



Land at 14 Club Street,

Manchester

Proposed Residential Development

Drainage Strategy

For: KMM Homes

Integra Consulting
Suite 4
14-32 Hewitt Street
Manchester
M15 4GB

Ref: 3309-DS
Job: 3309
Rev: -
By: NS

Date: Feb 2022

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1.0 **INTRODUCTION**

- 1.1 Integra Consulting has been commissioned by KMM Homes to undertake a Drainage Strategy for the land at 14 Club Street, Manchester. This document has been prepared to accompany the outline planning application for the proposed development of up to 26 dwellings at the site with means of access (refer to Appendix 5).
- 1.2 The objective of the Drainage Strategy is to identify the proposed surface and foul water drainage strategies for the development site. Potential flooding issues are also considered as part of this report together with any consequent implications on the proposed site development.
- 1.3 The Drainage Strategy has been undertaken in accordance with the pro-forma guidance contained in:
- Department for Communities and Local Government document 'National Planning Practice Guidance: Flood Risk and Coastal Change'
 - Manchester City, Salford City and Trafford Councils Level 2 Hybrid Strategic Flood Risk Assessment - Level 1 SFRA prepared by JBA Consulting and dated March 2010
 - Manchester City, Salford City and Trafford Councils Level 2 Hybrid Strategic Flood Risk Assessment - Level 2 SFRA prepared by JBA Consulting and dated March 2011
 - DEFRA / Environment Agency publication SC030219 'Rainfall Runoff Management for Developments' dated October 2013.
- 1.4 To date, consultations have been undertaken with the Environment Agency (EA).

2.0 STANDARDS AND LIMITATIONS

This report has been prepared solely for use by KMM Homes.

It shall not be relied upon or transferred to any other party without the prior written authorisation of Integra Consulting.

The findings and opinions in the report are based on information derived from a variety of different sources. Integra Consulting do not accept any liability for the accuracy or otherwise of any information provided by third parties.

It should be noted that some of the aspects considered in this study may be subject to change with time. Therefore, if the development is delayed or postponed, consideration may need to be given to reviewing such issues to confirm that no changes have taken place, either at the site or within relevant legislation.

Further consultations with statutory bodies are likely as the scheme progresses. It should be noted that even where responses have been received from Regulators, these could be subject to change at a later date.

3.0 CURRENT SITUATION

3.1 Site Location and Description

The circa 0.58 hectare site is located approximately 1.6km east of the centre of Openshaw at National Grid reference 389889, 397450 as shown on the site location plan in Appendix 1.

The site is bounded by residential properties to the west, a builder's yard and school playing fields to the north, residential properties and Ashton Old Road to the south and open land / residential properties to the east (refer to topographical survey in Appendix 2).

Ashton Canal lies circa 350m north of the site whilst the Gorton Upper Reservoir system lies in excess of 600m to the south of the site.

The site is generally flat with a range of levels from 87.5m AOD to 88.0m AOD over the site extent. The existing topographical survey can be found in Appendix 2.

The western section of the site is vegetated and a bowling green occupies the central section of the site. There are hard landscaped areas in the northern and eastern sections of the site comprising two buildings and associated areas of positively drained bitmacadam surfaced car park with adjacent areas of soft landscape.

3.2 Flooding

Current Environment Agency flood data indicates the proposed development site to lie wholly in Flood Zone 1 (refer to Appendix 3 for details).

EA / DEFRA flood mapping indicates that the bowling green and the vegetated land to the west of the bowling green are at a low to medium risk of surface water flooding. This is most likely due to the impermeable nature of the ground conditions and the presence of existing high brick wall construction around the main club building and bowling green area.

EA / DEFRA flood mapping does not indicate any areas of the proposed site at elevated risk of reservoir flooding.

3.3 Existing Sewers

The United Utilities sewer plan in Appendix 4 indicate the following adopted sewer infrastructure at and adjacent to the site:

- 225mm diameter combined sewer extending from north to south beneath Club Street
- 300mm diameter combined sewer extending from east to west beneath Backwell Street
- 225mm diameter combined sewer extending both north to south and east to west adjacent to the western site boundary
- 375mm diameter (becoming 450mm diameter) combined sewer extending from west to east beneath Ashton Old Road

4.0 PROPOSED DEVELOPMENT

4.1 Development Proposals

It is proposed to submit an outline planning application for the construction of up to 26 dwellings with means of access (refer to Appendix 5 for details of the proposed indicative masterplan).

4.2 Surface Water Drainage

The issue of surface water drainage to the proposed development has been considered with reference to the hierarchy of surface water disposal as noted in the Building Regulations H3:

- i) Sustainable Urban Drainage Systems (SUDS)
- ii) Discharge of surface water off site direct to watercourse
- iii) Discharge to adopted sewer

SUDS are made up of one or more structures built to manage surface water runoff. They are used in conjunction with good management of the site to prevent flooding and pollution. There are four general methods of control:

- Filter strips and swales
- Filter drains and permeable surfaces
- Infiltration devices
- Basins and Ponds

A Phase 1 geo-environmental desk study has been undertaken by Peak Environmental Solutions (refer to Appendix 7 for Phase 1 desk study details). The desk study indicates the site to be underlain by superficial deposits of Devensian Till which are in turn underlain at depth by Permian Collyhurst Sandstone Formation solid deposits. The nearest BGS borehole to the site lies circa 50m west of the site and indicates boulder clay deposits to the full 5m borehole depth.

Although no specific infiltration testing in line with BRE 365 has been undertaken, it is evident from the above noted borehole data / desk study data that the underlying soils at shallow depth beneath the site are likely to have a relatively low permeability and are therefore likely to preclude the use of post-development soakaway surface water drainage techniques at the site.

On the basis that the nearest watercourses to the site lie circa 350m north and over 600m south of the site through multiple third party land ownerships, it is therefore proposed to discharge suitably attenuated site surface water to the existing 225mm diameter adopted combined sewer that extends from north to south beneath Club Street potentially using the existing site connection. A survey of the existing private on-site sewer network has been undertaken and the results are provided in Appendix 6 of this report.

The site lies in a Critical Drainage Area and hence post-development flows would need to be limited to 50% of the existing brownfield runoff rate within the brownfield areas of the site. However, in betterment of the above noted requirement, it is proposed to limit post-development surface water runoff to greenfield runoff rates with a minimum rate of 5 litres per second to apply as a pragmatic measure to avoid future system blockages.

On this basis, the estimated preliminary on site storage volume to cater for a 1 in 30 year event is circa 90m³ whilst on site storage to cater for a 1 in 100 year plus 40% climate change event is approximately 210 m³ (refer to Appendix 8 for details). Please note that these estimated figures are subject to finalisation of soil type following detailed ground investigation.

The post-development surface water drainage strategy will naturally need to be agreed in principle with both the LLFA and United Utilities. Discharge of post-development surface water into the adjacent adopted combined sewer system will also naturally require a formal S104 application to be made to United Utilities.

Ultimately the final design of the drainage system will be subject to the finalised site arrangement, further targeted site investigation and subsequent development of a detailed drainage scheme.

The post-development surface water drainage system will be designed to ensure that:

- There is no surcharge in the 1 in 1 year event:
- Surface water flows remain on site up to a 1 in 100 year + 40% climate change storm event.
- Sufficient surface water storage will be available to ensure there is no risk to property

4.3 National Planning Policy Framework and Technical Guidance

The residential site development proposals are classed as 'more vulnerable' in Table 2 of the Flood Risk and Coastal Change guidance.

'More vulnerable' developments in Flood Zone 1 are classed as appropriate according to Table 3 of the Flood Risk and Coastal Change guidance.

Proposed post development levels will be engineered in order to protect the development and not provide any increased flood risk elsewhere.

Types of flooding that could affect the site are:

River - the site wholly lies in Flood Zone 1

Sea – there is no risk of flooding from the sea

Groundwater – there are no springs or weep areas on the site

Sewers – there have been no local reports of sewer surcharge

4.4 Strategic Flood Risk Assessment & EA Mapping Review

From our review of the Manchester City, Salford City and Trafford Councils Level 2 Hybrid Strategic Flood Risk Assessment - Level 2 SFRA prepared by JBA Consulting and dated March 2011, the site lies in the Conurbation Core Critical Drainage Area.

There are no groundwater protection zones in the vicinity of the site and there is negligible residual fluvial risk. The site is not noted to lie within a flood warning area.

4.5 Safe Access and Egress

Safe access / egress from the site in extreme conditions will be via the entrance on Club Street.

4.6 Foul Water Drainage

We would propose to discharge post-development foul drainage from the proposed residential development site to the existing 225mm diameter adopted combined sewer that extends from north to south beneath Club Street potentially using the existing site connection.

The foul drainage network will naturally comply with Building Regulations 2010 – Approved Document H1 and the calculations for post-development foul water discharge will be based on Sewers for Adoption 8th Edition.

5.0 SuDS DESIGN STATEMENT

5.1 SuDS Requirements

SuDS measures are required on the proposed development to comply with the National Planning Policy Framework (NPPF), DEFRA Non-Statutory Technical Standards for Sustainable Drainage Systems and the SuDS guidance in the Manchester City, Salford City and Trafford Councils Level 2 Hybrid Strategic Flood Risk Assessment - Level 2 SFRA prepared by JBA Consulting and dated March 2011

The key conceptual SUDS design criteria for the development are covered in Non-Statutory Technical Standards for Sustainable Drainage under sections S1 to S9 based on the part brownfield / part greenfield nature of the development site.

Peak Flow Control

S2 of the DEFRA Technical Standards stipulates that for greenfield developments, the peak runoff from the development for the 1 in 1 year and 1 in 100 year rainfall events should never exceed the greenfield runoff rate for the same event.

S3 of the DEFRA Technical Standards stipulates that for brownfield developments, the peak runoff from the development for the 1 in 1 year and 1 in 100 year rainfall event must be as close as reasonably practicable to the greenfield runoff rate for the same rainfall event but should never exceed the rate of discharge from the development prior to re-development for that event.

Volume Control

Requirement S4 stipulates that the runoff volume in the 1 in 100 year, 6 hour rainfall event should never exceed the greenfield runoff volume for the same event.

Requirement S5 stipulates that the runoff volume in the 1 in 100 year, 6 hour rainfall event must be constrained to a value as close as is reasonably practicable to the greenfield runoff volume for the same event but should never exceed the runoff volume from the development site prior to development.

Flood Risk within the Development

S7 stipulates that the drainage system shall be designed such that no flooding shall occur on any part of the site during a 1 in 30 year storm event whilst the S8 requirement stipulates that, during a 1 in 100 year enhanced rainfall event, no flooding of any building shall occur.

S9 stipulates that site levels shall be designed such that flows which are as a result of rainfall events exceeding the 1 in 100 year enhanced rainfall event, are managed in exceedance routes that minimise the risks to people and property.

Water Quality

Water quality measures are generally considered with reference to CIRIA Report 'C753 – The SUDS Manual', specifically Chapters 4 and 26. In this instance, the hierarchy of surface water discharge has demonstrated that it is not feasible to discharge surface water flows to ground or to watercourse and hence the local existing adopted combined sewer system is the only viable discharge option. Accordingly, no further water quality treatment is considered appropriate.

5.2 Proposed SUDS Methodology & Drainage Design Principles

As detailed in section 4.2, discharge of surface water direct to the ground in the form of infiltration measures is deemed infeasible due to the low level permeability of the underlying natural strata. Accordingly, controlled discharge to the adjacent existing adopted combined sewerage network beneath Club Street is the proposed method of post-development surface water discharge.

Peak Flow Control

Post-development surface water flows from the proposed development site shall be limited to greenfield runoff rates with a minimum rate of 5 litres per second to apply as a pragmatic measure to avoid future system blockages and to provide a significant betterment in relation to the existing situation.

Volume Control

The proposed post-development discharge flow rate of 5 litres per second will apply for all flood events from the 1 in 1 year to the 1 in 100 year (enhanced) event. This is deemed to equate to a significant betterment over the development site.

Flood Risk within the Development

To cater for excess surface water runoff, the proposed method of attenuation on the site is to utilise underground storage beneath the site highway with a downstream piped drainage system discharging attenuated site surface water into the existing adopted combined sewerage system beneath Club Street.

It is proposed to accommodate the 1 in 100 year (enhanced) event storage volume within the underground storage. Accordingly, this will ensure that criteria S7 and S8 are met.

The site is to discharge post-development surface water into underground storage within the 'red line' site boundary which in turn will discharge through a flow control chamber to limit the discharge to a runoff rate of 5 litres per second that equates to a significant betterment over the existing situation. Downstream of the storage / flow control chamber, the attenuated surface water flow will discharge to the adjacent adopted combined water sewerage system beneath Club Street.

It is intended that post-development surface water discharge to the adopted combined sewerage system will utilise the existing site private drainage connections to the adjacent adopted United Utilities combined sewer beneath Club Street where possible (refer to Appendix 6 for details).

5.3 Management and Maintenance of SuDS Drainage System

The management and maintenance of the above noted SuDS measures to serve the proposed development will be undertaken by a maintenance management company to be appointed for the project. The appointment of the maintenance and management company is to be confirmed at the completion of the build phase. All parts of the drainage network are to be accessible and are to be constructed from materials that are suitable and robust for the lifetime of the development.

The maintenance activities required for the drainage network are as follows:

5.3.1 Cellular Storage Structure

The maintenance for the cellular storage structure is as follows:

Operation	Frequency
Inspect and identify any areas that are not operating correctly and if required take remedial actions	Monthly for three months then six monthly intervals
Debris caused from catchment surface (where it may cause risk to performance)	Monthly
Where rainfall infiltration into cellular storage from above, check surface or filter for blockage or silt, algae or other matter by jetting	As required but at least twice a year
Remove sediment from upstream surface water network by jetting	Annually or as required
Repair / check all inlets, outlets, overflows and vents	As required
Inspect / check all inlets, outlets, vents and overflows to ensure that they are in good condition and operating as designed	Annually and after severe storms

5.3.2 Flow Control

The maintenance for the flow control is as follows:

Operation	Frequency
Inspect and identify any areas that are not operating correctly, if required take remedial actions	Monthly for three months then at six monthly intervals
Debris removal from catchment surface (where it may cause risk to performance)	Monthly
Check control chamber for blockage or silt, algae or other matter by jetting	As required, but at least four times a year
Remove sediment from upstream drainage network and sediment from within manhole by jetting	As required, but at least twice a year
Repair / check all inlets and control mechanics	As required
Inspect / check all inlets and control mechanics to ensure that they are operating as designed	Twice a year as a minimum and after severe storm events

5.3.3 Flow Control Chamber Design Criteria

In addition to the above maintenance methods, the flow control chamber will be designed so it works effectively throughout the lifespan of the development and will have precautionary features to ensure maintenance work can be carried out promptly and efficiently to ensure no control failure which may otherwise subsequently lead to flooding.

Details of the flow control chamber are as follows:

- High Water Level Alarm: Alarm installed and directed to site maintenance team
- Spares: Control spares to be kept on site for efficient maintenance

5.3.4 Flood Routes

A visual monthly inspection of flood routes should be made in order to check that routes are not blocked by new fences, walls, soil or other rubbish with removal undertaken as necessary.

5.3.5 Spillage – Emergency Action

Most spillages on development sites are of compounds that do not pose a serious risk to the environment as they enter the drainage system in a slow and controlled manner with time available for natural breakdown in a treatment system. Therefore, small spillages of oil, milk or other known organic substances should be removed where possible using soak mats as recommend by the Environment Agency with residual spillage allowed to bio-remediate in the drainage system.

In the event of a serious spillage, either by volume or of unknown or toxic compounds, then the spillage should be isolated using soil, turf or fabric and outlet pipes from chambers downstream of the spillage blocked with bungs. Bungs for blocking pipes may be made by wrapping soil or turf in a plastic sheet or close woven fabric. The Environment Agency should be contacted immediately.

5.3.6 Linked and Further Maintenance

The maintenance of the drainage network and SuDS features is to be linked with the landscape maintenance plan for the proposed development.

5.3.7 Maintenance Activities

A log of all maintenance activities is to be kept and made available to the Local Planning Authority (LPA) and / or the Lead Local Flood Authority (LLFA) on request.

6. CONCLUSIONS

6.1 Flooding

Following review of the Environment Agency flood maps and data, it has been confirmed that the site lies wholly in Flood Zone 1.

