



**NETWORK RAIL – WATER UK – ENVIRONMENT AGENCY -
NATURAL RESOURCES BODY FOR WALES**

PESTICIDE AGREEMENT

**Protection of Vulnerable Groundwater and Surface Waters from Pesticide
Application by Network Rail**

Approved by

Date *30 Aug 2016* Network Rail

Approved by

Date

Water UK

Approved by Toby Willison

Date 22 Aug 2016 Environment Agency

Approved by

Date

Natural Resources Body for
Wales



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Date 08/09/2016

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Abbreviations

| | |
|-----------------|--|
| DrWPA | Drinking Water Protected Area (term used in relation to areas requiring drinking water protection) |
| EA | Environment Agency |
| NR | Network Rail |
| NRW | Natural Resources Body for Wales |
| PPP | Plant Protection Product |
| SgZ | Safeguard Zone (terminology used in relation to drinking water protection) |
| SPZ | Source Protection Zone (EA terminology used in relation to groundwater protection) |
| SU Regulations | Plant Protection Products (Sustainable Use) Regulations 2012 |
| WFD Regulations | Water Environment (Water Framework Directive) Regulations 2003 |
| WSPA | Water Source Protection Area |
| WUK | Water UK |

1. Introduction

Network Rail uses pesticides on its estate to manage vegetation in order to help meet its obligations of providing a safe, reliable and sustainable rail infrastructure. Failure to control the growth of vegetation can lead to unacceptable health and safety risks to staff and the travelling public. The use of pesticides in this essential management activity presents a potential threat to the quality of groundwater and surface waters, particularly those that are abstracted in the vicinity of the railway and used for drinking water supply.

The Water Environment (Water Framework Directive) (England and Wales) Regulations 2003 (hereon 'WFD Regulations') require the protection of surface water and groundwater used for the supply of drinking water. Under these, England and Wales must aim to avoid deterioration so that the levels of treatment required to produce drinking water can be reduced. The Plant Protection Products (Sustainable Use) Regulations 2012 (hereon 'Sustainable Use Regulations' (SU Regulations)) identify that pesticide use should be minimised in specific areas, including those areas used for drinking water supply. In addition, in these areas appropriate risk management measures should be taken and low risk plant protection products should be considered first.

2. Purpose

This Agreement sets out how the Environment Agency, National Resources Body for Wales, Network Rail and Water UK (henceforth referred to as "the Parties") will work together to achieve the following objectives:

1. The sustainable use of pesticides on the railway as a tool to achieve a safe, reliable and sustainable railway.
2. Groundwater and surface waters protected from pesticide contamination arising from use on the railway.
3. Drinking water sources that are free from pesticide contamination arising from use on the railways.
4. Protection of the wider water environment from the use of pesticides on the railway, by ensuring storage, use and disposal of pesticides is in line with the requirements of the SU Regulations.
5. Meet the duties and requirements of the Parties.

For the purposes of this Agreement, the areas of railway land identified as requiring specific controls on the use of pesticides around vulnerable groundwater and surface waters are termed 'Water Source Protection Areas' (WSPAs).

The criteria that should be used to identify groundwater and surface water WSPAs are set out in Section 4.

This Agreement will not affect the statutory duties, regulatory responsibilities or the legal rights, responsibilities and obligations of the parties. It doesn't preclude

enforcement action by the Environment Agency or Natural Resources Body for Wales where appropriate.

3. Duties and requirements of the Parties supported by this Agreement

3.1 Network Rail (NR)

NR has a requirement to provide a network that allows its customers the Train Operating Companies and Freight Operating Companies to run a safe, reliable and punctual service. NR also has a responsibility to its neighbours and a general obligation of good environmental stewardship.

In accordance with best practice NR will use professionally trained and British Agrochemical Standards Inspection Scheme (BASIS) qualified advisors to ensure that:

- The problem is evaluated and that appropriate pesticide and rate of use is stipulated
- The use of pesticides in **all** areas is limited to the minimum required for efficacy
- The mode of applications is approved and appropriate.

