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TM/C5692/13700

20th November 2024

Environment Agency
Richard Fairclough House
Knutsford Road
Latchford
Warrington
WA4 1HT

*For the Attention of Mr Lee Beveridge*

Dear Lee

**Re: Land Bound By Gould Street, Williamson Street, Bromley Street And Bilbrook Street, Manchester, M4 4DD Planning Application number: 128248/FO/2020.**

We are writing in follow up to the meeting held on 7th November 2024 between representatives from the Environment Agency, Brownfield Solutions, Jackson Remediation and the client, MCR. We would like to address specific concerns raised by the Environment Agency over a former well(s) which is evident on the historical mapping pertaining to the site, which was raised as a potential unaccounted pathway between shallow made ground soils / perched groundwater and sensitive groundwater resources within the Principal Aquifer underlying the site.

**Background and Context**

A detailed summary of the site history and previous geo-environmental investigations and remediation completed on site to date is provided within BSL Phase I and II Geo-Environmental Assessment ref. MB/C5692/13303 Rev A, and should be referred to for further specifics on the detailed history of the site, however a very brief summary is provided below for context.

The site has been used a gasworks since circa 1824, originally occupying the western half of the site, expanding to occupy the whole site by 1891, and remained so until the mid 1980s. There are at least 6 known historical tar tanks / gasholders present in the northern half of the site, the majority of which have been remediated previously during a voluntary remediation scheme in 2010 which focused on source removal and in situ stabilisation of gasholder contents. One gasholder remains which has not been subjected to any previous remediation (referred to as Tar Tank No. 1) and is known to contain at least 3-4m of viscous tar at its base.

A comprehensive geo-environmental investigation was completed by BSL in summer 2024 focusing primarily on the northern area of the site which contains the historical gasworks structures. The investigation identified evidence of widespread contamination within the made ground soils, shallow perched groundwater bodies as well as elevated concentrations of metals, inorganic compounds, PAHs, phenols, aromatic hydrocarbons and BTEX (benzene and xylene) identified at various groundwater sampling locations representative of the Principal Aquifer.

Given the apparent impaction of the Principal Aquifer, likely by historic site activities and remaining un-remediated point sources (e.g. Tar Tank No. 1), a key objective of future remediation at the site will be to address remaining point sources and ensure that known pathways to sensitive water resources are broken as far as possible, to limit the spread of contaminants underlying the site as far as possible.

Therefore, in light of the above, the purpose of this letter is to specifically address the former 'well' structures as potential pathways to sensitive groundwater / surface water resources and highlight these structures to ensure they are fully considered as part of ongoing geo-environmental assessments and reporting, specifically to inform the Conceptual Site Model and Remedial Strategy which is in production at the time of writing.

**Available Information on Historical Features and on-site Drainage**

BSL have re-reviewed historical information from a number of sources detailed below:

- National Gas Archive – Transco Plc, Manchester Corporation, Rochdale Road Station, Plan of Works Drains.
- Historical Ordnance Survey Mapping (1:500 to 1:10560 scale, date ranges 1848-2024).
- BGS Onshore Geoindex.