There are to be no off site surface water flood routes generated by the development during an enhanced 1 in 100 year storm. All surface water run-off will remain on site in the 1 in 100 year + 40% climate change event.

6.2 Site Surface Water Drainage

It is proposed to discharge suitably attenuated post-development surface water into underground storage beneath the on-site highway which in turn will discharge through a flow control chamber to limit the discharge to greenfield runoff rates with a minimum rate of 5 litres per second to apply as a pragmatic measure to avoid future system blockages.

Downstream of the underground storage / flow control chamber, the attenuated surface water flow will discharge to the adjacent adopted combined water sewerage system beneath Club Street.

6.3 Site Foul Water Drainage

We would propose that post-development foul drainage discharges from the proposed residential development to the existing adjacent adopted combined sewerage system beneath Club Street to the south of the site.

6.4 Flood Risk Management Measures

There will be a site management Health and Safety document prepared in respect of the site.

6.5 Off Site Impacts

All roofed and paved areas are to be drained into the site surface water drainage system. The design of the site surface water system will ensure that no off site flood flows are generated by the proposed development in the 1% plus climate change event.

6.6 Residual Risk

With careful design of the drainage elements as described above, there will be no residual flood related risks remaining after the development has been completed.

The proposed building envelopes will naturally fully lie in Flood Zone 1.

A post-development safe emergency access can be maintained at all times during a flood event with emergency access from Club Street.

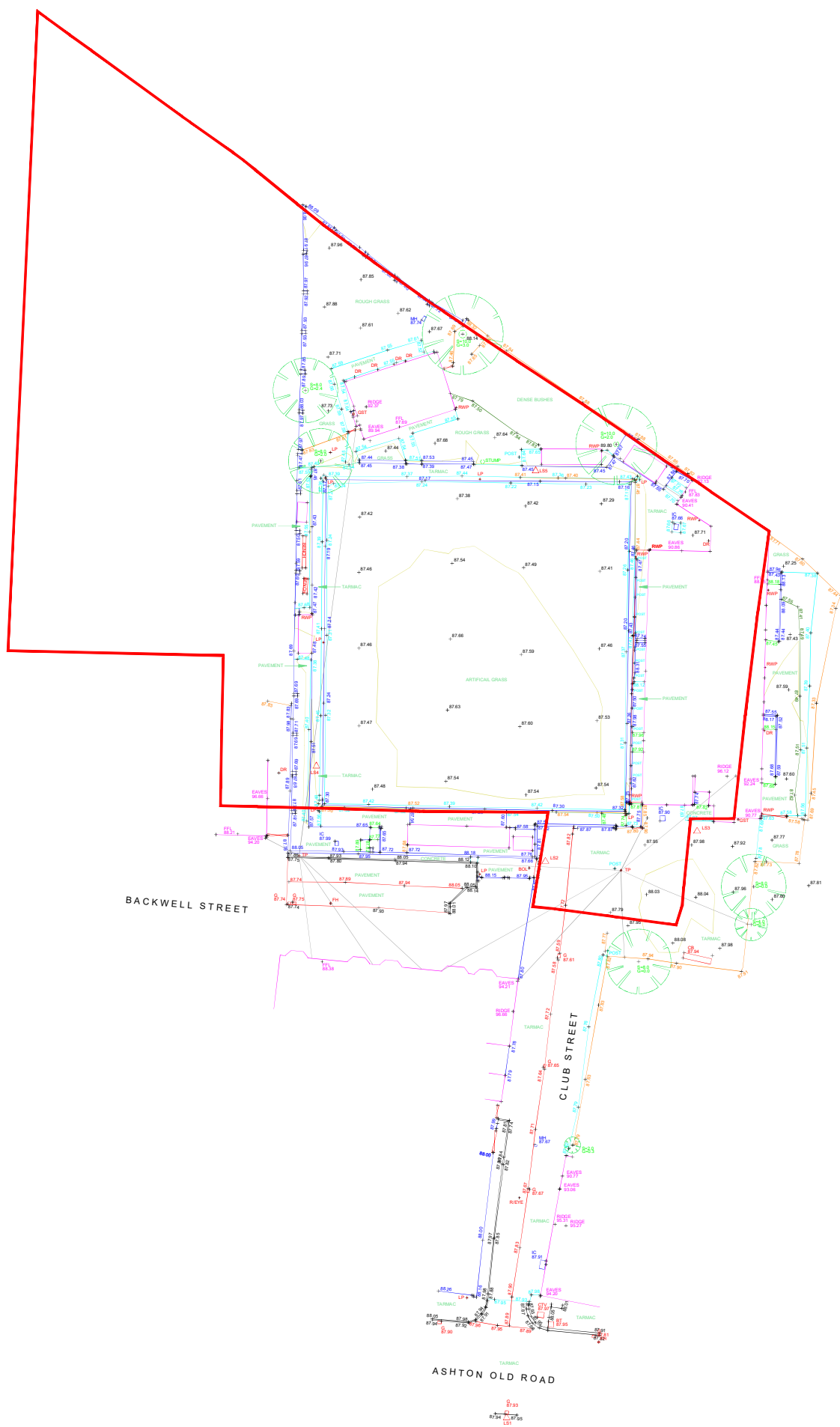
APPENDIX

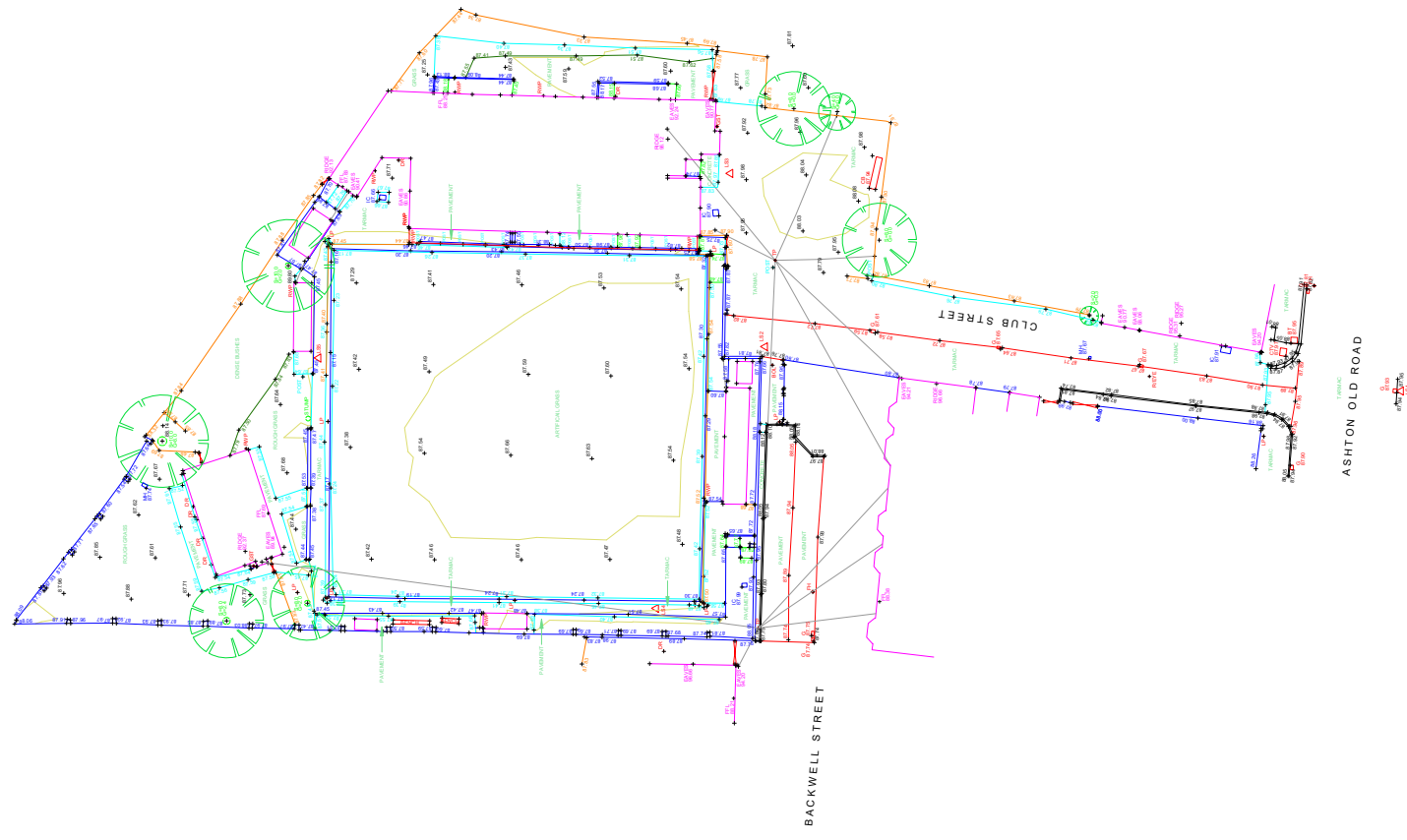
APPENDIX 1

SITE LOCATION PLAN

APPENDIX 2

TOPOGRAPHICAL SURVEY / SITE BOUNDARY





APPENDIX 3

ENVIRONMENT AGENCY FLOOD MAPPING

Flood map for planning

Your reference
The Fairfield

Location (easting/northing)
389899/397420

Created
18 Jul 2021 20:46

Your selected location is in flood zone 1, an area with a low probability of flooding.

This means:

- you don't need to do a flood risk assessment if your development is smaller than 1 hectare and not affected by other sources of flooding
- you may need to do a flood risk assessment if your development is larger than 1 hectare or affected by other sources of flooding or in an area with critical drainage problems

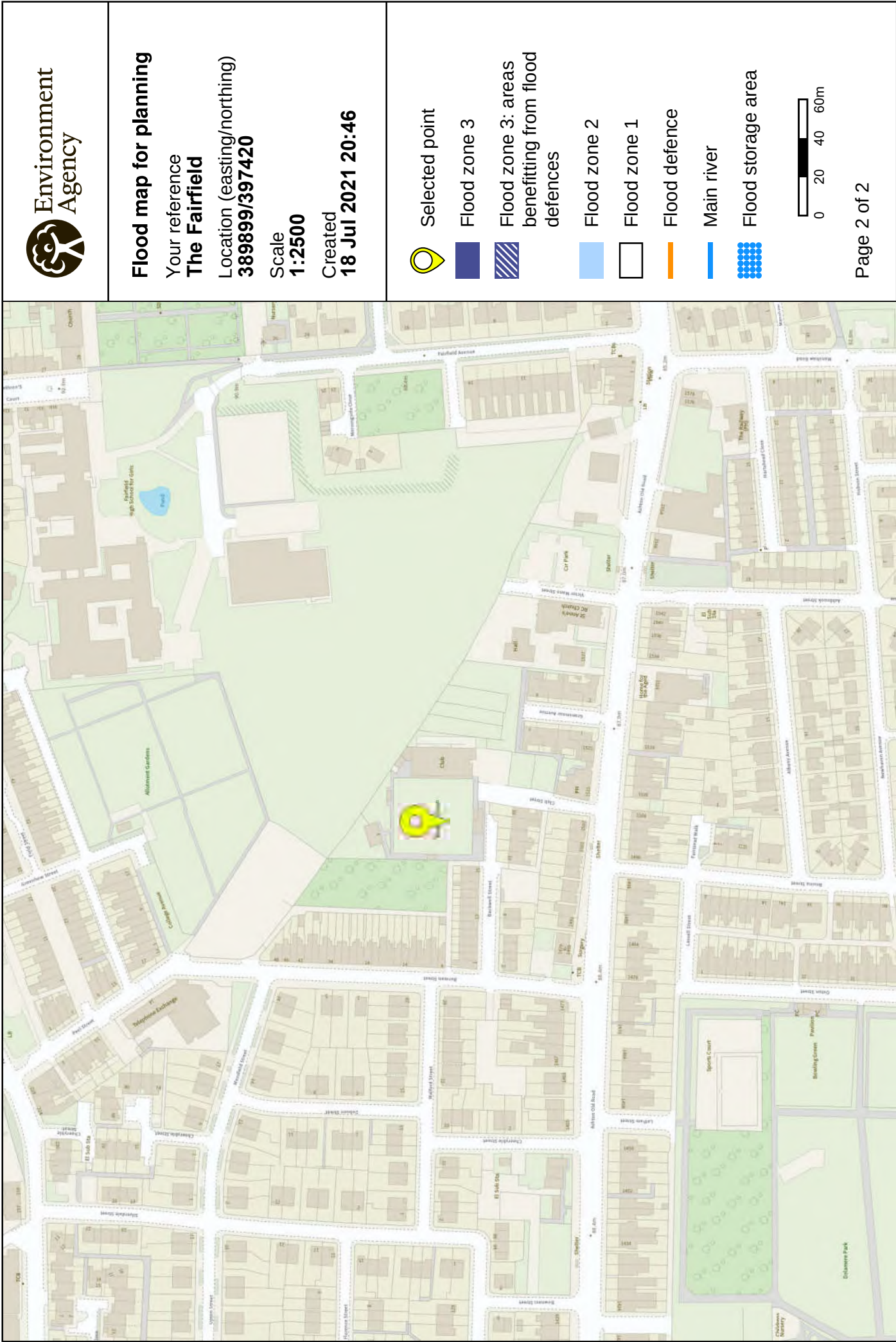
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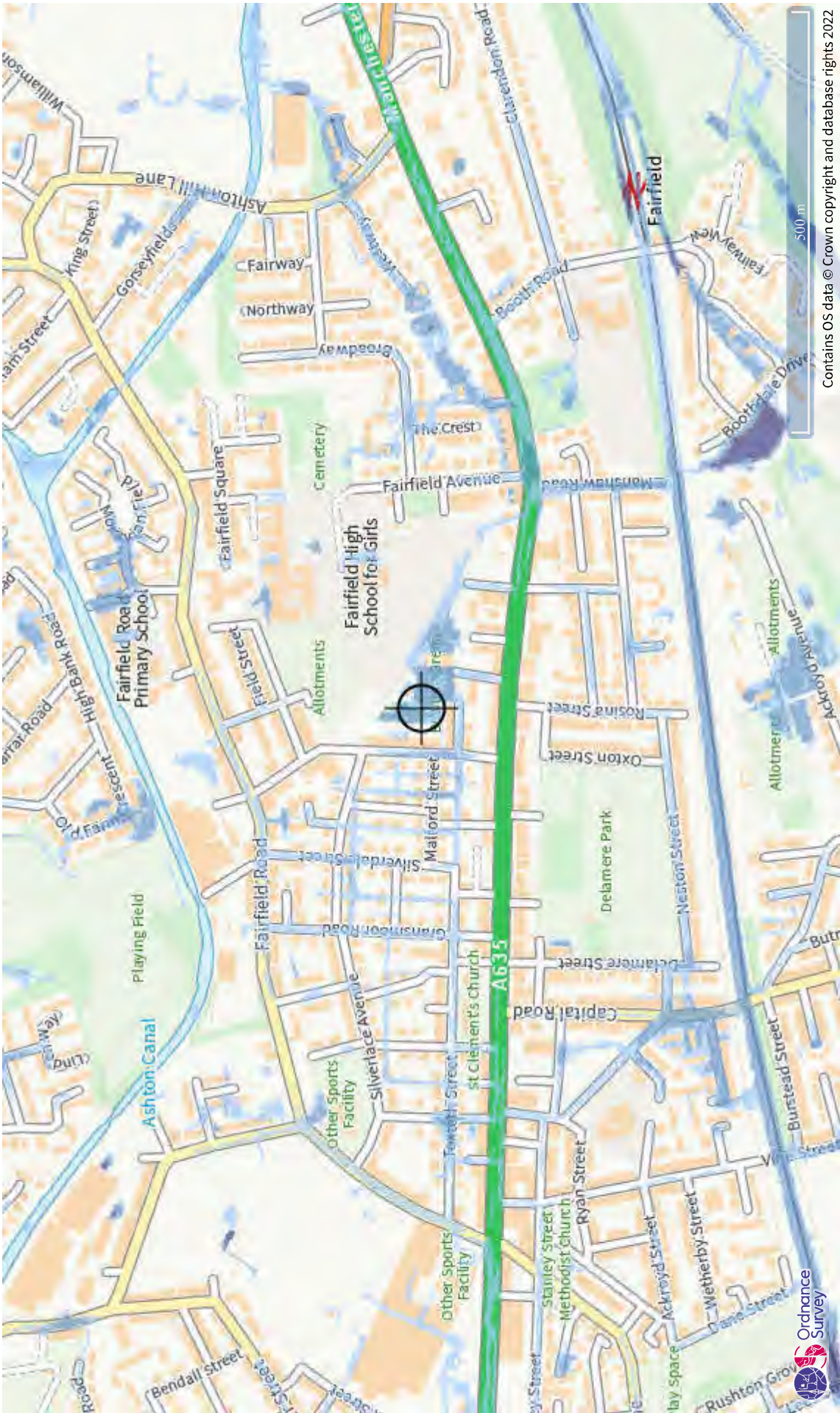
The flood map for planning shows river and sea flooding data only. It doesn't include other sources of flooding. It is for use in development planning and flood risk assessments.