3.2 Environment Agency (EA)

The EA is responsible for protection of the water environment and is the competent authority charged with implementing the WFD Regulations in England. The primary purpose of this pesticide agreement is to help deliver the requirements of the WFD Regulations concerning the protection of drinking water sources. Its implementation should also however contribute to the meeting the environmental objectives of the WFD Regulations relating to aquatic ecosystems.

3.3 Natural Resources Body for Wales (NRW)

NRW is the competent authority for implementing the WFD Regulations in Wales. NRW shares the same purpose as the EA for implementing this pesticide agreement.

3.4 Water UK (WUK)

WUK represents all major statutory water and wastewater service supply organisations in the UK. Water companies are required to supply wholesome and safe drinking water at the customers tap. Standards for quality of drinking water are set by national regulations based on WHO guidance and EU legislation. The Water Supply (Water Quality) Regulations set a number of standards that must be met in drinking water and include a requirement that levels of an individual pesticide in treated water shall not exceed 0.1µg/l.

3.5 Meeting the needs of all Parties

NR takes account of all national and European legislation when managing the vegetation on the railway network, including WFD Regulations and SU Regulations. The techniques used will be determined by the target species, location and overall objectives of the management regime to the extent that non-pesticide management techniques will be used. Where pesticide products are to be applied, this is done using efficient and safeguarded equipment and following industry good practice and guidance. Pesticide application equipment must receive regular inspection in meeting the objectives of the SU Regulations.

4. Identification of Vulnerable Areas – Water Source Protection Areas (WSPAs)

WSPAs are areas where water abstractions are vulnerable to contamination by pesticides and where it has been agreed a restricted range of active substances will be used on sections of the rail network. The criteria for identifying WSPAs for surface waters and groundwater are set out in sections 4.1. and 4.2 below.

In 'Extra vulnerable WSPAs' pesticides must only be used as a last resort with full agreement in writing from the EA and/or NRW and the local water companies. A local risk assessment must be carried out by a qualified professional.

4.1 Groundwater sources

WSPAs should only be identified to protect groundwater sources if any of the following circumstances apply:

- A railway line passes through any designated Source Protection Zone 1 (SPZ1)
- A railway line passes through Source Protection Zone 2 (SPZ2) of any source that has a history of atrazine or diuron contamination
- A railway line passes 'close' to a source where there is no groundwater Source Protection Zone (SPZ) yet defined where risk of contamination is known. The definition of 'close' will vary from source to source, but could be up to 2km or more depending on local aquifer characteristics. In each case a hydrogeological assessment should be carried out.
- A railway line passes close to a source where despite the existence of an SPZ that suggests the railway should not be contributing to source contamination, there may be evidence to suggest otherwise. The models used to generate SPZs do not take account of geological anomalies or man-made structures which might provide by-pass routes. In such cases railway lines passing 'close' to the source should be identified.

4.2 Surface water sources

WSPA should only be identified to protect surface water sources if any of the following circumstances apply:

- The railway line runs through a surface water Drinking Water Protected Area (DrWPA), upstream of an abstraction point, and is within 100m of the watercourse.
- Where the abstraction point lies at the top end of a DrWPA then the following guidance should be used by the water company to establish the extent of the WSPA:
 - Railway line is located upstream of the abstraction point and within 100m of the river.
 - The distance upstream that is deemed important for protection needs to be decided and will depend on a number of criteria:
 - Direct abstraction will make a water treatment works more vulnerable than one with bankside storage.
 - Tributaries entering downstream of railway spraying and upstream of abstraction may dilute any contamination.
 - The presence of Advanced Water Treatment will make a works less vulnerable and may reduce the total length of track identified in the WSPA.
 - Local topography/situation of a railway line, e.g. a track on an embankment running alongside a river is more at risk than one where the river and track are on the same level.
- The railway line runs within 100m of a raw water storage reservoir used for drinking water purposes.
- The railway line runs within 100m of the river and is located in a surface water Safeguard Zone (SgZ) associated with an 'at risk' DrWPA, where pesticides used by NR are listed in the EA SgZ Action Plan as problem substances. Water quality monitoring data within the SgZ will need to demonstrate that the particular NR pesticide is a problem in that area.
- Where the SgZ Action Plan has identified glyphosate as the problem substance the water company can request the relevant lengths of railway to be identified as 'no-spray' zones. In such areas other means of weed control may be utilised by NR on the railway track. It should be noted that such restrictions will pose operational, financial, and possibly safety, issues for NR. Consequently, any requests for no-spray zones will have to be supported by water quality monitoring data that show glyphosate to be an issue.

