

# SNG Aquanet Marine Licence and SEPA Application Supporting Information

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<b>Project:</b>	Proposed Net Cleaning Facility at Rova Head, Lerwick		
<b>Our reference:</b>	416725-001	<b>Your reference:</b>	
<b>Prepared by:</b>	Michael Kerr	<b>Date:</b>	15/01/2021
<b>Approved by:</b>	Jon Moncrief	<b>Checked by:</b>	Steven Hillier
<b>Subject:</b>	SNG Aquanet Marine Licence and SEPA Application – Supporting Information		

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## 1 Introduction

### 1.1 General

As part of the construction of a net cleaning facility at Rova Head, Lerwick, Shetland. SNG propose to install two (2) number outfalls and one (1) number intake pipe. The following works are to be undertaken based on preliminary design:

- Installation of Sea Water intake; an 80mm diameter pipe approximately 60m in length connected to an onshore storage tank, the water will be used for next washing activities. At the abstraction point there will be a steel frame supporting a submerged pump and intake head. The intake head will be located at approximately 1m below MLWS. The abstraction will be intermittent and typically not exceed 6.4l/s during operation.
- Installation of a Process water and Foul water outfall; Process water and Foul water will be combined in a 200mm diameter pipe approximately 75m in length, fitted with a diffuser / non-return valve, which will discharge the combined treated effluent by gravity up to a maximum flow of 1.43l/s at approximately 2m below MLWS
- Installation of Surface water outfall; surface water will be conveyed by gravity through a 250mm diameter perforated pipe in a stone filled trench, approximately 35m in length and discharge onto the shoreline at a headwall.

### 1.2 Location

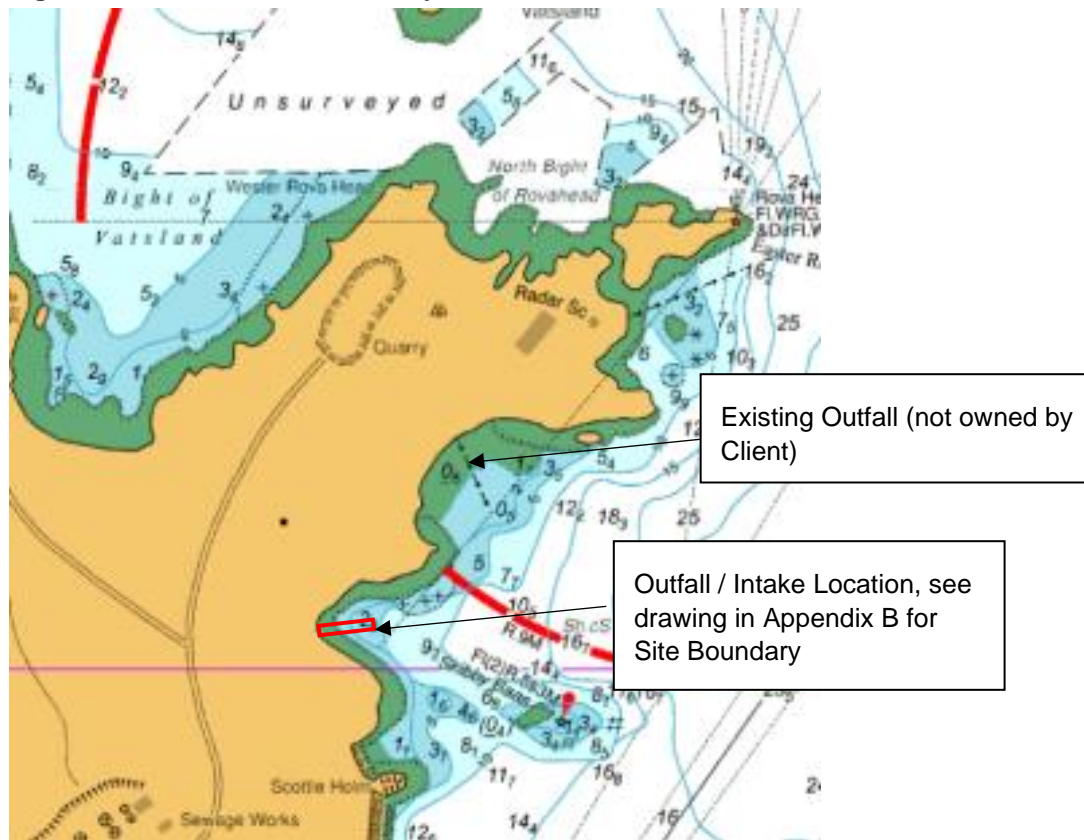
The proposed location for the works is located on east side of mainland Shetland, just north of Lerwick. Figure 1.1 shows an extract from Admiralty Chart 3271 showing the outfall / intake location and Figure 1.2 shows an aerial view of the site. The position for the outfalls and intake has been selected to avoid the rocky headland and skerries and follow the shallow beach and small bay, to reduce construction excavations and lessen impact.

