UTILITIES APPRAISAL

Proposed Residential Development

Land West of Merrivale Lane, Ross on Wye, Herefordshire

Prepared for:
Savills

19th October 2018

Project Number:
RMA-C1894

RMA ENVIRONMENTAL

environmental planning consultancy

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1	19th October 2018	Client Issue

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APPENDICES

1 INTRODUCTION

1.1 RMA Environmental Limited has been commissioned by Savills to undertake a utilities appraisal for a proposed residential development on land to the west of Merrivale Lane in Ross on Wye, Herefordshire.

1.2 The principal objective of this appraisal is to establish the presence of key utility services in relation to the site boundary and also to identify any potential constraints associated with the ability of the relevant utility provider to supply the proposed development. The appraisal has been based on the construction of approximately 10 residential properties within the red line boundary provided at the outset of the project (refer to Appendix A).

1.3 A search of utilities and services which are located on or close to the site has been undertaken to inform the later detailed design stage. A utilities plan (refer to Figure 1.1) has been prepared which summarises the location of services within and immediately adjacent to the application site. This was achieved through the provision of a Groundsure Utilities Search Report (refer to Appendix B). It is noted that mapping provided by affected utilities owners is not exhaustive; unmapped infrastructure may still be located within the site boundary that has not been identified during this search.

1.4 The following subsections provide details of the availability and any potential capacity issues that might exist for the following services:

- mains water supply;
- surface water and foul sewerage;
- gas;
- electricity; and
- telecommunications.

1.5 It has been concluded that all principal services are available in the local area other than foul sewerage and surface water sewerage. Some of the available services may require capacity studies to be carried out to confirm that there is sufficient capacity in the local area and to identify any abnormal costs to the development.

2 UTILITIES APPRAISAL

Public Water Mains Infrastructure

Within the Site

2.1 Wessex Water sewer records indicate that there is no mains water infrastructure within the site boundary.

Adjacent to the Site

2.2 A 4 inch existing public water main is located along the eastern boundary of the site within Merrivale Lane and a 4 inch public water main is also located to the east along The Gresleys.

2.3 Public water mains infrastructure is located within the residential areas to the north of the site within Alton Street and to the west within Eastfield Road and Sussex Avenue.

2.4 It is considered that easements with respect to the surrounding potable water network would not affect the layout of the proposed development.

Capacity Enquiry

2.5 Welsh Water were consulted regarding the capacity within the water main network for the proposed development, based on a maximum of 10 dwellings.

2.6 It was concluded that a water supply can be made available to service the proposed development and initial indications are that a connection can be made from the 4 inch diameter cast iron watermain along Merrivale Lane. Welsh Water should be consulted at the detailed design stage to establish the cost of providing new on-site water mains to serve the development (refer to Appendix C).

Surface Water and Foul Sewerage Infrastructure

Within the Site

2.7 Welsh Water sewer records indicate that there is no public surface water or foul sewer infrastructure within the site boundary.

Adjacent to the Site

2.8 A 229 mm combined rising main sewer is located approximately 50 m to the east of the site along The Gresleys. Further combined sewage infrastructure is located within the residential development to the north of the site along Chase Road and Chase Side and to the west of the site along Sussex Avenue.

2.9 It is anticipated that applicable easements for these sewers would not affect the layout of the proposed development.

Capacity Enquiry

2.10 Welsh Water were consulted regarding the capacity within the combined sewer network for the proposed development, based on a maximum of 10 dwellings.

2.11 Consultation confirmed that there is adequate capacity within the public combined sewerage network to accommodate the development (refer to Appendix C). Flows could be routed to the manhole for the combined sewer located within The Gresleys approximately 50 m east of the site via a gravity connection. Final details of this connection require further consultation with Welsh Water at the detailed design stage.

Gas Infrastructure

Within the Site

2.12 Wales and West Utilities Limited mapping identifies that there is no gas infrastructure within the site.

Adjacent to the Site

2.13 Wales and West Utilities Limited mapping identifies a Low Pressure (LP) main located within Merrivale Lane directly east of the site.

2.14 Further LP gas infrastructure is located within the residential areas surrounding the site and, in particular, within The Gresleys, Alton Street, Princess Way and Sussex Avenue.

2.15 There is no Medium Pressure (MP) gas infrastructure within the vicinity of the site.

2.16 It is anticipated that any easements for gas infrastructure would not affect the proposed development layout.

Capacity

2.17 It is concluded that gas links are available for the development; however, network reinforcement outside the site boundary may be required. Wales and West Utilities Limited should be consulted further to establish if there is sufficient capacity in the local network or if capacity upgrades off-site will be required.

Electricity

Within the Site

2.18 Western Power Distribution Mapping identified a Low Voltage (LV) overhead line in the south-eastern corner of the site approximately 3 m from the eastern boundary of the site. The overhead cable runs parallel to the eastern boundary of the site for approximately 50 m before exiting the site via an LV underground cable. An electricity pole is located on the eastern boundary of the site.

2.19 It is anticipated that any easements for electricity infrastructure would not affect the proposed development. However, easements for the overhead electricity infrastructure will have to be considered during the construction phase of the development and these easements will be confirmed with Western Power during the detailed design stage.

Adjacent to the Site

2.20 Western Power Distribution mapping has identified that a High Voltage (HV) 66 kV underground cable runs from the existing bungalow (directly north-west of the site) along the access track in an easterly direction towards Merrivale Lane.

2.21 High Voltage (HV) and Low Voltage (LV) electricity infrastructure is located within the residential areas to the north, east and west of the site, serving Merrivale Lane, The Gresleys, Alton Street, Chase Side, Chase Road, Sussex Avenue, Blake Avenue and Eastfield Road.

2.22 It is anticipated that any easements for electricity infrastructure would not affect the proposed development layout; however, this should be confirmed prior to works commencing.

Capacity

2.23 It is concluded that electricity connections are available for the development; however, network reinforcement may be required. Detailed consultation with Western Power Distribution will be required when the exact power requirements of the proposed development have been quantified to establish if there is sufficient capacity in the local network or if capacity upgrades off-site will be required.

Telecommunications

Within the Site

2.24 Openreach mapping identifies that there is no telecommunications infrastructure within the site.

Adjacent to the Site

2.25 A telecommunications map was received from Openreach (the infrastructure division of BT Group). This has identified that there is Openreach infrastructure located within the land ownership boundary and is approximately 10 m north of the northern boundary of the proposed development site.

2.26 Openreach infrastructure including joint boxes and poles are located within Merrivale Lane to the east of the site as well as the residential areas to the north, east and west of the site including, The Gresleys, Alton Street, Chase Road, Sussex Avenue, Blake Avenue and Eastfield Road.

2.27 It is considered that any easements would not affect the proposed development; however, this will be confirmed prior to works commencing through further consultation with Openreach.

Capacity

2.28 It is concluded that telecommunications links are available for the site; however, network reinforcement may be required. Detailed consultation with Openreach will be required when the exact requirements of the proposed development have been quantified to establish if there is sufficient capacity in the local network or if capacity upgrades off-site will be required.

3 SUMMARY AND CONCLUSIONS

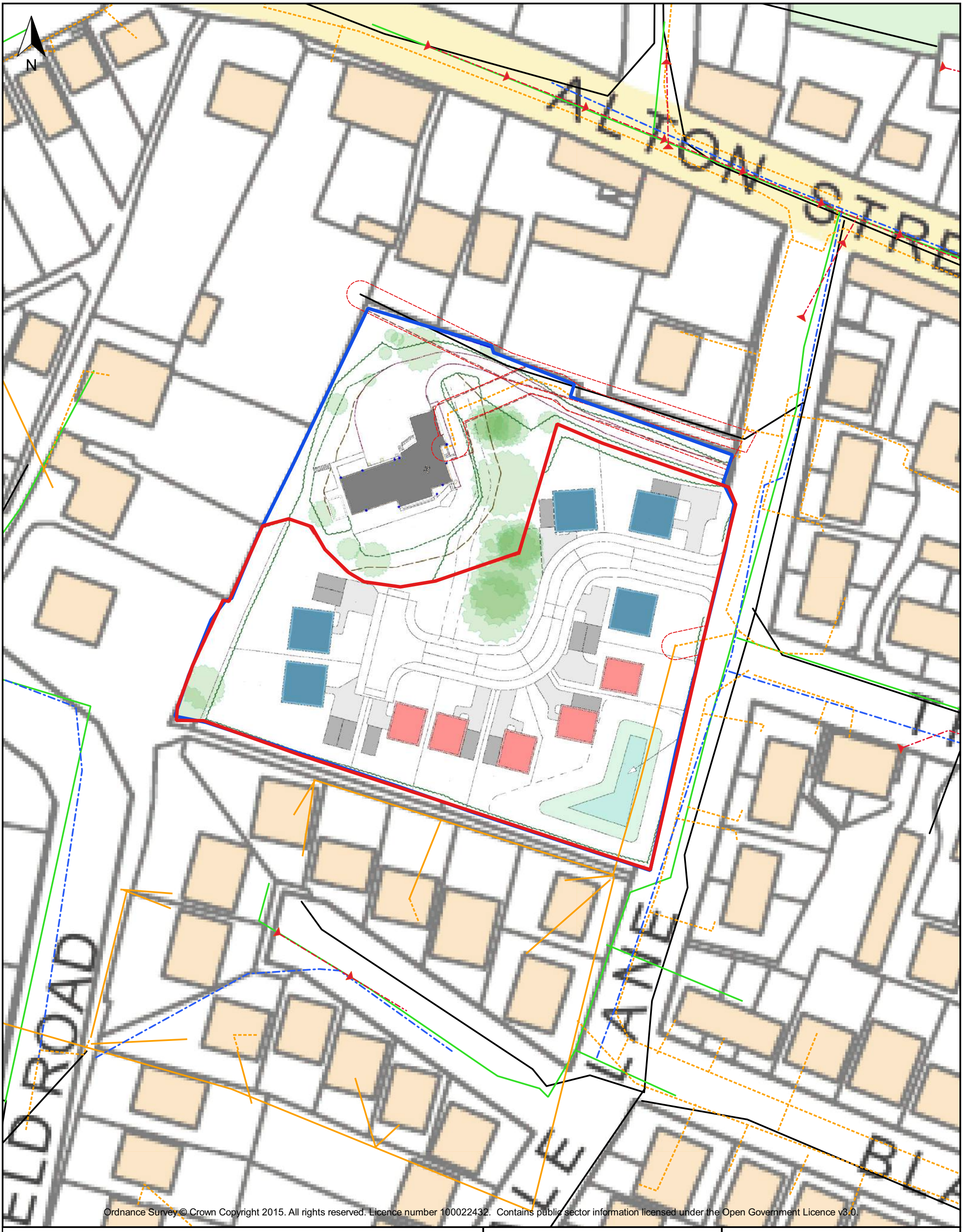
3.1 Table 3.1 provides a summary of the availability of key services and the recommended actions to be undertaken in order to fully establish any abnormal infrastructure costs that would be required to ensure sufficient capacity is available to serve the development.

