west sussex county council

TOWN AND COUNTRY PLANNING ACT 1990

APPLICATION FOR PLANNING PERMISSION
(INVOLVING MINERALS OR WASTE MATERIALS)

FOR OFFICIAL USE ONLY
County Matter
Application No: .....
Date Received: .....
E.S. .....
Fee: .....

IT IS IMPORTANT THAT YOU READ THE GUIDANCE NOTES AS INCORRECT COMPLETION INVOLVES DELAY
(6 copies of the application, including plans, and supporting statement are required together with the appropriate fee)

1. Applicant (in BLOCK CAPITALS)	2. Agent (in BLOCK CAPITALS)
Name: MIDMAR ENERGY ONSHORE Contact: MISS CHARLOTTE WHEATLEY Address: 6 DEAN PARK CRESCENT BOURNEMOUTH DORSET BH 1 1HL Telephone Number: 01202 438333 E-mail: charlotte.wheatley@midmar.co.uk Fax: 01202 438444	Name: Contact: Address: Telephone Number: E-mail: Fax:

W.S.C.C.
07 OCT 2005
DEVELOPMENT CONTROL
PLANNING SERVICES

3. Full **Address** or **Location** of the land to which this application relates:
LIDSEY OILFIELD, LIDSEY, BOGNOR REGIS, WEST SUSSEX, PO22 9PF

4. Full **Description** of the proposed development.
DEVELOPMENT AND OPERATION OF A THREE WELLHEAD AND BEAM PUMP OIL PRODUCTION FACILITY PLUS ANCILLARY WORKS AT THE LIDSEY OIL EXPLORATION SITE AT LIDSEY, NEAR BOGNOR REGIS.

5. Type of Application

	State Yes or No
(a) Full planning permission (including change of use).	YES
(b) Outline planning permission for the erection of a building.	NO
(c) Approval of Reserved Matters.	NO
(d) Renewal of an unexpired, unimplemented Temporary Permission.	NO
(e) Permission to develop land or for retention of building or continuance of use without complying with a condition imposed on a planning permission.	YES

If yes, state those matters to which this application relates:

	Tick where Appropriate
(i) Siting	
(ii) Design	
(iii) External appearance	
(iv) Means of access	
(v) Landscaping of the site	

If yes, state the date and number of the permission and identify the particular conditions:

Date: 26 NOVEMBER 2003

Permission Number: BN/41/03 + AL/91/03

Condition Number:

6. (a) Area of site 1:62 Hectares (b) Floor area of any proposed buildings 44.7 m^2
(c) State whether applicant owns or controls any adjoining land ~~Yes~~/No. If yes the land must be edged blue on the location plan.

7. State whether the proposal involves:

	State Yes or No		State Yes or No
(a) New building(s) or structure(s)	YES	(d) Alteration of an existing access to a highway — Vehicular	NO
		Pedestrian	NO
(b) Alteration or extension of building(s)	NO	(e) Closure of existing access	NO
(c) Construction of a new access to a highway — Vehicular	NO		
Pedestrian	NO		

8. Particulars of Use of Buildings or Land - State: (a) Present use EXTENDED WELL TESTING
(b) If vacant, the last use.

9. **Additional Information:**

	State Yes or No	
(a) Is the application for the winning or working of Minerals?	YES	If yes, complete form Part 4
(b) Is the application for the processing or disposal of waste materials?	NO	If yes, complete form Part 3
(c) Does the application include Industrial, Office, Warehousing, Storage, or other Commercial uses.	YES	If yes, complete form Part 2
(d) Does the proposed development involve any public right of way within the site?	NO	If yes, indicate the position on plan
(e) Does the proposed development involve the demolition of any building?	NO	If yes, please indicate their positions on plans
(f) Does the proposed development involve demolition or alteration of a building of Special Architectural or Historic interest or demolition within a Conservation Area?	NO	If yes, a separate application for: Listed Building Consent or Conservation Area Consent may have to be made to the District Council.

(g)	Existing	Proposed
(i) How will surface water be disposed of?	INTERCEPTOR TANK	INTERCEPTOR TANK
(ii) How will foul sewage be disposed of? (e.g. Mains, Cesspit etc.)	CESSPIT	CESSPIT

10. **Plans** List the drawings and plans submitted as part of the application - indicate drawing numbers and scales

MAP 1 - FLOOD RISK MAP
MAP 2 - SITE ACCESS + BOUNDRY (1:10,000)
MAP 3 - SENSITIVE RECEPTORS (1:10,000)
FIGURE 1 - SCALE CROSS SECTION OF EXISTING FEATURES
FIGURE 2 - SCALE CROSS SECTION OF PROPOSED FEATURES
FIGURE 3 - SCALE PLAN OF EXISTING FEATURES
FIGURE 4 - SCALE PLAN OF PROPOSED FEATURES
FIGURE 5 - VIEW OF SITE FROM NORTH TO SOUTH
FIGURE 6 - VIEW OF SITE (S TO N)
FIGURE 7 - VIEW OF SITE (E TO W)
FIGURE 8 - VIEW OF SITE (W TO E)
FIGURE 9 - LOCATION PLAN (1:2,500)
FIGURE 10 - WELL SITE PIPE LAYOUT PLAN

11. **Fees**
If a fee is submitted please give the amount £ 450.5 Fee Category 8

12. I/WE APPLY FOR PLANNING PERMISSION AS DETAILED ABOVE

SIGNED: ..... DATE: 26th July 2005

on behalf of MIOMAR ENERGY OFFSHORE LTD.

(insert applicant's name if signed by an agent.)

west sussex county council

PLANNING APPLICATION FORM PART 2

For official use only
Application No.

ADDITIONAL INFORMATION REQUIRED WHEN APPLICATION INVOLVES INDUSTRIAL, OFFICE, WAREHOUSING, STORAGE, SHOPPING OR COMMERCIAL DEVELOPMENT

1. In the case of industrial development, give a description of the processes to be carried on and of the end products, and the type of plant and machinery to be installed.	PRIMARY ACTIVITIES: • PUMP AN EMULSIFIED MIXTURE OF CRUDE OIL AND SALINE WATER TO THE SURFACE. • PRODUCE CRUDE OIL, WATER AND GAS TO SITE STORAGE TANKS • SEPARATE CRUDE OIL, WATER AND GAS INTO HOLDING TANKS. • LOAD CRUDE OIL ONTO ROAD TANKERS FOR EXPORT. (reference to supporting statement 5.0)
2. Name and present address of the occupier.	MIDMAR ENERGY ONSHORE LIMITED 6 DEAN PARK CRESCENT BOURNEMOUTH DORSET BH1 1HL
3. Is the proposal related to an existing use on or near the site? If so, please explain the relationship.	CURRENT PLANNING ALLOWS FOR EXPLORATION AND APPRAISAL DRILLING. WE PROPOSE TO PRODUCE CRUDE OIL FROM LIDSEY-1 WELL, AND DRILL 2 MORE WELLS INTO THE SAME RESERVOIR (reference to supporting statement 1.3)
4. Is the proposal to replace existing premises in this area or elsewhere which have become obsolete, inadequate or otherwise unsatisfactory? If so please give full details.	NO. (reference to supporting statement.....)

5. Details of floor areas and uses	Existing floor space of use (if any):	Proposed floor space of use (if any):	Total floor space of use (if any):
(a) What is the amount of industrial floorspace ?	(a).....m²	.....m²	16187.5 m²
(b) What is the amount of office floorspace ?	(b).....m²	.....m²	28.0 m²
(c) (a) What is the amount of retail floorspace ?	(c).....m²	.....m²	.....m²
(d) (a) What is the amount of storage/warehousing floorspace ?	(d).....m²	.....m²	16.7 m²
(e) other uses (please specify) ? ENCLOSED DRILLING AREA	(e).....m²	.....m²	11,331.32 m² (2.8 ACRES)
.....	.....m²	.....m²	.....m²

(reference to supporting statement SITE PLAN.)

6. Numbers of staff (a) Number of staff in existing premises on the site. (b) How many new staff will be employed on the site as a result of the development. (c) If you propose to transfer staff from other premises, please give details of the numbers involved and of the premises affected.	Office / Industrial / Other / / / 1 4 4* * THESE WILL BE EMPLOYED WHILE SITE IS BEING CONSTRUCTED (reference to supporting statement 1.4)
7. What provisions have been made for the parking, loading and unloading of vehicles within the curtilage of the site?	ROAD TANKERS WILL BE LOADED AT THE LOADING BUND FOR SAFETY, A TURNING ZONE IS INCLUDED IN THE SITE DESIGN. THERE WILL BE A SMALL AREA FOR STAFF VEHICLES BY THE OFFICE AREA. (reference to supporting statement/plans 3.1)
8. What is estimated vehicular traffic flow to the site during the normal working day? (Please include all vehicles except those used by individual employees driving to work).	WEEKLY: 8 RETURN JOURNEYS BY ROAD TANKERS TRANSPORTING CRUDE OIL. 2 RETURN JOURNEYS DELIVERING DIESEL AND CHEMICALS (reference to supporting statement 3.1)
9. What is the nature volume and proposed means of disposal of any trade effluents or trade refuse?	SULPHIDE SCAVENGER (5.3.1) DEMULSIFIER (5.3.2) AMMONIA (5.3.3) TRADE REFUSE REMOVED BY A LICENSED WASTE CARRIER. (3.6) (reference to supporting statement 5.3)
11. Will the proposed use involve the use or storage of any hazardous materials of type and quantity mentioned in the planning legislation? If "yes" state materials and approximate quantities.	Yes / ~~No~~ PRODUCTION OF CRUDE OIL IS ESTIMATED TO BE 1500 bl (240,000 L) PER WEEK (reference to supporting statement 5.1)

west sussex county council

PLANNING APPLICATION FORM **PART 4**

For official use only
Application No.

