

**CUADRILLA RESOURCES
LIMITED**



APPENDIX - E
ECOLOGY STUDY

Cuadrilla Resources Limited
January 2010

Lower Stumble Hydrocarbon Exploration Site
Planning Application [January 2010].
Prepared by Phil Mason

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Proposed Lower Stumble Exploration Site

Land off London Road, Balcombe
near Haywards Heath, West Sussex

ECOLOGICAL APPRAISAL

Client: Cuadrilla Resources Ltd
c/o Phil Mason, Planning, Wayleave and Land Consultant
The Cottage, Glebefields, Woodseaves, Stafford, Staffordshire ST20 0LA

Site: Land off London Road, Balcombe, West Sussex

Project: Ecological appraisal

Walkover appraisal: Ron Allen 22 October 2009

Desk study: Ron Allen 2 July 2009

Report date: 29 October 2009

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1.0 INTRODUCTION AND SUMMARY

Cuadrilla Resources Ltd proposed to develop an area of hard standing (**Figure 1**) accessed off London Road in Balcombe as their proposed Lower Stumble Exploration Site and accessed via an existing gravel track. This report provides background ecological information on the site.



Fig 1. Proposal site

A desk study (based upon a biodiversity search commissioned from the Sussex Biodiversity Record Centre) and a walkover survey of the site and surroundings have been undertaken.

The desk study indicated that the site and its access road were not covered by any particular ecological land designation. However, woodland to the north and southeast are shown as ancient woodland.

The walkover survey indicated that the site comprised bare trafficked hard standing bounded by bare cut banks and vegetated screening bunds and accessed by a firm gravel track.

Land to either side comprised woodland and conifer plantations or screening tree plantings. Neither the exploration site, nor the immediately adjoining land, held any habitats of significant ecological interest. The woodland to the north and to the southeast of the site are older woodlands and should be protected from adverse effects, however there would be no such effects as long as the proposed works were restricted to the site and its existing access road.

Steps should be taken to ensure that no contaminated water reaches a small stream in woodland close to the access road and that any lighting is directed away from woodland edges.

2.0 THE PROPOSAL

The proposal is to construct an oil drilling platform within an area of hard standing with access via an existing hard gravel track off London Road to the south of Balcombe, West Sussex.

London Road is to the southeast and an embanked railway line is to the northeast.

The general relations are shown in **Figure 2**.

