BAA.2210 Victoria North HIF Infrastructure Main Works

Cheetham hill Culvert Technical Note

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30/05/2023

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1.0 Introduction

The purpose of this technical note is to describe the investigation and subsequent analysis of the location of the Cheetham hill culvert and any impact onto the Victoria North HIF site

2.0 Historical Information

As part of planning application 1 a condition was put in place (Condition 17) which required the establishment of the existence, location, and condition of the Cheetham Hill Junction Drain Culverted ordinary water course.

A location plan was obtained from MCC which indicated that the culvert was located passing under the northern most arch of the existing bridge and then running across the site area towards the river in the location of the existing United Utilities manhole located adjacent to the river Irk.

3.0 Onsite Investigation works

Following the presentation of the location drawing a series of investigations where undertaken across the site in an effort to locate evidence of the culvert and its outfall across the site.

Starting with an initial inspection of the united utilities manhole system for evidence of inlets from the culvert and any possible outfall out directly to the river Irk no evidence of a specific culvert outfall to either of the areas was identified.

A number of trial holes where undertaken along the projected route (as shown on the provided location plan) but no culvert/drain system was identified.

A number of trial holes where excavated adjacent to the bridge structure running along the north edge of the HIF site. These excavations identified a pair of pipes passing under the bridge arch and connecting into what is identified as the historic railway siding track drainage system.

Approximately 15m to the East of the bridge on the adjacent land owned by TFGM a partially filled open trough culvert was identified. The channel is in situ along the area an into the TFGM sidings but along its length the culvert is infilled in places up to around 50% of its depth with stone and vegetation. No water has been identified within the trough.

As part of a check into the background of the area and the culvert a outfall was also identified to the rear of HMG paints and into the river Irk. Further investigations into the area suggests that at some point in time works had been undertaken which diverted the water from within the culvert to the identified outfall.

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4.0 Findings

Following the discovery of the pipework under the bridge and exposing the connection to the historic railway trackside drainage it showed that at some point in time the culvert was connected into the system which eventually connects to the UU sewer which crosses the site.

During the investigations it was found that the historic track drainage had become silted up and so was not providing a route for any volume of water to pass through the system

Inspection of the channel along the TFGM site shows that this is partially infilled with ballast and vegetation.

There is no evidence of water flow within the channel. The lack of water traversing the channel has been further evidenced by observation as during the period the ends of the pipe have been exposed and connection to the final outlet on the HIF site has been disrupted(since January 2023). No flow of water has been observed exiting the pipework coming onto the HIF site in this period including during heavy prolonged rain periods.

An incoming pipe has been identified coming from the north embankment into the historic rail drain. This incoming water has been tested and has elevated levels of methane which requires treatment before reconnection to the UU system.

5.0 Conclusions

The Cheetham hill culvert at some point in time (most probably when the railway infrastructure was installed) was diverted into the track side drainage system. This system was connected into the existing drainage system via the track drainage connection.

At what may have been a similar time an outfall was constructed to the East of the HIF site which outfalls into the River Irk form the rear of what is now HMG paints.

Based on the observed flow of water through the out fall at HMG paints and the absence of flow of water into the HIF area it would appear that at some point in time the culvert system was permanently diverted to outfall solely at the HMG paints outlet only.