Table 3.1: Summary of Utilities Appraisal

UTILITY	LOCATION	DISCUSSION	RECOMMENDATIONS
Mains water	There are no public water mains located within the site boundary. Water infrastructure is located along Merrivale Lane to the east of the site as well as residential areas to the north, east and west of the site.	Welsh Water have confirmed that a water supply connection can be made from the 4-inch diameter cast iron water main along Merrivale Lane to service the proposed development.	Welsh Water should be consulted at the detailed design stage to establish costs of providing new on-site water mains to serve the development.
Surface Water or Foul Sewers	No surface water or foul sewer infrastructure is located within the site boundary. A combined rising main sewer is located along The Gresleys approximal 50 m east of the site.	Wessex Water have confirmed adequate capacity is available within the public combined sewerage network to accommodate the development. Flows should be routed to the manhole for the combined sewer located within The Gresleys via a gravity connection.	Further consultation should be undertaken with Welsh Water at the detailed design stage, once the exact requirements are quantified.
Gas	There is no gas infrastructure within the site boundary. LP gas infrastructure is located to the east, north and west of the site.	Gas links are available for the site but network reinforcement outside the site boundary may be required.	Consultation should be undertaken with Wales and West Utilities Limited with regard to the availability of gas for the development once the exact requirements are quantified.
Electricity	A LV overhead line is located in the south-eastern corner of the site and exits the site via an LV underground cable. A HV 66 kV underground cable is located directly north of the site within the land ownership boundary. Electrical infrastructure is located along Merrivale Lane and in the residential areas surrounding the site.	Easements for the overhead electricity infrastructure will have to be considered during the construction phase of the development. Electricity connections are available for the development; however, network reinforcement may be required.	Consultation should be undertaken with Western Power with regard to easements during the construction phase of the development and the supply of electricity to the development once the exact requirements are quantified.

UTILITY	LOCATION	DISCUSSION	RECOMMENDATIONS
Telecoms	There is no telecommunications infrastructure within the site boundary. Openreach infrastructure is located within the land ownership boundary approximately 10 m north of the site as well as along Merrivale Lane to the east of the site and in the residential areas surrounding the site.	It is considered that any easements would not affect the development; however, this will be confirmed through further consultation with Openreach. Network reinforcement outside the site boundary may be required.	Consult Openreach with regards to the easements for the infrastructure within the site and for the supply of telecoms to the development once the exact requirements are quantified.

Figures



Key

- Red Line Boundary
- Ownership Boundary
- 3m easement
- Combined Sewer
- Water Main
- Underground Electricity Cable
- Overhead Electricity Cable
- Gas
- Telecommunications

Figure 1.1: **Utilities Plan**

Client: **Savills**

Project: **Merrivale Lane, Ross on Wye**

Title: **Utilities Assessment (C1894)**

RMA ENVIRONMENTAL

Drawn:	Checked:	Date:	Scale:
MS	RM	03/10/2018	1:750@A3

Appendix A: Proposed Development Layout

KEY, nts

Exact property footprints subject to detailed design of internal layouts.

- 4B5P @ approx. 145 sqm (GIA)
- 3B5P @ approx. 100 sqm (GIA)
- Garage

savills

JOB TITLE		
Land at Merrivale Lane, Ross-on-Wye		
CLIENT DETAILS		
DRAWING TITLE		
Proposed Site Layout		
SCALE		
1:500, 1:625 @ A3		
DRAWING STATUS	**JOB NUMBER**	**REV**
2 Concept Design	1761 SK015	A
DRAWN	**CHECKED**	**DATE**
mr	mr	27/09/2018

YORK HOUSE, BLACKBROOK BUSINESS PARK, TAUNTON
SOMERSET, TA1 2PX. TEL. 01823 445030, FAX. 01823 445031

Appendix B:
Groundsure Premium Utility Search Report

Groundsure
LOCATION INTELLIGENCE

emapsite™

Essentials Utility Search Report

For the following location:

360123.63733268366, 223708.16172081104, N/A, N/A

Client:

Rob Murdock

Co-ordinates:

360134.600,223710.500

Reference:

GRS05259/estl_GS-5453159

Search Date:

17/09/2018

emapsite™

Technics
Geospatial Consultant Surveyors

Thank you for your Utility Search Report order. You have selected one of several report options developed to suit the specific needs of our different customers. The range comprises:

Utility Essentials

The Utility Essentials report gives visibility of the 5 key services – Gas, Electric, Water, Sewage and British Telecom, supplied for areas of up to 25 hectares. The Essentials report is ideal for remote sites where only the main utilities providers are likely to be present or projects where the aim is merely to check the availability of the main utilities e.g. in the planning stages of a new development. All available information is collated and delivered as a single report in 5 working days with any outstanding information being delivered as soon as it is available.

Utility Premium

The Utility Premium report provides comprehensive information about all services affecting your site, including: Gas and Oil Pipelines; mains Water and Sewerage; Telecoms and fibre-optic cables; and transportation networks. This report is ideal when comprehensive information is required for your site, ensuring you are managing your risk and avoiding expensive delays. Supplied for areas of up to 25 hectares, all available information is gathered, collated and supplied as a single report within 10 working days, with any outstanding information being delivered as soon as it is available. Please note, a search of Vtesse Networks Ltd is not included in this report. If you require a Vtesse Networks Ltd search this is available through our Utility Singles Telecoms report.

Utility Fast-track

The Utility Fast-track report delivers all the information of a Premium report (Gas and Oil Pipelines; mains Water and Sewerage; Telecoms and fibre-optic cables; and transportation networks) but with all available supplier responses being collated in a report and delivered to you within 5 working days, with any outstanding information being delivered as soon as it is available. Please note, a search of Vtesse Networks Ltd is not included in this report. If you require a Vtesse Networks Ltd search this is available through our Utility Singles Telecoms report.

Utility Singles

Our Utility Singles reports enable you to request data for a single utility type. You can order Gas, Water & Sewerage, Electricity or Telecoms as an individual search. This is a cost–effective way to obtain relevant information if you only need to check the availability/position of a particular utility in order to plan a new development or make changes to an existing development. Supplied for areas of up to 25 hectares*, all available information is gathered, collated and supplied as a single report within 10 working days, with any outstanding information being delivered as soon as it is available.
*Telecom report with Vtesse is limited to a maximum radius of 250m.

UTILITY REPORT CONTENT & INFORMATION

1 Purpose of Utilities Report

The Utilities Report is intended to be for project planning and feasibility only. It is not suitable to be used for construction or excavation purposes. The existence of utilities on the plans does not imply that they are suitable in size, capacity, type or location for the project purpose. The Utility Companies should be contacted directly for clarification in this regard.

2 Compilation of the Utilities Report

The Utilities Report is a compilation of Utility Company record plans. These are obtained via application to the Utility Companies following a geographic search to determine which Companies are in a given area. The data is provided by the Utility Companies in a variety of formats including faxed plans, pdf files, digital drawing files and paper drawings. They are all converted to pdf files for inclusion in the report. The quality of the plans therefore varies. A quality assured process is followed for each report. This requires that it is checked at different stages during the process before being subjected to a final assessment prior to issue.

3 Limitations and Accuracy of the data

Each Utility Company has its own disclaimer statement in respect of the information they provide. They do not guarantee or provide a warranty for the data. The Utility Company disclaimers should be referred to when considering the accuracy and completeness of the data. Generally the plans provided are for guidance only and are not guaranteed to be up to date or to be a complete record of the Utility Company plant in a given area.

Some Utility Companies only show main utilities. Therefore service pipes or cables may not be shown on the plans but they may be present on the site.

Some Utility Companies state that the utilities may deviate from the route and position shown on the plans.

Due to the time delay between installation of, or repair or upgrading of utilities and the subsequent updating of the Utility Companies plans, it should be noted that there could be utilities present that are not shown on the plans.

