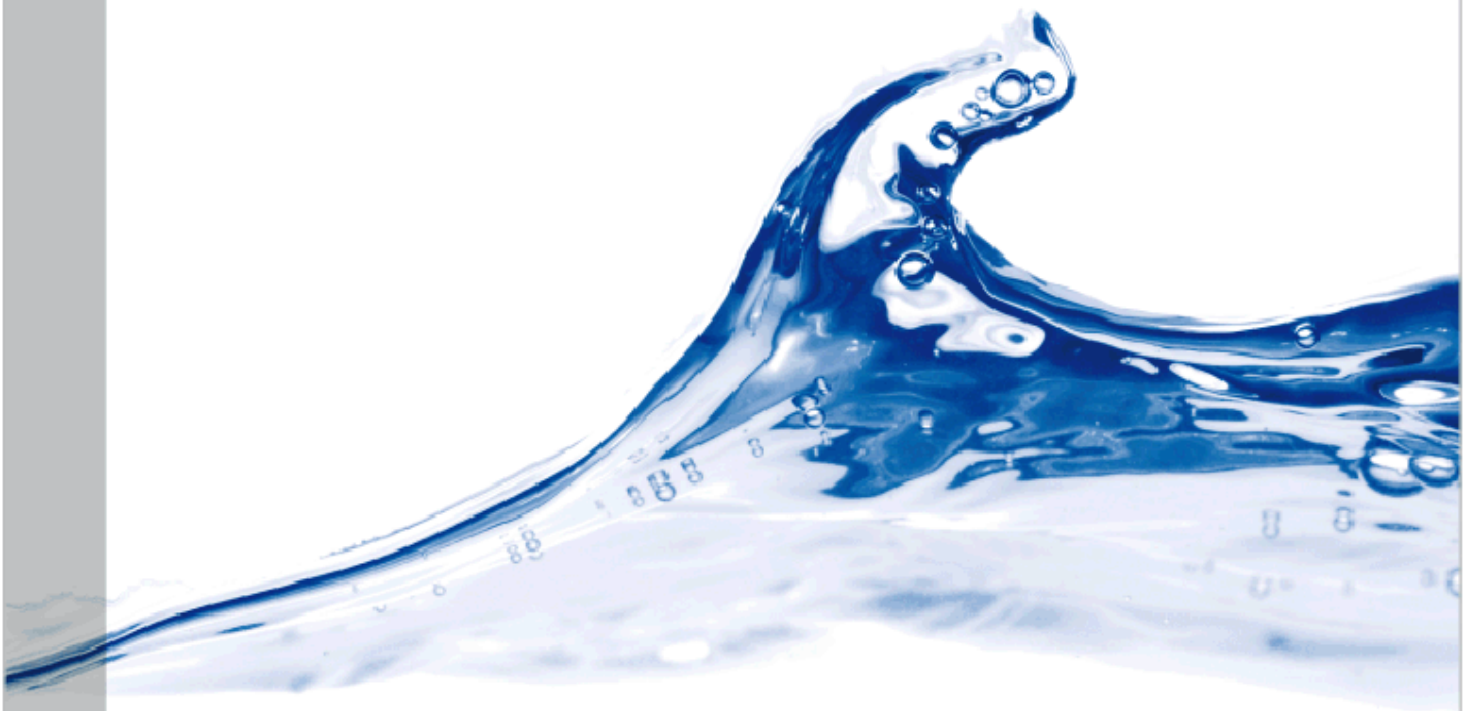
# Martinborough Environmental Monitoring Plan

*South Wairarapa District Council*

March 2014 – Working Draft



SOUTH WAIRARAPA DISTRICT COUNCIL

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## QUALITY RECORD SHEET

**Document** Martinborough Environmental Monitoring Plan Martinborough Effluent Monitoring Plan – Working Draft

**Reference** R:\Projects\1250_Combined_Scheme_Review\500 Deliverables\510 Reports\Martinborough Resource Consent Application\Martinborough Environmental Monitoring Plan.docx

**Date** March 2014

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## *REVISION HISTORY*

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| Working Draft | AWT Water | Environmental Monitoring Plan | 6/3/2014 |
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# EXECUTIVE SUMMARY

# 1 INTRODUCTION

## 1.1 Purpose of the Monitoring Programme

## 1.2 Consent Requirements

# 2 MONITORING PROCEDURES

## 2.1 Influent and Effluent Quantity and Quality Monitoring

Effluent Monitoring shall be covered in the Effluent Discharge Management Plan.