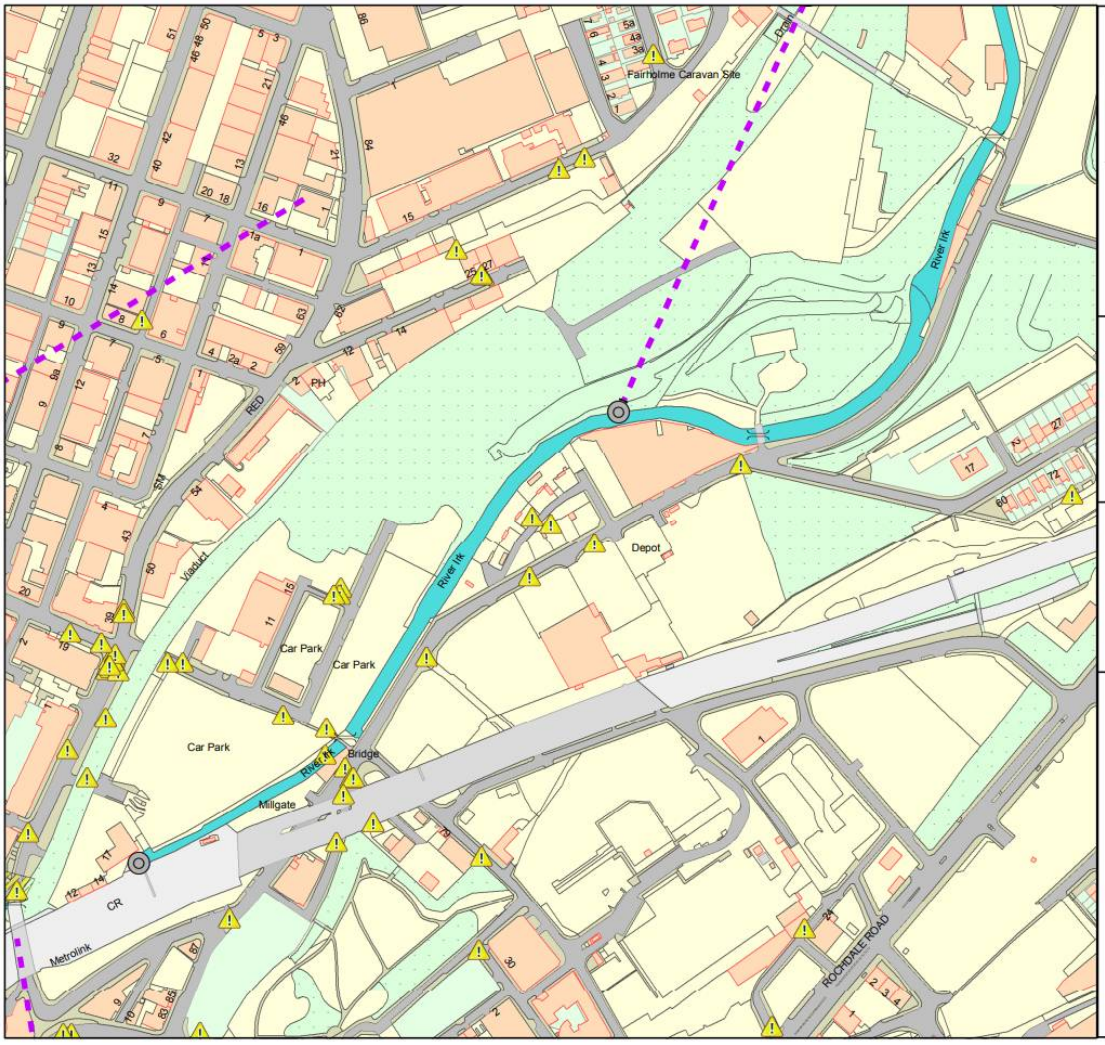
Therefore, the removal of the pipework of the Cheetham culvert on the HIF site will have no impact on any upstream drainage systems

Management of the incoming water from the connection from the embankment area on the HIF site will be managed in the short term by a temporary treatment facility. Agreement has been reached with UU for a temporary discharge Licence for this. A permanent solution for the long term treatment is currently being developed by MCC and a permanent discharge Licence is being agreed with UU.

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Appendix 1a – MCC Cheetham Hill Culvert Historic location plan

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MANCHESTER CITY COUNCIL

LLFA DATA SCREEN

Address/Site Ref:
Red Bank

Our Ref: **MCC014/12/2021**

Author: Manchester City Council LLFA
Date: 14/12/2021
Scale: 1:3,629

The position of features shown on this plan is approximate only and is given in accordance with the best information currently available. Manchester City Council will not accept liability for any loss or damage caused by the actual position being different from those shown.