ADDITIONAL INFORMATION REQUIRED WHEN APPLICATION INVOLVES WINNING, WORKING OR PROCESSING MINERALS

1. Type(s) of mineral to be extracted/handled.	CRUDE OIL, NATURAL GAS AND WATER. GAS AND WATER TO BE RE-INJECTED/TREATED AND REMOVED. CRUDE OIL EXPORTED TO BP ~~HAMBLE~~ REFINERY (reference to supporting statement 5.2)	
2. Estimated quantity to be extracted annually, and total content within site.	Annual quantity to be extracted: 900c – 116 000 bbl ~~tonnes~~ Total quantity within site: 230 000 bbl ~~tonnes~~ (reference to supporting statement 2.0)	
3. Length of time operations will last.	Permanently / ~~Temporary~~ for ~12 years (reference to supporting statement 3.7)	
4. Details of new or modified processing plant.	List additional plant: APPENDIX 1 (reference to supporting statement 3.4)	
5. Proposed hours of working	Weekdays 8 am to 5 pm Saturdays am to pm (reference to supporting statement 3.3)	
6. Numbers of staff	No. currently employed at site 0 Total employed after this development ~9 (reference to supporting statement 1.4)	
7. Daily traffic movements at the site	*Current* Lorries Cars	*Proposed* 1 Lorries 3-4 Cars (reference)
8. Brief description of restoration proposals for the site following extraction of the minerals	TREES ARE CURRENTLY GROWING ON THE SITE WHICH WILL HELP RESTORE THE LAND QUICKER. WE SUGGEST THE SAFE DISMANTLING OF THE SITE, RECYCLING EQUIPMENT AND AGGREGATE, REMOVING REMAINING LIQUIDS BY TANKER AND PLUGGING WELLS. REMOVING BUNDS AND SEALING MEMBRANE TO RETURN LAND TO FARMABLE CONDITION. (reference to supporting statement 3.7)	
9. Brief description of aftercare proposals for the site following restoration	THIS WOULD DEPEND ON PLANNING AND LANDOWNER WE WOULD CONTINUE TO MONITOR THE SITE AND TREES WOULD, BY THEN, COMPLETELY SHIELD THE LOCATION. (reference to supporting statement 3.7)	
10. Measures proposed to safeguard local amenity	Dust Yes / ~~No~~ (reference 4.4) Noise Yes / ~~No~~ (reference 4.2)	

	Landscape Yes / ~~No~~ (reference 3.2) Traffic Yes / ~~No~~ (reference 3.1) Ecology Yes / ~~No~~ (reference 3.2) Archaeology Yes / ~~No~~ (reference 4.8) Hydrology Yes / ~~No~~ (reference 4.1) Vibration Yes / ~~No~~ (reference 4.2) Others.....(reference.....) .....(reference .....) .....(reference .....)
11. Scheme of working.	Phasing SITE PREVIOUSLY PREPARED FOR DRILLING. ~~Yes~~ / No (reference 1.1) Depths of excavation Yes / No (reference.....) Topsoil management Yes / No (reference.....) Overburden management Yes / No (reference.....) Management of wastes/washings Yes / No (reference.....) Drainage Yes / No (reference.....) Highway accesses Yes / No (reference.....)
12. Has the site been tested by the use of boring or trial holes? Give details of any tests used.	LIDSEY-1 (1987) PRODUCTION TESTS (1987, 1989) EXTENDED WELL TEST (2000) (reference to supporting statement 1.1)
13. Has the site been investigated for its agricultural capabilities?	~~Yes~~ / No ADVISED BY FARMER (reference to supporting statement 4.7)
14. Will the proposal require the diversion of any rights-of-way, over-head lines, watercourses etc? Give details if appropriate.	NO. THE SITE WAS PREPARED FOR EXPLORATION AND APPRAISAL DRILLING. THEREFORE THESE REQUIREMENTS HAVE ALREADY BEEN MET. (reference to supporting statement 1.1)
15. Does the applicant own the land or lease it?	~~Own~~ / Lease
16. Does the applicant own the mineral rights?	Yes / ~~No~~

west sussex county council

TOWN AND COUNTRY PLANNING (GENERAL DEVELOPMENT PROCEDURE) ORDER 1995

CERTIFICATE UNDER ARTICLE 7

Complete **either** Certificate A **or** B as appropriate, **and** the Agricultural Holdings Certificate

CERTIFICATE A

I certify that:

on the day 21 days before the date of the accompanying application nobody, except the applicant, was the owner (a) of any part of the land to which the application relates.

Signed:.....On behalf of: MIDMAR ENERGY ONSHORE LIMITED Date: 26th July 2005

CERTIFICATE B

I certify that:

I have/The applicant has given the requisite notice to everyone else who, on the day 21 days before the date of the accompanying application, was the owner (a) of any part of the land to which the application relates, as listed below.

Owner's (a) name	Address at which notice was served	Date on which notice was served

Signed:.....On behalf of:.....Date:.....

AGRICULTURAL HOLDINGS CERTIFICATE

Delete part (i) **or** (ii) as appropriate

(i) None of the land to which the application relates is, or is part of, an agricultural holding.

OR

(ii) I have/The applicant has given the requisite notice to every person other than my/him/her* self who, on the day 21 days before the date of the application, was a tenant of an agricultural holding on all or part of of the land to which the application relates, as follows:

Tenant's name	Address at which notice was served	Date on which notice was served

Signed:.....On behalf of: MIDMAR ENERGY ONSHORE LIMITED Date: 26th July 2005

(a) "owner" means a person having a freehold interest or a leasehold interest the unexpired term of which is not less than seven years, or, in the case of development consisting of the winning and working of minerals, a person entitled to an interest in a mineral in the land (other than oil, gas, coal, gold or silver).

NOTICE UNDER ARTICLE 6 OF APPLICATION FOR PLANNING PERMISSION

Town and Country Planning (General Development Procedure) Order 1995

(to be served on an owner* or a tenant**)

Proposed development at (a) LIDSEY OILFIELD SITE

I give notice that (b) MIDMAR ENERGY ONSHORE LIMITED

is applying to the (c) West Sussex County Council

for permission ~~for~~/to (d) DEVELOP AND OPERATE AN OIL PRODUCTION FACILITY

Any owner* of the land or tenant** who wishes to make representations about this application should write to the West Sussex County Council at (e) The Planning Department, County Hall, Tower Street, Chichester, West Sussex, PO19 1RL,

by (f) 17th August 2005

* "owner" means a person having a freehold interest or a leasehold interest the unexpired term of which is not less than seven years, or, in the case of development consisting of the winning or working of minerals, a person entitled to an interest in a mineral in the land (other than oil, gas, coal, gold or silver).

** "tenant" means a tenant of an agricultural holding any part of which is comprised in the land.

Signed: .....

On behalf MIDMAR ENERGY ONSHORE LTD

Date: 26th July 2005

Statement of owners' rights
The grant of planning permission does not affect owners' rights to retain or dispose of their property, unless there is some provision to the contrary in an agreement or in a lease.

Statement of agricultural tenants' rights
The grant of planning permission for non-agricultural development may affect agricultural tenants' security of tenure.

Insert:
- (a) address or location of the proposed development
- (b) applicant's name
- (c) name of Council
- (d) description of the proposed development
- (e) address of the Council
- (f) date giving a period of 21 days beginning with the date of service of the notice.

APPLICATION FOR

PERMANENT PLANNING PERMISSION

MIDMAR ENERGY ONSHORE LIMITED

SUPPLEMENTARY INFORMATION

TUESDAY, 13 SEPTEMBER 2005

Document #	MEL/UKOnshore/LDY/1/3/4	Checked	
Version #	1.1	Approved	TWJR
Controlled	NO	Date	2005
Copy #	001	Author	MP
Date of Issue		Assigned to	

APPLICATION FOR

PERMANENT PLANNING PERMISSION

MIDMAR ENERGY ONSHORE LIMITED

SUPPLEMENTARY INFORMATION

TUESDAY, 13 SEPTEMBER 2005

Document #	MEL/UKOnshore/LDY/1/3/4	Checked	
Version #	1.1	Approved	TWJR
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Midmar Energy Limited
Midmar Energy Onshore Limited

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Midmar Energy Limited - Registered 27th June 1995
Registered no. SCO158863 VAT no. 663 7272 18
Midmar Energy Onshore Limited- Registered 4th February 1998
Registered no. SCO055329 VAT no. 716 9732 09

First Completed / Published 2002

Comments, questions or applications for re-production should be addressed to the head office.

Record of changes

Version	Date	Remarks	Initials
v1.	July 05	Initial release version	MP
V1.	Sept 05	Inclusion of revised site plans	CRW

Distribution List

Priority	Position	Location

SUPPLEMENTARY INFORMATION FOR LIDSEY PERMANENT PLANNING PERMISSION

Existing Planning Permission Numbers: BN/9/97 & AL/38/97
BN/25/99 & AL/48/99
BN/31/01 & AL/84/01
BN/41/03 & AL/91/03

EXECUTIVE SUMMARY

Lidsey Oilfield Site was originally constructed for both exploration and production, it has two sealing membranes, a bunded area for fluid storage, cellars for wellheads, emergency water storage tanks and a perimeter ditch with fluid discharge interceptors. Previous Licence holders have carried out extended well tests, these prove that the field can be worked economically for approximately 12 years. Midmar Energy Onshore Limited is 100 % owner and operator of the Licence and are applying for Planning Permission to construct a production facility to produce crude oil. The proposed production facility would be semi-permanent, taking about 6-8 wks to install, and removable within 7 days, there would be no permanent buildings or equipment. This semi-permanent facility would use custom equipment, connected by standardized flanges, to provide a superior quality, site-specific layout (see site plan & section 2.2). Essential buildings will be a port-a-cabin and containers, these will have a combined floor area of just 44.7 m^2. Midmar would require local temporary staff to construct the site, and would employ 4-5 local permanent staff on site to manage the production.