The user shall make further enquires and investigations to satisfy himself as to the adequacy of the plans and position of the utilities. The exact position of the utilities should be verified by the use of suitable detecting devices and safe digging practices in accordance with HS(G)47. Further advice on the location of the utilities should be requested from the owner.

4 Completeness

Whilst every effort is made to locate all Utility Companies in a given area, due to the sensitive or restrictive nature of certain sites, the existence of redundant utilities, the emergence of new companies and the combining of, takeover or sale of existing Companies, we cannot guarantee to provide details on all utilities in a given area.

5 Date

Due to the Utility Companies plans being regularly changed and updated, the Utility Report is only valid at the time of production.

6 Liability

For the reasons given in 1 – 5 above neither emapsite Ltd nor Technics Group Limited (trading name of Subtechnics Limited) can accept any liability for or offer any guarantees for the report or the content. No representation is made by either emapsite Ltd and/or Technics Group Limited as to the accuracy, completeness, sufficiency or otherwise of this report.

7 Copyright

8 Assignment

The Utility Report cannot be assigned to any other party without the prior written consent of Technics Group Limited.

Terms and Conditions

The Terms and Conditions should be read in conjunction with the 'Report Content & Information' sheet. The content of the 'Report Content & Information' sheet forms part of the Terms and Conditions.

1. Disbursements

1.1. Several Utility Companies charge for either searching to determine if they have any plant or for providing plans. These charges are included in the cost of Utility Essentials, Utility Premium and Utility Fast-track Reports, and are not charged as extra. Utility Singles Reports do not include disbursement charges and these will be charged as extra to the client at cost. The client will be made aware of any applicable charges prior to finalisation of purchase.

1.2. The Utility Companies that make a charge or the charges themselves may be changed or updated without notification to the client.

2. Turnaround times

2.1. Whilst every effort is made to produce the reports as quickly as possible we are reliant on the Utility Companies to provide us with the plans and/or data. Depending on the product purchased, generally reports are completed within approximately 5 to 15 working days.

2.2. No guarantees can be made regarding the time taken to complete the report.

3. Limitation of Liability

3.1 Technics Group Ltd (trading name of Subtechnics Limited) and/or emapsite Ltd will make all reasonable endeavors to provide the Utility Report within the stated time period and shall not be liable for any delay arising because of any act, omission or delay of any Utility Company.

3.2 The Utility Companies have no liability to Technics Group Ltd and/or emapsite Ltd in relation to the provision of information, plans and/or data or the omission of or to provide such information, plans or data. Therefore Technics Group Ltd and/or emapsite Ltd shall have no liability to a Client for the information, plans and data contained in a Utilities Report.

3.3 Technics Group Ltd and/or emapsite Ltd shall have no liability in relation to any Utilities Report for loss or damage arising in relation to loss of profits, loss of business, loss of use, costs, damages, charges or expenses.

4. Cancellation Policy

4.1. We are unable to cancel the order once finalised.

5. Force Majeure

Technics Group Ltd and/or emapsite Ltd will have no liability to the Client if it is prevented from or delayed in performing its obligations in connection with producing the Utilities Report by any act, event, omission, accident or incident beyond its reasonable control. These include but are not limited to:- any form of industrial dispute, strike or lock-out, breakdown or failure of a utility service or transport network, act of God, war, riot, civil commotion, malicious damage, accident, incident, breakdown of plant, machinery or electronic system, fire or flood.

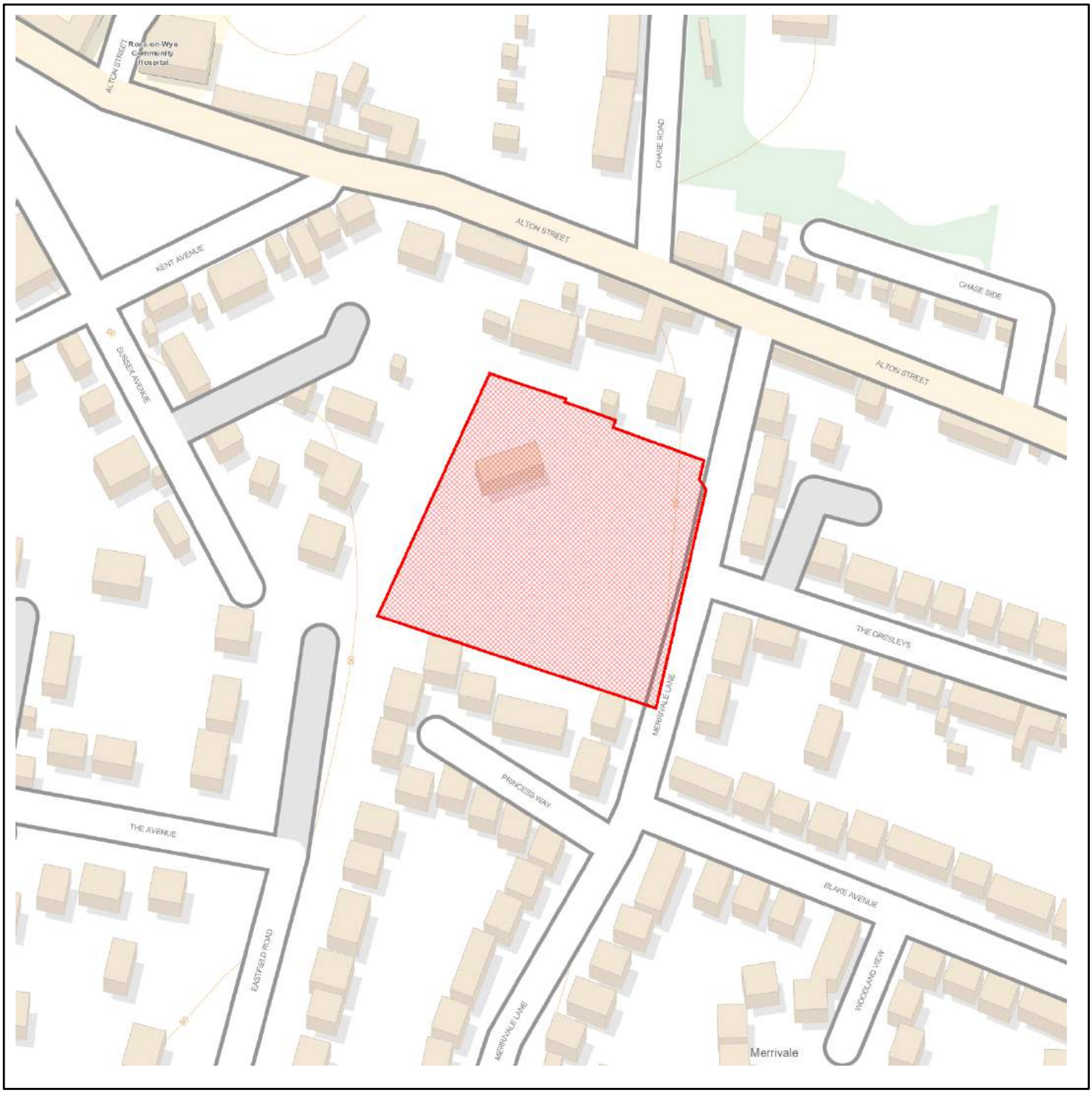
6. Governing Law

The Governing Law and Jurisdiction of these Terms and Conditions, any Contract or Agreement are governed by and construed in accordance with the laws of England and Wales. The courts of England and Wales shall have non-exclusive jurisdiction to settle any dispute or claim that arises out of or in connection with these Terms and Conditions, any Contract or Agreement.

Site Location Plan

Our Ref GRS05259/estl_GS-5453159

Grid Reference OSGB: 360134.600,223710.500



Utility Company Underground Services Results Schedule

Your Ref:	estl_GS-5453159
Our Ref:	GRS05259
Address:	360123.63733268366, 223708.16172081104, N/A, N/A
Grid Reference:	360134.600,223710.500
Postcode:	
Author:	Matthew Clarke
Search Date:	17/09/2018

Utility Company	Responses	Outcome
Electricity		
Western Power Distribution (WPD) Midlands	4	Affected
Gas		
Wales & West Utilities Ltd	5	Affected
National Grid UK	1	Not Affected
Telecoms/Cable		
BT Openreach	1	Affected
Water and Sewers		
Dwr Cymru Welsh Water Plc	2	Affected
Dwr Cymru Welsh Water Plc	0	Cancelled

emapsite™

Groundsure
LOCATION INTELLIGENCE

Electricity

RICS Regulated By RICS · chartered ices · THE SURVEY ASSOCIATION · EUROPEAN GPR ASSOCIATION · RISQS · Achilles · CHAS

WESTERN POWER DISTRIBUTION

Serving the Midlands, South West and Wales

Our Ref: 13746132 Your Ref: GRS05259

Monday, 17 September 2018

Stephen Sawyer
Technics House Merrow Business Park
Guildford
Surrey
GU4 7WA

Western Power Distribution,
Mapping Centre
Toll End Road
Tipton
West Midlands
United Kingdom
DY4 0HH
www.westernpower.co.uk

Map Response
T 0121 623 9780
WPDMapResponse
@westernpower.co.uk

LinesearchbeforeUdig
Help Desk 0845 437 7365

Dear Stephen Sawyer

Thank you for your enquiry dated Monday, 17 September 2018

I now enclose a copy of our plan showing existing Western Power Distribution (WPD) Electricity / WPD Surf Telecom apparatus in the vicinity of your proposed works. This information is given as a general guide only and its accuracy cannot be guaranteed. Please note that all WPD equipment on site should be assumed to be LIVE until WPD prove otherwise and provide you with confirmation to this effect in writing. Recent additions to our network, or service connections between the main cable and a building or street lamp may not be shown.

