

# 'Spoil to Soil' at Womersley



RECYCLING WASTES AND  
BY PRODUCTS FOR  
USE IN AGRICULTURE  
AND LAND RESTORATION

The colliery spoil tip at Womersley near Darrington, south of the A1/M62 interchange, had acted as the disposal point for spoil from the nearby Kellingley Colliery which was the last operational deep coal mine in the UK. Due to the deposition of millions of tonnes of deep mined colliery spoil the restoration scheme required the specialist 4R 'spoil to soil' restoration scheme approach.

## This approach involves:

- Consent from the regulators
- The careful selection and importation of bulk organic matter and lime-based ameliorants
- Incorporation to the correct depths at the correct quantities dependent on the materials used and the habitats required

## This leads to:

- Obvious visual improvements and aesthetic value to the site
- Mitigation of Acidity
- Reduced site run off and siltation
- Increased water infiltration
- Development of different habitat types across different substrates on the site
- Provision of income to the landowner



See over for further details →

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## The 4R 'spoil to soil' approach is managed to ensure the longevity and sustainability of any planting scheme.

Our consultancy team worked with the landowner to agree a restoration masterplan on 90 hectares to create soils where no natural soil resources remained.

The project started in September 2016 under Environmental Permitting Regulation consents which were applied for by 4R and approved by the Environment Agency. Approximately 90,000 tonnes of suitable organic materials were used to treat on site colliery spoil and limestone fines remaining on site from when it was an active limestone quarry.

In the autumn of 2017, part of the site was seeded with a low maintenance, non-ryegrass seed mix. This seed mix established well despite the autumnal conditions at the time and a steeply sloping bank was stabilised by the plant growth. The slope, facing nearby residents, was revegetated such that the view from the neighbours was dramatically improved and for the first time since they moved to their home this area of the site was visually attractive compared to black colliery spoil.

An odour management plan was put in place during the process to control any odorous emissions to the neighbouring area. This involved communication with residents prior to activities such as spreading, recognition of wind direction and weather prior to spreading and careful location of stockpiles to maximise



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distance between potentially odorous materials and neighbours. In addition, all potentially odorous materials were incorporated immediately following spreading.

A grass sward is now developing across the site and will soon be ready for its planned end use of amenity green space and woodland to benefit the local community.

**In common with other 4R Restoration projects the land owner received a royalty payment for the material imported.**

Our team of soil scientists, environmental and operational staff provide a unique blend of experience when looking at restoring brownfield sites. This project adds to our expanding portfolio of land restoration, completing over 25 different sites and phases across the UK in the past 12 years for our landowners.

**The 4R Group is always looking for brownfield sites to restore.**



4R RECYCLING IS PART OF THE 4R GROUP  
INNOVATORS IN WASTE SCIENCE  
AND RECYCLING TECHNOLOGIES

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