Appendix 7_Protocol for Monitoring Point Source Emissions to Surface Water and Sewer at Points S1 and W1

This protocol is a written monitoring plan to meet the requirements of EPR/QP3525MG and details proposals to undertake representative monitoring of the surface water discharged from points S1 and W1 shown on the plan in Schedule 7, including the parameters to be monitored, frequencies of monitoring and methods to be used.

This protocol will be used to train nominated employees involved with the sampling of site drainage discharges to sewer and surface water. It will be available as a reference document / work instruction for all employees involved with the sampling of site drainage discharge. A copy will be provided to these employees as well as the Site Manager 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 water discharged for the purpose of assessing compliance with the environment permit.

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

Point source emissions to water

There are two point source emissions to water, one to surface water and one to sewer. The discharges consist of rainfall dependent run off from site surface (storage and treatment areas).

Surface Water (W1)

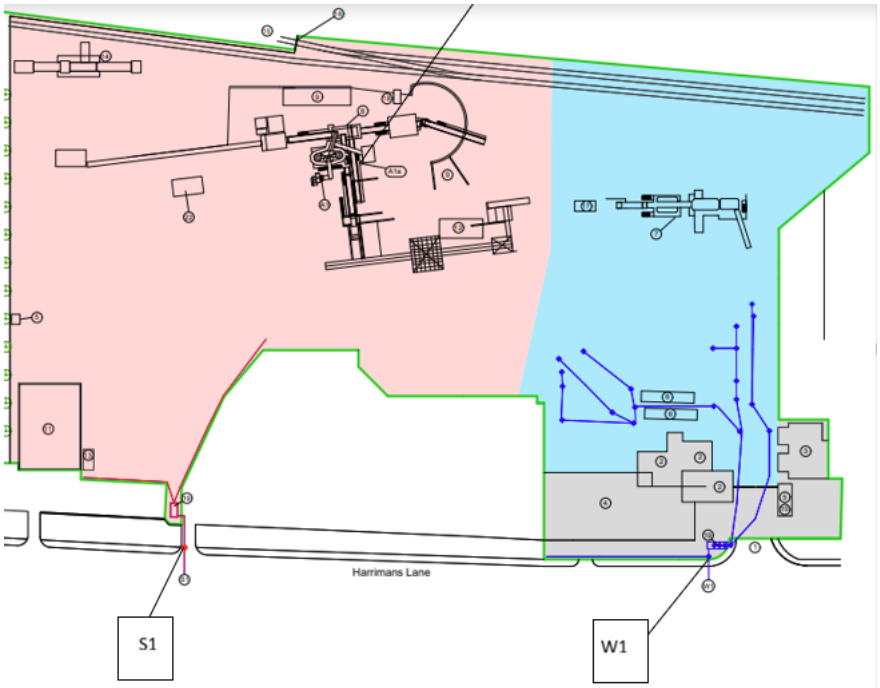
The site has an impermeable surface with a sealed drainage system. The surface water drainage system flows via abatement technique class 1 full retention oil water separator aka interceptor located to the east of the yard discharges (W1) to surface water drainage on Harrimans Lane, which ultimately discharges to controlled watercourse, Tottle Brook.

Sewer (S1)

The site has an impermeable surface with a sealed drainage system. The surface water drainage system flows via abatement technique class 1 full retention oil water separator aka interceptor located at the southern tip of the yard discharges (S1) to the foul sewer on Harrimans Lane, which is treated by Severn Trent Water Company.

Emission Point reference	Nature of emission	Abatement Technology	Emission type
W1	Rainfall dependent site run off potentially containing oil, metals, Solids	Oil water separator	Point source emission to surface water, Tottle Brook
S1	Rainfall dependent site run off potentially containing oil, metals, solids	Oil water separator	Point source emission to sewer (STW)

The discharges are shown on the Site plan in schedule 7 of the environment permit and extract below.



Monitoring Protocol.

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

a) Sampling Frequency

Samples from both S1 and W1 discharges will be taken monthly.

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

b) Sample Records

Chain of Custody forms will accompany samples to the laboratory. Laboratory Reports will be kept on site.

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.

c) Sampling locations

W1 and S1 – Manhole covered sample chambers located immediately downstream of the interceptors prior to discharge from site.

d) Monitoring Strategy

Periodic monitoring will consist of the collection of discrete spot samples of effluent, that are 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 and 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 competency of the nominated employee will be reviewed by observations.

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

f) <u>Health & Safety Considerations</u>

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 Health and Safety Manager.

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.