This information relates to the selected location and is not specific to any property within it. The map is updated regularly and is correct at the time of printing.

Flood risk data is covered by the Open Government Licence which sets out the terms and conditions for using government data. <https://www.nationalarchives.gov.uk/doc/open-government-licence/version/3/>

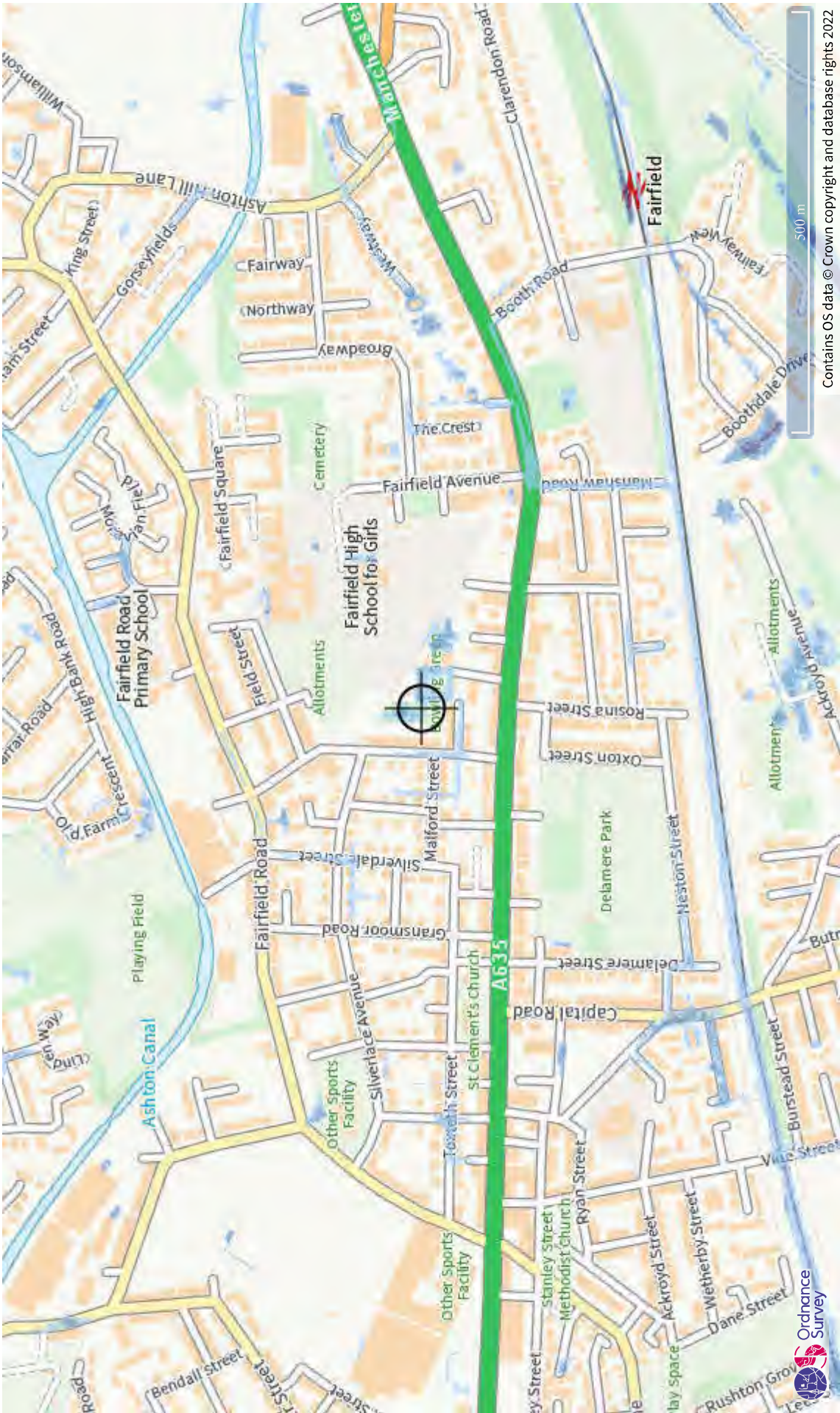
Use of the address and mapping data is subject to Ordnance Survey public viewing terms under Crown copyright and database rights 2021 OS 100024198. <https://flood-map-for-planning.service.gov.uk/os-terms>





Surface water flood risk: water depth in a low risk scenario
Flood depth (millimetres)

- Over 900mm
- 300 to 900mm
- Below 300mm
- Location you selected



Surface water flood risk: water depth in a medium risk scenario
Flood depth (millimetres)

- Over 900mm
- 300 to 900mm
- Below 300mm
- Location you selected

APPENDIX 4

UNITED UTILITIES SEWER PLAN

Integra Consulting

**14-32
Hewitt Street,
Manchester,
M15 4GB**

FAO:

How to contact us:

**United Utilities Water Limited
Property Searches
Haweswater House
Lingley Mere Business Park
Great Sankey
Warrington
WA5 3LP**

Telephone: 0370 7510101

E-mail: propertysearches@uuplc.co.uk

**Your Ref: The Fairfield
Our Ref: UUPS-ORD-310889
Date: 29/07/2021**

Dear Sirs

Location: 21 BACKWELL STREET, MANCHESTER, M11 1NE

I acknowledge with thanks your request dated 25/07/2021 for information on the location of our services.

Please find enclosed plans showing the approximate position of United Utilities' apparatus known to be in the vicinity of this site.

The enclosed plans are being provided to you subject to the United Utilities terms and conditions for both the wastewater and water distribution plans which are shown attached.

If you are planning works anywhere in the North West, please read United Utilities' access statement before you start work to check how it will affect our network. <http://www.unitedutilities.com/work-near-asset.aspx>.

I trust the above meets with your requirements and look forward to hearing from you should you need anything further.

If you have any queries regarding this matter please [contact us](#).

Yours Faithfully,



Karen McCormack
Property Searches Manager

TERMS AND CONDITIONS - WASTEWATER AND WATER DISTRIBUTION PLANS

These provisions apply to the public sewerage, water distribution and telemetry systems (including sewers which are the subject of an agreement under Section 104 of the Water Industry Act 1991 and mains installed in accordance with the agreement for the self construction of water mains) (UUWL apparatus) of United Utilities Water Limited "(UUWL)".

TERMS AND CONDITIONS:

- This Map and any information supplied with it is issued subject to the provisions contained below, to the exclusion of all others and no party relies upon any representation, warranty, collateral contract or other assurance of any person (whether party to this agreement or not) that is not set out in this agreement or the documents referred to in it.
- This Map and any information supplied with it is provided for general guidance only and no representation, undertaking or warranty as to its accuracy, completeness or being up to date is given or implied.
- In particular, the position and depth of any UUWL apparatus shown on the Map are approximate only. UUWL strongly recommends that a comprehensive survey is undertaken in addition to reviewing this Map to determine and ensure the precise location of any UUWL apparatus. The exact location, positions and depths should be obtained by excavation trial holes.
- The location and position of private drains, private sewers and service pipes to properties are not normally shown on this Map but their presence must be anticipated and accounted for and you are strongly advised to carry out your own further enquiries and investigations in order to locate the same.
- The position and depth of UUWL apparatus is subject to change and therefore this Map is issued subject to any removal or change in location of the same. The onus is entirely upon you to confirm whether any changes to the Map have been made subsequent to issue and prior to any works being carried out.
- This Map and any information shown on it or provided with it must not be relied upon in the event of any development, construction or other works (including but not limited to any excavations) in the vicinity of UUWL apparatus or for the purpose of determining the suitability of a point of connection to the sewerage or other distribution systems.
- No person or legal entity, including any company shall be relieved from any liability howsoever and whensoever arising for any damage caused to UUWL apparatus by reason of the actual position and/or depths of UUWL apparatus being different from those shown on the Map and any information supplied with it.
- If any provision contained herein is or becomes legally invalid or unenforceable, it will be taken to be severed from the remaining provisions which shall be unaffected and continue in full force and affect.
- This agreement shall be governed by English law and all parties submit to the exclusive jurisdiction of the English courts, save that nothing will prevent UUWL from bringing proceedings in any other competent jurisdiction, whether concurrently or otherwise.

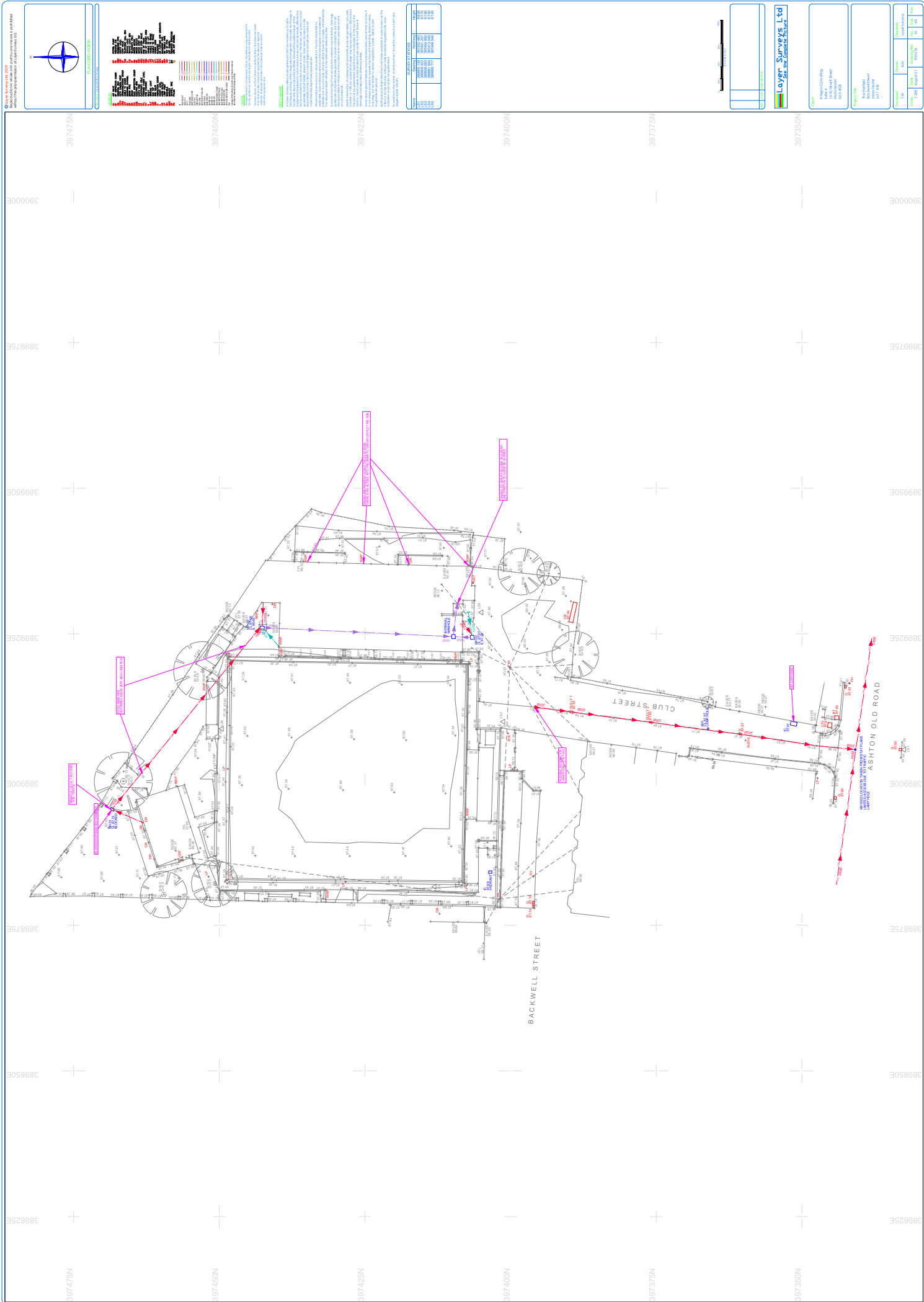
APPENDIX 5

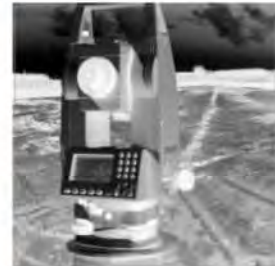
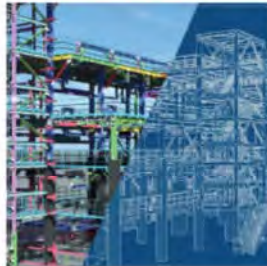
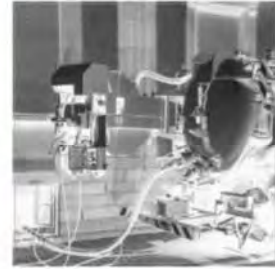
PROPOSED INDICATIVE MASTERPLAN



APPENDIX 6

EXISTING DRAINAGE SURVEY





LAYER SURVEYS LTD
SEE THE COMPLETE PICTURE

DRAINAGE SURVEY

Job Number
000933Surveyed by (Operator)
LEE MORTONBase Unit
ELFEIYII63Date
13/08/2021**Client Details:**Integra Consulting
Suite 4,
14-32 Hewitt Street, Manchester,
M15 4GB

Client Contact Name: Neville Shaw

Site Details:THE FAIRFIELD
BACKWELL STREET
MANCHESTER
M11 1NE

Site Contact Name: Neville Shaw

Contractor Details:Layer Surveys Ltd
Francis House
Meadowcroft Business Park
Pope Lane
Preston
Lancashire
PR4 4BA

Office Contact Number: 01772 611634

Purpose of Survey:

