

Environmental Management for Pipeline Engineers



Basic Environmental Management Tools for Pipeline Construction

Water Management

Plan	Divert Where Possible	Manage Run-off	Flood Risk Areas	De-watering & Pumping
<ul style="list-style-type: none"> Look at the available ground information, site topography and information in the public domain to develop plans and drawings of how the water on the project will be managed. 	<ul style="list-style-type: none"> Install land drainage to divert surface water away from your site. Use grips, dummy ditches and silt fences to divert & capture water from within your working area. 	<ul style="list-style-type: none"> Minimise topsoil stripping where possible. Compact / cover soil heaps. Check and maintain grips, silt fences on a regular basis. 	<ul style="list-style-type: none"> Minimise storage facilities (cabins, plant, equipment or materials) in floodplains. Spoil bunds to incorporate significant gaps regularly. May require flood defense consent. 	<ul style="list-style-type: none"> Apply for a permit to pump. Prevent water from entering excavations, by using cut off ditches. Select discharge locations in agreement with the EA / Client. Install silt mitigation at location & monitor regularly. Support inlet hoses above the watercourse bed and use appropriate pump rates to minimise silt pollution. Use guarded pump inlets to avoid drawing in aquatic life.



Waste Management

Plan & 'Duty of Care'	Segregate & Recycle	Hazardous waste	Transportation	Waste Transfer Notes & Disposal
<ul style="list-style-type: none"> Site Waste Management Plan shall be developed on projects worth over £300k. Duty of Care means you must consider disposal alternatives, store waste safely and securely, manage waste transfer notes, be licensed to carry, store, and dispose of waste, check the waste supply chain also comply with the relevant licenses. Buy eco products where possible. 	<ul style="list-style-type: none"> Review materials to be used & identify all recyclables prior to commencing works. Source appropriate recycling waste carriers and sites. Ensure all waste streams are segregated and labelled with waste codes on site. 	<ul style="list-style-type: none"> Register with the EA as a producer of hazardous waste prior to the production of any hazardous waste. Construction items include; painting and coating materials and tins, welding rods, waste oils, aerosols, lubricants, tarmac, contaminated rags, batteries, fluorescent tubes and contaminated land, etc. As a general rule, double bag and tie any hazardous waste and label with contents and waste code as a minimum. 	<ul style="list-style-type: none"> Transport of hazardous waste shall be in a marked vehicle and handled by competent waste disposal contractors. Waste carriers shall hold a valid waste carriers licence. When carrying waste ensure there is a consignment note. 	<ul style="list-style-type: none"> Complete forms fully. It's Law! Retain records for a minimum of 2 years. (5 years for some hazardous wastes) All waste management facilities used shall hold a valid Waste Management License, check validity.

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Contamination Management

Plan	Plant	Refueling	Spill Mitigation	Disposal
<ul style="list-style-type: none"> Establish Emergency Plans for various spills. Identify what you have that could act as a contaminant and understand how it affects your environment around you. Ensure mitigation measures are planned, available and suitably sized for the task. 	<ul style="list-style-type: none"> Use drip trays for static plant items, e.g. pumps, generators. Check plant for leaks and damage prior to starting on site. Ensure spill kits are with plant. Where possible do not site plant near to water courses or local drainage. 	<ul style="list-style-type: none"> Use only trained personnel Don't refuel within 30m of a watercourse or aquifer, where possible. Use drip trays where possible. Always have spill kits available. Ensure nitrile gloves are available in the spill kit. 	<ul style="list-style-type: none"> Practice! Know what you have to do in a spill situation. Make sure everyone knows how to use the spill kits and storage requirements for hazardous products. 	<ul style="list-style-type: none"> Double bag and label contaminated soil and spill kit materials. Return to construction yard and dispose of as hazardous waste. Inform the Environmental Team of incidents.



Watercourse Crossings

Crossing Design	Vehicle Crossing	Pipeline Crossing	Open Cut Technique	Trenchless Techniques
<ul style="list-style-type: none"> Always check true bottom of watercourse level when designing the pipe levels. Ensure that the minimum cover from the invert level is achieved. 2.0m cover as a minimum, but check the client's specifications. Ensure tie in welds are located a suitable distance from the bank so to not disturb the bank when excavating a bellhole. 	<ul style="list-style-type: none"> Never drive through a watercourse, use a flume crossing or a bridge. Consult the EA for fluming consent. When fluming, use sandbag headwalls, maintain bank vegetation or use straw bales to minimize silt contamination from run-off. Ensure flume sizes are a suitable for the anticipated watercourse volumes and flow rates. 	<ul style="list-style-type: none"> Consult with EA over crossing methodology & consent, use non-intrusive techniques where possible. Consult the EA for crossing consent. Potentially fish/crayfish surveys. Always consult the EA to find out which need to be undertaken. 	<ul style="list-style-type: none"> Ensure there is an uninterrupted flow of water whilst the pipeline is installed; dam and over-pump or flume and excavate and install around. Program operations during periods of good conditions, e.g. weather, river level/ flow. Minimise the amount of bank vegetation to be disturbed. Remove and store the bed and bank material separately and label. Use sedimats, silt fences, booms etc. downstream to minimise silt pollution. 	<ul style="list-style-type: none"> Consult with EA over crossing methodology & consent. Ensure there is a validated emergency procedure for a 'breakout' if using bentonite or a similar product for lubricant. Review geotechnical information to ensure a suitable trenchless method is selected.

Common Invasive Plant Species & Protected Animal Species to look out for in the UK

Invasive Species

Japanese Knotweed



Giant Hogweed



Himalayan Balsam



For further information on how to deal with these species, follow this link: <http://publications.environment-agency.gov.uk/pdf/GEHO0410BSBR-e-e.pdf>

Protected Species

- Bat (The Conservation of Habitats and Species Regulations 2010)
- Badger (Protection of Badgers Act 1992)
- Dormouse (The Conservation of Habitats and Species Regulations 2010)
- Great Crested Newt (The Conservation of Habitats and Species Regulations 2010)
- Otter (The Conservation of Habitats and Species Regulations 2010)



For an up to date list of protected species, follow this link: http://www.naturalengland.org.uk/Images/ProtectedSpeciesLists_tcm6-25123.pdf

From the editor: We have tried to make sure the above article is as accurate and up-to-date as possible. If you think we have something wrong, or you feel we need to update it, please get in touch [here](#).

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