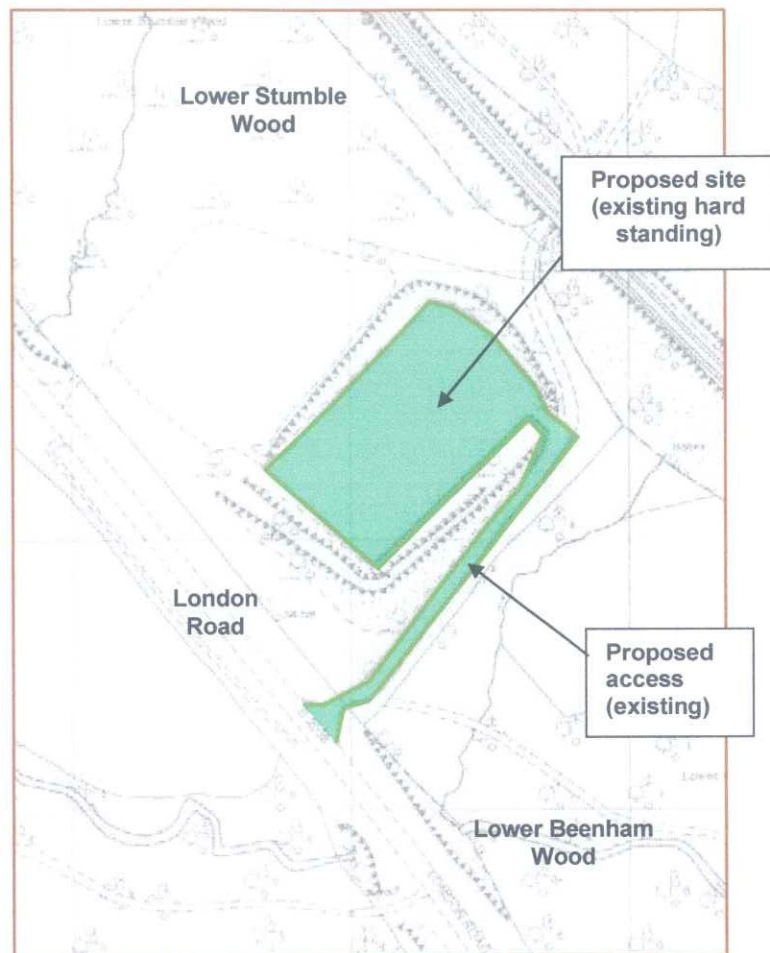


Fig. 2 Location of proposal site and access road in relation to surrounding land

3.0 DESK STUDY

3.1 BIODIVERSITY SEARCH

In order to ascertain the ecological setting of the property, a biodiversity search has been commissioned from the Sussex Biodiversity Record Office. A summary of the search information is provided here and the full report is available on request.

This search, conducted on 2 July 2009, provided information for an area within a 2km radius including:

- Rare and Protect Species
- Biodiversity Action Plan Species
- Bird Inventory
- Sussex Alien Species Report
- Survey Information
- Scheduled sites, local sites and other land designations.

3.2 STATUTORY SITES

There are no statutory sites (Sites of special Scientific Interest SSSIs, Special Protection Areas SPAs and Local Nature Reserves LNRs) within or close to the proposal site.

3.3 NON-STATUTORY SITES

Figure 3 shows information on non-statutory sites from HBIC.

Proposal site

It can be seen from Figure 3 that the site is not designated for nature conservation.

Adjacent land

The site is surrounded on all sides by land not having any ecological designation other than being within an Area of Outstanding Natural Beauty.

Nearest Sites of Nature Conservation Importance (SNCIs)

These sites are non-designated sites identified at a county level and recognised to be of local conservation importance.

All such sites are at least 0.6km from the site.

The nearest site is:

M42 Rowhill and Station Pastures (species rich grassland) about 0.6km to the north.

Other sites are within 2km of the site are:

M22 Balcombe Lake and associated woodlands (semi-natural woodland, stream and lake at about 1.7km to the northeast;
M35 Balcombe Marsh (neutral grassland) about 1.1km to the southeast;
M39 Balcombe Estate Rocks (sandrock outcrops in woodland) about 1km to the northeast; and
M40 Ardingly Reservoir and Loder Valley Nature Reserve (reservoir, herb-rich grassland and woodland) about 1.2km to the northeast.