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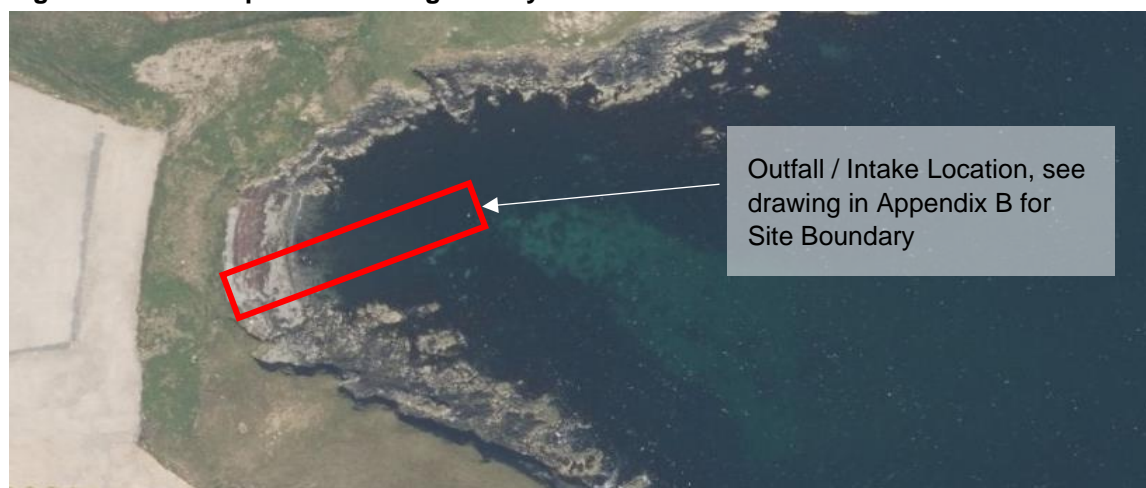
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**Figure 1.1: Extract from Admiralty Chart 3271**



Source: <Insert Notes or Source>

**Figure 1.2: SNG Aquanet Washing Facility Site Location**



Source: Ordnance Survey © Crown copyright [2020]. All rights reserved. Licence number 100026791

## 1.3 Proposed Design

### 1.3.1 Intake

The intake will draw sea water from the bay, through a submerged pump and intake head located on the seabed. Extracted water will be used to clean fishing nets. The pump and intake head will be supported on a lightweight steel frame to allow access for maintenance etc. The effluent water shall then be processed within a treatment facility on shore and discharged through the outfall pipe discussed in section 1.3.2. The route for intake pipe is shown in the drawing in Appendix B and in Figure 1.3. In advance of detailed design being completed, the outline design for the intake can be summarised as follows:

- 80mm Diameter HDPE pipe extending approximately 60m from the storage tank located on shore, 25m of the pipe are located below MHWS.
- Pipe to be installed in a shallow trench, anticipated to be approximately 1.0m below ground level.
- Pipe to be covered with rock armour protection seaward of MHWS, approximately 25m in length.
- The intake head and submerged pump will be located at approximately 1.0m below MLWS with local excavation of the seabed required to accommodate this.
- The steel frame supporting the intake head and submerged pump will be founded onto the seabed with a top level slightly higher than MHWS to allow maintenance access in all tidal states, the plan area shall be approximately 1.5m (W) x 1.0m (L). The frame will be fitted with a navigation light to mark the structure.