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Appendix 1b – Onsite Investigation works findings

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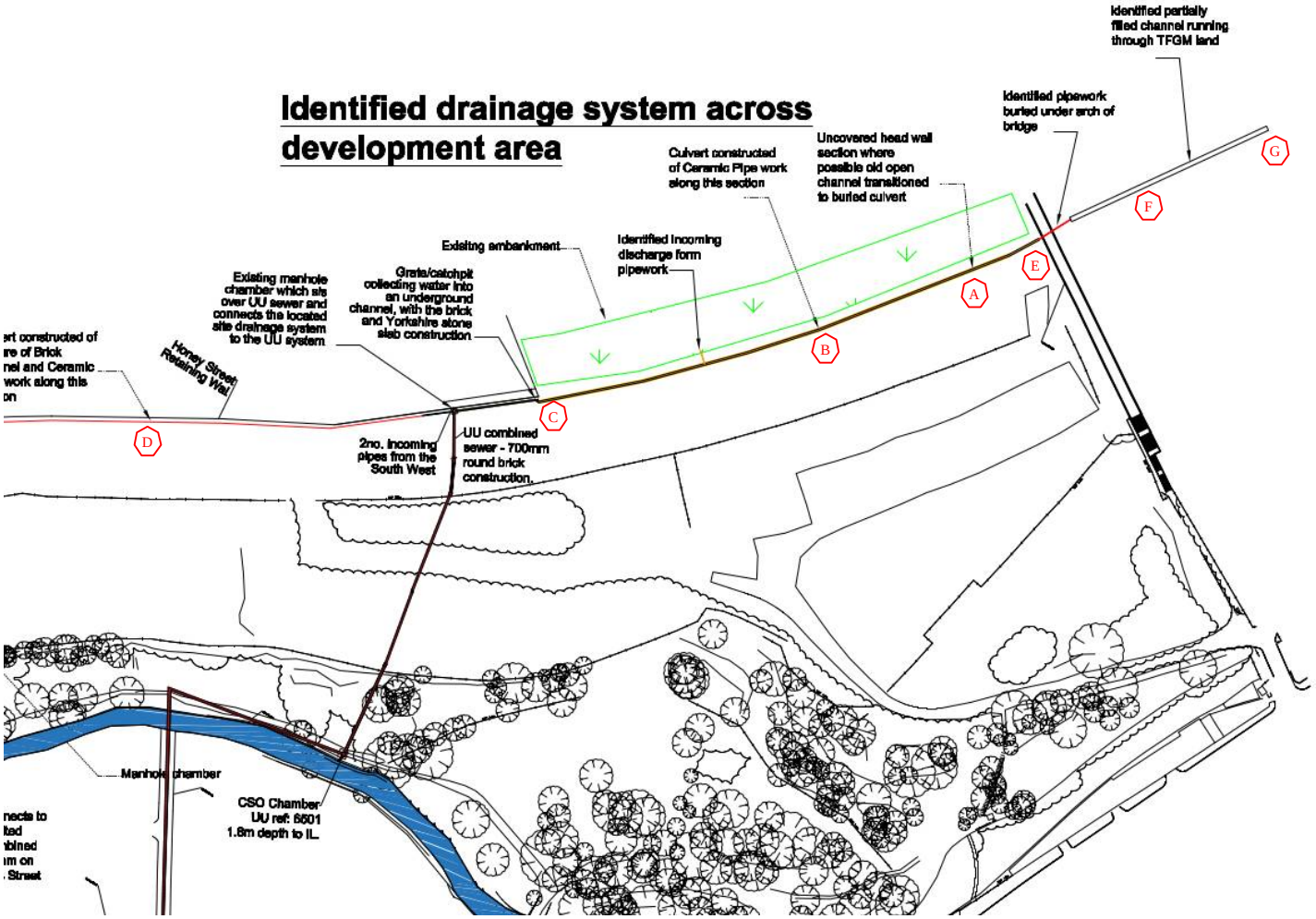


