

WARD

Barnsley_Protocol for Monitoring Point Source Emissions to Surface Water at point W1.

This protocol details a proposal to undertake representative monitoring of the surface water discharged from point W1 shown on the site layout plan in appendix 2 of the operating techniques, including the parameters to be monitored, frequencies of monitoring and methods to be used.

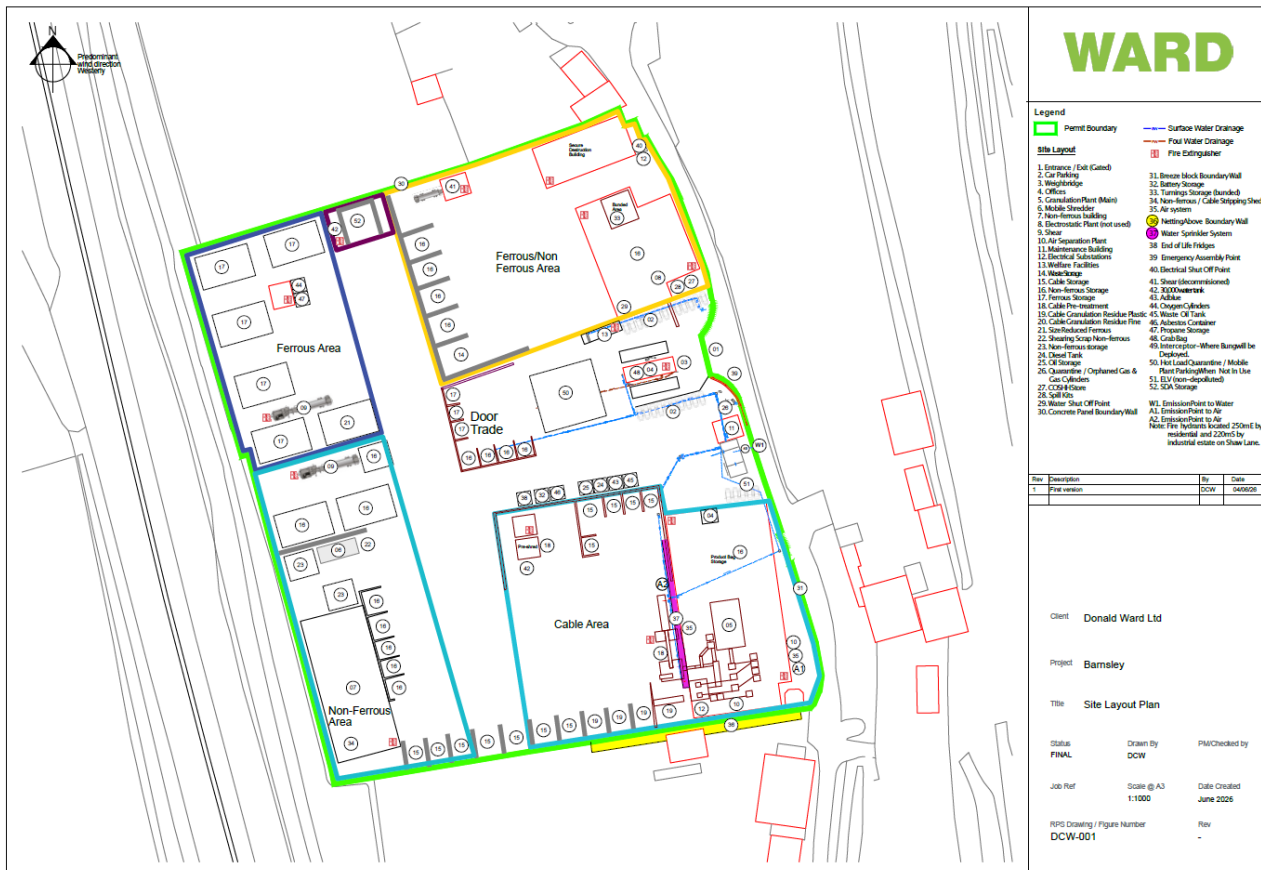
Once approved by the Environment Agency, this protocol will be used to train nominated employees involved with the sampling of site drainage discharges to water. It will be available as a reference document / work instruction for all employees involved with the sampling of site drainage discharge to surface water. A copy will be provided to these employees as well as all Site Managers and Supervisors and will form an integral part of the sites Environment Management System.

The objective is to facilitate the gathering of representative water quality data for the surface water discharged to watercourse.

This Work Instruction has been written with due regard to 'Guidance Monitoring discharges to water: guidance on selecting a monitoring approach.'

The site drainage

The discharge from the site is to surface water at location W1 and is shown on the Site Layout Plan in appendix 2 of the operating techniques and extract below.