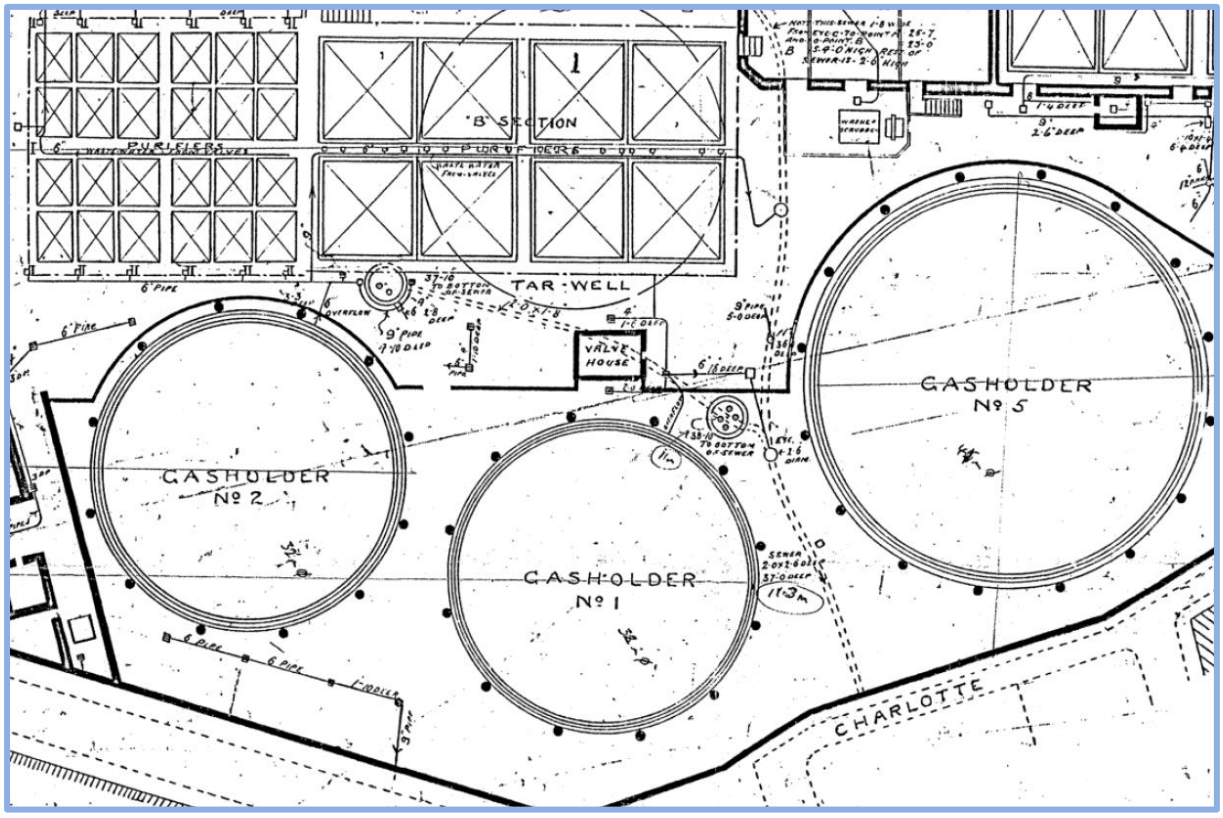
The Historical Ordnance Survey Mapping shows two circular features in the northern area of site, evident on mapping dated 1891 – 1978. Between 1949 and 1952 these features are specifically labelled as 'wells' which have been rightly flagged by the EA as notable features which require further consideration.

With reference to the BGS Onshore Geoindex, there are no historical water wells located on site, and no current or historical groundwater abstraction licences on site, the closest the closest being 609m north-west. The site is not located within a Source Protection Zone.

Historical plans of the former gasworks have been made available by Transco Plc (now Cadent) and are presented in Appendix A. These show detailed plans of an extensive private drainage network on site, which includes two circular features appearing to align with the features annotated as 'wells' on the historical mapping. BSL have carried out a detailed overlay comparison of the historical mapping against the drainage drawing, the overlay comparisons are presented in Appendix B. This confirms beyond reasonable doubt that the features labelled as 'wells' on the historical mapping in fact directly correlate to the large circular features shown on the historical drainage plans. Based on these spatial assessments, as well as the available environmental information on known historical water wells and groundwater abstraction points in the vicinity, it is clear the features relate directly to former gasworks infrastructure rather than representing former groundwater abstraction wells.

The private drainage drawings appear to show the sewer system running directly through the western feature, whereas the sewer appears to terminate in the eastern feature. Annotations suggest the base of the deep sewer system is between 37'10'' and 38'10'' (11.5 to 11.8m bgl) in this area of the site, deepening towards the north, and the system appears to continue off site beneath Charlotte Street. An extract from the historical drainage plan is provided below for context (full document presented in Appendix A).

**Figure 1: Extract from historical drainage plans provided by Cadent.**




The network of deep drainage is evidenced at the current ground surface by a series of manholes in the north-western area of the site; these manholes appear to be shown adjacent to the circular features on figure 1 above.