Lidsey Oilfield Site is approximately 4 acres. Midmar intends to leave 1.2 acres of the site for planting to help shield the site. Management of the site will be by the locally based Site Production Operator, who will oversee all operations. The site will be manned during normal working hours, though should any issues arise, the Site Production Operator will be contactable 24 hrs/day. The site will produce crude oil, water and gas, pass through a separator and then to on-site storage tanks. Treatment chemicals (sulphide scavenger, demulsifier and ammonium) will be utilised as required. Separated water will be re-injected into the same reservoir, or exported to an off-site treatment facility. The crude oil (approximately 1500 barrels/wk) will be loaded and exported to BP Hamble by road tanker. Licensed waste carriers will remove any by-products of the process. As the storage tanks are filled they are vented via the ammonium scrubber, which will remove any unwanted gases. Associated gas production will be used to generate power for the site equipment. Any excess gas will be re-injected to enhance oil production or generate power for local industries. Regular maintenance and inspections will be used to prevent any site malfunction, these include electronic gas sensors will also be installed and connected to shutdown equipment. Two impermeable 'Terram' liners will protect the groundwater and the land surrounding the site, so no uncontrolled release of fluids will escape from the site. At the end of the production operations the well will be plugged according to DTI, Environment Agency and County Council requirements, and the area will be returned to the condition stipulated in the planning permission.

The environmental risks at Lidsey Oilfield Site are low, but nevertheless we are prepared for fire (there is a 50 m^3 fire water tank), and oil spills (the concrete bunded area that will be more than 125 % of the maximum capacity of the storage tanks). We have sought advice from West Sussex Fire and Rescue Department on how best we can prevent accidental fires and protect the site from arson. The site will have security fencing, an alarm and have security lighting. We will also be contacting West Sussex Constabulary for further information on security measures prior to beginning operations. Midmar has comprehensive Operating Manual, HSE and Emergency Procedures Manual and Environmental Management System. Weekly and monthly reports are used to assess equipment performance, efficiency and possible risk.

The proposed Lidsey Oilfield is not in an environmentally sensitive area. It is not an English Nature designated SSSI, nor is it in an Environment Agency 'Groundwater Source Protection Zone'. There is no direct path to the local aquifer, and the underlying ground is protected from fluids escaping from the site by two impermeable membranes. According to the Environment Agency, the proposed Lidsey Oilfield Site is not at risk from flooding. Odour levels are expected to be negligible as produced fluids are not exposed to the open air, however the site is not in an air quality monitoring zone. For comparision, night-time noise levels at our Brockham Oilfield site are well below 35 dB(A) at the site perimeter, and we anticipate that Lidsey will be similarly quiet. These compare favourably with current noise and odour levels in the Lidsey locality (Environmental Health, Arun District Council). We have found that the 100KVA super silenced generator and 1000 lb/hr steam boiler at Brockham Oilfield create low noise emissions when they are located in 20' containers, so we would do the same at Lidsey. The generator is used to drive the on-site pumps: getting the crude oil to the surface is achieved by a continuously operated 25kW 3ph electric motor, and a 12kW 3ph electric motor is intermittently used to circulate fluids between the process equipment and to load the road tankers. The site is covered in hardcore and scalpings so dust will not be a problem. Midmar estimates 8 return journeys by road tanker, and one diesel and one chemical delivery per week. These will be during normal working hours to minimise the effect of the workings on the local community.

Contents

LIST OF FIGURES

1.0 INTRODUCTION

1.1 BACKGROUND

A Licence for exploration of the Lidsey field was originally granted in 1984, and following some technical work, a decision to drill was made.

The site was constructed to meet all the requirements of an exploration well-site and full production facility. The construction included two sealing membranes resistant to hydrocarbons and various layers of aggregates, these both protect the membrane and provide stable support for heavy equipment. The site also has a bunded area for fluid storage, cellars for wellheads, emergency water storage tanks and a security fence. A perimeter ditch with fluid discharge interceptors was also constructed as an additional safety feature for intercepting fluids.

The Lidsey field was discovered in 1987 by Carless Exploration and at that time, the field was deemed too small for development. Edinburgh Oil and Gas completed a 90 day Extended Well Test (EWT) in 2000.

Various owners have undertaken a range of treatments in order to increase production rates, and in 2001, Midmar became a partner and subsequently the Operator. Midmar has recently concluded a Sale and Purchase Agreement with the remaining partners and owns 100 % of the Licence.

1.2 TECHNICAL WORK

Midmar has undertaken extensive Geoscientific and Engineering work reviews over the past 2-3 years. The results have demonstrated that the field can be economic and that the hydrocarbon resources should be developed (Minerals Planning Guidance Notes 1-14).

1.3 EXISTING PLANNING

The applications and amendments currently in force were obtained in order to drill exploratory wells and perform a production test of any potential hydrocarbon reserves. Midmar understands that a new permission is required to drill wells for the production of crude oil.

Midmar proposes the drilling of an appraisal well, followed by the drilling of a development well at the Lidsey site and installation of semi-permanent facilities to process the produced hydrocarbons for safe export.

1.3.1 Exploration Wells vs Development Wells

Exploratory wells do not differ from development wells in operational terms. However, knowledge gathered through drilling exploration wells significantly improves the performance of development well operations.

1.3.2 Temporary *versus* Semi-Permanent Production Equipment

Midmar proposes the installation of a semi-permanent production facility - so called because it may be disassembled and removed quickly (i.e. within 7-10 days) and contains no permanent buildings or equipment. The construction of a semi-permanent facility takes 6-8 weeks.

Current permissions allowed for the construction of similar test equipment, but require it to be installed on a temporary basis and completely removed at the end of the permission. Previously the temporary exploration works used generic equipment capable of rapid installation / removal (normally within 1 or 2 days). Consequently, pipelines and electrical cables etc are terminated in standardised connectors and are evidently connected and laid out for simplicity or best fit, and not the most practical. The Semi-Permanent facility will utilise custom made equipment, connected by standardised flanges and will consequently provide a far superior 'fit-for-purpose' site layout.

Midmar proposes using super-silenced containerised power generation and heat treatment facilities. Aside from being swiftly deployed and removed, these also allow us to rapidly replace equipment in the event of serious malfunction.

1.4 EMPLOYMENT

Midmar would need to employ a number of local staff to initially construct the site (as this takes significantly longer than removal) and ultimately operate and manage the day-to-day processes. We would like to involve the local community as much as possible, and intend to use local businesses for supplies and manpower.

Midmar would require temporary staff to construct the site. While initially we anticipate only being able to employ 2-4 permanent staff on site, we hope that once the proposed well is producing, our employee requirements would increase. We would try to appoint local staff wherever possible.

2.0 Assessment of need for the Development

2.1 Why the development is needed

Midmar agrees with National Policy that, "Minerals are important natural resources which are essential in the production of many goods and services..." this is particularly true of crude oil, due to its versatility following refining. Midmar hopes that the production of crude oil from the proposed Lidsey Oilfield will enhance the British economy by reducing in the need for mineral imports.

The proposed Lidsey Oilfield and other possible onshore reserves in West Sussex are of key economic importance to Britain, especially as production in the North Sea is in decline. It is recognised in the West Sussex Minerals Local Plan 2003-2006 and in Sustainable Development: the UK Strategy that, "sustainable development does not mean having less economic development... and new investment and environmental improvement often go hand in hand."

2.2 How we can contribute to meeting the needs of the County

Through our proposed development at Lidsey, Midmar hopes to fulfil the rural needs of West Sussex as detailed in Policy NE8. The proposed Lidsey Oilfield will benefit the rural community of Lidsey through productive economic activity (in accordance with Policy LOC2).

Midmar believes that the scale and appearance of the development are in keeping with the rural area and that the impact of increased activity at this site will not adversely affect the amenity, character or environmental features of the area. This is particularly true now that the planted trees have grown around the site, and effectively screen it from the local residential community. As the sewage works also receives visits by HGVs, Lidsey Road is familiar with this sort of industrial traffic. This is a small oilfield and the rate of production is expected to require only 8 return journeys from road tankers per week, and less frequent deliveries of diesel and chemicals, which would not adversely increase the traffic levels. There are two entrances onto Lidsey Road from the site, the southern entrance is by far the safest for slow moving vehicles, this is the access point that we had planning permission to use during the exploration drilling, we propose the continued use of this access point for the site development.

The Lidsey Oilfield site has previously received planning permissions for temporary facilities to assist with exploration drilling. Before the land was leased in 1988 it was used for farming, as such this development forms part of the essential farm diversification schemes because it generates an income for the landowner and local farmer, Mr Eggins, this income will help to ensure the continued vitality and viability of his other farming operations.

2.3 COMMITMENT TO THE ENVIRONMENT

While the proposed Lidsey Oilfield site is not on land considered to be environmentally sensitive, Midmar understands (from Policy ERA2) that biodiversity is a major influence on the character of West Sussex. We are committed to protecting any species that lives permanently or temporarily at the site and are eager to discover new information about the County's geology. The past use and management of the land has contributed to the biodiversity of the County and we hope that future generations will appreciate and benefit from the care Midmar will take, as the proposed operators of the is site, to preserve the biodiversity of West Sussex.

In accordance with Minerals Policy ERA6, Midmar have limited the development (including buildings, plant and machinery) to the essential minimum, and these can be quickly removed. In the supplementary information Midmar has explained how it has already, and intends to, manage the environment with sensitive and environmentally sound work practices to prevent any adverse effects to the quality of water and soil (as described in Policy ERA5). This responsibility would continue during the proposed site operation, restoration and aftercare.

Midmar hopes to have shown in this application that we are committed to applying sensitive working practices during minerals extraction, and enhancing the overall quality of the environment once extraction has ceased. Although we anticipate that the waste this development will produce to be small, we aim to reuse and recycle as much as possible.

