'A PROJECT NAME'

FINAL REPORT

'A MONTH A YEAR'

Before '*a date*'

After '*a date*'

Completed/Prepared By

DENE-TECH

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On Behalf of

A Client

A Clients Address

Total Number Of Misconnections	Total Number Of Misconnections removed	Misconnection Rate In Catchment (%)
52	49	5.4%

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1. SUMMARY REPORT

Project Reference	***A Ref No.***
Project Name	***A Name***
Location	***A Borough Council***
Grid Reference	***A Grid Ref***
Watercourse	***A River***
Pollution Control Technologist	***A Technologist***
Contractor	**Dene-Tech Services Limited**

Original Problem Definition:

This investigation involved identification and rectification of all misconnections to the surface water system which discharges to the River '*Name* at *outfall / assessed manhole (Manhole Ref No*)' located '*a description of location'* at grid reference '*xxxxxx, xxxxxx'*.

Solutions to Resolve:

The following methodology will be adopted during the investigation:

- Desktop Catchment Study
- Outfall Analysis
- Manhole Inspections & Caging to identify polluting sub catchments
- Property Surveys to identify misconnections
- Rectification of misconnections
- Final Manhole and Outfall inspection

Results

'XX' properties were identified with misconnected pipework as detailed in the table below.

Type of Misconnection	Number Identified	Comment
Washing Machine		
Kitchen Sink		
Dishwasher		
Toilet		
Hand Basin		
Shower		
Bath		
Bungs		
FW – SW		

Table 1 Misconnections

The owner of the outstanding property would not allow access for us to determine the source of two misconnected pipes to the surface water storm trap; for the purpose of this report we have assumed they were 1 washing machine and 1 hand basin based on the evidence found in the surface water manhole. Following the rectification of 7 of the 8 properties there has been a significant improvement in the water quality at the assessed manhole*. '(edit as applicable or remove)'*

2. INTRODUCTION

As part of Thames Water Utilities Limited commitment to improving water quality in the River '*Name'* an investigation was commissioned, by Thames Water, to establish and remove any illegal misconnections to the public surface water drainage system which discharges to the River '*Name'* at 'outfall / assessed manhole (STC25 Ref No)' located *'a description of location'* at Grid Ref '*XXXXXX XXXXXX'*.

The study was commissioned *'as part of the Environment Agency's AMP list of unsatisfactory outfalls / as part of the 'Waiting List' Project. (delete as appropriate)'*

Dene-Tech Services Limited has been employed to carry out these investigations.

The desktop study was carried in 'MM/YY' followed by the caging investigation in 'MM/YY' Property surveys were completed between 'MM/YY' and 'MM/YY' in the polluted sub-catchments.

The methodology adopted for the survey was in accordance with Thames Water Pollution Tracing Method Statement **-** Pollution Control.

This report provides comprehensive details and analysis of the work completed during the study and provides some conclusions and recommendations

3. SURVEY METHODOLOGY

The desk top study established that a total of 'XXX' properties existed with potential connections to the public surface water system to the outfall under investigation.

A strategy was developed to isolate the overall catchment into smaller sub-catchments and then monitor the system for evidence of pollution utilising wire cages. The wire cages are designed to capture waste materials from both kitchens and toilets (food waste / toilet waste etc) and have an absorbent membrane included which will detect traces of washing machine waste and other detergents as well as petrol / oil based substances.

A standard 'scoring' system is utilised when assessing cage sites and this is carried out upon installation and then repeated on any subsequent visits made to monitor cage conditions.

Table 2 provides details on the scoring system.

The cages were typically installed for a four week period and re-visited twice during this period to assess pollution. However the duration of any installation and number and frequency of visits are subject to change due to local conditions such as weather, level of contamination etc.

Additional cages are also deployed further upstream on some networks based on the findings of the initial cage installation in an attempt to further isolate pollution sources. These additional cages are subject to the same checking regime.

The frequency of the checking regime is designed to ensure that cages are installed for sufficient time to detect any 'intermittent' discharges and also allows for variations in weather conditions.

Every cage is made on site at the installation location and is designed in such a way that they create a minimal risk of blocking the system. They are designed to sit in the outgoing invert of a manhole and are fixed to a step iron with 10mm polypropylene rope.

The public drainage network is also investigated in an attempt to establish if any Dual Manholes or Combined Sewer Overflows exist within the catchment which could contribute pollution at the outfall in inclement weather or if any blockages occur in the network.

Level of Contamination					
None	Low Non Sewage	High Non Sewage	Low Sewage	High Sewage	
1	2	3	4	5	
Weather Conditions					
Dry	Light Rain	Light Showers	Heavy Rain	Heavy Showers	Snow
A	B	C	D	E	F

Table 2 – Cage Scoring

Any areas that give a positive indication of pollution had the properties upstream added to a property survey check list and were then visited for full connectivity surveys to establish where all waste water appliances, within the property, discharge.