A drainage survey was undertaken by General Utilities Northwest Ltd in May 2020, ref. 2020_05_18 GOULD STREET MANCHESTER BDP. This investigated the condition of manholes and drainage infrastructure on site. Manhole refs MH14, MH15 and MH16 were located and appear to correlate to the deep drainage system discussed in this letter, and according to the drainage survey these manholes have invert levels between 10.25m and 12.00m bgl, which would correlate to the historical records suggesting invert levels of between 11.5 to 11.8m to the sewer in the circular features. Images of the manholes and deep drainage infrastructure indicate the structures appear to be constructed from masonry, and records from MH14 and MH16 indicate the deep drains may have partially collapsed and are assumed to be redundant. MH15 was able to be surveyed but no pipes were visible beyond circa 1m away from the base of the manhole. The drainage survey is presented in Appendix C.

The presence of a deep drainage system has already been considered within the Phase I and II Geo-Environmental Assessment report (ref. MB/C5692/13303 Rev A) which acknowledges the deep drainage represents an area where contamination leaching from the made ground and gasholders could potentially collect and migrate within the site and possibly off-site, although the extent of leaching and contamination migration is unknown and may be limited given the evidence of collapse and blockages of the surveyed sections of the drainage. At this stage the drainage and associated surface connection points (manholes, circular historical features) are considered to represent potential pathways for mobile gross and dissolved phase contamination, which may result in impaction of nearby surface water receptors and the Principal Aquifer, depending on the extent and condition of the drainage networks as a whole.

**Closing Remarks**

Based on the information presented above, the features identified as historical wells on the historical mapping, as raised during the Environment Agency during our recent meeting on 7th November, are in fact directly related to the historical deep drainage network present on site associated with the former gasworks infrastructure. From our review of the available information, we are confident beyond reasonable doubt that these features do not represent former or current groundwater abstraction wells and appear to terminate within the deep drainage network at approximately 10.5-12m below current ground levels. We trust the EA are in agreement with our assessment based on the information presented.

Detailed Geo-environmental Risk Assessments including a Detailed Quantitative Risk Assessment (DQRA) for controlled waters are ongoing at the time of writing, and a detailed Remediation Strategy will be produced for the site in due course. These assessments will consider the deep drainage network and associated system of surface connection points as potential pathways for contaminant migration and ensure appropriate remedial measures are presented in due course, as required by the forthcoming DQRA and Remedial Strategy.

We trust the enclosed is of interest, if you have any queries then please do not hesitate to contact the undersigned.

