

REG 02 – Environmental Aspects and Impacts Register

Environmental Aspects	Environmental Impacts	Control Measures	Risk Rating High/Medium/Low
1 WATER			
<ul style="list-style-type: none"> • Spillage of pollutants directly into water courses, drains, drinking water wells or on to paved surfaces • Poor storage of oils, fuels and chemicals • Damage to drums, tanks and pipes, either as a result of an accident or vandalism. • Uncontrolled surface water run off from side roads, excavations or disturbed ground • Pumping dirty water into water courses or surface drains • Working in, over or next to water courses and ground water • Disposing of washout from concreting operations • Hosing of dirt and concrete from various surfaces 	<ul style="list-style-type: none"> • Fish killed and affects on other river life • Contamination by change of water pH and chemical balance • Contamination of groundwater and domestic drinking supplies • Visual impairment for example silting and foaming • Destruction of the microbiological in sewerage works • Cross contamination of air and ground by gases and chemicals released from contaminated water • Notice from EA or Local Authority • Discharge into sewer or surface water without consent 	<p>Preventing escape of pollutants</p> <ul style="list-style-type: none"> • Store oils, fuels and chemicals where they will be protected and away from watercourses and drains (minimum of 10m from any watercourse/drainage system) • Store large quantities of hazardous liquids in bunded tanks, ensure pipe valves are secure • Provide appropriate site security • Always supervise refuelling • Seal-off or remove abandoned drains • Control surface water run-off from earth works • Isolate/ bund/cover of stockpiled contaminated material • Keep roads and hard standing clean • Use drip trays underneath static plant <p>Dealing with escaped pollutants</p> <ul style="list-style-type: none"> • Identify source of pollution and stop • Avoid spillage spreading • Provide spillage kits and block off drains • Identify unknown substances by sampling, analysis and description • Stop uncontrolled water entering or leaving excavations • Provide sumps in excavations • Provide Pollution Incident Control Plans • Report spills to EA/NR in accordance with emergency plan • Shovel contaminant into sacks and dispose of in accordance with Hazardous Waste (England and Wales) Regulations 2005 	<p>Medium</p>

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<p>2 AIR</p>			
<ul style="list-style-type: none"> • Dust from earthworks excavations and earth moving • Soil treatment or ground stabilisation • Dust from cutting, grinding, grouting and packing • Poor handling and storage of materials i.e. stock piling sand spoil and aggregates without covers • Dust from concrete batching and pouring • Dust generation from the transport of materials to and from site. • Loading and unloading of dust generating materials • Fumes from plant and vehicles • Fumes from user of solvents, glues and paints • Fumes from the use of weed-killers and other similar chemicals • Disruption of potentially contaminated site and the release of contaminated dusts and gases 	<ul style="list-style-type: none"> • Reduction of local air quality, mail odours and visual impairment leading to neighbour annoyance and complaints • Reductions in plant and fruit growth • Alteration or deterioration of plant and animal communities • Constraints and cost and / or programme of project from unacceptable levels of dust and issue of an abatement notice • Cross contamination of surface water and soils • Creation of low level ozone • Contribution to global warming 	<p>Haul routes</p> <ul style="list-style-type: none"> • Select suitable routes away from sensitive areas if possible • Pave heavily used areas • Reduce the width of roads • Vacuum sweep paved and public access roads • Limit vehicle speeds <p>Plant</p> <ul style="list-style-type: none"> • Use wheel washes • Exhausts not to discharge directly to ground levels <p>Earthworks and excavations</p> <ul style="list-style-type: none"> • Re-vegetate or temporarily seal or complete ground works as soon as possible <p>Materials handling and storage</p> <ul style="list-style-type: none"> • Store materials out of the wind • Cover all dust generating materials (transport on and off site and Stored) with tarpaulin • Compact and blind stockpile surfaces <p>Concrete batching and pouring</p> <ul style="list-style-type: none"> • Mix concrete / bentonite slurries in enclosed / shielded areas • Keep concrete pours clean when turned off <p>Cutting grinding grouting and packing</p> <ul style="list-style-type: none"> • Minimise cutting and grinding on site • Use dust extractors on cutters and saws • Damp down dust generating areas • Do not burn waste materials / tyres on site <p>Corrective</p> <ul style="list-style-type: none"> • Erect screens to act as windbreaks or dust screens 	<p>Low</p>

