

Lower Stumble Exploration Site, Balcombe

Traffic and Transport Effects

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1.1 Introduction

The Balcombe 2z hydrocarbon borehole (“the borehole”) was drilled by Cuadrilla Balcombe Limited (“Cuadrilla”) in 2013 under planning permission WSCC/027/10/BA. Planning permission granted in 2010 allowed the flow rates in the borehole to be tested and monitored but these works were never completed due to the time limits that were imposed on the works. Therefore, Cuadrilla secured a temporary planning permission in 2014 (ref: WSCC/005/14/BA) to stimulate the borehole, test and monitor the flows, plug and abandon the borehole and then restore the land back to its original use as forestry storage.

The 2014 permission expired and therefore a subsequent application (ref: WSCC/040/17/BA) allowed the works to take place, with Angus Energy (“Angus”) carrying out a 7 day well test in September 2018. However, leftover drilling fluids are present in the well and WSCC have deemed the permission to have expired, given the time limits imposed on the works for only 6 months. Angus now intends to return to the well to carry out the originally proposed ‘pumping operation’ with the potential to carry out an extended well test (EWT) should the results be favourable.

1.2 Purpose of Report

This technical note describes the effects that the proposed development is likely to have on traffic flows within the local area. In line with good practice, a Traffic Management Plan (TMP) will be implemented by the appointed contractor, an outline of which is provided at section 1.6 with the full TMP attached at Appendix 1.

After completion of the borehole exploration and appraisal programme, the surface site would be cleared of all equipment and restored to its former hard standing status. Subsequently, there will be no long-term effects from the proposed development from a traffic and transport perspective.

1.3 Legislation, Policy and Guidance

The relevant guidance which has been used to assess the effects of the proposed development comprises the following:

- National Planning Policy Framework (DCLG, 2019);
- Planning Practice Guidance (DCLG, 2016); and
- WSCC Transport Assessment Methodology

National guidance recommends that a transport assessment should be submitted where a development generates significant amounts of transport movements. Referring to the WSCC methodology, this defines significant to be in excess of 20 HGV movements per day.

1.4 Assessment Methodology

To assess the likely effect of construction traffic on the local area the WSCC Transport Assessment Methodology is considered.

Information provided by Angus indicates the predicted traffic generated by the proposed operations based on workers and HGV movements. This data has been compared to the WSCC significance threshold to determine if further assessment is required, while also comparing with the previous permission.

The construction effects have been considered by examining the different vehicle requirements over the three stages of work, as outlined in section 2. These briefly comprise the following:

- Stage 1: Removal of drilling fluids; and
- Stage 2: Exploration borehole testing operations;

1.5 Environmental Baseline

The application site is located adjacent to a purpose built access road which links to B2036 London Road, approximately 1km south of Balcombe village. The B2036 connects junction 10a of the M23 motorway and beyond to Crawley with Cuckfield and Haywards Heath.

The M23 provides the main strategic route to the site for HGVs while light vehicles can also approach the site from the A272.

London Road is a B classified road which is a single carriageway road providing the only connection from the site to the strategic road network. It primarily serves the village of Balcombe along with a number of rural properties along its route. It is generally subject to a 50mph speed limit to the north of Balcombe, reducing initially to 40mph and then 30mph through the village. South of the village the speed limit increases to 60mph, including the section onto which access to the application site will be provided.

There are bus stops immediately outside the site offering a 2 hourly service to Hurstpierpoint and Crawley via Balcombe. Balcombe benefits from a railway station with passenger rail services connecting Brighton and Bedford via London. However, it is expected that road transport will form a significant part in worker movements and for all materials and equipment.

1.6 Mitigation

Although there is no discernible effect on the traffic flow as a result of the proposed operations a TMP has been developed (Appendix 1) to ensure that HGVs only use appropriate routes to access the site.

HGV traffic will be limited to accessing the site using B2036 London Road from the M23 motorway. HGVs will be limited to a left in/right out turn into London Road. Accessing the B2036 to the south of the application site will be restricted for construction traffic. This route is illustrated in Appendix 2.

A summary of the details set out in the TMP is as follows:

- The anticipated number, frequency and types of vehicles used during the proposed development;
- The method of access and routing of vehicles including consideration of routing to/from the south;
- The parking of vehicles by site operatives and visitors;
- The loading and unloading of plant, materials and waste;
- The storage of plant and materials used in the development;
- The erection and maintenance of security hoarding (if relevant);
- The provision of works required to mitigate the impact of development upon the public highway (including the provision of temporary Traffic Regulation Orders);
- Details of public engagement both prior to and during the proposed development;
- Traffic management schemes such as restrictions on timings, associated signage etc; and
- Measures to ensure that HGVs avoid travelling past Balcombe Church of England Primary School (a) 30 minutes before and 15 minutes after the start of the school day; and (b) 15 minutes before and 30 minutes after the end of the school day on any school day.