Yours sincerely

**For Brownfield Solutions Limited**



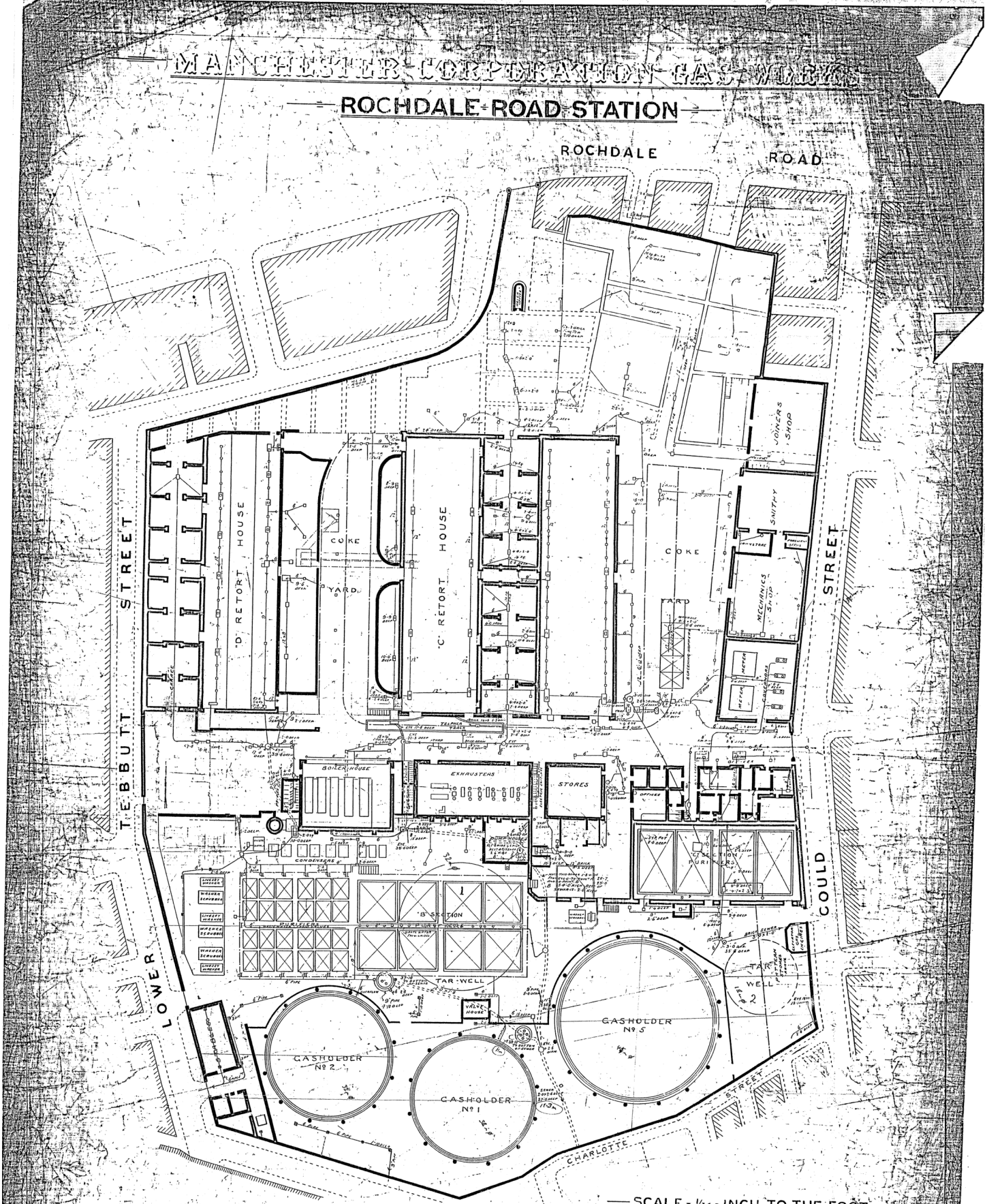
# APPENDIX A

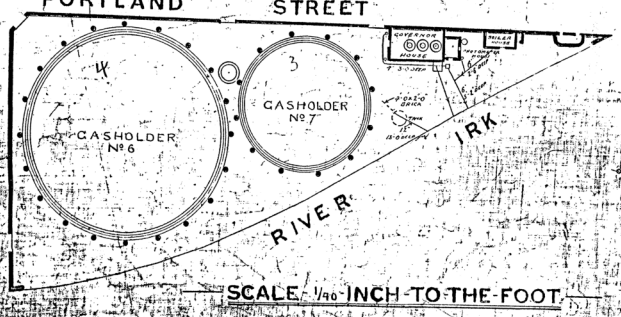
**Manchester Corporation, Rochdale Road Station, Plan of Works Drains**