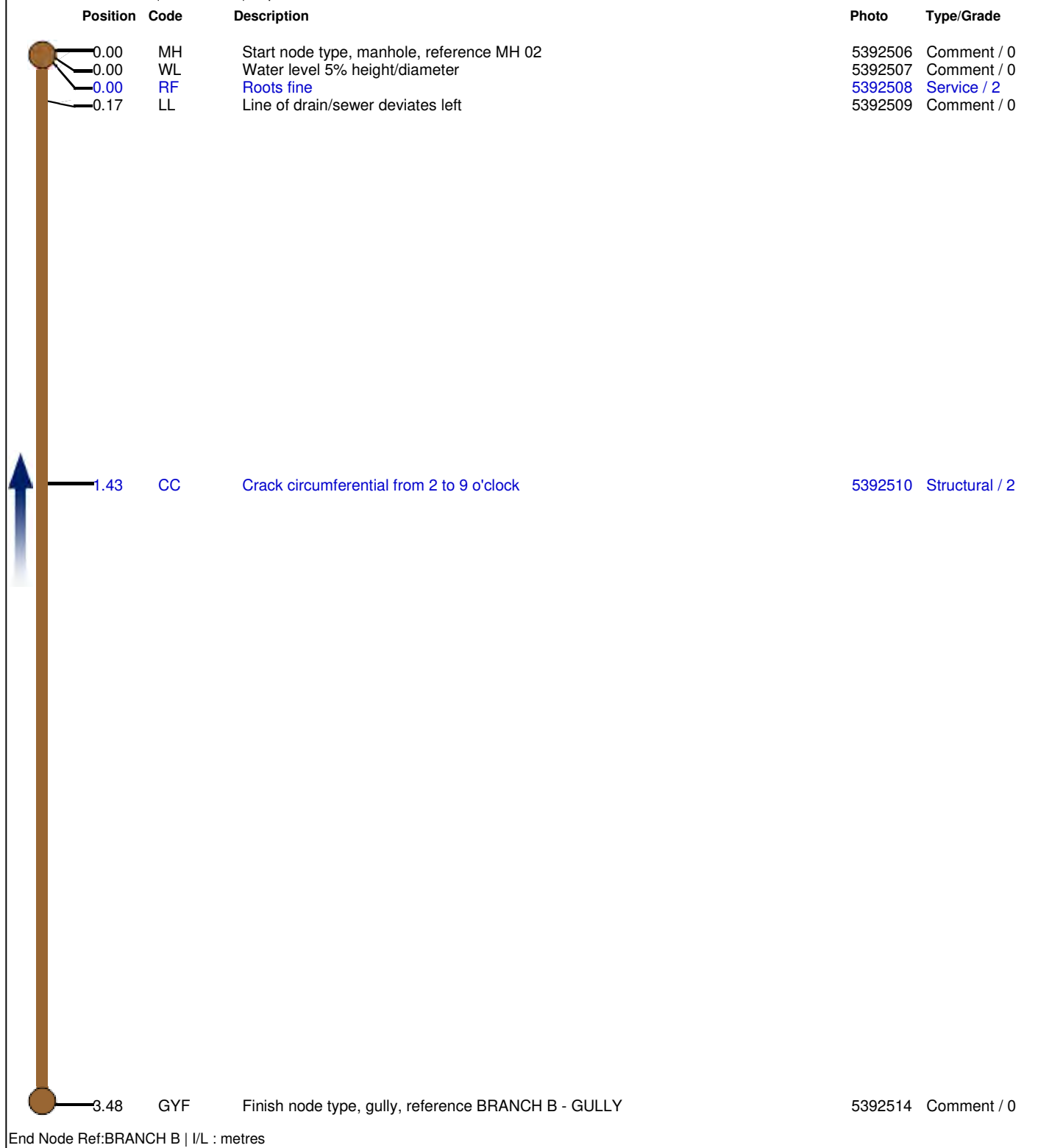
Job Number 000933	Surveyed by (Operator) LEE MORTON	Base Unit ELFEIYII63	Date 13/08/2021
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Page 9	Survey Run Sheet(Survey 3 - INTERNAL MH to MAIN CARRIER)
Page 12	Survey Run Sheet(Survey 4 - MH 03 to BRANCH A)
Page 14	Survey Run Sheet(Survey 5 - MH 03 to BRANCH C)
Page 16	Survey Run Sheet(Survey 6 - MH 03 to INTERNAL MH)
Page 18	Survey Run Sheet(Survey 7 - GULLY 1 to MAIN CARRIER)
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Page 22	Survey Run Sheet(Survey 9 - LAMP HOLE to MAIN CARRIER)
Page 24	Final Page

Surveyed by (Operator) LEE MORTON	Job Number 000933	Pipe Length Reference(PLR) BRANCH B X	Date 13/08/2021	Pre Cleaned Not Cleaned
Weather 1 - Dry	Customer Present	Service Grade/Structural Grade 2/2	Base Unit ELFEIYII63	Section Number 1
Road THE FAIRFIELD Place BACKWELL STREET Location MANCHESTER		Division District Location Details		
Purpose Duty Combined Catchment	Shape/Size 100mm Material Vitrified clay Category	Start Node MH 02 End Node BRANCH B Total length 3.48 metres		
Scale 1:0.16 Direction Upstream				

Start Node Ref:MH 02 | I/L : metres | Depth: 0.98 metres



End Node Ref:BRANCH B | I/L : metres

Job Number
000933

Surveyed by (Operator)
LEE MORTON

Base Unit
ELFEIYII63

Date
13/08/2021



Start node type, manhole, reference MH 02



Water level 5% height/diameter



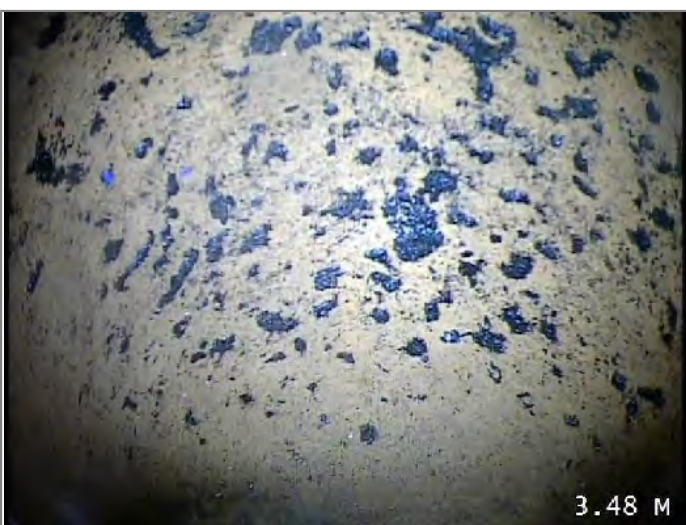
Roots fine



Line of drain/sewer deviates left



Crack circumferential from 2 to 9 o'clock



Finish node type, gully, reference BRANCH B - GULLY

Surveyed by (Operator) LEE MORTON	Job Number 000933	Pipe Length Reference(PLR) MH 02 X	Date 13/08/2021	Pre Cleaned Not Cleaned
Weather 1 - Dry	Customer Present	Service Grade/Structural Grade 4/3	Base Unit ELFEIYII63	Section Number 2
Road THE FAIRFIELD Place BACKWELL STREET Location MANCHESTER		Division District Location Details		
Purpose Duty Combined Catchment	Shape/Size 100mm Material Vitrified clay Category	Start Node MH 02 End Node MH 03 Total length 31.79 metres		
Scale 1:1.63 Direction Downstream				

Start Node Ref:MH 02 | I/L : metres | Depth: 0.98 metres

Position	Code	Description	Photo	Type/Grade
0.00	MH	Start node type, manhole, reference MH 02	5392520	Comment / 0
0.00	WL	Water level 5% height/diameter	5392521	Comment / 0
0.10	DER	Settled deposits coarse 20% cross-sectional area loss	5392522	Service / 4
4.81	JN	Junction at 3 o'clock, diameter 100mm	5392524	Comment / 0
5.36	FC	Fracture circumferential from 8 to 12 o'clock	5392530	Structural / 3
9.83	JN	Junction at 3 o'clock, diameter 100mm	5392531	Comment / 0
13.81	CC	Crack circumferential from 8 to 3 o'clock	5392533	Structural / 2
15.24	JN	Junction at 3 o'clock, diameter 100mm	5392536	Comment / 0
20.64	JN	Junction at 3 o'clock, diameter 100mm	5392555	Comment / 0
25.93	JN	Junction at 3 o'clock, diameter 100mm	5392563	Comment / 0
31.79	MHF	Finish node type, manhole, reference MH 03	5392579	Comment / 0

End Node Ref:MH 03 | I/L : metres



Job Number
000933

Surveyed by (Operator)
LEE MORTON

Base Unit
ELFEIYI63

Date
13/08/2021



Start node type, manhole, reference MH 02



Water level 5% height/diameter



Settled deposits coarse 20% cross-sectional area loss



Junction at 3 o'clock, diameter 100mm



Fracture circumferential from 8 to 12 o'clock



Junction at 3 o'clock, diameter 100mm

Job Number
000933

Surveyed by (Operator)
LEE MORTON

Base Unit
ELFEIYII63

Date
13/08/2021



Crack circumferential from 8 to 3 o'clock



Junction at 3 o'clock, diameter 100mm



Junction at 3 o'clock, diameter 100mm

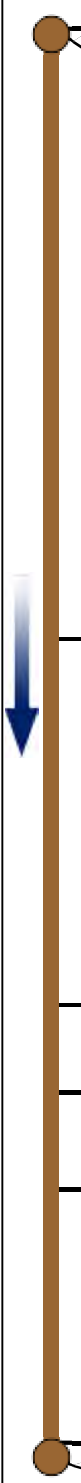


Junction at 3 o'clock, diameter 100mm



Finish node type, manhole, reference MH 03

Surveyed by (Operator) LEE MORTON	Job Number 000933	Pipe Length Reference(PLR) INTERNAL MX	Date 13/08/2021	Pre Cleaned Not Cleaned
Weather 1 - Dry	Customer Present	Service Grade/Structural Grade 0/1	Base Unit ELFEIYII63	Section Number 3
Road THE FAIRFIELD Place BACKWELL STREET Location MANCHESTER		Division District Location Details		
Purpose Duty Combined Catchment	Shape/Size 100mm Material Vitrified clay Category	Start Node INTERNAL MH End Node MAIN CARRIER Total length 4.58 metres		
Scale 1:0.21 Direction Downstream				

Start Node Ref:INTERNAL MH I/L : metres						
Position	Code	Description		Photo	Type/Grade	
0.00	MH	Start node type, manhole, reference INTERNAL MH		5392837	Comment / 0	
0.00	WL	Water level 5% height/diameter		5392838	Comment / 0	
						
1.95	JN	Junction at 12 o'clock, diameter 100mm		5392851	Comment / 0	
3.12	JDM	Joint displaced medium		5392852	Structural / 1	
3.40	LD	Line of drain/sewer deviates down		5392860	Comment / 0	
3.71	JN	Junction at 12 o'clock, diameter 100mm		5392861	Comment / 0	
4.52	LD	Line of drain/sewer deviates down		5392890	Comment / 0	
4.58	OFF	Finish node type, outfall, reference MAIN CARRIER		5392909	Comment / 0	
End Node Ref:MAIN CARRIER I/L : metres						

Job Number 000933	Surveyed by (Operator) LEE MORTON	Base Unit ELFEIYII63	Date 13/08/2021
 0.00 M Start node type, manhole, reference INTERNAL MH		 0.00 M Water level 5% height/diameter	
 1.95 M Junction at 12 o'clock, diameter 100mm		 3.12 M Joint displaced medium	
 3.40 M Line of drain/sewer deviates down		 3.71 M Junction at 12 o'clock, diameter 100mm	



Job Number
000933

Surveyed by (Operator)
LEE MORTON

Base Unit
ELFEIYII63

Date
13/08/2021

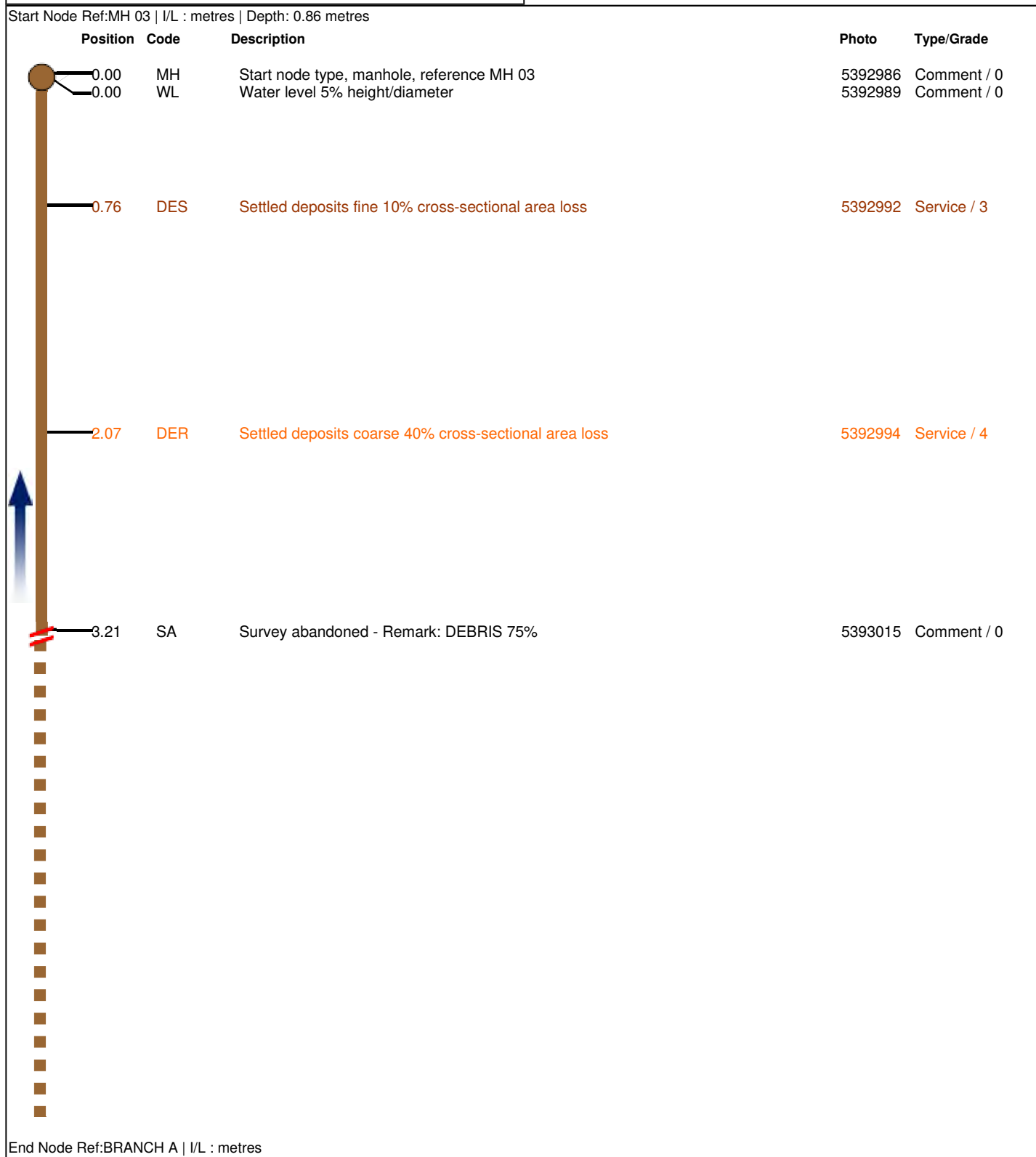


Line of drain/sewer deviates down



Finish node type, outfall, reference MAIN CARRIER

Surveyed by (Operator) LEE MORTON	Job Number 000933	Pipe Length Reference(PLR) BRANCH A X	Date 13/08/2021	Pre Cleaned Not Cleaned
Weather 1 - Dry	Customer Present	Service Grade/Structural Grade 4/0	Base Unit ELFEIYII63	Section Number 4
Road THE FAIRFIELD Place BACKWELL STREET Location MANCHESTER		Division District Location Details		
Purpose Duty Combined Catchment		Shape/Size 100mm Material Vitrified clay Category	Start Node MH 03 End Node BRANCH A Total length 6 metres	
Scale 1:0.31 Direction Upstream				



Job Number
000933

Surveyed by (Operator)
LEE MORTON

Base Unit
ELFEIYII63

Date
13/08/2021



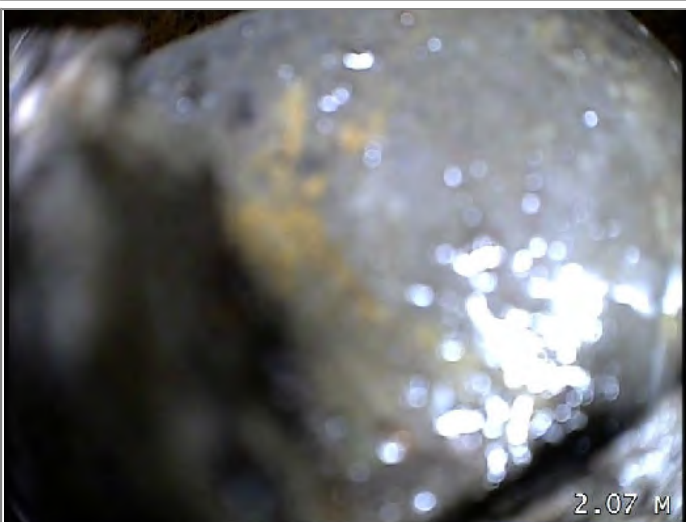
Start node type, manhole, reference MH 03



