on the outcrop of the northern lode in Wheal Coates. Given its location the shaft could not be fully recorded, though its upper section is open to the west.	None. The shaft is cut into the cliff face and requires no protection.	SW 69837 50179
190274	Mine building south of Tubby's Head	A small levelled platform measuring 4.0m x 3.0m with a revetted masonry face 0.4m high on its eastern side probably represents the site of a mine building associated with the nearby shaft [190273]. The date of its construction is unknown.	None	SW 69839 50174

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96792	Boundary wall between Tubby's Head and Wheal Coates	A boundary wall dividing Tubby's Head to the north from Wheal Coates to the south, this stone-faced earth wall has been constructed of mine waste and averages 1.5m high and 1.6m wide at its base, reducing in height to an average of 0.35m to the north. It appears to post-date prospecting activity [96789]. The boundary is not shown on the St. Agnes Tithe Map of 1840, nor a map of the Manor of Tywarnhaile dated to 1842 (CRO AD-145-32), though had been constructed by 1878, when it was shown on the 1st Edition OS 1:2500 mapping. The boundary was probably created as a barrier to stock grazing the land to the north to exclude them from the heavily-mined area of Wheal Coates.	Maintain wall structure. Undertake small-scale repairs where eroded by walkers.	
190275	Mine north-east of Wheal Coates	A mine named Little Wheal Coates is documented at the north of the area of Wheal Coates in a document in the Enys Papers dating to 1770. The Little Wheal Coates sett is likely to have included the outcrop of the northernmost lode in Wheal Coates, which has been exploited by means of an openwork and a line of extractive pits.		SW 70199 50326
190276	Openwork north-east of Wheal Coates	An east-west trending rock-cut openwork 36m long and 5.5m wide straddles the National Trust boundary at the north-eastern corner of the Wheal Coates site. This appears to have been worked as part of Little Wheal Coates on a lode paralleling the northern boundary of the mine. The feature is open, but is flooded only a few metres below surface. It is enclosed within a drystone wall constructed of mine waste and incorporates a shaft [190277] at its western end.	Maintain boundary wall	SW 70190 50326 to SW 70221 50325
190277	Mine shaft north-east of Wheal Coates	A shaft is documented at the western end of an openwork [190276] identified as having been developed as part of Little Wheal Coates. On the 1st Edition of the OS 1:2500 mapping the openwork alone was shown, but by 1908 (OS map evidence) the shaft was surrounded by an oval wall. The shaft was named Stephen's Shaft by Symons in 1870. The shaft is now flooded to near surface and the section of wall shown on the 1908 mapping as crossing the line of the openwork on its eastern side has collapsed into the openwork.	Maintain boundary wall. Consider ancillary fence if this site becomes more accessible in the future.	SW 70196 50326
190278	Extractive pits north-east of Wheal Coates	A group of eight pits sunk on or near the outcrop of the Little Wheal Coates lode at the northern end of the Wheal Coates site are probably outcrop working pits, these being in a tight linear cluster and averaging 4.5m in diameter and 1.25m deep with annular spoil dumps. This area is rather overgrown and detailed survey was not possible in 2009.	None	SW 70143 50313, SW 70143 50319, SW 70148 50315, SW 70148 50319, SW 70152 50319, SW 70156 50314, SW 70158 50321, SW 70160 50317, SW 70168 50322, SW 70175 50321
190279	Extractive pits north-east of Wheal Coates	Two elongated linear gulleys and a roughly circular hollowed area on the outcrop of Little Wheal Coates lode represent outcrop workings. These measure (from east to west), 10m x 4.0m, 15m x 5.0m and 8.0m diameter. The pits are around 1.5m deep and are have spoil dumps to both north and south.	None	SW 70098 50299, SW 70107 50303, SW 70114 50305, SW 70126 50307
190280	Extractive pits and prospecting pits north of Wheal Coates	A group of 21 pits sited on the outcrop of Little Wheal Coates Lode are a mixture of outcrop working pits and prospecting pits, the four nearest the centre of the eastern section of this group which are about 4.5m in diameter and 1.25m deep are probably outcrop working pits. The remainder, averaging 3.0m in diameter and 0.8m deep represent prospecting pits excavated to attempt to prove the western extension of the lode, which seems to have been lost at this location.	None	SW 70037 50274, SW 70033 50281, SW 70038 50287, SW 70046 50296, SW 70048 50287, SW 70054 50282, SW 70055 50278, SW 70054 50291, SW 70060 50294, SW 70063 50290, SW70069 50291, SW 70065 50283, SW70073 50294, SW 70073 50299, SW 70075 50303, SW 70079 50296, SW 50079 50292, SW 70079 50287, SW 70088 50292, SW 70094 50292,

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				SW 70094 50282
190281	Pond or site of mine building north of Wheal Coates	A shallow rectangular excavation measuring 7.75m x 5.25m in plan and now no more than 0.5m deep to the north of openwork [190287] has the appearance of a small pond, though might be the site of a small mine building. No leat serving this feature could be identified, whilst vegetation conditions made it impossible to locate any revetting stonework. This is likely to be an early feature of the site, possibly of equivalent date to the nearby openworks.	None	SW 70124 50291
190282	Prospecting pit north of Wheal Coates	An isolated prospecting pit measuring 1.6m x 1.0m x 0.5m deep with a small associated spoil dump excavated between the outcrops of the principal Wheal Coates lode worked from surface and that of the Little Wheal Coates lode.	None	SW 70116 50286
190283	Possible mine shaft north of Wheal Coates	A possible small shaft showing as a spoil dump 7.0m in diameter and 3.0m high between outcrop workings on Little Wheal Coates and Wheal Coates outcrop workings. No indications of the shaft itself were seen.	Monitor this feature for signs of subsidence.	SW 70010 50277
190284	Extractive pits north of Wheal Coates	A pair of probable outcrop working pits taking the form of an elongated linear hollow 8.0m long and 3.5m wide immediately to the east of shaft [190285]. The pits are heavily vegetated and their depth could not be established during survey in 2009.	None	SW 70079 50267, SW 70074 50266
190285	Mine shaft north of Wheal Coates	A mine shaft documented by the Ordnance Survey as an open feature on the 1st Edition 1:2500 mapping, and shown as being to the south of the centre of a spoil dump 20m in diameter. The shaft was mapped by Symons in 1870 as Arthur's Shaft. The shaft appears to have still been open in 1908 (OS map evidence). Operation Minecap record Sheet 7/1 recorded that the shaft was 'not located'. The spoil dump is now about 5.0m high and has clearly been dug into. There is no sign of the shaft mouth, which must be choked.	Monitor this feature for indications of subsidence. Consider ancillary fence if the site becomes significantly more accessible.	SW 70066 50265
190286	Drystone wall around openwork north-east of Wheal Coates	A 330m long drystone wall constructed to a width of 1.0m and an average height of 1.2m surrounding the eastern section of the openwork [190287] and [190299] in the northern part of Wheal Coates. OS map evidence indicates that this feature was constructed between 1878 and 1908, almost certainly as a safety feature. The walling is primarily of mine waste, though Budd and Gale 1993 noted approximately 100 rounded cobblestones incorporated into the wall, these including three mortar stones, one cupped stone, three ore crushing anvils and one undiagnostic piece. As the survey only recorded readily visible worked stones from the wall, it must be assumed that it probably contains many more examples. The presence of these worked stones strongly hints at the early working of the nearby lode outcrop, such artefacts having been found within securely dated prehistoric mining contexts elsewhere in Britain.	Monitor for indications of damage by visitors.	SW 70089 50256 to SW 70228 50300 to SW 70245 50282 to SW 70103 50234
190287	Openwork north-east of Wheal Coates	Running west-north-west to east-south-east in the northern part of Wheal Coates, this is the easternmost section of openwork within National Trust ownership (though there is a further 17m long, 5.0m wide section of openwork in the privately-owned land immediately to the east). The near-vertical sides are predominantly rock-cut and the base has been partially backfilled with spoil. The width of the openwork suggests that a network of closely-set lodes were worked here, whilst the absence of drill marks on the walls and the stone tools, mortars and anvils incorporated into the safety wall around this feature [190286] indicate that the openwork was developed at an early date. Hawkins (1832, 140-1) noted that the area worked by Wheal Coates 'has been the seat of much mining adventure at some early time, for it abounds in tin-lodes, one of which has been worked out from the surface for some considerable depth: the two smooth walls being left untouched . . .' (Hawkins 1832, 142-3).	None	SW 70143 50249 to SW 70242 50287
190288	Prospecting trench north-east of Wheal Coates	A 45m long, 6.0m wide and 1.75m deep north-south aligned trench cut through the ground between the eastern and western sections of the Wheal Coates openwork [190287] and [190289] is almost certainly a prospecting trench cut to test the ground in this area and to sample the lode worked in the openwork. A similar feature [190290] lies 35m to the west. The date at which this prospecting trench was cut is unknown.	None	SW 70131 50263 to SW 70139 50215

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NT HBSMR No;  Cornwall HER No	Name	Description / Interpretation	Management Rec's	Grid Ref (8 figure)
190289	Openwork north of Wheal Coates	The western section of the Wheal Coates openwork is 100m long and averages 10m wide at its western end, 5.0m wide in its central section, whilst the two branches at its eastern end are each 3.5m wide. Its sides are vertical and rock cut, with no evidence of drill marks and its base is filled with spoil, the average depth of the openwork now being 7.0m deep. The openwork appears to have been worked on a pair of closely-spaced tin lodes which branch at their eastern ends, the southernmost of these being worked to the east, the northernmost terminating after 17.5m. The openwork is likely to have originally been excavated to a far greater depth than is presently visible, whilst the absence of tool marks and the discovery of a range of stone tools in the spoil making up its abandonment hedge [190286] suggest an early date of exploitation. The immediate western extension of this openwork appears to have been infilled prior to the creation of a 19th century dressing floor [190299], but operations on the outcrop to the west of this can be traced most of the way to the cliff edge.	None	SW 70042 50213 to SW 70130 50260 and SW 70318 50248
190290	Prospecting trench north of Wheal Coates	A 35m long, 4.5m wide and 1.5m deep north-south aligned trench on the southern side of openwork [190289] represents a prospecting trench excavated to test for lodes parallel to it, and is similar in form to another trench 35m to the east. The date of its excavation is uncertain.	None	SW 70099 50240 to SW 70109 50206
190291	Probable mine shaft north of Wheal Coates	A large hollowed area on the northern side of the central section of openwork [190289] measures 8.5m in diameter, and opens onto the openwork on its southern side. This feature is aligned between outcrop working [190292] and shaft [190285] and either represents a small undocumented shaft sunk onto the northernmost of the lodes worked in the adjacent openwork, or one sunk onto a north-south trending lode crossing the openwork. The hollow is 4.5m deep and has sub-vertical sides. Its base is covered with vegetated spoil.	Monitor the hollowed area for indications of subsidence	SW 70080 50251
190292	Probable mine shaft north of Wheal Coates	A large hollowed area on the southern side of the central section of openwork [190289] measures 15m in diameter, and opens onto the openwork on its northern side. This feature is aligned to the south of outcrop working [190291] and shaft [190285] and either represents a small undocumented shaft sunk onto the southernmost of the lodes worked in the adjacent openwork, or one sunk onto a north-south trending lode crossing the openwork. The hollow is 6.5m deep and has sub-vertical sides. Its base is covered with vegetated spoil.	Monitor the hollowed area for signs of subsidence	SW 70091 50299
190293	Prospecting pit north of Wheal Coates	A small and isolated prospecting pit to the north of openwork [190289] and probably excavated as a precursor to its development. The pit is 1.5m in diameter, 0.4m deep, but there is little evidence for its associated spoil dump.	None	SW 70057 50243
190294	Quarry structure north of Wheal Coates	A building at this location consists of a masonry wall 14m long, 2.25m high at its western end and 1.2m high at its eastern end with returns to the north 1.5m long and having a sloping coped surface on its southern side. The northern side of the structure consists of a single stone wall between 0.25m and 0.45m high. At its centre is a section of mass concrete measuring 0.8m x 0.6m and 0.65m high with a curving indent in its upper surface. 1.5m to the north of this structure is a small concrete footing at ground level measuring 0.3m x 0.12m. It is understood that this structure was the base for a stone crusher operated by the local authorities during the mid 20th century, and used to crush mine waste for hardcore.	None	SW 70059 50238
190295	Prospecting pits north of Wheal Coates	A pair of conjoined east-west aligned prospecting pits immediately to the north of openwork [190289] and probably excavated as a precursor to its development. Its associated spoil dumps appear to have been spread and flattened.	None	SW 70046 50232, SW 70051 50234
190296	Prospecting pit north of Wheal Coates	An isolated prospecting pit to the north of openwork [190289] and probably excavated to locate the lode subsequently worked from surface in the openwork. The pit measures 2.25m x 1.6m in plan and is 0.5m deep, having a spoil dump on its western side.	None	SW 70030 50247

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190297	Extractive pit north of Wheal Coates	A pit measuring 8.0m long, 3.5m wide and 1.2m deep appears to represent a small stope collapse over backfilled workings on the outcrop of a lode parallel to and 12m to the north of that worked in the Wheal Coates openwork [190289]. At its eastern end is the possible entrance to a very shallow adit.	Monitor this feature for signs of further subsidence	SW 70026 50226
190298	Prospecting pits north of Wheal Coates	A linear group of five pits aligned north-east to south-west over a distance of 65m (with a further pit [190269] 11m to the south-west). These follow the trend of the Wheal Coates openwork, whose worked outcrop (which seems likely here to have been backfilled) would lie about 12m to the south. The pits vary in size, but most are about 3.5m x 1.5m in plan, 1m deep and have spoil dumps on their downslope sides. The alignment of these pits suggests workings along the outcrop of a lode parallel to that worked in the nearby openwork [190289], though their size suggesting prospecting on the lode outcrop.	None	SW 70037 50235, SW 70033 50230, SW 70019 50223, SW 70009 50215, SW 69993 50206, SW 69978 50197, SW 70019 50187
190299	Tin dressing floors north of Wheal Coates	The documented site of the early water-powered dressing floors at Wheal Coates, these being shown as 'Stamps' on Symons' 1870 map of the St. Agnes Mining District, lay at the western end of the central section of the Wheal Coates openwork [190289] and were probably constructed over a backfilled section of it. Nothing was shown here on the 1st Edition of the OS 1:2500 mapping. The survey undertaken here in 1986 by Sharpe and Smith hints at a fairly extensive area measuring 65m x 40m laid out as a pair of terraces on which a series of buildings had been laid out and a wheelpit erected. These seem to have been very extensively demolished, and the area is now characterised by sometimes linear spreads of rubble mixed with low dumps of mine spoil within which the outlines of individual structures cannot easily be discerned. The date at which this dressing floor was established is unknown, but given the longevity of most leat systems serving such sites, it is quite likely given the location of the dressing floors at the western end of the main section of the Wheal Coates openwork [190289] that water-powered stamps may have been operated here for several centuries.	This area of Wheal Coates requires further documentary research and detailed survey to determine what elements of the former dressing floors survive.	SW 70019 50187
190300	Mine pond north of Wheal Coates	The reservoir which provided water for the waterwheel working the stamps on the early dressing floors [190299] at Wheal Coates and supplying water for dressing purposes was sited at this location, and originally measured 13.5m square, being enclosed within 2.0m high, 2.0m wide stone revetted earth banks. The upslope (eastern) section of the reservoir has been demolished and the eastern and western banks are now very tumbled, but the downslope bank of the reservoir survive, though is becoming rather overgrown. The source of water for the reservoir was not established, but is likely to have been one of the number of leats which run into the Wheal Coates site from the south and west, most likely the linear feature mapped by Sharpe and Smith [190371] some distance to the south and probably fed from near the head of the shallow valley to the west of the mine.	None	SW 70051 50166
190301	Prospecting pit north of Wheal Coates	An isolated prospecting pit excavated into spoil near the lower end of the early Wheal Coates dressing floors probably represents re-prospecting of the material deposited there, though may relate to work undertaken to locate the outcrop of the lode worked from surface by openworks in this area of the site [190289].	None	SW 70004 50189
190302	Prospecting pits north of Wheal Coates	A pair of conjoined, north-south aligned prospecting pits in the western part of the early dressing floors at Wheal Coates [190299] with a linear spoil dump extending downslope from their northern end. These may represent sampling of the deposits at the foot of the dressing floors, and are likely to be late in date.	None	SW 69992 50178, SW 69989 50185
190303	Extractive pit north of Wheal Coates	A substantial pit measuring 10m x 5.0m in plan and up to 1.0m deep located at the eastern end of openwork [190289] and accompanied by a spoil dump on its western side is likely to be a partly-backfilled extractive pit on the outcrop of the lode worked by the adjacent openwork. The eastern side of the pit appears to have been partly infilled by the material used in the levelling up of the early water-powered dressing floors to its east [190299].	None	SW 69970 50175



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190304	Prospecting pit north of Wheal Coates	An isolated prospecting pit just to the north of the outcrop of the northern lode in Wheal Coates was probably excavated in order to determine its location. The pit measures 2.0m in diameter and is 0.4m deep, having a spoil dump on its western side.	None	SW 69974 50183
190305	Openwork north of Wheal Coates	An openwork excavated on the northern lode in Wheal Coates, this taking the form of a 45m long east-west aligned U-shaped trench up to 12.5m wide and 3.0m deep. The openwork appears to slight lean [190338]. The openwork running from the eastwards from the cliffs at this location is apparently discontinuous, being in three sections (this being the easternmost), though this may reflect later partial backfilling to allow access across it. There are no associated spoil dumps, suggesting that this material was disposed of over the cliff, and that the direction of development was from west to east. The profile of the excavation suggests that it has been partly backfilled.	None	SW 69915 50183 to SW 69961 50180
190306	Openwork north of Wheal Coates	An openwork excavated on the northern lode in Wheal Coates, this taking the form of a 26m long east-west aligned U-shaped trench up to 7.5m wide and 3.0m deep. The openwork running from the eastwards from the cliffs at this location is apparently discontinuous, being in three sections (this being the central section), though this may reflect later backfilling to allow access across it. There are no associated spoil dumps, suggesting that this material was disposed of over the cliff, and that the direction of development was from west to east. The profile of the excavation suggests that it has been partly backfilled.	None	SW 69883 50173 to SW 69912 50182
190307	Openwork north of Wheal Coates	An openwork excavated on the northern lode in Wheal Coates, this taking the form of a 35m long east-west aligned U-shaped trench up to 10m wide and 3.0m deep. The openwork running from the eastwards from the cliffs at this location is apparently discontinuous, being in three sections (this being the westernmost), though this may reflect later backfilling to allow access across it. There are no associated spoil dumps, suggesting that this material was disposed of over the cliff, and that the direction of development was from west to east. The profile of the excavation suggests that it has been partly backfilled. The openwork appears to peter out at its western end, 27m from the cliff edge, and it is possible that there was originally very little overburden over the lode outcrop in this area.	None	SW 69853 50158 to SW 69884 50172
190308	Adit north of Wheal Coates	A small and almost completely choked adit entrance on the southern edge of the base of the westernmost section of openwork [190307], its mouth having become backfilled by material eroded from the sides of the openwork. The interior of the adit could not be explored, though appears to have been driven on the lode outcrop and would have drained a substantial section of worked ground to the east, possibly extending as much as 450m to the east. There is no clear associated spoil dump, and it is likely that all waste material was disposed of over the nearby cliff.	None	SW 69864 50160
190309	Clay or sand pit north-east of Wheal Coates	A clay or sand pit, measuring 25m x 25m in plan and a maximum of 4.0m deep at the eastern end of the outcrop workings at Wheal Coates. Unlike other clay sand pits nearby [190420] this pit has no outwash channel. It is marked as 'Old Quarry' on the 1st Edition OS 1:2500 mapping.	None	SW 70237 50230
190310	Extractive pits north- east of Wheal Coates	An elongated north-east to south-west aligned hollow which appears to represent the site of a pair of conjoined outcrop working pits. There is a substantial spoil dump immediately to the west of the northern end of the hollow, which is up to 3.5m deep and measures 20m long and 8.5m wide.	None	SW 70184 50221, SW 70179 50211
190311	Extractive pits north- east of Wheal Coates	A shallow hollowed area measuring 17.5m by 8.5m in plan and 0.6m deep which appears to represent the location of an elongated outcrop working pit or a pair of closely-set pits on the outcrop of the northernmost of the lodes at Wheal Coates which were worked in this fashion. The spoil from this excavation appears to have been spread around the pits or to have been backfilled into them.	None	SW 70122 50204, SW 70116 50200

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190312	Extractive pits north-east of Wheal Coates	A shallow hollowed area measuring 15m in diameter and 1.0m deep which appears to represent the location of an elongated outcrop working pit or a pair of closely-set pits on the outcrop of the northernmost of the lodes at Wheal Coates which were worked in this fashion. The spoil from this excavation appears to have been spread around the pits or to have been backfilled into them.	None	SW 70102 50193, SW 70095 50190
190313	Prospecting pit north-east of Wheal Coates	A small pit measuring 1.6m in diameter with no appreciable spoil dump on the northern side of extractive pit [190312] is probably a prospecting pit. This may be a secondary feature testing tin values in the spoil material into which it was dug.	None	SW 70097 50200
190314	Extractive pits north of Wheal Coates	A sub-triangular hollowed area aligned roughly east-west measuring 14m x 7.0m in plan and 0.7m deep which probably represents the sites of a pair of conjoined extractive pits on the outcrop of the northern lode in Wheal Coates which has been worked in this fashion. There are no appreciable spoil dumps and the waste material may have been backfilled into the excavation.	None	SW 70076 50192, SW 70070 50187
190315	Extractive pit north of Wheal Coates	A shallow sub-triangular, east-west aligned hollow measuring 6.0m x 4.0m in plan and 0.5m deep which appears to represent a backfilled extractive pit immediately to the west of [190314].	None	SW 70063 50184
190316	Extractive pit north of Wheal Coates	An isolated outcrop working pit which is sub-triangular in form and which appears to have been substantially backfilled. It is sited just to the east of reservoir [190300] and is 7.0m long, 4.5m wide and 1.5m deep.	None	SW 70063 50175
190317	Prospecting pit north-east of Wheal Coates	An isolated prospecting pit at the eastern end of the Wheal Coates site, just to the east of an area of outcrop workings. The pit measures 2.5m x 1.6m x 0.5m deep, but its spoil dump seems to have been spread out in the surrounding area.	None	SW 70244 50213
190318	Extractive pits north-east of Wheal Coates	A group of five large extractive pits on an east-west alignment extending over a distance of 50m. Individual pits are up to 5.0m in diameter and they average 3.5m deep. Unlike most of the outcrop pits to the south, these have less developed spoil dumps, which appear to have been spread out in their vicinity.	None	SW 70263 50198, SW 70252 50200, SW 70239 50196, SW 70236 50203, SW 70217 50198
190319	Extractive pits north-east of Wheal Coates	An east-west aligned linear group of large outcrop working pits or shallow shafts excavated onto a lode outcrop over a distance of 95m with extensive spoil dumps between the pits and on both their north and south sides. Individual pits are between 5.0m and 6.0m in diameter, though in places they coalesce and the sequence of their exploitation is unclear.	None	SW 70194 50182, SW 70187 50182, SW 70174 50183, SW 70164 50180, SW 70154 50176, SW 70146 50180, SW 70163 50190, SW 70158 50187, SW 70148 50184, SW 70146 50172, SW 70130 50170, SW 70108 50171
190320	Mine shaft north of Wheal Coates	Operation Minecap record Sheet 7/2 mark an unnamed shaft at this location with the notes 'shaft dimensions 2.1m x 1.4m, ok to cap, road in and dangerous'. A 3.0m Clwyd cap was fitted, the notes adding 'concreted, coned and backfilled' between June and October 1983, the backfill being topped up in March 1985. The shaft lies within an area of dense scrub and was inaccessible during the 2009 survey. The CAU survey in 1986 plotted a discrete spoil dump at this location.	Monitor the Clwyd Cap for signs of significant corrosion. Monitor shaft fills for indications of subsidence.	SW 70116 50170
190321	Extractive pits north-east of Wheal Coates	An east-west aligned chain of substantial outcrop working pits and their associated spoil dumps extending over a distance of 165m, reflecting the working of a lode outcrop by shallow, interconnected shafts. The outcrop pits individually average 5.0m in diameter and are 3.0m deep, though their spoil dumps overlap, and there is some evidence that they were worked sequentially.	None	SW 70278 50182, SW 70272 50180, SW 70263 50182, SW 70226 50174, SW 70214 50171, SW 70206 50170, SW 70198 50167, SW 70193 50164, SW 70184 50164, SW 70171 50164, SW 70150 50159, SW 70140 50159,

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				SW 70121 50157
190322	Prospecting trench north of Wheal Coates	A shallow elongated east-west aligned trench 25m long, 2.5m wide and 1.0m deep at the western end of the principal area of outcrop working pits at Wheal Coates is probably a relatively late prospecting trench designed to test the mineral content of the superficial deposits in this area. It is accompanied by relatively low spoil dumps to both its north and south sides.	None	SW 70093 50153 to SW 70069 50147
190323	Prospecting pits north-east of Wheal Coates	A cluster of 24 prospecting pits in the northern central part of the area of Wheal Coates where intensive outcrop working has taken place. Most of the pits are about 2.0m in diameter and 1.25m deep, though some are nearer 4.0m in diameter and over 2.0m deep. Most of those near the centre of the cluster appear to post-date the excavation of the outcrop working pits and the deposition of their spoil dumps, and were probably excavated in order to evaluate whether workable tin remained in this material. This area is very heavily vegetated and re-survey in 2009 proved almost impossible.	None	SW 70170 50215, SW 70169 50204, SW 70172 50199, SW 70171 50194, SW 70185 50203, SW 70191 50211, SW 70194 50203, SW 70202 50206, SW 70187 50190, SW 70192 50194, SW 70195 50188, SW 70199 50184, SW 70203 50181, SW 70211 50176, SW 70204 50194, SW 70208 50189, SW 70213 50187, SW 70218 50196, SW 70224 50184, SW 70234 50182, SW 70243 50191, SW 70247 50183, SW 70256 50181, SW 70259 50188
190324	Prospecting pits north-east of Wheal Coates	A cluster of six prospecting pits at the north-western end of the area of outcrop workings at Wheal Coates, the majority of which were excavated into the spoil from the outcrop workings, and therefore represent re-prospection of this material.	None	SW 70125 50195, SW 70132 50188, SW 70134 50181, SW 70125 50188, SW 70121 50183, SW 70166 50179
190325	Prospecting pits north-east of Wheal Coates	A pair of conjoined prospecting pits at the western end of the main area of outcrop working at Wheal Coates, probably predating the exploitation of the lodes from surface. The pits are surrounded by a common spoil dump and measure 2.0m in diameter and 0.7m deep.	None	SW 70089 50162, SW 70084 50162
190326	Prospecting pits north-east of Wheal Coates	A group of twelve prospecting pits on an east-west alignment near the southern edge of an area of outcrop working on a series of parallel lode outcrops. These lie in an area of dense scrub and could not be individually accessed during the 2009 survey, but most appear to be about 2.0m in diameter and 0.6m deep, their spoil dumps immediately adjacent.	None	SW 70156 50144, SW 70162 50142, SW 70156 50150, SW 70160 50150, SW 70164 50156, SW 70166 50150, SW 70174 50153, SW 70179 50150, SW 70211 50156, SW 70209 50151, SW 70213 50145, SW 70247 50173
190327	Mine shaft north-east of Wheal Coates	Symons 1870 map of the St. Agnes Mining District mark this as Flatrod Shaft, probably originally worked from the beam engine at SW 70288 50330 during the working period which ended during the 1860s. The shaft lies at the eastern end of an area of intensive outcrop working within a shallow hollow, being covered by a Clwyd Cap. Operation Minicap record Sheet 7/59 notes that a 5.0m Clwyd Cap was fitted to the shaft, which was subsequently backfilled, work being completed in June 1983, the fill being topped up in March 1985. There are no indications of the route of the flatrods to this shaft, which are likely to have been carried on post above ground level. A substantial level-topped spoil dump surrounds the shaft.	Monitor Clwyd Cap for indications of significant corrosion and shaft throat for subsidence.	SW 70247 50173

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190328	Extractive pits north-east of Wheal Coates	A pair of extractive pits on an east-west alignment occupy this location in a particularly disturbed area of dumps and hollows representing the working of an underlying outcrop. The pits are complex in form and have become scrubbed in and nearly inaccessible, but appear to measure 6.0m in diameter and 1.5m deep.	None	SW 70225 50163, SW 70218 50159
190329	Extractive pits north-east of Wheal Coates	A group of three extractive pits on an east-west alignment within an area of complex dumps and hollows which represents the sinking of shallow shafts on the outcrop of one of the lodes in Wheal Coates. The pits have become very overgrown and inaccessible, but appear to be about 7.5m in diameter and 2.0m deep, with adjacent spoil dumps.	None	SW 70189 50146, SW 70181 50137, SW 70174 50143
190330	Mine shaft north-east of Wheal Coates	Operation Minecap record Sheet 7/4 notes works undertaken to a mine shaft at this location. The notes read 'Open shaft, v dangerous, OK to cap, road in'. The shaft was recorded as measuring 4.0m x 4.0m at surface and 2.0m x 2.0m at bedrock level. A 4.0m Clwyd Cap was fitted and the cone was backfilled, works being completed in October 1983, the fill being topped up in March 1985.	Monitor Clwyd Cap for significant corrosion and shaft throat for indications of subsidence.	SW 70170 50142
190331	Extractive pit north-east of Wheal Coates	An isolated extractive pit sunk on the outcrop of the southernmost of the lodes at Wheal Coates which were worked in this fashion, taking the form of a hollow 8.5m x 5.0m in plan and 1.6m deep with spoil dumps spread to both its east and west.	None	SW 70218 50142
190332	Mine shaft north-east of Wheal Coates	Operation Minecap record Sheet 7/3 notes 'open shaft and v dangerous, OK to cap, road in, bat shaft' for this location. The shaft is noted as measuring 2.0m x 2.0m at the top of its opening and 2.7m x 2.0m at bedrock. The shaft was coned out, a masonry-faced concrete blockwork tower 2.2m high constructed and a steel bat grille fitted on its top. The work was carried out between April 1983 and January 1985. The record notes that the grille was repainted in 1989. Dines (1956) notes this as Water Shaft which has a short drive at 20 fathoms depth on Towanroath Lode; the deep adit may extend as far as this shaft. The vegetation surrounding the rather ugly bat tower has now grown in and the shaft is not readily accessible, but is still open.	Monitor bat castle and grille.	SW 70137 50125
190333	Prospecting pits north of Wheal Coates	A group of eight prospecting pits on an east-west alignment spread out over a distance of 82m and set just to the north of hushing trench [190337]. The majority of these features measure 1.6m diameter and 0.4m deep, with spoil dumps on their western sides, but the westernmost measures 4.0m in diameter and 0.7m deep and appears to have been excavated into the upcast spoil from the hushing trench.	None	SW 70119 50138, SW 70104 50131, SW 70098 50132, SW 70091 50132, SW 70083 50133, SW 70079 50140, SW 70062 50138, SW 70037 50134
190334	Hushing channel north of Wheal Coates	An east-west aligned V-shaped trench 130m long, 6.0m wide and up to 3.5m deep in the central northern part of Wheal Coates represents a hush - a channel excavated in part by the release of a large body of water in order to reveal the underlying bedrock, and used as a prospecting tool. Water was supplied from a reservoir immediately to the east of this trench, which is paralleled just to its south by a smaller example which joins it at its mid point [190335]. The trench has low, linear overburden dumps along both its northern and southern edges, but the bulk of the waste material which would have been produced during its development has left no trace, and must have been disposed of over the cliffs to the west. The date at which the trench was excavated is unknown, though would certainly have predated the construction of buildings downslope documented as dating from the 1872 reworking of Wheal Coates.	None	SW 69982 50128 to SW 70111 50122
190335	Hushing channel north of Wheal Coates	An east-west aligned V-shaped trench 45m long, 3.75m wide and up to 2.5m deep in the central northern part of Wheal Coates represents a hush - a channel excavated in part by the release of a large body of water in order to reveal the underlying bedrock, and used as a prospecting tool. Water was supplied from a reservoir immediately to the east of this trench, which is paralleled just to its north by a more substantial example [190334] and which it joins at its western end. The trench has low, linear overburden dumps	None	SW 70053 50120 to SW 70117 50108

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		along both its northern and southern edges, but the bulk of the waste material which would have been produced during its development has left no trace, and must have been disposed of over the cliffs to the west. The date at which the trench was excavated is unknown, though would certainly have predated the construction of buildings downslope documented as dating from the 1872 reworking of Wheal Coates.		
190336	Demolished mine building at Wheal Coates	The 1st Edition 1:2500 OS mapping shows a north-south aligned roofed mine building of unidentifiable function measuring 10m x 5.0m in plan at this location. The structure had been demolished by 1908 (OS map evidence) leaving only a platformed area where a pair of paths within the site now meet.	None	SW 69978 50137
190337	Demolished mine building at Wheal Coates	The 1st Edition OS 1:2500 mapping depicted a north-south aligned roofed mine building of unidentifiable function measuring 7.0m x 3.25m in plan at this location. By 1908 it had been demolished (OS map evidence). No trace of the structure could be found at this site though a pair of overgrown levelled platforms measuring 10m x 20m survive, suggesting that this might have been the site of a small dressing floor.	None	SW 69961 50123
190338	Leat north of Wheal Coates	A short (57m) section of leat 0.6m wide and 0.3m deep with a low upcast bank on its western side were surveyed at this location, running from the openwork to the north and fading just to the north of the 19th century mine smithy. Its alignment suggests that it may be the same as leat [190440] which can be traced from near the Wheal Coates dressing floors into the valley to its south. If this is the case, the leat is likely to have flowed from south to north, to have been employed in the operation of the openwork, and to predate the development of structures at Wheal Coates dating to its 1872 to 1998 period of working.	None	SW 69951 50172 to SW 69936 50120
190339	Ore stockpiling yard north of Wheal Coates	Immediately upslope from the small stamps water wheel and dressing floors [190340] and [190341] in the northern part of the Wheal Coates site is a small levelled platform cut into the cliff slope and measuring approximately 5.0m x 5.0m in plan. This is likely to have been a storage area for the ore which was to be fed to the stamps 10m downslope.	None	SW 69917 50124
190340	Wheelpit north of Wheal Coates	Some distance to the north of the core area of Wheal Coates are the remains of a small wheelpit which would have driven stamps serving an associated dressing floor to the south. The date of construction of this element of the site is unknown, though Dines (1956) refers to a small-scale working between 1901-2, which might have consisted of the re-processing of dump material using this site. The wheelpit consists of a massive masonry plinth 3.65m long x 2.35m wide which stands to a maximum of 2.0m high to the south. On its upper surface are a pair of walls 0.55m high and 0.6m high, these probably originally joined along the western end of the structure, though there has been considerable masonry loss in this area and possibly retaining the northern loading for a set of stamps set to the south of the plinth. The wheelpit, which incorporates some re-used masonry, is set to the north of the plinth and measures 1.15m wide x 1.65m deep x 6.15m long. One axle bearing hold-down bolt tunnel can still be seen on the head of the northern wall near its centre. The remainder cannot be seen and must have become obscured or infilled. The wheelpit walls are 0.75m thick. Its tailrace was led off downslope, passing beneath a path via a stone-lined culvert. There are no obvious signs of a feed leat for the waterwheel. The path leading towards the stamps from the north is 3.0m wide, suggesting that dump material from the openwork was the principal material reworked at the time.	The consolidation of this structure should be undertaken to arrest masonry collapse.	SW 69903 50128
190341	Tin dressing floors north of Wheal Coates	To the south of wheelpit and stamps site [190340] is a levelled sub-triangular area cut into the cliff slope measuring 20m long and 10m wide at its maximum. This would have sited a pair of buddles used to concentrate tin from the ore, though little trace of these now survives. Some revetting stonework survives along the rear face of the dressing floor, though brambles and gorse obscure most of this feature.	This dressing floor is becoming lost through scrub development. Control spread of brambles and gorse.	SW 69896 50124