Damage to underground cables and contact with overhead lines can cause severe injury or may prove fatal. If you are excavating on site in the vicinity of either WPD Electrical apparatus or WPD Surf Telecom apparatus you must comply with the requirements of the following:-

Health & Safety Executive guidance HS(G)47, Avoiding Danger from underground services.

Work taking place in the vicinity of our plant is also regulated under the:-

Electricity at Work Regulations 1989, Health and Safety Act 1974, CDM Regulations 2015.
Safe working procedures should be defined and practiced

Please ensure that the use of mechanical excavators in the vicinity of our plant is kept to a minimum. WPD Surf Telecom ducts contain fibre cables, which are expensive to repair. Therefore, extreme care must be taken whilst working in the vicinity of these ducts, hand digging methods being used to determine their precise position.

If there are overhead lines crossing your site and your proposal involves building works which may infringe the clearance to our overhead system then you should call the relevant general enquiries number (see page 2 of this letter) for advice. Where overhead lines cross your site you must comply with the requirements of Health & Safety Executive guidance as laid down in GS6, Avoidance of Danger from Overhead Electric Lines.

Where diversions to WPD apparatus are needed to allow change to occur on site, the cost of these alterations may be charged to the persons responsible for the works.

If you require advice in connection with your proposals please contact the relevant general enquiries number (see page 2 of this letter)

Following consultation the local Western Power Distribution team will where necessary prepare detailed proposals and provide a quotation for any necessary alterations and/or development of our equipment on the site.

Yours sincerely
WPD Map Response Team

Western Power Distribution PLC
South West - 02366894
South Wales - 02366985
East Midlands - 02366923
West Midlands - 03600574

Registered in
England and Wales

Registered Office:
Avonbank
Feeder Road
Bristol
BS2 0TB

Contact Us

Emergency or Power Supply issues
In an emergency call 0800 6783 105, 24 hours a day.

Mapping Enquiries
If you have an enquiry relating to this letter or the attached map plan, please contact us using the following information:

Telephone	0121 623 9780
Email	WPDMapResponse@westernpower.co.uk

General Enquiries
If you have a general enquiry, please call us on the following telephone number:

All areas	0800 096 3080

LinesearchbeforeUdig
If you have an enquiry relating to the use of the LinesearchbeforeUdig website please contact LinesearchbeforeUdig using the following information:

Telephone	0845 437 7365
Email	enquiries@linesearchbeforeudig.co.uk
Website	www.linesearchbeforeudig.co.uk

Steps to help keep you safe

- **If you are working within 10 metres of our 33kV, 66kV, 132kV underground electricity cables or within 10 metres of an overhead electricity line you should call the relevant General Enquiries for free safety advice.**

  Safety Documents – please download our informative safety documents to help ensure that you, your staff and the public are kept safe whilst working in the vicinity of electricity.
  http://www.westernpower.co.uk/Health-and-Safety/Public-Safety

- **Make sure you have up to date plans** - remember that recent additions to our network or service connections between the main cable and a building or street lamp may not be shown.

- **Look for signs of service cables -** an electricity meter box or nearby streetlamp may give you an indication that service cables are present in your area of work.

- **Non WPD Network -** electricity cables, lines and equipment owned by others may also be present in addition to WPD network. They are unlikely to be shown on our plans.

- **Use a cable locator** - trace electricity cables and mark the position of them using paint or other waterproof marking on the ground.

- **Hand dig trial holes** - to confirm the position of cables in close proximity to your area of your work and use spades and shovels rather than picks, pins or forks.

- **Have an emergency plan** - so that everyone working on site understands what to do in the event of an underground electricity cable being damaged or contact being made with an overhead electricity line.

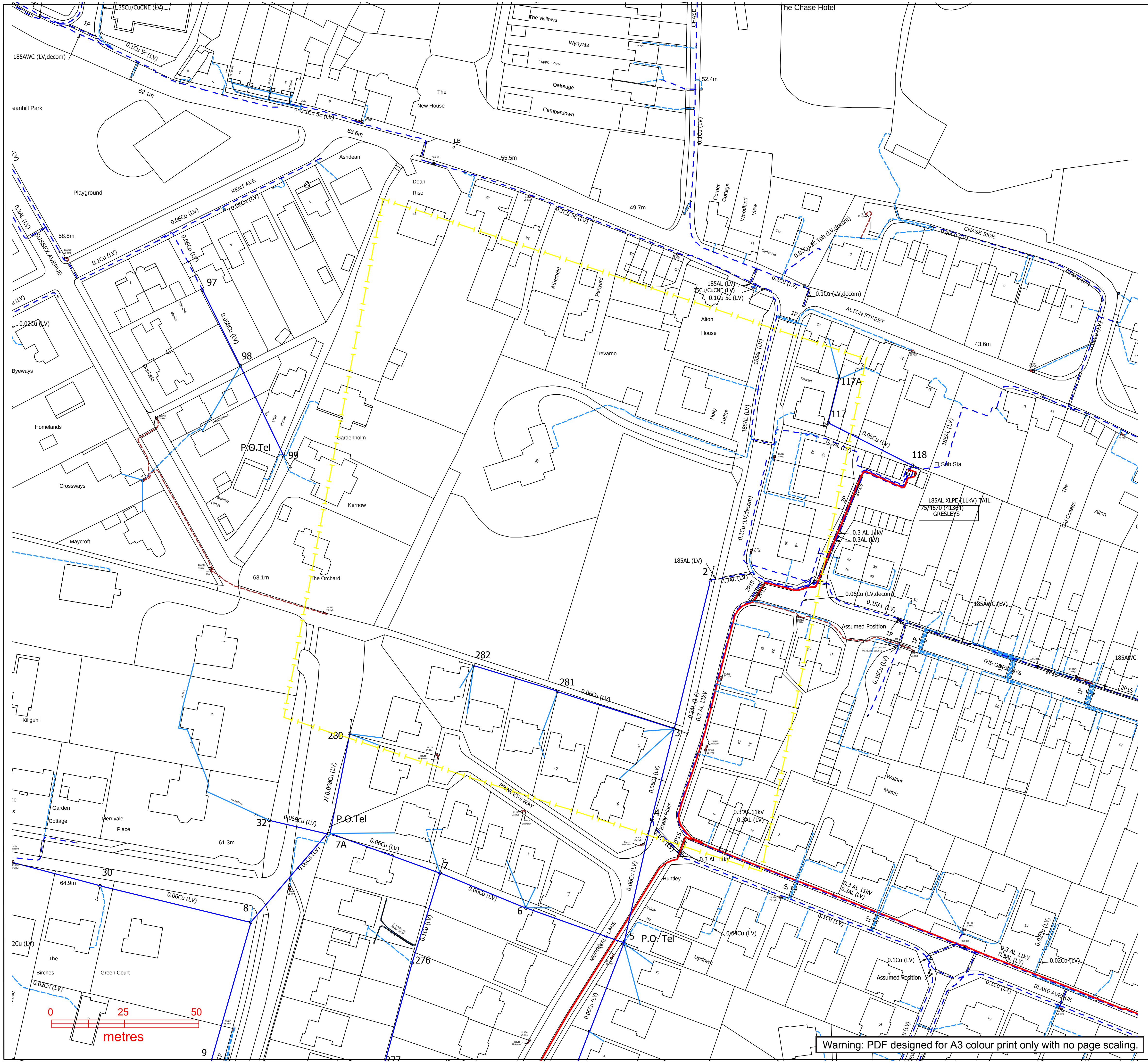
- **If you are working within 10 metres** of an overhead electricity line then it may be necessary for you to erect warning signs and markers, or height restriction goal posts. Ensure that you comply with the requirements of Health & Safety Executive guidance laid down in GS6, Avoidance of Danger from Overhead Electric Lines.

- **If you are erecting a structure** that could allow anyone standing on it, or its access device (ladder, scaffold, MEWP), to come within 3m of any overhead electric line then **you must inform us**. This is your duty and a legal requirement under the Electricity Safety, Quality & Continuity Regulations 2002.

- **If you cannot work safely** around the underground electricity cable or overhead electricity line, then you may need to get it moved to allow your works to go ahead. Call the general enquiry numbers above for guidance.

- **It is possible that cables or pipes may be embedded in concrete** - electricity cables embedded in concrete MUST be made 'dead' by Western Power Distribution or the cable owner before the concrete is broken out. Alternatively, another safe way of working should be agreed.

Cables are sometimes covered by tiles or a marker tape - these can be concrete, polythene or earthenware and are a useful early warning of the presence of cables; you should avoid disturbing any tiles or tape to expose the cable. Not all cables have these warning indicators.