Entry into the surface exploration site would be from the existing access to Lower Stumble Wood and the Balcombe Estate's forestry and farming activities from London Road (B2036), to the west of the site. Given that this access has previously been used for hydrocarbon exploration and the temporary nature of the development proposed, it is not considered necessary at this stage to improve the access further.

The access track and hard surfaced existing bell mouth will be kept clear of debris during all site operations and approved highway signage will remain in situ throughout the three stages of the proposed development. All HGVs associated with the proposed development will access the site via Junction 10a of the M23 motorway and not from the south via Cuckfield.

1.7 Predicted Effects

Access to the site for the exploration well testing equipment would be from the M23 motorway junction 10A and along the B2036 London Road. Journeys to and from the site would avoid the peak traffic flow periods except in the case of emergency. Access to the site for operatives travelling in light vehicles would depend on the location of their accommodation and may come from the north or south along the B2036 London Road. It is assumed for assessment purposes that workers will be distributed approximately 75% to the north and 25% to the south.

The rural nature of the road network surrounding the site is factored into the construction traffic effects; as such a specific HGV route has been developed. It is possible to assess the likely effect of construction traffic along this route by examining the volume of construction traffic provided by Angus, which are presented in further detail in Table 1 below.

Table 1: Balcombe 2z Hydrocarbon Well Testing – Estimated HGV Movements

Stage	Activity	Approximate Timescales	Estimated HGV Movements	Maximum daily HGV movements
1	Mobilisation / equipment set up	1 week	Approximately 65 two-way vehicles movements. This equates to an average of 9 two-way vehicle movements per day.	20 two-way vehicle movements.
	Pumping (removal of drilling fluid)	1 week	Approximately 97 two-way movements. This equates to an average of 6 two-way vehicle movements per day.	23 two-way vehicle movements.
2	Mobilisation / equipment set up	1 week	Approximately 65 two-way vehicles movements. This equates to an average of 9 two-way vehicle movements per day.	20 two-way vehicle movements.
	Flow Testing (intermittent flow periods and shut-in periods for pressure monitoring)	52 to 156 weeks	<p>When Flowing: Approximately 97 two-way movements. This equates to an average of 6 two-way vehicle movements per day.</p> <p>When Shut-in: Approximately 8 two-way movements. This equates to an average of 2 two-way vehicle movements per day.</p>	<p>When Flowing: 23 two-way vehicle movements.</p> <p>When Shut-in: 4 two-way vehicle movements.</p>

As discussed above, these figures were examined to identify the maximum volume of HGVs on any given day with consideration for the duration of such an effect. They have also been compared with the previous consent to determine the scale of impact with what has already been considered acceptable.

During stage 1 of the works, the vehicle movements have been estimated as being the same as previously consented, representing a worst case, as the level of equipment required will be to simply remove the drilling fluid.

During stage 2 of the works, the vehicle movements for site mobilisation have again been estimated to be the same as previously consented, although these will likely be less than predicted as a proportion of the equipment will already be on site from stage 1.

During the flow testing phase within stage 2, the flow period will initially be for an hour or so, increasing gradually increasing to days, weeks and months. The subsequent shut-in period will always be for 2-3 times the flow period, i.e. 1 week flowing followed by 2-3 weeks shut-in. Therefore, the peak will typically represent around 25-30% of the total time and will predominantly equate to tanker movements on and off site.

Given that these vehicle movements are the same as previously consented, it is considered that the existing site access could accommodate the proposed development without any further improvements. It is also expected that the level of traffic generated by the proposed development would be likely to have a negligible impact on the local highway network.

In terms of light vehicles, it is estimated that up to 22 car/van movements may be generated by the activities at the peak with a typical value of 16 movements during site mobilisation and just 8 movements during the flow testing stage. Given the distribution of these movements to north and south directions from the site access, it is likely to result in a negligible effect on the local highway network.

1.8 Conclusion

This assessment provides a summary of the likely increase in traffic flows associated with the proposed development. Utilising data provided by Angus it is considered that the proposed operations will have a negligible effect on the local road network and no greater than that previously approved for flow testing operations.

The local highway network has sufficient capacity to accommodate the level of temporary traffic during the operational period.

The proposed mitigation measures, comprising good practice preparation of a TMP, should be sufficient to overcome any concerns raised over increased HGV and non-HGV movements generated during the proposed operations.

APPENDIX 1 – TRAFFIC MANAGEMENT PLAN



Traffic Management Plan

Lower Stumble Exploration Site, Balcombe

August 2019

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Appendices

Appendix A: Well Site Location

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1 Executive Summary

1.1.1 This Traffic Management Plan (TMP) has been prepared to support a Planning Application, on behalf of Angus Energy (Angus), to carry out hydrocarbon (oil and gas) exploration and appraisal at an existing hydrocarbon site south of Balcombe.