Figure 1

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Photos of investigation works

A. Headwall uncovered



B. Clay pipe work of culverted section of drain



C. Grating/catchpit



D. Section of culvert/drain uncovered



E. Photo of bund installed to side of bridge



F. Photo of empty channel in TFGM area



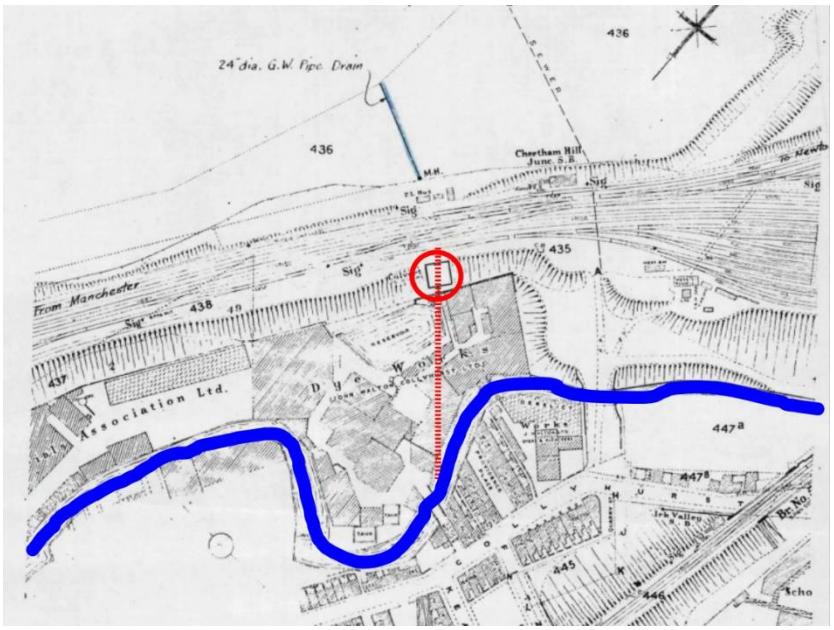
G. Photo of empty channel in TFGM area

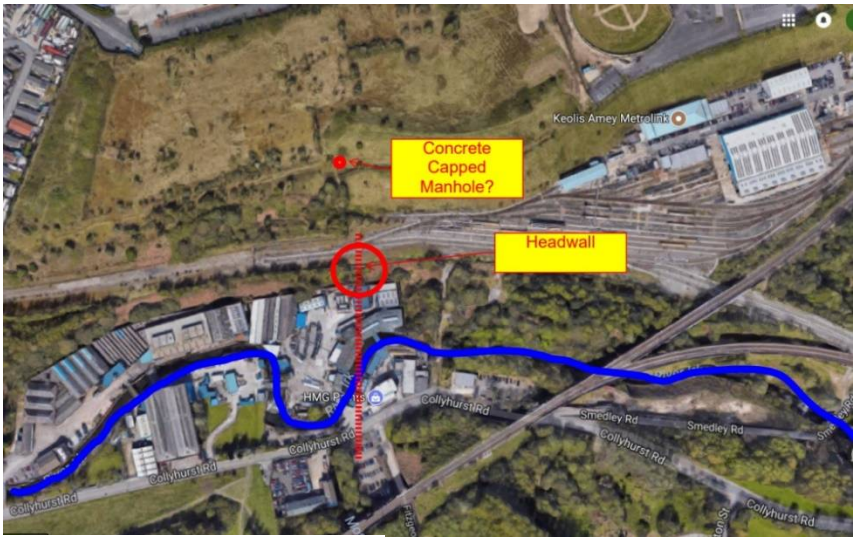


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Location of identified outfall to East of site outside of HIF works area