NB: NR policy already prohibits spraying on bridges crossing water and other sensitive locations such as viaducts and elevations.

5. Trial sites

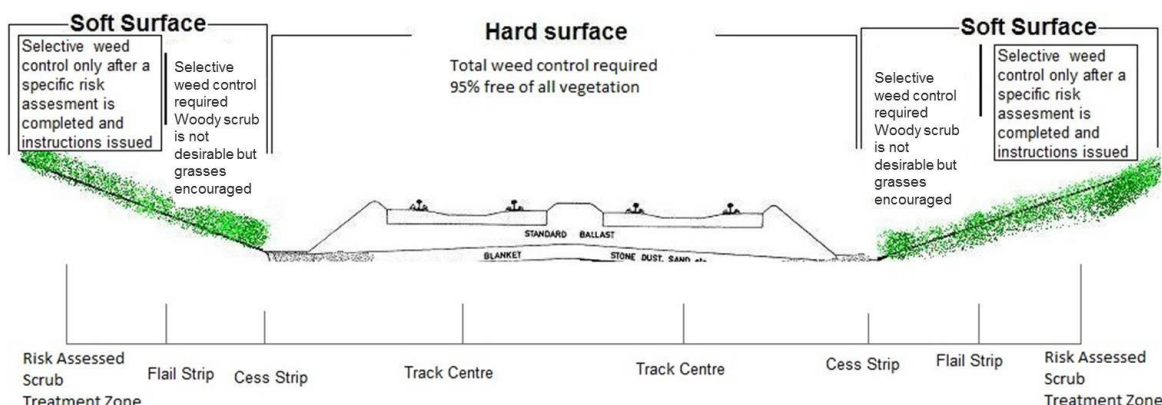
From time to time it will be necessary to carry out trials of new pesticides and application methods. Sites proposed for trials will be risk assessed and agreed by the Parties and relevant water company(s) on a site by site and hazard basis and manufacturers' application recommendations will be followed.

6. Agreed active ingredients

Appendix 1 identifies which active substances will be used across the wider rail network for weed control, and the more limited range of substances that will be used in sections of the network within WSPAs.

7. Application Methods

The method of application must be agreed by all Parties. The diagram below shows where the pesticide types may be used.



7.1 Records of pesticides applied.

NR requires that a record of all pesticide applications on the infrastructure is made and kept for reference. Three types of record are kept; (i) the task list used by rail mounted spray operators, (ii) the task sheet used by On-Track hand spray operators and (iii) the Off Track task list used by hand spray operators. When completed, these documents become a record of the application containing the application method, the pesticide used, the rate and date of application. NR will make a summary of the total mass of each active substance used in the spray season across the network and submit this to the other Parties by 30th April each year. The records will also be made available to the other title Parties on request.

8. Working Arrangements

8.1 Annual Review of WSPAs

Annually the Parties will review the list of protected sources produced the previous year using the following arrangements.

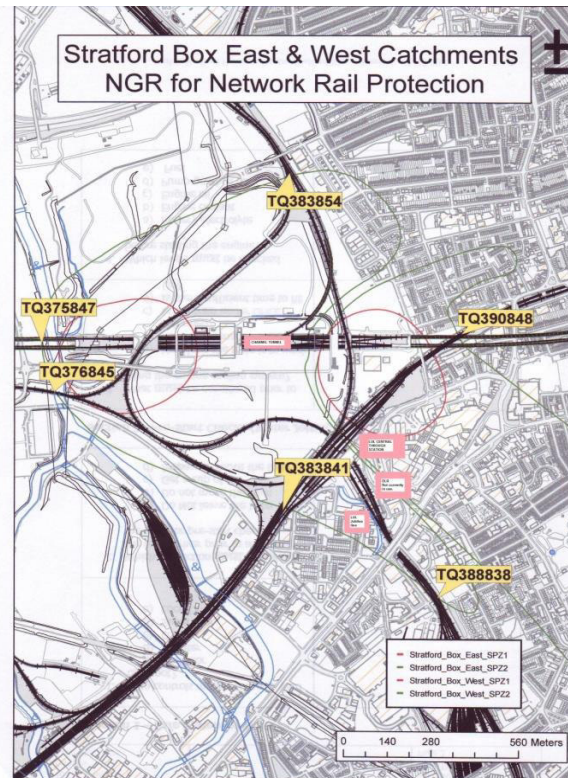
- The EA will write to Named contact within each Water Company based wholly or mainly in England and NRW will write to Named contact within each Water Company based wholly or mainly in Wales in (or before) May each year seeking confirmation of the area that Water Companies wish to identify in line with the criteria set down in section 4. To facilitate this process relevant Water Companies will update the EA and NRW of any change in their contacts for the Agreement