1.1.2 HGV traffic will be limited to accessing the site using B2036 London Road from the M23 motorway. HGVs will be limited to a left in/right out turn into London Road. Accessing the B2036 to the south of the application site will be restricted for construction traffic. In terms of traffic management, the following measures will be implemented:

- The site management will ensure that all traffic enters and leave as the site during the approved hours of operation and avoid hours during the morning and afternoon school start and finishing periods;
- Vehicle loading and unloading will be contained within the well site with no adverse impact upon the localised road network;
- On site traffic management will ensure that there are no adverse implications with vehicles entering or leaving the site;
- There will be no need for specific traffic control for HGV movements to and from the site;
- Signage will be erected as with earlier exploration activities at the site;
- There will be no need for road closures or traffic diversions during the short period of well testing;
- The proposed HGV movements will have no adverse impact upon pedestrians in the vicinity of the site;
- The proposed HGV movements will have no adverse impact on public transport operating within the vicinity of the site;
- Weather conditions will be closely monitored to ensure that safeguarding controls are employed to allow site traffic to safely enter and leave the site with no adverse impact upon other traffic in the vicinity of the site; and

- Emergency measures will be put in place should protestor activity disrupt anticipated HGV traffic travelling to and from the site.

2 INTRODUCTION

- 2.1.1 This traffic management plan (TMP) has been prepared on behalf of Angus Energy PLC in association with a planning application for exploration and appraisal comprising the flow testing and monitoring of the existing hydrocarbon lateral borehole along with site security fencing, the provision of an enclosed testing flare and site restoration.
- 2.1.2 The Balcombe 2z hydrocarbon borehole (“the borehole”) was drilled by Cuadrilla Balcombe Limited (“Cuadrilla”) in 2013 under planning permission WSCC/027/10/BA. Planning permission granted in 2010 allowed the flow rates in the borehole to be tested and monitored but these works were never completed due to the time limits that were imposed on the works. Therefore, Cuadrilla secured a temporary planning permission in 2014 (ref: WSCC/005/14/BA) to stimulate the borehole, test and monitor the flows, plug and abandon the borehole and then restore the land back to its original use as forestry storage.
- 2.1.3 The 2014 permission expired and therefore a subsequent application (ref: WSCC/040/17/BA) allowed the works to take place, with Angus Energy (“Angus”) carrying out a 7 day well test in September 2018. However, leftover drilling fluids are present in the well and WSCC have deemed the permission to have expired, given the time limits imposed on the works for only 6 months. Angus now intends to return to the well to carry out the originally proposed ‘pumping operation’ with the potential to carry out an extended well test (EWT) should the results be favourable.
- 2.1.4 As part of planning permission ref: WSCC/040/17/BA, Angus Energy discharged condition 11 concerning a TMP for the proposed well testing and site restoration. This statement aligns with and builds on the procedures to control HGV traffic submitted to discharge condition 11.

3 SITE MANAGEMENT AND SUPERVISION

3.1.1 The principal responsibility will lie with the Energy Site Security:

Angus Energy PLC James Court

Tel: 07512 730138

3.1.2 Day to day responsibility will be with the Energy Site Operator:

Angus Energy PLC Sam Court

Tel: 07512 730138

3.1.3 Any problems or disputes should be addressed to these individuals. Angus Energy PLC are committed to working with the communities in which they operate and will keep residents informed throughout the well testing and restoration period.

3.1.4 The TMP will be effective on all construction related vehicles for the duration of the well testing contract and further during the subsequent restoration of the site. For the avoidance of doubt this will include all construction staff their operatives and subcontractors and all deliveries.

4 TRAFFIC MANAGEMENT PLAN

4.1 Location

- 4.1.1 The site lies off the B2036 London Road and benefits from an existing access used for earlier site operations. No alterations are proposed to the access which was subject to a Site Safety Audit as part of previous planning applications. The site location is shown at Appendix A.
- 4.1.2 All heavy traffic associated with the proposed well testing and restoration operations will access the site off the B2036 and enter from the north having travelled from Junction 10A of the M23 via the B2036. Vehicles travelling to the site from the south will “U-turn” at Junction 10 of the M23. The route is shown at Appendix B. All small vehicles (i.e. Cars, vans, pickups) used by staff and site operatives will be encouraged to use the routes set out above to ensure minimal use of local roads in the vicinity of the site.
- 4.1.3 The proposed route to the site from the M23 passes through the village of Balcombe, passing the village school. Heavy goods movements to and from the site ‘will be timed so that none are undertaken during the morning and afternoon school start and finish periods.
- 4.1.4 Heavy goods vehicles are those over 7.5 tonnes and can be identified by the high visibility markers (red and orange stripes) on the rear of the vehicles.
- 4.1.5 The exploration site has already been constructed and no additional site construction or associated HGV traffic will be required. The following table sets out the key areas where HGV traffic will be generated:

Table 1: Balcombe 2z Hydrocarbon Well Testing – Estimated HGV Movements

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4.1.6 During the site development programme all crew members for site operations will be brought into the site by mini-bus at the commencement and end of each shift. No parking will be required for such vehicles.

