



**PROJECT:**

**Vartry Water Supply Project - Water Treatment Plant &  
Reservoir Upgrade Contract**

(IW Ref 16/085)

**DOCUMENT:**

**Summary of Environmental Measures**

## Document Control Sheet

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**APPENDIX A**  
**SUMMARY OF ENVIRONMENTAL MEASURES**

### Prevention of Pollution to Surrounding Water Courses during construction, installation, commissioning, testing and operations:

- Avoidance of pollution of rivers, lakes, streams and other water courses
- Protection of Water Quality
- Protection of aquatic life & surrounding habitats

Measures to reduce risk include:

- Bunding and containment
- Visual inspections
- Water samples taken at defined intervals and analysis conducted both internal & external by an approved laboratory
- Waste management
- Maintenance of plant /machinery
- Training and awareness of environmental risks

Aspect	Potential Impact	Control Measure
Uncontrolled release of a hazardous substance	Toxic substances enters the water course resulting in a potential fish kill, damage to eco-systems and water quality is affected	Trained persons handling and working with substances. Deliveries are supervised. Visual checks undertaken to ensure containers are not damaged. Spill kits and clean up materials are Provided.
Incorrect storage of hazardous substances	Leaking /damaged containers Lack of segregation of substances	All substances must be bunded. Bunds will be 110% holding capacity. Open bunds are emptied of rainwater. Bunds are subject to visual inspection. Bund integrity test undertaken once every 3 year. Containers are stored in line. Quantities are kept to a minimum. Storage is in line with SDS requirements. Environmental procedure relating to 'bulk fuel & oil storage' implemented.

Run-off of washings from cleaning construction vehicles Run off from sludge during transfer	Oil / diesel enters the water course Sludge matter enters the watercourse Harmful to aquatic life Affects water quality	Washings only permitted in designated Areas. Designated collection areas created. Installation of a 150mm ductile iron Sluice Valve (SV) on the imported sludge deliver pipework that can be shut-off when sludge transfer is complete to minimise sludge run-off onto concrete area
Movement of silt, soil during construction & excavation	Pollutes the water affecting aquatic life and water quality	Prevention measures to reduce the risk of silt or soil entering watercourses include the use of settlement ponds or attenuation tanks for settlement of surface water prior to the discharge.
Fueling and lubrication of plant and machinery resulting in a spillage	Oil / diesel enters the water course harmful to aquatic life Affects water quality	Only permitted in designated areas away from drains and other water discharge points. The surface water drainage systems at each site will be fitted with a petrol interceptor fitted to an alarm.
Cleaning of access roads into/from workplaces	Large volumes of mud allowed to build up Overloading of soil on removal trucks	Provision of soak ways and regular cleaning of access roads Loads are supervised and not permitted to exceed limits
Poor waste management	Waste enters the water cause damage to aquatic life and to other animals and birds	Waste is controlled and segregated Recycling policy in place Waste Management plan in place Waste is removed by approved waste contractors with current permits covering classification of materials to be removed for disposal
Construction methods - concrete pouring	Kills aquatic fauna through alteration of stream ph levels	When cast in place concrete is required all works done in dry weather and allowed to cure for 48hrs before re-flooding

## Prevention of Pollution - Control of noise during construction, installation, commissioning, testing and operations

- Avoidance of noise pollution arising out of work methods utilised during construction, operations of equipment, plant and machinery
- Sound levels measured at the Site boundaries during construction will not exceed the following limits:
  - Daytime 08.00-20.00hr 55 dBLAeq (hourly)
  - Night time 20.00-08.00hrs 45dBLAeq (hourly)

Measures to reduce risk include:

- Design of plant and equipment ensures noise levels do not exceed permitted decibel levels
- Noise reduction measures - acoustic covers fitted/layout of plant & equipment
- Noise monitoring is undertaken & measurements are recorded
- Ear Protection zones are identified
- Signs & notices displayed
- Maintenance of plant, equipment & machinery
- Construction machinery fitted with exhaust silencers
- Training and awareness of environmental risks

Aspect	Potential Impact	Control Measure
Exceedance of Noise levels	Nuisance to others at work including neighbouring residences	Noise monitoring will be carried out monthly. Construction equipment will be maintained in good condition and fitted with exhaust silencers. The selection of equipment that does not emit high noise levels where possible. Other noise control measures that may be considered include: Servicing and or modifying the plant / equipment; Replacing of existing plant / equipment; Moving the operation away from sensitive receptors; Rescheduling the activity;

## Prevention of Pollution to Surrounding Water Courses during construction, installation, commissioning, testing and operations – Waste Management

- Avoidance of pollution of rivers, lakes, streams and other water courses
- Protection of Water Quality
- Protection of aquatic life & surrounding habitats
- Control & Management of Waste

Measures to reduce risk include:

- Waste Management Plan (WMP) is implemented
- Recycling policy implemented
- Waste is segregated and labelled
- Waste is contained in suitable containers including enclosed skips
- Waste removed by Licensed contractors and Waste Transfer Forms (WTF) are maintained
- Waste Contractor must ensure collection permits are obtained from Donegal County Council
- Waste management
- Maintenance of plant /machinery
- Training and awareness of environmental risks

Aspect	Potential Impact	Control Measure
Waste is not correctly managed	Vermin Litter Nuisance Overflowing containers Incorrect segregation of waste types	Waste levels are recorded. Waste is removed regularly by a licensed contractor to designated disposal areas. Waste permits are retained and checked to ensure they are current Daily litter pickup. Good housekeeping is essential and must be Maintained. Use of recycling of materials is identified and monitored. Burring is not permitted at any time. Pest control and prevention methods are implemented and maintained.