- Water Companies will, upon receipt of the request, review and, if required, amend their existing list of WSPAs taking into account;
 - Any track length that no longer requires specific protection under this agreement, e.g. due to source closure
 - Any new track length that requires specific protection under this agreement, e.g. due to the commissioning of new sources
 - New information on source vulnerability
 - Any new PPP or application methods used.
- The list of identified sites should be compiled into the following format (shown year with some examples).

| Site | Water Company | Former EA Region/ EA Area | Ground/ Surface Water | Restriction NGR | Restriction NGR | Estimated Route Length (km) |
|------------------|---------------|---------------------------|-----------------------|-----------------|-----------------|-----------------------------|
| Bexley | TWUL | Thames | GW | TQ 51200 74500 | TQ 46300 72700 | 5.1 |
| River Lee, Luton | TWUL | Thames | SW | TL 12300 18200 | TL 13400 16000 | 2.4 |

| Site | Water Company | NRW Ops area | Ground/ Surface Water | Restriction NGR | Restriction NGR | Estimated Route Length (km) |
|------------|---------------|----------------|-----------------------|-----------------|-----------------|-----------------------------|
| River Lugg | DCWW | Mid | SW | SO 18100 71900 | SO 21000 72100 | 3 |
| E.Cled dau | DCWW | South West Ops | SW | SN 10000 19600 | SN 01500 20900 | 8.9 |

- New or amended items should be highlighted in blue text. Items to be removed should be highlighted in red text for one issue only.
- The above information should be submitted with associated maps for new or amended areas, indicating the SPZ for groundwater or SgZ / DrWPA the drinking water source and the estimated **length of** railway (see diagram below) to the EA's nominated contact and NRW's Water Quality Planning Team by 15th June each year. The return should also be marked as OFFICIAL.



Example map showing SPZs, railways and OS grid references

- On receipt of all the Water Companies' data the EA will produce a master spreadsheet of all WSPAs for England and Wales for submission to NR no later than 1st August each year.
- Individual WSPAs can be reviewed at any time through the year on a case-by-case basis through liaison with NR, the local water company and the local EA office or NRW Water Planning team. Typical examples might be where a water company identifies an 'extra vulnerable area' where even the use of glyphosate has to be prohibited, e.g. where the water source runs directly underneath the railway track.
- Where NR experience a specific weed problem within a WSPA that requires targeted treatment using a pesticide not generally allowed, they may apply for special dispensation to make a one-off pesticide application.
- Weedspray restrictions for private railways will be agreed locally between the EA, NRW, the relevant Water Company(ies) and the railway owner using this agreement as a template.

Domestic legislation implementing Directives 2009/147/EC on the conservation of wild birds (the 'Birds Directive') and 92/43/EEC on the conservation of natural habitats and of wild fauna and flora (the 'Habitats Directive'), will be taken into account when identifying or planning WSPAs.

8.2 Annual review arrangements

The Parties shall review the content of this Agreement annually

8.3 Update of Agreement

Following annual review, or on request from any of the Parties at any time, the Agreement may only be amended by the title Parties. Proposed changes and amendments shall be ratified by consensus and then signed off. Only then can it be distributed at the wider level.

8.4 Document Issues

All documentation which is to be distributed to non-title Parties must be ratified and signed off before general distribution.