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190342	Tin dressing floors north of Wheal Coates	A small rectangular platformed area measuring 12m x 8.0m cut into the cliff slope and set on the cliff edge to the north-west of Towanroath Shaft may well have been a very small scale dressing floor. There is no documentation for this site which might either relate to an early operation on the site, or one which reworked the tailings stream from the Wheal Coates dressing floors upslope. The site retains a few fragments of retaining masonry and hints of a single buddle.	None	SW 69821 50090
190343	Mine smithy at Wheal Coates	This masonry-constructed, originally gabled smithy building dating from 1910 measures 7.0m x 4.2m in plan; its walls, which are 0.6m thick stand to a maximum height of 2.7m high internally, though at the northern end of the building they have been reduced in height to no more than 0.5m. The western wall averages 0.85m high. At the interior of the southern end of the building is a plinth 0.4m high, 1.65m x 1.26m in plan which was the forge base. Above this and just to the east of its centre is a 0.3m square opening. The chimney opening for a stovepipe flue is directly above this, partly cut into the wall (0.7m x 0.3m in plan), the upper section incorporating it; the hole in the wall head being roughly 0.3m square, its form suggesting that it incorporated a steel stovepipe. In the wall to the west of the base of the forge are a pair of 0.15m square holes 1.5m above ground level which extend half way through the wall, their locations suggesting that they supported a frame holding up the eastern edge of the hood over the forge. On the eastern wall only one of these openings survives, the northernmost having been infilled. In the northern wall is a doorway 1.15m wide, whose jambs are now only 0.5m high. The floor of the building consists of levelled rab and small stone.	Some small scale masonry loss has taken place. Minor consolidation works are needed to prevent further damage to the structure.	SW 69977 50095
190344	Demolished mine building at Wheal Coates	The 1st Edition 1:2500 mapping shows the site of the 19th century mine smithy at this location, depicting a rectangular building measuring 13.5m x 4.0m in plan, an extension to its south-west measuring 10.5m x 2.25m. The building had been demolished by 1908. No trace of the structure survives at this site.	None	SW 69938 50102
190345	Demolished arsenic calciner at Wheal Coates	The 19th century arsenic calciner at Wheal Coates appears to have been an east-west aligned roofed structure measuring 9.0m x 5.0m in plan shown at this location on the 1st Edition OS 1:2500 mapping, the building probably housing a single reverberatory calciner bed. From its eastern end a 1.5m wide above-ground flue extended 14.5m, the location of its eastern end corresponding with the western end of the exposed section of the later sub-surface calciner flue [190349], suggesting that it was undergrounded from this point to the chimney to the south-east [190373]. The calciner and flue had been demolished by 1908 (OS map evidence). No above-ground traces of this structure survive.	Monitor erosion of the cliff slope in this area which is crossed by an informal path. This may reveal the foundations of the original calciner, but may also expose soils significantly contaminated with heavy metals.	SW 69947 50082
190346	Arsenic calciner at Wheal Coates	Constructed in 1913 to clean arsenic and sulphur from the dressed tin ore, the later Wheal Coates arsenic calciner is a masonry-constructed gabled structure cut into the hillslope which contains a pair of boat-shaped reverberatory calciners fired from the west and discharging to the north and the south. A gabled extension to the west of the calciner contains two rabbling openings and a damper opening, as well as a domestic fireplace. The western gable stands to 4.5m high, the southern wall of the western extension is 2.82m high (to original wall plate height) to the south and 2.2m high to the north. The western gable of the calciner is 6.5m high, whilst the gable of the western extension is about 4.5m high. The western wall of the extension contains a window offset from the centreline of the wall, this measuring 1.15m high and 0.9m wide. Four timber lintels over have some traces of woodworm. The window reveals retain flashing showing the window frame location. This wall also incorporates a fireplace and chimney, the fireplace opening measuring 0.62m wide and 0.9m high and 0.35m deep. The fireplace has a very corroded iron lintel which requires replacement. The chimney is 0.2 deep and 0.62m wide. There is a doorway to the north 1.1m wide and would have had a lintel at 2.2m above current ground level. In the southern wall is a window 1.0m wide and 1.2m high with a cill 1.2m above ground level. The cill has lost some	The calciner requires some minor consolidation works to arrest structural deterioration.	SW 69935 50087

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		stonework and requires repairs. There are paired timber slots in the widow reveals. The eastern wall is the western wall of the calciner and contains a pair of brick arch headed openings with stone slab cills (in which there are sockets for door hinges); these are 0.4m high x 0.45m wide to springings, 0.53m to top of springings set with their bases 1.5m above ground level. White china clay brick used for reveals and arches of these openings. At the centre of the wall is a damper opening with its base at 1.67m above ground level which measures 0.25m square. On both the northern and southern walls are the hearth openings (set at the northern end of the building) and the openings into which the calcined ore was raked through the rabbling openings. The arched opening near the centre of the elevation is 0.9m wide, 0.65m to springings and 0.95m to the underside of its rather flat white brick arch. At the eastern end of the buildings is a second opening measuring 0.93m wide, 1.1m high to the springings and 1.4m high to the base of the rather flat brick arch. A massive piece of granite runs from underneath the springings on the western side of the eastern opening to above the western opening. The window in the southern wall of the calciner is 0.8m wide. The eastern wall of the building is built into the slope and at its northern and southern ends the head of the wall is only 1.5m above average ground level. The gable is 3.5m above average ground level. The door into this elevation is offset to the south and measures 1.0m wide x 1.85m high, though the cill to the doorway has been broken away. The walls are 0.6m thick. Internally, the calciner consists of a pair of upturned boat-shaped calcining hearths, each with its brick-lined hearth and discharge pit, separated by the remnants of the masonry separating wall. The upper superstructures of the hearths have gone completely, but are likely to have been of brick, the space between and around them probably originally filled with soil or rab for insulation. The hearths and ash pits are 0.5m wide and 1.4m long, with stepping to their sides and internal ends. The discharge pit is 0.9m wide and 1.3m long and 0.45m deep. There is a step all around the interior of the building at the level of the bases of the damper opening. The general floor level is 0.6m below this and the remains of the dividing wall is 0.3m above this 'floor' level. On the northern wall near the centre is the flue leading to the chimney upslope. This has its base at the level of the floor step, is stone-capped and appears to be open over most of its length. It measures 0.45m square.		
190347	Demolished mine building at Wheal Coates	The OS 1:2500 1st Edition mapping shows a north-south aligned roofed structure measuring 6.75m x 6.5m at this location, probably part of the tin floors. The building had been demolished by 1908 (OS map evidence), leaving only a platformed area adjacent to the 20th century calciner.	None	SW 69927 50080
190348	Demolished mine building at Wheal Coates	The OS 1st Edition 1:2500 mapping show a north-south aligned roofed structure measuring 13.5m x 9.0m at this location at the northern end of the dressing floors. Its position suggests that it probably housed dressing floor equipment and was possibly the tin house where the ore was finished and bagged for sale. By 1908 the building had been demolished (OS map evidence). The area is now blank, although some fragments of revetting walling surround the platform on which it stood.	None	SW 69937 50075
190349	Arsenic flue at Wheal Coates	The 1910 arsenic calciner [190346] is linked to its chimney [190373] by an underground flue 55m long and probably 0.5m wide and 0.6m high. Its western end is capped in stone slabs, though an exposed section at its mid point has a brick arched top. The flue was constructed in 1872 to link the original calciner [190345] to the chimney, and seems to have been extended to the west in 1910 when the replacement calciner was constructed.	Monitor condition of grided section to ensure that it does not pose a hazard to visitors.	SW 69940 50085 SW 70006 50047
190350	Mine shaft north-east of Wheal Coates	This small capped shaft appears to be that recorded on Operation Minecap Sheet 7/48 where an unnamed shaft was covered with a 3.0m diameter Clwyd Cap, the backfilling of the cone being completed in June 1983, topping up of the fill being carried out in March 1985.	Monitor Clwyd Cap for corrosion and shaft fills for indications of subsidence.	SW 70189 50117

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190351	Mine shaft north-east of Wheal Coates	This small capped shaft appears to be that referred to on Operation Minecap record Sheet 7/48 (a number which appears at two locations on these maps).	Monitor Clwyd Cap for corrosion and shaft fills for indications of subsidence.	SW 70204 50101
190352	Mine shaft north-east of Wheal Coates	A prominent spoil dump at this location is that derived from a small mine shaft sunk on the outcrop of the southernmost of the lodes developed through outcrop workings at Wheal Coates. The shaft has been fitted with a 3.0m Clwyd Cap, though there are no records of this work within the mid 1980s Operation Minecap records, unless this is one of the shafts labelled Sheet 7/48 in this approximate location.	Monitor Clwyd Cap for corrosion and shaft fills for indications of subsidence.	SW 70213 50093
190353	Mine shaft north-east of Wheal Coates	Possibly a duplicate plotting of Shaft [190352] nearby, this is the documented location for a small capped mine shaft. There is a small spoil dump at this approximate location.	Monitor Clwyd Cap for corrosion and shaft fills for indications of subsidence.	SW 70229 50091
190354	Mine shaft north-east of Wheal Coates	Operation Minecap records sheet 7/5 records a small shaft covered with a 3.0m Clwyd Cap at this location in June 1983, the fill being topped up in March 1985. This is the documented location of the Wheal Coates explosives magazine, this being shown as a roofed circular structure on the 1st Edition of the OS 1:2500 mapping, where it was labelled 'Magazine'. On the 1908 OS mapping dating to 1907/8 this location was labelled 'Old Shaft'. It is likely that the ruins of the magazine were misinterpreted on the second visit of the OS survey team, and the Operation Minecap Team followed this up, despite the absence of a shaft at this location. No trace of the Clwyd Cap could be seen in the disturbed scrubby area documented as having been the site of the magazine.	Monitor this site for indications of subsidence.	SW 70140 50096
190355	Dam for hushing reservoir east of Wheal Coates	A 60m long, 3.5m wide and 1.0m high earthwork to the south of the principal area of outcrop workings at Wheal Coates appears to have impounded rainwater within a large triangular area to its east in order to provide a supply of water for washing a pair of prospecting hushes [190335] and [190334] downslope to the west, the water being fed down the hushes via a now destroyed sluice at the northern end of the dam. The reservoir predates a phase of prospecting by pitting [190363] which occupies most of its interior; given that this prospecting activity is likely to be related to the very extensive and early outcrop working to the north of this site, the dam and associated hushing reservoir are likely to be amongst the earliest features on the mine.	None	SW 70139 50108 to SW 70207 50033
190356	Hushing reservoir east of Wheal Coates	A reservoir enclosed by an earthwork dam [190355] provided a source of water for washing out hushing channels [190334] and [190335] to the west which were used for prospecting for lodes. The construction of the reservoir predates a phase of prospecting by pitting [190313] which occupies most of its interior; given that this prospecting activity is likely to be related to the very extensive and early outcrop working to the north of this site, the hushing reservoir is likely to be one of the earliest features of the mine. There is some evidence that the reservoir was re-used during later phases of activity on the site, a pair of contouring channels [190359] and [190360] and a cross-contour water channel [190362] leading westwards from the reservoir towards the site of the 1872 mine reservoir suggest that rainwater collecting in this pond was used to supplement that provided by the leat [190399] serving the later mine pond.	None	SW 70190 50084
190357	Prospecting pits east of Wheal Coates	A large group of 72 prospecting pits on the southern edge of the area exploited by outcrop working pits occupying an area measuring 150m x 60m. These appear to represent at least two phases of prospecting activity, those which have been cut into the original ground surface (these being principally at the eastern and western edges of this group) representing primary prospecting activity predating the development of shallow shafts along the outcrops of the lodes. The remainder (near the centre of this area) have been excavated into the upcast spoil created during the development of the outcrop workings and represent a re-prospecting of this material to determine whether it was worth re-working. The pits vary in size,	None	SW 70277 50157, SW 70269 50157, SW 70268 50163, SW 70266 50147, SW 70276 50132, SW 70278 50119, SW 70277 50106, SW 70267 50123, SW 70242 50165, SW 70251 50150, SW 70250 50142,



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		the smaller examples being 2.0m x 1.5m in plan and 0.8m deep, larger examples, which are up to 4.0m in diameter, may represent outcrop workings rather than prospecting pits in deep deposits of relocated spoil.		SW 70241 50153, SW 70243 50148, SW 70233 50153, SW 70255 50155, SW 70266 50146, SW 70230 50147, SW 70238 50138, SW 70252 50130, SW 70253 50126, SW 70248 50129, SW 70251 50118, SW 70250 50109, SW 70242 50116, SW 70237 50115, SW 70235 50114, SW 70235 50110, SW 70234 50106, SW 70230 50105, SW 70227 50114, SW 70224 50123, SW 70240 50126, SW 70236 50123, SW 70230 50123, SW 70225 50118, SW 70231 50130, SW 70227 50128, SW 70223 50126, SW 70222 50121, SW 70217 50134, SW 70213 50129, SW 70207 50134, SW 70199 50131, SW 70186 50140, SW 70188 50135, SW 70212 50104, SW 70207 50104, SW 70203 50096, SW 70199 50097, SW 70177 50092, SW 70177 50104, SW 70177 50115, SW 70173 50122, SW 70170 50093, SW 70166 50089, SW 70164 50094, SW 70172 50103, SW 70161 50101, SW 70149 50104, SW 70148 50109, SW 70153 50112, SW 70156 50115, SW 70151 50118, SW 70144 50116, SW 70161 50130, SW 70156 50129, SW 70129 50111, SW 70124 50108, SW 70120 50108, SW 70116 50114, SW 70111 50114, SW 70119 50122, SW 70113 50121
190358	Prospecting pits east of Wheal Coates	A chain of four prospecting pits with an outlying pit to their west would have been excavated to intersect the outcrop of a lode parallel to those worked in the outcrop workings to their north. The pits are typically 2.0m x 1.5m in plan, 0.6m deep and have spoil dumps on their western edges. These are likely to be primary features within this mining landscape, predating the development of the nearby outcrop workings.	None	SW 70123 50094, SW 70123 50087, SW 70123 50081, SW 70127 50077, SW 70116 50086

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190359	Water channel east of Wheal Coates	A contouring drain parallel to hushing reservoir [190356] and 43m in length is likely to be part of a surface water collection system feeding water into channel [190361] for use at Wheal Coates to the west.	None	SW 70150 50087 to SW 70173 50050
190360	Water channel east of Wheal Coates	A contouring drain parallel to hushing reservoir [190355] and 52m in length is likely to be part of a surface water collection system feeding water into channel [190361] for use at Wheal Coates to the west.	None	SW 70144 50079 to SW 70165 50032
190361	Water channel east of Wheal Coates	A 0.5m wide, 0.3m deep, 130m long channel running westwards from near the central point of dam [190355] towards the core of the Wheal Coates mine buildings may well have provided an additional source of water for filling mine pond [190394], tapping rainwater accumulating in the former hushing reservoir [190356]. The date at which this channel was excavated is unknown, but is likely to post-date 1872 when the mine pond was created.	None	SW 70164 50065 to SW 70034 50033
190362	Prospecting pits east of Wheal Coates	A north-south aligned chain of eight pits in two principal groups, the southernmost taking the form of a chain of four prospecting pits, the northernmost being a loose group of prospecting pits and slightly larger possible outcrop working pits. The prospecting pits average 2.0m x 1.5m in plan, 0.6m deep with spoil dumps on their western edges; the larger pits to the north are 3.5m x 2m in plan, 1.0m deep. These are likely to represent early features in the development of operations at the mine.	None	SW 70123 50058, SW 70129 50050, SW 70125 50039, SW 70141 50048, SW 70148 50050, SW 70142 50040, SW 70144 50034, SW 70147 50030
190363	Prospecting pits east of Wheal Coates	Much of the interior of hushing reservoir [190355] is occupied by a moderately dense scatter of 26 prospecting pits, these averaging 2.0m x 1.5m in plan, 0.7m deep and having low associated spoil dumps, these being mostly to their west. Some of the pits are arranged in chains of two or three, set across the contour, this arrangement being intended to intersect east-west aligned lode outcrops parallel to those exploited immediately to the north. This prospecting activity is likely to be early in date, preceding the development of the outcrop workings and possibly relating to a phase of operations documented in the Enys Papers during the late 17th century.	None	SW 70181 50072, SW 70193 50075, SW 70202 50080, SW 70210 50079, SW 70214 50080, SW 70222 50078, SW 70228 50084, SW 70232 50080, SW 70235 50075, SW 70233 50071, SW 70230 50074, SW 70229 50066, SW 70221 50071, SW 70217 50068, SW 70212 50071, SW 70209 50071, SW 70203 50072, SW 70198 50067, SW 70193 50068, SW 70191 50065, SW 70197 50061, SW 70205 50063, SW 70197 50056, SW 70216 50058, SW70220 50054, SW 70220 50041
190364	Prospecting pits east of Wheal Coates	A well-preserved chain of nine north-south-aligned prospecting pits running from the north of outcrop workings [190369] and [190370] would have been excavated in order to locate a lode parallel to that worked in the pits to the south. The pits average 2.0m x 1.5m in plan, 0.7m deep and have well-developed spoil dumps on their western sides.	None	SW 70170 50041, SW 70169 50035, SW 70168 50031, SW 70168 50027, SW 70170 50021, SW 70171 50018, SW 70175 50014, SW 70174 50010, SW 70178 50007
190365	Prospecting pits east of Wheal Coates	A chain of five north-south aligned prospecting pits, ranging in size from 3.0m x 2.0m in plan and 1.25m deep down to 2.0m in diameter and 1.0m deep, the smaller examples being in the northern part of this group. Each has a discrete spoil dump on its western side.	None	SW 70155 50025, SW 70158 50015, SW 70164 50006, SW 70168 49998, SW 70170 49991

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190366	Mine east of Wheal Coates	A common name for early Cornish mines, the bounds for Good Fortune mine are documented in the Enys Papers at approximately this location. The trial does not seem to have been successful, and nothing more was heard of it. There are few indications of activity in this area.	Further documentary research is required for this site.	SW 70197 50016
190367	Mine shaft east of Wheal Coates	A small shaft close to a group of outcrop working pits [190370] in the eastern part of Wheal Coates. The shaft is covered with a Clwyd Cap and sits within a hollow 5.0m diameter. The shaft has a small associated spoil dump. Operation Minecap record Sheet 7/46 notes that this shaft was coned, filled and covered with a 2.0m Clwyd Cap in June 1983, being 'topped up' in March 1985.	Monitor Clwyd Cap for corrosion and shaft fills for indications of subsidence.	SW 70194 50013
190368	Extractive pit east of Wheal Coates	An outcrop working pit 6.0m in diameter and about 2.0m deep, though completely ingrown with scrub vegetation adjacent to the footpath leading from Wheal Coates car park to Chapel Porth.	None	SW 70209 50017
190369	Extractive pits east of Wheal Coates	A group of six east-west aligned outcrop working pits on the southernmost lode in Wheal Coates, apparently developed from surface only at its eastern end. Most of this group are between 4.5m and 6.0m in diameter and between 1.7m and 2.0m deep, though the easternmost is 8.0m in diameter and 2.5m deep. All have spoil dumps on their western sides.	None	SW 70118 49988, SW 70132 49995, SW 70148 50000, SW 70155 49999, SW 70157 49993, SW 70160 49999
190370	Extractive pits east of Wheal Coates	A pair of outcrop working pits continuing the trend of [179] eastward and similar in dimensions to them, averaging 5.0m in diameter and 2.0m deep.	None	SW 70185 50002, SW 70203 50003
190371	Leat east of Wheal Coates	A low and rather sinuous linear bank (initially interpreted by Sharpe and Smith as part of an early field system), this 1.25m wide, 0.4m high bank is most likely to be the upcast spoil for a now backfilled leat linking the shallow valley to the east of Wheal Coates to its early dressing floors [190299].		SW 70144 49963 to SW 70066 50107
190372	Prospecting pits east of Wheal Coates	A group of seven large prospecting pits on an east-west alignment just to the east of the isolated chimney at Wheal Coates. The three to the west are small and shallow, but those to the east are substantial pits, 2.0m x 1.5m in plan and 0.75m deep, with spoil dumps on their western sides. The alignment of these pits is unusual, given that they follow, rather than cross the trend of the lodes at Wheal Coates.	None	SW 70046 50055, SW 70089 50055, SW 70033 50053, SW 70027 50053
190373	Free-standing chimney at Wheal Coates	A detached un-coursed lime-mortared shillet and mine waste built chimney (with a few incorporated bricks) constructed in 1872. The chimney is now 9.0m in height (8.5m to drip ring) with a surviving brick drip ring (five courses in all) but lacking its original upper brick capping courses. The chimney is vertically split internally by a 0.3m thick wall and served two flues – one running to the boiler house adjoining the all-indoor beam whim and horizontal whim, the second providing a draught to the calciner. The flue to the calciner survives, but that to the whim has lost its capping and been infilled. The chimney was constructed in 1880 and continued in use until 1914.	Monitor the condition of this structure, in particular the top courses of brickwork.	SW 70007 50046
190374	Flue between boiler house and chimney at Wheal Coates	A below ground, stone-lined flue 0.6m wide and in excess of 0.6m deep was constructed in 1872 to link the boiler serving the winding engine house [190377] and its chimney [190373] a short distance to the east. This may have been capped in boiler plate, though the covering appears to have been removed. A short open section of the flue is visible immediately to the east of the boiler house; beyond this it appears to have been infilled.	None	SW 70007 50046 to SW 69996 50036
190375	Wheal Coates tin and copper mine	Extensive evidence for outcrop mining on the cliffland to the north of Chapel Porth suggests that copper and tin have been extracted from this area for many centuries. The earliest documentary references to mineral working in this area date to 1692, when the Enys Papers provide evidence for underground mining activity. In 1791 a sett agreement between Sir William Lemon and a group of mine adventurers provides the first reference to 'Wheal Coates' and for active prospecting activity. The mine is shown on the 1st Edition of the OS 1:5280 mapping in 1804 as 'Wheal an Coats' and was documented as being active in 1815 and again in 1822. By 1828 the mine had acquired a steam pumping engine and was developing in depth, accounts surviving for operations between 1839 and 1842.	None	SW 69970 50040

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190376	Horizontal engine house at Wheal Coates	<p>The mine was sold up in 1844 and abandoned for a few years. In 1847 the mine was once again recorded as being at work on a small scale, being take over by John Taylor and Sons in 1858, though was probably abandoned not long afterwards. The mine was restarted in 1872 and equipped with a new pumping engine on Towanroath Shaft, a combined stamping and winding engine on the cliffs above, together with its associated dressing floor. Following a temporary cessation of activities between 1877 and 1880, the mine was restarted with a replacement winding engine and operations continued until 1883, the concern being wound up in 1887, though some small scale work continued at surface in the following two years. A further small-scale working is recorded between 1901-2. In 1906 the site was re-prospected and in 1910 a new steam pump was installed on Towanroath Shaft and a horizontal winding engine erected on the upper section of the site, together with new dressing floors. The costs of pumping the mine workings dry took longer than had been expected and proved costly and in 1914 the mine was abandoned. Despite efforts by the former mine manager to restart operations until 1919, Wheal Coates was never again worked. The surface remains at Wheal Coates reflect this long history of exploitation. In the northern part of the site, the landscape is dominated by rock-cut openworks and a densely-packed area of outcrop working pits, prospecting pits and trenches, hushes and their associated reservoir and the leats which fed it which are all likely to be pre-19th century in date, like the probably fire-set working on the lode outcrop where it is exposed in the cliff face below Towanroath Shaft, and in the upper sections of the sea cave known as Towanroath Vugga. Evidence for the earlier 19th century workings is slight, the isolated chimney near the road marking the site of the first pumping engine on the site; a scatter of small, now capped, mine shafts within the area originally exploited by outcrop pits and openworks probably also relate to this period. During 1872-1887 the focus of operations had moved to the west, as reflected in the locations of the surviving pumping, winding and stamping engines, the associated boiler pond and dressing floors. Other, now demolished buildings were also sited in the area immediately to their north, whilst the explosives magazine was sited to the north-east. Towanroath Shaft and the area immediately to its west were reused during the unsuccessful reworking between 1906 and 1914, some 19th century mine buildings being adapted or re-used, others like the calciner, smithy and horizontal winding engine house being constructed during this period of operations. The mine was acquired by the National Trust in 1957, Towanroath engine house being conserved in 1970, the remaining mine structures being conserved between 1986 and 1987.</p> <p>A rectangular building, constructed in 1910 to house a twin-cylinder horizontal winding engine to replace the all-indoor beam whim used in the previous workings, but re-utilising its boiler house [190377]. Of shillet and mine waste construction without quoins. Its internal dimensions are 7.35m x 6.0m with walls 0.6m thick. The rear gable (to east) is 5.0m high with a central doorway 2.2m high and 1.0m wide with three timber lintels over (now showing some signs of woodworm) and a window offset to the southern end of the wall with a cill at 0.8m above floor level which measures 1.3m x 0.8m (measured to apparent location of original lintels). The side walls (north and south) average 2.2m high. The southern wall contains a boiler house door at its western end, this being 1.1m wide x 1.9m high. The cill of this doorway has been broken away somewhat. There are two elongated slots against of the northern and southern walls, these being 0.94m wide, 1.45m deep and 7.15m long. The southern slot extends underneath the western wall of the whim engine house for its full width of 0.55m and has timber lintels over at this point. There are two windows in the eastern elevation with their cills at 0.85m from floor level, the original heights were about 0.95m and the windows are 1.9m wide. The western wall would have incorporated the whim cables opening, which would have been closed off in planking; the opening in this face is 2.0m wide, though the probable removal of the machinery through this opening has resulted in some parts of the wall being demolished in the process. A white brick 'honest repair' undertaken in 1999 was</p>	Monitor condition	SW 69992 50040

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190377	Boiler house at Wheal Coates	<p>undertaken to pick up unsupported masonry. The wall survives to 2.2m high, the height from internal floor level to external ground level being 1.13m. The floor is of concrete throughout, and incorporates a large square pit (possibly for brake and other gear) and a shallow pit to the west which would have housed the whim drum. This has a curving base and measures 2.3m x 1.7m x 0.6m deep.</p> <p>This boiler house was constructed in 1880 to serve the all-indoor beam whim engine and stamps engine and was subsequently (1910) adapted to provide steam for the nearby horizontal whim. It measures 16.55m x 3.55m wide internally at its western end, though is now wider (at 6.0m wide) where it abuts the horizontal whim engine house. It may be that the northern section of the eastern wall was demolished when the horizontal whim was constructed. There are traces of some stonework more or less continuing the line of the southern wall of the all-indoor whim engine house to the east of its south-eastern corner, though this is only to about 500mm high, is of a different construction style from the engine house and on a slightly different line. The area between this walling and the horizontal whim engine house has been infilled with rubble, possibly deliberately. An internal step matches the plinth course on the exterior of the all indoor whim, this averaging 1.45m above the ground level within the boiler house. The walls above the plinth course survive to 0.8m though are more typically between 0.45 and 0.6m high, in many cases this being close to or only just above prevailing ground level, particularly on the southern side of the building, all masonry above this level having been demolished on the closure of the mine and the recovery of materials. The highest standing section of the boiler house is at its western end where it is 3.7m high. There are traces of pointing around the original door frame on this wall reveal, the door being 2.68m wide. The boiler house had a window (or coal chute) in the south wall 2.8m in from the south-west corner, the cill being at 0.9m from ground level, 1.85m long and surviving to 0.7m high. At the eastern end of the building the flue runs out diagonally towards the chimney, but has lost its capping and can be traced for the first 1.5m after which it appears to have been infilled.</p>	Monitor the condition of this building periodically.	SW 69989 50032
190378	Winding engine house at Wheal Coates	<p>An originally hip-roofed building of shillet and mine waste construction, without quoins, constructed in 1880 to house an all-indoor beam winding engine. The engine was removed on the closure of the mine in 1889, and on the reopening of the mine in 1910 a replacement engine house for a twin cylinder horizontal winder [190376] was constructed nearby, reutilising the original boiler house [190377]. The walls of the engine house are more or less complete to wall plate level. Demolition to remove the engine on the closure of the mine resulted in the removal of the axle loading and the infilling of the whim cage pit, which would have been to the east of the house. The walls survive to an average of 4.0m high off the internal floor level. The eastern wall is 5.0m high and has a blocked doorway at its centre with its cill 0.3m above the present floor level internally, making the door 2.55m high and 1.05m wide. The original timber lintel over the door has five equally-spaced nails set into its length. The lintel is of pine and is in good condition. The window at the head of the wall has been somewhat truncated by the loss of building fabric; this opening appears to again have been 1.05m wide and had splayed reveals, but only 0.4m of the depth of the window survives. The southern wall contains the (blocked) boiler house door measuring 0.9m wide, its cill appears to be about 0.7m above the internal floor level, making the door 2.55m high. An original timber lintel incorporated into wall has some minor splitting but otherwise in good condition. The beam support timber opening is inaccessible, but appears to be 0.35m square. There are two joist pockets near the ends of the south wall at 3.8m above floor level, these being 0.3m x 0.2m in size. The southern wall is just under 6.0m high from the internal floor level. There is a pit on the south eastern corner of the floor measuring 3.0m x 1.6m in plan and 1.8m deep with two 1.5m square vertical hold down bolt tunnels on its northern side. Near the base of the pit the bolts would have run through a timber cill beam with its base 300mm off the top of the current infill to this</p>	Monitor the condition of this building periodically. Treat woodworm in lintels.	SW 69984 50035

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190379	Gas engine house at Wheal Coates	<p>pit. There are a pair of openings 300mm high and 300mm wide at the base of the pit which would have provided access to the hold down bolts. A plinth traverses the engine house from north to south near its central point and is 1.35m wide. To the west of this is a T-shaped pit marking the original location of the cylinder, this being 1.05m wide x 1.9 m deep, off this an extension 1.25m long x 1.0m runs to the west. In the eastern wall at floor level and immediately above the cylinder pit is a narrow diagonal opening 1.0m high and 0.5m wide with a rusty iron lintel which would have carried a cylinder drain pipe. Also in the northern wall are the remains of a possible opening now 1.6m wide through which the whim axle would have passed. The broken opening runs to the full height of the wall and is likely to be the result of demolition of the central section of the wall to remove the machinery. The blocked steam pipe opening in the SW corner of the building is 400mm x 300mm high and topped with a corroded iron lintel. In the western wall just off the centre is a window opening with four timber lintels, the window having splayed reveals and measuring 1.4m wide internally and 1.5m high. The cill of the broken opening in the northern wall is 0.5m above external ground level. Externally, there is a narrow plinth course 0.13m wide and a maximum of 1.7m above ground level around the whole of the building. The maximum height of the building is on the south side where it abuts the associated boiler house. The blocked boiler house door has its cill at the plinth course and is 2.2m high. This has some rough quoining and a timber lintel. The blocked rear (eastern) door is partly obscured by the western wall of the horizontal whim engine house and only 0.55m of its width is visible.</p> <p>A masonry-constructed ruin dating to 1910, which has lost all of its upper sections, the remaining walls surviving to a maximum of 2.95m high, though most are less than this, averaging 1.65m high, this building was constructed to house a producer gas plant and a gas engine used to drive dressing floor machinery. The building is 7.4m x 4.36m in plan internally and has walls 0.6m thick. It may have been built in two phases of construction, as the lower 1.6m of the wall structure are of notably better quality build than the upper sections. There is evidence for a timber closure to the western end of the building in the form of four timber channels set into the western wall ends – this appears to have been an open-ended building which was closed off in planking. The interior of the building was probably concrete floored throughout, though most of this is currently obscured by vegetation and rubble which may mask diagnostic features. Some traces of render survives on the inner faces of the walls. Extending downslope on the western end and offset to the south of the building is a 0.57m wide and 2.85m long x 0.25m deep slot which would have carried pipework or belting. Immediately downslope again is a massive concrete plinth carrying four bolts which would have supported the gas engine itself. This is on a low base 0.4m high and 4.8 long x 3.5m wide. The plinth itself is 3.65m x 1.2m and 0.45m high and is on a sub-slab, the plinth being on the southern side of the base. The building widens to the north at this point, the extension being 1.95m wide, 3.25m of its length survives; the remainder downslope has been demolished. Downslope again and to the south of the gas engine plinth is a power transfer slot which deepens to the west and with its base cut into bedrock. This feature is 10.4m long x 1.1m wide and reaches a maximum depth of 1.45m, the whole of this feature being flush-pointed in cement mortar. At the western end of the slot are a series of walls and concrete plinths which would have supported pulverisers, screens and vanning tables. The pair to the north measure 1.97m long x 0.6m wide, the plinth towards the east are narrower. Downslope again are another pair of plinths incorporating a central slot 1.76m x 0.5m wide on a concrete strip base 3.9m long, the slot between being 0.65m wide and currently 0.65m deep. To the east again are a series of four north-south orientated machine concrete bases. Some elements of these bases show damage. Downslope again is what appears to have been part of a concrete floor or a large machine base, most of which has been broken up.</p>	Monitor condition	SW 69976 50051

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190380	Demolished boiler house at Wheal Coates	The boiler house for the stamps engine house, constructed in 1872, was aligned north-south, set across its eastern elevation. This structure, which would have housed a single boiler, measured 17.75m x 5.0m in plan, steam being passed to the stamps engine via an opening in the lower part of the rear wall of the engine house. The firing end of the boiler house would have been to the south. In 1880 a purpose-built all indoor beam whim engine was installed in a new house [190378], its boiler house [190377] also supplying steam to the stamps engine. The original stamps boiler house was demolished, leaving no trace.	Minor consolidation works are required for the tops of the surviving walls.	SW 69970 50039
190381	Stamps engine house at Wheal Coates	Constructed in 1872/3 to a design by Michell of Redruth, though adapted to suit the site, the engine house was originally designed to both power the stamps and wind from Towanroath Shaft to the west via an incline down the cliff slope. After a short period of operation in this dual function mode, a new purpose-built winding engine house [190378] was constructed nearby, the boiler house adapted so as not to foul the incline road and the engine thereafter powered only the stamps, continuing in this role until the closure of the mine in 1887 when the engine was scrapped. The south-eastern corner plinth course is 300mm above ground level. On the downslope, western end of the building, the sloping ground means that the plinth is 2.8m above ground level. There are two arch-headed ground floor windows in the southern elevation, both having two courses of brick headers and splayed reveals, partial brick quoining, being 900mm wide and 1.25m high to the springings. The cill of the westernmost opening has been partly infilled, that of the easternmost has been partly lost. The steam pipe opening is below the eastern end of the eastern window in this elevation and measures 400mm wide x 750mm high. The wall thickness of this elevation at this level is 750mm. There are two symmetrically-placed middle floor windows, the easternmost being arch-headed in two courses of stretcher bricks with splayed reveals, the westernmost originally-arch-headed window was enlarged to the west and upwards during the 20th century reworking of the mine and now has a timber-lintelled head. The girder opening is above the middle floor eastern window and has three timber lintels in good condition and measures 400mm square. A pair of arch-headed windows on the bob loft are again symmetrically-placed and of similar dimensions and design to the others in this elevation. Below the western ground floor window at ground level is an opening 1.15m high and 0.42m wide extending through the full thickness of the wall. This connects with the cataract pit and has stone lintels internally and externally. Wall construction is of un-coursed mortared killas and mine waste. There are three tie bolts at the western end of the wall, these being set immediately behind the bob wall, a closely-set pair at the level of the head of the second floor windows with a pair of boiler plate patresses; below this just below the level of the base of the 2 <sup>nd</sup> floor windows is a second pair, the easternmost having lost its patress plate. A pair of hook bolts, one being just above the arch of the western ground floor window and just to the west of its centre; a second is about a metre to the west and set 1.5m lower down. About 750mm above the plinth course and 1.5m back from the face of the bob wall a rusty iron bar protrudes from the wall. The profile of the wall head on this elevation is slightly ragged there having been about 350mm of stone loss at the eastern end of the wall. The rear wall which is 0.75m thick contains the rather narrow cylinder doorway (doubling as the boiler house door) 1.21m wide and 1.94m to the springings and has three courses of brick headers. The middle floor and upper floor windows are centrally set, whilst the cylinder arch is offset to the south. The middle and upper floor windows have two courses of brick headers in their arches, splayed reveals with brick long and shortwork quoining. The spring beam openings are about 0.4m square and are set between the middle and upper window; these extend fully through the wall. The top floor window appears to be slightly narrower than the middle floor window. Most of the northern part of the gable masonry has survived, though there has been some loss to the west. 0.5m to the north of the cylinder arch at the base of the wall is an opening 0.75m wide and currently 0.2m high with a masonry lintel which was probably the steam pipe entry.	Minor conservation works are required for this structure to address limited deterioration of its structure. In the long term the collapsed masonry from the wing wall should be removed from the top of the bob wall.	SW 69964 50039