9 ROCHDALE ROAD

# MANCHESTER CORPORATION GAS WORKS

## ROCHDALE ROAD STATION



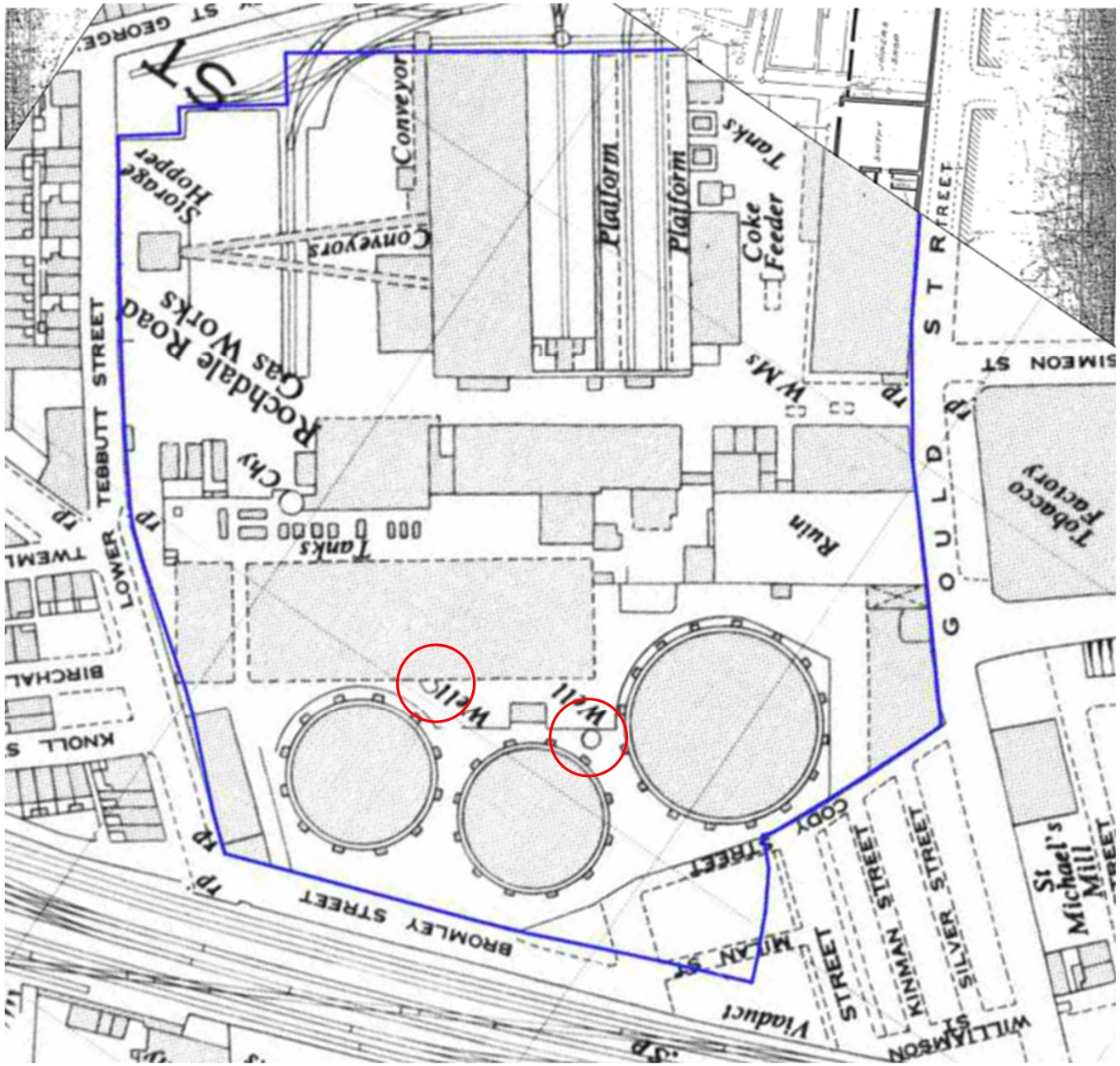

PLAN OF WORKS - DRAINS

National Gas Archive
Transco Plc
Common Lane
Partington
Manchester, M31 4BR

Copyright of Transco plc

# APPENDIX B

**Historical Well / Drainage Overlay**




## REFERENCES

| | |
|---|---|
| **Overlay** | National Grid, 1:2500, 1949, production date 27th June 2024 |
| **Underlay** | Manchester Corporation, Rochdale Road Station, Plan of Works Drains |