**Figure 1.3: Proposed Route for Intake**



Source: Site Records



### 1.3.2 Combined Process water and Foul water Outfall

The outfall will combine the treated effluent from the net washing facility and foul water from the site. The route for the outfall is shown in the drawing in Appendix B and in Figure 1.4. In advance of detailed design being completed, the outline design for the outfall can be summarised as follows:

- 200mm Diameter HDPE pipe extending approximately 75m from the final manhole, 35m of which are below MHWS.
- Pipe is to be installed in a shallow trench, using the same trench as that for the intake but spaced approximately 1m apart.
- Pipe to be covered with rock armour protection from shoreline onwards, approximately 50m in length.
- The discharge point will be fitted with either a non-return valve, Tideflex or equivalent, or a vertical diffuser.

**Figure 1.4: Proposed Route for Combined Process water and Foul water Outfall**



Source: Site Records

### 1.3.3 Surface Water Outfall

The surface water outfall will discharge via a headwall onto the shoreline just above MHWS. The route for the outfall is shown in the drawing in Appendix B and in Figure 1.5. In advance of detailed design being completed, the outline design for the surface water outfall can be summarised as follows:

- 250mm Diameter HDPE perforated pipe extending approximately 35m from the final manhole.
- Pipe is to be installed in a shallow trench.
- Pipe to be covered with rock armour protection from shoreline onwards, approximately 5m in length.
- The discharge point will be via a precast concrete headwall, above MHWS. An HW Small 100 or HW Small 150 Headwall supplied by FP McCann or similar approve will be used, the following image is from the FP McCann brochure:

Headwall Range	Up to and including Pipe Sizes	Max Pipe O.D.	Back Wall Height (external)	Front Wall Height (external)	Backwall Width (internal)	Front Wall Width (internal)	Headwall Length	Standard invert level (variable)	Wall Thickness	Floor Thickness	Approx. weight kg
HW Small 100	300	450	815	450	586	1305	1320	100	100	162	1100
HW Small 150	300	450	815	450	586	1305	1370	100	150	162	1390

**Figure 1.5: Proposed Surface water Outfall**



Source: Site Records



## 2 Supporting Information

The following information is provided in support to the Marine Licence application:

### 2.1 Applicant Details

N/A

### 2.2 Agent Details

N/A

### 2.3 Payment

N/A

### 2.4 Application Type

N/A

### 2.5 Project Details

- a. N/A
- b. The total works area below MHWS is assumed to be a 9m wide strip (offset 2.5m either side of the intake and surface water outfall pipe respectively) along the length of the outfall and intake pipes:  
 $44\text{m} \times 9\text{m} = 396\text{m}^2$
- c. Estimated start date based on the works being undertaken after a Marine Licence is granted and Contractor appointed with work being undertaken in July 2021.
- d. Estimated completion date of November 2021
- e. Cost estimate, based on early Contractor Engagement, circa £750,000.
- f. N/A
- g. N/A
- h. Method statement including schedule of work

The design assumes the general method statement and schedule of work as given below. However, the appointed Contractor will be responsible for preparing a detailed method statement and schedule in line with their proposed works, subject to acceptance by the Agent and Applicant.

The following takes place in sequence from the upstream end of the intake / combined process outfall to the intake head / discharge point:

- A trench is excavated along the superficial deposits on land and through the seabed (assumed to be formed from sedimentary rock with pockets of sands and gravels)
  - The trench will be wide enough to allow the intake and outfall pipe to be located in the same trench, the trench width will be approximately 1.5m wide. The trench for the outfall shall extend 15m past the intake head point.
- The pipe shall be laid on a layer of bedding material in the bottom of the trench and covered with the excavated material, the pipe shall be buried at least 1.0m below ground / seabed level
- The trench shall then be covered with a layer of rock armour, approximately 0.5m deep.
- The steel support frame for the intake head and submerged pump shall then be installed and the intake pipe connected.

