Scottish Water

MARINE (SCOTLAND) ACT 2010

Project Autocode Number 404046

Craigendoran Sewer Rising Main Replacement Project

(Final Details with Updated Permanent Marine Deposits Schedule)

This is a Scottish Water project to replace an existing sewer rising main which is unreliable in operation, subject to frequent bursts and subsequent release of raw untreated sewage to the marine environment. It is proposed to carry out the replacement pipeline installation in the spring/summer of 2016. The majority of the pipeline route 1.5 km of 2.1 km lies in the Inner Clyde SSSI/RAMSAR for overwintering/feeding Redshank. Following consultation with SNH Scottish Water have been given a construction window to work in the intertidal zone between 1st April and 31st August 2016, to avoid disturbing the overwintering Redshank.

1. **Project**

The project will be to replace the full length of the existing sectional cast iron lines sewer pumped rising main between Craigendoran Pier pumping station and Helensburgh sewage treatment works at Ardmore; a total length of 2.1 km. The new rising main will be installed in HDPE (High Density Polyethylene). Included in the new pipeline will be air valves and scour valves at the high and low points of the new rising main respectively which will be installed within concrete manholes above MHWS (Mean High Water Springs).

2. **Location**

The total length of pipeline being installed in the intertidal zone below MHWS (Mean High Water Springs) is 1.6 km, consisting of a short 0.2 km section at Craigendoran Pier and a longer 1.4 km section between the (central grid reference 231,790E 680,690N) of a total rising main length of 2.1 km. The start and finish co-ordinates of the two pipelines sections being installed below MHWS are tabulated below. Please also find attached drawings of the proposed 710 mm OD (Outside Diameter) polyethylene pipeline route.

Pipeline section	Grid Co-ordinates Start NGR	Grid Co-ordinates Finish NGR	Pipeline length below MHWS (km)
Short Section	NS 30293 81279	NS 31048 81182	0.166
Long Section	NS 31283 81136	NS 32026 80128	1.360

Working areas and temporary compounds are identified on the attached sketch plan, the main pipeline lay down and storage area will be at the northern end of the pipeline route. The main contractor compound will be at the Helensburgh WwTW. All deliveries to site will be via road, no material will be delivers to site by sea. All equipment and materials will be stored in secure areas at either the contractors compound at Helensburgh sewage treatment works, Ardmore, or at the storage compound at Craigendoran Pier sewage pumping station.

3. Method

It is proposed that two pipeline installation squads will commence installation of the pipeline from both ends of the route at Craigendoran Pier SPS Sewage Pumping Station) and Ardmore STW (Sewage Treatment Works). As the time constraints are tight with respect to the April to August construction window, the delivery contractor will want to maximise the time on the beach in the intertidal zone installing the pipeline. As the installation work will involve working below MHWS (Mean High Water Springs) the delivery contractor will schedule his working window to fit in with the tide patterns. As a result this may mean working in the early morning/late evening.

At low tide excavators will dig the pipe trench to the appropriate depth with excavated material being cast aside and segregated to retain the profile of sediments on the beach for later reinstatement. Pipe bedding material, if required depending on the quality of the excavated beach material, will be transported to the prepared pipe trench by dumper truck and the pipetrench filled and compacted to the appropriate specification.

Sections of pipeline will be welded up on the dry land in approximately 50 m long sections and pulled out to the prepared pipetrench and installed. There will be a requirement to make the final pipe weld between the buried section and newly laid section of pipe in-situ on the beach; this will be achieved with the use of a tracked mobile pipe welding machine. The pipeline will be overlaid with the flexible concrete revetment anti flotation protection. The trench will then be backfilled with the cast aside excavated material in the order excavated to retain the original sediment profiles. Excess excavated material will be thinly distributed over the surrounding area for tidal dispersion.

- Volume of pipe / m run = 0.4 m3
- Volume of revetment mat / m run = 0.24m3
- Total volume of arisings / m run = 0.64m3

The volume of material over the width of the 12m wayleave, this will amount to an additional height of 53mm (approx. 2 inches).

See attached detailed method statement “Craigendoran Beach Works” from Cleantech the specialist delivery contractor carrying out the installation works on the methodology of the new pipeline installation.