4.1.7 The foregoing paragraphs advise on the expected traffic flows for HGV's associated with the exploration site development and the timeframe which is anticipated. In the event of protestor activity, which has been a feature of earlier exploration activities at the site, there may be unexpected delays to vehicle movements. Should this occur the Mineral Planning Authority will be notified accordingly.

4.2 Hours of Operation

4.2.1 With the exception of undertaking urgent works in emergency situations, the movement of all HGVs to and from the site shall only be undertaken between the hours of 07:30 and 18:30 Mondays to Fridays and over 8:00 to 13:00 on Saturdays.

4.2.2 No HGV movements shall be undertaken on Sundays, holidays and public holidays.

4.2.3 Heavy good movements to and from the site will be timed so that none are undertaken during the morning and afternoon school start and finish periods avoiding school drop off/pick up times.

4.3 Vehicle Unloading and Parking

- 4.3.1 A designated area will be identified for a compound within the site for the storage of incoming materials to be used in the exploration programme. Additionally, an area will be set aside for the temporary storage of any waste materials derived from the site operations. The waste skips and storage has been designed at the southern end of the site and these will be the last items to be removed when the site is decommissioned. HGV access will therefore not be required during the short exploration period at the site.
- 4.3.2 An additional area will be set aside for the deliveries of materials and the parking of all contractor related vehicles.
- 4.3.3 Clear signage will be erected near the site entrance to ensure that delivery drivers are aware of all traffic management procedures relating to the site. Manoeuvring space will be maintained to ensure that all vehicles enter and leave the site in a forward direction.
- 4.3.4 The Site Manager will ensure that no employee or operative associated with the exploration programme parks any vehicle on the adjoining roads outside the exploration site.

4.4 On Site Traffic Management

- 4.4.1 On site the following site rules you will be imposed on drivers:
- the speed limit is 5 mph unless a lower speed is posted, or conditions make it unsafe to drive at 5mph;
 - hand-held mobile phones or site radios must not be used while driving;
 - obey all traffic signage and any designated banksman;
 - drivers must wear all the necessary PPE when outside of their vehicles and
 - enclosed welfare cabins, PPE requirements still apply when operating vehicles with open cabs;
 - no children, animals (other than security team dogs) or unauthorised passengers are permitted on site;

- drivers must not stop on site roads and only park where instructed do so by the banksman or security personnel;
- no manoeuvring operations are to be carried out without a banksman in attendance;
- drivers will be encouraged not to leave engines running unnecessarily; drivers needing to take legal rest breaks must do so within the site boundaries not on the public roadways.

4.5 Traffic Control

- 4.5.1 As the HGV loads are carried on conventional vehicles there will generally be no need to employ traffic escorts, apart from the drilling rig itself which may have escort vehicles with flashing orange lights.

4.6 Signage

- 4.6.1 As with earlier site exploration operations appropriate signage will be erected prior to the development commencing on site. Details of the signs proposed are shown at Appendix C.

4.7 Road Closures and Diversions

- 4.7.1 The incoming HGV traffic can easily be accommodated using existing roads from the M23 motorway and there are no proposals for road closures or diversion routes from other traffic using the nearby public highways.

4.8 Pedestrians

- 4.8.1 The proposed HGV traffic will have no direct impact upon pedestrians along the route from the M23 Motorway. Should pedestrians be crossing the entrance to the site then they will be advised of potential HGV traffic moving to and from the site.
- 4.8.2 Activities at the site have historically been the subject of protests and in the event of protestors being present, liaison will be undertaken with the West Sussex Police to ensure the safety of pedestrians in the vicinity of the site.

4.9 Public Transport

- 4.9.1 The activities at the site will have no impact upon public transport facilities within the village of Balcombe or in the vicinity of the site.

4.10 Weather Considerations

- 4.10.1 Should adverse weather conditions arise additional safeguarding controls will be employed for HGV traffic entering or leaving the site in order that other traffic may be aware of the movements and allow sufficient time for accommodating the HGV's onto the nearby public highway. In the event of wet weather, the site access will be regularly inspected to ensure that there are no delays to HGV traffic entering or leaving the site.

4.11 Emergency Measures

- 4.11.1 The well testing works proposed involve conventional oil and gas exploratory techniques and it has been confirmed to the West Sussex Planning Authority that no hydraulic fracturing will take place. However, there is a growing body of objection to any oil and gas exploration undertaken within England. To this end protestor activity will be monitored by specialist personnel and at all times liaison will be maintained by the security personnel with the West Sussex Police. This will enable any disruption to the proposed HGV traffic programme to be appropriately managed. In this regard it should be noted that delays to HGV traffic attending the site may lead to a longer timeframe than that advised for the completion of the well testing works and demobilisation of the well testing equipment and all associated site equipment.