3.0 Lidsey Oilfield Site

Lidsey Oilfield lies in the Arun district of West Sussex, it is 530 m north-east of Lidsey Farm, Lidsey Road and 500 m south of Woodgate Caravan Park. It is directly north of Southern Water's sewage treatment works, with a track aligned parallel to the boundary between the sites. The Lidsey Oildfield site is leased from a local farmer, who operates a maggot farm on the land bounding the site to the east. The area is not deemed to be environmentally sensitive.

The land that the proposed Lidsey Oilfield site lies on is approximately 4 acres (16187.5 m^2), not all of this area will be used for an industrial purpose, we intend to leave approximately 1.2 acres out of the four undeveloped so that the plants and trees that shield the site can continue to grow. We are only constructing essential buildings and these will have a combined floor area of 44.7 m^2.

The site is very well constructed with a bunded area to contain storage facilities. Ditches and earth bunds surround the site except at the point of vehicular entry. The entire site was prepared using two impermeable Terram membranes, these prevent oil, site water or any other fluid escaping into the locality. The location is secured by a fence and remains locked when unmanned. There are four designated zones on site: Production area, Process area, Loading area and Office area.

A recent reserves audit has shown that proven recoverable reserves at the site are estimated at 230,000 bbl (36,567 m^3), with proven and probable reserves being 600,000 bbl (95,392 m^3). It is anticipated that annual production may vary between 116,000 bbl and 9,000 bbl.

3.1 Traffic & Access

In the interests of preventing slow moving traffic and unsociable operations for the local community, we are prepared to restrict vehicle movements during certain times, excepting emergencies. We note that the water treatment plant opposite our site also operates HGVs and we feel it would be less confusing if we were to adhere to the same access restrictions imposed on them.

We estimate that there would be 8 return journeys by road tankers, each week, these journeys would are expected to be during normal working hours. Deliveries of diesel and chemicals are expected to total once a week on average.

The access route that we intend to use is the wider southern entrance from the A29 past Lidsey Farm onto the tarmac track leading to Lidsey Sewage Works and the proposed Lidsey Oilfield.

3.2 CURRENT ENVIRONMENTAL STATUS

Midmar obtained a screening opinion (under Regulation 5 of the EIA Regulations 1999) from Jeremy Farrelly at West Sussex County Council on the 2nd June 2005 based on the proposed production facility at Lidsey Oilfield. The screening opinion states: "Having regard to the selection criteria for screening Schedule 2 development, and the advice contained in Circular 2/99 the County Planning Authority considers that the development **does not** require an Environmental Impact Assessment."

The proposed location for the Lidsey Oilfield is outside a Groundwater Source Protection Zone (Environment Agency) and there is no direct path to the local aquifer. The site has two impermeable membranes that would act as barriers preventing fluids from escaping the site.

The nearest protected area is approximately 1 km west of the A29, and a considerable distance from the site, which is east of the A29. The Aldingbourne Rife, according to the Public Protected Areas Register is a protected area under the Freshwater Fish Directive (Ref ID: 1023; E: 401580, N: 498500). The reason for this designation is the presence of economically significant species that are present in these waters. The proposed Lidsey Oilfield Site would cause no risk to this protected area as there is no direct flow route from the site.

The Lidsey Oilfield Site is also not at risk from flooding. Environment Agency flood maps (Appendix 2) have been consulted, and even in spring, while the area is occasionally subject to floods, the oilfield site - being slightly higher - does not experience floods.

The land is not thought to be environmentally sensitive as, according to the English Nature website, it is not near a Site of Special Scientific Interest (SSSI).

The Arun Environmental Health Office was contacted recently with regard to the proposed Lidsey Oilfield Site. Graham Evans, the Senior Environmental Health Officer, states in his letter (Appendix 3) that the sewage works and maggot farm in this area are operated under the condition that odours should not cause nuisance to nearby sensitive neighbours, it is anticipated that the proposed oilfield site will easily adhere to this condition of work.

Graham Evans also advised Midmar on noise levels, suggesting that the 'rating level', determined in accordance with BS 4142, being more than 10 dB below the measured background noise level, would make complaints unlikely. We intend to design the proposed installation to this standard.

Graham Evans states that the site is not currently in an Air Quality Management Area. To maintain this standard the installation should be designed to ensure that the emission objectives set in the Air Quality Regulations 2000 (amended) are met. Midmar is happy to comply with these regulations.

3.3 MANAGEMENT

Midmar follows the technical guidance and Best Available Techniques provided by the Environment Agency, Chief Inspector and Industry Bodies and recognises that there is a necessity to review operating and business practises on a regular basis and to react quickly to situations that are obviously incorrect. With review processes and proper document control, we expect to achieve optimal techniques in practise and at all of the small production facilities we operate.

The responsibility of site management will remain with the operator, Midmar Energy Onshore Limited. Management of the site will be carried out by the Land Manager based at our head office in Bournemouth, however, the day to day running will be the responsibility of a locally based Site Production Operator. The Site Production Operator will be contactable 24 hours a day and employed to operate the site according to the Operating Procedures Manual and HSE and Emergency Procedures Manual.

Initially, most testing and monitoring will be performed daily to determine the most efficient operating practises. A daily log will be kept on site that contains a chronological report of all activities on site, detailing time, date and activities. In addition to this, a weekly and monthly report will be made to summarise site activities. An operations inventory will be held in the site office detailing permanent and temporary site equipment, chemicals, fuel and gas.

Automatic shut off procedures will be in place to shut down equipment if preset sensor parameters are exceeded. An automatic site paging system will be installed so any situations requiring attention will be immediately brought to the notice of the Site Production Operator and Land Manager.

The hours the site will be manned are normal working hours. However the Site Production Operator and the Land Manager will respond immediately to any issues that arise day or night.

3.4 SITE EQUIPMENT

Midmar proposes installing the following equipment:

- Four oil storage tanks and a water holding tank
- 12kW electrically driven pump for export and circulation
- Three wellheads and beam pumps with equipment to control flow of liquids
- 3 phase separator (oil, water and gas)
- 55kW Heat exchanger to promote the action of chemicals*
- 20' containerised 200KVA (170kW) super silenced generator*
- 20' containerised 366 kWh electric steam boiler
- 30' port-a-cabin site office
- 20' container workshop
- 20' container storage facility

- Security lighting, normally off during night time hours
- Gas and diesel storage tanks

* Combined Heat and Power units to increase efficiency.

See appendix for further details.

3.5 PROCESS

The production installation would use equipment similar to that used on Extended Well Tests. The following activities form the production process:

- Crude oil, water and gas continuously flow from the wellhead to a separator, which directs the fluids to on-site storage tanks.
- Production flows to the separator via chemical injectors.
- Produced water is then re-injected into the same reservoir, or exported to an off-site treatment facility by licensed waste carrier.
- Treated crude oil is loaded onto road tankers and exported to BP Hamble's oil storage facility.

3.6 WASTE AND EMISSIONS

Levels of wastes on-site are expected to remain low, so waste management licensing is not required. The following processes are designed to reduce the emissions from the site:

- By-products from the scrubber and solid waste from the produced fluids will be removed by a licensed waste carrier.
- Water that has been separated from the production fluid will be re-injected into the well, or exported off-site for treatment.
- As the storage tanks are filled, they are vented via a chemical scrubber and electronic sensors to ensure that there are no hazardous emissions. The vent is placed at a minimum of 7m above ground.
- Exhaust emissions from the generator will pass through a catalytic converter.

Emissions are strictly controlled on site as the entire process circulates in a closed volume. The commissioning process will pressure test and certify stock tanks and pipe work fit for purpose. The only points of exit during the process operations are the vent stack and the tanker-loading manifold, detailed on the site schematics and layout in the appendix.

Sensors measuring emission levels are located around the site, and if pre-set limits are breached, the system will alert the Site Production Operator.

3.7 TERMINATION AND RESTORATION

Site restoration is an obligation that must be carried out by the operator for the DTI as part of the field development submission and approval procedures.

At the cessation of production operations, the wells will be plugged with cement and the casing cut below ground and removed, and will adhere to the DTI's requirements. The site will then be restored to its original state.

The site is expected to remain economic for up to 12 years from the start of production, although this figure will be calculated more accurately when a full reservoir study is performed using production history.

Many trees have been planted around the site at different times. The rapid growth on those that surround the earth bunds (in particular oak and ash) will ensure that the site will be entirely screened in 1-2 years.

Decommissioning of equipment is not expected to pose any environmental risks as all equipment is transportable and will be cleaned before disassembly. All waste cleaning liquids will be transported from the site by road tanker and correctly disposed of.

The site restoration will be carried out in the following manner with exact details to be determined before operations are terminated:

- All site production equipment and materials to be removed and re-cycled or renovated for re-use or scrapped.
- Any remaining liquids to be pumped into transportation tankers and removed.
- A workover unit brought in to 'plug' the wells in accordance to the DTI guidelines.
- Once the site is certified as containing no contaminant, all site surfaces and the bunds to be removed by mechanical machinery and removed for reprocessing, if necessary.
- The sealing membrane will be removed after all surfaces have been removed.
- A site survey to be carried out to confirm that no contaminant has been introduced to the land, remedial action will be carried out if required.
- The tertiary earth originally moved to create the site will be bulldozed back into position, restoring the site to original use.

More accurate decommissioning and restoration programmes will be devised nearer the time when all issues are more fully understood and more advanced techniques may be available.

4.0 MONITORING

4.1 GROUNDWATER PROTECTION

Experience from the Extended Well Test supports the assumption that no discharges of any kind are anticipated on the site. The site is outside a Groundwater Source Protection Zone (Environment Agency). The British Geological Survey (BGS) drilled a borehole at Lidsey Sewage Works [Location: SU 90 SW 52, 9457 0349] in 1981. This finished in the London Clay at 15 m without encountering an aquifer. From this data we can infer the aquifer is below this clay, and that the clay is another impermeable layer that will further protect the local aquifer. The site is lined with an impermeable membrane to further ensure the groundwater is protected from pollution, in the unlikely event of spillage on site.