WESTERN POWER DISTRIBUTION

Serving the Midlands, South West and Wales

Contact Us

Mapping Enquiries:		**General Enquiries:**	
All areas	0121 623 9780	All areas	0800 096 3080

Report damage immediately – KEEP EVERYONE AWAY FROM THE AREA
0800 6783 105

Date Requested: 17/09/2018
Job Reference: 13746132
Site Location: 360127 223711
Requested by: Mr Stephen Sawyer
Your Scheme/Reference: GRS05259
Exact Scales:
1:1250 Area or Circle dig site
1:500 Line dig site

IMPORTANT NOTICES

- This information is given as a guide only and its accuracy cannot be guaranteed. Services or recent additions to the network may not be shown.
- Cables, overhead lines & substations owned by other electricity network owners or private companies may be present and may not be shown.
- You should always verify exact locations of cables using a cable locator and by careful use of hand tools in accordance with HSE guidance note HSG47.
- When working within 10m of any overhead electric line you should follow the requirements of HSE Guidance Note GS6.
- For further advice on working near our electricity cables or lines, call our Contact Centre on 0800 096 3080.
- Advice should be sought from the Western Power Distribution Contact Centre for any work that is to take place in proximity to 66kV or 132kV underground cables and 66kV 132kV overhead lines – 0800 096 3080

Overhead Line | **Underground Cable**

PL
Service
LV
HV (11kV)
HV (33kV)
HV (66kV)
HV (132kV)

SURF Telecoms | **Pilot Cables**

Link Box

PME Earth

Pole Mounted Transformer

Site Location Line/Area

Underground Earth

Ground Mounted Transformer

Avoidance of Danger from Electricity Overhead Lines and Underground Cables

WESTERN POWER DISTRIBUTION
Serving the Midlands, South West and Wales

Avoidance of Danger from Electricity Overhead Lines and Underground Cables

Introduction

In the UK on average, 20 people are killed and 400 people are injured as a result of coming into contact (or close proximity) with electricity overhead lines and underground cables.

Although electric shock is the first thing that people associate with coming into contact with our network, those who have witnessed the effects of damage to our system are shocked by the amounts of heat, light and noise that are the result of an electrical flashover.

In the Midlands, South West and South Wales, Western Power Distribution (WPD) have had to attend to incidents where people have accidentally made contact with one of our live electricity overhead lines or damaged an underground cable and become seriously injured.

A significant number of these accidents occurred whilst people were working in the vicinity of overhead and underground electrical apparatus and this booklet has been produced to provide general guidance on how you and your employees can avoid becoming one of these statistics.

Our Operational Area

PLANNING YOUR WORK.

It makes sense to consider your safety while in the vicinity of our equipment as early in your planning process as possible.

One of the first things you should do whenever you are planning your work is to check whether there is any of our equipment in the immediate vicinity. You should do this whether your work is taking place on public (e.g. highways and footpaths) or on private land.

For instance, take a good look around your site to see if there are any visible overhead lines. You should also bear in mind that we have a very extensive network of underground cables, and we are always happy to supply a plan from our Map Response Team who can be contacted via the following;

Tel: 0121 623 9780
Fax: 0121 623 9223

WPDMapResponse@westernpower.co.uk

An online mapping service is available at
www.westernpower.co.uk/locationplans

It is always safer to assume that there are underground cables present in the ground until you have proven otherwise.

WORKING IN THE VICINITY OF UNDERGROUND CABLES

Having obtained copies of our network maps, it is important to recognise that in most cases there will be no surface indication of the presence of our underground cables. We therefore advise that you take the following actions:

- Make sure that you have up-to-date copies of our cable record plans ON SITE - not back in the office.
- Don’t assume that these plans are to scale if they have been faxed or copied.
- Make sure that a competent person using a Cable Avoidance Tool (CAT) locates all of the cables shown on these plans.
- Mark the locations of cables on the ground surface with waterproof road paint or other permanent marker.
- Always assume that our cables are live unless we have informed you, in writing, otherwise.

- By hand, dig trial holes to locate the exact position of all cables. Always use a spade or shovel – never use a pick, fork or power tool – push the spade or shovel into the ground applying foot pressure.

- Look out for ducts, marker tape or tiles but do not rely on these. Even if a cable route was originally laid in a duct or with a marker tape, these may have been removed during other excavations at a later date along all or part of the cable route.
- Brief all people working in the vicinity of the presence and location of all underground cables.

UNDER NO CIRCUMSTANCES SHOULD YOU ATTEMPT TO WORK ON, OR INTERFERE WITH, ANY OF OUR UNDERGROUND CABLES.

The only people qualified to work on this equipment are our operatives; who have been specifically trained and are authorised in writing to do so.

Please also be aware that:

- Cable record plans are not guaranteed to be completely accurate. Kerb lines, roads and buildings may have been moved or altered since the cables were laid.
- Cables should ordinarily be at least 450mm deep but don't assume this to be the case where you are working – ground levels could have changed.
- Not all service cables are shown on record plans, so look for cables running down poles and bear in mind that all buildings, street lights and street furniture are likely to have cables running to them. Cables feeding street furniture may be relatively shallow near to the furniture.
- Cables do not run in straight lines. They often "snake" through the ground avoiding surface and buried obstacles that may not be visible to you.
- Cables are flexible and can change direction and depth abruptly – for this reason never use mechanical excavators within 0.5m of any underground electricity cable even if you have located it with trial holes.

- **No attempt should be made to break out concrete surrounding a cable. Please contact us immediately on our general enquiries number and we will discuss the options for safe working which may include making the cable dead or you moving your work site if possible. If we need to make the cable dead we may need to provide our customers with two weeks notice of the power interruption.**
- Our cables and joints are not designed to act as steps or to be left unsupported. If you remove support from any cable, you will need to support it using temporary hangers at not more than 0.5m intervals.
- When backfilling, please consolidate the ground under the cables, cover the cable with soil free of stones or with stone dust and replace any cable marker tiles, ducts and tape.

IF YOU DAMAGE AN UNDERGROUND CABLE

you must immediately clear the area of personnel, because the cable could still be live, or become live again.

If a machine is still in contact with the cable, instruct the driver to JUMP clear. Do not touch any part of the machine.

Please contact us on our emergency number immediately and tell us what has happened. Please be ready to provide us with a contact telephone number and an accurate location or set of directions – this will help us in getting our staff to site quickly to minimise any danger and lessen the disruption to your work.

Please report any damage to a cable, however superficial it might seem. The cable may not fail at the time of damage, but it could fail later, causing danger to our staff and other contractors, disruption to our customers' supplies, and also – if we trace the damage back to you – a very much larger repair bill.

WORKING IN THE VICINITY OF OVERHEAD LINES

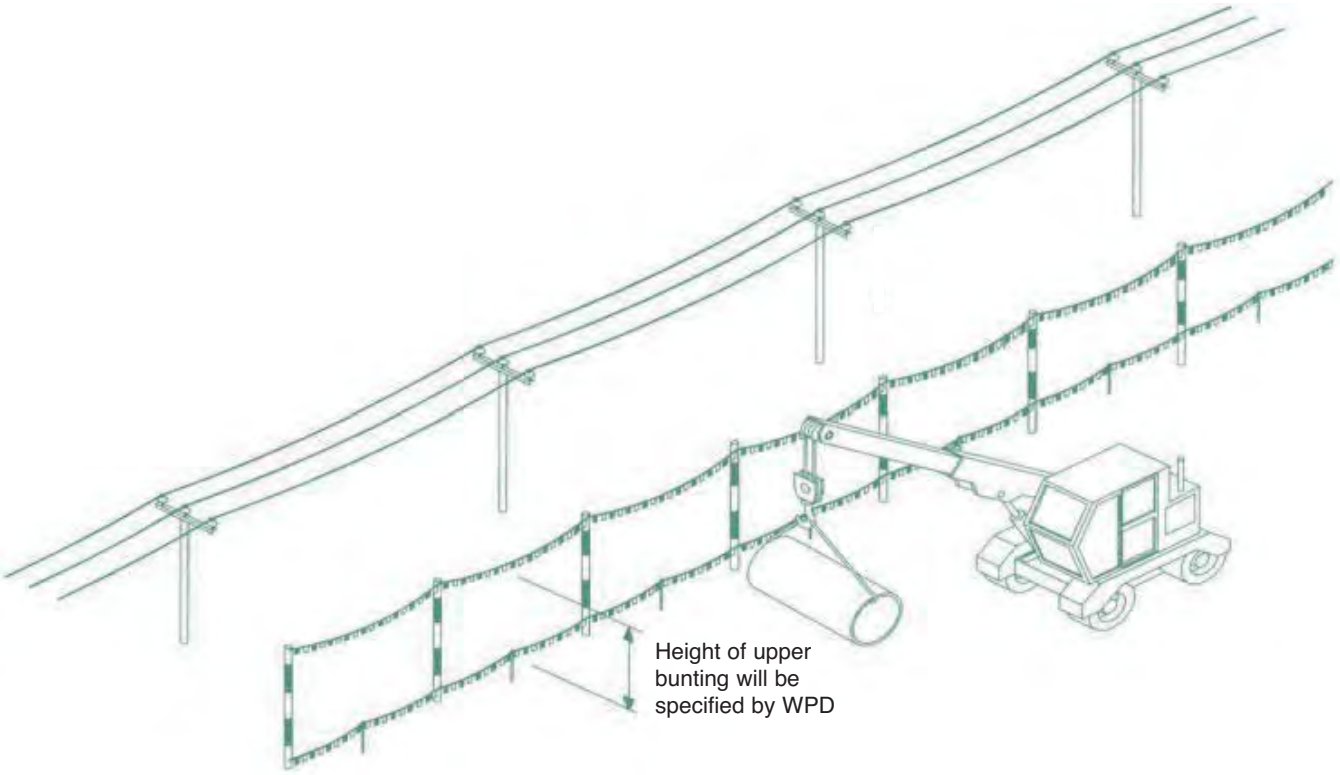
UNDER NO CIRCUMSTANCES SHOULD YOU ATTEMPT TO WORK ON, OR INTERFERE WITH ANY OF OUR OVERHEAD LINE EQUIPMENT OR SERVICE WIRES.

The only people qualified to work on this equipment are our operatives; who have been specifically trained and are authorised in writing to do so.