## Prevention of Pollution – Air Emissions during construction, installation, commissioning, Testing and operations

- Avoidance of air pollution from work practices and activities

Measures to reduce risk include:

- Burning is not permitted
- Dust monitoring will be undertaken
- Land clearance will be kept to a minimum

Aspect	Potential Impact	Control Measure
Uncontrolled release of a hazardous substance , smoke or gas into the atmosphere	Harmful to health Harmful to the environment Damage to property & equipment Fire Explosion	Work involving naked flames is subject to controlled conditions and permit to work (Hot Work). Firefighting measures / equipment are provided and maintained.
Dust emissions from excavations and from transport movements	Dust cloud causing nuisance Health impact	Dust emissions will be kept to a minimum (less than 130mg/m <sup>2</sup> /d) above background levels at the site boundary. Monitoring points will be set up at each side of the site boundary and independent weekly dust monitoring will be undertaken and recorded. Independent weekly dust monitoring shall be undertaken and findings communicated to client A dust minimisation plan will be implemented and include control measures: Use of wheel washes and road sweepers Spraying water on haul roads during dry weather Sowing grass seed as soon as practicable In periods of dry weather, water sprays shall be used to ensure that dust does not cause problems for residents in the area. Coordinate work schedules, when more than one contractor is working on a site, so that there are no delays in construction activities



resulting in disturbed land remaining unstabilised. Vehicles and machinery will be maintained in good condition to ensure sufficient running. Selection of smallest engine sized plant and equipment suitable for the task will be selected. Engines will not be left running/idling unnecessary. Environmental procedure relating to air pollution Implemented.

### Prevention of Habitats & Fauna during construction, installation, commissioning, testing and operations

The infrastructure will be designed so that the facility has a minimal negative impact on the surrounding flora and fauna. The following surveys are noted:

- o Topographical Survey.
- o Ecological Screening Assessment.
- o Invasive Species Survey.
- o Archaeological Impact Assessment.

Measures to reduce risk include:

- Compliance with the Ecological Impact Assessment
- Protection of water courses & habitats
- Awareness of fish spawning season

Aspect	Potential Impact	Control Measure
Uncontrolled release of a hazardous substance, disturbance of existing habitats and surrounding areas. Contaminating of water courses by materials etc. used during construction	Harmful to areas of special scientific interest Harmful to vegetation	No hedgerow removal to take place during the bird breeding season, which is defined in the Act as the period from 1st March to 31st August. No hedgerow or tree felling to occur between these dates Excavations left open overnight will have temporary ramps put in place to allow mammals that enter them to escape. All Trees and hedgerows will be retained where possible. . If hedgerows must be removed, an equivalent length of hedgerow to be planted around the outside

perimeter of the site. Replacement hedgerows to contain a similar species composition and structure. If tree removal cannot be avoided, then compensatory planting should take place at a nearby suitable location such as the external boundary of the site. Compensatory trees should be of a suitable native species, and be of sufficient girth. Should tree felling be required, then a survey is required to establish whether the trees provide roost sites for bats. This will be carried out prior to felling by a qualified bat surveyor. Should bats be present, then mitigation measures are required. The “Guidelines for the Treatment of Bats during the Construction of National Road Schemes” (NRA, 2005) should be followed for felling of trees with the potential to support bats. Environmental procedure relating to ‘habitat, flora and fauna protection’ implemented.

### **Control measures for minimizing the risk of environmental impacts**

Control measures will be implemented on an activity specific basis and in accordance with the control measures and reference to the following guidance documents:

- CIRIA 650 (2005) Environmental Good Practice On Site (Second Edition);
- CIRIA 532 (2001) Control of Water Pollution from Construction Sites - Guidance for consultants and contractors;

Control measures are stated within the Register of Environmental Aspects and Impacts. The register is reviewed monthly and is updated when processes and activities change / added to the workplace.

Specific control measures that will be implemented at Operations of the works to reduce the risk of an environmental impact will include:

- Planned preventative maintenance is undertaken
- Planned inspections and checks on critical safety /equipment/alarms systems
- Refresher training is provided to persons operating the Works
- Maintenance of spill kits and emergency response equipment
- Checks undertaken on bund installations
- Good housekeeping policy maintained
- Supervision of deliveries of sludge, chemicals and other hazardous substances

**Demolition**

Due care and caution will be given to the following when carrying out demolition works

- Disposal of surplus soil
- Contamination of ground
- Noise pollution
- Protective measures dealing with each of these issues are detailed in the Aspects and Impacts Register. Due diligence and adherence to best practice and Codes of Practice will be adopted at all stages during the demolition process to minimise the risk of transfer of invasive species.

**SCADA System**

One of the most critical measures in place to ensure protection of water courses, rivers and lakes is the SCADA system. The SCADA system enables alarms to be generated when specified set points are reached. These set points can be tank levels, water quality parameters at the spillway monitoring stations or other process critical variables. The SCADA set points can be selected to alarm operations personnel, activate an immediate emergency shut-down of elements of the plant and/or initiate the emergency callout procedure.