NOTES

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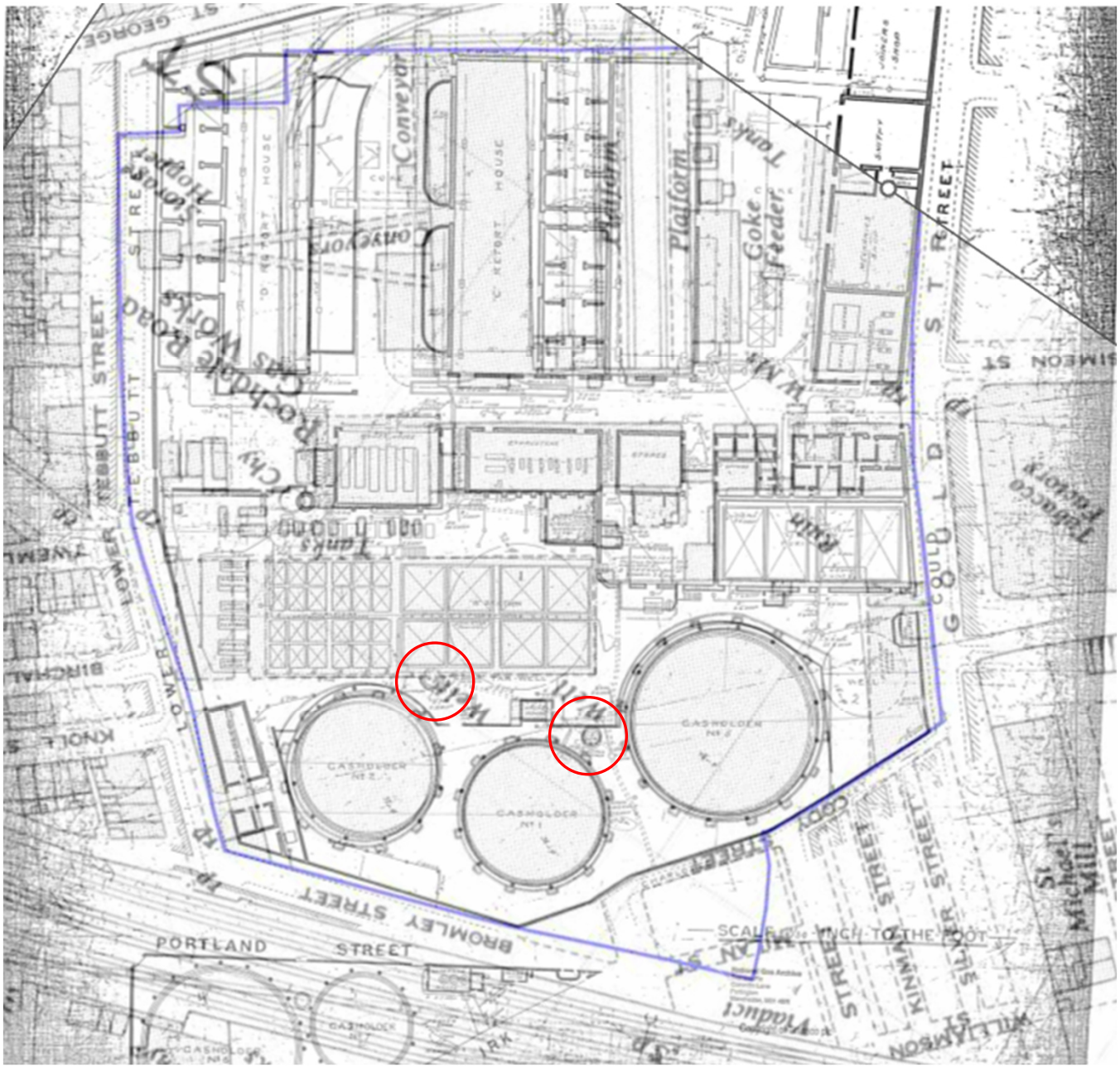
CLIENT
INTRO DEVELOPMENTS / MCR PROPERTY GROUP

PROJECT TITLE
GOULD STREET, MANCHESTER

DRAWING TITLE
HISTORICAL WELL / DRAINAGE OVERLAY (OVERLAY 100% OPACITY)

| ASSOCIATED DOCUMEMT REF. | SCALE | DATE |
|---|---|---|
| TM/C5692/13700 | NTS | 14/11/24 |

| DRAWN BY | CHECKED BY |
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| TM | AJS |




## REFERENCES

| | |
|---|---|
| **Overlay** | National Grid, 1:2500, 1949, production date 27th June 2024 |
| **Underlay** | Manchester Corporation, Rochdale Road Station, Plan of Works Drains |