- The tideflex valve shall then be fitted to the outfall pipe at the end of the works.

The following takes place in sequence from the upstream end of the surface water outfall to the outlet:

- A trench is excavated along the superficial deposits on land and through the seabed (assumed to be formed from sedimentary rock with pockets of sands and gravels)
  - The trench will be approximately 0.5m wide.
- The pipe shall be laid on a bottom of the trench and covered with the excavated material, the pipe shall be buried at least 1.0m below ground / seabed level
- The trench shall then be covered with a layer of rock armour, approximately 0.5m deep.
- The outlet of the pipe shall be connected to a precast concrete headwall

An approximate schedule of the anticipated works is as follows:

- Based on an 8 Week programme the following tasks and associated time frames are likely:
  - Weeks 1 - 4, trenching for pipe routes;
  - Week 5, installation of pipe and testing;
  - Week 6 – 7, backfilling and rock armour placement; and
  - Week 8, snagging works
- i. N/A. However, given that the works will temporarily disturb the seabed, sediment transportation shall be minimised.

## 2.6 Deposits and / or Removals

Refer to drawing MMD-416725-C-DR-00-XX-0100 for details of the proposed outfalls and intake and the line of MHWS.

- a. Permanent deposits and removals below MHWS

### Deposits

- Boulders:
  - Rock armour between 300 – 500mm will be placed over the trench in layers to form a protective mound with a height of 500mm (typically).
    - For Intake this will be approx. 25m in length
    - For the Combined Process water and Foul water Outfall this will be 35m approx. in length
  - The width of the rock armour will be approx. 1.5m for the combined trench conveying the Intake and Combined Process water and Foul water outfall pipes.
  - The total volume of rock armour material required below MHWS is therefore estimated as  $([0.5\text{m} \times 25\text{m} \times 1.5\text{m}] + [0.5\text{m} \times (35 - 25)\text{m} \times 1.5\text{m}]) = 26.25\text{m}^3$ .
  - Assuming a density of the rock armour of  $2450\text{ kg/m}^3$ , the total weight of rock armour below MHWS is therefore estimated at around 65t.
- Pipe
  - 60m of pipe is to be installed below MHWS (25m from the Intake and 35m from the Combined Process water and Foul water Outfall)
  - The pipe is planned to be constructed from HDPE with a Diameter of 80mm and 200mm respectively.

### Removals

N/A

- b. N/A

c. N/A

d. N/A

## **2.7 Disposal of Dredged Substance(s) or Object(s) at Sea**

N/A

## **2.8 Noise Monitoring**

The project is expected to use conventional marine plant such as small jack up barge or multi-cat workboat where dry working cannot be achieved. It is unlikely that these will generate significant noise and as such no Noise Registry registration is deemed to be required.