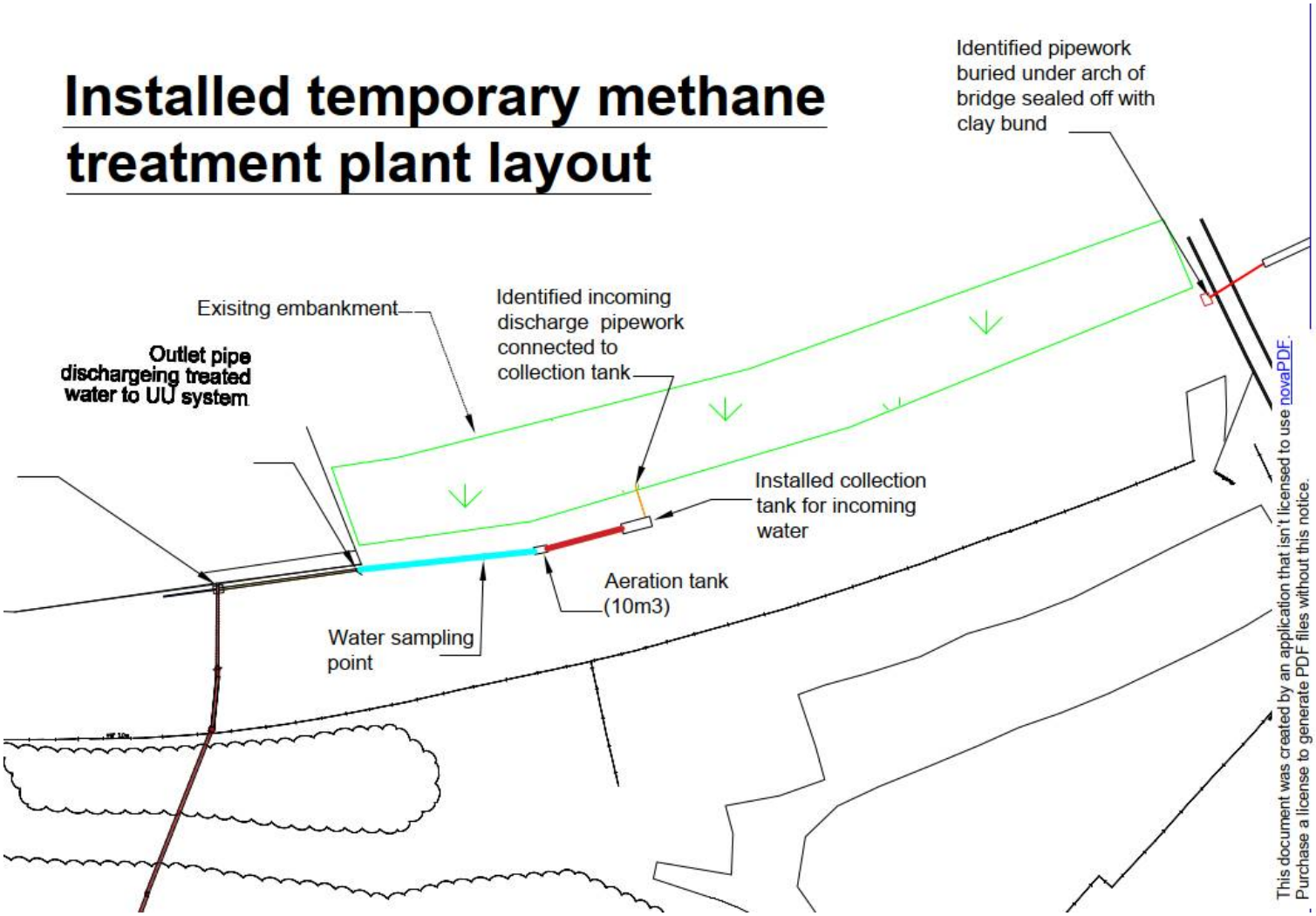


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Appendix 1c – Temporary Methane treatment plant layout

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Installed temporary methane treatment plant layout



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