Water level 5% height/diameter



Settled deposits fine 10% cross-sectional area loss

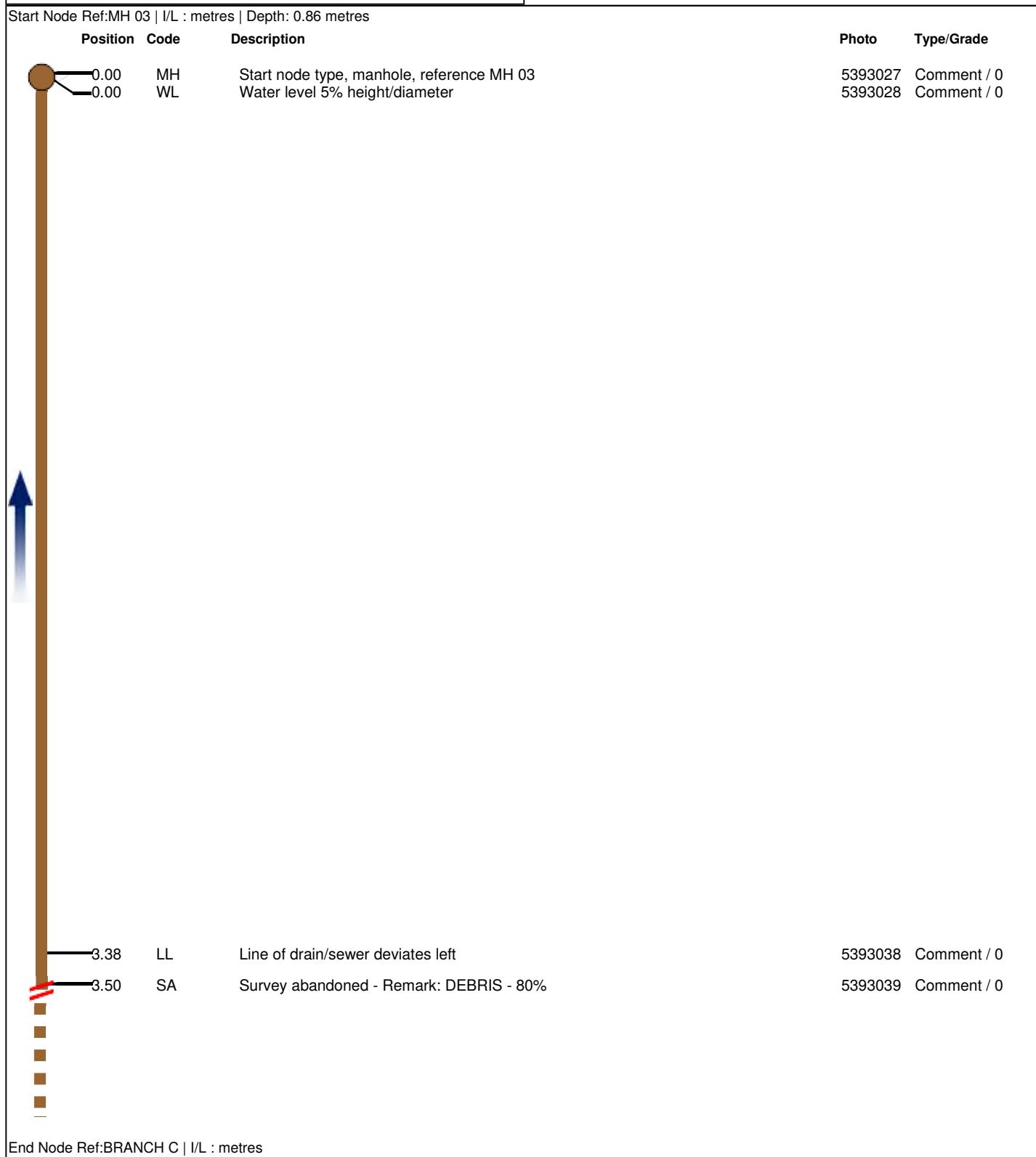


Settled deposits coarse 40% cross-sectional area loss



Survey abandoned - Remark: DEBRIS 75%

Surveyed by (Operator) LEE MORTON	Job Number 000933	Pipe Length Reference(PLR) BRANCH C X	Date 13/08/2021	Pre Cleaned Not Cleaned
Weather 1 - Dry	Customer Present	Service Grade/Structural Grade 0/0	Base Unit ELFEIYII63	Section Number 5
Road THE FAIRFIELD Place BACKWELL STREET Location MANCHESTER		Division District Location Details		
Purpose Duty Combined Catchment	Shape/Size 100mm Material Vitrified clay Category		Start Node MH 03 End Node BRANCH C Total length 4 metres	
Scale 1:0.21 Direction Upstream				





Job Number
000933

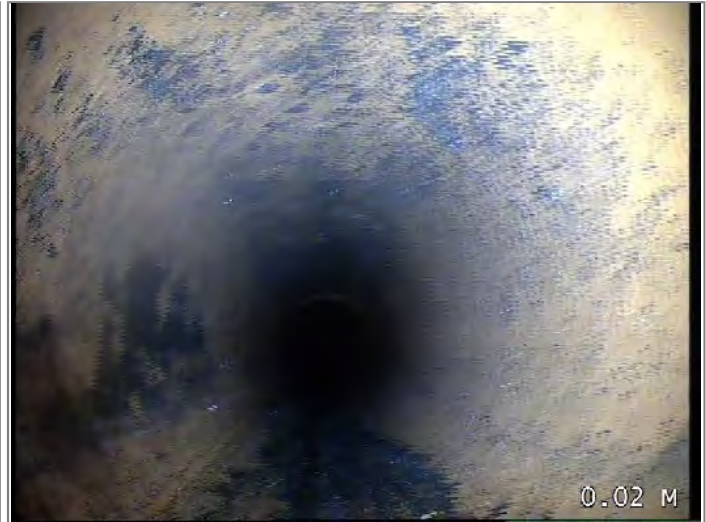
Surveyed by (Operator)
LEE MORTON

Base Unit
ELFEIYII63

Date
13/08/2021



Start node type, manhole, reference MH 03



Water level 5% height/diameter



Line of drain/sewer deviates left



Survey abandoned - Remark: DEBRIS - 80%

Surveyed by (Operator) LEE MORTON	Job Number 000933	Pipe Length Reference(PLR) MH 03 X	Date 13/08/2021	Pre Cleaned Not Cleaned
Weather 1 - Dry	Customer Present	Service Grade/Structural Grade 0/0	Base Unit ELFEIYII63	Section Number 6
Road THE FAIRFIELD Place BACKWELL STREET Location MANCHESTER		Division District Location Details		
Purpose Duty Combined Catchment	Shape/Size 100mm Material Vitrified clay Category		Start Node MH 03 End Node INTERNAL MH Total length 2.4 metres	
Scale 1:0.10 Direction Downstream				





Job Number
000933

Surveyed by (Operator)
LEE MORTON

Base Unit
ELFEIYI63

Date
13/08/2021



Start node type, manhole, reference MH 03



Water level 5% height/diameter

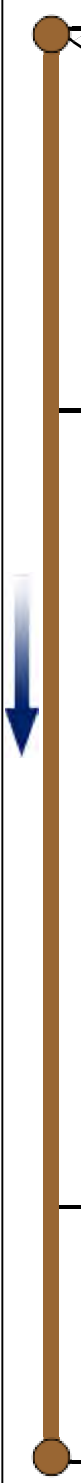


Line of drain/sewer deviates down - Remark: BACKDROP



Finish node type, manhole, reference INTERNAL MH

Surveyed by (Operator) LEE MORTON	Job Number 000933	Pipe Length Reference(PLR) GULLY 1 X	Date 13/08/2021	Pre Cleaned Not Cleaned
Weather 1 - Dry	Customer Present	Service Grade/Structural Grade 0/0	Base Unit ELFEIYII63	Section Number 7
Road THE FAIRFIELD Place BACKWELL STREET Location MANCHESTER		Division District Location Details		
Purpose Duty Combined Catchment	Shape/Size 100mm Material Vitrified clay Category		Start Node GULLY 1 End Node MAIN CARRIER Total length 0.9 metres	
Scale 1:0.00 Direction Downstream				

Start Node Ref:GULLY 1 I/L : metres						
Position	Code	Description		Photo	Type/Grade	
0.00	GY	Start node type, gully, reference GULLY 1		5393523	Comment / 0	
	WL	Water level 5% height/diameter		5393525	Comment / 0	
						
0.24	LD	Line of drain/sewer deviates down		5393526	Comment / 0	
0.74	REM	MAIN CARRIER		5393527	Comment / 0	
0.90	BRF	Finish node type, major connection without manhole, reference MAIN CARRIER		5393531	Comment / 0	
End Node Ref:MAIN CARRIER I/L : metres						



Job Number
000933

Surveyed by (Operator)
LEE MORTON

Base Unit
ELFEIYII63

Date
13/08/2021



Start node type, gully, reference GULLY 1



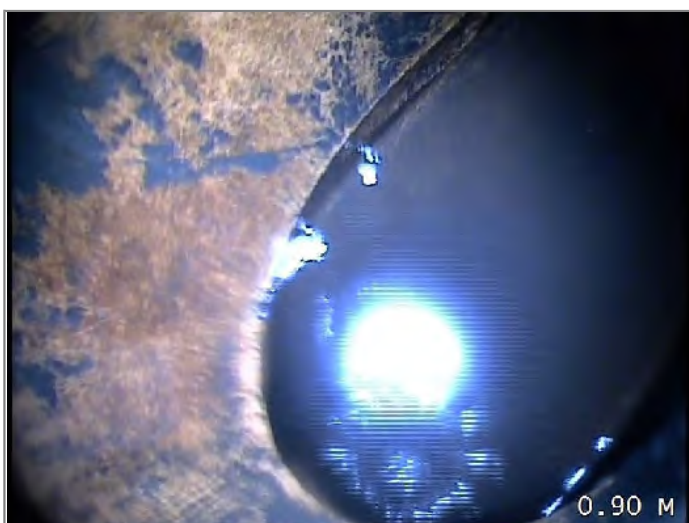
Water level 5% height/diameter



Line of drain/sewer deviates down

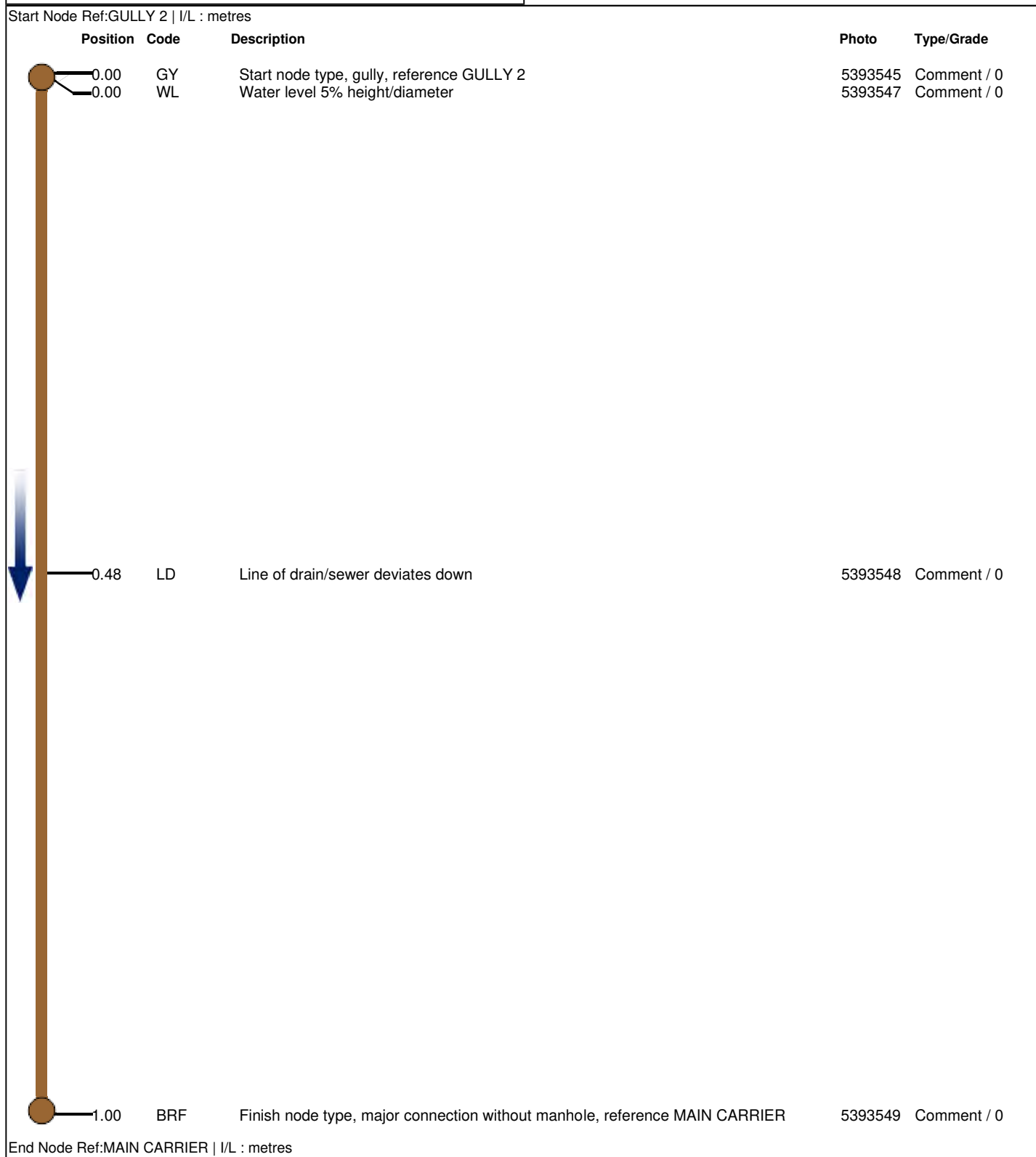


MAIN CARRIER



Finish node type, major connection without manhole, reference MAIN CARRIER

Surveyed by (Operator) LEE MORTON	Job Number 000933	Pipe Length Reference(PLR) GULLY 2 X	Date 13/08/2021	Pre Cleaned Not Cleaned
Weather 1 - Dry	Customer Present	Service Grade/Structural Grade 0/0	Base Unit ELFEIYII63	Section Number 8
Road THE FAIRFIELD Place BACKWELL STREET Location MANCHESTER		Division District Location Details		
Purpose Duty Combined Catchment	Shape/Size 100mm Material Vitrified clay Category		Start Node GULLY 2 End Node MAIN CARRIER Total length 1 metres	
Scale 1:0.05 Direction Downstream				





Job Number
000933

Surveyed by (Operator)
LEE MORTON

Base Unit
ELFEIYII63

Date
13/08/2021



Start node type, gully, reference GULLY 2



Water level 5% height/diameter



Line of drain/sewer deviates down



Finish node type, major connection without manhole, reference MAIN CARRIER

Surveyed by (Operator) LEE MORTON	Job Number 000933	Pipe Length Reference(PLR) LAMP HOLE X	Date 13/08/2021	Pre Cleaned Not Cleaned
Weather 1 - Dry	Customer Present	Service Grade/Structural Grade 3/0	Base Unit ELFEIYII63	Section Number 9
Road THE FAIRFIELD Place BACKWELL STREET Location MANCHESTER		Division District Location Details		
Purpose Duty Combined Catchment	Shape/Size 225mm Material Vitrified clay Category		Start Node LAMP HOLE End Node MAIN CARRIER Total length 30 metres	
Scale 1:1.57 Direction Downstream				

Start Node Ref:LAMP HOLE | I/L : metres

Position	Code	Description	Photo	Type/Grade
0.00	RE	Start node type, rodding eye, reference LAMP HOLE	5393591	Comment / 0
0.00	WL	Water level 15% height/diameter	5393592	Comment / 0
0.00	DER	Settled deposits coarse 10% cross-sectional area loss	5393593	Service / 3
9.10	SA	Survey abandoned - Remark: UNABLE TO PUSH FURTHER	5393623	Comment / 0

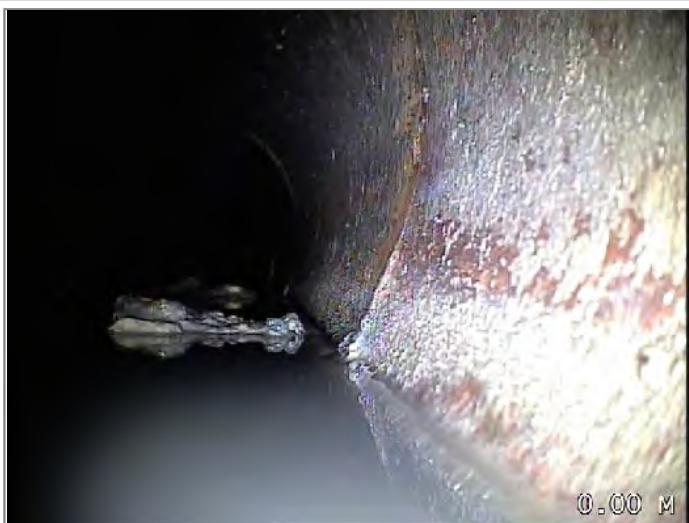
End Node Ref:MAIN CARRIER | I/L : metres