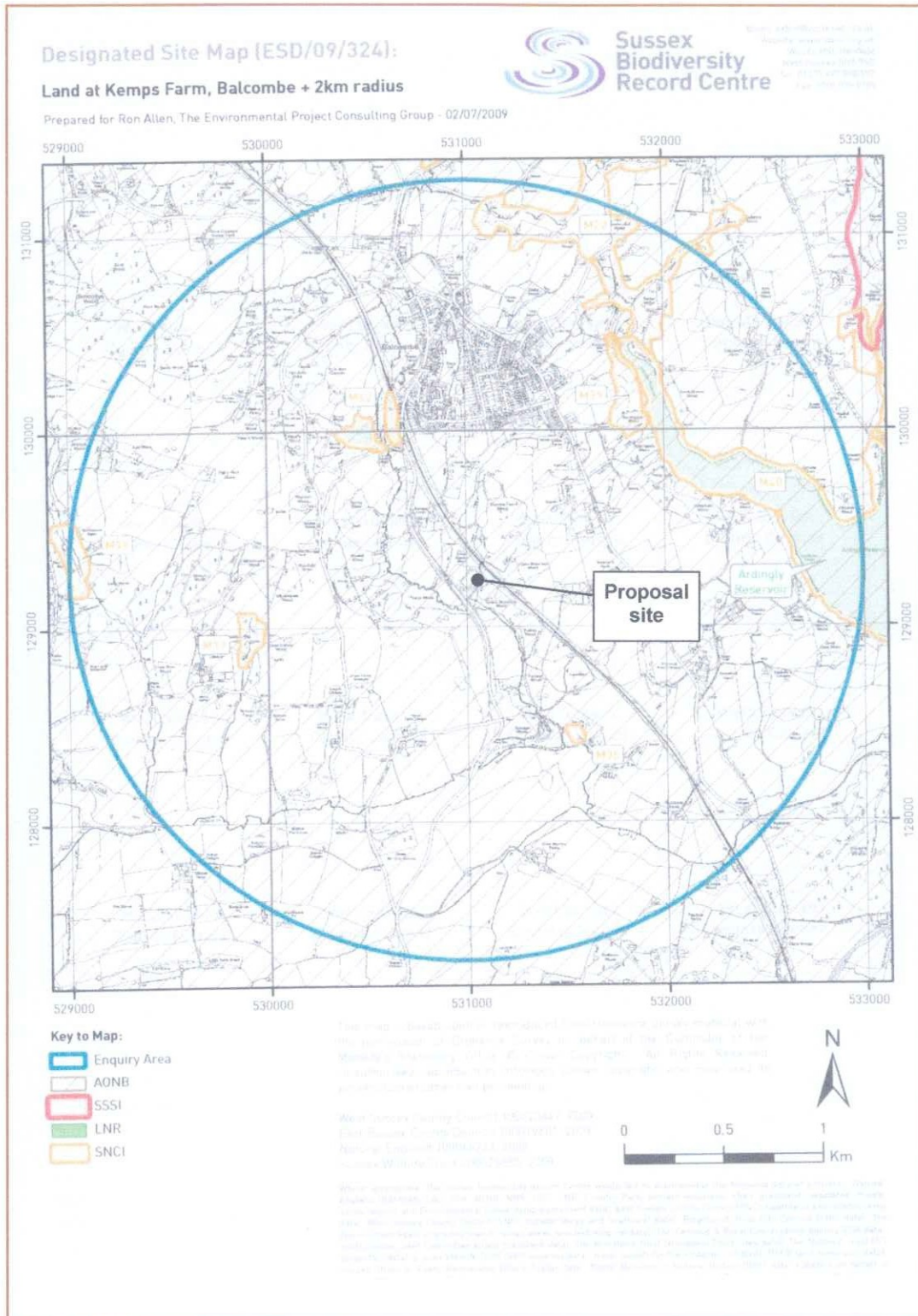


Fig. 3 Plan showing non-statutory sites

3.4 HABITATS

The habitats map in the search report (**Figure 4**) shows that the area round the site is rich in ancient woodlands, some with ghyll woodlands. Lower Stumble and Lower Beenham Woods are shown as ancient woodlands and are close to the site (**Figures 2 and 4**).