## **2.9 Statutory Consenting Powers**

N/A

## **2.10 Scotland's National Marine Plan**

N/A

## **2.11 Pre-Application Consultation**

N/A

## **2.12 Consultation**

N/A

## **2.13 Environmental Assessment**

N/A

## **2.14 Associated Works**

N/A



## A. Photographs of the location of the project

**Figure A.1: View from Northern Bank looking at Shoreline**



Source: Site Records



**Figure A.2: View from Northern Bank looking at Bay**



Source: Site Record



**Figure A.3: Shoreline**



Source: Site Records



**Figure A.4: View from Southern Bank looking at Shoreline**



Source: Site Records

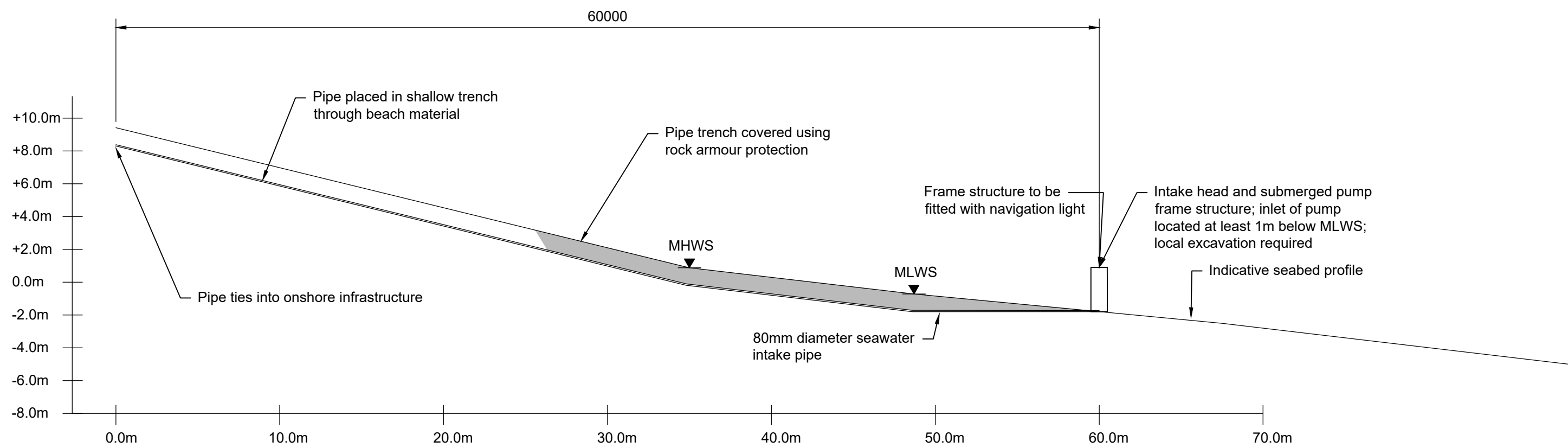


## **B. Drawing**



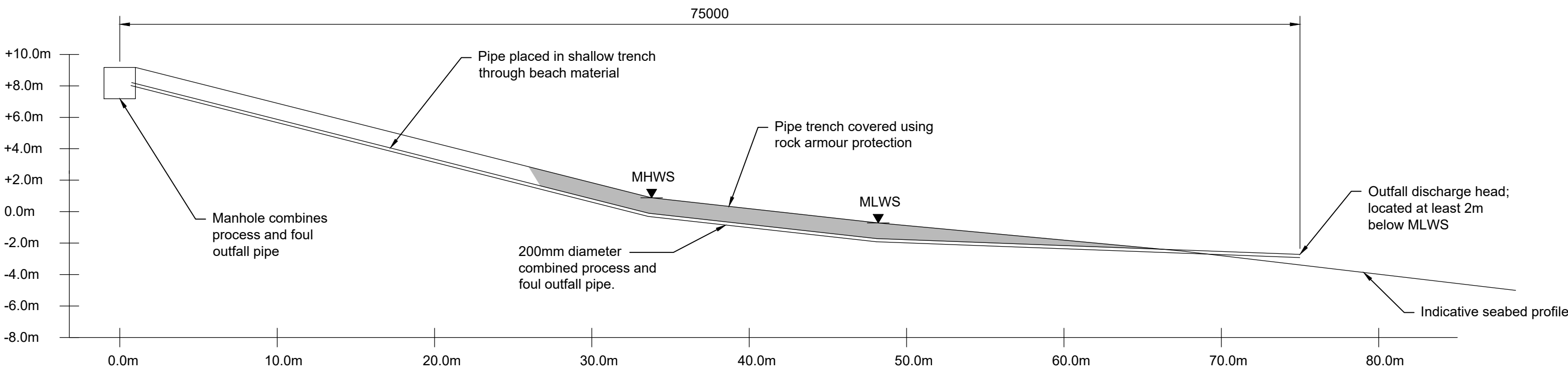


Photo 1



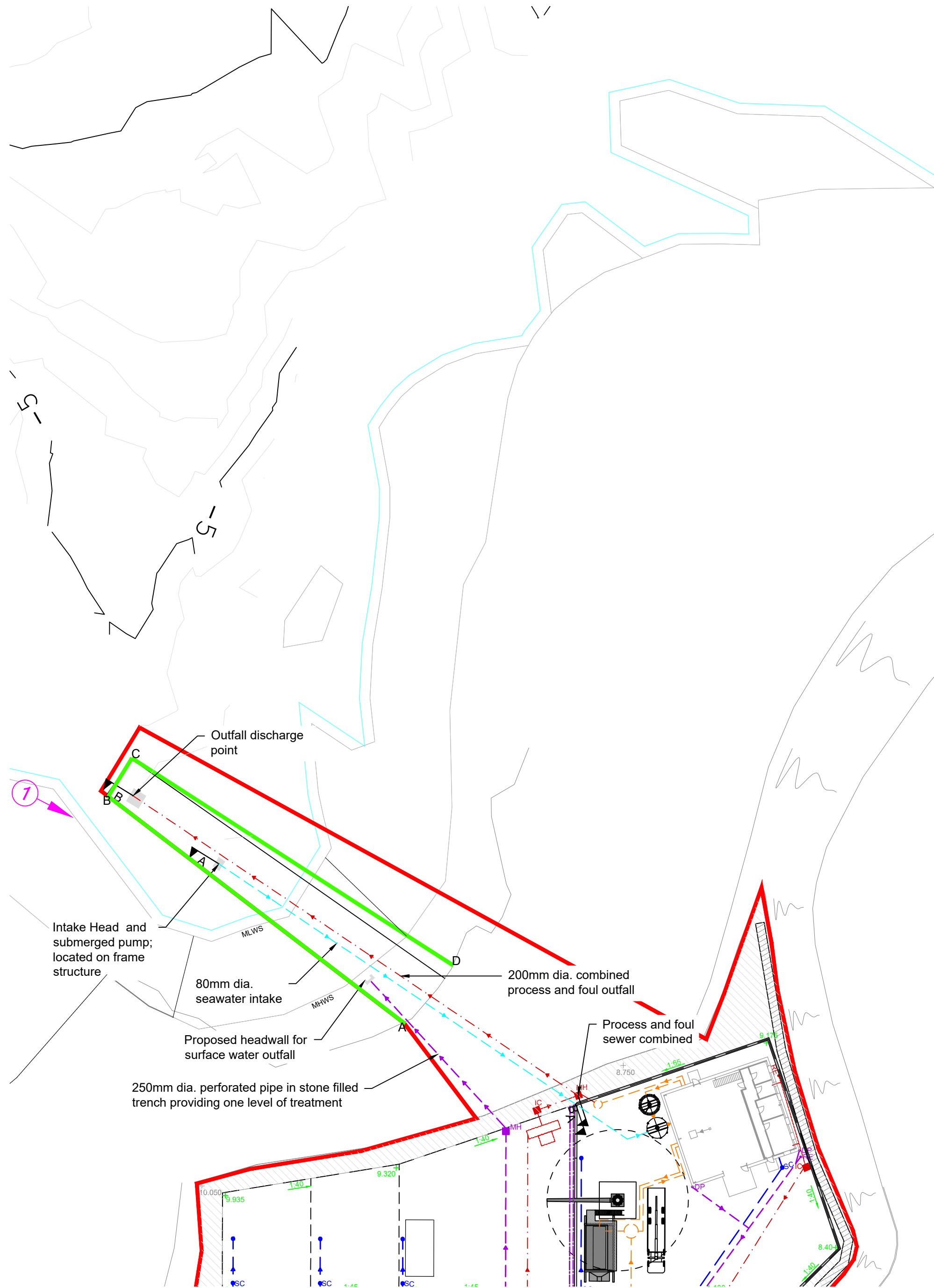
Section A-A

Scale 1:250



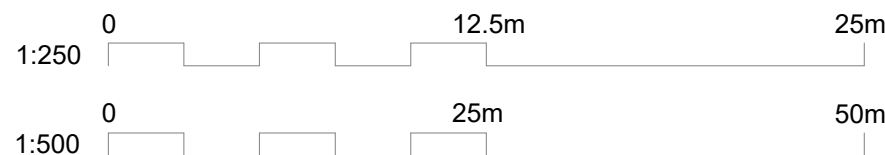
Section B-B

Scale 1:250



Plan on Proposed Outfall and Intakes

Scale 1:500



Notes

- This drawing is indicative only and is subject to detailed design.
- All dimensions are in millimeters unless noted otherwise.
- All levels are in metres and are to Ordnance Datum.
- Chart Datum is 1.22m below Ordnance Datum (Lerwick)
- Tide Levels:
  - MHWS = 0.88 mOD
  - MLWS = -0.72 mOD

Reference Coordinates		
Point ID	Easting	Northing