Job Number
000933

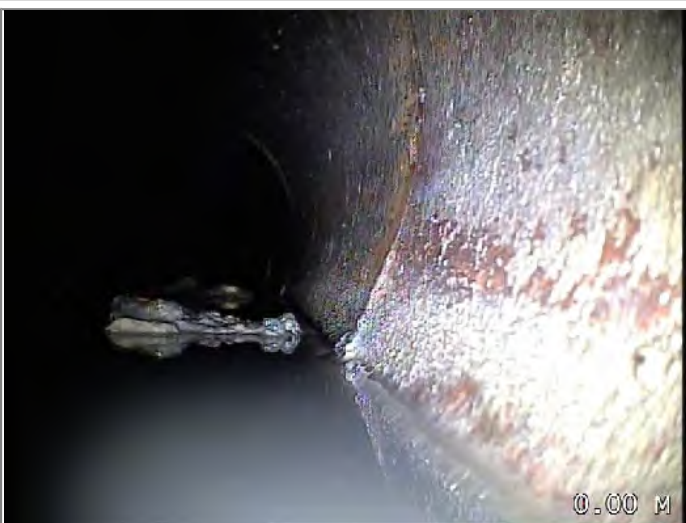
Surveyed by (Operator)
LEE MORTON

Base Unit
ELFEIYII63

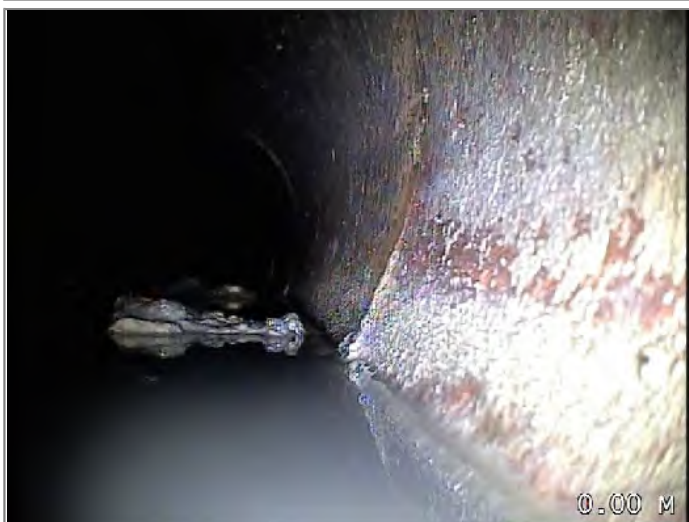
Date
13/08/2021



Start node type, rodding eye, reference LAMP HOLE



Water level 15% height/diameter



Settled deposits coarse 10% cross-sectional area loss



Survey abandoned - Remark: UNABLE TO PUSH FURTHER



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Head Office: Francis House, Meadowcroft Business Park, Pope Lane, Preston, PR4 4BA
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Layer Surveys Ltd Manhole Survey Card

Card No	01	Map No	
Catchment		MH No	MH 02
Location	THE FAIRFIELD		
Town	MANCHESTER M11 1NE		

★ PR	Status		Syphon	★ C	Function	★ MH	MH Type	13/08/2021	Date of Survey
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COVER DETAILS

☐ Square	☒ Rectangle	☐ Triangle	☐ Dbl Triangle	☐ Circular	☐ Oval	☐ Other	☐ Multiple	☐ Hinged	☐ Lockable
Cover Level		m	H / M / L Cover Duty	★ M	Initials	CL			

PIPE DETAILS

Incoming Pipes

Clockwise from pipe X	Pipe	Depth from Invert (m)	Upstream / Downstream MH Ref	Shape	Size (mm)		Pipe Mat	Lining Mat	Back Drop Dia (mm)	Back Drop Depth (m)
	A	0.97		C	100	X	PF			
	B	0.86		C	100	X	VC			
	C	0.96		C	100	X	VC			
	D	0.96		C	100	X	VC			
	E					X				
	F					X				

Outgoing Pipes

X	0.98		C	100	X	VC			
Y					X				

Cover Opening at narrowest	730 X 590	mm	Chamber Dimension	800 X 900	mm	Evidence of Surcharge	
Shaft at narrowest		mm	Shaft Depth (from CL)		mm	OX / H2S / METH Toxic atmosphere	

MANHOLE CONSTRUCTION DETAILS

☐ Pre Cast Concrete	☐ In Situ Concrete	☒ Brick	☐ GRP	☐ Arch	☐ Corbel	☐ Taper	☐ Side Entry
☒ Reducing Slab	☐ Segments	☐ No. of Landings	☐ No. of Step Irons	☐ No. of Ladders			
☐ No. of Regulating Brick Courses							

CONDITION INFORMATION (specific in remark)

	Cover	Shaft	Irons / Ladders	Chamber	Benching	Channel	
OK	☒	☐	☐	☒	☒	☒	
Needs attention	☐	☐	☐	☐	☐	☐	
Urgent attention	☐	☐	☐	☐	☐	☐	
Depth of Flow		mm	Depth of Silt		mm	Height of Surcharge from CL	

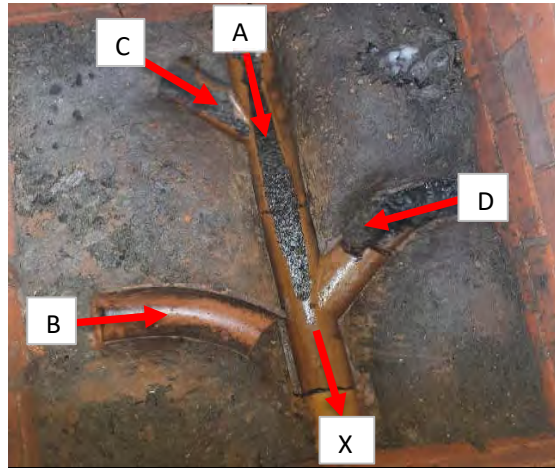
REMARKS

BRANCH C CAPPED
BRANCH D FULL OF SILT - CLEANING REQUIRED

LOCATION SKETCH



PLAN OF MANHOLE



STATUS	PU : Public	PR : Private	WC : Culverted Watercourse	} Applies to main outlet
	24 : Section 24	HD : Highway Drain		
FUNCTION	F : Foul	C : Combined	S : Surface Water	} Applies to main outlet
MANHOLE TYPE	IF : Infall	MH : Manhole	CP : Catchpit	CSO : Consented Sewer Overflow
	LH : Lamphole	RE : Rodding Eye	SO : Storm Overflow	DS : Dual system Manhole
	GU : Gully	OF : Outfall	SA : Soakaway	PS : Pumping Station
COVER DUTY	L : Light Duty	M : Medium Duty	H : Heavy Duty	
SHAPE	C : Circular	E : Egg	R : Rectangular	
	S : Square	T : Trapezoidal	A : Arched	
	B : Barrel	H : Horseshoe (Inverted U)	U : U-shaped with flat top	
	X : Other (state in words)			
PIPE (OR LINING) MATERIAL	AK : Alkathene	AC : Asbestos Cement	BR : Brick	
	CI : Cast Iron	SI : Spun (Grey) Iron	CO : Concrete	
	CSB : Concrete Segments (Bolted)	CSU : Concrete Segments (Unbolted)	CC : Concrete Box Culvert	
	DI : Ductile Iron	GRC : Glass Reinforced Concrete	GRP : Glass Reinforced Plastic	
	PSC : Plastic/Steel Composite	PVC : Polyvinyl Chloride	PE : Polyethylene	
	RPN : Reinforced Plastic Matrix	ST : Steel	VC : Vitrified Clay	
	PP : Polypropylene	PF : Pitch Fibre	MAC : Masonry, Coursed	
	MAR : Masonry, Random Courses	XXX : Other (State in remarks)		
LINING	BL : Bitumen	RL : Resin	IS : Insituform	
	CL : Cement	PI : Plastic		

Layer Surveys Ltd

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T: 01772 611634



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Layer Surveys Ltd Manhole Survey Card

Card No	02	Map No	
Catchment		MH No	MH 03
Location	THE FAIRFIELD02		
Town	MANCHESTER M11 1NE		

★ PR	Status		Syphon	★ C	Function	★ MH	MH Type	13/08/2021	Date of Survey
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COVER DETAILS

☒ Square	☐ Rectangle	☐ Triangle	☐ Dbl Triangle	☐ Circular	☐ Oval	☐ Other	☐ Multiple	☐ Hinged	☐ Lockable
Cover Level		m	H / M / L Cover Duty	★ M	Initials	CL			

PIPE DETAILS

Incoming Pipes

Clockwise from pipe X	Pipe	Depth from Invert (m)	Upstream / Downstream MH Ref	Shape	Size (mm)		Pipe Mat	Lining Mat	Back Drop Dia (mm)	Back Drop Depth (m)
	A	0.86		C	100	X	VC			
	B	0.70		C	100	X	VC			
	C	0.70		C	100	X	VC			
	D					X				
	E					X				
	F					X				

Outgoing Pipes

X	0.87		C	100	X	VC			
Y					X				

Cover Opening at narrowest	640 X 640	mm	Chamber Dimension	540 X 540	mm	Evidence of Surcharge	
Shaft at narrowest		mm	Shaft Depth (from CL)		mm	OX / H2S / METH Toxic atmosphere	

MANHOLE CONSTRUCTION DETAILS

☐ Pre Cast Concrete	☐ In Situ Concrete	☒ Brick	☐ GRP	☐ Arch	☐ Corbel	☐ Taper	☐ Side Entry
☒ Reducing Slab	☐ Segments	☐ No. of Landings	☐ No. of Step Irons	☐ No. of Ladders			
☐ No. of Regulating Brick Courses							

CONDITION INFORMATION (specific in remark)

	Cover	Shaft	Irons / Ladders	Chamber	Benching	Channel	
OK	☒	☐	☐	☒	☒	☒	
Needs attention	☐	☐	☐	☐	☐	☐	
Urgent attention	☐	☐	☐	☐	☐	☐	
Depth of Flow		mm	Depth of Silt		mm	Height of Surcharge from CL	

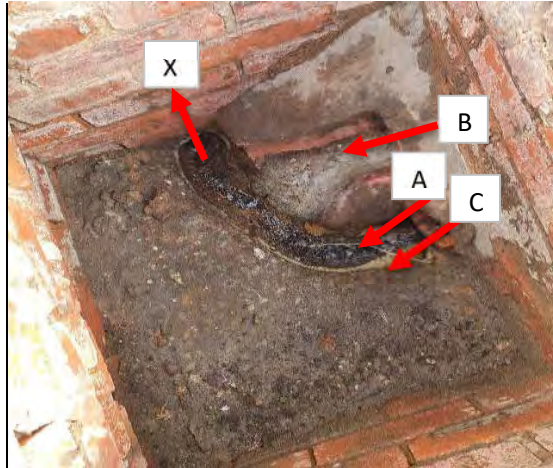
REMARKS

★ See Overleaf for Key

LOCATION SKETCH



PLAN OF MANHOLE



STATUS	PU : Public	PR : Private	WC : Culverted Watercourse	} Applies to main outlet
	24 : Section 24	HD : Highway Drain		
FUNCTION	F : Foul	C : Combined	S : Surface Water	} Applies to main outlet
MANHOLE TYPE	IF : Infall	MH : Manhole	CP : Catchpit	CSO : Consented Sewer Overflow
	LH : Lamphole	RE : Rodding Eye	SO : Storm Overflow	DS : Dual system Manhole
	GU : Gully	OF : Outfall	SA : Soakaway	PS : Pumping Station
COVER DUTY	L : Light Duty	M : Medium Duty	H : Heavy Duty	
SHAPE	C : Circular	E : Egg	R : Rectangular	
	S : Square	T : Trapezoidal	A : Arched	
	B : Barrel	H : Horseshoe (Inverted U)	U : U-shaped with flat top	
	X : Other (state in words)			
PIPE (OR LINING) MATERIAL	AK : Alkathene	AC : Asbestos Cement	BR : Brick	
	CI : Cast Iron	SI : Spun (Grey) Iron	CO : Concrete	
	CSB : Concrete Segments (Bolted)	CSU : Concrete Segments (Unbolted)	CC : Concrete Box Culvert	
	DI : Ductile Iron	GRC : Glass Reinforced Concrete	GRP : Glass Reinforced Plastic	
	PSC : Plastic/Steel Composite	PVC : Polyvinyl Chloride	PE : Polyethylene	
	RPN : Reinforced Plastic Matrix	ST : Steel	VC : Vitrifed Clay	
	PP : Polypropylene	PF : Pitch Fibre	MAC : Masonry, Coursed	
	MAR : Masonry, Randon Courses	XXX : Other (State in remarks)		
LINING	BL : Bitumen	RL : Resin	IS : Insituform	
	CL : Cement	PI : Plastic		

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Layer Surveys Ltd Manhole Survey Card

Card No	03	Map No	
Catchment		MH No	MH 01
Location	THE FAIRFIELD02		
Town	MANCHESTER M11 1NE		

★ PR	Status		Syphon	★ C	Function	★ MH	MH Type	13/08/2021	Date of Survey
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COVER DETAILS

☐ Square	☒ Rectangle	☐ Triangle	☐ Dbl Triangle	☐ Circular	☐ Oval	☐ Other	☐ Multiple	☐ Hinged	☐ Lockable
Cover Level		m	H / M / L Cover Duty	★ M	Initials	CL			

PIPE DETAILS

Incoming Pipes

Clockwise from pipe X	Pipe	Depth from Invert (m)	Upstream / Downstream MH Ref	Shape	Size (mm)		Pipe Mat	Lining Mat	Back Drop Dia (mm)	Back Drop Depth (m)
	A				Height	Width				
	B					X				
	C					X				
	D					X				
	E					X				
	F					X				

Outgoing Pipes

X					X					
Y					X					

Cover Opening at narrowest		mm	Chamber Dimension		mm	Evidence of Surcharge	
Shaft at narrowest		mm	Shaft Depth (from CL)		mm	OX / H2S / METH Toxic atmosphere	

MANHOLE CONSTRUCTION DETAILS

☐ Pre Cast Concrete	☐ In Situ Concrete	☒ Brick	☐ GRP	☐ Arch	☐ Corbel	☐ Taper	☐ Side Entry
☒ Reducing Slab	☐ Segments	☐ No. of Landings	☐ No. of Step Irons	☐ No. of Ladders			
☐ No. of Regulating Brick Courses							

CONDITION INFORMATION (specific in remark)

	Cover	Shaft	Irons / Ladders	Chamber	Benching	Channel	
OK	☐	☐	☐	☐	☐	☐	
Needs attention	☐	☐	☐	☐	☐	☐	
Urgent attention	☒	☐	☐	☒	☒	☒	
Depth of Flow		mm	Depth of Silt		mm	Height of Surcharge from CL	

REMARKS

UNABLE TO SEE INCOMING AND OUTGOING PIPES
MANHOLE FULL OF WASTE AND DEBRIS - NO COVER JUST BRICK SLABS

LOCATION SKETCH



PLAN OF MANHOLE



STATUS	PU : Public	PR : Private	WC : Culverted Watercourse	} Applies to main outlet
	24 : Section 24	HD : Highway Drain		
FUNCTION	F : Foul	C : Combined	S : Surface Water	} Applies to main outlet
MANHOLE TYPE	IF : Infall	MH : Manhole	CP : Catchpit	CSO :Consented Sewer Overflow
	LH : Lamphole	RE : Rodding Eye	SO : Storm Overflow	DS :Dual system Manhole
	GU : Gully	OF : Outfall	SA : Soakaway	PS :Pumping Station
COVER DUTY	L : Light Duty	M : Medium Duty	H : Heavy Duty	
SHAPE	C : Circular	E : Egg	R : Rectangular	
	S : Square	T : Trapezoidal	A : Arched	
	B : Barrel	H : Horseshoe (Inverted U)	U : U-shaped with flat top	
	X : Other (state in words)			
PIPE (OR LINING) MATERIAL	AK : Alkathene	AC : Asbestos Cement	BR : Brick	
	CI : Cast Iron	SI : Spun (Grey) Iron	CO : Concrete	
	CSB : Concrete Segments (Bolted)	CSU : Concrete Segments (Unbolted)	CC : Concrete Box Culvert	
	DI : Ductile Iron	GRC : Glass Reinforced Concrete	GRP : Glass Reinforced Plastic	
	PSC : Plastic/Steel Composite	PVC : Polyvinyl Chloride	PE : Polyethylene	
	RPN : Reinforced Plastic Matrix	ST : Steel	VC : Vitrified Clay	
	PP : Polypropylene	PF : Pitch Fibre	MAC : Masonry, Coursed	
	MAR : Masonry, Randon Courses	XXX : Other (State in remarks)		
LINING	BL : Bitumen	RL : Resin	IS : Insituform	
	CL : Cement	PI : Plastic		

APPENDIX 7

PEAK ENVIRONMENTAL SOLUTIONS PHASE 1 DESK STUDY REPORT

4th August 2021

Our Ref: 42167R1/Draft-RevA1

PDF BY EMAIL ONLY

DRAFT FOR CLIENT COMMENT - NOT FOR DISTRIBUTION

KMM Homes Limited
31 Sackville Street
Manchester
M1 3LZ

Dear KMM Homes,

**LAND AT CLUB STREET, MANCHESTER, M11 1NF
PHASE 1 ENVIRONMENTAL ASSESSMENT**

Overview

We write, following your instruction, to provide a Phase 1 environmental assessment (site investigation) to assist in preparation for residential development of an area of land at Club Street in the Openshaw area of Manchester, M11 1NF ('the site'). Figure 1 shows the site location (centred on National Grid Reference 389912, 397415) and Figures 2 and 3 show the current site layout and boundary location.