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This suggests that the floor of the boiler house was originally below the current ground level and has been infilled. The chimney is on the north-eastern corner of the house and has been built into it, though the masonry used for its construction is of a rather better quality than that used in most of the rest of the house. The chimney is truncated and its brick cap has been lost. The northern elevation includes a stone-lintelled opening measuring 0.86m x 0.44m wide near ground level – this matching the equivalent opening in the southern elevation. Above and forward of this an enlarged opening now 0.75m wide and 0.5m high with a stone lintel on its outer face. There appears to have been some stone loss at the eastern end of the original opening, which would have been about 0.4m wide. There is a single, centrally-placed ground floor window of similar design to those on the southern elevation. Above this the western middle floor window has again been modified and is now lintel-headed. The girder opening is 0.4m x 0.4m and has been slightly infilled. There are two patress plates at a level half way between the middle and ground floor window openings – again these are of crude boiler plate fabrication. Only a small part of one top floor arched window survives, as the western section of this wing wall has collapsed. Some remnant inscribed false coursing is visible on this wall adjacent to the junction with the chimney. The bob wall is to the west and is relatively plain, being almost entirely constructed of squared off mine waste. The loadings have been removed almost entirely, leaving only a pair of large stones projecting on the southern side of where these would have been sited and the scar where the loadings were removed was patched in. The plug door is square-headed, 1.1m wide; its cill has been repaired. It is spanned externally and internally by stone lintels with a timber lintel between these. The fallen section of the wing wall has been mortared into place on top of the bob wall. The wing walls have erection steps at their heads; the western section of the southern wing wall above bob wall top height is leaning in slightly. Internally, most of the bedstones have survived, the maximum spacing between opposed bolt holes being 1.0m. Most of the remaining areas of the floor are lower than the bedstones, particularly to the north and sections of the leading edge of the upper part of the stepped cylinder plat seem to have been lost. The eastern wall incorporates the cylinder opening and the two windows. Half way between the head of the cylinder opening and the base of the first floor window opening is an incorporated timber 0.07m thick, apparently in good condition. The base of the middle floor window has been cut into to construct a brick-faced socket 300mm x 300mm in size, but has been blocked in on the outside. Between the middle and upper floor windows are the openings for the spring beams and top floor joists, the inner pair being about 350mm square, the outer pair narrower – about 250mm wide x 300mm high. These have paired timber lintels over which are about 0.075m thick in good condition. The northern wall incorporates the paired holes in the cataract pit which has been infilled to about half its depth with rubble and small stone. The forward hole is an enlarged original and has a pair of 50mm thick timber planks forming the inner lintel. This opening lines up with a pair of pockets in the north wall inner face, one set at the leading edge of the cylinder plat, the second half way between this and the east wall. These have 50mm thick timber lintels. Above this are another pair of pockets at the level of the springings of the middle floor windows, the westernmost measuring 250mm x 300mm with a 50mm thick lintel, the eastern is 300mm square with a 75mm thick lintel. An infilled socket in the NE corner of the building lines up with these and has a half-round timber lintel over it. A probable fourth infilled timber socket in the NW corner of the building at this level also has a timber lintel. At the level of the head of the ground floor window, a 50mm thick incorporated timber extends to the rear face of the east wall. There are two pockets mid way between the ground floor and the middle floor windows, one in the NW corner of the house is 400mm high and 300mm wide with a granite cill and lintel. The second over the leading edge of the cylinder plat is 300mm square. Immediately below this is an incorporated timber and a patch of brickwork 300mm square, probably an infilled wall pocket. At the leading edge of the middle floor window are three incorporated timbers each 50mm thick



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		leading from the new brickwork to the rear face of the bob wall. At its eastern side a timber leads from the springings of the window back to the east wall. Above the girder opening is a 100mm step. The girder opening is 400mm x 300mm and has two timber lintels in rather poor condition. There has possibly been some stone loss over the girder opening. Intersecting the middle of the upper floor window is another incorporated 50mm thick timber which runs to the east wall. The bob wall is plain internally with a granite lintel over the plug door and some incorporated timbers immediately over this. The internal elevation of the southern wall matches that of the northern wall although there has been some significant stone loss between the base of the eastern ground floor window and the opening below and to its east. The iron lintel above this ground level opening is now very corroded and the inner timber lintel has gone. The incorporated timbers in this internal elevation match those to of the northern wall. At the springing line of the ground floor window are incorporated timbers which span a wall pocket at the eastern end of this elevation. A full length timber runs from the crown of the western middle floor window back to the east end of the wall. There are three timbers just above the spring line of the middle floor windows. Masonry around the socket for a joist in the south-western corner of the wall has been repaired. There is an incorporated timber running across the crown of the eastern middle floor window matching that on the opposite wall.		
190382	Ore haulage tramway at Wheal Coates	Ore was wound from Towanroath Shaft via a wooden tramway running up the cliffslope to the steam stamps. This was originally powered by the stamps engine house [190379], but power was subsequently supplied by a purpose-built winding engine [190378]. During the early 20th century reworking of the mine the inclined tramway was reinstated, but was powered by a new horizontal winding engine [190376]. All timber components of the incline have been removed, though the route of the cutting can be traced in the lower part of the cliffslope. A patch of cobbling adjacent to the southern side of the stamps engine house represents the area where the ore was landed at the head of the incline.	Consolidate the remaining cobbling adjacent to the stamps engine house to prevent further deterioration.	SW 69967 50034 to SW 69881 50018
190383	Ore dressing floors at Wheal Coates	The 20th century dressing floors were powered by a Tangye producer gas engine in a house to the north of the original stamps engine house [190379] and utilised some of the original terraced platforms constructed for the 19th century dressing floors. The gas engine was intended to power ten heads of Californian stamps, but it appears that these were never used and ore dressing was undertaken at a works in Chapel Combe. The 20th century Wheal Coates dressing floors are now represented by a range of rather poorly-preserved concrete bases for a range of unidentifiable equipment.	None.	SW 69952 50047
190384	Ore dressing floors at Wheal Coates	The 1st Edition OS 1:2500 mapping shows the layout of the 19th century dressing floors at Wheal Coates. Two groups of stamps were sited to the north of the engine house at its western end in an area subsequently occupied by the crushing equipment powered by the gas engine installed in 1910. Seven large buddles (two measuring 10m diameter, five measuring 7.25m diameter) were arranged on two tiered platforms separated by masonry walls to their west. Other dressing floor structures including the calciner and tin house were arranged to the north. Water was probably supplied via the main reservoir at the top of the site [190394] whilst waste water was discharged over the cliff via a cross-contour channel. Little remains of this arrangement, given that this area was reused for the 20th century dressing floors. The dressing floor terrace revetment walling seems to have been refurbished, though some sections of walling were not reused, these lying to the north and south of the 20th century dressing floors.	Monitor condition of walls and undertake minor conservation works where deterioration is found.	SW 69937 50044
190385	Miners' change house at Wheal Coates	A north-south aligned roofed rectangular structure measuring 9.5m x 5.5m in plan 24m to the north of Towanroath Shaft shown on the 1st Edition OS 1:2500 mapping may well have been the miners' dry or change house. The building was shown as unroofed in 1908 (OS map evidence). What survives is a simple rectangular, shillet and minewaste-constructed building which has been substantially demolished, its remains being 9.5m long x 4.02m wide internally	Minor consolidation works are required to the wall tops of this structure.	SW 69878 50047

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		with walls 0.6m thick standing to a maximum (on the eastern side) of between 1.2m and 1.5m high where theyrevet the cliffslope. There are traces of internal rendering and limewash. The floor has grassed over, and no internal features are visible. A fragmentary section of the south-west corner of the building survives to 1.35m high. The doorway in the western end of the building is 1.8m wide.		
190386	Miners' path at Wheal Coates	A well-cut path zig-zags down the cliffslope from a point just to the north of Towanroath Shaft leading to a high level entry into Towanroath Vugga. At its southern end there are the remains of a short flight of stone-cut steps. This miners' path may be of considerable antiquity, accessing the early cliff workings [190393], but probably have continued in use during later periods of working, the high level entry into the cliffs accessing its beach adit.	None	SW 69846 50038 to SW 69830 50006
190387	Building at Wheal Coates	On the coastal slope below Towanroath engine house, and immediately adjacent to the outcrop of the Towanroath lode in a partly quarried area containing mine spoil are the remains of a small building constructed of mine waste. Although most sections of its walls have tumbled, a section of drystone revetting masonry 3.0m long and 1.25m high runs east west on its southern side, returning to the north for a further 2.0m though at a reduced height. This appears to represent the tumbled remains of a small miners' structure whose western and northern walls have collapsed, partly within the building itself, whose interior is obscured. No trace a doorway was found. The proximity of this structure to the lode outcrop and nits location on the cliff slope suggest a miners' building, constructed during the early stages of the exploitation of the lode outcrop.	Monitor structure for signs of deterioration.	SW 69836 50035
190388	Building foundation at Wheal Coates	A mass concrete plinth just to the north of Towanroath Shaft set on a damaged concreted platform was probably the site of the compressor used to supply rock drills underground at Wheal Coates.	None	SW 69880 50022
190389	Shaft at Wheal Coates	Towanroath Shaft was the principal shaft at Wheal Coates, and was sunk on Towanroath Lode near its outcrop in Towanroath Vugga. Dines (1956) reports the lode as being 'four to six feet wide, of brecciated killas cemented by banded quartz with comb structure and much red staining, it is stoped in part.' Dines reports that the shaft is vertical to the 50 fathom level and on the underlie to the 80 fathom level below adit. The shaft was used for both winding and pumping throughout the later part of the 19th century and the early 20th century. Given the present capping it is not possible to measure the dimensions of the shaft, which is open to sea level, where it is flooded. The shaft does not access the sea cave eroded onto the lode directly, but connects to it by a short high-level cross-cut in its southern wall. The shaft has been capped using a concrete ring beam incorporating a gridded opening made up of drill steels, this work being of unknown date and probably commissioned by the Duchy of Cornwall (as mineral lords). This original 1.0m x 0.5m grille has subsequently been covered by a Lionweld type grille.	There are indications that the original grille covering the shaft has deteriorated. A secondary grille has been placed over the original but this has been damaged by visitors trying to drop stones down the shaft and has required temporary patching. It is recommended that both grilles are removed and replaced with a new, robust grille over the shaft opening.	SW 69879 50016
190390	Pumping engine house at Wheal Coates	Constructed in 1872 to a design by Michell of Redruth, this pumping engine house housed a 36" cylinder beam engine working Towanroath Shaft. The building was not constructed according to the original drawings, the windows in its eastern wall being omitted, as were three of those on the western elevation. The engine house was built from a mix of locally-derived shillet (killas) and mine waste, imported granite being used for wall corners and red brick to frame all of the wall openings except for the quoining of the plug door. The engine house measures 8.25m x 6.25m in plan, being aligned north-south, Towanroath shaft being adjacent to its northern (bob) wall. The basal plinth course is a maximum of 3.41m high, with the wing wall heads being 13.5m above ground level and the gable 16.0m high. The chimney, which is 3.8m in diameter at ground level is also constructed of a mixture of shillet and mine waste with a red brick capping, the masonry section being 14.9m	Some conservation works are needed to this structure. Tell-tales should be fixed across the cracks in the northern and southern walls to see whether there is ongoing significant movement within the structure and remedial works carried out if this is	SW 69877 50012

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		<p>high, the upper brick section (82 courses) rising to a height of 21.65m. The tops of the wing walls incorporate erection steps. The bob wall is 1.3m thick and incorporates the plug door, which 1.23m wide and 3.5m high, its arch consisting of three courses of header bricks. The eastern wall is blank apart from the timber-cilled and lintelled girder opening and a pair of tie bolts, one of these having a substantial timber patress. The western wall contains an arch-headed window in the plinth lighting (and possibly also serving as access to) the cataract pit, a pair of splay-revealed arch-headed windows lighting the ground floor and the girder opening. The rear (southern wall) contains the 1.5m wide, 2.5m high cylinder opening; above this are arch-headed windows lighting the middle floor and bob loft. This wall, like the wings walls, is 0.8m thick. Internally, the walls incorporate four rows of cut-off half-round timbers which look as if they originally supported internal framing, probably a structure installed during the 20th century reworking of the mine. The engine house was substantially reconstructed by the National Trust in 1986 to repair damage done during the adaptation of the engine house in 1910, a section of the bob wall below the plug door opening being reconstructed, as also the face and surface of the cylinder plat and sections of the rear wall. Some new brickwork repairs are visible in the arch to the cylinder opening. Cracking has occurred in the lower part of this elevation and in the upper part of the bob wall suggesting that some movement is occurring within the structure.</p>	the case.	
190391	Pumping engine house at Wheal Coates	<p>In 1910, with the reopening of Wheal Coates, a horizontal steam pumping engine was purchased from Wheal Merth, Lelant and set up on a plinth within the former pumping engine boiler house, this being constructed of material recovered from the flywheel loadings of the old stamps engine house upslope. In order to link this engine to the pitwork over and in Towanroath Shaft parts of the northern and southern walls of the pumping engine house were broken away. An angle crank set up to the north of the engine house on a concrete foundation measuring 1.8m x 1.9m, supporting a cubic machine plinth 1.2m square with two mounting bolts set into its upper surface powered the pump rods, whilst a surface balance bob was sited to the north of the shaft. The remains of the later pumping engine house now consist of a series of elongated mass concrete plinths surrounded on its western and southern sides by a single skin masonry wall 1.6m high. The concrete platform 7.2m wide contains a pair of concrete plinths; the first, 1.6m wide and 11.6m long stands 2.0m high. This supported a number of machine mountings on its upper surface. The second concrete plinth is parallel to the first and set to its east, measuring 5.7m x 1.95m wide. This incorporates a central trench 2.6m long x 0.48m wide and 0.4m deep.</p>	<p>Minor conservation works are required at the southern end of this structure. It is recommended that the eroded low section of this wall at its centre is built back up using appropriate materials to make the upper surface of the structure less readily accessible by children.</p>	SW 69874 50002
190392	Boiler house at Wheal Coates	<p>The 1872 boiler house serving the Towanroath pumping engine is shown on the 1st Edition OS 1:1500 mapping as a roofed rectangular structure 15m x 6.5m in plan, the 1908 OS mapping showing a narrow elongated extension to its west, the building eventually housing three boilers. Unusually, these were fed with a mixture of fresh and sea water, which necessitated one being taken out of service for flushing and cleaning to prevent damage, whilst the other pair fed the engine. The flue path seems to have been complex, running the whole length of the building and returning via a large flue to the chimney incorporated into the south-eastern corner of the engine house. The original boiler house was substantially altered during the 1910 reworking of the mine, resulting in the demolition of most of the original structure. A surviving wall 14.4m long on the eastern side of the southern part of the boiler house revets the cliff slope and stands up to 3.5m high and incorporates some rock outcrops near its southern end as well as a few wall sockets. The southern end of the building is represented entirely by a cut into bedrock. The northern end of the building incorporates the flue running towards the chimney; this is 0.7m wide and 1.1m high; it appears to be capped with slate slabs and its walls are of mortared coursed killas. In the centre of the southern section of the boiler house and 3.0m from its eastern wall is an elongated, raised partly revetted area which measures 8m x 3m and stands to 0.75m height. Most of this feature consists of rubble</p>	<p>Minor conservation works are needed to stabilise the remaining masonry of this structure.</p>	SW 69873 49987

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		fills incorporating granite and brick and may be the remnants of the fill between a pair of boilers. There is no obvious trace of the coal chute which would have supplied the building from the east, and it must be assumed that coal was brought along the adjacent coastal track through a door in the western wall near its southern end. There are no traces of flashing on the engine house to indicate the roof line(s) of the boiler house roof(s).		
190393	Coastal mine workings at Wheal Coates	The large cave known as Towanroath Vugga (The cave of the red sands) was eroded by the sea onto the outcrop of the Towanroath Lode, which carried both tin and copper. At its inland end, Wheal Coates adit has been driven for 46 fathoms (84m) according to Dines (1956), though according to another plan accessed by Dines, the adit reaches nearly as far as Water Shaft [190332] 280m inland from the shaft. Part of this adit system remains accessible. The lode outcrop shows signs of having been worked from the cliff face, with some evidence for stoping and for possible fire setting, whilst the roof of the cave has been quite extensively stoped away. This working is likely to be early, possibly dating to the period of operations documented in the Enys Papers in 1692, though its form suggests that it could conceivably be considerably earlier.	None	SW 69838 50007
190394	Mine pond at Wheal Coates	Water for the boilers of the stamping winding and pumping engines, as well as the dressing floors at Wheal Coates during both the 19th and 20th century workings was supplied from a reservoir on the clifftops measuring 22m x 17.5m, the reservoir being contained by stone-revetted earth banks 1.5m high. Water was supplied to the reservoir from a claypit to the east [190420] via an extensive leat [190399] and fed to the boilers and dressing floors via a well-preserved sluice in its south-western corner.	None	SW 69985 50011
190395	Quarry south of Wheal Coates	The killas used for much of the construction of the engine houses and other buildings at Wheal Coates was obtained from a coastal quarry immediately to the south of its mine reservoir [190395]. The quarry measures 21m x 15m in plan and is over 5.0m deep. There is a dump of residual spoil at its western end, whilst the route of a trackway links the quarry to the core of the site.	None	SW 69966 49996
190396	Mine to the south-west of Wheal Coates	Probably equivalent to the 'Whele Mapp' mentioned in the Enys Estate bounds book of 1720 (RIC V139, now redrawn from public access), though its bounds were surveyed as 'Whealan Nap' by John Terry of Redruth in 1779. Whele Mapp bounds were noted as lying between Wheal Coates adit, Towanroath and Wheal Rock. This appears to be a small sett of which little else is known.	Further documentary research is required for this site.	SW 69954 48952
190397	Prospecting pit to the south of Wheal Coates	An isolated prospecting pit on the cliff slope to the south of the core of the Wheal Coates site measures 1.8m x 0.75m x 0.5m deep and has a small spoil dump on its seaward side.	None	SW 69951 49953
190398	Mine road to the east of Wheal Coates	During the 20th century reworking of Wheal Coates, the mine purchased a Clayton and Shuttleworth 5 ton twin cylinder traction engine to haul coal and materials to the mine, and to transport ore to a stamping mill in Chapel Combe. Construction began on a roadway across the downs to link the mine to the Combe, but according to Sawle (pers. comm.) this roadway was never finished, and the traction engine did little work. The roadway runs from the stamps engine house [190379] southwards past the quarry [190395], swinging away to the east to link with existing trackways running southwards towards the Combe. Although the western section of the roadway has been completed, its central section consists of little more than a 3.0m wide linear spread of coarse rock, the surfacing material never having been put in place. The eastern end of the intended roadway may have been a pre-existing track, as this is overlain by an enclosure (1908 OS map plot 1612).	None	SW 69953 50027 to SW 70216 49445
190399	Leat to the east of Wheal Coates	The leat supplying the principal reservoir at Wheal Coates [190394] appears to have taken its water supply from an abandoned claypit [190420] to the west of the mine, the leat taking the form of a vertically-sided cut 0.75m deep and 0.5m wide near the claypit, where it cuts through the drainage gully of a second claypit [190425] and a probable streamworks [190428]. Across the downs, the leat is more ephemeral, averaging 0.5m wide and 0.3m deep, with a low	None	SW 69992 50000 to SW 70236 49946

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		spoil bank on its southern side which is up to 1.0m wide and 0.4m high. At its western end the leat enters the reservoir in its south-eastern corner. This appears to have been the original route of this leat, though field evidence suggests that it was re-cut at its eastern end during the 20th century reworking.		
190400	Leat to the south and east of Wheal Coates	Aerial photographs and field evidence suggests that a linear feature apparently originating in the small valley to the south-east of Wheal Coates and following a contouring course to the Wheal Coates dressing floors is likely to have been an early mine leat. This feature appears to be overlain by earthworks associated with the 19th century dressing floor, and may have continued to the north [190338], terminating at the openwork which forms the northern boundary of the mine [190305]. If this is the case, the leat is pre 19th century in date, and it would have been utilised during one of the earlier documented period of operation of the mine. The leat has become partly backfilled, though appears to be about 0.6m wide, is now 0.3m deep, and is accompanied by a low spoil bank on its southern side. Its eastern course is unclear, though may run parallel to the path which runs down the northern side of the valley in this location.	None	SW 69918 50019 to SW 70103 49867
190401	Leat to the south and east of Wheal Coates	A rather faint linear feature which can be traced northwards from the northern side of the narrow valley to the south of Wheal Coates northwards as far as a point just upslope from Towanroath engine house at Wheal Coates may be an early mine leat. Neither its source nor its destination can be identified. The feature is ephemeral, though best-preserved in its southern section where it averages 0.35m wide and 0.2m deep. There are traces of a spoil bank on its western side in places.	None	SW 69899 50033 to SW 69833 49759
190402	Prospecting pits to the south of Wheal Coates	A loose cluster of five prospecting pits in the heathland to the south of Wheal Coates in an area without any other indication of mining activity may be the only evidence for a documented Wheal an Nap. These prospecting pits, which average 1.6m x 0.8m in plan and are generally 0.6m deep with small spoil dumps on their seaward sides do not appear to have located any workable deposits.	None	SW 69908 47860, SW 69933 49854, SW 69923 49847, SW 69926 49840, SW 69936 49841
190403	Trackway leading from Beacon Drive to Chapel Porth	Now part of the local path network, this track appears to have developed to link Chapel Porth to the lower slopes of St. Agnes Beacon (meeting Beacon Drive near Beacon Farm). The track is likely to have been developed as a means to transport sea sand from the cove to the newly-developed enclosures from the heath on the fringes of the Beacon to reduce their acidity. It also passes close to the sites of St Agnes Chapel and St. Agnes Well.	Monitor condition of path surface and address erosion issues at an early stage, especially in the western section of the route.	
190404	Prospecting pit to the south of Wheal Coates	An isolated prospecting pit to the south of Wheal Coates may be associated with prospecting activity in a documented Wheal an Nap. Other groups of prospecting pits lie to the west [190402] and south of this [190407].	None	SW 70008 49859
190405	Boundary stone to the south of Wheal Coates	A small , vertically-set piece of rough granite at this location appears to be one of a set of three boundary stones (with [190413] and [190431] located during fieldwork, and probably marking the southern boundary of the Wheal Coates sett. The stone is weathered, but does not appear to have carried any markings.	Cut back encroaching vegetation	SW 70054 49852
190406	Mine to the south of Wheal Coates	Wheal Uny is mentioned in an Enys Estate bounds book dating to 1720 (RIC V139, now withdrawn from public access) as being bounded on its eastern side by Good Fortune, to the west by Wheal Level and to the north by Wheal Coates, almost certainly placing it just to the north of or in the shallow valley to the south of Wheal Coates which leads down to Chapel Porth. The sett was shown on a bounds map drawn up by John Terry of Redruth in 1779. No specific archaeological features can be associated with this sett, for which these appear to be the only documented references.	Further documentary research is required for this site.	SW 70056 49903

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190407	Prospecting pits to the south of Wheal Coates	A group of six prospecting pits in two groups (the easternmost being a tightly-grouped chain of three pits aligned north-south) on the northern edge of the small valley leading down towards Chapel Porth are likely to have been excavated in an attempt to prove the outcrop of an east-west trending lode, possibly that exploited in the nearby shaft [190408] in Wheal Uny, an early operation within this area. The pits are of conventional size and have spoil dumps on their southern edges.	None	SW 70001 49811, SW 70009 49817, SW 70016 49815, SW 70025 49825, SW 70026 49821, SW 70029 49817
190408	Mine shaft to the south of Wheal Coates	An isolated capped shaft to the south of Wheal Coates, adjacent to the footpath running from Wheal Coates car park to Chapel Porth, possibly sunk as part of Wheal Uny, a poorly-documented mine which appears to have been in this area. This appears to be the shaft documented as Operation Minecap Sheet 3/19. Although this is noted as 'Trial pit' with no record of works being undertaken, a Clwyd Cap has been fitted to this feature. No shaft is documented here on the OS 1st Edition 1:2500 mapping.	Monitor Clwyd Cap for indications of significant corrosion and shaft fills for signs of subsidence.	SW 69994 49804
190409	Prospecting pits to the south of Wheal Coates	A group of three prospecting pits on the northern side of the valley leading down to Chapel Porth which were probably excavated in order to prove the outcrop of a lode worked as part of Wheal Uny via a nearby shaft. The pits are of conventional size and have spoil dumps on their southern sides.	None	SW 70000 49789, SW 69993 49789, SW 69994 49784
190410	Prospecting pit to the south of Wheal Coates	An isolated prospecting pit at the head of the slope of the valley leading down to Chapel Porth, this may have been associated with Wheal Rock, which is documented as having been in this general location. The pit measures 2.0m x 1.0m and is 0.5m deep with a spoil dump on its south-western side.	None	SW 69918 49784
190411	Mine to the south of Wheal Coates	Wheal Rock is mentioned in an Enys Estate bounds book dating to 1720 (RIC V139) as lying to the south-west of a 'Wheal Mapp' and was mapped by John Terry of Redruth in 1779. Wheal Rock was mentioned as the former lessees of stamping mills at Chapel Porth in 1847. The most likely site for this mine is the rocky headland immediately to the north of Chapel Porth. No specific archaeological features can be definitively associated with this sett, though this area includes a number of small outcrop shafts and a pair of possible adits.	Further documentary research is required for this site.	SW 69870 49778
190412	Prospecting pits to the south of Wheal Coates	A pair of prospecting pits aligned north-west to south-east on the crest of the ridge to the north of Chapel Porth may have been associated with Wheal Rock, which is documented as having been tried in this general location. The pits have small associated spoil dumps.	None	SW 69880 49774, SW 69862 49781
190413	Boundary stone to the south of Wheal Coates	A low, rough granite marker set upright on the nose of the ridge above the valley leading down to Chapel Porth probably marked the southern boundary of the Wheal Coates sett, together with [190405] and [190431].	None	SW 69845 49763
190414	Quarry to the south of Wheal Coates	A substantial quarry adjacent to the Coast Path just to the north of Chapel Porth, marked as 'Quarry' on the OS 1st Edition 1:2500 mapping where it is shown as measuring 12.5m x 12.5m in plan with a spoil dump spilling westwards down the coastal slope for a distance of 11.5m. The function of this excavation is unknown, though it may represent a trial working on a lode outcrop and be the site of Wheal Rock rather than a quarry, whose purpose cannot be identified in this rather isolated location.	None	SW 69768 49730
190415	Adit to the north-east of Chapel Porth	An adit entrance or a small trial working driven northwards into the lower valley side from the platformed area above its base just to the north of St. Agnes Chapel. Possibly associated with a poorly-documented mine known as Wheal Rock, the adit, whose probable entrance is choked shows as a lobby 5.0m long, 2.0m wide and 1.5m deep. There are no workings on the valley sides to the north, so this feature is probably a short trial only.	None	SW 69794 49669

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190416	Extractive pits to the north-east of Chapel Porth	A group of three shallow pits sunk into the shelved area on the northern valley side of the narrow coombe extending north-east from Chapel Porth. These are aligned south-west to north east over a distance of 15m. These range in size from 3.0m x 2.0m in plan and 1.0m deep to 5.0m x 3.0m in plan and 0.5m deep, and have small associated spoil dumps on their southern sides, suggesting prospection rather than extraction, these being excavated either to test the levels of detrital tin in the head material on the valley side, or to attempt to locate the outcrop of a lode striking off the coombe.	None	SW 69790 49666, SW 69784 49663, SW 69778 49658
190417	Extractive pits to the north-east of Chapel Porth	A pair of prospecting pits cut in to the shelved area on the northern side of the coombe leading north-east from Chapel Porth. These are aligned along the shelved area and are 3.0m x 2.0m in plan, 0.7m deep with well-defined spoil dumps on their southern sides. It is possible that these were sunk to access the outcrop of a lode running parallel to the valley on its northern side, but the small spoil dumps suggest that they are prospecting features.	None	SW 69732 49636, SW 69727 49634, SW 69724 49632
190418	Clay or sand pit to the east of Wheal Coates	A former clay or sand pit, partly infilled and levelled during 1999 to create a visitor car park for Wheal Coates.	None	SW 70308 49982
190419	Probable streamwork to the east of Wheal Coates	Wheal Level is mentioned in an Enys Estate bounds book (RIC V139) of 1720 within the description of the bounds of a Wheal Uny which lay to its east and was mapped by John Terry of Redruth in 1779. The bounds probably refer to the shallow tin streamwork extending to the north of the shallow valley to the north-east of Chapel Porth, though its name suggests operations developed from an unidentifiable adit.	Further documentary research is required for this site.	SW 70245 49972
190420 41102	Clay or sand pit to the east of Wheal Coates	A very large clay or sand pit 80m long and 50m wide. The pit was shown on the 1st Edition OS 1:2500 mapping, though it is unclear whether it was then at work. It has subsequently become completely infilled with willows, though appears to be relatively flat bottomed and at least 6.0m deep.	The spread of willow growth from this feature into the surrounding landscape should be prevented.	SW 70246 49982
190421	Drainage channel for clay or sand pit to the east of Wheal Coates	An 8.5m wide, approximately 65m long outwash gully from clay/sand pit [190420] has a flat base and averages 3.5m deep. This feature was probably cut to allow the drainage of the clay pit, though material may also have been recovered from it. There is a possibility that this feature originated as a small tin streamwork.	None	SW 70230 49933 to SW 70129 49863
190422	Extractive pit to the east of Wheal Coates	An isolated outcrop working pit at the western end of dam [190423], 5.0m deep and 1.5m deep with a rather spread and vegetated spoil dump is not on any lode outcrop. It is possible that this represents a prospecting pit rather than an outcrop working pit given the absence of any other features of this type immediately adjacent to it.	None	SW 70213 49957
190423	Dam to the east of Wheal Coates	A curving earthwork dam 12m long, 5.0m wide and rising to a maximum of 1.25m high appears to have impounded water from one of the clay/sand pits immediately to the north. There are traces of a central sluice and an outwash channel downslope [190424]. The function of this dam is uncertain, though it is most likely to have been created to provide a source of water for one of the leats serving Wheal Coates to the west, and may have been the original source for the water powered dressing floors in the northern part of the site [190299].	None	SW 70219 49958
190424	Drainage channel for clay or sand pit to the east of Wheal Coates	A generally flat-bottomed shallow outwash channel from clay/sand pit [190425] averages 7.0m wide and 2.0m deep. This would have been cut to assist with the drainage of the pit whilst it was being worked, but is crossed by a dam [190423] which provided a head of water, presumably for one of Wheal Coates' mine leats.	None	SW 70220 49953 to SW 70199 49892

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190425	Clay or sand pit to the east of Wheal Coates	A relatively shallow clay or sand pit, this being 3.0m deep and relatively flat bottomed, drained by a channel running downslope [190426]. The pit was not shown on the 1st Edition of the 1:2500 OS mapping.	None	SW 70215 49991
190426	Drainage channel for clay or sand pit to the east of Wheal Coates	The drainage channel from clay/sand pit [190426]. This is flat bottomed and averages 7.0m in width and 3.0m deep.	None	SW 70203 49953 to SW 70154 49906
190427	Tin streamwork to the east of Wheal Coates	A tin bound called Wheal Druckard is recorded on a map in the Enys Papers at approximately this location in 1779. No further information is known about this working, which may have been only a proposal or a trial, or which may have been the name under which one of the small streamworks in this area [190428] was worked.	Further documentary research is required for this site.	SW 70153 49906
190428	Possible tin streamwork to the east of Wheal Coates	An elongated linear hollow which is a maximum of 15m to 18m wide though averaging 12m wide with a depth of 3.5m, its sides being near-vertical. Its base is level, though the profile of the channel is U-shaped. This may be a tin streamwork, though there are no obvious dumps in its base, as the material has been washed away downslope. The gully merges into the shallow valley to the south, which was probably also streamed for tin.	None	SW 70188 49979 to SW 70056 49766
190429	Prospecting pits to the east of Wheal Coates	A chain of three prospecting pits set on an undisturbed piece of ground between the many channels which transect this area. These may have been excavated during the development of probable tin streamworks in this area [190428]. The pits average 1.7m in diameter, are 0.4m deep and are accompanied by small spoil dumps.	None	SW 70181 49908, SW 70184 49906, SW 70186 49904
190430	Prospecting pits to the east of Wheal Coates	A chain of three prospecting pits set on an undisturbed piece of ground between the many channels which transect this area. These may have been excavated during the development of probable tin streamworks in this area [190428]. The pits average 1.7m in diameter, are 0.4m deep and are accompanied by small spoil dumps.	None	SW 70154 49887, SW 70158 49883
190431	Boundary stone to the east of Wheal Coates	A rough piece of granite set on its end on the western side of streamwork [190428] appears likely to be one of a group of three (with [190405] and [190413]) marking the bounds of a former mine set, possibly that of Wheal Coates. There is no lettering on the stone.	None	SW 70129 49879
190432	Prospecting pits to the east of Wheal Coates	A loose cluster of thirty-nine prospecting pits to the south and east of the clay works or sand pits [190420] to the north-east of Wheal Coates. These are likely to represent a mixture of prospecting activity associated with the excavation of these features and with the development of probable streamworks within the shallow valley leading from the present NT car park at Wheal Coates down to the sea at Chapel Porth. The pits are loosely arranged into a series of fairly open contouring groups of five or six, though in places there are short chains of pits in groups of threes. The majority of these pits average just under 2.0m x 1.6m in plan and 0.4m deep with spoil dumps on their downslope sides.	None	70247 49905, SW 70259 49898, SW 70273 49886, SW 70239 49882, SW 70242 49874, SW 70231 49864, SW 70237 49858, SW 70238 49855, SW 70239 49854, SW 70222 49862, SW 70221 49856, SW 70228 49851, SW 70234 49841, SW 70226 49837, SW 70223 49831, SW 70223 49827, SW 70226 49823, SW 70194 49861, SW 70197 49852, SW 70194 49846, SW 70145 49843, SW 70146 49842, SW 70148 49839, SW 70139 49826, SW 70145 49821, SW 70149 49817, SW 70155 49810, SW 70161 49805, SW