4. Permanent Deposits

- 1.526 km of 710 mm OD PE100 SDR 11 welded polyethylene pipe, weight per metre (131 kg/m) 200 tonnes

- Pipeline bedding material 40 mm - nominal size, locally sourced crushed rock 460 cubic metres, 780 tonnes at 1.7 tonne/cubic metre.
- Fleximat, flexible concrete revetment, anti- floatation and scour protection 6 m x 2.4 m x 0.015 m sections, 3.8 tonnes per section; total length of pipeline below MHWS (Mean High Water Springs) 1,526 m, 254 required for full length below MHWS, total weight 965 tonnes total volume of concrete 402 cubic metres at a concrete density of 2.4 tonnes per cubic metre.

5. Temporary Deposits

Drag boxes will be required to support the beach trench excavations, as it is anticipated two installation teams will be working from opposite ends of the long section pipeline route and also a team working in the short pipeline section the maximum weight of temporary deposits for three 7.5 m x 2.5 m drag boxes for the 1.5 m width trench will be 18 tonnes (6 tonnes per drag box).

6. Ecology/Environment

The pipeline route has been extensively surveyed and has identified and number of ecological constraints as well as the designated Inner Clyde SSSI/Ramsar for overwintering/feeding Redshank.

Birds

The long section of the pipeline route lies in the designated Inner Clyde SSSI/Ramsar for overwintering/feeding Redshank. Detailed discussion have been held with SNH (Scottish Natural Heritage) regarding the working window for the pipe laying activity to avoid disturbing overwintering/feeding Redshank. The acceptable working window will be from 1st April through to 1st August. Outwith this period there will be risk of disturbing the feeding wading birds. Scottish Water has commissioned a winter bird count for the Colgrain intertidal area, September-March 2015 – 2016. In the event of a construction overrun into September 2016 the information will be used to assess the impact on the overwintering feeding bird population.

Otters

Otters have been identified as being active in the Craigendoran/Colgrain area and two low status resting places have been identified at the Craigendoran Pier end of the pipeline route. The SI (Site Investigation) work undertaken in the summer of 2015 was carried out under an EPS (European Protected Species) licence to protect the otter resting places and also otter welfare.

In advance of the pipeline installation work a follow up protected species survey will be carried out to ensure no conditions have changed from the surveys carried out in 2015. The proposed pipeline installation work will be carried out under a new EPS licence to protect

otter welfare. The construction team will be given regular toolbox talks relating to their legal obligations in protecting otters including otter welfare, otter resting places and their wider environment.

INNS (Invasive Non-Native Species

From the walkover survey and from previous Scottish Water works carried out in the Craigendoran Pier and Ardmore area there are known areas of both Japanese Knotweed and Himalayan Balsam contamination. These areas have mapped by a specialist contractor and a management plan has been implemented to prevent the spread of invasive weeds from site as a result of the SI (Site Investigation) works or of the main pipeline installation project.

The management plan includes a herbicide spraying programme which was implemented in the autumn of 2015 and will continue throughout the construction programme. The management plan will also include control of vehicles equipment and personnel into the contaminated areas and as appropriate decontamination of the same leaving these controlled areas. Any arisings from excavations through contaminated areas of Japanese Knotweed and Himalayan balsam will be disposed to an appropriately licensed and controlled landfill site.

7. Pre Application Consultation

Scottish Water were advised by the Marine Scotland Licensing Operations Team (MS-LOT) that a public pre-application consultation (PAC) was to be carried in advance of the marine engineering licence application submission for a sewer rising main installation in the intertidal zone located south east of Helensburgh. A public notice was placed in the Helensburgh Advertiser 5/11/2015, the public information event was held in Helensburgh, Braeholm 17/12/2015, no member of the public attended this open event. A copy of this public notice is attached. In addition no written representations have been received from the public by the deadline of 7/01/2016.

As advised by MS – LOT the statutory stakeholders were also contacted by e-mail with the details of the proposed project.

Marine Coastguard Agency navigationsafety@mcga.gov.uk

Northern Lighthouse Board navigation@nlb.org.uk

SNH (Scottish Natural Heritage)

Argyll_Outerhebrides@snh.gov.uk and Strathclyde_ayrshire@snh.gov.uk

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