Overhead lines have the advantage that, unlike underground cables, they can easily be seen.

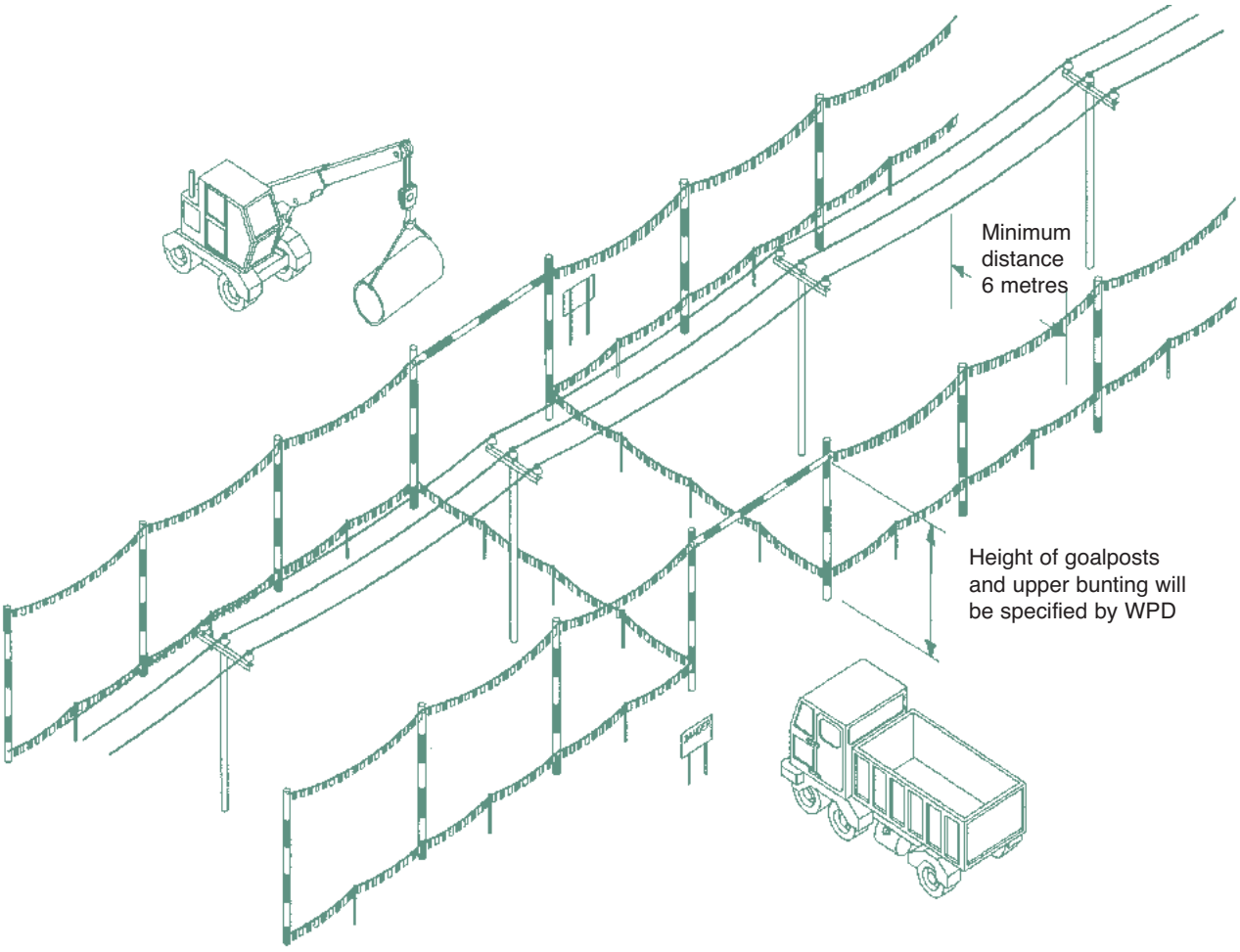
- Always assume that our overhead lines are live unless we have informed you otherwise in writing.
- We will be able to advise you about the type and voltage of the overhead lines in question and provide you with information about the clearances that you must adhere to during your work. Please ring our regional general enquiries number for further advice.
- If you are in any doubt about whether the overhead lines in question are power or telephone (this is a very common mistake) – please ask us.
- In some circumstances, we may be able to temporarily shroud low voltage overhead lines and services running to buildings if you need to work in the vicinity e.g. for scaffolding erection, fascia repairs and painting work on domestic properties. We don't normally charge for the shrouding of overhead lines, but please give us as much notice as possible.
- If you think that you will be working close to our overhead lines and they need shrouding – please don't start work until we have agreed what needs to be done and all safety precautions are in place.
- Please note that it is not technically possible to shroud high voltage lines, so if you cannot avoid working near to our high voltage lines, contact us and we will be happy to meet with you to discuss safe alternatives.

- If it is decided that work can go ahead in the vicinity of our overhead lines but there is a risk of you infringing the safety clearances from the overhead lines, you have a responsibility to erect safety barriers to segregate your works from the area around the overhead lines. The detailed requirements for these barriers are provided in the HSE document GS6 ‘Avoidance of Danger from Overhead Lines’. As a summary they should consist of:
  - Red and white coloured posts erected at 6m intervals, with coloured bunting stretched between their tops, supplemented by low level bunting erected at 1m above ground level, supported at 3m intervals on red and white coloured posts. This is shown below.



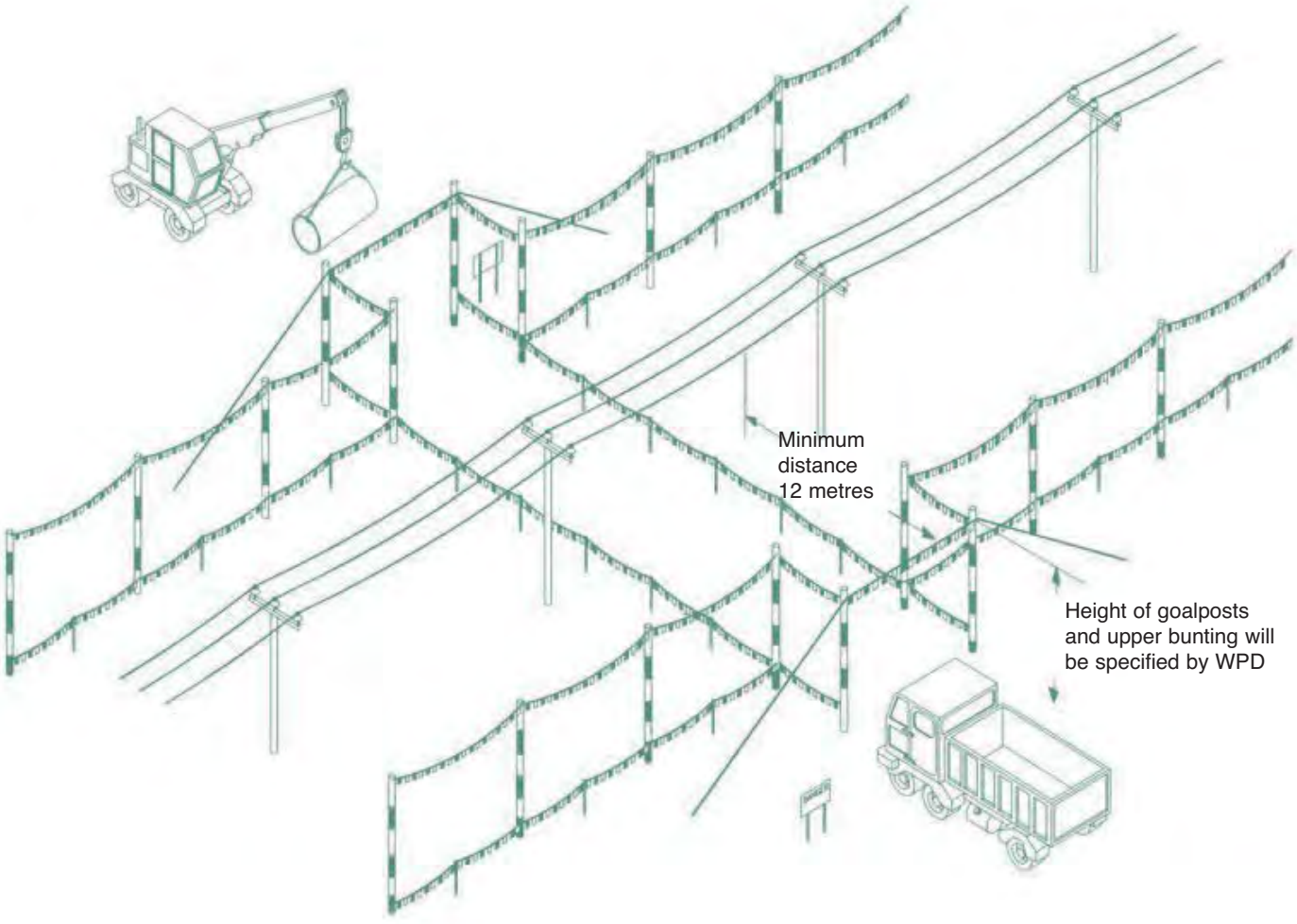
  - We are able to advise you on the height of the barriers and any additional clearances necessary if you are using large plant on your site.
  - Any bunting, ropes and lanyards used should be made from an insulating material.
  - These barriers should be erected parallel to the overhead line at a minimum distance of 6m horizontally from the outermost conductor of the overhead line.