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3 NOISE			
<ul style="list-style-type: none"> • Ground preparation e.g. soil stripping, clearance of ballast, • Excavation and diversion of services • Loading and unloading of lorries • Audible reversing warning on vehicles • Mobile generators • Various plant / compressors, cement mixers • Operational drills, hammers etc • Vehicles transporting materials to and from site • Shouting, radios and out of hour deliveries 	<ul style="list-style-type: none"> • Disturbance of wildlife • Complaints from neighbours • Poor public / Network Rail relations • EPA Notice to stop works • Local Authority relationships decay • Safety Issues 	<p>Reducing Noise</p> <ul style="list-style-type: none"> • Use methods that uses equipment/modes of operation that are less noisy • Use mufflers or silencers to reduce noise transmitters along pipes and ducts • Minimise drop heights into hoppers, lorries or other plant • On sensitive sites use rubber linings on tipper trucks • Use plant conforming to relevant standards and guidelines • Use noise control on equipment on operating plant • Use noise enclosures and screens were appropriate • Where possible use electrically powered plant • Shut down any plant that is not in use • Maintain adequately all plant to minimise rattling and squeaking • Ensure that audible warning systems are switched to the minimum setting required by the HSE • Reduce the need for noisy assembly e.g. buy prefabricated <p>Minimising Disturbance</p> <ul style="list-style-type: none"> • Restrict noisy plant away from public areas • Restrict noisy activities to certain periods of the day i.e. 9am –4pm • Arrange deliveries to suit the area • Route construction vehicles to take account of the need to reduce noise • Keep haul roads well maintained • Liaise with nature conservation to minimise disturbance to wildlife <p>Communication</p> <ul style="list-style-type: none"> • Section 61 consent application necessary or Noise Management Plan • Inform local authorities and local residents 	<p>Medium</p>

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4 WASTE			
<ul style="list-style-type: none"> • Excavation of potentially contaminated material e.g. asbestos in troughing, oily contaminated soil and ballast • Removal of vegetation, scrap metal and top soil • Removal of hazardous building materials • Wasting excessive quantities of raw materials • Poor storage, protection or multiple handling of materials and wastes • Over ordering of materials and poor stock control • Lack of training • Poor site control • Disposal and transport of waste to landfill • Reuse and recycling of aggregates, • Fibre optic waste • Removal of sharps etc 	<p>Primary negative impacts</p> <ul style="list-style-type: none"> • Re- exposure and cross contamination to air, ground and water • Use of natural non renewable resources • Loss of site landfill space • Excess waste going into landfill • Increased noise, dust and vibration from transport <p>Primary positive impacts</p> <ul style="list-style-type: none"> • Reduced use of raw materials and aggregates where possible <p>Secondary negative impacts</p> <ul style="list-style-type: none"> • Damage to countryside, habitats and ecology • Contribution to global warming • Reduced landscape quality <p>Secondary positive impacts</p> <ul style="list-style-type: none"> • Reduced damage to the countryside habitats and ecology 	<p>Classify Waste</p> <ul style="list-style-type: none"> • Identify unknown wastes by location, description and chemical analysis • Classify your wastes before disposal with a European waste code. <p>Monitoring of site waste</p> <ul style="list-style-type: none"> • Order the correct amounts of materials • Implement a Site Waste Management Plan <p>Control of site waste</p> <ul style="list-style-type: none"> • Remove and dispose of litter in the working area. • Prevent damage to materials during delivery and storage • Avoid accepting incorrect deliveries, exceeding shelf life of materials and double handling • Provide appropriate site security • Dispose of different wastes in the correct containers • Use prefabricated materials where possible • Return pallets and excess packaging to the suppliers where possible • Reuse/ recycle materials e.g. crushed concrete, shuttering, boarding, scrap metal, cut offs and identify local recycling markets • Removal of sharps by specialist contractor <p>Duty of care</p> <ul style="list-style-type: none"> • Verify waste carriers registration and licences • Liaise with the zones and authorities on removal of vegetation waste especially listed and protected species • Ensure waste transfer notes are completed, as required under Waste Transfer Regulation - Duty of Care and consignment notes etc. <p>Raise awareness of waste on site</p> <ul style="list-style-type: none"> • Allocate responsibility for waste on site • Provide waste training and raise awareness of site operatives 	<p>Medium</p>