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W1 will consists of rainfall dependant surface water drainage run-off from the site surfacing, via an interceptor to surface watercourse (Shaw Dyke).

The Protocol.

The site drainage will be sampled in accordance with the following methodology:

a) **Sampling Frequency**

Samples will be taken quarterly in January, April, July & October.

The discharge from the site will be rainfall dependant and therefore there may be occasions when a sample is due to be taken, but it has not rained and it will not be possible to collect a sample as there is insufficient flow. In this event, the sample will be collected as soon as is practicable after the scheduled date.

b) **Sample Records**

A sampling record sheet will be completed at the time of sampling to record the following information: Date & time of sampling, name of sampler, flow conditions during sampling and a description of the sample (colour, odour, appearance etc). An example and a blank form are provided in Appendix 1. Copies of completed records will be available on site. Laboratory Reports will be kept on site.

c) **Sampling locations**

W1 – Manhole covered sample chamber located immediately downstream of the interceptor prior to discharge from site to surface water.

d) **Monitoring Strategy**

Periodic monitoring will consist of discrete spot samples of effluent collected and preserved in accordance with the recommendation of the contracted laboratory. A spot sample is a discrete sample of the discharge and assesses the quality at that particular moment in time. This method of sampling is the most appropriate method for sampling intermittent discharges to assess compliance with trade effluent consents or permit conditions. The methodology detailed below will be adhered to.

e) **Employee Training & Responsibility**

All relevant employees will receive instruction and training in respect of this Monitoring protocol.

The nominated employee will be responsible for collecting, recording and dispatching samples to the laboratory in accordance with this protocol.

The Site Manager will have overall responsible for ensuring that the nominated employee is monitoring in accordance with the protocol.

The Site Manager will have overall responsibility for review of results, non-conformities, actions taken, record keeping and reporting.

f) **Health & Safety Considerations**

Sampling will be undertaken with due regard for Health and Safety considerations, such as manual handling, PPE and safe access to monitoring location etc. Advice will be sought from the Head of Health and Safety.

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Employees responsible for sampling will inform a supervisor or line manager when they are going to take a sample and when they expect to be back.

Employees will never enter into the sample chamber to be sampled. They will never leave an open manhole or chamber unguarded or unattended.

g) Sampling Equipment

The sample bottles and storage crates/cool boxes will be provided by the laboratory. Appropriate sampling equipment will be utilised e.g. dedicated sample rod & container.

h) Quality Control

Laboratories will have appropriate ISO, UKAS and MCERTS accreditation. UKAS accreditation to MCERTS for ISO 17025 available for sampling and analysis and MCERTS Laboratory equipment use covered by ISO 17025.

Only sample bottles provided by the laboratory will be used to contain the samples. The laboratory will be called in advance to arrange for the required number of sets of sample bottles and chain of custody forms to be delivered and a collection time arranged. Employees will check they have all the required equipment before commencing sampling.

Employees will ensure that the seal on the plastic bottle is not broken prior to use. If the seal is not intact the bottle will not be used. Glass bottles may not be sealed as they are reusable. Please ensure the glass bottles do not contain residue before use. NB. Some bottles will contain preservatives but this will be clearly marked on the bottle. Employees will always read the labels and instructions on the bottles.

Samples will be stored appropriately and sent to the laboratory within the designated stability periods as advised by the Laboratory.

Duplicate samples, sometimes referred to as split samples will be submitted for laboratory analysis as a method of assessing sampling uncertainty.

i) Sampling Methodology

Courier collection will be arranged in advance so the samples will not be retained unnecessarily on site pending collection.

A spot sample will only be collected when there is a flow. Samples will not be taken of standing water. The discharge from site will be weather dependant, spot samples will be collected during or after rainfall events.

Samples will only be taken from the identified sampling location W1.

A dedicated sampling rod with container attachment will be used for the purpose of collecting a sample. Employees will ensure it is clean before use and rinse it several times in the discharge to be sampled before collecting the sample.

Samples will be collected away from the sides and bottom of the channel to avoid contamination of the sample with any sediment and biological growths.

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Care will be taken when lifting manhole lids to avoid contamination of the sample by the disturbance of deposits from the cover when the cover is lifted and prevent contamination of the sample from the chamber walls and any bottom deposits.

Laboratory provided sample bottles should not be rinsed before filling unless specified by the laboratory. Bottles containing preservatives will not be rinsed. Bottles containing preservatives will be marked for example 'Contains Sodium Thiosulphate' and will have the necessary hazard warning stickers such as 'Corrosive' or Irritant' on the bottle. These bottles will also be accompanied by COSHH data or Safety Data Sheets (SDS).