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				70168 49806, SW 70163 49826, SW 70172 49830, SW 70178 49834, SW 70180 49823, SW 70181 49802, SW 70189 49812, SW 70205 49801, SW 70211 49813
190433	Tin streamwork to the east of Wheal Coates	A short and relatively shallow linear gully to the east of Wheal Coates whose lower (southern) end connects with the narrow valley leading south-westwards to Chapel Porth is likely to be a small-scale tin streamwork. The feature is 120m long and averages between 10m and 15m wide and 3.5m deep with a V-shaped profile. Possible traces of an associated reservoir were found at its upper end, where there is a linear earthwork 1.5m wide, 0.3m high extending 20m to the north-west of the end of the excavation. Vegetation within the interior of the streamwork made it impossible to determine whether any diagnostic features survive, but exposed soils near the edge of this feature include a scatter of water rounded stone. The bases of other probable or possible streamworks nearby [190428] seem to be relatively blank suggesting that all waste was washed away down the nearby coombe to the sea. The direction of work is likely to have been from south-west to north-east.	Consider clearing scrub vegetation from the interior of this feature.	SW 70141 49818 to SW 70026 49736
190434	Prospecting pits to the east of Wheal Coates	An open group of four prospecting pits between two eroded linear hollows, both of which probably represent small tin streamworks [190433] and [190428] and which are probably related to their development. The pits average 1.75m by 1.6m in plan, are 0.45m deep and have spoil dumps on their downslope (south-western) sides.	None	SW 70097 49793, SW 70098 49787, SW 70091 49786, SW 70091 49775
190435	Prospecting pits to the east of Wheal Coates	A pair of prospecting pits in the open ground to the west of streamwork [190433] which probably relate to its development. The pits measure 1.75m x 1.5m in plan and are 0.45m deep.	None	SW 70064 49830, SW 70065 49829
190436	Leat to the south-east of Wheal Coates	A shallow linear hollow linking streamwork [190433] and streamwork [190428], apparently excavated to transfer washing water from the stream valley to the west into the central part of streamwork [190433]. The feature is relatively slight, being 0.6m wide and up to 0.3m deep, with a rather spread spoil dump on its southern side. Material upcast from the leat includes a number of water-washed stones.	None	SW 70088 49811 to SW 70089 49772
190437	Prospecting pit to the south-east of Wheal Coates	An isolated prospecting pit to the east of streamwork [190433] and probably associated with its development. The pit measures 1.6m in diameter and is 0.3m deep with a spoil dump on its south-western side.	None	SW 70119 49779
190438	Prospecting pit to the south-east of Wheal Coates	An isolated prospecting pit to the east of streamwork [190433] and probably associated with its development. The pit measures 1.7m x 1.5m in plan and is 0.3m deep with a spoil dump on its south-western side.	None	SW 70077 49748
190439	Prospecting pit to the south-east of Wheal Coates	An isolated prospecting pit in the open ground to the east of streamwork [190433] and probably associated with its development. The pit measures 1.6m in diameter, is 0.35m deep and has a spoil dump on its downslope side.	None	SW 70176 49762
190440	Prospecting pit to the south-east of Wheal Coates	An isolated prospecting pit in the open ground at the east of streamwork [190433] and probably associated with its development. The pit measures 1.6m in diameter, is 0.35m deep and has a spoil dump on its downslope side.	None	SW 70137 49747
190441	Prospecting pit to the south-east of Wheal Coates	An isolated prospecting pit in the open ground at the east of streamwork [190433] and probably associated with its development. The pit measures 1.6m in diameter, is 0.35m deep and has a spoil dump on its downslope side.	None	SW 70082 49721

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190442	Prospecting pit to the north-east of Chapel Porth	An isolated prospecting pit on the open heathland to the east of the shallow valley leading down to Chapel Porth, probably excavated as part of the prospecting activity associated with one of the small and unsuccessful early ventures documented in this general area. The pit measures 1.75m x 1.6m in plan, is 0.4m deep and has a spoil dump on its western side.	None	SW 70019 49693
190443	Prospecting pits to the north-east of Chapel Porth	A chain of five prospecting pits on a contouring north-west to south-east alignment probably excavated as part of the prospecting activity associated with one of the small and unsuccessful early ventures documented in this general area. The pits average 1.8m x 1.6m in plan, are 0.4m deep and have spoil dumps on their western sides.	None	SW 70006 49686, SW 70007 49680, SW 70009 49677, SW 70010 49674, SW 70012 49671
190444	Prospecting pits to the north-east of Chapel Porth	A pair of prospecting pits on the southern edge of the shallow valley leading down to Chapel Porth, probably excavated during attempts to develop an early mine sett within this area. The pits are 1.75m x 1.5m in plan, 0.4m deep and have spoil dumps on their downslope sides.	None	SW 69980 49688, SW 69986 49688
190445	Prospecting pits to the north-east of Chapel Porth	A chain of three prospecting pit on the open level ground to the south of the small valley leading down to Chapel Porth. These would have been excavated as part of the attempt to locate workable lodes in this area, though no subsequent development seems to have occurred. The pits are 1.75m in diameter and 0.3m deep, with spoil dumps on their north-western sides.	None	SW 70023 49642, SW 70017 49637, SW 70013 49631
190446	Prospecting pits to the north-east of Chapel Porth	A group of three prospecting pits on the hilltop to the north of Chapel Combe would have been excavated to test for lode outcrops in this area. The absence of any other mining activity in the surrounding area suggests that the venture was unsuccessful. The pits measure 1.75m in diameter, are 0.3m deep and have small associated spoil dumps.	None	SW 70196 49696, SW 70198 49693, SW 70183 49686
190447	Trackway to the north-east of Chapel Porth	An 85m long linear feature 2.0m wide that appears to be a trackway, possibly linking the track network in this area to the clay or sand pits to the north.	Manage encroaching vegetation.	SW 70174 49685 to SW 70155 49602
190448	Trackway to the north-east of Chapel Porth	A 150m long spur from the track network to the north of Chapel Combe terminates at an enclosure which seems from OS archive maps to have been enclosed between 1878 and 1908. The purpose for the creation of the track is unknown, though its heading suggests that it would have led to the road between Goonvrea and Chapel Porth.	Manage encroaching vegetation.	SW 70148 49637 to SW 70247 49527
190449	Mound to the north-east of Chapel Porth	A 7.0m diameter , 0.35m high mound adjacent to the trackway across the downs. The form of the mound is somewhat amorphous and its function could not be established.	None	SW 70148 49604
190450	Mine shaft to the north-east of Chapel Porth	A small capped shaft just to the south of the footpath linking Beacon Drive and Chapel Porth. The shaft has a small spoil dump spilling into the valley and has been fitted with a Clwyd Cap. Operation Minecap records do not include any mention of works having been done to this feature, though the presence of a Clwyd Cap suggests that works were undertaken here in 1983 as part of this scheme.	Monitor Clwyd Cap for indications of corrosion and shaft fills for signs of subsidence.	SW 69931 49735
190451	Natural feature associated with the legend of Giant Bolster north-east of Chapel Porth	Thomas Quiller-Couch's noted that there were the marks of Giant Bolster's thumbs ' <i>indented on a stone in the well, and near it, on another, the print of his foot, very large, and very like a footmark. Pins were dropped in with wishes as in many other parts of Cornwall</i> ' (Quiller-Couch 1894, 2). However, Robert Hunt's account, based on stories collected long after the destruction of the well in c 1820, noted that ' <i>there still exists, in the valley running upwards from Chapel Porth, a stone in which may yet be seen the impression of the giant's fingers. On one occasion, Bolster, when enjoying his usual stride from the Beacon to Carn Brea, felt thirsty, and stooped to drink out of the well at Chapel Porth, resting, while he did so, on the above-mentioned stone</i> ' (Hunt 1865, I, 56-8). The Giant's fingerprints were not found, but a rock near this location bears a hollow the shape of a large boot on its upper surface, this being known as the Giant's Footprint. It is possible that the two sites have been confused with one another, it having been suggested that the 'fingerprints' relate to	None	SW 69940 49719

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		a piece of naturally fretted rock sited near the Chapel.		
190452	Mine or tin streamwork north-east of Chapel Porth	Tin bounds called Wheal Hope were mapped at this general location by John Terry of Redruth for the Enys family in 1779. Almost nothing is known of the undertaking, which may have been little more than an early trial, though there are three small mine shafts on the southern side of the narrow coombe leading north-eastwards from Chapel Porth at this location.	Further documentary research is required for this site.	SW 69923 49701
190453	Mine shaft north-east of Chapel Porth	A small choked shaft, possibly representing the site of Wheal Hope, one of a group of three on the southern side of the narrow coombe leading north-eastwards from Chapel Porth. The shaft has been fitted with a Clwyd Cap, almost certainly as part of the Operation Minecap safety works programme in 1983, though this shaft is not included in the project records.	Monitor Clwyd Cap for signs of corrosion and shaft fills for any indications of subsidence.	SW 69920 49701
190454	Mine shaft north-east of Chapel Porth	A small choked shaft, possibly representing the site of Wheal Hope, one of a group of three on the southern side of the narrow coombe leading north-eastwards from Chapel Porth. The shaft has been fitted with a Clwyd Cap, almost certainly as part of the Operation Minecap safety works programme in 1983, though this shaft is not included in the project records.	Monitor Clwyd Cap for signs of corrosion and shaft fills for any indications of subsidence.	SW 69917 49685
190455	Openwork east of Chapel Porth	An openwork on the open land to the north of Chapel Porth which measures 12.5m long (east-west) and is up to 8.5m wide and 3.0m deep. Dug into shattered bedrock, its base has been infilled and levelled; there are some indications of dry stone walling on its northern side at its western end. Its spoil dump extends 18.5m to the west, is up to 2.0m high and covers leat [190474]/[190475]. Operation Minecap record Sheet 3/16 records that a small mineshaft was treated within the openwork, this being fitted with a 3.0m diameter Clwyd Cap and filled in July 1983. No trace of the Clwyd Cap can now be seen.	Monitor the interior of this feature for signs of subsidence.	SW 69922 49602
190456	Mine shaft east of Chapel Porth	Operation Minecap record Sheet 3/17 notes that a small mine shaft was treated at this location within a quarry-like excavation. A 3.0m diameter Clwyd Cap was fitted over the shaft, which was backfilled in July 1983.	Monitor Clwyd Cap for indications of corrosion and shaft fills for signs of subsidence.	SW 69885 49704
190457	Platformed area north-east of Chapel Porth	A small 'quarry' adjacent to mine workings on the southern side of the small valley leading down to the north-eastern side of Chapel Combe. The quarry, which measures 17m x 10m in plan and is up to 3.5m deep, is shown on the 1st Edition OS 1:2500 scale mapping, and is marked on the current OS mapping as 'Tip (disused)'. The levelled area here may represent the excavation for a horse whim associated with an nearby mineshaft [190456]; alternatively, the levelled area represents the site of a building or a working area associated with the nearby mining activity.	None	SW 69885 49704
190458	Prospecting pit north-east of Chapel Porth	An isolated prospecting pit on the southern slope of the small valley leading south-westwards to Chapel Combe. This lies close to a small cluster of mine shafts [190450], [190451], [190453], [190454] and [190456] and probably predated their development. The pit measures 1.6m in diameter, is 0.35m deep and has a spoil dump on its downslope side.	None	SW 69886 49692
190459	Quarry north-east of Chapel Porth	A small quarry excavated into the lower southern slope of the valley leading south-west towards Chapel Combe was probably excavated to provide building materials for nearby, now lost buildings or mine structures.	None	SW 69816 49662
190460	Adit north-east of Chapel Porth	A cut driven eastwards into the side of the valley leading down to Chapel Combe which is 5.0m long, 2.0m wide and 1.5m deep is probably a small, shallow prospecting adit. There are no shafts or other workings to the east of this feature.	None	SW 69806 49664
190461	Tin streamwork north-east of Chapel Porth	A probable streamwork developed on tin gravels which has accumulated in the shallow valley leading down to Chapel Porth from the north-east. There are indications of intermittent, small-scale working over most of the length of this valley, but at its south-western end the valley has been scoured out to a depth of up to 4.0m deep over a width of up to 10m, bedrock being exposed in much of the lower section of the valley. The evidence is consistent	None	SW 69827 49687 to SW 69744 49601

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		with small-scale stream working, the waste material from these activities having been flushed over the cliffs and into the sea.		
190462	Adit north-east of Chapel Porth	A small linear cutting into the southern side of the small valley leading south-westwards to Chapel Porth probably represents the site of the mouth of a small adit heading towards and possibly connecting with the openwork on the hillslope above. The feature is 2.5m long, 1.5m wide and 1.25m deep. It has no associated spoil dump, though any spoil disposed of into the nearby stream would have been washed down to the sea.	None	SW 69813 49655
190463	Prospecting pit north-east of Chapel Porth	A prospecting pit on the southern side of the valley leading down to Chapel Combe is immediately to the east of a possible trial adit [190462] and measures 1.6m in diameter and is 0.3m deep, with a small spoil dump to the west.	None	SW 69821 49651
190464	Extractive pits north of Chapel Porth	A chain of four outcrop working pits on a west-south-west to east-north-east alignment spread over a distance of 40m, apparently working the outcrop of a lode running inland from the Two Vugs [190470] where it outcrops. The pits average 4.0m in diameter and are between 1.0m and 1.5m in depth. They have relatively small associated spoil dumps to the south-west.	None	SW 69876 49626, SW 69866 49624, SW 69853 49619, SW 69839 49616
190465	Prospecting pits north of Chapel Porth	Flanking the chain of outcrop working pits [190464] above Chapel Porth to their east and west are a pair of prospecting pits 2.0m in diameter and 1.0m deep, with spoil dumps to their south-west. These would have been part of a cross-contour chain of small excavations down to bedrock which would have been used to prove the location of the lode outcrop.	None	SW 69850 49630, SW 69854 49609
190466	Quarry north-east of Chapel Porth	A small quarried scoop in the side of the valley leading north-east from Chapel Porth adjacent to the footpath. The scoop is 6.0m long, 3.5m wide and has a maximum back wall height of 2.0m. This is probably a small-scale quarry, excavated to provide the materials for a nearby mine structure.	None	SW 69788 49625
190467	Miners' building north-east of Chapel Porth	A small miners' building, either a store or (according to some accounts) an explosives magazine was constructed on the site of St. Agnes Chapel [190468] at Chapel Porth. This structure measures about 7.0m x 2.5m in plan internally, being defined by turf-covered earth walls up to 0.7m high with some stone reinforcement and having an entrance in its north-eastern corner. It has been suggested that the structure incorporates some of the original stonework from the Chapel, but this was not seen at the time of the 2009 survey. The levelled interior of the structure is regularly used for small barbecue fires.	Monitor this structure for damage or misuse by visitors.	SW 69757 49597
190468 25006	Demolished chapel north-east of Chapel Porth	Chapel Porth takes its name from a chapel which was mentioned as being in ruins by the early eighteenth century (Tonkin 1975-6, 204) and survived until about 1780 when it appears to have been demolished (Lysons 1814, 11). William Borlase described the site in about 1750 (quoted in Warner 1965, 41): <i>'Keeping down Porth Chapel Coom we came to the chapel which gave its name to the bottom. Its walls are in ruins and nothing worth seeing; a little Chapel yard there was round it the fences of which are still to be traced, and the ground being very loose and the turf soft you may thrust a cane down easily a foot and more makes me think there are graves here.'</i> The 1st and 2nd edition Ordnance Survey 1:2500 scale maps (c 1880 and 1907) placed the site of the chapel close to the beach at Chapel Porth. More recently, however, a site which better fits what is known of the location of the former chapel has been located in the small side coombe which runs into the lower end of Chapel Coombe from the north east. R. B. Warner (1965) identified a small three-sided earthwork enclosure on the south side of the deeply-incised stream which follows the base of the small valley, the fourth side on the south west being made up by the steeply-sloping valley side. He concluded that extant masonry walling within the enclosure was probably the remains of a small miners' powder or tool store built on the site after the chapel was dismantled. Warner noted squared stones among those making up the structure and suggested that they may have come from the chapel ( <i>ibid.</i> , 43). He also sketch-surveyed a possible platform on the northern side of the stream, opposite the chapel, together with an adjacent shell midden under a covering of blown sand, and proposed that these might	Monitor this site for inappropriate use and damage.	SW 69757 49597

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190469	Demolished holy well north-east of Chapel Porth	<p>represent an occupation area associated with the chapel. Loose blown sand and maritime vegetation are the probable context for Borlase's observation that a cane could be pushed down easily 'a foot and more'. Warner concluded that the earthwork remains suggested a chapel building lying approximately east-west and between 20 and 30 feet (6-9m) long and 10 to 15 feet (3-4.5m) wide (<i>ibid.</i>). He suggested that a tenth century date was likely for the structure, based on the potential range of ratios between the length and breadth dimensions and comparisons with a somewhat similar site at Troon, although allowing that an earlier date was possible. The dismantling of the chapel appear to have been wholesale, leaving few surviving traces. Survey reports noted the turf covered footings of a wall, up to 0.4m high forming a building of rectangular plan orientated SW-NE. The sides were reported as measuring 12.0m x 7.0m, though the ground plan appears rather larger than this, the earthworks, which are 1.0m wide and up to 0.7m high, form two sides of a rectangle which would have measured 14m x 9.0m. No traces of exposed stonework were found.</p> <p>St Agnes holy well was located at Chapel Porth, most probably adjacent to the nearby chapel in in the narrow valley which debouches at the site of the caves known as the Two Vugs at the north end of Chapel Porth beach. Joanna Mattingly (nd), who suggests that it was probably built about 1500 in a style which she terms porch-type wells, of which there are a number of other examples in Cornwall. Borlase visited the site of the chapel in the mid eighteenth century and noted that '[A] few paces below' it was St Agnes well, which he sketched and described: '<i>The water is very smooth and pure and has done wonderful cures as most of our saints wells have done, but this water is better rewarded than that of most other holy wells for it has a neat little chapel or room built over it. The water comes out from the niche A into a little square bowl of stone 16 to 17 inches [approximately 0.4m] the sides, in a plentiful little stream. Before the well are two triangular stones f.b. with holes in them to secure a covering for the holy water and to lock? it up. The water, passing through a neat channel cut in the pavement, discharges it self over the threshold B – on each side the well is a stone bench D, D, between which benches the stone pavement is 3' 7" [3ft 7in – 1.1m] wide to 6 feet [1.8m] long. Above the well are niches C, C, one likely for St Agnes, the other for the holy virgin. This chapel is 7' 1" [7ft 1in – 2.13m] high within, the roof form'd of stone, but so cemented that it does not at all take water – tis plaster'd also against the stonework which plaister has I think some thousand initial letters of ye names of persons who though to leave some memorandum behind them, but were much mistaken /so . . . neare upon another are the letters/ on the right side of the well are cut in the stone 1612, but this cannot be ye date of ye building for it must have been built before the Reformation – the dor case was prettily shaped &amp; molded in moor stone, but wanton fools have torn down the sides of it and pieces of it were lost. The door case rested on a handsome plinth, and being made of a coarse moorstone which has soft par[t]s inter-mix'd with it's [sic] hard tis eaten into boles by the spray of the sea which it faces and lying on ye brim of the cliff . . . On each side of the front there is a little buttress A G . . . which have a very good effect . . . The front without, exclusive of the buttresses is 7' 3" [7ft 3in – 2.15m] wide and 9' 1" [9ft 1in – 2.7m] high – the outside country is all stone so that but /for/ folly and spite it might have lasted entire many years' ([Borlase Parochial Memoranda, quoted in Mattingly nd, 4-5. Mattingly (nd, 7) suggests that the well structure is likely to have been decommissioned at the time of the Reformation and images removed and wall paintings obliterated. The generally good state of repair described by Borlase and the date of 1612 cut in a stone indicates that that it had probably undergone some repair subsequently. Although damaged by the mid eighteenth century the well structure survived into the nineteenth century – the Lysons (1814, ccxlvii) described it as a 'plain Gothic building of stone, about eight feet wide in the front, where is an opening with an obtuse arch' – but was reported to have been demolished about 1820, the supply of water to it having previously been diverted by mining activity (Quiller-Couch 1894, 2). It is said that the principal depredators, who carried away the stone to build a hedge, said, when remonstrated with, 'What's the good of a well without water?' (<i>ibid.</i>). The well was accompanied by a plunge pool for 'bowsenning' people thought to be afflicted by madness. The well site seems to have been completely obliterated, leaving no traces, though seems certain</i></p>	None.	SW 69739 49593

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190470 25005	Adit driven from natural cave at Chapel Porth	to have been located at the seaward end of the shallow valley leading down to the north-eastern side of Chapel Porth beach, most probably immediately above the openings to the group of caves known as the Two Vugs, to which one version of the legend of Giant Bolster and St. Agnes is attached. The driving of adits nearby would certainly have lowered the local water table, rendering the well dry. It is unclear where the carved stonework of the well was taken subsequent to its removal from this site, but it is likely to be incorporated into a local building.  A group of three caves excavated on a lode structure by the action of the sea are known locally as the Two Vugs. An adit appears to have been driven inland from the back of the southern cave at high level. It did not prove possible to explore this feature, but it seems likely to have been excavated along the outcrop of the lode in order to prospect it and may connect with outcrop workings [190464] and small shafts [190456], [190450], [190451], [190453] and [190454] to the north-east on the southern flanks of the valley.	None	SW 69730 49583
190471	Quarry north of Chapel Porth	A quarry like feature above the eastern side of Chapel Porth and adjacent to the footpath leading towards Wheal Coates may be a prospecting feature given that its spoil dump is the same volume as the excavation. The 'quarry' measures 6.0m x 3.0m in plan, is 2.2m deep and is aligned north-east, directly towards an openwork on the hilltop [190455].	None	SW 69756 49558
190472	Enclosure at Chapel Porth	A rectangular enclosure on the steep lower slopes on the northern side of Chapel Combe at Chapel Porth was originally associated with a small cottage which was demolished between 1820 and 1840 and which was occupied by a family who probably worked in the nearby tin dressing floors. The enclosure measures 35m by 45m in plan and its banks are 1.0m wide and 0.75m high, these being accompanied by an external ditch 1.0m wide and 0.3m deep. Neither the enclosure nor the cottage are shown on archive maps of Chapel Porth.	None	SW 49810 49504
190473	Site of cottage at Chapel Porth	The small enclosure [190472] on the northern side of Chapel Combe at Chapel Porth was the site of a small cottage, this, in 1820, being described as 'a miserable hut at a place called Chapel-porth', and apparently occupied by the Cowling family, one of whose children had died whilst gathering limpets. Neither the 1840 tithe mapping nor the OS 1:2500 1st edition mapping show any trace of either the enclosure or the cottage.	Further documentary research is required for this site.	SW 69806 49493
190474	Leat north of Chapel Combe	A leat which can be traced for just under 600m along the upper valley side of Chapel Combe. The leat bed averages 0.75m wide and is cut 0.35m into the slope. For most of its length it is accompanied by spoil dumps on its downslope (southern and western) sides, though in its central section there are spoil dumps 2.0m wide and 0.7m high on both upper and lower sides. The source for the water appears to have been the upper parts of the small valley running down towards Chapel Combe from its north and its eventual destination a narrow openwork or streamwork which lies just to the north of the approach road to Chapel Combe [190485]. The eastern end of the leat was obliterated as the result of the creation of an agricultural enclosure (plot 1612 on the OS 1908 1:2500 mapping), whilst the leat has been over-dumped by the spoil excavated from openwork [190455] midway along its length, suggesting that this is a relatively early feature.	None	SW 70023 49733 to SW 70220 49425
190475	Prospecting pit north of Chapel Combe	An isolated prospecting pit adjacent to leat [190474] measures 1.8m x 1.0m in plan and is 0.4m deep with a small spoil dump on its southern side.	None	SW 69973 49494
190476	Leat to the north of Chapel Combe	A 165m section of a mine leat which is up to 0.75m wide and which has a bank on its southern side which measures 1.5m wide and 0.4m high. The leat fades at its eastern end; to its west, it merges with [190474] which suggests that it represents an alternative course along which the water was carried. The direction of flow of the leat is uncertain, though it is probable that it flowed from west to east, serving linear mine working [190485].	None	SW 69952 49503 to SW 70107 49452

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190477 41071	Wheal Freedom	The sett of Wheal Freedom was shown on Symons' map of the St. Agnes Mining District dating to 1870 as occupying the downs to the north of Chapel Combe, being bounded to the north by Wheal Coates and to the east by West Polbreen. Dines 1956) grouped Wheal Freedom with East Charlotte, which occupied ground to the south of the stream (this mine was previously a separate entity). Dines reports that the mine worked only intermittently, producing small amounts of copper and tin, copper output being recorded in 1828, 1829 and 1862 and tin in 1908-9. The productive area of the mine lay in the south-eastern part of the sett, and there is little evidence that the early prospective work undertaken in its western part was followed up.	None	SW 70033 49550
190478	Bank north of Chapel Combe	A 55m long section of earth bank 1.7m wide x 0.3m high with a shallow ditch 1.0m wide and 0.3m deep on its eastern side running cross contour. The function of this bank is unclear, though it probably represents the remains of a pasture boundary or a mine sett boundary.	None	SW 70013 49438 to SW 69992 49389
190479	Prospecting pits north of Chapel Combe	A pair of prospecting pits aligned north-south just to the east of bank [190478] on the northern slopes of Chapel Combe. These are of standard dimensions and have spoil dumps on their downslope sides.	None	SW 70004 49408, SW 70000 49402
190480	Quarry on north side of Chapel Combe	A small quarry immediately to the north of the approach road to Chapel Combe which measures 10m x 8.0m and which has a back face 5.0m deep cut into subsoil. There is no appreciable spoil dump. The quarry was shown on the 1st Edition OS 1:2500 mapping (as 'Old Quarries') and may have been excavated to provide material for road surfacing.	None	SW 69986 49377
190481	Prospecting pits north of Chapel Combe	Three prospecting pits aligned north-west south-east on the northern slopes of Chapel Combe. These are relatively small and isolated examples, and have spoil dumps on their downslope sides.	None	SW 70051 49405, SW 70060 49387, SW 70064 49381
190482	Quarry on north side of Chapel Combe	A quarry measuring 16m x 14m and a maximum depth of 6.0m excavated into fractured shillet bedrock, exposing a narrow vertical lode in its north-eastern corner. Its spoil dump is sited on the southern side of the approach road to Chapel Combe. The quarry is shown on the 1st Edition OS 1:2500 mapping (as 'Old Quarries'), and was probably excavated to provide road construction material.	None	SW 70051 49354
190483	Quarry on north side of Chapel Combe	A small quarry just to the north of the approach road to Chapel Combe measuring 11m x 8.5m with a maximum depth of 5.0m. There is no spoil dump and the quarry, shown on the OS 1st Edition 1:2500 mapping (as 'Old Quarries'), was probably excavated to provide a source of road construction material.	None	SW 70064 49345
190484	Quarry on north side of Chapel Combe	What appears to be a substantial, but largely backfilled quarry, shown on the OS 1:2500 1st Edition mapping as 'Old Quarries' just to the north of the approach road to Chapel Combe. The interior of the quarry appears to have been backfilled and most of its area reclaimed as a small agricultural enclosure (OS 2nd Edition 1:2500 OS mapping plot 1610) which contains a mine shaft [190671] from which the backfill material may well have derived. The quarry measures 50m north-south, but only 10m of its width now survives as a very overgrown linear hollow along the western side of the agricultural enclosure. The enclosure is bounded to the west by a stone-faced bank up to 2.0m high.	None	SW 70095 49358
190485	Tin streamwork north of Chapel Combe	A substantial, elongated linear hollow running parallel and to the north of the approach road to Chapel Combe. The upper section of this feature, which lies outside NT ownership is densely vegetated and could not be accessed for survey. The feature has been infilled where it is crossed by the Chapel Combe road; beyond this point it turns to the west and runs as far as the stream in the base of the Combe. In its lower section, the gully is more or less V-shaped, up to 10m deep and 12m wide at its top, though narrowing to a 3.0m to 5.0m wide base. The sides of the gully are steep and heavily eroded and the course of the gully is, in places, quite sinuous. There do not appear to be any obvious spoil dumps associated with this feature, although the valley floor downstream towards Chapel Porth is cloaked in deep deposits of silt. Given the probability that leat	Further documentary research is required for this site.	SW 70320 49374 to SW 70027 49256

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		[190474] fed water to the head of this feature, this seems likely to have been a tin streamwork, though one of an unusual form. If this was the case, the tin washed from the gully would have been collected and taken to one of the sites further down the Combe for dressing. This is likely to be an early mining feature, though appears to be undocumented.		
190486 53510	Site of WWII beach defences at Chapel Porth	Accounts of this area during World War II indicate that beach defences were constructed here to prevent an enemy landing. The defences consisted of barbed wire entanglements with land mines, these being removed following the cessation of hostilities in 1945 leaving no traces. A 1941 air photograph shows a curving wall (HER PRN 53510) extending across the beach at Chapel Porth, this being likely to be a tank barrier of a type known from other beaches such as Porthluney, at Caerhayes (HER PRN 170560), and at Kennack Sands on the Lizard (HER PRN 166881, 166883). An undated but probable wartime photograph of a group on the beach at Chapel Porth shows what appears to be a largely destroyed concrete barrier topped by barbed wire entanglements on metal uprights (Benney 1988, 47). Behind this, within the present car park, a flat-roofed rectangular building constructed of concrete blocks is visible, and it is possible that this was of military origin, this subsequently being re-used as a refreshment kiosk [190487]	None	SW 69742 49483
190487	Site of café at Chapel Porth	The original beach café at Chapel Porth was sited just to the east of the sea wall and was probably built during World War II as part of the beach defensive works. Archive photographs show it to have been constructed of blockwork, the cafe to the north being rendered, the southern section taking the form of a seating area. The whole of the structure was covered with a timber-constructed flat roof. The building was replaced by a purpose-built new cafe in 1957 and was subsequently demolished.	None	SW 69750 49479
190488	Lifeguard and carparkers hut at Chapel Porth	Constructed in 1985/6 and built into the bank at the end of the road leading to Chapel Porth car park, this building provides a base for both the lifeguards and the National Trust car parker. The structure is of modern construction of material brought in from elsewhere and utilises reclaimed cut porphyry for its quoins and the framings to wall openings and a mass concrete roof. The building is 2.6m high on its south-west corner, and its western side is 3.05m wide, this elevation incorporating a timber double shuttered window which is 1.8m x 950mm with a timber lintel and a sloping slate cill. The building extends into the bank a further 1.8m to the north. The southern elevation is 4.4m long and incorporates two doorways, the western being 900mm wide x 2.0m high, the adjacent eastern doorway being 750mm x 2.0m. Both are fitted with plain vertically-planked tanalised timber doors; there is a U-section timber gutter above. Adjacent to the eastern doorway is a small timber shuttered window measuring 500mm x 700mm with a sloping slate cill and cut quoins as elsewhere on the building. Walling forming an extension to the building extends along the road verge for 1.7m and incorporates a 300mm ceramic pipe with a glass porthole in its end. The height of the building at the east end of its southern elevation is 1.85m.	Minor conservation works are required to treat or replace woodwormed timber lintels.	SW 69765 49488
190489	Demolished dressing floor structure at Chapel Porth	The 1st Edition OS 1:2500 mapping showed a 9.0m x 4.5m plan structure at this location, this probable settling tank being a component of the dressing floors at Chapel Porth. This feature had been demolished by 1908 (OS map evidence).	None	SW 69748 49463
190490	Demolished dressing floor structure at Chapel Porth	The 1st Edition OS 1:2500 mapping showed a 14.5m x 5.5m plan double-bayed settling tank at this location, this being a component of the dressing floors at Chapel Porth. This feature had been demolished by 1908 (OS map evidence).	None	SW 69757 49456
190491	Demolished dressing floor structure at Chapel Porth	The 1st Edition OS 1:2500 mapping showed a 16.75m x 6.0m plan roofed structure at this location with an extension on its northern side measuring 14m x 3.0m, this being one of the buildings making up the dressing floors at Chapel Porth. This feature had been demolished by 1908 (OS map evidence).	None	SW 69764 49462



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190492	Substantially demolished dressing floor structure at Chapel Porth	The 1st Edition OS 1:2500 mapping showed a 22m x 6.0m plan roofed structure at this location, partly covering a pair of large diameter buddles, this being one component of the dressing floors at Chapel Porth. This feature had been demolished by 1908 (OS map evidence), though its northern wall forms the edge to the carpark at this location.	None	SW 69780 49474
190493	Demolished structure at Chapel Porth	The 1st Edition OS 1:2500 mapping showed an 8.15m x 4.15m plan roofed structure at this location, this building lying to the south of the wheelpit and almost certainly housing the stamps at Chapel Porth. This building survived until 1908 (OS map evidence), by when it had been extended and a pair of structures added on its southern side. The building was subsequently demolished, and now partly sites of the present public toilets.	None	SW 69790 49467
190494	Site of tin dressing floors at Chapel Porth	Tin dressing floors probably operated at Chapel Porth for several centuries, a pair of 'tin stamping houses' at Chapel Porth being leased for 21 years in December 1683. In 1728 'White Polbrean stamping mill at Porth Chapel Coombe' was recorded. In 1792 stamping mills at Chapel Porth were again being leased. In 1846 the Royal Cornwall Gazette carried an advertisement for stamping mills at Chapel Porth occupied by the Wheal Charlotte or North Towan adventurers and by the Wheal Coates adventurers whilst the Penzance Gazette for 1847 advertised the leases of two stamping mills at Chapel Porth 'now or lately' occupied by the Wheal Rock adventurers. An early 19th century account of the area (Tredinnick nd) suggests that as many as 300 people worked on the tin dressing floors in Chapel Coombe. A photograph from Clive Benney's collection shows the remains of the last set of stamps at Chapel Porth. Taken during the early years of the 20th century, this shows a high breast-shot waterwheel of about 20 feet diameter. To its north are the remains of between four and six heads of stamps. Another photograph, probably taken during the 1930s, shows the remains of the waterwheel on the point of collapse. Most of the masonry structure of the wheel pit and stamps seems to have been cleared away not long after World War II when the public toilets were constructed on their site. The remains of the structure consists of masonry walling abutting the road nearby and rising a height of 7.25m above the present car park level. This cement-coped wall runs east for 5.56m, returns to the south for 2.75m, then to the west again for 1.5m; the wall then returns to the south for 6.0m then back to the east for 4.75m, where it abutted by a pair of beach cobble revetting walls which probably represent lead abutments. It is difficult to determine exactly where the wheelpit originally stood, though it appears from map evidence that the high southern wall represents the northern side of the wheelpit, though this has been considerably modified through the demolition of adjacent structures. The wall coping probably dates to the years after World War II when the toilet block [190495] was constructed.	Periodically monitor the condition of the remaining walling of this structure.	SW 69794 49466
190495	Toilet building at Chapel Porth	A toilet block constructed as a lean-to on the western side of the remains of the wheelpit at Chapel Porth was constructed shortly after 1936, when a grant of land was made for the construction of public conveniences at Chapel Porth (CRO X/399/1). It measures 5.5m x 3.95m in plan, is 2.5m high at the lower edge of its single pitch roof and is constructed of roughly squared mine waste and granite mixed with locally-derived un-coursed shillet. The quoins to the wall corners and openings have clearly been recycled from another building. The building is internally divided into three for men, women and disabled users. The doors are brown painted tanalised timber with vertically-set planking, lintels are timber and painted brown, the door cills are of slate whilst the gutters are ogival in form and painted red. The roof is of diminishing course scantle slates and incorporates two fixed rooflights. To its east, and constructed on the site of the wheelpit is a small masonry-built service block 3.75m x 2.5m in plan and 6.5m long. This appears to have been constructed in stages from 1957, has a flat mass concrete roof and incorporates a storage room. At the eastern end of this block a small stone-built store 1.4m x 0.68m in plan and 2.05m high is the most recent addition.	None.	SW 69795 49460