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5 VIBRATION			
<ul style="list-style-type: none"> • Use of surface breaking equipment e.g. pneumatic drills, hydraulic hammers, rock- breaking equipment • Movement of heavy plant and vehicles onto and off site 	<ul style="list-style-type: none"> • Disruption to wildlife • Damage to geological and archaeological site • Damage to nearby structures and buildings • Safety • Nuisance • Structural damage to adjacent property • Liability issues 	<p>Communication</p> <ul style="list-style-type: none"> • Inform neighbours of the potential for vibration <p>Best practise</p> <ul style="list-style-type: none"> • Where possible use working methods or plant which produce low frequency vibrations • Evaluate the potential for vibration from different works activities • Place plant on a heavy base • Fix rotating or impacting machines on anti vibration mountings • Don't use equipment such as 'jackhammers 'or 'peckers' where material could be cut and lifted out. • Work to British Standards on Vibration • Isolate plant from the transfer medium <p>Monitoring vibration</p> <ul style="list-style-type: none"> • Monitor/ survey sensitive locations and structures before starting and completing work. • Monitor vibration levels during the works 	<p>Low</p>

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6 ARCHAEOLOGY/BUILT HERITAGE			
<ul style="list-style-type: none"> • Finding unexpected archaeological finds during excavations • Dewatering • High levels of vibration/compaction • Work on listed buildings 	<ul style="list-style-type: none"> • Potential for damage disturbance or loss of national heritage • Cracking and subsidence • Contamination from burial grounds 	<p>Working around archaeology</p> <ul style="list-style-type: none"> • Review contract to determine responsibility on the management of archaeology on sites • Follow contractual obligations e.g. provide attendance and /or access to professional archaeologists. • Ensure that the method of working complies with any stipulated contractual obligations <p>Corrective Control Measures</p> <ul style="list-style-type: none"> • Stop work Immediately • Protect the find by fencing /blocking it off • Contact the site engineer/manager • If necessary seek specialist advice e.g. local archaeology officer within the local authority or county council involved. • Establish if it is necessary to obtain separate scheduled Ancient Monument consent before continuing to work. • If treasure found report the find to the LA and English Heritage within 14 days after the day on which you realised that the find might be treasure 	<p>Low</p>

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7 ECOLOGY			
<ul style="list-style-type: none"> • Tree Preservation Orders • Site of Special Scientific Interest • Invasive weeds • Protected species • Impacts on groundwater levels from tunnelling • Site clearance of soil vegetation • Work within water courses resulting in silting and potential mobilisation of contaminants • Damage to tree roots from trial holes and micro-tunnelling • Working near to water with the possibility of direct or indirect disturbance to bank-side and in-stream ecology • Excavating or cut and filling may damage geological site • Uncontrolled spraying of weed killer to remove vegetation • Using bright lighting during any possession work in rural areas. • Creation of water bodies and new habitats • Regulating and diverting rivers 	<ul style="list-style-type: none"> • Consent requirements • Disruption or loss of wildlife • Change/ loss/ fragmentation of habitat • Changes in species number and diversity • Attracting wildlife • Changes in food source • Changes to water quality • Interruptions to the movement of wildlife e.g. impediment to fish migration • Removal of hedgerows and other vegetation • Damage or removal of important rock formations or landforms • Changes to water quality • Nuisance 	<p>Sensitive sites</p> <ul style="list-style-type: none"> • Comply with information from relevant parties regarding sites of ecological importance, areas with protected species, consents, working in SSSI. • Before works, identify and fence off sensitive areas and brief staff • Do not store spoil or building materials within the protected area • Place protective bund around ponds • Ensure run-off is directed from sensitive areas • Plan appropriate transport routes to avoid protected areas • Consider a 'Site Management Statement' prior to undertaking work • Seek specialist advice if plant/s or animal/s may be affected <p>Flora and Fauna</p> <ul style="list-style-type: none"> • Check if tree preservation orders exist for any trees on the site • Keep vehicles and plant away from trees • Do not cut or damage roots greater than 25mm in diameter within the protected area. Cut roots with a clean hand saw • Wrap exposed roots with damp sacking until ready for compact backfilling. • Plan, design and replace habitats and wildlife destroyed or removed • Use temporary fencing to mark the protected area around the tree • Consider schedule of works in relation to breeding or nesting periods <p>Invasive weeds</p> <ul style="list-style-type: none"> • Cut with hand tools to ensure that weeds are not spread when de-vegetating • Ensure any waste soil disposed of has correct waste transfer documentation. <p>Communication</p> <ul style="list-style-type: none"> • Establish close working relationships with nature conservation bodies and with local environmental groups for provision of advice • Plan works and submit consents well in advance of work starting. 	<p>Medium</p>