- The supports may be supported by rubble or concrete filled barrels or buried directly in the ground.
- Danger Notices should be fixed to all of your high level supports.
- The ground enclosed within these barriers is best regarded as “dead ground” in which all foot and vehicular traffic is forbidden, in all circumstances, for the duration of your work.
- Where it is necessary for foot and vehicular traffic to pass under the line, you will need to form a marked access way between the barriers as shown below.



- This access way should comprise of bunting erected 1m above ground, supplemented by high level “goal-posts” erected at either end.
- The goal post cross bars should be rigid, made of insulating material and positioned in a location and at a height specified by us.

- The access route should be as narrow as possible and should not normally exceed 10m in width.
- If it is necessary to make the access route wider than this, you may find it impractical to use rigid cross bars, so you may use a tensioned rope and bunting instead. If you use rope and bunting as a cross bar, you should move the entrance to the access route out to a minimum distance of 12m from the outermost conductor of the line. This is to allow for any stretching of the rope if pulled by your plant.



- If you decide to use steel wire rope to support the barrier, this must be effectively connected to earth at both ends.
- You should also install Danger Notices at all probable directions of approach and clearly display the cross bar height.
- If you are working at night, or in conditions or poor visibility, you should ensure the area is well lit and that the overhead lines are clearly visible.
- Whatever measures you take, you should ensure that everyone working in the vicinity of overhead lines is briefed about the risks and what safety measures are in place. Do not permit anyone to carry long objects, especially scaffold poles, ladders and irrigation pipes in the vicinity of overhead lines.
- You should ensure that all shrouding, barriers and signs are regularly inspected and maintained so that they remain effective.
- Overhead lines are not normally insulated and electricity at high voltages may jump, so a dangerous situation can arise just from a close approach.
- Cranes and excavators working near overhead lines are at increased risk because of the possibility of the jib/arm slewing or being raised into the overhead line, or the load swinging into the overhead line. You may therefore also need to fit plant and vehicles with restricting chains etc. to physically restrain their operation – we can advise on this if you wish.
- If you are planning to carry out tree cutting or arboriculture work in the vicinity of our overhead lines, you need to be aware that this is a complex, high risk activity and we recommend that you employ a competent tree surgeon, who complies with all of the requirements of Forestry industry Safety Accord (FISA) publication FISA 804 - Electricity at work: Forestry.

If contact is made with an overhead line

you must immediately clear the area and suspend all work within 50m of the damage because the line could still be live, or become live again.

The operator of a machine that is in contact with an overhead line should:

- **if the machine is still operable and the operator is still in the cab:**

  provided that you do not risk breaking the overhead line or dragging it to the ground, immediately lower the raised parts of the machine USING ONLY THE CONTROLS IN THE CAB and/or drive the vehicle clear of the overhead line.

  contact us immediately on our emergency number so that we can check the overhead lines.

  instruct other people in the vicinity not to approach the vehicle.

- **if the machine is not operable, cannot be driven clear of the overhead line or there is a risk that doing so will break the line or drag it to the ground:**

  stay in the cab.

  contact your site manager or us immediately on our emergency number by radio or mobile phone or as soon as possible by any other method.

  instruct everyone outside the vehicle not to approach it.

  do not exit the cab until given confirmation BY WPD PERSONNEL that it is safe to do so.

- **if the machine is inoperable or cannot be driven free and there is risk of fire or other immediate hazard:**

  JUMP clear of the vehicle, avoiding simultaneous contact with any part of the machine and the ground.

  try to land with your feet as close together as possible.

  where possible, continue to move away from the vehicle using “bunny hops” with your feet together until at least 15m from the vehicle.

  instruct other people in the vicinity not to approach the vehicle.

  contact us immediately on our emergency number.

  do not return to the vehicle until given confirmation by WPD PERSONNEL that it is safe to do so.

Whatever the circumstances please contact us on our emergency number immediately and tell us what has happened. Please be ready to provide us with a contact telephone number and an accurate location or set of directions – this will help us in getting our staff to site quickly to minimise any danger and lessen any disruption to your work.

Please report any damage or contact no matter how minor they may seem to you at the time. The damage may not cause a serious problem at the time of damage, but it could fail later, causing danger to our staff and members of the public, disruption to our customers' supplies, and – if we trace the damage back to you – a large repair bill.

MORE INFORMATION

For your information, we are legally obliged to report all contact with our system to the Health & Safety Executive (HSE), and, if you are an employer, you may be obliged to report incidents involving your staff or contractors to the HSE. Even if no one is hurt, you could be prosecuted for failing to report such an incident.

More detailed general information on this subject is available in the following publications from the HSE:

HSG(47) – Avoiding Danger from Underground Services

GS6 – Avoidance of Danger from Overhead Lines

Along with Forestry Industry Safety Accord (FISA) publication FISA 804 – Electricity at Work: Forestry

If you require more site-specific information relating to our equipment at your location please contact us on our regional general enquiries numbers.

Our general enquiries numbers are;

Midlands General Enquiries	0845 724 0240
South Wales General Enquiries	0845 601 3341
South West General Enquiries	0845 601 2989

FINALLY…

Please, always remember that electricity cables and overhead lines can be very dangerous – the general rule is STAY AWAY and stay safe.

NOTES

WESTERN POWER DISTRIBUTION

Serving the Midlands, South West and Wales

This booklet is issued by the Safety Team

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Our emergency number is:
0800 6783 105

Calling from a mobile?
East Midlands
0330 123 5009
West Midlands
0330 123 5008
South Wales
0330 123 5002
South West
0330 123 5001

LOOK OUT-

LOOK UP!

A Guide to the Safe Use of Mechanical Plant in the Vicinity of Electricity Overhead Lines

WESTERN POWER DISTRIBUTION
Serving the Midlands, South West and Wales

The Safe Use of Mechanical Plant in the Vicinity of Electricity Overhead Lines

Introduction

Every year in the UK on average, two people are killed and many more are injured when mechanical plant and machinery comes into contact or close proximity to overhead electricity lines.

This booklet has been produced for anyone who uses mobile plant, (such as Hiabs, MEWPs, Tipper Lorries and Trailers, Grab Lorries, Concrete Conveyors and Excavators) for short duration work and provides general guidance on how to avoid becoming part of these statistics.

1 BEFORE STARTING WORK

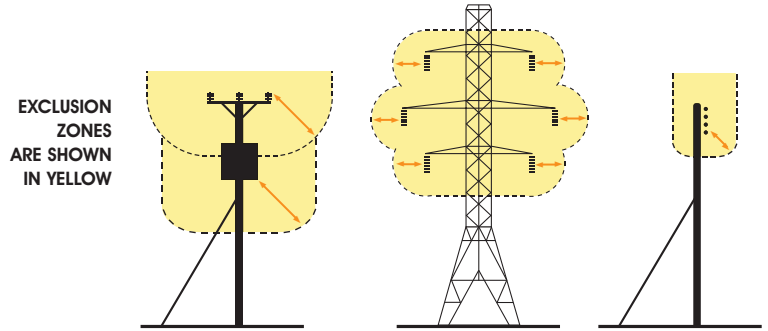
- Overhead lines have the advantage that they can easily be seen, so before you set up your vehicle or plant always:

STOP AND LOOK UP!

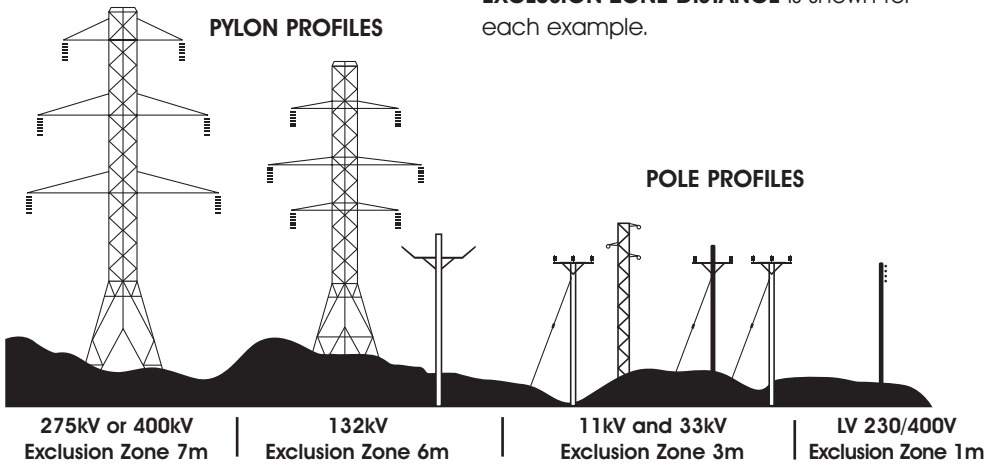
- If you are working at night, or in conditions of poor visibility, you should use spotlights or a torch to carefully check that there are no overhead lines within your vehicle's reach.
- Always assume that our lines are live unless we have informed you otherwise in writing.
- If you are in any doubt about whether the lines in question are power or telephone (this is a very common mistake) – always assume that they are power lines and are live.
- It is not normally practical for electricity companies to shroud high voltage conductors and even when low voltage conductors are shrouded, the shrouding is not designed to protect against contact by mechanical plant – again, always assume the lines are live.

2 EXCLUSION ZONES

- Overhead power lines are not normally insulated and so any contact can result in serious or fatal injuries.
- Electricity at high voltages can also jump gaps with no warning whatsoever, so it is also dangerous to let your plant approach too close to a line.
- The distance that electricity can jump depends on the voltage of the line. The higher the voltage, the further you must stay away from the line and any other equipment that may be fitted to the pole or pylon. This distance is called the **EXCLUSION ZONE.** Examples of this are shown highlighted in the diagram below.