A full log of property visits was recorded to include details on date of survey, outcome of survey (Clean, Polluting, Unable to Gain Access, Refused Access etc), and any repeat visits attempting to gain access.

Any householder where misconnections were identified was informed of the situation at the completion of the survey and potential solutions for the problem were discussed. This was then followed up by a letter confirming the misconnection and requesting that the necessary rectification works be completed as soon as possible.

Upon confirmation that the remedial works were complete a return visit was organised to confirm that the property is no longer causing pollution into the surface water network.

A regime of follow up communications (letters, telephone calls, e-mails) was also employed when the initial rectification letter received no response.

Any property that could not be accessed during the initial phase of the property survey also received a regime of follow up letters in an attempt to access the property.

Any areas where the cages indicated that no pollution was present were occasionally monitored, in conjunction with the Thames Water Technologist, throughout out the property survey and rectification process to ensure that the system remains free from pollution. XX cages were re-installed to assist with this analysis. '(*delete this sentence if no cages re-installed)'*

4. CATCHMENT ANALYSIS

A total of 'XX' cages were installed within the catchment.

Table 3 provides details on the results of the caging investigation

STC25 MH reference	Road Name	Rating	Comment

Table 3 – Caging results

Any streets with a score of two or more were investigated in detail to establish the exact location of misconnections on the individual properties. This resulted in 'XX' properties being surveyed out of the original total of 'XXX' defined in the desktop study which equates to 'XX%' of the overall catchment.

Out of the properties checked 'XX' were identified as having misconnected pipework a total of 'X%', this consisted of '*details on appliances'*.

A total of 'XX' could not be accessed ('XX%') despite numerous attempts and letters requesting permission to conduct a property survey.

Following notification to the householder of the misconnection(s) a total of 'XX' properties have successfully completed the necessary remedial works and are no longer discharging waste water to the surface water network. In total connections from '*details on appliances*' have been removed from the system.

Unfortunately despite numerous contacts from both Dene-Tech Services and the Thames Water Technologist 'XX' properties have failed to respond to the request to remove the illegal connections and these were handed over the locale Environmental Health Officer (EHO) at '*A Borough Council'* on 'DD/MM.YY' for further action / enforcement. In total there are *'details on appliances'* in the hands of the EHO for resolution.

5. CONCLUSION AND RECOMMENDATIONS

Since the start of the investigation there has been a marked improvement in both the aesthetic quality and actual water quality at the outfall location.

As part of this study 'XX%' of the identified misconnections within this catchment have now been rectified to discharge to the foul / combined sewer network and it is therefore recommended that the outfall is removed from *'the Environment Agency's AMP list of unsatisfactory outfalls / the 'Waiting List' Project. (delete as appropriate*)'.

APPENDIX 1
Catchment Plan

‘***A project No. a project name Catchment Plan’***
(nb Save layout window in MapInfo as a WMF file & then insert as a picture, edit image as necessary. On larger catchments create more than 1 if needed for clarity)

APPENDIX 2
Misconnection Record Sheet

'A catchment Ref No A catchment name' **Misconnection Record**

Summary

Total Misconnected Appliances	16	Foul to surface water	0	Bungs replaced	0	Polluting Properties	8

Key:
WM – Washing Machine, KS – Kitchen Sink, DW – Dish Washer, T – Toilet, HB – Hand Basin, SH – Shower, B – Bathroom, FW-SW – Missing dual manhole bung or other cross connection

Property	Street	Postcode	WM	KS	DW	T	HB	SH	B	FW-SW	Date inspected	Date rectification inspected and confirmed
1	*A street name*	*A postcode*	*1*				*1*			*1*	*05-Apr-13*	*15-Oct-13*
2	*A street name*	*A postcode*	*1*				*1*				*05-Apr-13*	*outstanding*
3	*A street name*	*A postcode*	*1*								*21-Mar-13*	*03-May-13*
4	*A street name*	*A postcode*					*1*				*19-Mar-13*	*10-Jun-13*
5	*A street name*	*A postcode*	*1*								*19-Mar-13*	*10-Jun-13*
6	*A street name*	*A postcode*	*1*		*1*						*19-Mar-13*	*03-May-13*
7	*A street name*	*A postcode*	*1*	*1*			*2*		*1*		*19-Mar-13*	*15-Aug-13*
8	*A street name*	*A postcode*	*1*				*1*				*19-Mar-13*	*15-Oct-13*
			7	1	1	0	6	0	1	0		