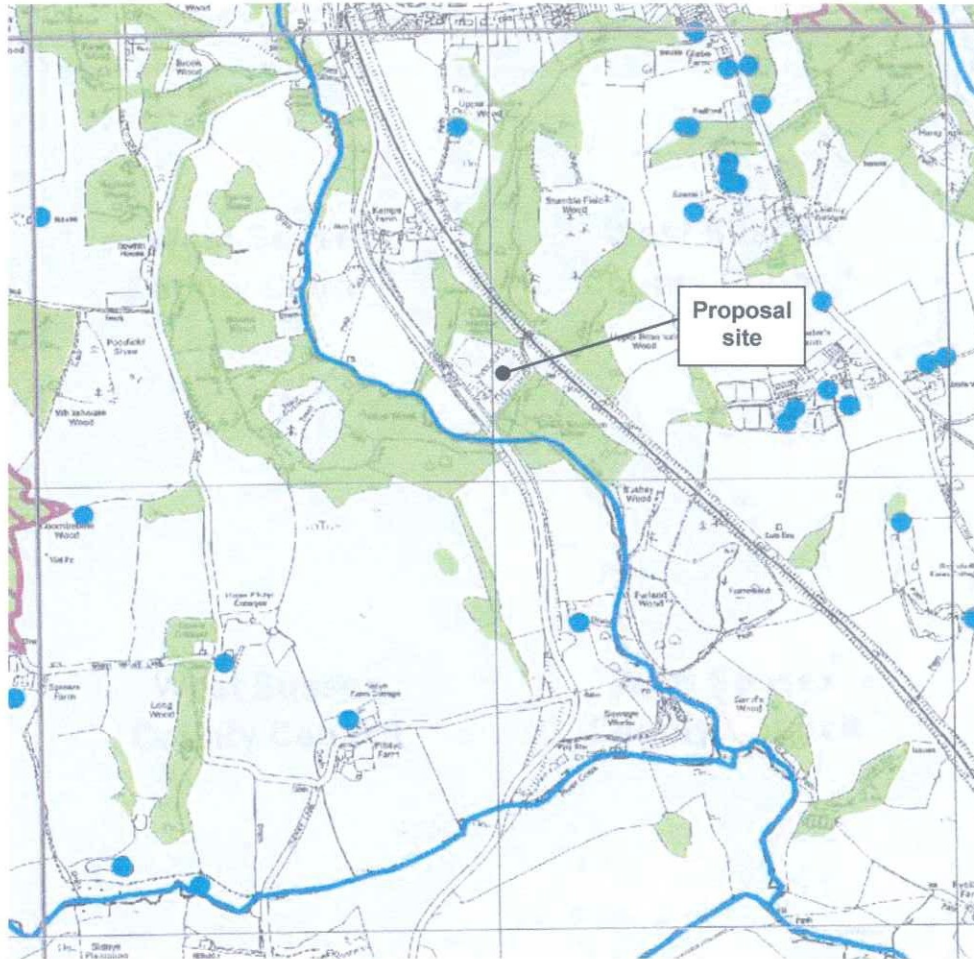


Fig. 4 Extract from Biodiversity Search Report showing habitats

3.5 RARE SPECIES INVENTORY

The search indicated the presence of a range of rare fungi, lichens, liverworts, mosses, ferns, sedges, grasses, molluscs, insects, fish and mammals within the 2km radius search area.

3.6 PROTECTED SPECIES

A number of protected lichens, ferns, flowering plants have been recorded within the search area. Animal species recorded include great crested newt, slow-worm, grass snake, adder, bats and European water vole.

Information of these species is provided in the search report. These species are not described further in this report because they have been recorded from woodlands, wetlands, grasslands and other habitats unrelated to the proposal site and not affected by the proposals.

3.7 BIODIVERSITY ACTION PLAN (BAP) SPECIES

BAP species within the 2km search area include a number of lichens, liverworts, mosses, ferns, and flowering plants as well as European eel, brown trout, great crested newt, common toad, slow-worm, grass snake, adder, brown long-eared bat, European water vole and brown hare.

Information of these species is provided in the search report. These species are not described further in this report because they have been recorded from woodlands, wetlands, grasslands and other habitats unrelated to the proposal site and not affected by the proposals.

3.8 BIRDS

A large number of birds have been recorded within the search area including those found in open water and wetlands, woodlands, open habitats and gardens. While some of these species will be found in the vicinity of the proposal site, the site itself, being bare ground, will not be attractive to these species and will not provide critical nesting or breeding habitat.

3.9 INVASIVE ALIEN SPECIES

A number of invasive species have been recorded in the vicinity including giant hogweed and Japanese knotweed typical of waste land and that could occur on the proposal site, although have not been seen during the site visit.

3.10 ENVIRONMENTAL SURVEYS

There are a great many reports listed mostly in relation to the Sites of Importance for Nature Conservation, river corridors and other semi-natural or significant habitats, including geological sites. Note of these reports directly relate to the proposal site or adjacent land.