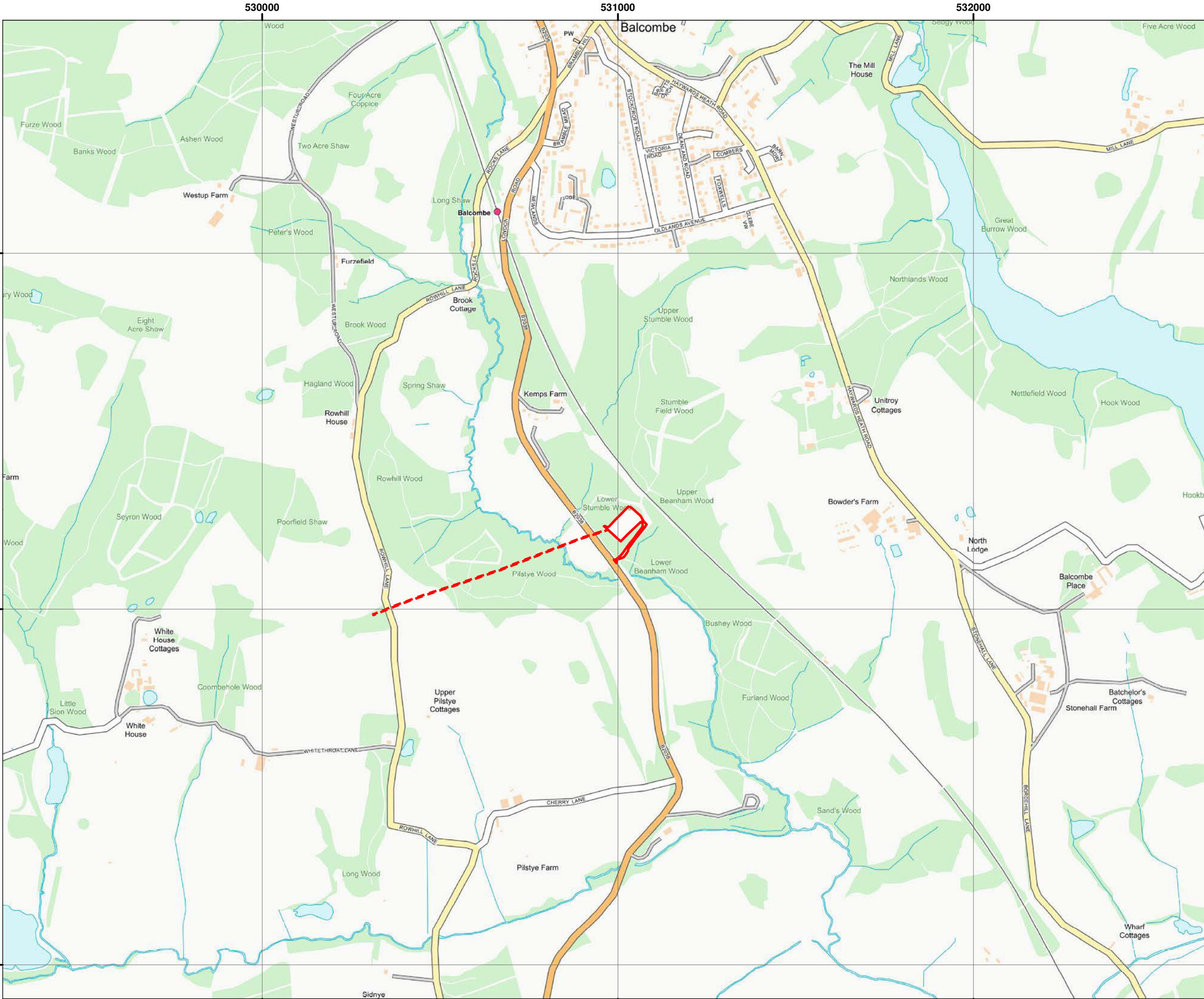
4.12 Public Engagement

- 4.12.1 The details of the well testing works will be advised to the local community, Parish and District Councils via a formal liaison committee for which the structure, remit and membership has been formulated and submitted in association with Condition 21 of the planning consent regulating the proposed well testing operations. During the period of work on site should details of the work programme vary this will be submitted in writing to the Mineral Planning Authority for onward transmission to all relevant interested parties.

5 CONCLUSION

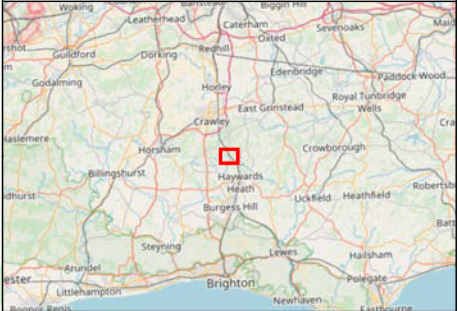
- 5.1.1 The traffic management measures to be implemented at the Balcombe well site are aimed to proactively and safely accommodating all well site HGV traffic movements from the point of source to the well site (Junction 10a of the M23 via the B2036 to the well site off London Road).
- 5.1.2 Angus Energy Plc shall only proceed to implement these measures once it has received approval in advance and in writing from the West Sussex County Council planning authority.
- 5.1.3 It is considered that the above information provides sufficient detail and reassurance that these traffic management measures are appropriate and necessary for the completion of the proposed development.