4.2 NOISE & VIBRATION

All of the onsite pumps are powered by electric motors, which are inherently very quiet, and the onsite generator will be installed into a 20' container clad with a super silent acoustic material.

Midmar Energy already operates an onshore oilfield at Brockham in Surrey. Due to the sensitivity of the location at Brockham, the night noise level limits are low. Sound emissions are measured at a height of 4 m above ground level and at least 3.5 m away from any building façade. The following table has been calculated using the noise levels of equipment installed at Brockham Oilfield (35dBA at site perimeter). Consideration has been made for the ground effect, but not for the earth bund.

Location (Distance from site)	Estimated $L_{Aeq,\ 5\ minute}$ (dB(A))
Woodside Caravan Park (500 m)	7.6
Headhone Farm (600 m)	5.9
Lidsey Farm (530 m)	7

While there are several possible sources of noise associated with the proposed operations at the Lidsey Oilfield site, the sensitive receptors are all 0.5 km, or further away. Ground effect will help absorb sound, and large earth banks to the north and west of the site will act as sound barriers (see table and calculation).

Electric motors are used to power all of the onsite mechanical equipment reducing unnecessary additional noise. The main sources of noise are from site equipment and the nature of these pumps ensures no high frequency noise is generated, typically all motors will create noise in the 63 or 125 octave bands as they are powered by a 50 Hz 3-phase generator. The pieces of mechanical equipment we intend to use that generate noise are identified below:

- Beam pump mechanism and motor - electrically driven oscillating beam, driving a down hole pump via push-rod assembly is in operation 24 hours a

day for approximately 95 % of the year. The frequency of oscillation is in the order of five cycles per minute.

- Circulation and Export pump and motor - This electric pump circulates and moves the produced fluid around the production equipment. Its primary function is to circulate separated production fluids into their respective folding tanks. Its operation will only be during the working day as it requires the supervision of the Site Production Operator, thus operation will be limited to approximately 2 % of a yearly period on average.
- Re-injection pump and motor - The re-injection pump is used to re-inject the water separated from the crude oil production and rainwater captured by site bunds and ditches just below the oil horizon in the producing reservoir rock. This motor will operate for less than two hours per operation. Operation frequency will be in the order of every second day.
- 200 KVA diesel generator - The super silenced generator will be in operation continuously, except when routine maintenance is carried out.
- Heavy Goods Vehicle Access - The estimated weekly access will be in the region of 8 return journeys during normal working hours. Deliveries of diesel and chemicals are expected to total once a week on average.

Boundary Noise Levels and Sensitive Receptors

The noise levels at the site boundary nearest the generator are difficult to predict as a large earth bund exists between the site and the nearest point. At the nearest distance to the fence, the noise level will be less than 40 dBA without adjustment for the earth bund.

There are three sensitive receptors in the local vicinity, see Appendix 6 for the map;

Sensitive Receptor	Distance from Lidsey Oilfield	Attenuation: Ground Effect NOTE 1	Attenuation: Earth Bund NOTE 2	Maximum Noise Emission NOTE 3
Lidsey Farm	530 m	24 dB(A)	No Bund	24 dB(A)
Headhone Farm	600 m	16 dB(A)	5 dB(A)	11 dB(A)
Woodside Caravan Park	500 m	18.5 dB(A)	5 dB(A)	13.5 dB(A)

Note 1: Attenuation of sound due to Ground Effect. The decay of noise over distance from a point source is governed by the Inverse Square Law:

Sound Intensity (I) is proportional to $1/r^2$

It is accepted that a doubling in distance produces a 6dB decrease in sound intensity (Noise & Noise Law: A Practical Approach, 1994, Adams & McManus, Wiley Chancery Law).

Note 2: Attenuation for Earth Bund: BS 5228 states that, "If a noise source is partly visible from the measurement point, it is assumed that the noise level at this point

should be reduced by 5 dB(A); if the noise source is completely screened, the noise level should be reduced by 10 dB(A)". The above table only reduces the noise level by 5 dB(A), as plant is not in place to check sighting from the sensitive receptors.

Note 3: Maximum noise emission is calculated to include Ground Effect and the Earth Bund, where it is present.

4.3 GAS

Three locations have been chosen to monitor gas levels. Permanent sensors will be placed at the following:

- Vent stack (for direct emissions)
- Bund (for localised emissions)
- Perimeter fence or office (for background levels).

Both permanent and hand-held gas sensors will be used to measure the condition of the equipment and environment.

Gas is not expected to be released from the system, however in case of emergency, all sensors will be connected to an automated shut down, which will stop and close in the producing wells.

4.3.1 Vent Stack

As the storage tanks are filled, the produced fluid displaces the headspace volume. Therefore the headspaces of the stock tanks must be vented to allow for the changes in volume. The headspace gas will first pass through an ammonium gas scrubber and then vent at a minimum height of 7 metres above the site ground level. The vent will be continuously monitored with electronic sensors in line with the Environment Agency's IPPC regulations.

4.4 DUST

Dust will not be generated as a direct result of production operations as the entire site is covered in hardcore and scalpings. The site road is owned and operated by Southern Water and is covered in tarmac.

4.5 ODOUR

There are two possible sources of odours on-site: crude oil and ammonium. Produced fluids are not exposed to the open air and therefore will not normally pose an odour risk. However there is a requirement for an infrequent periodic visual inspection of the storage tanks which will allow a mild odour of oil to be released for a short period of time. Midmar does not expect the odour to be detected anywhere except in close proximity to the bunded area.

On a day-to-day basis, the tanks are vented as they are filled, implying that the volume vented will be equivalent to the produced volume. Please note that the headspace is air in proximity to crude oil and not hydrocarbon gas.

Venting the headspace is standard practice at our Brockham production site and during the Extended Well Test at Lidsey, there were no noticeable odours, so it is not expected to be an issue. In the event that an unacceptable odour is noticeable at the site boundary, an investigation into how to remove odours will be initiated.

4.6 HAZARDS

The risks of producing oil in the onshore UK can be minimised by following established operational procedures and construction of the site and plant.

Specific identified risks include:

- Spill Hazard - risks occur during routine operations and during tanker export operations. Strict procedures and site / equipment design minimise the risk. Onsite oil spills will not pose any environmental risk due to the containment nature of the site construction. The largest volume of crude oil is held within the storage tanks contained entirely within the large concrete bunded area. The volume of the bunded area will be 135 % of the maximum capacity of the storage tanks. Leakage of oil onto the site will not pose any major risk due to the impermeable sealing membranes and bunded areas. Leakage offsite is unlikely due to fail-safe mechanisms on the transporting road tankers.

- Fire Hazard - the site and equipment construction adheres to all guidelines for hazardous area operations avoiding any direct ignition source. The operational and maintenance procedures in force avoid any possible risk. The use of certified hazardous area equipment minimises combustion risks. Should a fire break out, the risk to the locality would be from oil smoke. Mark Conroy, the West Sussex Fire Safety Officer, has been contacted about reducing the risks of both accidental fire and arson. He informed Midmar that arson has never been a problem in the Lidsey area and when the proposed site is operational, he will provide Midmar with more specific advice.

- Gas Hazard - permanent monitoring equipment connected to site shutdown equipment in conjunction with a robust maintenance and inspection schedule prevent gas release.

All waste and emissions during the Extended Well Test were low and showed there is no apparent impact on the environment. We perceive that it is technically very difficult to affect the environment, but we are prepared for the potential risks described above.

4.7 Agricultural Capabilities

The agricultural land that is leased for the Lidsey Site is very poor quality according to Mr Eggins, the farmer. It is the worst quality land on his farm and, prior to leasing it for oil exploration, he used the better areas of the site land for corn. Mr Eggins informed Midmar that it had poor productivity due to being very dry in summer and very wet in winter, and he estimated that the land would be a low Grade 3, with severe limitations. Mr Eggins has another piece of land on his farm that is similar to the Lidsey site, he hopes to plant it with trees, as crops are too unproductive to be economic.

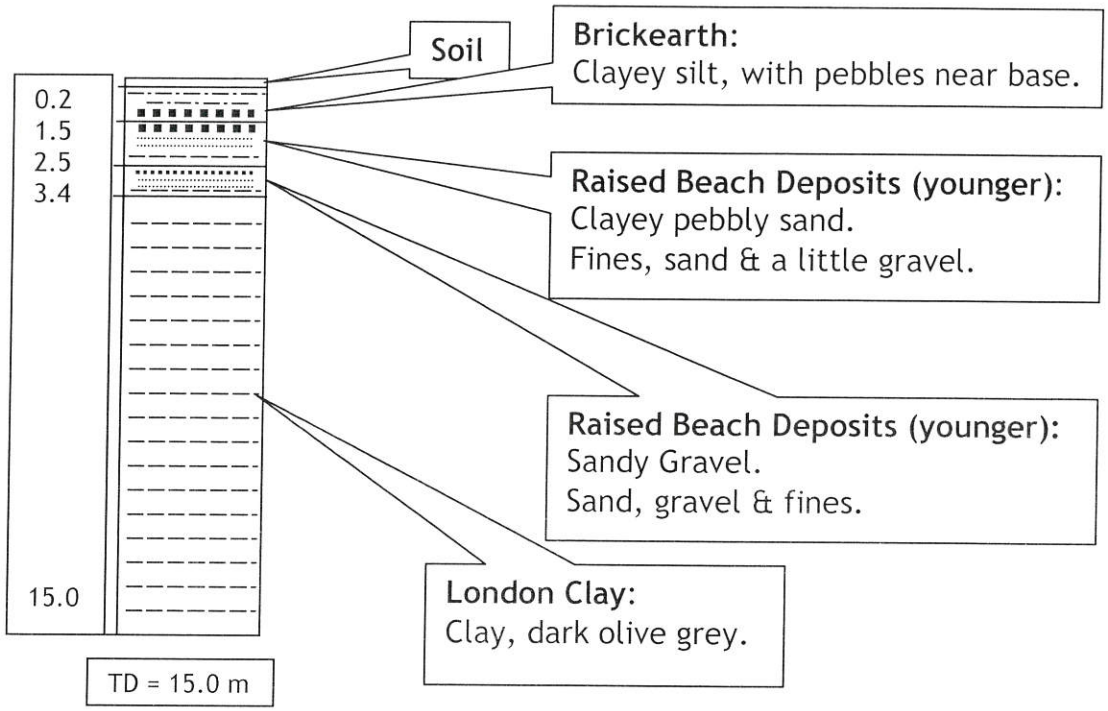
4.8 Archaeological Considerations

West Sussex is a county rich in archaeology and there have been several finds in the Lidsey region. John Mills, archaeologist at West Sussex County Council, informed Midmar that this development would have a low impact on the archaeology of the Lidsey Oilfield Site. Midmar will not disturb the land except to drill three 0.5 metre holes where the wells spud-in.