- You must not allow any part of your plant to enter the **EXCLUSION ZONE.**
- The diagram below shows typical types of overhead lines and provides a guide to help you assess the line voltage of lines on wooden poles or steel pylons. The minimum **EXCLUSION ZONE DISTANCE** is shown for each example.

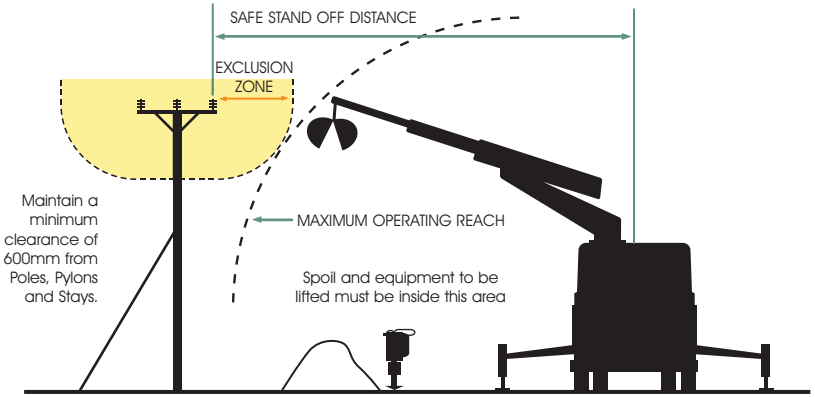


- Please note that these are absolute minimum distances that should under no circumstances be infringed. ***If you do – it could prove fatal.***

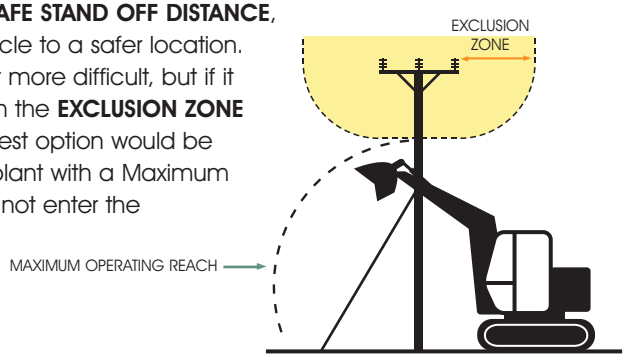
- As well as staying away from the lines or equipment, you should also stay at least 600mm away from any part of poles, pylons and stay wires.
- Please remember that is for guidance only, and if you are in any doubt, please call us for advice before setting up your plant or starting work.

3 STAND OFF DISTANCES

- If there are power lines in the vicinity of your work the best way to make sure you stay out of the **EXCLUSION ZONE** is to position your vehicle at a **SAFE STAND OFF DISTANCE** so that, even when fully extended, no part of it can accidentally reach inside the **EXCLUSION ZONE**.
- This **SAFE STAND OFF DISTANCE** can be calculated by adding the **EXCLUSION ZONE** distance for the appropriate voltage of the line to the Maximum Operating Reach of your vehicle. This is shown in the diagram below.

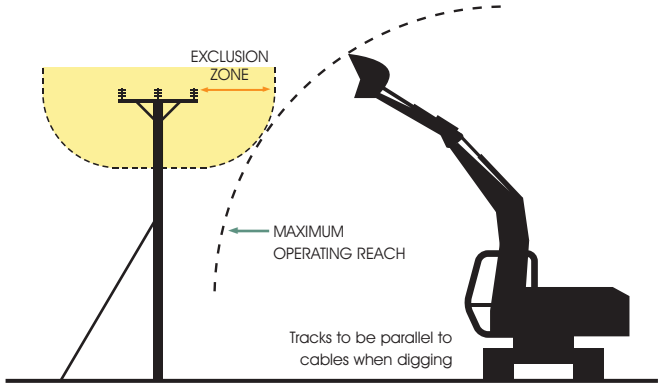


- If you position your vehicle outside of the **SAFE STAND OFF DISTANCE**, there is no risk of accidental contact with the lines and no danger of electricity jumping from the line to your vehicle.
- If you cannot achieve a **SAFE STAND OFF DISTANCE**, consider moving your vehicle to a safer location. It may make your job a bit more difficult, but if it means you stay away from the **EXCLUSION ZONE** - it will be safer. The next best option would be to consider using smaller plant with a Maximum Operating Reach that cannot enter the **EXCLUSION ZONE**.



- You may not be able to achieve either of these options, so, as a last resort, if you cannot avoid operating large items of plant in the vicinity of lines, you **MUST** make sure that the plant is fitted with restraints to ensure that the **EXCLUSION ZONE** cannot be entered. These restraints may be electrical or hydraulic systems fitted to the plant, or mechanical devices such as chains.

  Please seek advice from the plant manufacturer for more information on choices available for your particular item of plant.
- If you are using a mechanical excavator to dig parallel to the line, it is good practice to position the excavator with the tracks or wheels parallel to the line, so as you move along the excavation the **SAFE STAND OFF DISTANCE** is easily maintained.



- Care must also be taken to avoid non-mechanical equipment, (e.g. scaffold poles, ladders and long loads such as lengths of steel or timber) from entering the **EXCLUSION ZONE**.
- Always maintain at least 600mm clearance from your plant to any of our poles, stay wires or pylons. Any contact with these by your plant could cause the line to break and fall to the ground.

4 EMERGENCY PROCEDURES

If contact is made with an overhead line, you must immediately clear the area and suspend all work within 50m of the damage because the line could still be live, or become live again.

The operator of a machine that is in contact with an overhead line should take the following steps:

- **If the machine is still operable:**
  - lower any raised parts that are controlled from the driving position and/or drive the vehicle clear of the line, as long as neither of these actions risk breaking the line or dragging it to the ground.

- **If the machine is not operable or cannot be driven clear of the line:**
  - stay in the cab.
  - contact your site manager or us immediately by radio or mobile phone or as soon as possible by any other method.
  - instruct everyone outside the vehicle not to approach it.
  - do not exit the cab until given confirmation BY WPD PERSONNEL that it is safe to do so.

- **If the machine is inoperable or cannot be driven free and there is risk of fire or other immediate hazard:**
  - jump clear of the vehicle, avoiding simultaneous contact with any part of the machine and the ground.
  - try to land with your feet as close together as possible.
  - where possible, continue to move away from the vehicle using "bunny hops" with your feet together until at least 15m from the vehicle.
  - instruct other people in the vicinity not to approach the vehicle.
  - do not return to the vehicle until given confirmation BY WPD PERSONNEL that it is safe to do so.

Whatever the circumstances please contact us on our emergency number immediately and tell us what has happened.

Please be ready to provide us with a contact telephone number and an accurate location or set of directions – this will help us in getting our staff to site quickly to minimise any danger and to reduce any disruption to your work.

Our emergency number is:

105 or 0800 6783 105

Please report any damage or contact no matter how minor they may seem to you at the time. Whilst the damage may not cause a serious problem at the time of contact it could fail later, causing danger to our staff and members of the public, disruption to our customer's supplies, and – if we trace the damage back to you – a larger repair bill!

5 MORE INFORMATION

- Proximity Warning Systems (such as Wire Watcher – see *wirewatcher.co.uk* for information) may be fitted to your vehicle. Never turn these devices off or disable them in any way.
- Take note of any warnings these proximity warning systems may provide but do not use the presence of such devices as a reason not to follow the advice provided in this leaflet.
- For your information, we are legally obliged to report all contact with our system to the Department of Trade and Industry (DTI), and, if you are an employer, you may be obliged to report incidents involving your staff or contractors to the Health & Safety Executive (HSE). Even if no one is hurt, you could still find yourself being prosecuted for causing a dangerous occurrence.

6 FURTHER READING

For advice related to signing and guarding at longer term work sites please also refer to WPD booklet "Avoidance of Danger from Electricity Overhead Lines and Underground Cables"

More detailed information is also published in the following documents available from the HSE.

GS6 – Avoidance of Danger from Overhead Lines.

HS(G) 47 – Avoiding Danger from Underground Services.

Along with Forestry Industry Safety Accord (FISA) publication **FISA 804 - Electricty at Work: Forestry.**

If you require more site-specific information relating to our equipment at your location please contact us on the relevant **GENERAL ENQUIRIES NUMBER**:

0800 096 3080

FINALLY.... Please, always remember that electricity overhead lines can be very dangerous **– the general rule is *STAY AWAY and STAY SAFE!***

For the Safe Use of Mechanical Plant in the Vicinity of Electricity Overhead Lines ALWAYS FOLLOW THESE SIMPLE RULES – THEY COULD SAVE YOUR LIFE!

- **Treat all overhead lines as live and dangerous**
- **Any contact may be fatal or cause very serious injuries**
- **Electricity can jump gaps**
- **Before you set up or use plant near to lines – STOP and LOOK UP**
- **Take special care and use lights in the dark or poor light conditions**
- **If there are lines in the vicinity of your work – stay well away**
- **Set up your plant with care to reduce the chance of contact**
- **If you are unsure or need advice**

  - please ask us before starting work

Our emergency number is: 105 or 0800 6783 105

You can also call 105 if you spot damage to electricity power lines, poles and substations which could put you or someone else in danger.

If there's a serious immediate risk, you should also call the emergency services.

This booklet is issued by the Safety Team: wpdsafetyhelpline@westernpower.co.uk

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