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190496	Site of café at Chapel Porth	The original timber-constructed refreshment hut at Chapel Porth was sited adjacent to the access road on a platformed area adjacent to the former dressing floor structures. This temporary structure was demolished in 1957 and replaced by a purpose-built café in the newly-created carpark.	None	SW 69801 49465
190497	Demolished dressing floor structure at Chapel Porth	A roofed structure measuring 9.0m x 4.5m was shown on the 1st Edition OS 1:2500 mapping, this being part of the Chapel Porth dressing floors. The building had been demolished by 1908 (OS map evidence).	None	SW 69781 49447
190498	Demolished dressing floor structure at Chapel Porth	The largest of the roofed structures making up the Chapel Porth dressing floors, this large building measuring 26.5m x 5.5m in plan with two substantial extensions on its southern side lay at the eastern end of this complex of buildings and associated structures in 1878 (OS map evidence). By 1908, the majority of this structure had been demolished, having been replaced by a pair of smaller buildings adjacent to the stamps building [190493].	None	SW 69793 49453
190499	Site of café at Chapel Porth	The location of the first permanent café at Chapel Porth built by the National Trust in 1957. This simple rectangular gable-roofed masonry-constructed building with a timber clad southern elevation was subsequently extended to the south, but was destroyed by arson in 1984. Following its demolition, this building was replaced by the present cafe.	None	SW 69800 49448
190500	Café at Chapel Porth	Chapel Porth Café. Built to replace the cafe which burnt down in 1984, this modern structure is entirely built of thin pieces of horizontally-laid shillet/slate, mostly coursed, has projecting built-up corbels at eaves, and a diminishing course scantle slate roof with a dark grey ceramic ridge tile. The building is L-shaped, the western block measuring 4.05m wide x 5.9m long x 2.35m to eaves, whilst the extension to the south is 5.6m long x 3.8m wide. The western elevation of the café has two openings, each 700mm x 500mm under brown-painted timber lintels and with sloping slate cills. At the centre of the elevation is a tanalised timber louvred ventilator with a brick ventilator above this, topped by a security alarm box. The gutters are cast aluminium of an ogival pattern and are painted dark red. The southern elevation has a shuttered service opening 3.7m wide x 1.1m high with polished black slate cill, the shutter being of red painted aluminium with red-painted box-section aluminium reveals and has a timber lintel over the opening. The ogival pattern gutters and timber fascias are painted dark red. The western elevation of of the southern extension has an opening 3.55m wide and 2.0m high under a brown-painted timber lintel 300mm square. The eastern end of the southern wall of the café is cement rendered and incorporates a tanalised timber vertical planked security door giving access to the cafe. The walls of the southern extension to the building are 450mm thick, whilst the interior of the extension has plain, un-rendered stone walls with a 450mm wide bench around the inside faces of the western and southern side walls. The southern elevation of the extension sites a full width bench seat. The eastern elevation of the building appears to be part of the former cafe and has an opening near its northern end of the building which is 1.17m x 1.1m in size, containing vertically timber planked plain paired tanalised wooden shutters with brown painted timber lintel above. Again the timber soffit and ogival profile guttering is painted dark red. The northern elevation of the building is enclosed with a small yard area and contains a door and a blocked window into which an extractor fan has been installed. Immediately adjacent to the north-eastern corner of the cafe is a small timber-constructed garage for the quad bike used by the lifeguards. The northern wall of the yard is an original masonry wall which would have delineated the periphery of the former dressing floors. The building again suffered fire damage in 2007, requiring significant repairs.	None	SW 69803 49449

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190501	Site of dwelling at Chapel Porth	The site of a small bungalow on the eastern side of Chapel Porth built circa 1900 by Joe Tremewan for his niece Winnie Rickard, which she subsequently ran as a tea room and boarding house. The bungalow continued in use until 1957, when Chapel Porth was acquired by the National Trust. The bungalow site was acquired as a separate purchase (for £1,450.00) by the NT in order to prevent its redevelopment, and was reported as containing a sitting room, dining room, kitchen and three bedrooms, water being supplied by a well. The structure was timber constructed with an asbestos sheet roof. Given the condition of the structure the bungalow was demolished in 1959. The bungalow appears in many of the 20th century views and postcards of Chapel Porth. Its site remains as a levelled platform to the south of the stream at Chapel Porth, though has left no other traces. The former location of its well is unknown.	None	SW 69783 49409
190502	Leat in Chapel Combe	The stamps and dressing floors at Chapel Porth were supplied with water by a pair of leats tapped much further up the Combe and serving a number of works along their course. This, the upper leat, has its source near Charlotte United Mine, its upper section, which served the Old Century Works [190510] and a probable stamping mill [190505] destroyed during the construction of the northern abutments of the US Army bridge [190504] fed the waterwheel at Chapel Porth [190493]. The leat can be traced from adjacent to the bridge site for a distance of just under 200m, running just to the south of the approach road to Chapel Porth. At its western end it is defined by a 20m long 0.7m high retaining wall of beach cobbles and a 20m long, 3.0m high wall of mixed cobbles and mine waste which run to the head of the wheelpit. To its east, the leat is less easy to trace, having been infilled by material deposited during phases of road widening, though is discernible as an intermittent linear hollow.	Control the spread of gorse growth in and on this feature.	SW 69828 49441 to SW 69961 49362
190503	Leat in Chapel Combe	The lower leat feeding the dressing floors at Chapel Porth seems to have had its source at a dam across the valley floor just to the east of the US Army bridge [190504], though the section immediately downstream from this was obscured by its construction in 1944. Further downstream it is visible as a partly infilled linear hollow near the northern side of the valley base. At its western end it seems to have run at the level of the base of the lower revetting wall leading to the wheelpit, and its course is lost 30m to the east of the present cafe. Unlike the upper leat [190502] this water course is not documented on the 1st Edition 1:2500 OS mapping.	Control the spread of gorse growth in and on this feature.	SW 69816 49438 to SW 69956 49357
190504	Site of WWII bridge in Chapel Combe	A timber road bridge was constructed across the stream in the base of Chapel Combe by US Army engineers in the 2nd week of June 1944 to provide a crossing point on the stream for the new road which they cut from Chapel Porth up to Mulgram Hill and on to Towan Cross. The timber bridge appears to have been removed not long after the end of World War II, though its earthwork abutments still survive.	Consider the reinstatement of a timber footbridge at this location to enable visitors to cross the stream at this point. Some stabilisation of the earthwork abutments would be required.	SW 69959 49351
190505	Demolished dressing floor structure in Chapel Combe	The 1st Edition OS 1:2500 mapping showed a roofed building measuring 8.75m x 3.75m in plan with a small extension to its east at this location, with a second structure immediately to its north [190506]. The structure appears to be fed by a leat [190509] from the east and may well have housed a waterwheel and a small set of tin stamps, the wheel being housed in the eastern extension to the building. By 1908 the building was shown as unroofed (OS map evidence). Construction of the approach road to the US Army bridge appears to have completed the obliteration of this structure, though its footings and the base of the wheelpit may survive below the present ground surface at this location.	None	SW 69972 49363

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190506	Demolished dressing floor structure in Chapel Combe	A small rectangular unroofed structure measuring 7.25m x 4.25m in plan was shown at this location on the 1st Edition OS 1:2500 mapping, its location at the western end of a leat and its proximity to probable tin stamps [190504] suggesting that it might have been a small header pond for the adjacent water wheel. The building was not shown on the 2nd Edition OS 1:2500 mapping, and any remains would probably have been affected by ground works at the northern end of the approach road to the 1944 US Army bridge. A short panel of revetting stonework on the edge of the present roadway to Chapel Porth probably represents the last remains of this pond.	None	SW 69979 49369
190507	Demolished dressing floor structure in Chapel Combe	An apparently roofed structure measuring 6.35m x 5.0m was shown in the base of Chapel Combe some distance to the west of the New Century tin dressing floors and to the east of the probable small tin stamping mill [190505] sited near the US Army bridge [190504]. This structure is linked to the small stamping mill by a length of either walling or a leat (the mapping does not make it clear what this linear feature was) but its function is unclear. By 1908 (OS map evidence) this feature was unroofed. No features survive at this now very waterlogged location.	None	SW 70005 49340
190508	Demolished dressing floor structure in Chapel Combe	An apparently roofed structure measuring 5.5m x 3.75m was shown immediately to the south of the leat feeding probable tin stamping mill [190505] 60m to its west. It is unclear what the function of this structure might have been, though it was probably associated with tin dressing operations. It was shown as unroofed on the 1908 2nd Edition OS map and is now represented by a roughly level platform in a boggy area of the valley bottom.	None	SW 70026 49328
190509	Leat in Chapel Combe	A leat on the northern side of the base of Chapel Combe which can be traced from the western boundary of an agricultural enclosure to the east (though the OS 1st Edition 1:2500 mapping shows that its source was the stream 70m to the south-east of this. The leat served the waterwheel at the Old Century Works [190513] and the possible stamping mill [190505] which was sited just to the north of the US Army bridge, the tailrace from which probably continued westwards as the higher leat [190503] serving the stamps at Chapel Porth. The leat course is only intermittently accessible due to vegetation conditions, the section immediately to the west of the wheelpit being assumed to survive. To the west again the leat is a prominent feature to the south of the access road to Chapel Porth, being 0.8m wide and 1.0m deep, with a prominent bank 3.0m wide and 1.25m high on its southern side. To the east of the wheelpit, the leat was revetted by a 3.0m high drystone wall which has been partly overdumped in its central section. The leat must have bridged streamwork gully [190485], but can again be traced to its east, where it is 0.4m wide and 0.2m deep. To the east again the leat becomes untraceable given dense vegetation covering this area.	Clear encroaching gorse scrub.	SW 69984 49364 to SW 70130 49182
190510	Tin dressing works in Chapel Combe	The 1st Edition of the OS 1:2500 mapping shows a water-powered tin dressing works at this site in Chapel Combe, the site consisting of a waterwheel pit which would have driven tin stamps and a series of small roofed structures. The most likely source of material for this site at this date would have been a combination of mine waste from nearby disused mines and tailings from the valley base, but it is probable that the dressing floors had been in existence long before and had stamped tin from the local mines. By 1908 (OS mapping) it was shown as disused. A photograph of the works is reproduced in Brown and Acton (1999, 171), dating from the early 20th century and labelled 'Old Century Tin Works, Chapel Porth', but it is unclear whether the site, which consisted of a mixture of small timber and masonry structures was operational or derelict at that date. A sketch plan reproduced in the same source shows the remains of the wheelpit, a rectangular building, the site of Cornish tin stamps, a large buddle and the base of a feature interpreted by Brown as that of a vanning or shaking table. The foundations of these structures survive, though vegetation encroachment has now made access to the site very difficult.	Clear encroaching scrub vegetation and undertake detailed survey of site. The consolidation of masonry of the remaining structures will probably be required.	SW 70043 49274

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190511	Wheelpit in Chapel Combe	The wheelpit which housed the principal waterwheel on the Old Century Works, this driving the tin stamps and powering equipment on the dressing floors. The wheelpit is shown on the 1st and 2nd Editions of the OS 1:2500 mapping as measuring 9.5m long x 2.75m wide. The water wheel is not visible in archive photographs of the works taken during the 1920s when the site appears to be derelict, and it is probable that it had been dismantled by this date. The wheelpit survives, but is an area which has scrubbed to in such an extent that it is inaccessible.	Clear vegetation, record condition and undertake any necessary structural consolidation works.	SW 70046 49300
190512	Demolished dressing floor structure in Chapel Combe	A roofed structure set just to the north-east of the wheelpit [190511] shown on the 1st Edition OS 1:2500 mapping as measuring 6.0m x 4.0m. By 1908 (map evidence) it had been demolished. The function of the building is unknown. The area in which it was sited is so densely vegetated that it could not be accessed for survey, though it is possible that overgrown footings survive within this area.	Clear encroaching vegetation, carry out detailed survey and undertake any necessary structural consolidation works.	SW 70054 49296
190513	Remains of dressing floor structure in Chapel Combe	An elongated rectangular structure forming the largest of the buildings making up the Old Century Works, shown as a roofed structure measuring 23.75m x 7.0m on the 1st Edition OS 1:2500 mapping. The building was roofless by 1908 (OS map evidence), though a photograph in Clive Benney's collection which is thought to date to the 1920s shows what appears to be a completely different arrangement of structures on this site. However, the remains of a rectangular building survive in more or less the right location, though dense vegetation made survey difficult. What survives consist of a masonry wall to the north about 20m long and 3.5m high and walls to both east and west surviving up to 2.5m high, though reduced in height at their southern ends. The southern wall consists of a 25mm high footing which is 500mm wide, immediately inside which is a drainage gully 350mm wide and 150mm deep. It is probable that the southern wall of the building consisted of a planked wall on studwork.	Clear vegetation, record condition and undertake any necessary structural consolidation works.	SW 70047 49279
190514	Demolished dressing floor structure in Chapel Combe	One of the structures making up the Old Century Works, this was shown as a roofed structure measuring 11.5 x 8.0m on the 1st Edition OS 1:2500 mapping, and as a roofless ruin on the 1908 mapping. Immediately to its north-east was a small shed measuring 7.25m x 2.5m and on its south-eastern corner measuring 4.5m x 3.25m. Again, these were roofless by 1908 (map evidence). The area within which these structures were located is now densely scrubbed in, and no trace of them was found during survey. It is likely that the buildings would originally have been timber constructed, though were possibly built off concrete slabs or masonry footings, which may still survive.	Clear scrub vegetation from this site.	SW 70027 49279
190515	Demolished dressing floor structure in Chapel Combe	A rectangular roofed structure within the Old Century Works, shown on the OS 1:2500 1st Edition mapping as measuring 8.0m x 5.5m in plan. The building was shown as demolished by 1908 (OS map evidence). This part of the site is now occupied by is single cement-rendered convex buddle; lying under dense scrub, this seems to have been 6.0m in diameter. Immediately adjacent to this an iron pin protrudes from the ground surface. This is noted by Brown (Brown and Acton 1999) to be one of four set on concrete mountings which mark the site of a vanning table.	Clear encroaching scrub vegetation from this site.	SW 70042 49271
190516	Demolished dressing floor structure in Chapel Combe. Site of mine shaft.	The OS 1:2500 2nd Edition mapping dating to 1908 shows a 7.5m x 6.5m rectangular feature at this location which appears to have been a pond, this part of the site having been blank in 1878 (OS map evidence). No trace of the pond survives at this location, this part of the site being occupied by a small capped mine shaft within a 6.0m diameter hollow 1.5m deep whose spoil dump, 2.2m high, extends as far south as the stream. This shaft, Operation Minecap reference 3/14, was coned out and fitted with a 4.0m Clwyd Cap in May 1983.	Monitor Clwyd Cap for signs of corrosion and the shaft fills for indications of subsidence.	SW 70043 49265

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190517	Leat Chapel Combe	in A leat shown on the 1st Edition OS 1:2500 mapping whose source appears to have been in the valley near Chapel Porth Farm entered NT land at the north-western corner of the western enclosure associated with this holding. It was shown running parallel and 12m upslope from leat [190518], crossing streamwork gully [190485] but fading out 18m to its north-west. It is probable that it followed the access track to the Old Century Works, but would have then met the access road to Chapel Porth. It is probable that it formed a high level feed to the Old Century Works. The western part of the leat could not be followed, given dense vegetation, but to the east of the streamwork gully it shows as a substantial cut through spoil dumps, being 0.6m wide in its base and between 1.2m and 2.2m deep. Beyond the cut through the dumps it is 0.6m wide and 0.4m deep, with a linear spoil dump on its southern side, but is quickly lost within dense vegetation.	Manage encroaching scrub vegetation.	SW 70075 49238 to SW 70127 49179
190518	Leat Chapel Combe	in Between leat [190517] and leat [190509] a 80m length of a rather faint linear feature 0.6m wide and 0.25m deep with a slight spoil dump on its downslope side parallels leat [190517] upslope and leat [190509] downslope and is thus likely to represent a further, undocumented, leat serving stamping mills and dressing floors in the lower part of Chapel Combe.	Manage encroaching scrub vegetation.	SW 70070 49255 to SW 70109 49165
190519	Demolished dressing floor structure Chapel Combe	in The OS 1:2500 1st Edition mapping shows a 7.75m x 4.5m plan roofed structure at the south-eastern end of the Old Century works, a small open yard lying immediately to its south-east. The building had been demolished by 1908, leaving a scattered tumble of masonry on its site.		SW 70058 49238
190520	Demolished dressing floor structure Chapel Combe	in The OS 1:2500 1st Edition mapping shows an 11m x 5.25m rectangular feature at this location which appears to have been a pond. The feature was not shown on the 1908 OS mapping. There is a platformed area of approximately these dimensions at this location, though this is obscured by dense scrub.	Manage encroaching scrub vegetation.	SW 70053 49229
190521	Mine shaft Chapel Combe	in An small undocumented mine shaft was found at this location, this being located within a 9.0m diameter hollow 1.0m deep, its spoil dump extending to the stream to the south. The shaft is noted in Operation Minecap record 8/20 as having been coned and filled and fitted with a 5.0m Clwyd Cap in May 1983.	Monitor Clwyd Cap for signs of corrosion and shaft fills for any indications of subsidence.	SW 70060 49207
190522	Mine shaft Chapel Combe	in Operation Minecap record 8/20a notes an otherwise undocumented coned and filled mine shaft fitted with a 4.0m diameter Clwyd Cap in August 1983. This part of the site to the south-east of the Old Century Works and adjacent to the western boundary of an agricultural enclosure was not accessible at the time of survey due to very dense scrub.	Monitor Clwyd Cap for signs of corrosion and shaft fills for any indications of subsidence.	SW 70093 49165
190523	Stone lettering Chapel Porth	at On the southern side of Chapel Porth, an arrangement of white-painted beach pebbles spell out the words 'CHAPEL PORTH' in capital letters, the sign measuring 1.1m high and 11.8m long. The original sign was removed by the National Trust in 1957 following their acquisition of the property on the grounds that it was a recent and unsightly intrusion into the landscape, though after being informed that it had been in place since at least 1900 it was reinstated.	Monitor for indications of vandalism, damage or erosion.	SW 69718 49458
190524	Possible incline Chapel Porth	at An eroded cross-contour gully 42m long and averaging 9.0m wide connects the US Army roadway from Chapel Porth to Mulgram Hill to the site of the cottage [190473] which had been sited to the south of the present car park. Whilst this feature looks like a natural erosion gully, a photograph in the NT archive dated to 1986 show it as siting sectional chutes at the time, suggesting that spoil dump or other material was being transported down the slope at this point for some purpose - possibly waste dump removal for use as hardcore. Given the location of this feature just to the north of the principal mine dumps of Great Wheal Charlotte, it is possible that this gully developed during earlier phases of this activity.	None	SW 69678 49366 to SW 69784 49404

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190525	Enclosure south of Chapel Porth	On the crest of Mulgram Hill, originally approached from the south-east by a steep trackway, are the remains of an irregular pentagonal enclosure whose north-south axis measured 57m; at its widest, the east-west axis measured 45m. Although the trackway was shown on the 1840 St. Agnes tithe map, the enclosure was not depicted. The enclosure was shown on both the 1st and 2nd Editions of the OS 1:2500 mapping, the access track entering the enclosure on its eastern side and terminating on its southern corner. The function of this enclosure is uncertain given its exposed location, but it may have acted as a pound for mules and other pack animals employed by Great Wheal Charlotte. A plan of part of the Manor of Tywarnhaile in the Cornwall Record Office dating to 1846 (AD-145-32) shows a pair of closely-set rectangular structures near the centre of the enclosure at the end of the original track [190527], the easternmost aligned east-west, the southernmost aligned north-south. No indications of the functions of these buildings are given on the plan, though they may relate to Great Wheal Charlotte, whose sett they lie in and which was active at this date. The southern section of the enclosure survives, the boundaries taking the form of partly stone-faced earth banks 1.25m high and 1.5m wide with traces of construction ditches on their outer faces. To the north, the US Army road has destroyed most of its western side and has cut through the enclosure near its north-eastern corner. The northern part of its western side survives as footing courses in places, but there is little trace of the northern bank of the enclosure shown on the archive OS mapping. No traces of the buildings shown on the 1846 plan were found during survey in 2009.	None	SW 69661 49366
190526	WWII road from Chapel Porth to Towan Cross	A broad, engineered unsurfaced trackway was constructed in June 1944 by US Army engineers from the roadway running down to Chapel Porth across the stream via a now-destroyed timber bridge [190504] climbing the southern side of the Combe and closely following the route of an earlier track to the crest of Mulgram Hill, where it turned to the south, again following the route of an earlier mine roadway [190527] to Towan Cross. The roadway might have been constructed as a pre D Day exercise for US Army engineers, or may have been built to service the temporary encampment sited on Towan Moor. The road is currently used as a route from Chapel Combe to Mulgram Hill (most being designated a public right of way No 31835, here the Coast Path). Its upper section is considerably eroded, but the inland section of the road appears to have been made up with mine dump material whose sulphide content has cemented it together to form a hard-wearing surface.	None	SW 69942 49389 to SW 70356 48318
190527	Track from Chapel Porth to Mulgram Hill	The US Army road [190322] from Chapel Combe to Mulgram Hill and Towan Cross closely follows a much earlier track shown on the St. Agnes Tithe Map of 1840. This roadway probably provided a link between Chapel Porth, Towan Cross and the Charlotte mines, enabling coal, materials and ore to be transported, but might have been created to provide a means of taking sand from Chapel Porth to improve fields inland around Towan Cross. Most of the northern section of the original track was destroyed during the creation of the US Army road in 1944, though a short section survives at its eastern end, where it lies just to the west of the US Army road and takes the form of an overgrown 3.0m inclined track on the southern slopes of Chapel Combe.	None	SW 69228 49346 to SW 69658 49334
190528	Mine roads on Charlotte Moor	A 3.0m wide trackway links a series of shafts and other locations within Great Wheal Charlotte and a group of three small quarries on the upper slopes of Chapel Combe [190529], [190530] and [190531], meeting the valley floor in Chapel Combe near Charlotte United Engine Shaft. The track continues along the southern side of the valley floor to Mingoose. This seems like to have been constructed as one of the principal means of transporting materials to and from Great Wheal Charlotte as well as to North Towan and Charlotte United. Although not a public right of way, the track is used by walkers exploring the area as a means of linking Chapel Combe and Mulgram Hill.	Maintain as an informal footpath.	SW 70915 48623 to SW 69654 49201

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190529	Quarry to the south of Chapel Combe	A small quarry driven on a south-westerly direction into the upper southern slopes of Chapel Combe, one of a group of three which were probably excavated to provide building material for structures at Great Wheal Charlotte, being shown on the 1st Edition of the OS 1:2500 mapping. The quarry is 15m long, 14m wide and its back face is 7.0m high, the quarry base being level. Two discrete associated spoil dumps have been tipped down the valley side immediately to the north, these consisting of small pieces of shillet.	None	SW 69806 49308
190530	Quarry to the south of Chapel Combe	The central of a group of three small quarries cut into the upper southern slopes of Chapel Combe, probably to provide building material for structures at the nearby Great Wheal Charlotte. The quarry measures 8.0m x 8.0m in plan, has a level base and a back wall 3.5m high. Both the quarry and the associated spoil dumps to the north are relatively overgrown.	None	SW 69783 49315
190531	Quarry to the south of Chapel Combe	The largest of a group of three small quarries cut into the upper southern slopes of Chapel Combe, almost certainly to provide building material for structures at Great Wheal Charlotte. The quarry measures 30m east-west and 18m north-south, whilst its rear wall is 7.5m high. The associated spoil dump spills 20m down the valley side to its north. The floor of the quarry is covered with mine waste, whilst the upper rear face of the quarry displays a slight erosion hollow, suggesting that mine waste was tipped into the quarry at this point. The quarry spoil dump is partly cloaked in mine waste, whilst a gullied hollow [190524] extends down the lower part of the slope, suggesting that the quarry might have been used as a stockpiling point for mine waste which was subsequently transported downslope via the gully for reuse. Operation Minecap records (Sheet 3/15) suggest that this was considered to be a possible shaft site.	None	SW 69761 49323
190532	Prospecting pit in the north-west of Charlotte Moor	A shallow prospecting pit measuring 3.0m x 1.0m in plan. Slumpage from the associated spoil dump has reduced the depth of the pit to 0.4m.	None	SW 69748 49300
190533	Shaft in the north-west of Charlotte Moor	A choked shaft, part of Great Wheal Charlotte (Cornwall Consultants' Shaft J). Operation Minecap Sheet 3/8 noted that the shaft measured 3.2m x 2.3m internally. It was coned out and a 6.0m Clwyd Cap fitted in May 1983. The Clwyd Cap is still in place and the interior of the shaft is choked. The associated spoil dump has been partly excavated away around the shaft opening, though most of it survives, spilling down the valley side to the north.	Monitor Clwyd Cap for signs of corrosion and shaft fills for any indications of subsidence.	SW 69750 49297
190534	Prospecting pits in the north-west of Charlotte Moor	A loose group of six prospecting pits set immediately to the north of three probable small shafts [190535], [190536] and [190537] on the crest of the southern slopes of Chapel Combe. These average 2.0m x 1.5m in plan, 0.4m deep and have associated spoil dumps on their northern sides.	None	SW 69866 49256, SW 69877 49241, SW 69851 49254, SW 69853 49242, SW 69847 49236, SW 69855 49235
190535	Possible shaft in the north-west of Charlotte Moor	A possible shaft or a large outcrop working on the crest of the southern slopes of Chapel Combe, one of a group of three which are likely to be on the outcrop of North Lode at this location. The shaft or pit is 5.0m in diameter and 2.0m deep, with a spoil dump on its northern side.	Monitor for indications of subsidence.	SW 69831 49240
190536	Possible shaft in the north-west of Charlotte Moor	A possible shaft or a large outcrop working on the crest of the southern slopes of Chapel Combe, one of a group of three which are likely to be on the outcrop of North Lode at this location. The shaft or pit is 5.0m in diameter and 2.0m deep, with a spoil dump on its northern side.	Monitor for indications of subsidence.	SW 69837 49240
190537	Possible shaft in the north-west of Charlotte Moor	A possible shaft or a large outcrop working on the crest of the southern slopes of Chapel Combe, one of a group of three which are likely to be on the outcrop of North Lode at this location. The shaft or pit is 6.0m in diameter and 2.0m deep, with a spoil dump on its northern side.	Monitor for indications of subsidence	SW 69841 49232



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190538	Mine shaft to the south of Chapel Combe	The site of East Shaft in Great Wheal Charlotte survives as a small capped shaft midway down the southern slopes of Chapel Combe on the outcrop of North Lode with a well-preserved whim platform immediately to its west and a spoil dump spilling down the valley side to its north. Dines (1956) records this shaft as having been sunk to adit level, 50 fathoms below its collar. Operation Minecap record sheet 3/1 notes the shaft as 'Dangerous (OK)', measuring 2.3m x 1.4m. The shaft is recorded as being coned in May 1983, fitted with a 5.0m Clwyd Cap in August 1983, concreted in October 1983 and subsequently backfilled. The shaft was shown on mid-19th century mine plans and on the 1st Edition of the OS 1:2500 mapping.	Monitor indications for subsidence	SW 69927 49211
190539	Mine shaft to the south of Chapel Combe	A small capped shaft on the mid slopes of Chapel Combe on the outcrop of North Lode. The shaft is marked by a Clwyd Cap on a substantial and bare spoil dump on the valley side. Operation Minecap record sheet 3/14 notes that this shaft was coned and filled, being fitted with a 3.0m Clwyd Cap in May 1983. The shaft was shown on mid-19th century mine plans of Great Wheal Charlotte, though the OS 1:2500 1st Edition mapping show only the spoil dump.	Monitor indications for subsidence	SW 69986 49210
190540	Concrete slab in the north-west of Charlotte Moor	A mass concrete slab 5.0m long and approximately 0.75m wide aligned north-east to south-west, and which is in excess of 500mm thick with a levelled upper surface which does not appear to incorporate any bolts or mounting points. The slab is set within a narrow linear hollow excavated through a cinder dump, off which it has been built. There are no indications what function this mounting might have served, or the date at which it was constructed. Whilst it might relate to a late phase of mine dump recovery, given the documented military activity which took place within the surrounding area during the 1940s it is also possible that this feature dates to that period. It may be associated with a further, more complicated concrete structure [190552] 175m to the north-west which shares its general alignment and possibly also with a concrete lintel set across the plug door opening of Great Wheal Charlotte pumping engine house [190567].	None	SW 69671 49241
190541	Possible leat in the north-west of Charlotte Moor	A rather slight linear feature extends 125m around the contour to the south of Mulgram Hill, having the appearance of a leat which would have served the coastal shafts of Great Wheal Charlotte. At its northern end the feature becomes so indistinct that its route cannot be followed, whilst to the south any continuation of the feature has been destroyed by dump removal operations. The direction of flow of this leat cannot readily be determined. Given the elevation and location of this probable leat it is difficult to see what might have been the source for the water which would have flowed in it, though water pumped from one of the coastal mine shafts would be the most likely source.	None	SW 69573 49339 to SW 69589 49232
190542	Extractive pits in the north-west of Charlotte Moor	A run of surface excavations trending east-west to the north of Porthgidden Cove almost certainly represent early workings on the outcrop of Main Lode. These outcrop workings take the form of linear hollows averaging 15m long x 6.0m wide, up to 4.0m deep with slight dumps to both north and south, and with rather more extensive low finger dumps at their western ends adjacent to the coast path. There are traces of stone revetments in places along the upper edges of these hollows.	None	SW 69599 49228
190543	Extractive pits in the north-west of Charlotte Moor	A run of surface excavations trending east-west to the north of Porthgidden Cove almost certainly represent early workings on the outcrop of Main Lode. These outcrop workings take the form of linear hollows averaging 15m long x 6.0m wide, up to 4.0m deep with slight dumps to both north and south, and with rather more extensive low finger dumps at their western ends adjacent to the coast path. There are traces of stone revetments in places along the upper edges of these hollows.	None	SW 69632 49224

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190544	Extractive pits in the north-west of Charlotte Moor	A run of surface excavations trending east-west to the north of Porthgwiddden Cove almost certainly represent early workings on the outcrop of Main Lode. These outcrop workings take the form of linear hollows averaging 15m long x 6.0m wide , up to 4.0m deep with slight dumps to both north and south, and with rather more extensive low finger dumps at their western ends adjacent to the coast path. There are traces of stone revetments in places along the upper edges of these hollows.	None	SW 69669 49221
190545	Miners' cliff path at the west of Charlotte Moor	The remains of a narrow path lead westwards across the clifftops from Great Wheal Charlotte to the northern side of the gully in the cliffs at this point. Here the path runs to the south-east and apparently provided a means of access down the cliff to access a number of adits, but cliff erosion has removed all of its lower section.	None	SW 69525 49163 to SW 69648 49152
190546	Cliff adit at the west of Charlotte Moor	A high level adit set midway down the gully in the cliff face at the western end of Great Wheal Charlotte. Given its inaccessible location, no measurements were possible, nor any description of its condition, though the adit mouth was seen to be small in scale and open. It is likely from the location of the adit that it provided a short crosscut to the outcrop of the nearby lode.	None	SW 69559 49141
190547	Cliff adit at the west of Charlotte Moor	A high level adit set midway down the gully in the cliff face at the western end of Great Wheal Charlotte. Given its inaccessible location, no measurements were possible, nor any description of its condition, though the adit mouth was seen to be small in scale and open. It is likely from the location of the adit that it provided a short crosscut to the outcrop of the nearby lode.	None	SW 69582 49158
190548 40648	Copper mine at the west of Charlotte Moor	Great Wheal Charlotte (sometimes known as Wheal Charlotte) occupies the clifftops to the south of Chapel Combe and worked one principal lode (Main) which was subject to displacement by a slide. The mine was worked entirely for copper via a series of shafts running eastwards from the cliffs to the floor of Chapel Combe, mine plans showing the workings extending out under the sea for a short distance at Porthgwiddden Cove (CRO M-154). Records of the mine are scant, though production of 2,800 tons of 7.25% copper is recorded in the years 1834 to 1836 and in 1840. There appear to be no maps or plans which show the layout of the buildings which would have been sited here and the only surviving structure is the bob wall of the 1828 pumping engine house [190567]. Brown and Acton (1999) suggest that an earlier pumping engine house worked Cock's Shaft [190549], whilst a whim engine which additionally drove a copper crusher may have been sited near Williams' Shaft [190549]. The other shafts on the mine seem to have been worked by horse whims, the sites of those at West Shaft [190555] and Midwinter Shaft [190560] partly surviving. An 1842 sale advertisement for the mine reproduced in Brown and Acton (ibid) indicates that there were a count house and smithy in addition to the houses for the pumping and winding/crushing engine. The locations of these structures are unknown, no trace of them apparently having survived. The dressing floors, which would have been extensive, though which would not necessarily have sites any permanent structures, were probably sited in the western part of the site. Again, these seem to have left no clues as to their sites.	Monitor this area for inappropriate activities which would erode or otherwise damage earthwork features, in particular access by off-road motorcycles or 4x4 vehicles. Monitor documented mine shaft for any indications of the subsidence of their fills. Undertake any necessary conservation works to retain the bob wall of the engine house.	SW 69721 49168
190549	Mine shaft in the north-west of Charlotte Moor	William's Shaft, part of Great Wheal Charlotte, is recorded as having been sunk to a depth of 32 fathoms below adit (Dines 1956). The site of the shaft can no longer be seen and appears to have been infilled. Its very substantial spoil dump was shown by the OS 1:2500 mapping as measuring 35m x 50m in plan and extending to the cliff edge. It is probable that far more material was tipped over the cliff slope. Much of the clifftop dump survives, though has been rather disturbed by the removal and spreading of material. Operation Minecap record Sheet 3/4 records the shaft as 'Not located, no action taken'. It is probable that the shaft was informally backfilled during the removal of dump material.	Monitor shaft for indications of the subsidence of its fills.	SW 69655 49179

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190550	Mine shaft in the north-west of Charlotte Moor	Cock's Shaft, part of Great Wheal Charlotte is recorded as having been sunk to a depth of 42 fathoms below adit (Dines 1956). The shaft is shown on mid-19th century mine plans, whilst the OS 1:2500 1st Edition mapping showed a large spoil dump measuring 55m x 45m surrounding the shaft. This has been dug into in order to remove mine waste for hardcore, reducing its size somewhat. Operation Minecap record Sheet 3/3 indicates that safety works to this shaft were completed by CMS (probably Cornwall Mining Services) in May 1983, probably indicating that the shaft was excavated and concrete plugged at that time. No indications of the shaft position are now visible.	Monitor shaft for any indications of the subsidence of its fills.	SW 69724 49167
190551	Mine shaft in the north-west of Charlotte Moor	Moyle's Shaft, part of Great Wheal Charlotte is recorded as having been sunk to a depth of 32 fathoms below adit (Dines 1956). The shaft and its associate dump is shown on mid-19th century mine pans, whilst the OS 1:2500 1st Edition mapping showed an open shaft at the southern edge of a spoil dump measuring 30m in diameter, the shape of the dump suggesting that there may have been a horse whim serving the shaft on the south-eastern part of the dump. Operation Minecap record Sheet 3/2 indicates that safety works to this shaft were completed by CMS (probably Cornwall Mining Services) in May 1983, probably indicating that the shaft was excavated and concrete plugged at that time. The shaft is no longer visible and most of the northern part of the spoil dump has been removed.	Monitor shaft for any indications of the subsidence of its fills.	SW 69801 49160
190552	Concrete structure in the north-west of Charlotte Moor	Sited just to the north-east of the main group of mine dumps within Great Wheal Charlotte is this low concrete construction, shown on the modern OS mapping. The feature measured 8.0m x 5.25m and consists of a slightly angled concrete surface enclosed within a low blockwork wall whose north and south sides are extended to the west. The function of this structure is unknown; it is unknown whether it supported any form of superstructure. It appears to be on the same general alignment as a concrete slab set within mine dumps to the west [190540] and may have been associated in some fashion with 20th century mine waste removal or might have had a military origin during the occupation of Towan Moor by US armed forces during World War II.	None	SW 69831 49176
190553	Mound in the north-west of Charlotte Moor	A low mound 5.0m in diameter and 0.3m high at this location does not appear to mark the position of a prospecting pit. Its date and function are uncertain.	None	SW 69865 49171
190554	Prospecting pit in the north-west of Charlotte Moor	An isolated pit at this location is almost certainly a small prospecting pit, measuring 1.8m x 1.2m in plan and 0.4m deep with a small spoil mound on its northern side.	None	SW 69894 49179
190555	Mine shaft in the north-west of Charlotte Moor	West Shaft, part of Great Wheal Charlotte is recorded as being vertical to the 32 fathom level (below adit) where it met the lode and on the underlie to the 42 fathom level, and was one of the principal shafts worked by this mine. The shaft lies close to the cliff edge in the western part of the mine and is marked by a backfilled Clwyd Cap in an area of spread bare mine dumps. The shaft was recorded as reference Sheet 3/5 by Operation Minecap, who noted that a 3.0m diameter Clwyd Cap was fitted to the shaft, following its coning and filling, work being completed in July 1983.	Monitor shaft for any indications of the subsidence of its fills. Monitor Clwyd Cap for corrosion.	SW 69598 49120
190556	Adit in the west of Charlotte Moor	A shallow adit showing as a 15m long linear east-west trending hollow cut through mine dumps and measuring 3.5m wide and 1.0m deep. At its eastern end are the remains of a stone-arched adit portal, though the interior of the adit has become infilled with material and its interior was not accessible. This adit appears to be aligned on a small choked shaft 25m to the east [190559].	None	SW 69667 49088
190557	Adit in the west of Charlotte Moor	A possible shallow adit showing as a 12m long linear hollow up to 4.0m wide and 1.0m deep cut into mine dumps to the north-west of Engine Shaft on Great Wheal Charlotte [190568] and aligned in its general direction. The adit is blocked at its eastern end whilst there is a prominent spoil dump at the western end of the lobby.	None	SW 69681 49110