Appendix A: Well Site Location



- Legend:**
- Site Boundary - Above Ground Works
 - Site Boundary - Below Ground Works

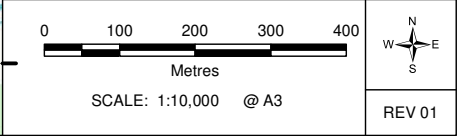
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Datum: OSGB 1936
Units: Meter



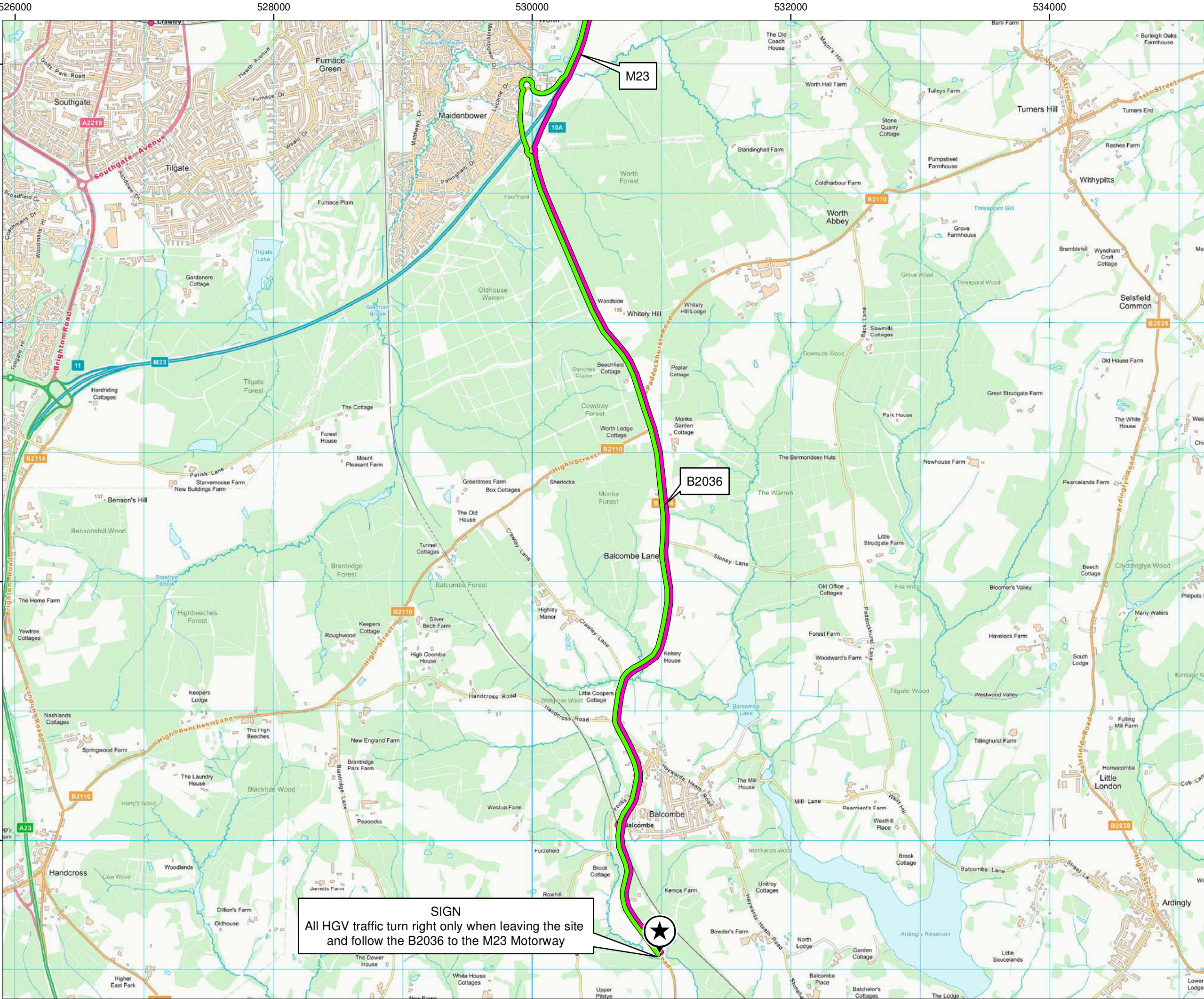
Rev	Date	Description
01	10/10/2017	Scale change
00	03/10/2017	First Draft

Balcombe 2z Hydrocarbon Well Testing

TITLE:
Figure 1:
Site Location Plan

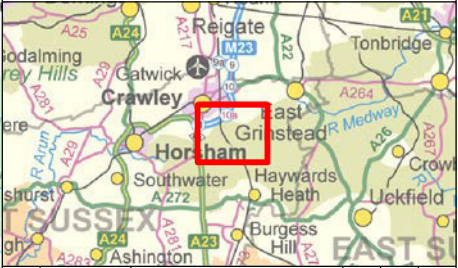


Appendix B: HGV Traffic Route



- Legend:
- Balcombe Site Location
 - HGV Vehicle Route - Outbound
 - HGV Vehicle Route - Inbound