The employee shall wear site PPE i.e. high visibility clothing, safety boots, hard hat, clean disposable gloves and eye protection when sampling.

g) <u>Sampling Equipment</u>

The sample bottles and storage boxes will be provided by the laboratory. These must be clean and any expiry dates observed. Appropriate and dedicated sampling equipment will be utilised e.g. dedicated sample rod & container. The above will be clean. Please see below for further information.

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 seals on plastic bottles are not broken prior to use. If the seals are not intact the bottle will not be used. Glass bottles may not be sealed as they are reusable. The sampler will 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/ safety data sheets.

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

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 an observable flow at the designated sample points. Samples will not be taken of standing water. The discharge from site is weather dependant, hence spot samples will be collected during or after rainfall events.

Samples will only be taken from the designated sampling locations.

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 by disturbing sediments and/or biological growths.

The manhole cover and immediate surroundings will be inspected and cleared of any debris that could fall into the chamber when the lid is removed. 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. Care will be taken regarding the use of the sample rod during the sampling to prevent any debris being disturbed from the walls or bottom of the chamber that could cause contamination of the sample.

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.

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, sample reference, date and time of sample and initials of sampler. For example Ward Nottingham_W1_17.03.26 @ 10.00hrs, GS. 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 samples 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 tables 1 & 2 below. Limits of detection will be adequate to enable comparison with consent limits.

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.

Table 1: Point Source emissions to Tottle Brook emission point ref W1				
Parameter (Note 3)	**Limit (incl. unit)**	**Reference Period (Note 1)**	**Monitoring frequency (Note 2) (Note 4)**	**Monitoring standard or method**
TOC COD (Note 5)	60 mg/l 180 mg/l	--	Monthly	BS 6068-2 34 BS ISO 15705
Total suspended solids	60 mg/l	--	Monthly	BS EN 872
Hydrocarbon oil index	10 mg/l	--	Monthly	EN ISO 9377-2
Arsenic (Note 6)	0.05 mg/l	--	Monthly	EN ISO 11885, EN ISO 17294-2 EN ISO 15586
Cadmium (Note 6)	0.05 mg/l	--	Monthly	EN ISO 11885, EN ISO 17294-2 EN ISO 15586
Chromium (Note 6)	0.15 mg/l	--	Monthly	EN ISO 11885, EN ISO 17294-2 EN ISO 15586
Copper (Note 6)	0.5 mg/l	--	Monthly	EN ISO 11885, EN ISO 17294-2 EN ISO 15586
Lead (Note 6)	0.3 mg/l	--	Monthly	EN ISO 11885, EN ISO 17294-2 EN ISO 15586
Nickel (Note 6)	0.5 mg/l	--	Monthly	EN ISO 11885, EN ISO 17294-2 EN ISO 15586
Zinc (Note 6)	2.0 mg/l	--	Monthly	EN ISO 11885, EN ISO 17294-2 EN ISO 15586
Mercury (Note 6)	0.005 mg/l	--	Monthly	EN ISO 17852 EN ISO 12846
pH	-	--	Monthly	
BOD	-	--	Monthly	
PFOA PFOS Deca BDE (Note 6)	-	--	6 monthly	BS ISO 25101

Note 1 - Relevant reference period:

• In the case of continuous discharge, daily average values, i.e. 24-hour flow-proportional composite samples.

• In the case of batch discharge, average values over the release duration taken as flow-proportional composite samples, or, provided that the effluent is appropriately mixed and homogeneous, a spot sample

Table 1: Point Source emissions to Tottle Brook emission point ref W1				
Parameter (Note 3)	**Limit (incl. unit)**	**Reference Period (Note 1)**	**Monitoring frequency (Note 2) (Note 4)**	**Monitoring standard or method**
taken before discharge. Note 2 – Monitoring frequencies may be reduced by written agreement of the Environment Agency if emission levels are proven to be sufficiently stable. Note 3: In addition the operator shall also monitor for relevant waste water parameters as required for example flow, pH, temperature, conductivity, BOD. Note 4: An alternative monitoring frequency may be agreed in writing with Environment Agency following completion of IC 9. Note 5: Either total organic carbon (TOC) or chemical oxygen demand (COD) can be monitored. TOC monitoring is preferred as does not rely on the use of very toxic compounds. Note 6: This substance is only required to be monitored where present in the waste water emissions inventory.				