4.0 HABITAT SURVEY

The walkover survey identified a number of common wildlife habitats on the site and the site's immediate surroundings (Figure 5), none being of particular ecological significance.

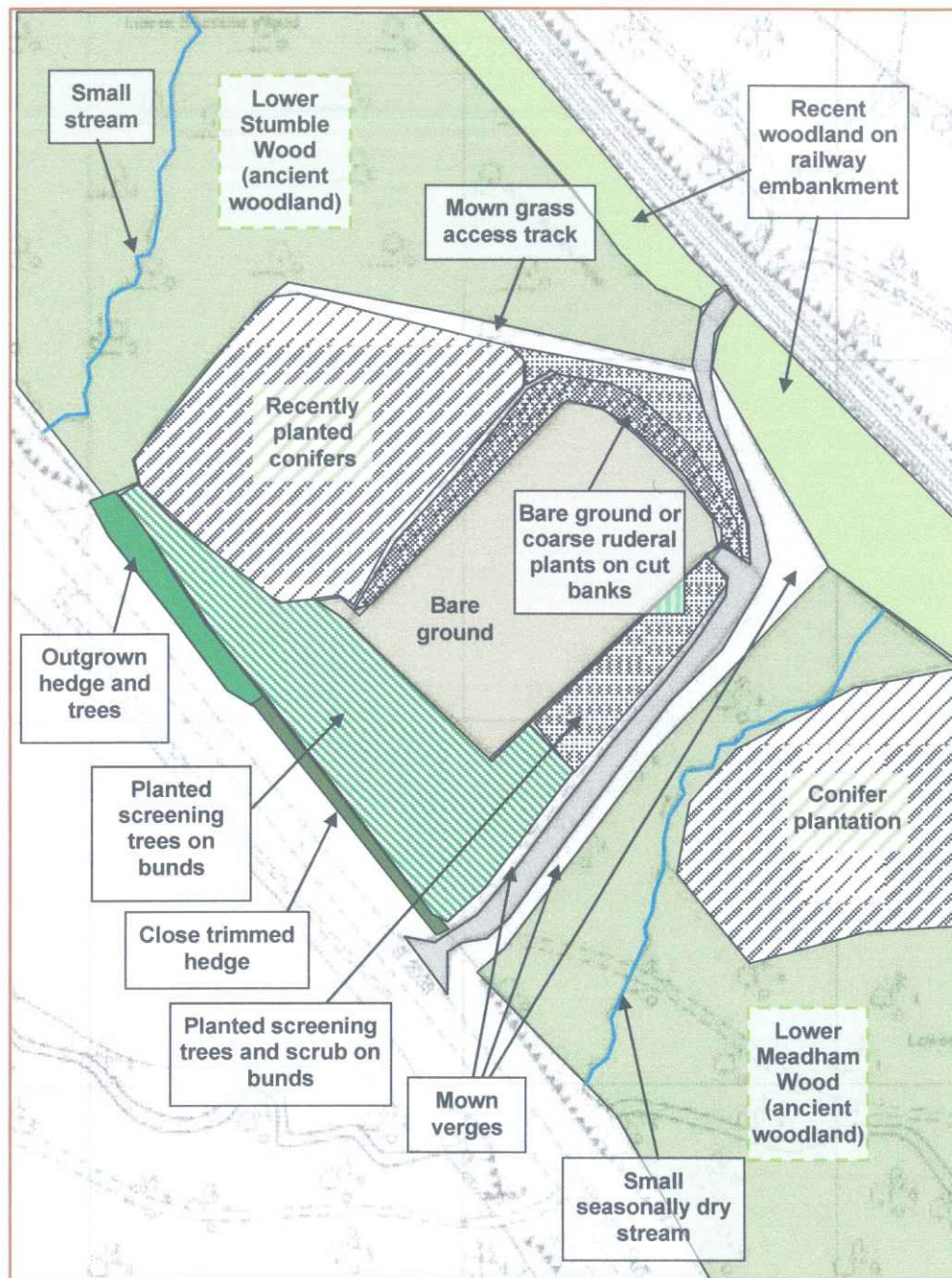


Fig. 5 Phase 1 Habitat Survey

Main site

The main site (**Figures 1 and 6**) and comprises bare hard standing of compacted soil, gravel and brick hardcore and had been heavily trafficked and was bare of vegetation.