This report has been prepared to provide information to help assess potential geo-environmental and land contamination issues that may affect the proposed development.

The report provides details of the environmental site setting based on a site walkover and information gathered from publicly available environmental/geological information from public bodies (including the Environment Agency (EA) (via DATA.GOV.UK) and British Geological Survey (BGS)) via a Groundsure Insight report reproduced in Appendix C. A review of current and historical Ordnance Survey mapping data has also been completed. The assessment includes a site conceptual model, a land contamination preliminary risk assessment, risk evaluation and conclusions and recommendations to assist in furthering development at the site.

The site walkover was undertaken on the 19th July 2021, photographs of the site are included in Appendix B.

Limitations of Assessment

The report has been prepared under umbrella frameworks laid out in non-statutory UK guidance provided here: <https://www.gov.uk/government/publications/land-contamination-risk-management-lcrm> and in R&D66:2008 ('Guidance for the safe development of housing on land affected by contamination'), as well as in general accordance with the current National Planning Policy Framework. Information provided to or obtained by Peak Environmental Solutions has been relied upon in good faith. Our investigations exclude (i) surveys to identify the presence of injurious and invasive weeds; (ii) surveys to identify the presence of asbestos containing materials in buildings and; (iii) surveys to identify geotechnical risk/issues, including those associated to potential mining legacy concerns. This report is subject to our standard terms of business and the attached limitations and exceptions.

Existing Site Layout

The 0.45 Hectare site is located in the Openshaw area of Manchester ~6km to the east of the city centre. The site is currently occupied by the Openshaw AEU Club and Institute and consists of:

- Club Street. An asphalt surfaced dead-end road that extends ~50m north off Ashton Old Road and leads to the Openshaw AEU Club main entrance located at the head of Club Street and to the east.
- An asphalt surfaced car parking area located to the east of Club Street in the centre/south of the site.
- A brick built social club building located in the east of the site. The main part of the building is a single storey structure with a pitched roof that has been extended at its northern, southern and western elevations.
- An overgrown and disused strip of land that is partially hard surfaced with paving slabs located to the east of the main building.
- A small, asphalt surfaced area is located to the north of the main building and gives access to a spectator stand and toilet facilities attached to the main building.
- To the west of the main building is a grass surfaced crown bowling green surrounded on all sides by a shallow gutter and an asphalt surfaced walkway. Hard surfaced viewing areas are located alongside the walkway in the south and west of the site extending to the site boundaries. Small spectator stands are present around the green to the south, west and north.
- A detached bungalow, surrounded by an overgrown garden occupies the northern part of the site, with the garden extending to the north-western tip.

The main building includes a bar area and a cellar beneath most of the original structure. The cellar was damp, but without standing water at the time of the walkover. The building has gas central heating and is connected to mains water and drainage.

No areas of temporary or permanent waste storage or disposal were identified at the site during the walkover. No bulk liquid (including oil) storage was on-going. Other than the main building basement, no underground structures (excluding underground services) were identified. No visual or olfactory evidence to suggest the presence of ground contamination was observed.

The site is flat at an elevation of ~91m above Ordnance Datum (AOD). The area around the site is also flat or very gently sloping to the south. Site boundaries around the main club and bowling green area are formed by either high brick walls to the south, west and north or palisade fencing to the east.

A potential invasive weed species (Japanese knotweed) was observed on the northern and north-eastern site boundary. It's presence should be confirmed by an invasive weed specialist.

Surrounding Land Use

The site is located in an area of mixed land use in the Manchester suburb of Openshaw. Land uses surrounding the site are as follows:

- **North:** School playing fields and a fencing contractors yard are present immediately to the north, with allotment gardens, school buildings and residential houses beyond.
- **East:** Playing fields are also present to the north-east. East of the club building is an overgrown and disused area that extends ~40m to a church development. East of Club Street are a disused and overgrown area, a pub and houses on Gransmoor Avenue, with further housing beyond. A fuel filling station is located ~150m to the east/south-east and is accessed via Ashton Old Road.
- **South:** Houses are present immediately to the south of the main club and to the north of Ashton Old Road. South of Club Street and Ashton Old Road, further housing extends ~200m to rail lines beyond. A park is present to the south-west.
- **West:** A disused and overgrown area extends ~25m to houses and a church extending at least 500m.

Proposed Site Layout

The proposed development layout has yet to be finalised, but it is understood to comprise residential houses. The development will also include hard surfaced access roadways and parking areas and soft landscaped gardens. The main access will be via Club Street.

Geological, Hydrogeological & Hydrological Setting

The 1:50,000 scale BGS geology map for the area records the presence of superficial deposits beneath the site consisting of Quaternary Devensian Till. Bedrock geology consists of the Permian Collyhurst Sandstone Formation. Carboniferous Coal Measures are present at depth beneath the site.

The BGS hold a database of borehole records that can sometimes provide additional ground condition information. The nearest log is for a borehole drilled in 1988 located ~50m to the west of the site and extended to 5m below ground level. The log records a thin layer of made ground over Boulder Clay (Till) extending to the base of the borehole. A thin gravel band was encountered at ~3m bgl.

The site is located in an area where the Coal Authority consider that there may be risks associated with past or present coal mining (i.e. it is located within the Coal Authority Reporting Area). The site is not located within the Development High Risk Area, suggesting that the Coal Authority consider it unlikely that past underground mining will affect development at the site. No mine entries or surface coal outcrops are recorded within 1 km on the on-line planning Coal Authority mapping.

Radon Maps provided by Public Health England indicate that the site is located within an area where the maximum radon potential is less than 1%. Radon protection measures should not be required for the proposed properties. This will need to be agreed directly with building control in due course.

The superficial deposits beneath the site are classified as a Secondary Undifferentiated Aquifer suggesting that they are unlikely to represent a significant groundwater resource. The bedrock deposits are classified as a Principal Aquifer and may represent a source for locally and regionally

important groundwater supplies. There are no groundwater abstractions recorded on the EA database within 1km of the site however and the site is not located within a Source Protection Zone (SPZ) set by the EA for the protection of important groundwater abstractions (Appendix C).

The nearest surface water feature is the Ashton Canal located ~350m to the north. Surface water runoff is likely to be in a southerly direction however in line with local topography. The nearest surface water feature to the south is the Gorton Reservoir system located more than 600m from the site.

The site is in an area that the EA have categorised as having a low probability of flooding (less than 1 in 1,000 annual probability of river or sea flooding).

Ecologically Sensitive Areas

The Government Information website www.magic.gov.uk lists conservation designations for the area. There are no designated areas including Sites of Special Scientific Interest, Areas of Outstanding Natural Beauty, Environmentally Sensitive Areas, National Nature Reserves, Local Nature Reserves or Specially Protected Areas within 1km of the site. No Scheduled Ancient Monuments are located near the site.

Site History & Potentially Contaminative Landuse

Historic Ordnance Survey (OS) maps for the site (1885 to present day) are attached and provide supporting information about previous on and off-site land use, including potentially contaminative land uses on or around the site. Aerial photography for the period between 2000 and 2020 has also been reviewed via Google Earth Pro.

At the time of the first OS in 1848, the site was undeveloped and occupied by fields. Ashton Old Road was present to the south, with some houses nearby. Rail lines were also already present in their current location to the south and school buildings in approximately their current locations to the north and north-east.

By 1892, the club building (un-extended), an outline possibly representing the bowling green and Club Street are recorded in their current locations. Houses have been built to the south and tram lines are shown within Ashton Old Road. A pond is recorded ~80m to the north.

Mapping from 1906 no longer records the pond. Further housing development in the area has occurred by this time, including beyond the site boundary to the east in the currently disused and overgrown area. This map records the Fairfield Laundry immediately to the north-west of the site for the first time.

The laundry is expanded with tanks and a chimney shown adjacent to the main building for the first time in the 1950s. In the 1970s, small buildings assumed to be domestic scale garages are established immediately to the west and north-west of the site and to the south of the car park. By 1984, the club building has been extended to approximately its current size and the bungalow in the north of the site has been added. The main laundry buildings have been removed by 1991, leaving some small buildings near the site to the north-west.

The aerial photograph record from 2000 shows the former laundry site in approximately its current layout as an open yard. Houses immediately to the east and garages immediately to the west and south have been removed by this time, leaving the undeveloped, fenced off areas that are currently present. Additional school buildings are added to the north-east in ~2003, but no other significant changes are recorded on the subsequent aerial photographs.

Contemporary Potentially Contaminative On-Site & Off-site Landuses

No industrial plants or facilities permitted to operate by the EA have been identified within the site boundaries. No current permitted activities have been identified within 500m of the site.

Contemporary industrial land uses have been identified within 500m of the site are as described above (fuel filling station to the south-east and fencing company immediately to the north-west).

Contamination Sources - Registered Waste Operations, Infilled Land and Pollution Incidents

No pollution incidents that are likely to affect the development have been identified on the EA database at the site or in the near vicinity (Appendix C).

No currently operational landfill sites are recorded on the EA database within 500m of the site. A closed landfill is recorded ~310m to the north-west of the site but should not affect the development (see Appendix C).

Contaminants & Hazards of Concern

The Phase 1 process has identified the following potential issues that may affect the development:

- The site has been developed since at least the 1890s, with various phases of development expansion occurring until approximately the 1980s. The area has been used as a social club, a bowling green and a residential house. Although none of these uses represent a significant sources of ground contamination, developed site use has been on-going for a considerable period and some contamination may have resulted.
- The site buildings have been altered or constructed at a time when use of asbestos containing materials (ACMs) was common. Site buildings and potentially site soils may include asbestos containing.
- Imported materials may have been used to form hard surfaced areas and/or improved drainage for the bowling green. Imported made ground can sometimes include concentrations of contaminants that may not be appropriate in a residential setting.
- A laundry was historically (between ~1900 and ~1980s) located in close proximity to the north-west of the site. A chimney and a tank are both recorded at various times during this period. Dry cleaning, if it was carried out, represents a potentially significant source of ground contamination in the form of chlorinated solvents which can remain in the ground for long periods. Solvents could migrate onto the site via groundwater movement and have the potential to impact the future site residents and other receptors.
- Land immediately to the south (of the car park) and immediately to the west and north-west of the site has historically been used to house domestic scale garaging. Some contamination may be present in these areas as a result. Significant impacts at the site are currently considered unlikely.

No other potential contaminants or sources of contamination that may affect the development have been identified during the Phase 1 assessment process.

Some concentrations of the following contaminants in particular may be present as a result of a history of development at the site and local ground conditions:

- Arsenic, cadmium, chromium, copper, lead, mercury, nickel, selenium, vanadium, zinc.
- Asbestos containing materials (ACMs).
- Banded speciated total petroleum hydrocarbons (TPH) fractions C6-C35.
- Volatile organic compounds including chlorinated solvents.
- Priority 16 polycyclic aromatic hydrocarbons (PAHs): naphthalene, acenaphthene, acenaphthylene, fluorene, phenanthrene, anthracene, fluoranthene, pyrene, benzo-a-anthracene, chrysene, benzo-b-fluoranthene, benzo-k-fluoranthene, benzo-a-pyrene, dibenzo-a,h-anthracene, benzo-g,h,i-perylene, indeno-1,2,3-c,d-pyrene.

Ground gases (methane and carbon dioxide) are currently considered unlikely to affect the site or the development.

Risk Assessment

The qualitative PRA is presented in Table 1 and considers the proposed residential development. The PRA includes an initial conceptual site model to assess the relative significance of risks associated with relevant pollutant linkages identified by a source-pathway-receptor analysis. The relative assessment of risk is based on the following:

- The likelihood (probability) of an event occurring, taking into account the presence of the hazard & receptor, as well the plausibility of the pathway. The likelihood is defined as the chance of a particular event occurring in a given period of time.
- The severity of the potential consequence, taking into account the relative significance the hazard (typically site specific) and the relative sensitivity of the receptor. Severity or consequence can be defined as adverse effect(s) or harm arising from a hazard that impairs receptor function/condition in the short term (acute) or longer term (chronic).
- Risk classification (very low to very high) using a risk matrix that combines 'consequence' and 'likelihood'; the risk matrix is detailed in Appendix E.
- For the purposes of the qualitative assessment, identified very low and low risks will be considered acceptable for the redeveloped use.

The PRA does not specifically consider risks to construction workers during the development who may come into contact with site soils. Protection of workers should be achieved via routine precautions and compliance with relevant construction health and safety statutory/non-statutory guidance and codes of practice.

Table 1: Post-Development Conceptual Site Model & Preliminary Risk Assessment

Relevant Pollutant Linkages			Risk Assessment			
Source/Hazard	Pathway	Sensitive Receptor	Consequence	Likelihood	Preliminary Risk Classification	Comments
Inorganic/organic substances in soils & groundwater	Direct contact (Ingestion & Dermal)	Human Health Future site users	Medium	Low likelihood	Moderate to Low risk	Some ground contamination may be present as a result of historic site use or surrounding land use. Sensitive residential receptors will be introduced.
	Inhalation of soil dust					
	Internal and external inhalation of organic vapour	Controlled Waters Groundwater	Medium	Low likelihood	Moderate to Low risk	The site is located in an important groundwater resource area, but a significant thickness of low permeability superficial deposits are present.
	Migration of organic contaminants into plastic water supply pipes					
Asbestos fibres/fragments in shallow soils	Ingestion of site grown vegetables	Controlled Waters Surface water	Medium	Unlikely	Low risk	Surface waters are not located in close proximity and are less likely to be affected by contaminants from the site.
	Soils leaching to groundwater					
	Perched water discharge to groundwater	Human Health Future site users	Medium	Low likelihood	Moderate to Low risk	-
	Lateral groundwater flow					
Aggressive ground conditions	Groundwater discharge to surface waters	BBM&S Buildings, building materials and services	Medium	Unlikely	Low risk	-
	Direct surface run-off					

Note: Identified Very Low and Low risks are considered acceptable for the redeveloped use
BBM&S: Buildings, building materials and services.

Conclusions and Recommendations

A Phase 1 environmental assessment has been undertaken for the site to support the proposed redevelopment. The purpose of the assessment was to:

1. Determine the potential for land contamination issues arising from the current or historical uses of the site and surrounding area; and
2. Provide an assessment of potential risks that identified land contamination issues may pose to sensitive receptors on the developed site (including future site users, controlled waters and infrastructure).