The route of the Portsmouth to Arundel Canal, built in the 1790s to early 1800s is of industrial archaeological interest. While it runs close to the oilfield site, as the site is on a hill (Appendix 1), it is extremely unlikely that the canal crosses into the site. A swing-bridge exists at the SE corner of the site and crosses the boundary of the Oilfield and Maggot Farm, our works will not affect this corner of the site. We estimate the site was excavated to more than 2 metres prior to exploration drilling in 1987, lined with an impermeable liner, filled with more hardcore, then lined again at a depth greater than 0.5 metre. It is not possible to establish the existence of the tow-path or specific depths to the liners without de-constructing the site, which would be prohibitively expensive. Any damage to the impermeable liners would cause them to require replacement. The earth that was excavated from the site in 1987 was used to build the earth bunds, while this has experienced considerable disturbance, Midmar is happy for these to be analysed.

Of further interest is the Lidsey Rife, a geo-archaeology feature that extends across this part of West Sussex. The Lidsey Rife is a raised beach deposit that can contain flint tools. According to the British Geological Survey 1996 Chichester and Bognor Sheet 317/332, Solid and Drift Geology 1:50,000 map the Raised Beach Deposits at Lidsey Oilfield are type 1 sands. This would partly explain the difficulties in draining the site and why Carless decided the site required two impermeable liners. The southern limit of the site (the track) has surface geology of the Palaeocene Reading Formation (Lambeth Group). These are mottled clays and can occur as sandy deposits locally. A British Geological Survey borehole drilled at Lidsey Sewage Works (below) discovered Raised Beach Deposits, these are clayey, pebbly sand and sandy gravel and extend from the surface to 1.4 metres depth. The Palaeocene Reading Beds dip northwards, while to the South the Quaternary deposits are Tidal River Deposits. This, coupled with the elevation of the Lidsey Oilfield Site suggests that, if the Raised Beach Deposits extend north into the site,

they would be very thin and near the surface - and were probably excavated and currently reside in the earth bund.



Borehole Log: Lidsey Sewage Works, West Sussex
SU 90 SW 52 [9457 0349]
British Geological Survey, 1981

5.0 Technical Installation Details

The proposed production installation is to be similar to that rented for the Extended Well Test (EWT) carried out in 2001. The installation will have several main activities and associated ones, described below. In all cases, the operations refer to the Environment Agency IPPC definition:

Section 1.2A(1)(h) - "Loading, unloading or other handling of, the storage of, or the physical, chemical or thermal treatment of i) to v). Particularly this installation refers to i) crude oil and v) emulsified hydrocarbons intended for use as a fuel.

If the council requests, Midmar can furnish them with any of the following documents, as they become available:

- Site Report
- Operating Procedures Manual
- Emergency Procedures and H.S.E. Manual

- Chemical Safety Data Sheets
- Maps and site plans
- Supporting letters and documentation

5.1 PRIMARY ACTIVITIES

The site is primarily involved in pumping an emulsified mixture of crude oil, saline water and gas to the surface from oil-bearing reservoir rock at a depth of approximately 1000 metres. The artificial lift is achieved down-hole by the use of a mechanical pump driven by push rods from a beam assembly at the surface. Production is piped to storage tanks via a chemical injector, treated and exported.

5.1.1 Produce Crude Oil, Water and Gas to Site Storage Tanks

The producing well, will utilise down-hole pumping equipment to provide artificial lift, this equipment will include; a mechanical pump driven by rods from a beam pumping assembly at the surface. They will flow crude oil from a depth of approximately 1000 m in the reservoir rock. The production will flow from the wellhead to the storage stock tanks located in the main bunded area, first passing via chemical treatment and a separator also located in the main bunded area.

Associated gas that is produced will be used to generate power for the site equipment. Excess gas will be re-injected to enhance production. In the event that associated gas is of minimal volume, the free gas will be vented.

5.1.2 Separate Crude Oil, Water and Gas into Holding Tanks

Demulsifier and sulphide scavenger will be added to the production at a point in the flow line prior stock tanks to aid the process of separation of oil and water. Normally the crude oil, water and gas mixture will be separated by a purpose built separation unit - a three phase separator. This will allow the bulk of the water and crude oil to be placed in separate storage tanks, while the associated gas compressed into a storage tank for use in the power generator. The separation of the final amounts of water from the oil will be effected by gravity.

5.1.3 Tanker Loading for Export

Once the crude oil has been prepared, it will be loaded into 204 barrel (32,000 litres) road tankers for export. A Drager test will be carried out on the headspace gas of loaded crude oil to confirm its content.

5.2 ASSOCIATED ACTIVITIES

5.2.1 Re-Inject / Export Produced Water

On completion of the production separation, the produced water (including any contaminated water) will be either re-injected into the reservoir at the oil water

contact or exported to a treatment facility. These are both standard methods of dealing with waste water, re-injection can be a vital part of reservoir maintenance as it provides pressure support in the reservoir. In the initial stages of production, the water will probably be exported to a treatment plant, providing it meets the requirements of the export facility.

5.2.2 Process Crude Oil

Chemicals are injected into the process in order to prepare the fluids and gas for handling and export. The produced fluid will require heating to promote the action of the injected chemicals.

5.2.3 Export Crude Oil by Road Tanker

Once loaded, the crude oil will be shipped to the nearest loading facility - BP's Hamble storage facility. Based on the reservoir simulation analysis, the production is estimated to be around 1500 barrels (240,000 litres) a week excluding maintenance downtime. Export activity will be contracted to BKP Environmental - a road haulage firm with certification to transport liquids of this nature.

In the interests of preventing slow moving traffic and unsociable operations for the local community, we are prepared to restrict vehicle movements during certain times, excepting emergencies. We note that the water treatment plant opposite our site also operates HGVs and we feel it would simplify the administration if we were to adhere to the same access restrictions that are imposed on their HGVs.

We estimate that there would be 8 return journeys by road tankers, each week, these journeys would are expected to be during normal working hours. Deliveries of diesel and chemicals are expected to total once a week on average.

5.3 Auxiliary Materials

There are four main chemicals used and stored onsite. The usage details are based on 95 % uptime of plant and process per year, which has made allowance for routine maintenance and safety checks as part of the work schedule. Before the Extended Well Test, the crude oil production was analysed to determine the best chemical solution for an installation of this type. Toluene and silver nitrate are testing related chemicals which are used in very small quantities.

The chemicals will be pre-ordered on a just-in-time basis, thus keeping stock storage to a minimum. The chemicals will be delivered in an IBC (Intermediate Bulk Container) and stored within the bunded area until use, when it will be mounted onto the chemical injection unit.

5.3.1 Sulphide Scavenger

This sulphide scavenger is designed for use in oil systems to remove hydrogen sulphide. They can be pumped directly into the production stream to be treated as the aqueous solution is completely water-soluble and yields water soluble, biologically friendly reaction by-products.

Volume

Although the quantity of sulphide scavenger required depends on the hydrogen sulphide content of the oil being extracted, which would be better known once the proposed production has begun. Our estimates from other oilfield sites show it would be in the region of 10-15 Litres per day.

Disposal

The sulphide scavenger solution is non-bioaccumulative and not toxic. It is completely water-soluble and yields water soluble, biologically friendly reaction by-products.

5.3.2 Demulsifier

Emulsions in oil production are tiny water droplets evenly distributed throughout the oil phase. A demulsifier is required to separate the oil and water phases. Some emulsions are very loose (easily broken) and others are tight however, the degree of emulsification of the crude oil is dependant on the naturally occurring emulsifiers both in the aqueous and oil phases.

Volume

Like sulphide scavenger, the quantity of demulsifier required would depend on the emulsions in the oil being extracted, which would be better known once the proposed production has begun. Our estimates from other oilfield sites show it would be in the region of 1.5-2.0 Litres per day.

Disposal

The demulsifier is oil soluble and will be exported with the crude oil, ultimately arriving at the refinery for re-processing. Technical and Safety Data Sheets of the chemicals are in Appendix 6.

5.3.3 Ammonium

Ammonium is normally used in fertilisers and is present in manure. In this process, it is mixed with water and used in the vent stack scrubber to remove remaining traces of Hydrogen Sulphide. This is used as a precaution as monitoring will normally prevent any releases.

Volume

The quantity of ammonium required is very small, the exact quantity will be better known once the proposed production has begun.

Disposal

The reaction products are non hazardous and have a very low environmental risk in diluted form - diammonium sulphide is in fact food for sea algae. It is standard practice to re-inject it into the reservoir or export it to a treatment plant. As part of our due diligence, we will analyse the fluids to ensure that it meets with requirements. Both Ammonium and Diammonium Sulphide are non-bioaccumulative. However Ammonium in concentrated form can be toxic to marine life, therefore caution will be exercised during transportation.