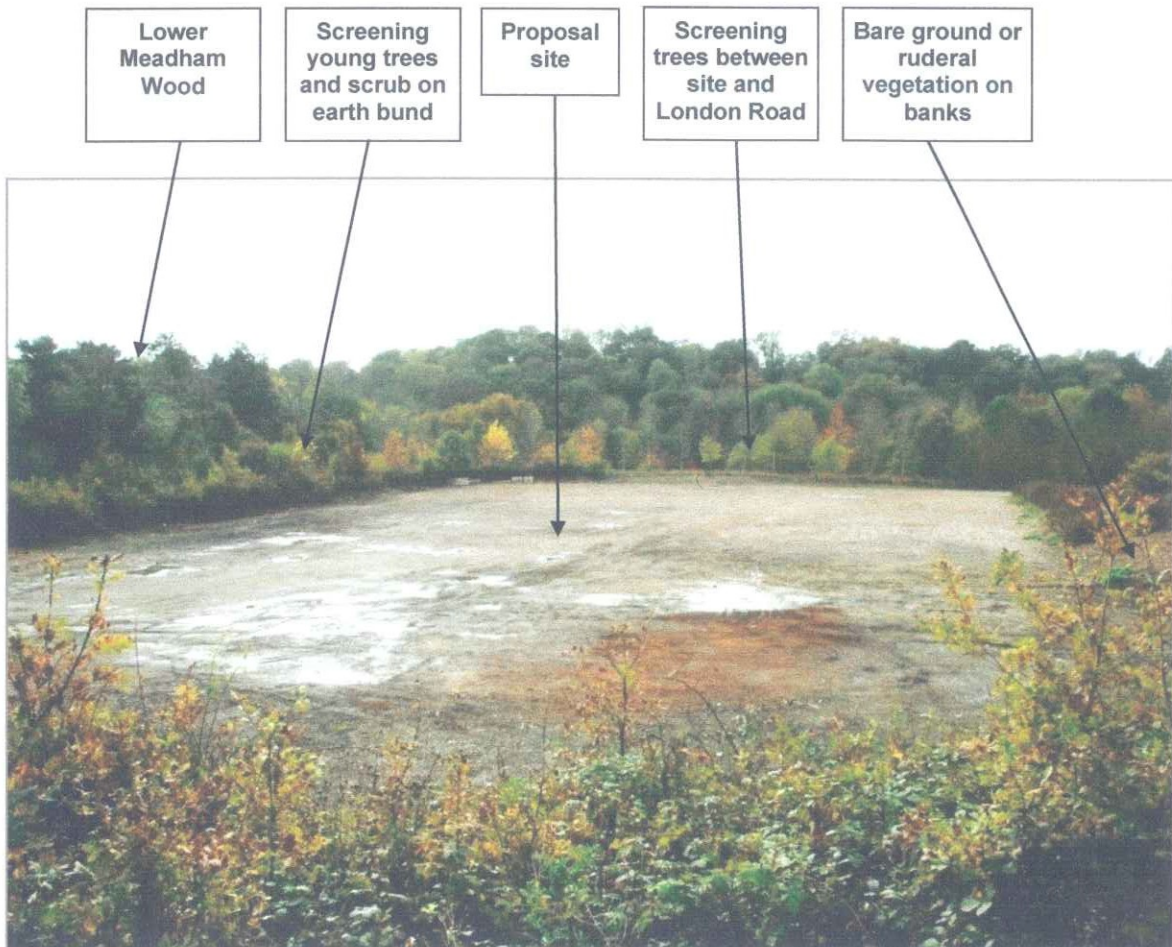


Fig. 6 Proposal site and surroundings

Access road and verges

The access road (**Figure 7**) was also of compacted gravel and hardcore. A thin strip of land either side of the road had been recently mown.