Sample container(s) will be filled in accordance with laboratory instructions. It may be necessary in some cases to fill the bottle completely (to avoid loss of volatile compounds) or to leave space for preservatives etc. If there is no laboratory guidance or instructions on the bottle, the bottles will be filled completely. The bottle will be tightly sealed so that the sample will not leak in transit and in order that it cannot be contaminated or alter significantly prior to analysis.

Collecting a duplicate sample will involve filling two sets of sample bottles simultaneously so that it has the effect of one spot sample being split over two separate samples for analysis. These will be labelled as separate samples so the laboratory is not aware of their duplicate nature. Duplicate samples will be collected for 25% of samples i.e. one quarter each year.

A check will be made that the sample is of a sufficient size – i.e. the correct number & type of sample containers have been filled.

Each sample container/bottle will be labelled with the Company name, site name, sample location reference, unique sample reference, date and time of sample and initials of sampler. For example Ward Barnsley, W1, 21.02.2021 @ 12:00hrs, VJ. A description of the sample will be completed on the Sampling Record Form, Appendix 1.

Samples will be packaged in a way to avoid damage or spillage in transit in the cool boxes and packaging provided by the laboratory.

The necessary paperwork will be included with the samples – the laboratory chain of custody form will be completed and the site will keep a copy for their records. Sample matrix will be specified to enable the Laboratory to select the appropriate MCERTS UKAS accredited analysis.

The sample(s) will be kept cool, in the dark and submitted to the laboratory as soon as possible, within 24hrs of sampling or as specified by the laboratory sample stability requirements. If overnight storage is required, the samples will be kept in designated cool boxes or refrigerated. They will not be stored alongside food or drinks.

j) **Sample Analysis**

Samples will be sent to laboratory for analysis. Analysis will be undertaken for the parameters specified in the following table.

The laboratory will send a receipt confirming the samples have been received and the analysis to be undertaken. This will have a reference/ job number. The details will be checked and the laboratory contacted immediately if any errors are detected.

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Parameter	unit
Suspended Solids	mg/l
pH	Unit
BOD	mg/l
COD	mg/l
Iron (total & dissolved)	mg/l
Cadmium (total & dissolved)	mg/l
Chromium (total & dissolved)	mg/l
Copper (total & dissolved)	mg/l
Lead (total & dissolved)	mg/l
Nickel (total & dissolved)	mg/l
Zinc (total & dissolved)	mg/l
Ammoniacal Nitrogen	mg/l
Extractable Petroleum Hydrocarbons (EPH)	mg/l
TOC	mg/l

k) Sample Results

Sample results should normally be received within 10 working days. The laboratory will be contacted quoting reference/job number if the results are not received within these timescales.

Results will be reviewed versus any limits as agreed with the regulator upon receipt and where necessary actions taken as required.

l) Limits

As agreed with the regulator.

m) Actions in the event of a breach of Quality Conditions/ Consent limit

There are currently no limits imposed. In the event that limits are imposed and one is exceeded the following action will be taken.

The Environment and Sustainability Team will be informed.

The source of the exceeded trigger level will be investigated and identified and remedial action will be taken, if required, to prevent reoccurrence.

Where required, further samples will be collected to monitor the situation or confirm effectiveness of maintenance/ improvement.

The EA will be notified using the appropriate agreed method.

n) Site Records

Sample records & laboratory results will be filed in site records along with any correspondence relating to the sampling. These records will be available on site for the life of the site.

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APPENDIX 1 - SAMPLE RECORD SHEET EXAMPLE

SITE NAME: Barnsley

Unique sample reference	Date and time	Sample location	Flow conditions	Colour	Odour	Appearance	Visual oil or grease	Comments & observations	Weather conditions	Sampler initials
n/a	05.04.26 @ 11:00	W1	No flow visible	N/A	N/A	N/A	N/A	Insufficient flow to sample	Showers, previous week dry.	VJ
W11001	10.06.26 @ 09:30	W1	Moderate	None - Clear	Slightly earthy odour	Some particles suspended but otherwise clear	None	None	Heavy rain, persistent for days	VJ

Notes on completing the sample record sheet.

- 'Unique sample reference' – please give each of your samples a unique reference number.
- 'Flow conditions' – please use your judgement to best describe the flow as either No flow, very low, low, moderate, high or very high.
- 'Odour' - odours are subjective but describe to the best of your ability – for example smells muddy, smells like rotten eggs or smells like wet dogs.
- 'Appearance' - describe the appearance of the sample from clear & transparent to cloudy & opaque. Please describe the sample using words such as clear, cloudy or opaque.
- Visual oil or grease' – Yes or None. If 'Yes' please provide detail. For example slight rainbow sheen on surface or oily residue present in sample etc.
- 'Comments and Observations' please note any actions taken – for example no sample taken.
- 'Weather condition' - Please detail conditions prior to and at the time of sampling.

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