APPENDIX 1 - SITE EQUIPMENT

1.1 SITE CONSTRUCTION & LAYOUT

The site was prepared using a sealing membrane, ditches and bunds in line with standard industry practice. Following the drilling of exploration wells, we have discovered that the site is situated on the eastern end of the reservoir. The design of the site has been altered from the exploration drilling to accommodate a semi-permanent production facility (as specified in this supplementary information). Appendix 4 shows photographs of the Oilfield Site at Brockham in Surrey, which is also operated by Midmar. The construction of the proposed site at Lidsey Oilfield would be very similar. The photographs show how little impact on the landscape the sites we operate have. Midmar is proud to develop operations that have a minimal impact on the visual environment (eg. painting the beam pumps green and using green containers) we also try to shield the location with planting as much as possible.

1.2 SITE EQUIPMENT

The equipment for the proposed production installation differs very little from the equipment used for the Extended Well Test. The key difference will be the quantity of storage and method of connecting equipment together - PN16 flanged purpose built pipework as opposed to quick fit (Chicksan) general pipe lengths and custom installed electrics as opposed to plugged in via extension cables.

Please see the appendices for the site layout plan.

In order to carry out the installation activities and directly associated activities, the site will require the following list of proposed site equipment:

1.2.1 Site Office & workshop

A 32' x 10' port-a-cabin will be placed onsite and will serve as an operational centre for the site. The temporary building will contain minor kitchen facilities, a toilet, wash hand-basin and an office with power and communications. The site office will contain all site safety information and first aid provisions as well as all recent production history.

A standard 20' x 9' x 9' container will be modified for use as a workshop and will contain various tools and spares for the site equipment. The mobile workshop will be onsite at Lidsey for approximately the first year, after this period it will be moved as we develop other sites.

A standard 20' x 9' x 9' container will be used for storage. This will contain spare parts for the mechanical equipment on site.

1.2.2 Storage Tanks

There are four different types of storage tanks:

- The proposed Crude Oil storage tanks will have a combined capacity of 2000 barrels (320,000 litres) in four 500 barrel units and will be situated in the main bunded area. This will allow for production over weekends and public holidays when activity will be kept to a minimum. The tanks are horizontal cylindrical tanks constructed of 12 mm plate steel. The dimensions are 18 metres in length, 2.25 metres in diameter and on 0.75 metre stands, giving a total height of 3 metres.
- A water holding tank with an approximate capacity of 400 barrels (64,000 litres) will also be positioned in the main bunded area to hold produced water before re-injection or export. This will be a vertical cylindrical tank, 6 metres in height with a diameter of 3.5 metres.
- Gas storage: A gas storage tank with compressor will be onsite, and used to power the generator and the process heating facility.
- Fuel storage: 1000 litre diesel storage tank will be kept in the main bunded area to store fuel for site equipment.

All storage tanks will be located in bunded areas and managed according to Oil Storage Regulations 2001 SI 2954.

1.2.3 Pumps

There are several electrically driven pumps on-site that have varying capacities from 11 to 25 KW. These pumps are for the following processes:

- Production: The beam assembly will be driven by a continuously operated 25kW 3ph electric motor connected to a down-hole mechanical pump by push rods. This provides artificial lift to the surface for the crude oil.
- Circulation / Export: A low pressure, high volume centrifugal pump will be driven by a occasionally operated (>5 % use) 11kW 3ph electric motor to circulate fluids between the items of process equipment and to load (and unload if required) road tanker exports.
- Re-injection: A high pressure, low volume, positive displacement or progressive cavity pump will be used to re-inject produced water at the oil-water contact at the bottom of the reservoir rock at approximately 1000 metres.

1.2.4 Wells and Wellheads

The production and control of fluids and gasses is achieved by wellhead equipment, which also simplify access to the wells. The equipment exists on the wellheads primarily to control flow of liquids into and out of the hole, but in the event of an emergency it provides a secure and safe method of stopping all fluid or gas movement. There is one existing well at the Lidsey site, which was drilling in 1987,

Midmar proposes drilling a second well in 2005 and possibly a third, though this will depend on production results.

The well is of standard construction comprising of a steel reinforced concrete cellar with steel casing cemented into the ground.

1.2.5 Generator

A super-silenced containerised 200KVA (170 kW) generator (20' standard container) will be used to provide site power. The generator will be powered by associated gas produced from the reservoir. In the event that we generate more gas/power than is required by our site, we would consider the possibilities of re-injecting the extra gas, this would enhance recovery; alternatively we could provide power to neighbouring businesses. If there is insufficient gas to usefully power onsite equipment, we would vent or flare it, as recommended by the Environment Agency in our IPPC Permit.

1.2.6 Boiler

A containerised boiler (20' standard container) is required to provide heat to the production process in order to promote the action of the demulsifier. Initial calculations indicate that we require a 366 kWh steam boiler, which would be fuelled by the associated gas production.

1.2.7 Bunded Area for Storage

The storage tanks are required to be located within a bunded area, which is capable of holding more than 125 % of the total storage volume. The construction is a reinforced concrete base with a wall built around the perimeter that will be coated with an impermeable membrane applied in liquid form. The base is constructed from 40 cm of PAV1 concrete with two layers of reinforcement steel sheets. The wall will be constructed from standard 9" x 9" x 18" solid breeze blocks. Specialist chemical resistant and impact resistant membrane paint is used to seal the walls.

The current bunded area at the Lidsey site is 18 m x 9 m, however this will need to be enlarged to 21 m x 26.5 m in order to accommodate all the facilities. The perimeter wall will be constructed using 4 layers of bricks giving a bund wall height of 0.9 m, which equates to more than 130 % of total storage volume.

1.2.8 Bunded Area for Tanker Loading

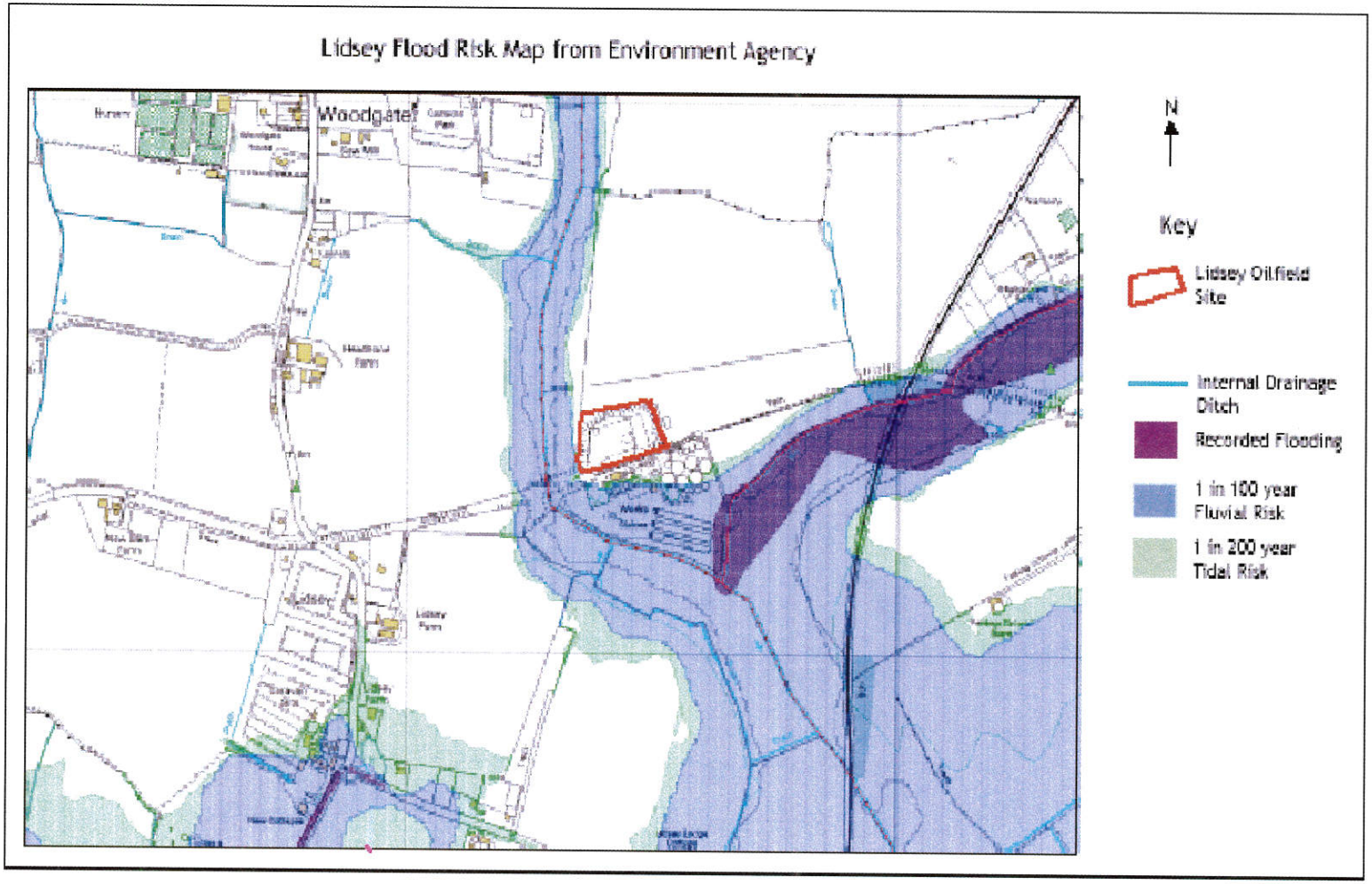
A tanker loading bund is required for all loading and unloading operations of controlled liquids. The loading bund is constructed from a reinforced concrete base with a perimeter of curb stones and a drain into the main bunded area. The design of the loading bund is not to contain any quantity of fluid, but to ensure any released fluid flows into the main bund via the drain. The exact size of the loading

is not a function of enclosed volume, but safety of access. Therefore the size of the loading bund will need to be assessed, but in our experience, this need be no more than 7 m x 20 m.