9. Future developments

NR will ensure that application equipment used is tested according to 2009/128/EC by National Sprayer Testing Scheme (NSTS) qualified testers.

NR will continue to develop techniques and equipment for targeting the use of pesticides and reducing quantities applied, including weed recognition control systems. WUK and the EA and NRW will support this work where requested and if resources permit.

NR will continue to investigate and develop alternatives to pesticides, for example hot foam and infrared treatment.

10. References

- Water Environment (Water Framework Directive) (England and Wales) Regulations 2003 (S.I. 2003/3242)
http://www.legislation.gov.uk/ukxi/2003/3242/pdfs/ukxi_20033242_en.pdf,
as amended by the Water Environment (Water Framework Directive)(England and Wales) (Amendment) Regulations 2015 (S.I. 2015/1623)
http://www.legislation.gov.uk/ukxi/2015/1623/pdfs/ukxi_20151623_en.pdf,
implementing Water Framework Directive (2000/60/EC)
http://ec.europa.eu/environment/water/water-framework/index_en.html
- The Plant Protection Products (Sustainable Use) Regulations 2012 (S.I. 2012/1657)
http://www.legislation.gov.uk/ukxi/2012/1657/pdfs/ukxi_20121657_en.pdf
implementing the Sustainable Use Directive (2009/128/EC) <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2009:309:0071:0086:EN:PDF>

- Water Supply (Water Quality) Regulations 2016 (S.I. 2016/614) http://www.legislation.gov.uk/ukxi/2016/614/pdfs/ukxi_20160614_en.pdf which implement Council Directive 98/83/EC on the quality of water intended for human consumption (otherwise known as the Drinking Water Directive)
- Management of lineside vegetation NR/L2/TRK5201
- The Code of Practice for the use of Plant Protection Products <http://www.pesticides.gov.uk/guidance/industries/pesticides/topics/using-pesticides/codes-of-practice/code-of-practice-for-using-plant-protection-products>
- The UK Pesticide Guide (updated annually) <http://www.bcp.org/shop/>

Appendix 1 (Version dated 30.09.2016)

| | Location | Application method | Description | Active Ingredient [1] |
|--|--|-----------------------------------|--|--|
| Non WSPA Sites | On track | Handheld equipment | Total weed control – vegetation management of grasses and broadleaf weed species | Diflufenican Glyphosate Flazasulfuron Sulfosulfuron Glufosinate Ammonium |
| | | | Selective weed control – vegetation management of broadleaf weed species | 2,4-D Amine Triclopyr [2] Dicamba Glyphosate Max plugs [3] |
| | | Rail mounted equipment | Total weed control – vegetation management of grasses and broadleaf weed species | Diflufenican Glyphosate Flazasulfuron Sulfosulfuron Glufosinate Ammonium |
| | Flail Strip & Off Track Areas | Rail mounted & handheld equipment | Selective weed control – for vegetation control | Citronella Oil 2,4-D Amine Aminopyralid [4] Fluroxypyr MCPA Triclopyr [2] Dicamba Mecoprop P Glyphosate Max plugs [3] Glyphosate [5] |
| Identified WSPA Sites (unless identified as No Spray) | On track | Handheld equipment | Total weed control – vegetation management of broadleaf weed species | Citronella Oil Glyphosate |
| | | | Selective weed control – vegetation management of broadleaf weed species | Glyphosate Max plugs [3] Glyphosate [5] |
| | | Rail mounted equipment | Total weed control – vegetation management of grasses and broadleaf weed species | Glyphosate |
| | Flail Strip & Off Track Areas | Rail mounted & handheld equipment | Selective weed control – for vegetation control | Glyphosate [5] |
| Extra Vulnerable WSPA | No use of any pesticide is permissible unless prior permission and site specific assessment has been agreed by all Parties. An AqHerb01 Form is available from the EA and NRW to initiate this process. | | | |
| Notes: [1] Any active ingredient not listed requires prior permission and site specific assessment agreed by all parties [2] Only as amine formulation and in mixtures [3] Stump treatment only [4] Not to be used within drip line of desirable trees. [5] Spot application only | | | | |