Coordinate System: British National Grid
Projection: Transverse Mercator
Datum: OSGB 1936
Units: Meter

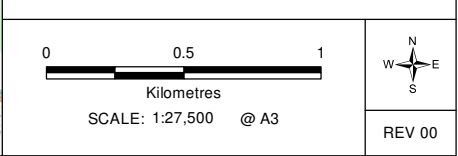


Rev	Date	Description	Drm	Chk	App
00	19/08/2019	First Draft	DR	IW	IW

Angus Energy

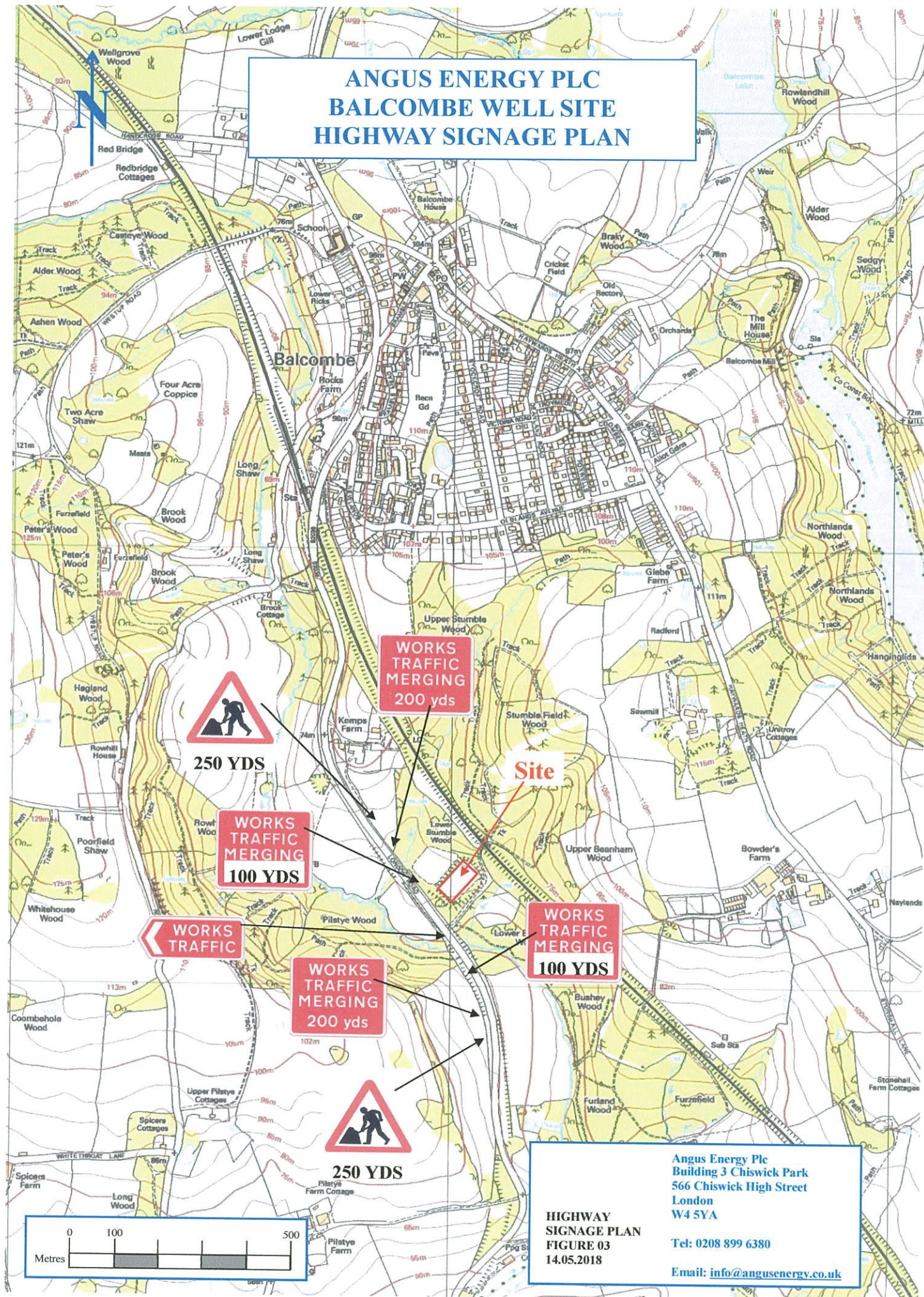


TITLE: Balcombe
Restricted HGV Route Plan



Appendix C: Signage Details

ANGUS ENERGY PLC BALCOMBE WELL SITE HIGHWAY SIGNAGE PLAN



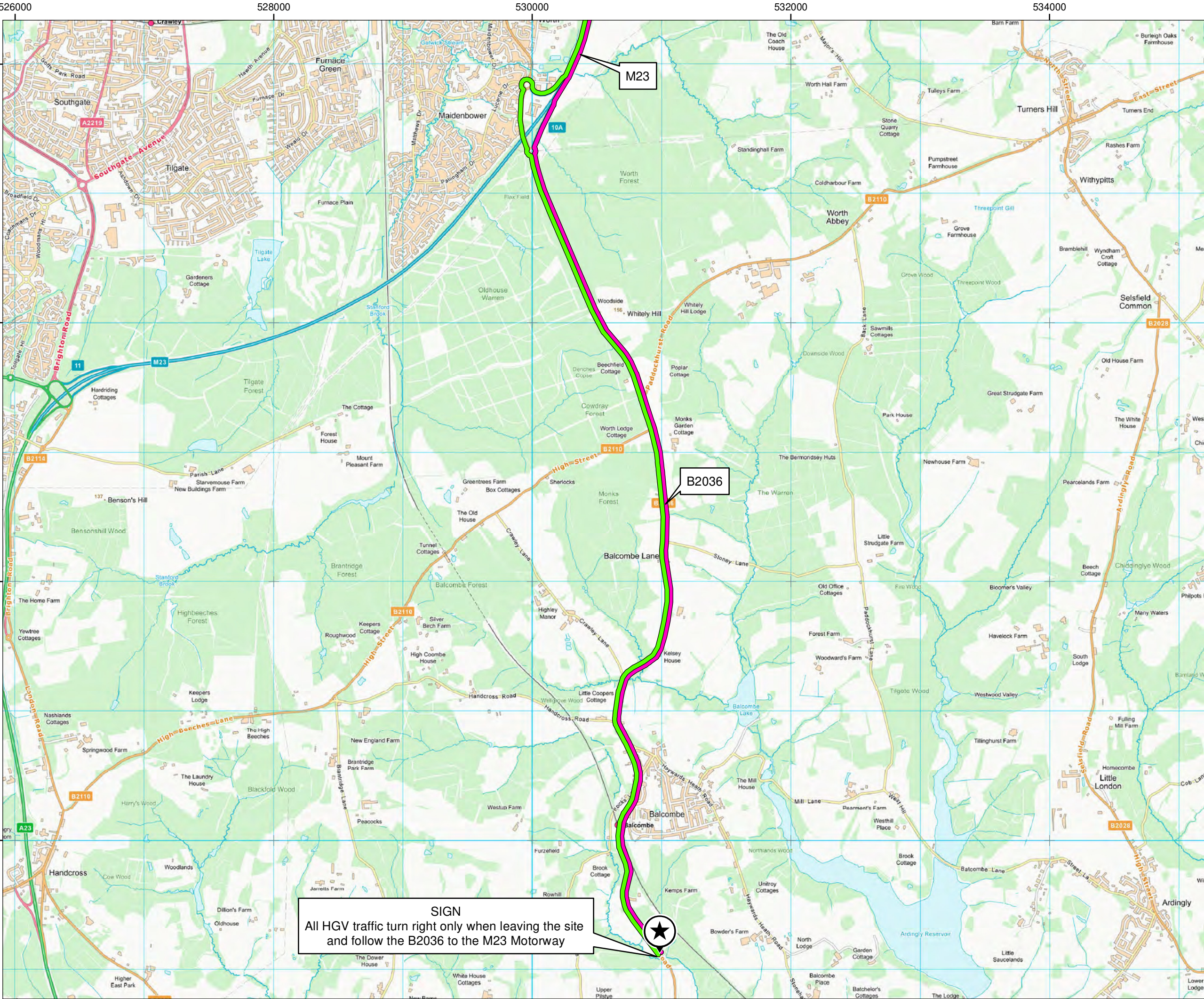
Angus Energy Plc
Building 3 Chiswick Park
566 Chiswick High Street
London
W4 5YA

HIGHWAY
SIGNAGE PLAN
FIGURE 03
14.05.2018

Tel: 0208 899 6380

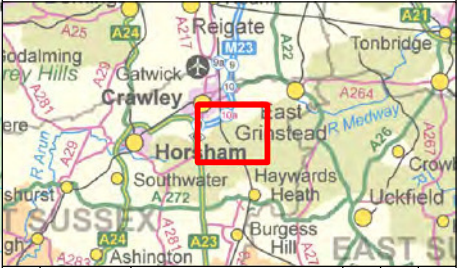
Email: info@angusenergy.co.uk

APPENDIX 2 – HGV ACCESS ROUTE PLAN



- Legend:
- Balcombe Site Location
 - HGV Vehicle Route - Outbound
 - HGV Vehicle Route - Inbound

Coordinate System: British National Grid
Projection: Transverse Mercator
Datum: OSGB 1936
Units: Meter



Rev	Date	Description	Drm	Chk	App
00	19/08/2019	First Draft	DR	IW	IW

Angus Energy



TITLE: Balcombe
Restricted HGV Route Plan