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190558	Cobbled surface in the west of Charlotte Moor	A small linear area of cobbling 10m long x 2.0m wide exposed in an informal path which may represent part of a larger surface, possibly an element of an undocumented copper dressing floor within Great Wheal Charlotte.	None	SW 69711 49118
190559	Mine shaft in the west of Charlotte Moor	A small undocumented mine shaft forming part of Great Wheal Charlotte and set 60m to the east-north-east of its Engine Shaft, possibly on a cross-cut to Cock's Shaft [190550]. The shaft was noted in the records of Operation Minecap (Sheet 3/12) as having been coned and fitted with a 2.0m diameter Clwyd Cap in July 1983. The shaft lies within an area of scrubbed-in rather disturbed mine dumps.	Monitor shaft for any indications of the subsidence of its fills. Monitor Clwyd Cap for corrosion.	SW 60707 49107
190560	Mine shaft in the west of Charlotte Moor	Midwinter Shaft. This was the westernmost of those worked by Great Wheal Charlotte and was set on the cliff edge and was sunk vertically to 32 fathoms below adit which is 40 fathoms below its collar (Dines 1956). The shaft is open, though has being fitted with a Clwyd Cap. The Operation Minecap records (Sheet 3/6) noted 'Very dangerous. Completed with cone only'. The shaft was noted as measuring 2.0m x 1.6m and having been fitted with a 4.0m diameter Clwyd Cap in May 1983. Adjacent to the shaft are a horse whim platform [190561] and a levelled, walled platform [190562] which seems to have sited a small dressing floor.	Monitor Clwyd Cap for indications of corrosion or instability.	SW 69509 49052
190561	Horse whim platform in the west of Charlotte Moor	Just to the east of Midwinter Shaft [190560] is a hollowed area 10m in diameter cut into the cliffslope which almost certainly represents the site of a horse whim platform, this forming the widest point of a platformed area immediately inland from the shaft. No traces of a central melior stone were found.	None	SW 69515 49045
190562	Dressing floor in the west of Charlotte Moor	To the east and south of Midwinter Shaft [190560] is an elongated platformed area up to 10m wide, the northern part of which probably sited a horse whim [190651]. The seaward side of the platform was edged by a dry stone construction masonry revetment which was up to 3.0m high, though the sections of this have now collapsed into the sea. To the south of the shaft the walling returned to the west as a Cornish hedge 600mm wide, its footing stones being visible in the dump surface. Spoil has been deposited over the southern part of the platformed area, some areas showing evidence for sorting and crushing suggesting that this was the site of a small primary dressing floor. Traces of clayey slimes on the cliffslope immediately upslope from this area suggest that a launder or leat carried water to this site.	Monitor retaining wall for indications that further collapse is likely to take place. If this is the case consider consolidation measures.	SW 69504 49034
190563	Site of slit trenches in the west of Charlotte Moor	1946 aerial photograph 106G-UK 1663-3380 shows a small cluster of about seven small, freshly excavated pits to the west of Great Wheal Charlotte Engine Shaft. Fieldwork did not reveal any trace of these features, which are likely to have been slit trenches dug by the US Army in June 1944.	None	SW 69587 49067, SW 69582 49061, SW 69586 49059, SW 69577 49056, SW 69586 49055, SW 69583 49050, SW 69588 49047
190564	Mine track in the west of Charlotte Moor	Faint traces of a 2.0m wide track lead from Midwinter Shaft [190560] most of the way eastwards to Great Wheal Charlotte Engine Shaft [190568]. This is likely to have been part of a network of mine roadways linking elements of this mine, though might have been created in 1983 by the Operation Minecap team.	None	SW 69534 49038 to SW 69648 49042
190565	Site of chimney in the west of Charlotte Moor	The chimney serving the boilers which supplied the pumping engine on Engine Shaft, Great Wheal Charlotte [190567] appears from field evidence to have been attached to the south-western corner of its boiler house [190566] (OS map evidence). This chimney was demolished following the closure of the mine, and only a low, roughly circular mound of debris 5.0m in diameter and 2.0m high now survives. According to Ken Brown, a scatter of brickwork suggests that the chimney fell to the north when it was demolished.	Consider small-scale evaluative excavation to determine whether the base of the chimney could be exposed.	SW 69655 49055

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190566	Site of boiler house in the west of Charlotte Moor	The boiler house serving the pumping engine at Engine Shaft, Great Wheal Charlotte [190567] was set to the north of the engine house, extending to its west and being about 18.5m long. Field evidence suggests that it would probably have been wide enough to accommodate a pair of boilers. Almost nothing now survives of this structure apart for a rather amorphous linear hollow with some low revetting stonework along its southern side, though it is possible that elements of the structure survive below ground level.	None at present, though minor consolidation works will be required to the small amounts of surviving masonry in the future.	SW 69677 49054
190567	Remains of pumping engine house in the west of Charlotte Moor	Great Charlotte was pumped using a 60" engine on Engine Shaft which was advertised for sale in April 1842 and was probably installed in or just after 1828, this replacing a 36" cylinder engine installed in or around 1820, and probably working in Cock's Shaft [190550]. There is little information concerning the engine house, which is now represented solely by its free-standing bob wall, together with the footings of its side and rear walls. The engine house measured 9.6m x 7.05m in plan, the bob wall being 2.2m thick, the remaining walls 1.0m thick. The bob wall stands to 8.6m high and incorporates a plinth course and a plug door 1.65m wide and 4.48m high, there being well-shaped cut granite voussoirs at its head. The lower part of the plug door opening is bridged by a concrete slab 0.22m thick of unknown date. In the internal face of the bob wall are the recesses for a pair of lateral stiffening timbers, but no traces for the pockets which would have held floor support timbers. The engine house was conserved by Percy Williams Builders in 1987 for the National Trust. A record of the structure was undertaken by Cornwall Committee for Rescue Archaeology while the scaffolding was in place (Plan GRH 142).	Minor conservation works are required to stabilise this structure.	SW 69682 49049
190568	Mine shaft in the west of Charlotte Moor	Engine Shaft at Great Wheal Charlotte lay immediately to the east of the pumping engine house [190567] whose bob wall survives on the clifftops at the south of the mine. The shaft is documented as being 150m deep. It had long been used as a rubbish disposal site by local people and in 1982 was reported as being filled with old cars from top to bottom. It was reported in the Operation Minecap archives as measuring 'over 2.0m x 1.6m'. The shaft appears to have been plugged in 1983, though has recently been re-fenced by the National Trust (together with the engine house bob wall). The shaft site is now a rather disturbed levelled area sloping towards the engine house.	Monitor the documented site of the shaft for indications of subsidence. Retain and maintain existing fence.	SW 69692 49050
190569	Mine pond in the west of Charlotte Moor	The northernmost of a pair of mine ponds just to the south of Engine Shaft on Great Wheal Charlotte and which would have provided a supply of water to the pumping engine boilers, this depression 17.5m long and 12m long is up to 1.5m deep. There is no obvious source of water supply to the pond, though a feed channel 2.5m wide and 0.6m deep leads from the north-western corner of this pond towards the nearby engine house. Given that this is a higher elevation than the floor of the pond, it is possible that water pumped from the mine shaft was fed to the pond via this channel.	None	SW 69675 49026
190570	Mine pond in the west of Charlotte Moor	The southernmost of a pair of mine ponds adjacent to Engine Shaft on Great Wheal Charlotte which would have provided a water supply for the pumping engine boilers. The depression measures 25m x 11m and is up to 1.5m deep. As with its neighbour, there does not appear to be any surviving evidence to indicate how the ponds were filled, the most likely source (given the elevation of the site and the absence of nearby water sources) that water was pumped from the mine shaft to fill them. A possible water channel leads north from the north-eastern corner of this pond, but can be traced for only 10m before it is lost in an area where dump removal has taken place.	None	SW 69699 49008
190571	Remains of mine track in the west of Charlotte Moor	Faint traces of a 2.5m wide trackway lead north-east from near the ponds to the south of Engine Shaft on Great Wheal Charlotte towards the principal mine road from Mulgram Hill to Towan Cross and Chapel Porth.	None	SW 69711 49020 to SW 69795 49092

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190572	Mine spoil dumps in the west of Charlotte Moor	The 1st and 2nd Editions of the Ordnance Survey 1:2500 mapping show very extensive spreads of mine spoil spread across the clifftops at Great Wheal Charlotte, these extending over the whole of the area occupied by its principal shafts, extending to a maximum of 325m north-south and 240m east-west. Much material raised in the western part of the mine would simply have been disposed of down the cliff slopes into the sea. Following the closure of the mine, these waste dumps appear to have become a source of hardcore material for local people and businesses, resulting in considerable disturbance and the removal of large amounts of material from this area. These isolated clifftops were recorded as being the principal site used during World War II for the disposal of unexploded enemy ordnance recovered from the surrounding area, resulting in further disturbance to the original dump forms, whilst further quantities of material were used for road surfacing by the US Army in June 1944. Dump removal continued into the mid 1980s as is evidenced by a photograph in the NT archive dating to 1986 showing a chute system used to transport mine waste from Great Wheal Charlotte down to Chapel Combe. As a result, the original forms and extents of the mine dumps have been considerably altered, mine waste has been spread and redistributed, whilst evidence for dressing floors and for mine buildings has, by and large, been obliterated. What remains of the original mine waste gives useful and geologically important clues to the underlying geology accessed by the shafts at Great Wheal Charlotte, this exhibiting considerable variation, though the barrenness of these areas indicates the significant concentrations of phytotoxic metal sulphides they contain. Variations in rock sizes help to identify a number of areas where a variety of dressing processes would have taken place. The most undisturbed mine dumps are those sited within an elongated linear area at the south of the mine, these taking the form of low individual 'barrow dumps' of primary waste [190573]. A further smaller group of such dumps extends westwards towards the cliffs flanking the coast path in the northern part of the site.	No further removal or disturbance of the spoil dumps should take place.	SW 69410 49211
190573	Mine dumps at Great Wheal Charlotte	A run of small-scale barrow dumps of primary spoil extend south-eastward from Engine Shaft in Great Wheal Charlotte. Unlike the extensive spreads of spoil surrounding the mine shafts to the north, these reflect primary hand sorting of mine waste on dressing floors, which must have lain near their north-western end, though which cannot now be identified. The dumps average 4.0m long, 2.5m wide and 1.0m high.	None required.	SW 69724 49004 to SW 69844 48984
190574	Quarry in the west of Charlotte Moor	A hollowed area adjacent to the coast path and on the edge of the cliff slope measures 10m x 8.0 in plan and has an eastern face 2.0m deep. There are no indications of any associated spoil dump. This feature is unlikely to be a mine working, and may be a small backfilled quarry.	None	SW 69506 48978
190575	Mound in the west of Charlotte Moor	A mound 8.0m in diameter and 0.3m high set to the west of a pair of similar features [190583], [190584] does not appear to be a mining feature and may be one of a small group of coastal barrows or cairns.	Further archaeological research is required to better understand this feature.	SW 69658 48857
190576	Site of slit trench in the west of Charlotte Moor	An isolated pit showing on 1946 aerial photographs in the heathland to the south of Great Wheal Charlotte may have been an isolated slit trench excavated during 1944. No trace of this feature could be found at the location shown on the aerial photograph.	None	SW 69676 48878
190577	Platformed area in the west of Charlotte Moor	A platformed area enclosed within an 8.5m diameter earthen bank without any significant visible stone content lies to the south-west of a pair of possible round houses [190582] and [190585] and a group of small earthen mounds [190575], [190584] and [190581]. This may represent the remains of a small round house or other early structure. The feature may also be a barrow or cairn. Rose and Preston-Jones surveyed this group of features in May 1985.	Further archaeological research is required to better understand this feature.	SW 69719 48844

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190578	Extractive pit in the west of Charlotte Moor	An isolated outcrop working pit, part of a group with [190579] but to the south of them and separated from them by 30m, this pit is 15m x 8.0m in plan, taking the form of two conjoined hollows 1.0m deep. There is a relatively low lip of spoil around the southern and eastern sides of the feature.	None	SW 69720 48889
190579	Extractive pits in the west of Charlotte Moor	A group of six outcrop working pits, arranged in two roughly north-south aligned parallel lines of three, the southern pair on each line overlapping to some degree. The pits are between 10.5m and 15m in diameter and are up to 5.0m deep. The associated spoil dumps mostly lie on their northern sides, average between 3.0m and 5.0m wide and are around 1.25m high, being rather spread. The interiors of the pits are very overgrown. These pits appear to have been developed on an undocumented north-south trending lode in the southern part of the Great Wheal Charlotte sett. There are no other indications of the working of the outcrop of this lode in the adjacent heathland.	None	SW 69731 48917, SW 69732 48926, SW 68739 48935, SW 69747 48931, SW 69748 48924, SW 69744 48912
190580	Prospecting pits in the west of Charlotte Moor	A chain of nine closely arranged north-west to south-east aligned prospecting pits, each being 1.5m wide, the chain being 38m long and accompanied by a continuous spoil dump 1.2m wide to their north-east. These pits appear to have been excavated to pick up an east-west trending lode and are adjacent to a cluster of outcrop workings on a north-south trending lode in the southern part of the Great Wheal Charlotte sett [190579]. The date at which the pits were excavated is unknown.	None	SW 69757 48939, SW 69755 48944, SW 69754 48950, SW 69751 48953, SW 69749 48956, SW 69749 48959, SW 69747 48964, SW 69747 48969, SW 69745 48972
190581	Slit trenches in the west of Charlotte Moor	This north-south-aligned linear group of seventeen well-preserved slit trenches lie within an area of low heath vegetation. Most measure 2.0m long x 0.6m wide and 0.6m deep; most have no obvious associated spoil dump. These features were created during the short-lived occupation of these clifftops by black troops of the US 29th Army Infantry Division who were quartered on Towan Moor in a temporary tented encampment in June 1944 prior to embarkation for D Day.	None	SW 59753 49920, SW 69755 48916, SW 69758 49910, SW 69757 49905, SW 69753 48897, SW 69746 48893, SW 69749 48886, SW 69757 48891, SW 69761 48883, SW 69760 48881, SW 69762 48862, SW 69756 48844, SW 69753 48862, SW 69743 48857, SW 69760 48848, SW 69760 48844, SW 69722 48878
190582	Possible round house in the west of Charlotte Moor	A possible round house, showing as a ring-shaped bank of soil without any visible stone revetment which is 12m in diameter and whose banks are 2.2m wide and 0.65m high. The interior of the enclosed area is level and free of features. No obvious entrance into the enclosure was noted. This and an almost identical feature 25m to the east-south-east [190585] do not appear to be WWII features as they are visible as well vegetated earthworks on 1946 aerial photographs, and it has been posited that they might be the earthwork remains of prehistoric round houses.	Further archaeological research is required to better understand this feature.	SW 69768 48875
190583	Mound in the west of Charlotte Moor	A small mound, apparently without any significant stone content measuring 3.8m diameter and 0.2m high of uncertain date and function, though possibly relating to the possible round houses to its south. This mound appears to be one of a group of at least three (with [190576] and [190584]) in this general area.	Further archaeological research is required to better understand this feature.	SW 69787 48912
190584	Mound in the west of Charlotte Moor	A small mound, apparently without any significant stone content measuring 3.0m diameter and 0.2m high of uncertain date and function, though possibly relating to the possible round houses to its south. This mound appears to be one of a group of at least three (with [190583] and [190575]) in this general area.	Further archaeological research is required to better understand this feature.	SW 69796 48934

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190585 53504 25030	Possible round house in the west of Charlotte Moor	A possible round house, showing as a ring-shaped bank of soil without any visible stone revetment which is 12m in diameter and whose banks are 2.2m wide and 0.65m high. The interior of the enclosed area is level and free of features. No obvious entrance into the enclosure was noted. This and an almost identical feature 25m to the west-north-west [190582] do not appear to be WWII features as they are visible as well vegetated earthworks on 1946 aerial photographs, and it has been posited that they might be the earthwork remains of prehistoric round houses.	Further archaeological research is required to better understand this feature.	SW 69788 48865
190586	Slit trenches in the west of Charlotte Moor	A group of four slit trenches set immediately to the north of a nearby trackway. These features date to June 1944, and were dug by US troops camped on the Moor prior to D Day. Most of the trenches are to a standard size, being 2.0m long, 0.6m wide and up to 0.6m deep, rarely accompanied by spoil dumps. Other groups of slit trenches lie nearby [190581], [190586] and [190589], together with the documented site of a further group [190587].	None	SW 69787 48858, SW 69802 48856, SW 69809 48846, SW 69819 48840
190587	Site of slit trenches in the west of Charlotte Moor	1946 aerial photograph 106G-UK 1663-3380 shows a group of five freshly dug pits in this area. Given the proximity of other groups of WWII slit trenches to the east and west [190581], [190586] and [190589], it is likely that these were similar in function, though no traces of them were found during the walk-over survey.	None	SW 69790 48892, SW 69794 48900, SW 69803 48904, SW 69813 48892, SW 69818 48885, SW 69811 48926
190588	Slit trench in the west of Charlotte Moor	An isolated slit trench was surveyed at this location, at the northern edge of an area which contains 49 surviving slit trenches [190581], [190586] and [190589] and the documented sites of a further five [190587]. All date to June 1944 when Towan Moor was temporarily occupied by black troops of the US Army 29th Infantry Division. The trench measures 2.0m long by 0.6m wide and is 0.5m deep.	None	SW 69811 48926
190589	Slit trenches in the west of Charlotte Moor	A group of 26 slit trenches excavated by black troops of the US Army 29th Infantry Division who were accommodated in a temporary tented encampment on Town Moor in June 1944, prior to embarkation for Normandy. These trenches lie within an area which contained over 50 similar features and which appears to have been used during an exercise. The trenches lie within an area between two former mine tracks; most are aligned along the contour, though some at the eastern and western ends of this group are aligned cross-contour. The trenches are all similar in size, being 2.0m long, 0.6m wide and averaging 0.6m deep; few are accompanied by waste dumps. Other groups of slit trenches lie nearby to the west [190586], [190581] together with a third group showing on archive aerial photographs [190587].	None	SW 69867 48838, SW 69875 48828, SW 69879 48844, SW 69880 48848, SW 69883 48839, SW 69890 48841, SW 69894 48841, SW 69894 48845, SW 69891 48851, SW 69898 48844, SW 69898 48846, SW 69897 48822, SW 69896 48835, SW 69904 48824, SW 69913 48823, SW 69911 48841, SW 69911 48846, SW 69929 48813, SW 69928 48821, SW 69928 48842, SW 69925 48844, SW 69935 48820, SW 69943 48808, SW 69943 48817, SW 69938 48828, SW 69938 48840, SW 69936 48851
190590	Mine track in the west of Charlotte Moor	A 2.5m wide rather indistinct revegetated track runs eastwards from Engine Shaft at Great Charlotte back to a junction with two other mine tracks. This seems likely to have been the principal roadway to Engine Shaft during its operation, and would have been the route using which coal and materials would have been transported to this part of the Great Wheal Charlotte site.	None	SW 70591 48402 to SW 69715 49009
190591	Prospecting pits in the north-west of Charlotte Moor	A pair of prospecting pits on the mid southern slopes of Chapel Combe, probably representing prospecting activity at the eastern edge of the Great Wheal Charlotte sett. The pits are 1.5m x 1.6m in plan and 0.75m deep with spoil dumps on their northern sides.	None	SW 69926 49142, SW 69938 49144



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190592	Slit trenches in the north-west of Charlotte Moor	A pair of slit trenches measuring 1.5m x 0.5m in plan and 0.5m deep without appreciable spoil dumps set at the top of the southern slopes of Chapel Combe are the northernmost of a group in this general area, one of several clusters on Towan Moor which were excavated during manoeuvres carried out by US Army troops encamped here in June 1944 prior to their embarkation to the Normandy beaches.	None	SW 69947 49143, SW 69953 49133
190593	Site of slit trench in the north-west of Charlotte Moor	A slit trench, one of a pair shown on 1946 aerial photographs at this location and which would have been excavated by US Army troops camped on Town Moor in June 1944. This pit was not located during survey in 2009 though others were found in the land to the south and east.	None	SW 69899 49094
190594	Slit trench in the north-west of Charlotte Moor	A slit trench, one of a pair shown on 1946 aerial photographs at this location and which would have been excavated by US Army troops camped on Town Moor in June 1944. The pit measures 2.0m x 0.6m and is 0.5m deep. This is one of a large group in the heathland to the south and east.	None	SW 69907 49088
190595	Prospecting pits in the north-west of Charlotte Moor	A pair of small prospecting pits on the north-eastern edge of Charlotte Moor, probably associated with prospecting activity at the northern edge of North Wheal Towan. The pits have small associated spoil dumps on their downslope sides. The northernmost pit is 1.5m in diameter and 0.5m deep whilst the southernmost is 1.65m in diameter and 0.4m deep with a downslope dump 1.0m wide and 0.75m high.	None	SW 69948 49101, SW 69958 49092
190596	Slit trench in the north-west of Charlotte Moor	An isolated slit trench measuring 1.5m x 0.75m x 0.5m deep, one of a group excavated in this area by US Army troops camped here in 1944. A large number of additional pits are located to the south and east of this location.	None	SW 69956 49097
190597	Slit trenches in the north-west of Charlotte Moor	A group of three slit trenches arranged in a north-south line excavated in this part of Charlotte Moor by US Army troops encamped here in June 1944, and part of a larger cluster around the western and southern side of quarry [190600], overlooking Chapel Combe.	None	SW 69952 49069, SW 69950 49072, SW 69949 49077
190598	Possible quarry in the north-west of Charlotte Moor	A large, roughly circular excavation which is 12m in diameter and 2.5m deep has a substantial spoil dump on its downslope side. It is uncertain whether this is a shallow and undeveloped quarry or a mining-related feature		SW 69973 49084
190599	Slit trenches in the north-west of Charlotte Moor	A group of two slit trenches excavated in this part of Charlotte Moor by US Army troops encamped here in June 1944, and part of a larger cluster around the western and southern side of quarry [190600], overlooking Chapel Combe. These measure 2.0m x 0.6 m and are 0.6m deep.	None	SW 69973 49084, SW 69973 49093, SW 69978 49091
190600	Quarry in the north-west of Charlotte Moor	A quarry excavated into the hillslope on the upper edges of the southern slopes of Chapel Combe. The quarry is depicted on the 1st Edition of the OS 1:2500 mapping with its associated downslope spoil dump, on which the quarry is shown as measuring roughly 25m in diameter. The quarry is named 'Old Quarry' on this mapping, suggesting that it was already disused by this date. It does not appear to have been extended by 1908 (OS map evidence) and is still the same size, taking the form of a near vertically-sided cut running south-westwards into the hillslope with a rear face 15m high and an overgrown spoil dump to the north. The quarry has a small extension to the south-west [190601] and was accessed by a levelled roadway approaching it from the south [190603]. It was probably excavated to provide a source of building stone for mine structures at North Towan [190698] or Charlotte United Mines [190651] nearby.	None	SW 69989 49104

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190601	Quarry in the north-west of Charlotte Moor	A small extension to the south-west of the nearby larger quarry [190600], taking the form of a vertically-sided high level platform at its south-western corner. Its eastern end is based in part on levelled spoil material, whilst the base of the excavation deepens to the north-east. It is uncertain whether this is simply an abandoned extension to the main quarry, or whether an undocumented crane or quarry structures were sited here. The excavation is a maximum of 5.0m deep.	None	SW 69986 49088
190602	Prospecting pit in the north-west of Charlotte Moor	A prospecting pit measuring 1.8m x 1.6m in plan and 0.6m deep with a spoil dump to its east has been dug into the hillslope immediately adjacent to the nearby quarry [190600].	None	SW 69997 49100
190603	Quarry track in the north-west of Charlotte Moor	A 2.5m wide trackway levelled into the valley side runs northwards to the quarry near Charlotte United [190600] and provided a means of removing material from it for use at the nearby mine.	None	SW 69994 49094 to SW 70010 48987
190604	Slit trenches in the north-west of Charlotte Moor	A pair of slit trenches measuring 1.5m x 0.5m in plan and 0.5m deep without appreciable spoil dumps set at the top of the southern slopes of Chapel Combe are part of a group in this general area, one of several clusters on Towan Moor which were excavated by US Army troops camped here during June 1944.	None	SW 69969 49060, SW 69974 49056
190605	Prospecting pit in the north-west of Charlotte Moor	A circular prospecting pit 1.5m in diameter and 0.6m deep with a spoil dump on its downslope side is one of a group in the northern part of the North Towan sett.	None	SW 69982 49055
190606	Slit trenches in the north-west of Charlotte Moor	A group of four slit trenches on the upper southern slopes of Chapel Combe measure 1.5m x 0.5m in plan and 0.5m deep. These features were excavated by US Army troops camped here in early June 1944.	None	SW 70007 49105, SW 70001 49083, SW 70012 49071, SW 70016 49072
190607	Prospecting pits in the north-west of Charlotte Moor	A pair of prospecting pits near quarry [190600] which were probably excavated during the development of North Towan mine [190698]. The pits measure 1.8m x 1.4m in plan, are 0.5m deep and have spoil dumps on their eastern sides.	None	SW 70010 49080, SW 70014 49019
190608	Site of slit trench in the north-west of Charlotte Moor	1946 aerial photographs show an isolated, freshly-excavated pit at this location which is likely to have been a slit trench, one of a group excavated on Towan Moor by US Army troops encamped here during June 1944.	None	SW 70026 49060
190609	Sites of slit trenches in the north-west of Charlotte Moor	A group of three pits showing on a 1946 aerial photograph of Towan Moor appear to have been freshly excavated. Their location suggests that they may have been part of a group of slit trenches excavated by US Army Troops encamped here in 1944. They appear to have been backfilled and were not located during the 2009 survey.		SW 69993 49015, SW 69987 49014, SW 69964 49002
190610	Site of mine shaft in the north-west of Charlotte Moor	Cornwall Consultants' documentary searches identified a shaft (their Shaft H) at this location on the south side of Chapel Coombe, noting that its site was not identifiable during fieldwork. The shaft was plotted here by the Operation Minecap team in 1983 as Sheet 8/1, the record noting that the shaft was fitted with a 3.0m Clwyd Cap in May 1983. Its site appears to be within a shallow, heavily-vegetated gully running northwards to Chapel Combe, in the base of which there is a hollowed area 5.0m in diameter and at least 2.0m deep. This feature could not be accessed, but is the most likely candidate for this shaft.	The location and condition of this shaft need to be determined.	SW 70050 49065

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190611	Platformed area in the north-west of Charlotte Moor	The site of a small structure immediately to the south of the track leading up the base of Chapel Combe, located just to the north-west of Pleasant Shaft in Charlotte United Mine. This undocumented structure is defined by a 4.0m x 8.0m platformed area cut into the hillslope to a depth of 2.0m and by earth banks to east and west which are up to 3.0m wide and between 0.8m and 1.25m high. The levelled base of the structure is covered in small pieces of mine waste. Its function is unknown.	Monitor for scrub encroachment.	SW 70122 49083
190612	Adit in Chapel Combe	The portal to a shallow adit accessing New Engine Shaft in Charlotte United Mine [190618] opens immediately adjacent to the path leading up Chapel Combe. The adit measures 1.0m wide and is currently 1.0m high, its lobby to the north of the track being substantially infilled with ochreous material; water flows sluggishly from the adit, whose rock-cut opening is covered with a small Clwyd Cap. Timber planks provide a bridge across the adit lobby. Operation Minecap record Sheet 8/2a notes a 3.0m Clwyd Cap fitted here in August 1983.	Replace Clwyd Cap with a purpose-made grille incorporating the potential for bat access. Replace rotten timber plank bridge over lobby.	SW 70135 49065
190613	Adit in Chapel Combe	This adit, which served as the main drainage adit for North Towan Mine [190698], had its portal just to the south of the stream in Chapel Combe at this location. The 1st Edition OS 1:2500 mapping show a 22m x 6.0m hollowed area to the north of the stream with water issuing from this. The adit portal would have been at the eastern end of this hollow, immediately adjacent to the track in the base of the valley. The hollow has become substantially infilled with ochreous material, which is now only 1.0m deep. The adit mouth is now obscured, though water still seeps from the eastern end of the hollow.	None	SW 70189 49058
190614	Mine tracks in Chapel Combe	There appears to have been a complex network of mine roads and tracks linking up the component sites within North Towan mine [190698], most of which are documented on the OS 1:2500 1st Edition mapping. Two overgrown 2.5m wide tracks cut up to 1.2m deep into the hillslope leading away to the west and south of Charlotte United engine house [190616] represent parts of this network.	None	SW 70057 49041 to SW 70118 49985
190615	Mine pond in Chapel Combe	Marked as 'Clay Pit' on the OS 1st Edition 1:2500 mapping, this 1.65m deep sub-rectangular feature measuring 11m x 7.0m in plan which is set just to the west of Wheal Charlotte United engine house [190616] is more likely to have been its boiler pond, though the course of the leat serving this feature could not be identified given the dense vegetation covering the surrounding area.	Control encroaching scrub vegetation.	SW 70111 49047
190616	Pumping engine house in Chapel Combe	The engine house at Wheal Charlotte United was constructed in 1869-70, containing a 36" cylinder pumping engine which had been moved from Wheal Freedom not far to the north. The engine was advertised for sale in July 1873 (the mine at the time being known as New Wheal Charlotte) and in 1878 (when the mine was known as Charlotte United). As well as pumping from Pleasant Shaft just to its east [190618] the engine also drove flat rods to another (unidentified) shaft 80 fathoms away. The single eight ton boiler in the nearby house also supplied steam to the nearby winding engine. Half of the engine house has collapsed, only the bob wall to the east and the northern wing wall surviving to more or less their original height, the western wall having almost completely disappeared and the eastern wall being reduced to the depth of the cylinder plat. The chimney survives to a height of 17.25m, the upper section above the drip coursing retaining 45 intact courses of brickwork. The house, which measures 8.35m x 5.55m in plan, is constructed of killas with granite framing to wall corners and wall openings, the bob wall containing notably more granite than the other walls and retaining traces of false coursing on its pointing. The head of the plug door has a brick-arched top. The surviving northern wall includes the timber-lintelled boiler house door, the girder opening, steam pipe opening and cylinder drain opening, as well as a row of pockets for the boiler house roof joists. The remains of the southern wall retain the bases of a pair of splay-revealed ground floor windows. An archive photograph in the Benney Collection shows that there was also a centrally-placed window lighting the middle floor on this elevation. The fragments of the rear wall which still remain attached to the chimney show the locations of a probably lintelled cylinder	Some conservation works are required to consolidate this structure. Encroaching vegetation should be cleared from around and within the building. The condition of the bedrock on which the bob wall is founded should be checked for stability.	SW 70134 49040

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190617	Boiler house in Chapel Combe	doorway and a window on the middle floor. It is likely that there was a centrally-placed window lighting the bob loft. The engine house was partly conserved by the National Trust in 1999.  The masonry-constructed boiler house serving both the pumping and winding engines at Charlotte United was sited on the northern side of the pumping engine house and housed a single 8 ton boiler. The surviving remains of the building measure 6.25m wide and 14m long (though the building would originally have been 16.35m long). The eastern wall of the structure was undermined by the subsidence of the shaft collar and has disappeared completely, whilst the western wall has collapsed to some degree and has an opening 3.55m wide at its centre, probably the original doorway through which the boiler would have been brought into the house. The northern wall survives to a height of 2.65m and includes a small window opening just to the east of its centre. The floor of the building is partly covered with vegetated rubble.	Some conservation works are required to consolidate this structure. Encroaching vegetation should be cleared from around and within the building.	SW 70133 49047
190618	Mine shaft in Chapel Combe	New Engine or Pleasant Shaft in Charlotte United may originally have been sunk during the working of North Towan and is noted by Brown and Acton (1999) as reaching 'no depth to speak of'. Dines (1956) provides no information regarding this shaft, suggesting that the mine plans have probably been lost. The collar of the shaft has collapsed, leaving a 5.0m deep, 9.25m diameter steep-sided crater immediately to the east of the engine house, on the south-eastern side of this parts of the surface balance bob mounting [190619] survive, albeit precariously. The Operation Minecap Project undertook no works at this shaft, which has recently been re-fenced by the National Trust.	The present chokage of the shaft is likely to be only temporary, though should be at or near bedrock. Further coning of the shaft throat will threaten to undermine the engine house and boiler house, as well as the balance bob loadings. Consider installing a permanent closure to the shaft at the base of the present collapse to prevent further subsidence.	SW 70140 49039
190619	Balance bob mountings at shaft in Chapel Combe	A pair of tall masonry structures on the south-eastern side of the crater which now marks the site of New Engine or Pleasant Shaft in Charlotte United [190618] represent the remains of the mountings for the surface balance bob fitted here to counterbalance the weight of the pump rods on the shaft. Brown and Acton (1999) note that this bob also drove 80 fathoms of surface flat rods.	These require the clearance of scrub vegetation and detail recording. It may be that subsidence of the ground on which the balance bob mountings were founded has advanced to the point where their collapse is inevitable. If this is not the case they should be consolidated.	SW 70147 49034
190620	Horse whim platform in Chapel Combe	A levelled platform measuring 18m x 18m on the hillslope to the east of the pumping engine house at Charlotte United [190616] represents the site of either a horse whim or a capstan servicing the nearby shaft [190618].	Prevent scrub encroachment across this feature.	SW 70184 49001
190621	Site of winding engine house in Chapel Combe	A levelled platform measuring 25m x 10m cut into the valley side to the east of the engine house on Charlotte United New Engine Shaft was the site of a timber-constructed winding engine house within which there was a 22" cylinder horizontal combined winding and stamping engine (with 16 heads of stamps). A roofed building measuring 10.5m x 6.75m at this location to the east of Pleasant Shaft, Charlotte United [190618] shown on the 1st Edition Ordnance Survey 1:2500 mapping. The building was demolished on the closure of the mine in 1878 and has left no trace	Prevent scrub encroachment across this feature.	SW 70189 49013