Table 2: Point source emissions to sewer emission point ref S1				
Parameter (Note 3)	**Limit (incl. Unit) (Note 5)**	**Reference period (Note 1)**	**Monitoring frequency (Note 2)**	**Monitoring standard or method**
Hydrocarbon oil index (Note 6)	10 mg/l	--	Monthly	EN ISO 9377-2
Arsenic (Note 4) (Note 6)	0.05 mg/l	--	Monthly	EN ISO 11885 EN ISO 17294-2 EN ISO 15586
Cadmium (Note 4) (Note 6)	0.05 mg/l	--	Monthly	EN ISO 11885, EN ISO 17294-2 EN ISO 15586
Chromium (Note 4) (Note 6)	0.15 mg/l	--	Monthly	EN ISO 11885, EN ISO 17294-2 EN ISO 15586
Copper (Note 4) (Note 6)	0.5 mg/l	--	Monthly	EN ISO 11885, EN ISO 17294-2 EN ISO 15586
Lead (Note 4) (Note 6)	0.3 mg/l	--	Monthly	EN ISO 11885, EN ISO 17294-2 EN ISO 15586
Nickel (Note 4) (Note 6)	0.5 mg/l	--	Monthly	EN ISO 11885, EN ISO 17294-2 EN ISO 15586
Zinc (Note 4) (Note 6)	2.0 mg/l	--	Monthly	EN ISO 11885, EN ISO 17294-2 EN ISO 15586

Table 2: Point source emissions to sewer emission point ref S1				
Parameter (Note 3)	**Limit (incl. Unit) (Note 5)**	**Reference period (Note 1)**	**Monitoring frequency (Note 2)**	**Monitoring standard or method**
Mercury (Note 4) (Note 6)	0.005 mg/l	--	Monthly	EN ISO 17852 EN ISO 12846
pH	-	--	Monthly	
BOD	-	--	Monthly	
PFOA PFOS Deca BDE (Note 4)	-	--	6 monthly	BS ISO 25101

Note 1 - Relevant reference period:

• In the case of continuous discharge, daily average values, i.e. 24-hour flow-proportional composite samples.

• In the case of batch discharge, average values over the release duration taken as flow-proportional composite samples, or, provided that the effluent is appropriately mixed and homogeneous, a spot sample taken before discharge.

Note 2: Monitoring frequencies may be reduced by written agreement of the Environment Agency if emission levels are proven to be sufficiently stable.

Note 3: In addition the operator shall monitor for relevant waste water parameters as required for example flow, pH, temperature, conductivity, BOD.

Note 4: This substance is only required to be monitored where present in the waste water emissions inventory.

Note 5: The BAT-AEL may not apply if the downstream waste water treatment plant abates the pollutant concerned, provided this does not lead to a higher level of pollution of the environment. The operator may request in writing to disapply the BAT-AEL, supported by a revised H1 Assessment and confirmation from the sewerage undertaker that the waste water treatment plant abates the pollutant concerned

Note 6: The monitoring frequency may be reduced if the down stream waste water treatment plant abates the pollutant concerned. The operator may request in writing to disapply the BAT-AEL, supported by a revised H1 Assessment and confirmation from the sewerage undertaker that the waste water treatment plant abates the pollutant concerned.

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.

Sample results shall be submitted 6 monthly to the Environment Agency using forms ‘WATER 1’ and ‘SEWER 1’.

l) Limits

As per tables 1 and 2 above.

m) Actions in the event of a breach of limit

In the event that a permit limit is exceeded the following action will be taken.

The Head of Environment and Sustainability will be informed.

The source of the exceeded trigger level will be investigated, 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 breach will be added as a non-conformity to our internal reporting system (MyCompliance).

The Environment Agency will be informed within 24 hours via a Schedule 5 Notification.

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.

APPENDIX 1 - SAMPLE RECORD SHEET EXAMPLE

SITE NAME: Nottingham Shredder

Sample reference	Date and time	Sample location	Flow conditions	Colour	Odour	Appearance	Visual oil or grease	Comments & observations	Weather conditions	Sampler initials
W1	17.03.26@ 10:00	W1	No flow visible	N/A	N/A	N/A	N/A	Insufficient flow to sample	Showers, previous week dry.	GS
S1	17.03.26 @ 14:30	S1	Moderate	None - Clear	Slightly earthy odour	Some particles suspended but otherwise clear	None	None	Showers, previous week dry.	GS

Notes on completing the sample record sheet.

- 'Sample reference' – please ensure each of your samples has a 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.

APPENDIX 1 - SAMPLE RECORD SHEET

SITE NAME: Nottingham Shredder

Unique sample reference	Date and time	Sample location	Flow conditions	Colour	Odour	Appearance	Visual oil or grease	Comments & observations	Weather conditions	Sampler initials

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.