Point A	447116	1144984
Point B	447161	1145012
Point C	447165	1145007
Point D	447122	1144975
Intake Head	447147	1145001
Process and Foul Discharge Point	447160	1145009
Surface Outfall Headwall	447124	1144987

Key to symbols

	Existing Hardcore Areas
	Proposed DBM Access Road / Car Park Spaces
	Site Boundary
	Limit of Contractors Marine Works
	Proposed 90mm dia. Water Supply
	Proposed ACO Drainage Channel
	Proposed Net Cleaning Pipework
	Proposed Surface Water Drainage
	Proposed Process Water
	Proposed Foul Sewer
	Proposed Surface Water Manhole
	Proposed Foul Sewer Manhole
	Proposed Foul Sewer Inspection Chamber
	Proposed Stop Cock
	Proposed Rodding Eye
	Proposed Down Pipe
	Existing Site Levels
	Proposed Site Levels
	Photo Number and Direction Photo is taken in

Reference drawings

MMD-416725-C-DR-00-XX-0001 - Location Plan  
MMD-416725-C-DR-00-XX-0002 - Existing Site Plan  
MMD-416725-C-DR-00-XX-0010 - Proposed Site Plan & Services (Sheet 1 of 2)  
MMD-416725-C-DR-00-XX-0011 - Proposed Site Plan & Services (Sheet 2 of 2)

P4	15.01.2021	MK	Consent Applications	SH	JM
P3	06.10.2020	RM	Preliminary For Discussion	SH	NP
P2	26.06.2020	MK	Preliminary Issue	SH	JM
P1	23.06.2020	MK	Preliminary Issue	SH	JM
Rev	Date	Drawn	Description	Ch'k'd	App'd

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Client	SNG Aqua Ltd Greenhead Lerwick Shetland ZE1 0PY
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Title	Proposed Net Cleaning Facility at Rova Head, Lerwick
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Proposed Outfall and Intake Location

Designed	M Kerr	MK	Eng check	S Hillier	SH
Drawn	M Kerr	MK	Coordination	A Davison	AD
Dwg check	S Hillier	SH	Approved	J Moncrieff	JM

Scale at A1	Status	Rev	Security
As Shown	PRE	P4	STD

Drawing Number  
**MMD-416725-C-DR-00-XX-0100**



## **C. Consultation Correspondence**

## Record of telephone conversation

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<b>Subject</b>	Marine Scotland Application
<b>Project title</b>	SNG Aqua
<b>Project number</b>	416725
<b>File number</b>	-
<b>Between (for Mott MacDonald)</b>	Andrew Stout
<b>And (name)</b>	Marine Scotland employee
<b>Organisation</b>	Marine Scotland
<b>Telephone</b>	Telephone conversation
<b>Date</b>	02/03/2020
<b>Time</b>	11:00
<b>Action</b>	N/A

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Telephone conversation with Marine Scotland confirmed that no Pre-Application Consultation is required.  
“Marine License Application for Construction Projects” can be submitted when ready.