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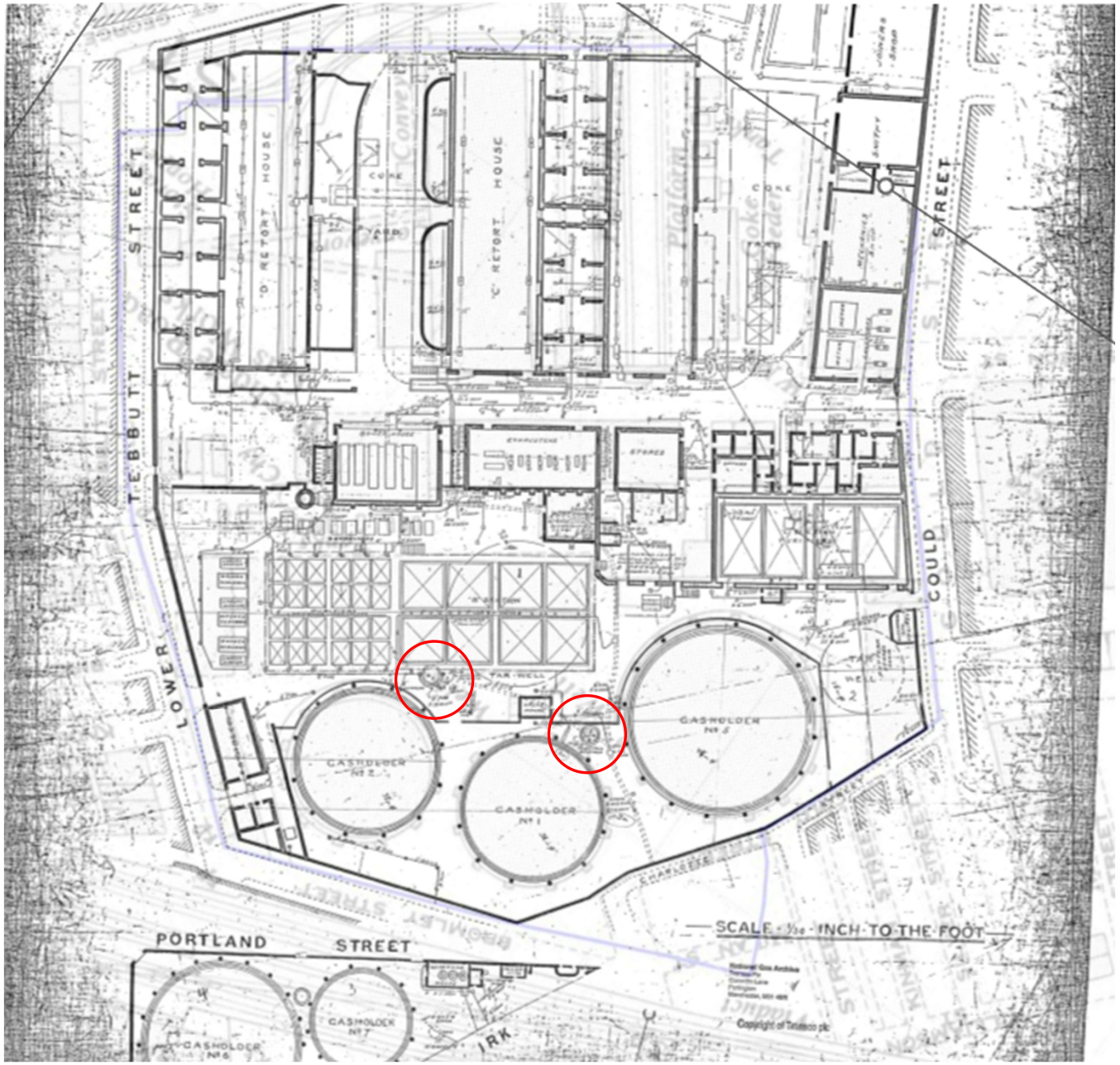
CLIENT
INTRO DEVELOPMENTS / MCR PROPERTY GROUP

PROJECT TITLE
GOULD STREET, MANCHESTER

DRAWING TITLE
HISTORICAL WELL / DRAINAGE OVERLAY (OVERLAY 50% OPACITY)

| ASSOCIATED DOCUMEMT REF. | SCALE | DATE |
|---|---|---|
| TM/C5692/13700 | NTS | 14/11/24 |

| DRAWN BY | CHECKED BY |
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| TM | AJS |




## REFERENCES

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|---|---|
| **Overlay** | National Grid, 1:2500, 1949, production date 27th June 2024 |
| **Underlay** | Manchester Corporation, Rochdale Road Station, Plan of Works Drains |

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PROJECT TITLE
GOULD STREET, MANCHESTER

DRAWING TITLE
HISTORICAL WELL / DRAINAGE OVERLAY (OVERLAY 20% OPACITY)