1.2.9 Fire Water Tank

One operational and one disused open top storage tanks containing water in case of emergency have already been installed on opposite sides of the site. These are simply corrugated galvanised steel sheets bolted together sitting on a concrete base. A liner is placed inside to make them hold water and they are open to air. A 3" Bauer connection with a valve is present for filling / emptying the tank. The tanks are approximately 5 metres in diameter and 2.5 metres high.

APPENDIX 2 - FLOOD RISK MAP- MAP 1



APPENDIX 3 - ENVIRONMENTAL HEALTH CORRESPONDENCE

Correspondence between M. Pearson, Land Manager at Midmar and G. Evans, Senior Environmental Health Officer, Arun District Council.

Both emails dated: 06 May 2005

Dear Mr Evans,

It was suggested that I contact your department at a meeting with the Planning Department of West Sussex County Council. Midmar Energy Onshore Limited are proposing to develop the Lidsey Oilfield Site at Lidsey, Nr Bognor Regis, PO22 9PF. We hope to produce crude oil for 10-12 years and would like information on the anticipated limits for odour, noise and emissions to air levels at this location. This can then be taken into account at the site design stage, and when we are costing and purchasing site equipment, like generators, gas sensors etc...

As there are other industries close to this location, it would be useful to know the current odour, noise and air pollution levels of the neighbouring sites, in particular the Sewage Treatment Works.

Yours Sincerely,

Marion Pearson
Land Manager

Midmar Energy Onshore Ltd
1st Floor, 6 Dean Park Cresent,
Bournemouth.
BH1 1HL
Tel: + 44 (0)1202 438333
Mob: + 44 (0)7747 895794
Fax: + 44 (0)1202 438444

Dear Ms Pearson

Thank you for contacting us in this matter. I would assume that further detail with regard to exactly what plant and equipment will be utilised on this site, operating hours and conditions, traffic movements etc will form part of a future EIA/Planning Application?

It also appears to me that "the loading, unloading or other handling..... of crude oil" is prescribed in Schedule 1 of the Pollution Prevention & Control Regulations 2000 as a part A1 activity requiring a permit from the Environment Agency? Such a permit will contain conditions requiring control of noise, odour and other atmospheric pollutants.

With regard to anticipated emission limits I would comment as follows:-

Odour - As you are aware the site is adjacent to a sewage treatment plant which has in the past been source of odour complaints from time to time. The standard employed with regard to these matters has been a requirement that the odour should not cause nuisance to nearby sensitive neighbours. You may not be aware that the site is also adjacent to a maggot breeding process. Although this process is not currently operating it retains an LAPC Authorisation from this Authority under the Environmental Protection Act 1990 - Part 1. Conditions of this Authorisation control emissions from the process to atmosphere in particular it is a condition that no offensive odours should be detectable outside the boundaries of the process. A similar standard should apply to the proposed installation.

Noise - We have no current information on noise emitted from neighbouring sites. A method for setting noise limit values is recommended in MPG11, however PPG 24 suggests that the likelihood of complaints about noise from industrial and commercial developments can be assessed using guidance in BS 4142:1990. Where a 'rating level' determined in accordance with BS 4142 is more than 10dB below the measured background noise level this is a positive indication that complaints are unlikely. I would suggest that the BS 4142 standard is appropriate in these circumstances and the installation should be designed to this standard.

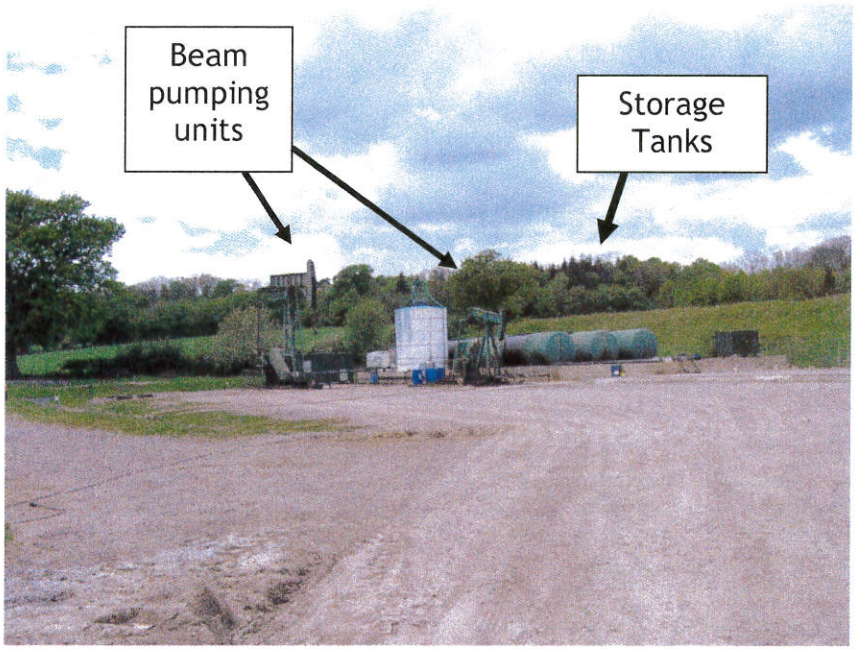
Other atmospheric pollutants - The site is not currently in an Air Quality Management Area. To maintain this standard the installation should be designed to ensure that the emission objectives set in the Air Quality Regulations 2000 (as amended) are met.

Should you require any further advice please contact me.

Yours sincerely

Graham Evans,
Senior Environmental Health Officer,
Arun District Council,
Arun Civic Centre,
Maltravers Road,
Littlehampton,
West Sussex,
BN17 5LF
pollution@arun.gov.uk

APPENDIX 4 - PHOTOGRAPHS OF BROCKHAM OILFIELD



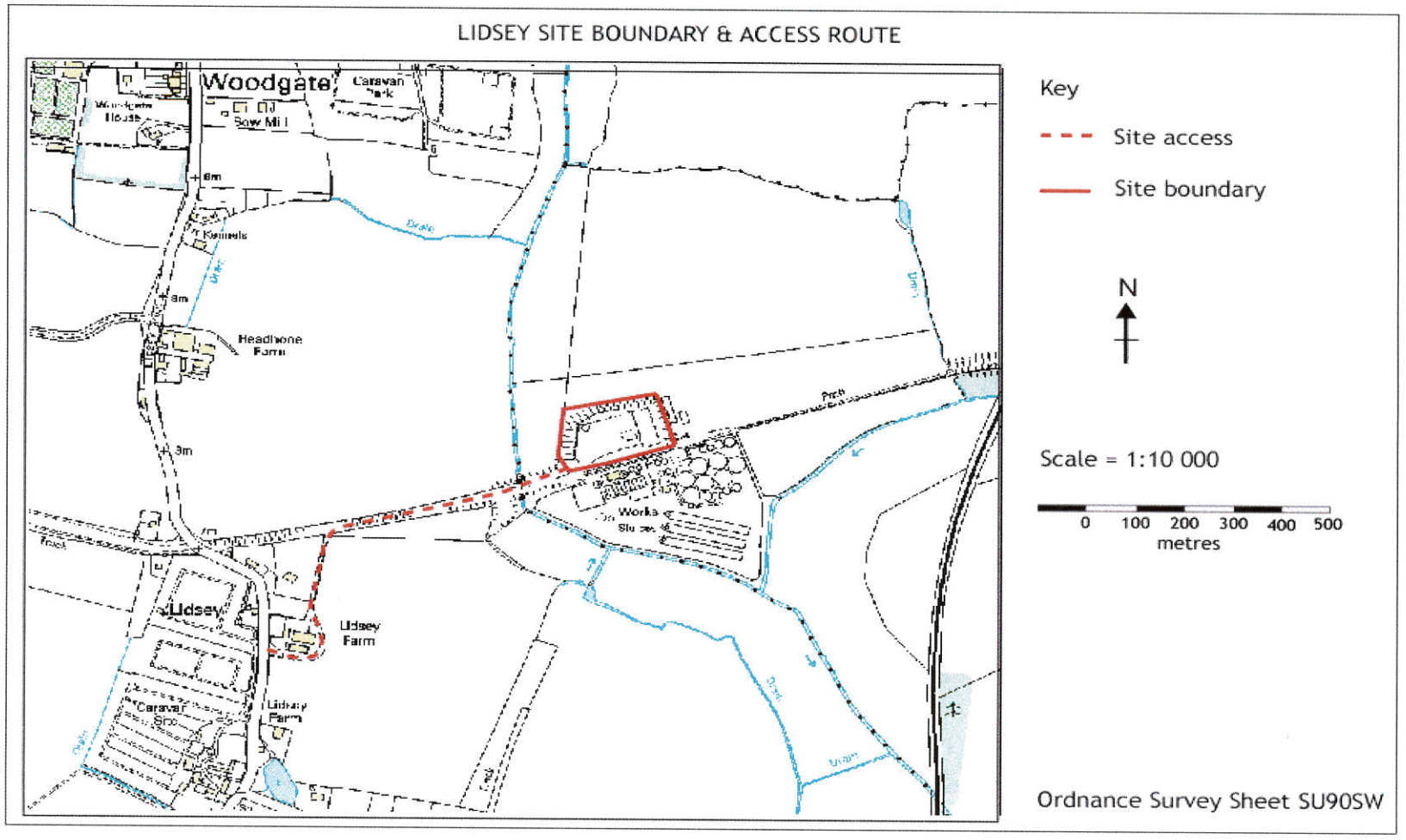
Brockham Oilfield Site from the site entrance. The green paint and surrounding vegetation all help to shield the site and reduce its visual impact on the local area. From the nearest road, the site can't be seen or heard.

Storage tanks and containers painted green to minimise visual impact on the environment. The earth bund (middle view) is considerably higher than the tanks and containers.

The two 'nodding donkey' beam pumps at Brockham.

These are painted green and blend into the environment through being concealed by vegetation.

APPENDIX 5 - ACCESS MAP- MAP 2



APPENDIX 6 - SENSITIVE RECEPTORS MAP 3