Influent Monitoring shall be covered in the WWTP Operations and Maintenance Manual.

## 2.2 River Water Quality Monitoring

### *2.2.1 Sampling Site Locations*

### *2.2.2 Sampling Procedures*

### *2.2.3 Sampling Result Records*

## 2.3 River Ecological Monitoring

### *2.3.1 Macro-invertebrate Sampling*

2.3.1.1 **Sampling Site Locations**

2.3.1.2 **Sampling Procedures**

The sampling and assessment shall be undertaken following a period of at least three weeks without a significant flood event (defined as an instantaneous river flow exceeding three times the estimated median flow in Ruamahanga River at Waihenga and during a period of low flow.

The macroinvertebrate sampling shall follow Protocols C3 (Hard-bottomed quantitative), P3 (full count with subsampling option) and QC3 (Quality control for full count with subsampling option) from the Ministry for the Environment's "protocols for sampling macroinvertebrates in wadeable streams" (Stark et al. 2001). This shall involve:

a) collection of five replicate 0.1m$^2$ Surber samples at random within a 20m section of riffle habitat at each sampling site;
b) full count of the macroinvertebrate taxa within each replicate sample to the taxonomic resolution level specified for use of the Macroinvertebrate Community Index (MCI); and
c) enumeration of the results as taxa richness, MCI, QMCI, %EPT taxa and %EPT individuals.

2.3.1.3 **Sampling Result Records**

### *2.3.2 Periphyton and Algae Assessment*

2.3.2.1 **Sampling Site Locations**

2.3.2.2 **Sampling Procedures**

The periphyton and algal assessment is to include:

a) a visual assessment of the percentage cover of both filamentous algae and algal mats (to the nearest 5%) at five points across each of four transects encompassing run habitat and extending across the width of the river at each sampling site. Reported estimates shall include:
   (i) Percentage cover of visible stream bed by bacterial and/or fungal growths (sewage fungus) visible to the naked eye;
   (ii) Percentage cover of visible stream bed by filamentous algae more than 2cm long;
   (iii) Percentage cover of visible stream bed by diatoms or cyanobacteria mats more than 0.3cm thick;
   (iv) Percentage cover of visible stream bed by diatoms less than 0.3cm thick; and
   (v) Percentage cover of visible stream bed that is clean.

b) collection of a composite periphyton sample across each sampling site using method QM-1a from the Stream Periphyton Monitoring Manual (Biggs & Kilroy 2000) at the same established monitoring sites and transects as defined in Condition 10 above (a composite of scrapings from eight rocks, two from each transect), using method QM-1b from the Stream Periphyton Monitoring Manual (Biggs & Kilroy 2000). The composite sample shall also be analysed for ash free dry weight and chlorophyll *a*.

2.3.2.3 **Sampling Result Records**

## 2.4 Groundwater Monitoring

This will address all groundwater monitoring required for land application at the Adjacent Block, Pain Farm and Pond seepage from the existing ponds.

Groundwater monitoring is likely to include levels and quality monitoring.

Samples shall be taken in accordance with the most recent version of Wellington Regional Council's groundwater sampling protocol.

### *2.4.1 Land Treatment Groundwater Monitoring*

2.4.1.1 **Sampling Site Locations**

2.4.1.2 **Sampling Procedures**

2.4.1.3 **Sampling Result Records**

### *2.4.2 Pond Seepage Groundwater Monitoring*

2.4.2.1 **Sampling Site Locations**

2.4.2.2 **Sampling Procedures**

2.4.2.3 **Sampling Result Records**

## 2.5 Soil Health Monitoring

To assess effects of the land application scheme on soil health.

### *2.5.1 Sampling Site Locations*

### *2.5.2 Sampling Procedures*

### *2.5.3 Sampling Result Records*

## 2.6 Monitoring for Odour

Reference made to the OMP

## 2.7 Complaints Register

Reference the OMM

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