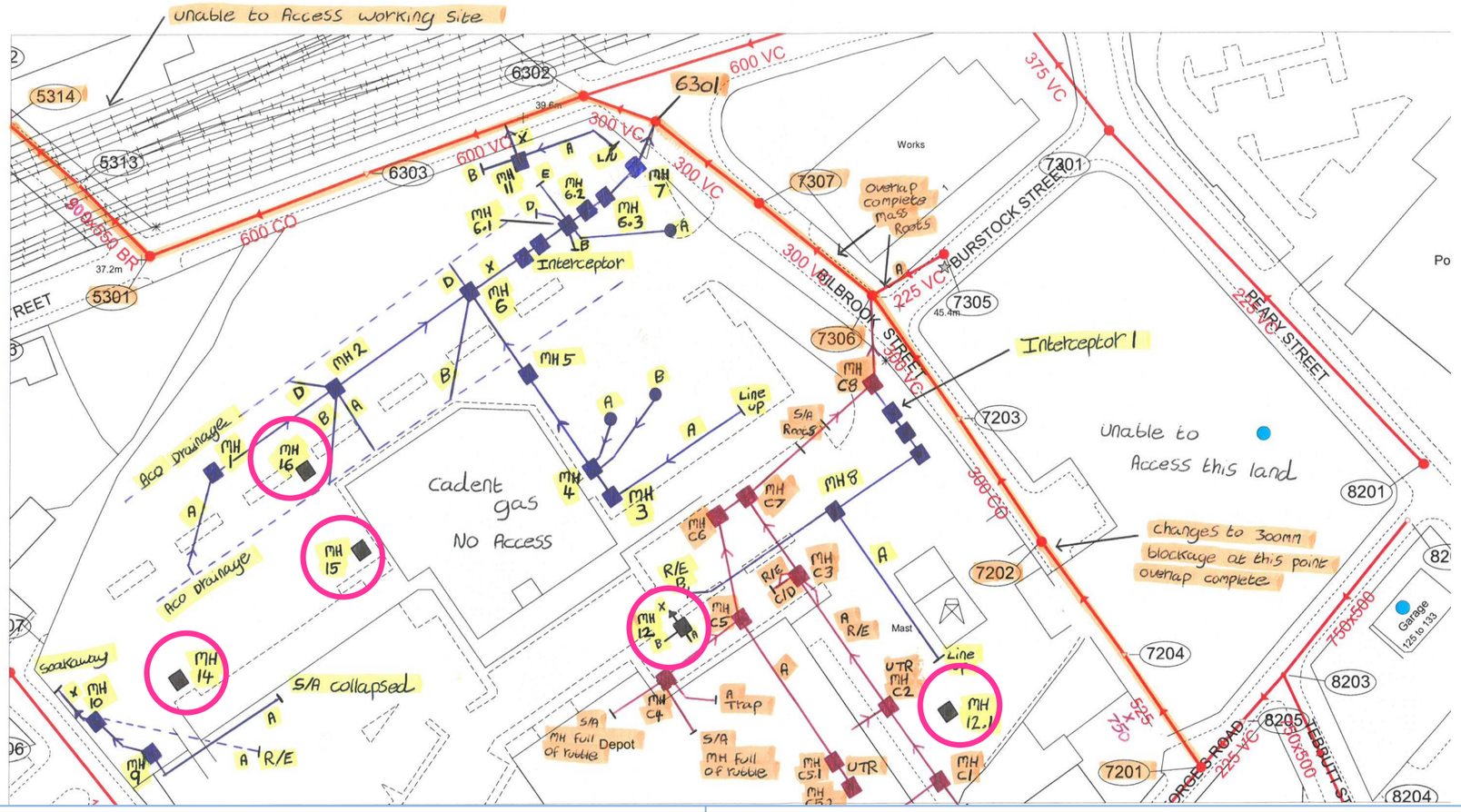
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# APPENDIX C

**Deep Drainage Survey Extract**

**Link to full Drainage Survey available for download - 2020_05_18 GOULD STREET MANCHESTER BDP.pdf**







VIEW DOWN MANHOLE 15 FROM SURFACE




MANHOLE 15 CONDITION AT INVERT LEVEL, NO PIPE VISIBLE, SURVEY TERMINATED

## KEY

MANHOLE LOCATIONS - DEEP REDUNDANT DRAINAGE

NOTES

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PROJECT TITLE
GOULD STREET, MANCHESTER

DRAWING TITLE
DEEP DRAINAGE SURVEY EXTRACT

| DRAWING No. | REVISION | SCALE | DATE |
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| C5692 | - | NTS | 30/09/24 |

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