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190622	Mine roadway in Chapel Combe	Part of a complex of roads and tracks linking up elements of North Towan, later Charlotte United mine. This overgrown roadway is 2.5m wide, levelled into the hillslope and leads just south of east for 200m, where it is documented as turning upslope towards the core area of North Towan.	Prevent scrub encroachment across this feature.	SW 70158 49036 to SW 70213 48636
190623	Site of prospecting pits in Chapel Combe	A group of three probable prospecting pits shown on 1946 aerial photograph 106G-UK 1663-3380 in an area so densely vegetated in bracken at the time of survey that they could not be located.	None	SW 70075 49013, SW 70083 49002, SW 70097 49002
190624	Bomb craters in Chapel Combe	A group of three circular pits with annular spoil dumps on the upper southern slopes of Chapel Combe have the appearance of small bomb craters and may well be the result of the use of mortar bombs by US Army troops stationed here in June 1944. The example at SW 70063 48980 measures 4.0m in diameter and is 0.7m deep, having a doughnut shaped spoil dump around its periphery, and may be a mortar bomb pit, as may be the 2.0m diameter circular pit without an obvious spoil dump at SW 70085 48963 and the pit measuring 3.0m x 2.0m x 0.8m deep at SW 70056 48944.	None	SW 70063 48980, SW 70085 48963, SW 70056 48944
190625	Prospecting pits in the central part of Charlotte Moor	A group of five prospecting pits in an area of open ground to the south-west of Charlotte United Pleasant Shaft. The pits vary in size, most averaging 1.75m long, 0.75m wide and up to 0.75m deep with spoil dumps on their downslope sides. The example at SW 70063 48980 measures 4.0m in diameter and is 0.7m deep, having a doughnut shaped spoil dump around its periphery, and may be a mortar bomb pit, as may be the 2.0m diameter circular pit without an obvious spoil dump at SW 70085 48963.	None	SW 70048 49001, SW 70001 48956, SW 70019 48966, SW 70019 48945, SW 70031 48948
190626	Site of prospecting pits in the central part of Charlotte Moor	1946 aerial photograph 106G-UK 1663-3380 shows four additional pits in the area occupied by prospecting pits [190625]. Field survey failed to locate these features, which may have been slit trenches which have subsequently become backfilled or obscured by vegetation.	None	SW 70019 48976, SW 70050 48980, SW 70054 48958, SW 70034 48938
190627	Site of prospecting pits in the central part of Charlotte Moor	A pair of probable prospecting pits shown on 1946 aerial photograph 106G-UK 1663-3380 in an area which was so densely vegetated in bracken that they could not be located during field survey.	None	SW 70112 48974, SW 70127 48979
190628	Site of possible shaft in the central part of Charlotte Moor	Cornwall Consultants' (2008) report mapping shows a pair of shafts (Shaft D) at this location, noting that they were difficult to identify because of the vegetation in this area. Dense vegetation also prevented access to this area in 2009. Operation Minecap did not record any shafts at this location.	Monitor Clwyd Cap for signs of corrosion and shaft fills for any indications of subsidence.	SW 70186 49001
190629	Mine shaft in the central part of Charlotte Moor	One of a run of mine shafts (Vian's Shaft) aligned north-south on the southern slopes of Chapel Combe and probably developed as part of North Towan, this shaft, set on a much disturbed spoil dump has been fitted with a Clwyd Cap. Operation Minecap Sheet 9/3 noted the shaft as being 'Open and dangerous - for traditional cap', it was coned with a 7.0m cap, concreted and backfilled, the works being completed in November 1983.	Monitor Clwyd Cap for signs of corrosion and shaft fills for any indications of subsidence.	SW 70194 48969
190630	Probable mine shaft in the central part of Charlotte Moor	A hollowed area 9.0m in diameter and 2.0m deep with a substantial spoil dump on its downslope side is probably an undocumented mine shaft. This site does not seem to have been treated by Operation Minecap and no Clwyd Cap is visible.	Monitor Clwyd Cap for signs of corrosion and shaft fills for any indications of subsidence.	SW 70180 48954
190631	Horse whim platform in North Towan Mine.	The remains of a horse whim platform which served the nearby shaft [190631] shows as a levelled platform next to it. Works undertaken by Operation Minecap are the probable cause of its truncation on its northern side.	None	SW 70175 48949

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190632	Mine shaft in the central part of Charlotte Moor	A small choked shaft (Cornwall Consultants' Shaft B) covered with a Clwyd Cap at the centre of a rather disturbed spoil dump. This is probably the shaft noted as Operation Minecap record Sheet 9/33 as having been fitted with a 3.0m Clwyd Cap and backfilled in May 1983.	Monitor Clwyd Cap for signs of corrosion and shaft fills for any indications of subsidence.	SW 70170 48939
190633	Mine shaft in the central part of Charlotte Moor	A shaft (Cornwall Consultants' Shaft C) covered with a Clwyd Cap under which there are some slight signs of subsidence of the infill material. Immediately to the east of the shaft is a large levelled area measuring 50m x 15m, downslope of the shaft is its relatively small spoil dump, whilst immediately to the east of the shaft and hollowed into the slope is a 10m diameter platform which represents the site of its horse whim. Operation Minecap record sheet 9/2 notes this shaft as 'Open and very dangerous', measuring 4.0m x 4.0m at the top of its mouth and 2.0m x 1.5m in depth. The shaft was fitted with a 5.0m Clwyd Cap in September 1983, and was concreted and backfilled in October 1983.	Monitor Clwyd Cap for signs of corrosion and shaft fills for any indications of subsidence.	SW 70147 48917
190634	Firing range for Holman's Projector in the central part of Charlotte Moor	Field trials of the Holman's Projector - a compressed air powered anti-aircraft mortar firing adapted Mill's Bombs - were carried out on Towan Moor from February 1940. 1946 aerial photograph 106G-UK 1663-3380 shows four light coloured elongated rectangular areas at approximately 100m intervals at these locations, the first being approximately 150m to the west from what appears to be the mortar site [190707]. These were interpreted by the National Mapping Programme as a rifle range, but a mortar proving range seems more likely. Field survey revealed no significant remains at these locations, suggesting that the targets were of a temporary nature and that only blank ammunition was fired.	Further documentary research is required for this site.	SW 69936 49048 to SW 70157 48758
190635	Prospecting pits in the central part of Charlotte Moor	A pair of prospecting pits in open ground to the west of the core area of North Towan/Charlotte United Mines. These measure 1.5m x 1.0m x 0.6m deep with spoil dumps on their downslope sides.	None	SW 70047 48872, SW 70052 38871
190636	Prospecting pit in the central part of Charlotte Moor	An isolated prospecting pit on Towan Moor, part of a scattered group in this general location which appears to form the south-western boundary of this activity in this part of Towan Moor. The pit measures 1.5m x 0.85m x 0.5m deep and has a spoil dump on its downslope side.	None	SW 70080 48840
190637	Prospecting pits in the central part of Charlotte Moor	A pair of prospecting pits on the slopes of Towan Moor, part of a group marking the south-western extent of prospecting activity in this area. The pits measure 1.8m in length, 0.8m wide and 0.4m deep, and have spoil dumps on their downslope sides.	None	SW 70123 48813, SW 70130 48815
190638	Prospecting pits in the central part of Charlotte Moor	A group of three prospecting pits to the east of a line of shafts worked by North Towan/Charlotte United Mines and immediately upslope from a second larger group of similar features. These average 1.75m long x 0.75m wide and 0.75m deep, with spoil dumps on their downslope sides.	None	SW 70153 48883, SW 70153 48886, SW 70153 48890
190639	Prospecting pits in the central part of Charlotte Moor	A group of eight prospecting pits in an area of open ground just to the east of a line of shafts marking a lode outcrop worked by North Towan/Charlotte United Mines. These are not laid out in a conventional linear fashion, but in a fairly tight cluster. The pits are of conventional size, ranging from 1.5m x 0.75m in plan to 2.2m x 1.0m in plan. Most are about 0.75m deep and have well developed spoil dumps on their downslope sides.	None	SW 70173 48908, SW 70177 48909, SW 70176 48916, SW 70172 48917, SW 70178 48918, SW 70182 48925, SW 70184 48920, SW 70188 48912
190640	Mine shaft in the central part of Charlotte Moor	Footway Shaft in North Towan would have sited the ladders used by men to get underground. The shaft site lies within a steep-sided heavily vegetated depression and is covered with a Clwyd Cap. Operation Minecap record Sheet 9/4 probably refers to this shaft, which is noted as having been covered with a 3.0m Clwyd Cap and filled in June 1983.	Monitor Clwyd Cap for signs of corrosion and shaft fills for any indications of subsidence.	SW 70213 48943

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190641	Mine shaft in the central part of Charlotte Moor	A small overgrown spoil dump and associated shaft at the northern edge of North Towan Mine sited just to the north of the track leading up Chapel Combe. The shaft, which was shown on the 1st Edition of the OS 1:2500 mapping, is choked and is covered with a Clwyd Cap. Operation Minecap record Sheet 9/5 notes that the shaft was coned, filled and fitted with a 3.0m Clwyd Cap in August 1983.	Monitor Clwyd Cap for signs of corrosion and shaft fills for any indications of subsidence.	SW 70283 48970
190642	Mine shaft in Chapel Combe	A small mine shaft shown on the 1st Edition of the OS 1:2500 mapping which was probably an adit shaft in North Towan. The shaft is choked and covered with a Clwyd Cap, sited near the stream within a 9.0 diameter, 1.5m deep hollowed area which is vegetated with willows. Operation Minecap record Sheet 8/5 notes that the shaft was coned, filled and fitted with a 4.0m Clwyd cap in May 1983.	Monitor Clwyd Cap for signs of corrosion and shaft fills for any indications of subsidence.	SW 70297 49003
190643	Mine shaft in Chapel Combe	A small mine shaft sited adjacent to the stream in Chapel Combe and shown on the OS 1st Edition 1:2500 mapping was probably a ventilation shaft on North Wheal Towan adit. The shaft is choked, covered with a Clwyd Cap and lies within an 8.0m area of low, disturbed and vegetated mine dumps. Operation Minecap record Sheet 8/6 notes that the shaft was coned, filled and fitted with a 3.0m Clwyd Cap in July 1983.	Monitor Clwyd Cap for signs of corrosion and shaft fills for any indications of subsidence.	SW 70329 48997
190644	Water channel in the central part of Charlotte Moor	A water channel 0.5m wide, 0.5m deep and 50m long leads downslope from a mine pond [190647] and a platformed area [190646] on the northern edge of Wheal Charlotte United. The northern end of this feature is lost in dense vegetation and its function could not be determined.	None	SW 70260 48955 to SW 70264 48907
190645	Slit trenches in the central part of Charlotte Moor	A group of slit trenches excavated in June 1944 by US Army troops on exercise on Towan Moor lie on the hillslope immediately downslope from the core of Charlotte United Mine. Typically these measure 2.0m x 0.6m x 0.6m deep and are generally not accompanied by distinct spoil dumps.	None	SW 70256 48954, SW 70241 48943, SW 70252 48942, SW 70252 48931, SW 70272 48928, SW 70278 48923, SW 70286 48922, SW 70277 48914, SW 70263 48909
190646	Platformed area in the central part of Charlotte Moor	A vegetated platformed area 10m in diameter at this location appears to represent a feature shown on the 1908 OS 1:2500 mapping. This appears to be related to a pond just upslope [190647] and a water channel immediately downslope, though its exact function is unclear.	None	SW 70267 48901
190647	Site of pond in the central part of Charlotte Moor	The 1st Edition of the OS 1:2500 mapping shows a 10m x 10m plan square feature at this location, at the northern side of the site of Charlotte Unite Mine. Fieldwork suggests that this was the site of a mine pond, from which a channel [190644] led away downslope. The earthwork remains confirm the archive mapping.	None	SW 70267 48883
190648	Site of pond in the central part of Charlotte Moor	The 1st Edition OS mapping show a sub-triangular feature at this location measuring 9.5m x 5.0m. Fieldwork identified the overgrown earthwork remains of a small mine pond at this location.	None	SW 70299 48884
190649	Slit trench in the central part of Charlotte Moor	An isolated slit trench measuring 2.0m x 0.6m x 0.5m deep was found at this location. This appears to be an outlying example of a group of similar features not far to the north-west, these having been created during field exercises by US Army troops in June 1944.	None	SW 70292 48881
190650	Sites of slit trenches in the central part of Charlotte Moor	A group of five slit trenches appear to be depicted on 1946 aerial photograph 106G-UK 1663-3380. Vegetation conditions within this area precluded confirmation that these features survive, though other similar features dating from June 1944 survive nearby.	None	SW 70310 48882, SW 70315 48877, SW 70323 48878, SW 70314 48871, SW 70328 48867

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190651	Mine in the central part of Charlotte Moor	The tin and copper lodes in the southern part of Charlotte Moor were worked under a number of names including North Towan and Charlotte United. A sale notice in the Royal Cornwall Gazette of 1807 refers to the disposal of the mine materials of North Towan, consisting of 'a Steam-Engine, 28½ inches; double capstan sheers; capstan rope, connection and pinion rods, slide plates and pins, caps, joints, &c. &c. about 40 fathoms of iron pumps of different sizes, working cylinders, clack-seats, wind-bores, plunger-poles, &c., two whims almost new, whim-ropes, kibbals, &c, timber and iron of various descriptions and sundry other Mine Materials.' An advertisement in the following year stated 'To be sold by survey at North Towan Mine, a complete steam engine, 28½ inch cylinder, double power. Two Work whims, one almost new. Several 6-inch Pumps, one 5-inch and one 7-inch Plunger, with sundry other Mining Materials. The date at which this working commenced is unknown, but in 1840 the Tithe Award mapping of showed a group of three structures centred at SW 70260 48612, these being labelled North Towan Mine, evidently a re-working of the sett. This area contains no traces of these structures, the principal area of shafts, their associated spoil dumps and a range of buildings associated with Charlotte United Mine, the successor to North Towan, was shown 200m to the north on the OS 1st Edition 1:2500 mapping of 1878. North Towan Mine, subsequently reworked as New Charlotte and Charlotte United Mine) worked three lodes in the central part of Wheal Charlotte Downs, adjoining Great Wheal Charlotte [190548] on its southern side. Records of the mine are scanty, but Dines (1956) recorded outputs (as Charlotte) of 23,100 tons of 8.5% copper ore between 1820 and 1856 and 3 tons of black tin in 1870 as New Charlotte or North Towan.	This is a problematic area as it contains the sites of a significant number of mine shafts protected by Clwyd Caps, as well as two open mine shafts. Specialist reports suggest that there may be shallow mine workings within this area which may be prone to collapse, some of the Clwyd Caps possibly having been set over features of this nature. To enhance public safety this area has been allowed to scrub in, though as a consequence none of the earthworks and building remains associated with a long period of mining activity on this site is currently accessible or has been adequately recorded. A reappraisal of the management of this area should take place, balancing archaeological, ecological, safety and access issues.	SW 70260 48612
190652	Demolished mine buildings in the central part of Charlotte Moor	The OS 1st Edition 1:2500 mapping shows three conjoined north-south aligned 13.25 x 4.0m rectangular structures at this location within Charlotte United Mine. To their east the mapping showed an open feature measuring 13.25m x 11.25m. These structures appear to be within the abandoned dressing floors associated with the mine, these features probably representing three settling tanks and a pond. The area within which these features lay is densely overgrown, making access almost impossible, but some traces of a hollowed area appear to survive at this location.	None	SW 70308 48863
190653	Demolished mine buildings in the central part of Charlotte Moor	The Ordnance Survey 1st Edition 1:2500 mapping depicts what appears to have been elements of dressing floors at Wheal Charlotte United at this location which comprises an open yard measuring 27m x 12m with a small roofed building at their south-western end and a 6.0m diameter buddle near its centre. The mine was disused at the time of mapping, and by 1907 (map evidence) these features were no longer mapped. Vegetation conditions within this area precluded survey; whilst the structures appear to have been demolished, it seems likely that earthwork evidence for the dressing floors will survive.	None	SW 70313 48850



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190654	Quarry in Chapel Combe. Possible shaft site	A small quarry cut into the valley side adjacent to the track leading along the southern side of Chapel Combe near Charlotte United engine house. The back wall of the quarry rises from 2.0m to 10m high; its spoil dump forms a linear platform along the valley side to its east and west and may have been used to form the trackway, which is here on a steep section of the valley side. The location of the quarry suggests that it might be on a lode outcrop and there may be a blocked shaft in its base, though none is documented here.	None	SW 70398 48883
190655	Adit in Chapel Combe	The lowest of the North Towan trial adits (Cornwall Consultants' Adit 1), this runs from a 7.0m long rock-cut lobby for a distance of 18m and a heading of 199 degrees to a dead end and averages 1.8m high and 1.0m wide. The small spoil dump to the north of the adit partly backfills shaft [190657].	None	SW 70447 48865
190656	Mine shaft in Chapel Combe	A small choked shaft in the valley base and documented on the 1st Edition 1:2500 OS mapping was probably developed as part of South Charlotte mine. This shaft shows as a choked hollow which is 6.0m diameter at its base and 15m diameter at its top, the hollow being 3.0m deep.	Monitor shaft closure for indications of subsidence. The shaft is currently difficult to access and does not pose a danger to visitors.	SW 70450 48871
190657	Mine shaft in Chapel Combe	Evans's Shaft in South Charlotte mine [190678] is sited immediately adjacent to another similar feature [190656] and was shown on the 1st Edition OS 1:2500 mapping. The shaft has become partly infilled with spoil from the excavation of adit [190655] and now shows as a hollow 12m in diameter and 1.5m deep around the circumference of which traces of an abandonment wall survive. The shaft is choked.	Monitor shaft closure for indications of subsidence. The shaft is currently difficult to access and does not pose a danger to visitors.	SW 70455 48867
190678	Mine in Chapel Combe	South Charlotte Mine is recorded on Symons' 1870 map of the St. Agnes Mining District as a component of New Charlotte (otherwise Charlotte United [190698]). The mine is otherwise very poorly documented, details of its production probably being subsumed within Charlotte United in Dines (1956). The trial adit [190655], pair of small shafts [190657] and [190656] and overgrown dressing floor near the stream at this location probably represent the principal remains of this site.	None	SW 70438 48876
190659	Mine dump and dressing floor in Chapel Combe	A level-topped mine dump which appears to have derived from either Evans' Shaft in South Towan [190657] and which was spread to its north-west is 10m wide and at least 45m long and 2.0m deep. Its southern side is defined by a 3.0m high revetment wall over most of its length, suggesting that this was the site of undocumented mine structures, most possibly a small dressing floor. It seems likely that the stream course here was artificially diverted from the north where the New Charlotte dumps spill down the hillslope. Vegetation conditions prevented detailed survey within this area, though there are hints of a leat [190697] heading in this direction further up the valley and on a slightly higher elevation.	Clear encroaching vegetation, carry out detailed survey and undertake any necessary structural consolidation works.	SW 70434 48875
190660	Adit in Chapel Combe	Opening onto the track running along the southern side of Chapel Combe is a trial adit (Cornwall Consultants' Adit 2). This is 11m long to a dead end and averages 1.8m high and 1.0m wide and does not appear to have an associated spoil dump.	None	SW 70447 48847
190661	Site of slit trenches in the central part of Charlotte Moor	A group of six small fresh excavations showing on 1946 aerial photograph 106G-UK 1663-3380 probably represent slit trenches excavated by US Army troops encamped on Charlotte Moor in the June 1944 prior to embarkation to Normandy. The are within which these pits are located is very densely overgrown, preventing access in 2009 and it is uncertain whether these features survive.	None	SW 70231 48881, SW 70237 48878, SW 70223 48864, SW 70203 48855, SW 70210 48844, SW 70214 48848

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190662	Site of slit trenches in the central part of Charlotte Moor	1946 aerial photograph 106G-UK 1663-3380 shows a pair of freshly-excavated pits at this location, almost certainly slit trenches excavated by US Army troops during June 1944. Vegetation conditions during field survey made it impossible to locate these features.	None	SW 70263 48855, SW 70268 48859
190663	Site of slit trenches in the central part of Charlotte Moor	1946 aerial photograph 106G-UK 1663-3380 shows a tight group of five freshly dug small pits at this location. These are likely to have been slit trenches excavated by US Army troops during exercises in June 1944. Vegetation conditions during the field survey made it impossible to confirm whether or not evidence for these features survives.	None	SW 70241 48839, SW 70244 48838, SW 70249 48836, SW 70239 48832, SW 70248 48826
190664	Mine shaft in the central part of Charlotte Moor	A small undocumented shaft (though possibly Blakeney's Whim Shaft) within an area of dense vegetation which would have been developed as part of North Towan has been covered with a Clwyd Cap. No works were noted at this location in Operation Minecap records.	Monitor shaft Clwyd Cap for signs of corrosion and shaft fills for indications of subsidence.	SW 70257 48830
190665	Mine shaft in the central part of Charlotte Moor	A small undocumented shaft within an area of dense vegetation which would have been developed as part of North Towan has been covered with a Clwyd Cap, though this work is not noted in Operation Minecap records.	Monitor shaft Clwyd Cap for signs of corrosion and shaft fills for indications of subsidence.	SW 70259 48814
190666	Mine shaft in the central part of Charlotte Moor	A small undocumented shaft within an area of dense vegetation which would have been developed as part of North Towan has been covered with a Clwyd Cap, though this work is not noted in Operation Minecap records.	Monitor shaft Clwyd Cap for signs of corrosion and shaft fills for indications of subsidence.	SW 70252 48813
190667	Demolished mine building in the central part of Charlotte Moor	The 1st Edition of the OS 1:2500 mapping shows a 10m x 6.0m roofed structure at this location with an attached yard of similar proportions to its east. By 1908 (map evidence) the building, which is likely to have been associated with North Towan Mine, had been demolished. The area within which this structure stood was so heavily vegetated that it was not possible to identify its site nor to confirm whether any evidence for it survives.	This area is currently under dense scrub cover, preventing access and recording. The current management arrangements for this area should be re-appraised to consider whether safety issues preclude management of encroaching scrub.	SW 70221 48829
190668	Prospecting pits in the central part of Charlotte Moor	A group of four prospecting pits on a north-south alignment in dense vegetation on the fringes of the North Towan workings. These average 1.85m x 1.6m in plan, 0.6m deep and have spoil dumps on their northern sides.	None	SW 70196 48824, SW 70195 48817, SW 70193 48811, SW 70184 48802
190669	Site of explosives magazine in the central part of Charlotte Moor	The 1st Edition of the OS 1:2500 mapping identifies this as the location of the Charlotte United Mines explosives magazine, depicting it as 5.0m x 4.0m roofed structure a short way to the west of the core of the mine. By 1908 (map evidence) the building appears to have been demolished. The site is now marked by a small area of scrub, but no upstanding components have survived.	None	SW 70166 48787
190670	Prospecting pit in the central part of Charlotte Moor	An isolated prospecting pit, probably excavated as part of North Towan. The pit measures 1.8m x 1.5m and is 0.4m deep with a spoil dump on its north side.	None	SW 70146 48784

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190671	Site of slit trenches in the central part of Charlotte Moor	1946 aerial photograph 106G-UK 1663-3380 shows a cluster of seven small freshly-excavated pits at this location, almost certainly slit trenches dug by US Army troops on manoeuvres on Towan Moor in early June 1944. Dense vegetation within this area did not allow their sites to be checked to identify whether they survived.	None	SW 70232 48791, SW 70238 48794, SW 70238 48787, SW 70247 48787, SW 70239 48776, SW 70245 48779, SW 70256 48778
190672	Mine shaft in the central part of Charlotte Moor	A small and undocumented mine shaft, probably developed as part of North Towan, this lies within an area of dense scrub vegetation. The shaft shows as a Clwyd Cap within a small hollowed area. The shaft is noted in Operation Minecap record Sheet 9/6 as having been fitted with a 3.0m Clwyd Cap and filled in July 1983.	Monitor Clwyd Cap for signs of corrosion and shaft fills for any indications of subsidence.	SW 70264 48795
190673	Demolished mine building in the central part of Charlotte Moor	The 1st Edition of the OS 1:2500 mapping show an L-shaped roofed structure at this location near the heart of Charlotte United Mine, at that time (1878) disused for some years. The building's long sides measured 8.25m and 6.3m, and it was sited immediately adjacent to a mine road. It seems likely that this was a mine service building of some type. By 1908, this building had been demolished. The vegetation on this part of the site was particularly dense, and no traces of the structure could be identified during field survey.	This area is currently under dense scrub cover, preventing access and recording. The current management arrangements for this area should be re-appraised to consider whether safety issues preclude management of encroaching scrub.	SW 70285 48816
190674	Demolished mine building in the central part of Charlotte Moor	The 1st Edition of the OS 1:2500 mapping depicts a 23m x 6.0m plan rectangular roofed structure with a 5.5m x 2.75m structure immediately to its south at this location, at the southern edge of what appears to have been a dressing floor. By 1908 (OS map evidence) the building had been demolished. The building is aligned between Blakeney's Whim Shaft 35m to the west and Way's Shaft 55m to the east. The size and orientation of this building suggests that this was a steam whim working both shafts, its boiler house making up the eastern end of the building. Vegetation conditions in this area precluded full survey, but if any evidence for the engine house survives it is likely to consist of no more than its footings.	This area is currently under dense scrub cover, preventing access and recording. The current management arrangements for this area should be re-appraised to consider whether safety issues preclude management of encroaching scrub.	SW 70307 48832
190675	Demolished mine building in the central part of Charlotte Moor	A small, rectangular roofless structure measuring 4.25m x 3.25m is shown at this location to the south of shaft [190676] on the 1st Edition OS 1:2500 mapping. It was no longer shown on the 1908 2nd Edition of the mapping. The area is now heavily scrubbed in and no remains of what might have been a small explosives magazine was found during the 2009 survey.	This area is currently under dense scrub cover, preventing access and recording. The current management arrangements for this area should be re-appraised to consider whether safety issues preclude management of encroaching scrub.	SW 70354 48809
190676	Mine shaft in the central part of Charlotte Moor	A substantial shaft, one of the principal shafts (Way's Shaft) developed during the working of North Towan set at the centre of a prominent spoil dump 35m in diameter and rising to over 12m high, with a secondary spoil dump to its north measuring 30m x 20m in plan is shown on mid-19th mine plans, and as an open feature on the 1st Edition OS 1:2500 mapping. The shaft is still open, though has been covered with a Clwyd Cap, and remains surrounded by the abandonment hedge shown on the 1st Edition OS 1:2500 map. The associated spoil dump appears to be relatively intact and undisturbed, though is now so heavily scrubbed in on its	Monitor Clwyd Cap for signs of corrosion and shaft fills for any indications of subsidence.	SW 70361 48822

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		upper surface and sides that the shaft could not be accessed. Operation Minecap records Sheet 9/7 notes this shaft as 'Open and Dangerous' and that it was fitted with a 7.0m diameter Clwyd Cap in October 1983. An additional note reads 'National Trust Wheal Charlotte. No access. Env. Difficult. Comp.'		
190677	Prospecting pits in the central part of Charlotte Moor	A pair of prospecting pits on the lower northern slopes of Towan Moor appear to be part of a group marking the north-eastern limits of this form of activity associated with North Towan mine. The pits are 1.5m long x 0.75m wide and 0.6m deep and have spoil dumps on their downslope sides.	None	SW 70401 48822, SW 70404 48825
190678	Two prospecting pits in the central part of Charlotte Moor	A pair of very closely-set prospecting pits on the lower northern slopes of Towan Moor appear to be part of a group marking the north-eastern limits of this form of activity associated with North Towan mine. The pits are 1.5m long x 0.75m wide and 0.6m deep and have spoil dumps on their downslope sides.	None	SW 70424 48803, SW 70429 48804
190679	Prospecting pits in the central part of Charlotte Moor	A group of four very closely-set prospecting pits on the lower northern slopes of Towan Moor appear to be part of a group marking the north-eastern limits of this form of activity associated with North Towan mine. The pits are 1.5m long x 0.75m wide and 0.6m deep and have spoil dumps on their downslope sides.	None	SW 70447 48809, SW 70450 48809, SW 70453 48809, SW 70454 48811
190680	Mine shaft in the central part of Charlotte Moor	A small mine shaft, one of a group worked as part of North Towan and which now lies in an area of dense scrub has been fitted with a Clwyd Cap. Operation Minecap record Sheet 9/39 notes that a 4.0m diameter Clwyd Cap was fitted to this shaft, which was backfilled, the work being completed in May 1983.	Monitor Clwyd Cap for signs of corrosion and shaft fills for any indications of subsidence.	SW 70309 48794
190681	Mine shaft in the central part of Charlotte Moor	A small, undocumented shaft, worked as part of North Towan mine within an area of very dense scrub. Operation Minecap record Sheet 9/38a notes that the shaft was fitted with a 3.0m diameter Clwyd Cap and filled in August 1983.	Monitor Clwyd Cap for signs of corrosion and shaft fills for any indications of subsidence.	SW 70317 48788
190682	Mine shaft in the central part of Charlotte Moor	A small, undocumented shaft, worked as part of North Towan mine within an area of very dense scrub. Operation Minecap record Sheet 9/38 notes that the shaft was fitted with a 3.0m diameter Clwyd Cap and filled in July 1983.	Monitor Clwyd Cap for signs of corrosion and shaft fills for any indications of subsidence.	SW 70329 48797
190683	Site of mine pond in the central part of Charlotte Moor	The 1st Edition OS 1:25000 mapping shows a 16.5m x 10m rectangular feature at this location. This was probably a mine pond. It lies in a heavily-scrubbed area with poor access and its condition and dimensions could not be checked.	This area is currently under dense scrub cover, preventing access and recording. The current management arrangements for this area should be re-appraised to consider whether safety issues preclude management of encroaching scrub.	SW 70341 48783
190684	Mine shaft in the central part of Charlotte Moor	Possibly an undocumented mine shaft or alternatively a hollow caused by the subsidence of a near-surface stoped area, this feature, which is now covered by a Clwyd Cap lies within an area which is now covered by very dense scrub. Operation Minecap record Sheet 9/8 noted a hollowed area at this location measuring 5.0m which was fitted with a 5.0m diameter Clwyd Cap and backfilled in May 1983.	Monitor Clwyd Cap for signs of corrosion and shaft fills for any indications of subsidence.	SW 70285 48771

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190685	Prospecting pit in the central part of Charlotte Moor	An isolated prospecting pit on the south-eastern edge of the core area of Charlotte United Mine, just to the south of a cluster of small shafts. The pit measures 1.8m x 0.75m and is 0.6m deep with a spoil dump on its downslope side.	None	SW 70271 48754
190686	Prospecting pit in the central part of Charlotte Moor	A pair of closely-set prospecting pits on the south-eastern edge of the core area of Charlotte United Mine. The pits measure 1.75m x 0.8m x 0.75m deep and have spoil dumps on their downslope sides.	None	SW 70309 48761, SW 70310 48760
190687	Prospecting pit in the central part of Charlotte Moor	An isolated prospecting pit on the south-eastern edge of the core area of Charlotte United Mine. The pit measures 1.8m x 0.75m and is 0.6m deep with a spoil dump on its downslope side.	None	SW 70317 48745
190688	Prospecting pit in the central part of Charlotte Moor	A single prospecting pit measuring 1.5m x 0.5m in plan and 0.5m deep with an associated spoil dump. This appears to have originally been one of a group of pits [190704] shown on a 1946 aerial photograph, some of which appear to have been slit trenches.	None	SW 70348 48733
190689	Extractive pit in the central part of Charlotte Moor	A substantial hollow up to 5.0m diameter and 1.25m deep at this location may be an outcrop working pit. Dense vegetation at this location prevented detailed survey.	None	SW 70203 48752
190690	Bank and ditch in the central part of Charlotte Moor	A cross-contour boundary feature 102m long appears from map evidence to have been constructed between 1878 and 1908 to the south-west of Charlotte United Mine. The feature is 2.0m high and between 0.6m and 1.2m high, being accompanied in its lower section by a vertically-sided linear hollow over 1.0m deep. The boundary appears to be mostly an earth bank, though with some stone revetment. It lies within an area of dense scrub vegetation. It is unclear why this boundary was constructed, as it extends across only part of the hillslope. It is possible that other sections of this feature to the north and south remained unfinished. A photograph taken in early morning light from the north side of the valley suggests that the boundary may continue as a low feature curving gently to the west, terminating at SW 70284 48996, though scrub growth made this area inaccessible for survey in 2009.	None	SW 70209 48804 to SW 70161 48712
190691	Prospecting pits in the central part of Charlotte Moor	A loose cluster of six prospecting pits to the south of the core area of Charlotte United Mine to the east and west sides of a boundary bank [190690]. The pits are in dense bracken and low scrub, but most measure 1.75m x 0.6m x 0.5m deep and have associated spoil heaps.	None	SW 70157 48739, SW 70163 48728, SW 70183 48729, SW 70191 48726, SW 70193 48741, SW 70199 48740
190692	Site of mine shaft in the central part of Charlotte Moor	Cornwall Consultants record their Shaft A at this location immediately adjacent to the track across the Downs. The only indications of a shaft here consist of a jumbled more or less levelled spread of mine waste and shillet adjacent to the path. Operation Minecap mapped the location of the shaft in 1983, but the records noted that it was 'not found'.	This location should be monitored for any indications of the subsidence of the shaft fills. Given its proximity to a public right of way the site of the shaft should probably be securely fenced.	SW 70146 48718
190693	Mine shaft in the central part of Charlotte Moor	Old Engine Shaft on North Towan Mine is the southernmost documented within an area of shafts and dumps making up the core of the mine. Cornwall Consultants note that it was sunk on South Lode. The shaft lies within a very large fenced area which has become very densely vegetated with scrub. In places sections of a ruinous abandonment hedge can be seen, but access into the fenced area is impossible, and would be dangerous given that the location of the edge of the shaft is uncertain. The shaft is open to at least 60m where there is standing water. Operation Minecap records Sheet 8/9 notes 'Open and very dangerous. Huge crater' The record	Monitor, retain and maintain the safety fencing around this feature. Specialist contractors undertake a survey of the area within the shaft fence to determine the	SW 70250 48722

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		indicates that the shaft measured 4.0m x 8.0m at ground level and 3.0m x 2.5m at bedrock. The notes also state ' National Trust Charlotte United Mine. Inaccessible '89'. This is likely to have been the site of a pumping engine, there being mine ponds nearby to the south [190699].	condition of the shaft and establish whether present safety arrangements are appropriate and adequate, as well as whether the remains of associated structures survive within the wall and fence line.	
190694	Quarry in the central part of Charlotte Moor	A substantial, flat-bottomed quarry is shown on a plan dated to 1859 on CRO plan X-560-28 and on the 1878 1st Edition OS 1:2500 mapping (as 'Old Quarry') a small spoil dump being shown on its northern side. No further development had occurred by 1908 (OS map evidence). A track leading westwards from the northern side of the quarry towards Mongoose [190695] suggests that it was excavated to provide construction materials for buildings there. Although measuring 35m x 25m in plan, the quarry appears shallow, though dense vegetation within it prevented access.	None	SW 70447 48744
190695	Quarry track leading from Charlotte Moor to Chapel Combe	A 2.5m wide trackway cut slightly into the valley side and leading from quarry [190694] eastwards towards the walled lane leading to Mongoose, this would have been the means by which the output from the quarry was taken away for use.	None	SW 70463 48733 to SW 70639 48734
190696	Quarry in Chapel Combe	A small quarry about 2.25m deep and 8.0m x 3.0m in plan has been cut into the valley side on the southern side of Chapel Combe. This is shown as 'Old Quarry' on the OS 1st Edition 1:2500 mapping. It appears to have been no more than a trial, or might have been excavated to provide material for surfacing the nearby track. It has no evident spoil dump.	None	SW 70562 48773
190697	Possible leat in Chapel Combe	A pair of contouring linear features on the lower valley side at this location may indicate part of the route of a leat serving a dressing floor [190659] a little further down the valley. The lower feature is 1.5m wide and revetted with stone 1.0m high on its northern side. The upper feature has a revetted face 0.6m high. It is probable that the leat ran between the two features. To the east, the feature is lost in a brambly hollow, to the west the leat would have intersected the footpath running through the valley not far away. About 15m of the feature are visible.	None	SW 70571 48785
190698 41669	Mine in the central part of Charlotte Moor	North Towan Mine, which worked a series of lodes crossing Towan or Charlotte Moor seems to have been renamed Charlotte United during a working between 1864 and 1877. This period saw the erection of a new engine house [190616] on the lower slopes of Chapel Combe and the sinking of a new shaft [190617] but was curtailed when a group of miners had the mine wound up in an attempt to secure unpaid wages.	This area is currently under dense scrub cover, preventing access and recording. The current management arrangements for this area should be re-appraised to consider whether safety issues preclude management of encroaching scrub.	SW 70283 48806
190699	Mine ponds in the central part of Charlotte Moor	A pair of large reservoirs are sited to the south of Old Engine Shaft in North Towan Mine. Neither is shown on the OS 1st or 2nd Edition 1:2500 scale mapping. The reservoirs measure 15m x 10m and 15m x 5.0m, the westernmost being 2.5m deep, the easternmost 1.8m deep. These are likely to have supplied water either to a nearby pumping engine, or to have contained pumped water for use on the dressing floors downslope.	Clear encroaching scrub vegetation	SW 70275 48700, SW 70288 48708