Bounding banks to main site

The banks on the northwest and northeast side of the main site (partly gabion reinforced) were either of bare soil or had become invaded with coarse ruderal



Fig. 7 Access road from London Road

vegetation of nettles *Urtica dioica*, docks *Rumex* sp., brambles *Rubus fruticosus* agg. and a small range of other plants typical of waste places including creeping buttercup *Ranunculus repens*, creeping and spear thistles *Cirsium arvense* and *C. vulgare*, burdock *Arctium* sp. and creeping cinquefoil *Potentilla reptans*.

Scrub

North of the compound above the banks is an area of scrub comprising mainly young pedunculate oak, hazel and dog rose growing out of dense bramble and nettles.

Screening bunds

The south-western boundary of the site is marked by an earth bank on which are established young (perhaps 10-15 years) native species trees of pedunculate oak, field maple and ash growing out of dense bramble and dog rose.

The south-eastern boundary, extending down to the London Road has older (about 20 years) more established native and non-native tree species planted in rows general over coarse grassland over shallow soil bunds with some bramble (**Figure 8**). These trees include: pedunculate oak, ash, small-leaved lime, red oak, Norway maple and beech.



Fig. 8 Screen plantings between site and London Road

Hedges

The edge of the London Road is marked by a hedgeline (**Figure 9**).

The part southwest of the site, has been recently neatly trimmed. The southern section of the trimmed hedge (closest to the entrance gate) comprises mostly beech, common hawthorn and ash while the northern part has common hawthorn, field maple and ash. To the northeast, the hedge has become outgrown into a strip of common hawthorn and blackthorn with goat willow, pedunculate oak and bramble.



Fig. 9 Trimmed roadside hedge

Ancient woodland

Lower Stumble and Lower Meadham Woods comprise ancient woodland (**Figure 4**) variously with pedunculate oak, ash and hazel. The strip of Lower Meadham Wood adjacent to the access track also has tall mature Scots pine.

Streams

There is a small stream running through Lower Meadham Wood just downslope of the access road. This stream appears to run in a small incised channel about 0.5m deep and variously 0.5-1m wide and was dry at the time of the visit.

There is a further stream shown on the Ordnance Survey plan (but not visited) within Lower Stumble Wood (**Figure 2**).

Conifer Plantations

Land to the northwest of the site comprises a very recently planted tract of conifers (**Figure 10**).

Land to the southeast and within Lower Meadham Wood has also been planted to conifers.

Fig. 10 Recent conifer plantation
(site is in middle distance)



5.0 CONCLUSIONS

No ecological land designation

The site is not included within any ecological land designation and so is not recognised as being nationally or locally important.

No nearby designated sites

Land around the site has no ecological designations.

Ancient woodland

The established woodland in the vicinity at Lower Stumble and Lower Meadham Woods is ancient woodland and of local or county ecological importance.

Watercourses

There are no watercourses within the site. There is a small seasonal stream close to the access road within Lower Meadham Wood and which currently takes water off the access track.

Protected species

The site is bare hard ground, devoid of vegetation, and not suited to protected species.

Precautions

It is recommended that should surface water be directed to the stream within Lower Meadham Wood, that this water should be clean and free of contamination.

The woodland edges will probably form flight routes for commuting bats and light sources should be directed away from the woodlands.

Overall conclusion

The site is of no significant ecological value and so no adverse ecological effects would be incurred by the proposed development as long as:

- 1. the site is restricted to the existing hard surface area;**
- 2. the access is restricted to the existing track and mown verges;**
- 3. no contaminated water reaches the small stream within Lower Meadham Wood;**
and
- 4. lighting is directed away from adjacent woodland habitats.**