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190700	Prospecting pit in the central part of Charlotte Moor	An isolated prospecting pit close to the group of shafts worked by North Towan Mine, this measures 2.0m x 0.8m in plan and is 0.6m deep; there is an associated spoil dump to the north-east of the pit.	None	SW 70250 48693
190701	Site of slit trenches in the central part of Charlotte Moor	A loose group of eleven freshly-excavated pits shown on 1946 aerial photograph 106G-UK 1663-3380 adjacent to a pair of mine reservoirs associated with North Towan Mine. The appearance of these features on the photograph suggests that they were slit trenches excavated by US Army troops during 1944. Dense scrub vegetation across this area prevented access for field survey.	None	SW 70260 48737, SW 70264 48688, SW 70271 48710, SW 70277 48710, SW 70265 48688, SW 70272 48681, SW 70297 48718, SW 70301 48715, SW 70295 48711, SW 70302 48707, SW 70296 48701
190702	Site of slit trenches in the central part of Charlotte Moor	A group of three pits showing on 1946 aerial photograph 106G-UK 1663-3380. Their appearance suggests that they might have been slit trenches excavated by the US Army during 1944. No trace of these features could be identified during field survey.	None	SW 70327 48695, SW 70327 48689, SW 70323 48682
190703	Prospecting pit in the central part of Charlotte Moor	An isolated prospecting pit to the east of North Towan Mine. The pit measures 1.5m x 0.6m in plan and has become largely backfilled.	None	SW 70325 48682
190704	Sites of slit trenches in the central part of Charlotte Moor	A group of six pits shown on 1946 aerial photograph 106G-UK 1663-3380, most of which have the appearance of slit trenches excavated by the US Army in 1944. Vegetation conditions obscured these features at the time of field survey.	None	SW 70333 48726, SW 70348 48728, SW 70348 48715, SW 70339 48642, SW 70348 48653, SW 70354 48711
190705	Platformed area and track adjacent to quarry on Charlotte Moor	A roughly rectangular area immediately to the south of quarry [190164] approached by a track from the south linking to roadway [190727] showing on a 1946 aerial photograph which appears to represent recent disturbance, probably associated with military activity. A smaller area of disturbance lies immediately to the north-west and was approached via a path from the west. This area lies in a heavily vegetated part of Charlotte Moor and could not be accessed in 2009.	None	SW 70348 48733
190706	Prospecting pits in the central part of Charlotte Moor	A pair of closely-set prospecting pits associated with North Towan Mine set on the northern slopes of Charlotte Moor. These each measure 1.5m x 0.5m in plan and are associated with small spoil dumps.	None	SW 70401 48716, SW 70401 48710
190707	Site used for Holman's Projector field trials on Charlotte Moor	A levelled platform measuring 17m by 15m adjacent to mine road [190527] appears likely to have been the site for the Holman Projector which was trialled here during the early part of World War II, firing grenades down a range extending to the north-west [190634].	None	SW 70233 48650
190708	Two prospecting pits in the central part of Charlotte Moor	A pair of closely-set slit trenches adjacent to a path across Towan Moor, these would have been excavated by US Army troops during 1944. These measure 1.5m x 0.5m in plan and are 0.5m deep.	None	SW 70265 48646, SW 70265 48640
190709	Prospecting pit in the central part of Charlotte Moor	An isolated prospecting pit associated with the operation of North Towan mine, measuring 1.6m x 0.75m in plan, this is 0.6m deep with an associated spoil dump.	None	SW 70271 48643

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190710	Prospecting pit in the central part of Charlotte Moor	An isolated prospecting pit on Towan Moor, probably associated with North Towan Mine. This measures 1.7m x 0.8m in plan, is 0.6m deep and is associated with a small rather spread spoil dump. 1946 aerial photograph 106G-UK 1663-3380 suggests that this was originally one of a close pair, but no trace of the second pit was identified during fieldwork.	None	SW 70346 48639
190711	Prospecting pit on the lower slopes of Chapel Combe	An isolated prospecting pit set on the lower slopes of the north-eastern part of Towan Moor does not appear to be associable with any identified mining activity. The pit measures 1.8m long, 0.75m wide and 0.6m deep and is accompanied by a small spoil dump on its downslope side.	None	SW 70560 48714
190712	Site of slit trenches in the south-eastern part of Charlotte Moor	1946 aerial photograph 106G-UK 1663-3380 shows a loose group of seven apparently freshly-excavated pits within the northern part of the eastern section of Towan Moor. It is unclear what these represent, some having the appearance of slit trenches, others appearing more blurred and possibly representing prospecting pits or mortar bomb craters. The area within which these features lie is now under dense scrub and not access was available during fieldwork.	Clear encroaching scrub vegetation from this part of Charlotte Moor.	SW 70494 48642, SW 70495 48637, SW 70537 48653, SW 70554 48636, SW 70534 48627, SW 70551 48622, SW 70578 48573
190713 53501	Site of an area of plough ridging in the southern part of Charlotte Moor	NMP plots from 1946 aerial photographs 106G-UK 1663-3380 shows an area of plough ridging in this area, the plough ridges being aligned south-west to north-east. No trace of this could be found during the 2009 survey.	None	SW 70343 48593
190714	Slit trenches in the southern part of Charlotte Moor	1946 aerial photograph 106G-UK 1663-3380 shows a loose group of twenty-one freshly-excavated pits within this area. These are likely to have been slit trenches excavated by the US Army in 1944. Evidence for seven of these, set out in a linear arrangement, survives.	None	SW 70252 48596, SW 70261 48598, SW 70266 48587, SW 70268 48578, SW 70271 48566, SW 70272 48559, SW 70287 48550
190715	Site of slit trenches in the southern part of Charlotte Moor	1946 aerial photograph 106G-UK 1663-3380 shows a loose group of twenty-one freshly-excavated pits within this area. These are likely to have been slit trenches excavated by the US Army in 1944. Whilst evidence for seven of these survives [190714], no trace of these fourteen features were found during fieldwork.	None	SW 70255 48585, SW 70258 48571, SW 70262 48561, SW 70284 48558, SW 70293 48554, SW 70308 48549, SW 70309 48542, SW 70334 48550, SW 70310 48534, SW 70306 48530, SW 70321 48531, SW 70306 48522, SW 70320 48524
190716	Slit trench in the southern part of Charlotte Moor	An isolated slit trench located just to the west of a boundary forming part of field system [190719] is likely to have been one of a group sited just to its east [190717] excavated by the US Army during 1944. The slit trench measures 1.5m x 0.5m in plan and is 0.5m deep.	None	SW 70328 48505
190717	Site of slit trenches in the southern part of Charlotte Moor	1946 aerial photograph 106G-UK 1663-3380 shows a loose group of six freshly-excavated pits within this area. These are likely to have been slit trenches excavated by the US Army in 1944. No traces of these features, most of which lie within an area used for rubbish disposal [190718], were found during fieldwork.	None	SW 70334 48498, SW 70342 48488, SW 70355 48482, SW 70340 48483, SW 70355 48476, SW 70339 48477
190718	Hollowed area in the southern part of Charlotte Moor	A shallow, overgrown, irregular hollowed area measuring 50m x 20m and up to 2.0m deep occupies part of the south-western enclosure forming field system [190719]. The function of this excavation is unclear, though it might have been associated with the operations of East Towan Mine. It appears to have subsequently used for rubbish disposal and is now ingrown with European gorse.	None	SW 70355 48470
190719	Field system in the	A series of low banks and ditches in this area form a group of four conjoined enclosures, the banks averaging 2.0m wide and 0.6m	The scrub vegetation	SW 70386 48488



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19063	southern part of Charlotte Moor	high, the associated ditches having mostly infilled and now only 0.25m to 0.4m deep. The National Mapping Programme suggest extensions of the boundaries beyond mine road [190527] to the north of the field system, but a systematic search of this area failed to identify earthwork features at these locations. The proximity of these small enclosures to the possible round houses [190723] and [190724] may suggest an association. No date for the enclosures could be determined; they are not shown on archive OS mapping or other plans of this area. Hollowed area [190718] slights the south-western enclosure and cuts through the boundary between this field and that to its east.	encroaching onto these features should be managed to retain them as visible features.	
190720	Slit trench in the southern part of Charlotte Moor	An isolated slit trench is located in the north-eastern corner of the north-western field within the small field system on Towan Moor [190719], close to one of its boundaries. The slit trench is similar in dimensions to others on Towan Moor, measuring 1.5m long, 0.5m wide and 0.5m deep, and would have been created during the short-lived occupation of Towan Moor by members of the US Army 29th Infantry Division awaiting embarkation to Omaha Beach on D Day.	None	SW 70397 48516
190721	Site of slit trenches in the southern part of Charlotte Moor	A loose group of six apparently freshly-excavated pits shown on aerial photograph 106G-UK 1663-3380 just to the north of mine road [190527] probably represent slit trenches excavated during 1944 by US Army troops camped here in the run-up to D Day, though the appearance of the westernmost of these suggests that it was either a prospecting pit or a mortar bomb crater. No trace of any features was found within this area during fieldwork.	None	SW 70394 48557, SW 70442 48545, SW 70437 48510, SW 70442 48502, SW 70466 48501, SW 70425 48478
190722	Slit trenches in the southern part of Charlotte Moor	A group of nine well-preserved slit trenches are located immediately to the south of mine road [190527], each of these averaging 1.5m x 0.5m in plan and up to 0.5m deep. These would have been excavated by members of the US 29th Infantry Division who were camped here in the run-up to D Day.	None	SW 70432 48474, SW 70444 48469, SW 70447 48472, SW 70458 48473, SW 70456 48480, SW 70466 48473, SW 70467 48468, SW 70481 48465, SW 70485 48462
190723 53506 19064	Possible round house and enclosure in the southern part of Charlotte Moor	At the south-eastern end of Town Moor, adjacent to the mine trackway leading from Towan Cross to the coast, are a pair of earthwork features which may be a pair of round houses with associated enclosures (with [190724]), though they are atypical in form and may represent later features. This, the westernmost, takes the form of a sub-circular bank 8.0m in diameter, 3.5m wide and 1.0m high enclosing a pit measuring 1.75m by 1.25m in plan and 0.6m deep. There appears to be an 'entrance' into this central area from the south-east. An encircling enclosure defined by a bank 2.0m wide and 0.7m high is attached to the south-eastern edge of the inner feature, which it encircles at an average distance of 7.0m, before heading to the south-east, where it fades out. There are two gaps in the bank; the first, almost immediately adjacent to the point where it joins the central feature is 4.0m wide; the second, to the east of the central feature, is about 1.5m wide. External to the enclosure bank is a ditch 1.75m wide and 0.25m deep. Dense low vegetation on around and in the enclosure and particularly within the central feature make it difficult to interpret this site. No traces of stonework revetting the banks was found during the 2009 survey, and the central 'pit' suggests a small mining feature, though may be the result of relatively recent disturbance, perhaps during the temporary occupation of the area by US Army troops in 1944. The relationship between the enclosure and its central feature with the nearby field system [190719] is unclear - the NMP plot suggests that these features depend from or partially overlie the eastern bank defining the northern part of this arrangement of small fields. Field survey during 2009 not reveal any traces of this section of bank. The proximity of the enclosure to the nearby track from Towan Cross to Mulgram Hill [190527] might suggest a post-medieval rather than prehistoric date for the creation of the enclosure and the feature it encircles.	These features require the clearance of scrub vegetation followed by detailed survey to determine their original function, date of construction and appropriate management. They should be maintained as visible features through the control of encroaching scrub vegetation.	SW 70466 48499

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190724 53507	Possible round house and enclosure in the southern part of Charlotte Moor	At the south-eastern end of Towan Moor, adjacent to the mine trackway leading from Towan Cross to the coast, are a pair of earthwork features which may be a pair of round houses with associated enclosures, though they are atypical in form and may represent later features. This, the easternmost, takes the form of a sub-ovoid feature embanked feature 10m in diameter, there being a 5.0m gap in its circuit. The low, rather flat-topped banks defining this feature average 3.0m wide and 0.6m high. The area they enclose is level and featureless. A low and rather spread bank extends to the south-east from this feature, this being 10m long, 1.2m wide and being between 0.3m and 0.15m high. At its south-eastern end the NMP plot suggests that this turns to the north, though fieldwork showed that the bank loses its character in this area. The relationship between the enclosure and its central feature with the nearby field system [190719] is unclear. The interpretation of this feature is unclear; the bank extending south-eastwards from the 'round house' parallels the mine track from Towan Cross to Mulgram Hill like that of its neighbour to the north-west; this might suggest that the feature is of post-medieval, rather than prehistoric date.	These features require the clearance of scrub vegetation followed by a detailed survey to determine their original function, date of construction and appropriate management. They should be maintained as visible features through the control of encroaching scrub vegetation.	SW 70495 48470
190725	Site of slit trenches in the southern part of Charlotte Moor	A group of sixteen apparently freshly-excavated pits were shown on 1946 aerial photograph 106G-UK 1663-3380 as being sited to the east of slit trenches [190722] between the mine road [190527] and shaft [190735]. These were probably further slit trenches excavated by US Army troops in 1944. No trace of these features was identified during fieldwork.	None	SW 70493 48455, SW 70499 48449, SW 70499 48440, SW 70484 48434, SW 70477 48441, SW 40469 48446, SW 70457 48451, SW 70463 48440, SW 70461 48438, SW 70455 48434, SW 70456 48439, SW 70453 48440, SW 70447 48440, SW 70444 48461, SW 70451 48450, SW 70445 48459
190726	Site of slit trenches in the southern part of Charlotte Moor	A group of eight apparently freshly excavated pits were shown on 1946 aerial photograph 106G-UK 1663-3380 at this location to the north of mine road [190527]. Whilst other pits within this general area of Towan Moor proved to be slit trenches excavated in 1944 by US Army troops, the appearance of this group of pits suggests that they may have been small bomb craters. The area within which they lie is very heavily overgrown with scrub, and was not accessible during fieldwork.	Clear encroaching scrub vegetation from this part of Charlotte Moor.	SW 70452 48458, SW 70553 48459, SW 70563 48456, SW 70562 48463, SW 70563 48474, SW 70553 48471, SW 70549 48474, SW 70552 48482
190727	Mine trackway linking Towan Cross with the central part of Charlotte Moor	A very overgrown 3.0m wide trackway, excavated to a maximum of 0.3m, which ran from Towan Cross north-westwards to provide the principal access to the core area of North Towan and Charlotte United mines [190698]. The track is not shown on the St. Agnes Tithe Map of 1840, and first appears on Symons' 1870 plan of the St. Agnes Mining District. It is also shown on the OS 1:2500 1st Edition mapping. The south-eastern end of the track has become obscured by dense scrub vegetation, and a path shown on the modern OS mapping now veers to the south 130m from the lay-by at Towan Cross, to join the mine track 65m away.	Clear encroaching scrub vegetation from this part of Charlotte Moor.	SW 70614 48411 to SW 70233 48797
190728	Possible dressing floors in the southern part of Charlotte Moor	Thin spreads of mine waste on the original ground surface within this area may reflect the site of small-scale dressing floors associated with East Towan Mine. No structures are documented here on either the OS 1st and 2nd Edition 1:2500 mapping or on mine plans.	None	SW 70385 48441
190729	Mine pond in the southern part of Charlotte Moor	A sub-triangular pond is shown at this location on the 2nd Edition OS 1:2500 mapping (though was not shown on the 1st Edition of the mapping, possibly an omission). It may have been created during a late phase of the working of part of East Towan Mine, possibly the reworking of its dump material. The pond survives, though has become rather scrubbed in at its western end and on its northern side, and measures 18m long, a maximum of 7.5m wide and averages 1.6m deep with a flat base. No trace of a source for	Clear encroaching scrub vegetation from this part of Charlotte Moor.	SW 70374 48428

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		the water which would have filled the pond was identified. The pond possibly provided a source of water for ore dressing operations.		
190730	Site of temporary military building in the southern part of Charlotte Moor	Aerial photograph 1946 106G-UK 1663-3380 depicts a narrow elongated rectangular area of cleared ground at this location in the south-western part of Towan Moor. The shape of this feature and the apparent freshness of the cleared ground suggests that this might have been the site of a temporary building associated with the occupation of this area by US Army troops in 1944. No remains of this feature were found during fieldwork.	None	SW 70328 48417
190731	Site of mine shaft in the southern part of Charlotte Moor	A double shaft (known as William's Shaft), part of East Towan Mine, is shown at this location on both the 1st and 2nd Editions of the OS 1:2500 mapping, this being the site of the northernmost of the pair. A spoil dump covering 160 square metres surrounded the shafts. Correspondence in the NT archives suggest that this area was used for rubbish disposal during the 1960s, following which a local contractor was authorised to remove mine spoil from the dump. Some low remnants of the spoil dump survive in the area to the north of the documented shaft site, but the shaft appears to have been infilled and is marked only by an area of rabbit-cropped grass. There is no record of this shaft having been formally capped. Operation Minecap recorded this shaft (Sheet 9/14) as being 'Not located. Burrow only' in 1984.	Given the proximity of this site to an informal car park and access point onto Charlotte Downs, the site of this shaft should be regularly monitored for any indications of the subsidence of its fills. The enclosure of this shaft and its neighbour within a secure fence might be required.	SW 70356 48409
190732	Site of mine shaft in the southern part of Charlotte Moor	The southernmost of a pair of closely-set shafts worked as part of East Towan Mine, one probably having been used for pumping, the other for winding. The spoil dumps here were removed by contractors during the 1960s and the general area is noted as having been used for rubbish disposal prior to this. The area formerly occupied by the western part of the spoil dump associated with this shaft is now a levelled area used as a car park, whilst the remnants of the spoil dump measure 12m diameter, standing to a maximum of 1.5m, on the upper surface of which can be seen the foundations of the safety hedge which formerly enclosed the shaft. The shaft itself appears to have been infilled, though there is no record of this having been formally undertaken. Operation Minecap recorded this shaft (Sheet 9/29) as being 'Not located. Burrow only' in 1984.	Given the proximity of this site to an informal car park and access point onto Charlotte Downs, the site of this shaft should be regularly monitored for any indications of the subsidence of its fills. The enclosure of this shaft and its neighbour within a secure fence might be required.	SW 70355 48401
190733	Mine in the southern part of Charlotte Moor	East Wheal Towan was a poorly documented copper mine lying to the east of Wheal Towan adjacent to Towan Cross, occupying the southern part of Towan Moor. It is shown on CRO plan X-560-28 dating to 1859 as consisting of a pair of shafts in this area, bordered by Wheal Towan to the west and North Towan to its north. By 1870, Symons showed East Towan as a sub-sett of Wheal Towan working an extension of its main lode, and bordered to the east by Wheal Tallack and to the north by New Charlotte. The mine was not mentioned by Dines (1956) and the depth and extent of its workings, its period of operation and mineral output are unknown. The mine seems to have been worked by a double shaft [190731] and a single shaft [190732] as shown on archive maps with relatively small associated spoil dumps. Near these are a pair of ponds [190729] and [190734] suggesting that there may have been waterwheel-driven pumps on at least one of the shafts, whilst a thin spread of mineral-rich mine waste occupying part of the area between the shafts may suggest the location of a dressing floor. No buildings were documented on the mine, suggesting that this was a late 18th or early 19th century operation, the mine structures having been demolished by the earliest-available plans of the mine.	Further documentary research is required for this site.	SW 70413 48404

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190734	Mine pond in the southern part of Charlotte Moor	A mine pond is shown at this location just to the north of the road from Towan Cross to Porthtowan on both the 1st and 2nd Editions of the OS 1:2500 mapping, the pond apparently having been slightly extended to the west on the later mapping. The pond was shown as having an irregular plan, though overall measured 50m along its east-west axis and 9.0m wide. No leat or source supplying the pond was depicted. The location of the pond suggests that it was part of East Towan Mine, lying just over 50m to the south of its double shaft [190731] and might well have been supplied water for water wheels driving pumps in the western section of the mine. No steam engines were recorded on this section of the mine. The reservoir site lies within a scrubbed-in area to which no access was available, but it seems likely that it has been infilled.	This site should be re-investigated to determine whether the pond survives and whether it would benefit from scrub clearance.	SW 70382 48354
190735	Mine shaft in the southern part of Charlotte Moor	A mine shaft which was worked as part of East Towan Mine as Allen's Shaft is shown at this location on both the 1st and 2nd Editions of the OS 1:2500 mapping, set within a spread of mine waste measuring approximately 45m x 40m. The shaft dumps are documented in the NT archives as having been partly recovered by a contractor during the 1960s. Operation Minecap recorded this shaft (Sheet 9/13) as being 'dangerous but fenced'. The fitting of a 5m Clwyd Cap was recommended, and the only operations undertaken in 1984 consisted of the coning of the shaft throat. The shaft dump has been substantially reduced from that shown on archive maps, but stands to between 2.5m and 3.0m above the surrounding landscape. The shaft is open and has recently been re-fenced.	Monitor, retain and maintain shaft fence.	SW 70467 48431
190736	Possible shaft to the west of Charlotte Moor	When Rose and Preston-Jones surveyed features within this area which include a pair of possible round houses [190580] and [190585], a group of low mounds [190375], [190583] and [190584] and a platformed area [190577], they also noted a stony mound between 8.0m and 10.0m in diameter and 0.1m high at this location within the enclosed land to the south. It was noted that the stones within this denuded feature were notably larger than others within the surrounding field. The location of the feature on the southern extension of the strike of a group of outcrop pits in the heathland nearby [190579] might suggest that this is a small backfilled outcrop working pit, though the presence of the possibly prehistoric features could indicate that this was a small cairn or barrow. Arable improvements appear to have removed any surface traces of the feature by 2009. The stony area lies on the north-eastern extension of the line of the clifftop outcrop workings just to the north of Porth Towan [190752], [190758] and [190755], as do two other large circular features in the field system [190742] and [190744] to the south-west. It is possible, therefore, that this mound represents a backfilled, undocumented mine shaft.	Monitor this part of the field for any indications of the subsidence of shaft fills.	SW 69766 48805
190737	Boundary bank to the west of Charlotte Moor	A rather spread 85m length of earth bank up to 2.0m wide and between 0.5m high to the south, having only slight height to the north, runs from the head of an inlet on the coast south-eastwards towards the former western boundary of an area of cliffland which was ploughed up a few decades ago, but which the NMP recorded as containing elements of a fossilised medieval strip field system. The bank appears to represent a property or cliff pasture boundary. The bank has been truncated at its eastern end where it runs into a modern bund enclosing a large ploughed field.	None	SW 69524 48825 to SW 69463 48667
190738	Possible extractive pits on the coast to the west of Charlotte Moor	A pair of large, roughly oval hollows on a south-west to north-east alignment set on the edge of the cliff with a second elongated pit immediately upslope. The western pair of pits measure between 8.0m and 10m long and 7.0m wide, being 0.8m deep on their western sides and 1.5m deep to the east. The eastern pit is 18m long, 10m wide and 1.0m deep. There are no obvious associated spoil dumps, material excavated here probably having been disposed of over the cliff. There are no known lode outcrops within this area, though CRO plan M-154 indicates a short section of adit driven in from the cliff in this general area, suggesting that they might be small-scale mining features.	None	SW 69380 48829

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190739	Possible leat on the coast to the west of Charlotte Moor	A rather faint contouring 50m long linear feature leading to the north of pit [190740] which is 300mm wide and between 150mm and 200mm deep may have been a leat. It fades on the cliff slope to the west of extractive pits [190738] and may be associated with them.	None	SW 69378 48825 to SW 69370 48789
190740	Quarry on the coast to the west of Charlotte Moor	A substantial pit excavated on the cliff edge 7.0m in diameter and 1.5m deep. It is unclear whether this represents very small-scale quarrying or a mining feature.	None	SW 69369 48781
190741	Boundary bank to the west of Charlotte Moor	An earth boundary 2.5m wide and 0.4m high extends inland for 45m from the cliff edge but is truncated near the coast path where the cliffland was ploughed up some decades ago. The boundary was plotted by the NMP as formerly continuing inland to SW 69488 48580, where it terminated on an existing field boundary. This appears to be a cliff grazing boundary, similar to [190737] to the north; it is broadly parallel to the now ploughed up elements of a fossilised medieval field system which occupied the cliffland to the north-east, and is therefore probably of equivalent date.	None	SW 69312 48652 to SW 69273 48667
190742	Possible shaft in fields to the west of Charlotte Moor	NMP plots show a large ovoid cropmark feature at this location. The location of this feature, mid-way between two other similar features and on a north-eastern extension of the alignment of outcrop pits on a lode outcrop to the north of Porth Towan [190752], [190755] and [190758] suggests that this might be an early and undocumented mine shaft. The area within which this feature was plotted is now within a ploughed field. No trace of the feature was found, though Rose and Preston-Jones surveyed the north-easternmost feature [190736] in 1985, recording a low stony mound within the field.	Monitor this area of the field for any signs of the subsidence of shaft fills.	SW 69637 48730
190743	Destroyed fossilised Mediaeval field system to the west of Charlotte Moor	The NMP plots show that this former area of cliffland had been enclosed and ploughed by 1946, revealing traces of a fossilised Mediaeval field system, this being made up of at least fourteen roughly parallel linear features running from the boundary of the enclosed land radially towards the coast to the north and west. Two cliff grazing boundaries [190747] and [190748] of which sections survive seem likely to be linked and contemporary. Continued ploughing over the last five decades has erased all surface traces of the boundaries making up the field system, which probably represented occasionally-used outfields associated with Towan Farm to the south.	None	SW 69446 48678
190744	Possible shaft in fields to the west of Charlotte Moor	NMP plots show a large ovoid cropmark feature at this location. The location of this feature, mid-way between two other similar features and on a north-eastern extension of the alignment of outcrop pits on a lode outcrop to the north of Porth Towan [190752], [190755] and [190758] suggests that this might be an early and undocumented mine shaft. The area within which this feature was plotted is now within a ploughed field. No trace of the feature was found, though Rose and Preston-Jones surveyed the north-easternmost feature [190736] in 1985, recording a low stony mound within the field.	Monitor this part of the field for any indications of the subsidence of shaft fills.	SW 69521 48680
190745	Site of prospecting pits on cliffland to the west of Charlotte Moor	NMP aerial photographic plots showed a cluster of eight pits centred at this location which is currently occupied by dense gorse. Their form suggests that they were probably prospecting pits associated with the working of the lodes running north-eastwards from the cliffs to the north of Porth Towan [190752], [190755] and [190758]. Vegetation conditions prevented survey of this area in 2009.	None	SW 69433 48574, SW 69451 48571, SW 69463 48569, SW 69419 48561, SW 69422 48567, SW 69433 48562, SW 69443 48559, SW 69460 48558
190746	Possible shaft in fields to the west of Charlotte Moor	NMP aerial photographic plots shows a substantial ovoid mound at this location which lies on the north-eastern extension of an alignment of outcrop pits [190752], [190755] and [190758] on a lode outcrop running from the clifftops to the north of Porth Towan. The feature is similar in appearance to, and on the same alignment as three other features to the north-east, suggesting that it may be an undocumented outcrop shaft. The area within which this feature lies is heavily scrubbed in, and although a 5.0m diameter 1.0m high	None	SW 69419 48541

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		dump of stony waste was found at this approximate location, no trace of the shaft was identified.		
190747	Boundary bank on cliffland to the west of Charlotte Moor	A bank 2.0m wide and 0.3m high extends inland from the coast path towards the current boundary of the enclosed land. Much of the bank runs within an area scrubbed in with gorse. This appears to have been one element on a fossilised Medieval strip field system [190743] and is paralleled by another example 16.5m to its south [190748].	None	SW 69434 48493 to SW 69286 48533
190748	Boundary bank on cliffland to the west of Charlotte Moor	A bank 2.5m wide and 0.4m high extends inland from the coast path towards a corner on the current boundary of the enclosed land. Much of the bank runs within an area scrubbed in with gorse. This appears to have been one element on a fossilised Medieval strip field system [190743] and is paralleled by another example 16.5m to its north [190747].	None	SW 69428 48481 to SW 69285 48518
190749	Prospecting pits in cliffland to the north of Porthtowan	A group of about five rather formless prospecting pits, these averaging 1.7m in diameter and 0.4m deep, most having spread spoil dumps on their south-western sides.	None	SW 69331 48536, SW 69329 48524, SW 69322 48522, SW 69316 48517, SW 69306 48516, SW 69281 48503, SW 69277 48492
190750	Prospecting pits in cliffland to the north of Porthtowan	A chain of four prospecting pits or a costeaning trench on an east-west alignment with further prospecting pits to the south of its western end which would have been excavated to test the outcrop of the lode worked to the south-west. The chain of pits or trench is 7.0m long, 2.5m wide and 0.5m deep, with a spoil dump to its south.	None	SW 69346 48480, SW 69342 48482, SW 69337 48483, SW 69332 48485, SW 69330 48480, SW 69315 48474
190751	Prospecting pits in cliffland to the north of Porthtowan	A pair of chains of prospecting pits, the northernmost group of three aligned north-west to south-east, the southernmost lying just to the north of the line of workings on the outcrop of the lode running north-east from the cliffs to the north of Porth Towan. Both groups would have been cut to prove the outcrop of the lode, which seems to have been lost in this general locality.	None	SW 69294 48504, SW 69300 48495, SW 69305 48486, SW 69300 48478, SW 69294 48468, SW 69276 48458
190752	Extractive pits in cliffland to the east of Porthtowan	A linear group of ten extractive pits sunk onto the outcrop of the northernmost of a group of three closely-set parallel north-east trending lodes outcropping in the cliffs to the north of Porth Towan. The pits average between 7.0m and 10m in diameter at their tops, 3.5m to 5.0m wide in their bases and between 1.7m and 2.5m deep. These lie within the sett of Wheal Towan and are shown (in schematic form) on Symons' 1870 map of the St. Agnes Mining District.	None	SW 69320 48482, SW 69314 48482, SW 69308 48477, SW 69303 48474, SW 69300 48465, SW 69277 48454. SW 69266 48448, SW 69263 48442, SW 69254 48436, SW 69244 48432
190753	Prospecting pits in cliffland to the north of Porthtowan	A pair of prospecting pits in an area of scrub on the north-eastern extension of a two lines of outcrop workings [190755] and [190758]. The pits are rather formless, being about 1.6m in diameter, 0.3m deep and with spoil dumps to their south-west.	None	SW 69373 48461, SW 69362 48459
190754	Prospecting pits in cliffland to the north of Porthtowan	Three prospecting pits in an area of scrub on the north-eastern extension of a pair of lines of outcrop workings [190755] and [190758]. The pits average 1.8m in diameter and 0.45m deep and have associated spoil dumps on their south-western sides.	None	SW 69345 48432, SW 69336 48430, W 69320 48425
190755 53499	Extractive pits in cliffland to the north of Porthtowan	A linear group of seventeen extractive pits sunk onto the outcrop of the southernmost of a group of three closely-set parallel north-east trending lodes outcropping in the cliffs to the north of Porth Towan. The pits average between 7.0m and 10m in diameter at their tops, 3.5m to 5.0m wide in their bases and between 1.7m and 2.5m deep. These lie within the sett of Wheal Towan and are shown (in schematic form) on Symons' 1870 map of the St. Agnes Mining District.	None	SW 69307 48417, SW 69288 48407, SW 69279 48406, SW 69268 48400, SW 69262 48396, SW 69251 48395, SW 69245 48396, SW 69243 48388, SW 69235 28384, SW 69220 48380, SW 69213 48375, SW 69202 48372,

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				SW 69193 48375, SW 69189 48370, SW 69183 48371, SW 69178 48369, SW 69171 48368
190756	Prospecting pits in cliffland to the north of Porthtowan	A pair of prospecting pits between the southern and central line of outcrop workings which run north-eastwards from the cliffs to the north of Porth Towan. The pits measure 1.6m in diameter and are 0.45m deep.	None	SW 69253 48401, SW 69256 48405
190757	Prospecting pits in cliffland to the north of Porthtowan	A chain of five prospecting pits on a north-south alignment between the central and southern line of outcrop workings running north-east from the cliffs to the north of Porth Towan. These pits, which measure 1.6m in diameter and 0.5m deep would have been excavated at an early stage in the development of the outcrop workings and would have been cut to prove the strikes of the two lodes.	None	SW 69217 48404, SW 69218 48398, SW 69220 48392, SW 69221 48386, SW 69223 48380
190758 53499	Extractive pits in cliffland to the north of Porthtowan	A linear group of eleven extractive pits sunk onto the outcrop of the central example of a group of three closely-set parallel north-east trending lodes outcropping in the cliffs to the north of Porth Towan. The pits average between 7.0m and 10m in diameter at their tops, 3.5m to 5.0m wide in their bases and between 1.7m and 2.5m deep. These lie within the sett of Wheal Towan and are shown (in schematic form) on Symons' 1870 map of the St. Agnes Mining District.	None	SW 69307 48428, SW 69300 48427, SW 69296 48424, SW 69291 48424, SW 69266 48415, SW 69250 48412, SW 69247 48409, SW 69225 48403, SW 69213 48404, SW 69204 48403, SW 69197 48397
190759	Mine to the north and east of Porthtowan	Wheal Towan, stretching from the Porth Towan valley northwards towards Great Wheal Charlotte and eastwards to Towan Cross was in operation in 1784, though its heyday was between 1815 and 1835, when it is recorded as producing 26,058 tons of copper ore. The principal centre of operations was the lode following the valley between Porth Towan and Towan Cross, this siting a number of noteworthy beam engines. The mine was principally a copper producer, though also yielded some coarsely crystalline cassiterite. The majority of the mine lay to the south of the National Trust property boundary, but a group of three closely-set parallel north-easterly trending lodes have been worked along their outcrops from exposures on the cliffs to the north of Porth Towan. These workings are not documented in Dines (1956) and were probably excavated prior to the main period of operation.	The majority of the Wheal Towan site lies outside the area managed by the NT. The features within NT owned land require no specific attention, though extractive pits near footpaths should be periodically monitored for indications of subsidence.	SW 69260 48421
190760 PRN 25031	Lithic find near Mulgram Hill	The Cornwall and Scilly SMR records a find of a number of flakes of flint on the western shoulder of Mulgram Hill. The current location of the material is unknown.	Monitor site for further finds.	SW 69648 49308
190671	Shaft north of Chapel Combe	A choked, fenced mine shaft in a small enclosure to the north of Chapel Combe was probably developed as part of Wheal Freedom [190477]. The shaft was shown as 'Shaft' on the 1878 1st Edition OS 1:2500 mapping and as 'Old Shaft' on the 1907 2nd Edition OS 1:25000 mapping. Operation Minecap records dating to 1983 for this site note 'not located. Levelled field' and no works seem to have been done at the time.	Monitor shaft for indications of subsidence. Maintain safety fencing.	SW 70122 49327
190672	Bomb crater on Mulgram Head	A bomb crater on Mulgram Head is referred to in Arthur Roberts' wartime diary, the bomb being one of a group of four dropped overnight on the 11 <sup>th</sup> Feb 1942 'Saw four more bomb craters, one right on Wheal Charlotte Point ...' A circular feature is visible on aerial photographs on the lower cliff slopes to the north of Mulgram Hill, and almost certainly equates with this documented site.	None	SW 69551 49290