The PRA has identified moderate to low risks to the identified receptors associated with potential land contamination and other related sources/hazards at the site. The following actions should be incorporated into the development scheme to ensure potential risks are effectively managed:

- The current buildings should be assessed for potential ACMs via an appropriate HSG264 compliant asbestos demolition survey. The recommendations of the survey should be implemented in line with CAR-2012, with all ACMs handled appropriately and removed for appropriate off-site disposal.
- Potential invasive species observed in the north of the site should be professionally assessed and a management strategy should be agreed and implemented as necessary prior to any ground excavations at the site.
- Following finalisation of the proposed residential development layout, demolition of the existing buildings, site clearance and where appropriate the removal of the existing hard standing, a targeted Phase 2 investigation that is proportionate to the risk levels highlighted in Table 1 should be completed. In particular, the investigation should:
 - *Establish the groundwater regime and groundwater quality in the north of the site in particular.*
 - *Establish shallow ground conditions and soil quality in future garden/landscaped areas.*
- The Phase 2 should be followed by generic quantitative/qualitative human health and controlled water risk assessments, as necessary, to identify the significance of any soil/groundwater contamination present.
- Following the Phase 2 investigation, the initial conceptual model and risk evaluation should be refined, reducing the uncertainties highlighted by this report. It is recommended that the scope of the Phase 2 be agreed in advance with the contaminated land department at Manchester City Council. The Phase 2 report should include conclusions and recommendations for any further investigation or risk assessment work.
- If required, a remediation/protection strategy should be developed to ensure that new buildings and site soils (including imported soils/sub-soil) do not represent a potentially unacceptable risk to the future site occupants.
- A discovery strategy should be developed for use during the redevelopment should unexpected impacted made ground deposits and/or natural soils and waste deposits be encountered. The strategy should include a protocol for characterising and dealing with any encountered contamination, including liaison with Manchester City Council.
- New site services should be laid in clean service corridors.

- Below ground water supply services should comply with industry best practice for site development and the requirements of the water utility company.

We trust that the above meets your requirements. If you have queries, please do not hesitate to contact us.

Yours sincerely,

For and on behalf of Peak Environmental Solutions Limited



Clare Dainton

Director

Enc.

- Figures:

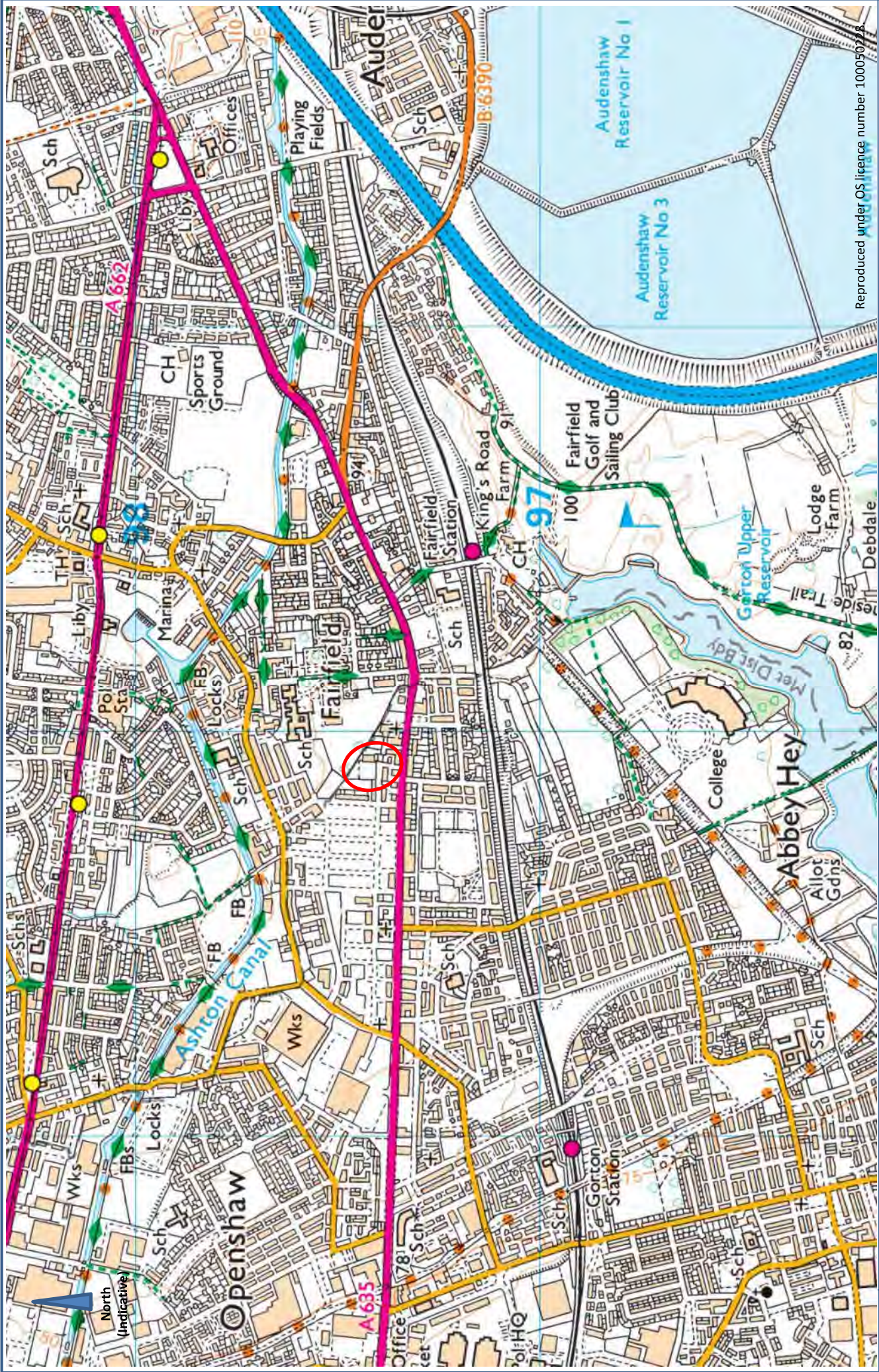
Figure 1: Site Location Plan

Figure 2: Site Layout Plan

Figure 3: 2021 Aerial Photograph

- Appendix A: Limitations & Exceptions
- Appendix B: Site Walkover Photographs
- Appendix C: Environmental Information Search
- Appendix D: Historical Map Pack
- Appendix E: Risk Matrix

FIGURES



Reproduced under OS licence number 100050218

Figure 1

Site Location Plan

○ Site Location

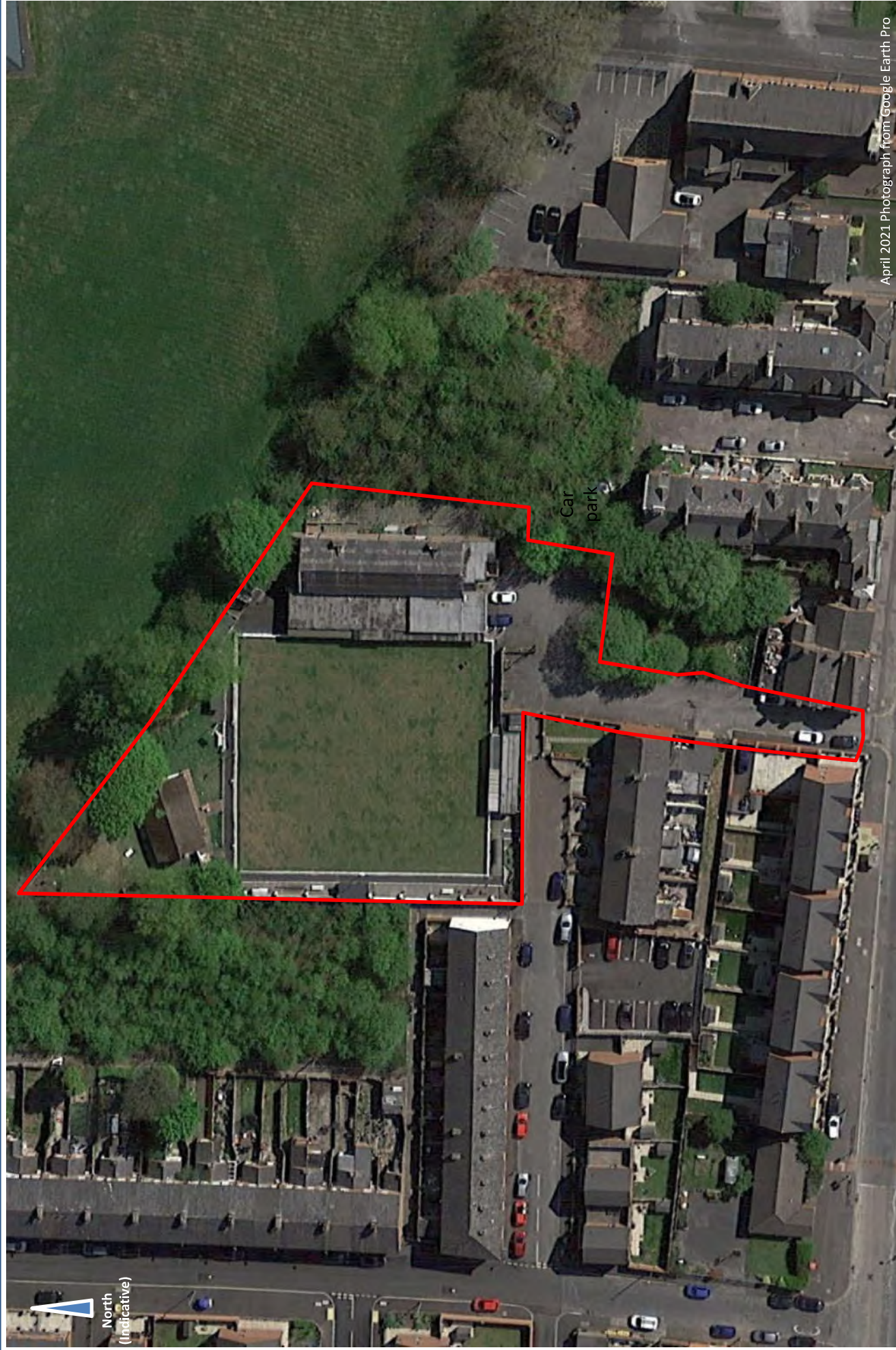
Scale: Not to scale



Figure 2 Site Layout Plan

Site Boundary (Indicative)

Scale: Not to scale



April 2021 Photograph from Google Earth Pro

Figure 3	Aerial Photograph showing Current Site Layout	 PEAK ENVIRONMENTAL SOLUTIONS
Site:	Land at Club Street, Openshaw, Manchester, M11 1HR	Project: 42163R1
Scale: Not to scale	Site Boundary (Indicative)	Beechfield, Ninelands Road, Hathersage Derbyshire, S32 1BJ Tel: 01433 659071 www.peakenvironmentalsolutions.com

APPENDIX A

LIMITATIONS AND EXCEPTIONS OF ASSESSMENT

KMM Homes Limited (the Client) has requested that a Phase 1 Environmental Assessment (the 'Project') be performed at the site. The report (and any copies of it) have been prepared for the sole use and reliance of the Client. This report s (and any copies of it) shall not be relied upon or transferred to any other parties without the express written authorisation of Peak Environmental Solutions limited. If an unauthorised third party comes into possession of this report, (and any copies of it) they rely on it at their peril and the authors owe them no duty of care and skill. Findings and opinions conveyed in the services should only be used by competent persons acting on the behalf of the Client and the findings and opinions conveyed in the services should only be used for the intended use. Copyright of reports & documents remains with Peak Environmental Solutions Limited. The project and report are subject to Peak Environmental Solutions standard terms and conditions.

Authorised or unauthorised copies of this document may come into the possession of organisations that are designated under the Freedom of Information Act 2000 ("the Act"). Such organisations that are designated in the Act are requested by Peak Environmental Solutions to respect the above statements relating to confidentiality and copyright.

Our investigations exclude (i) surveys to identify the presence injurious and invasive weeds; (ii) surveys to identify the presence of asbestos containing materials in buildings and; (iii) surveys to identify geotechnical risk/issues, including those associated to potential mining legacy concerns.

The findings and opinions conveyed via this report are based on information obtained from a variety of sources as detailed within this report, and which Peak Environmental Solutions Limited believes are reliable. Nevertheless, Peak Environmental Solutions Limited cannot and does not guarantee the authenticity or reliability of the information it has relied upon. The report represents the findings and opinions of experienced geo-environmental consultants. Peak Environmental Solutions Limited does not provide legal advice and the advice of lawyers may also be required.

The opinions presented in this report are based on a review of records, available investigation reports and historical sources. Peak Environmental Solutions Limited has found indicators that suggest that geo-environmental hazards may exist at the site and these may warrant mitigation or consideration appropriate to the end use stated by the Client. Not finding such indicators does not mean that geo-environmental hazards do not exist at the site. In addition, the Risk Assessment did not include any enquiry with respect to substances not included within the substances of concern.

The Client is advised that the geo-environmental conditions stated within reports supplied to Peak Environmental Solutions Limited are subject to change. Certain indicators of the presence of geo-environmental hazards may have been latent at the time of the most recent site reconnaissance and may subsequently have become observable. It is possible that Peak Environmental Solutions research, while fully appropriate for the Project, failed to indicate the existence of important information sources. Assuming such sources actually exist, their information could not have been considered in the formulation of Peak Environmental Solutions findings and opinions.

Certain indicators or evidence of geo-environmental hazards may have been outside the very limited portion of the subsurface investigated or monitored, latent at the time of this work or only partially intercepted by the works and thus their full significance could not have been appreciated. Groundwater levels are particularly susceptible to variations due to seasonal or other effects. Accordingly, it is possible that Peak Environmental Solutions work, whilst fully appropriate for the Project failed to indicate the presence or significance of geo-environmental hazards. Assuming the presence of a hazard, it could not have been considered in the formulation of Peak Environmental Solutions findings and opinions. The subsurface geological profiles and other descriptions are generalised by necessity and have been based on the information found at the locations of the exploratory holes and depths sampled and tested.

Any interpretation of the results of the Project have been based on the proposed site usage and the findings are not valid should the proposed land use and/or the regulatory regime/guidance change. Where interpretation is based on public domain guidance/protocols/models/software/code, Peak Environmental Solutions is not liable for errors in the guidance/protocols/models/software/code.

Peak Environmental Solutions Limited believes that providing information about limitations is essential to help the Client identify and thereby manage their risks. These risks can be mitigated, but they cannot be eliminated, through additional research. Peak Environmental Solutions Limited will on request, advise the client of the additional research opportunities available, their impact on risk, and their cost.

In preparing this report, it has been assumed that all past and present occupants have provided all relevant and other information, especially relating to known or potential geo-environmental hazards. This report is not required to identify insufficiencies or mistakes in the information provided by the user/owner or from any other source, but has sought to compensate for these where obvious in the light of other information.

APPENDIX B



Photo 1: Looking north up Club Street



Photo 2: Site entrance and car park looking north-east from Club Street



Photo 3: Site boundary wall from Backwell Street looking north



Photo 4: Looking north-west across the car park towards the club

 PEAK ENVIRONMENTAL SOLUTIONS	Site: Land at Club Street, Openshaw, Manchester M11 1HR	Beechfield, Ninelands Road, Hathersage Derbyshire, S32 1BJ Tel: 01433 659071 www.peakenvironmentalsolutions.com
Project: 42163R1		



Photo 5: Looking south across the car park. Club Street on the right of the photo



Photo 6: Looking south across the area in the east of the site to the east of the club building

 PEAK ENVIRONMENTAL SOLUTIONS	Site: Land at Club Street, Openshaw, Manchester M11 1HR Project: 42163R1 Beechfield, Ninelands Road, Hathersage Derbyshire, S32 1BJ Tel: 01433 659071 www.peakenvironmentalsolutions.com
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Photo 7: Looking north-west across the bowling green towards the bungalow



Photo 8: Looking south-east across the green, bungalow on the left of the photo

 PEAK ENVIRONMENTAL SOLUTIONS	Site: Land at Club Street, Openshaw, Manchester M11 1HR Project: 42163R1	Beechfield, Ninelands Road, Hathersage Derbyshire, S32 1BJ Tel: 01433 659071 www.peakenvironmentalsolutions.com
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Photo 9: Looking south from the northern tip of the site



Photo 10: Looking north towards the northern tip of the site

	Site: Land at Club Street, Openshaw, Manchester M11 1HR Project: 42163R1	Beechfield, Ninelands Road, Hathersage Derbyshire, S32 1BJ Tel: 01433 659071 www.peakenvironmentalsolutions.com
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Photo 11: Looking east across the green towards the main club building



Photo 12: Inside the main club building

 PEAK ENVIRONMENTAL SOLUTIONS	Site: Land at Club Street, Openshaw, Manchester M11 1HR Project: 42163R1	Beechfield, Ninelands Road, Hathersage Derbyshire, S32 1BJ Tel: 01433 659071 www.peakenvironmentalsolutions.com
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Photo 13: Main club building basement area 1



Photo 14: Main club building basement area 2

APPENDIX C

APPENDIX D

APPENDIX E

Table - Qualitative Risk Classification Matrix

Probability (likelihood)	Consequence			
	Minor	Mild	Medium	Severe
High likelihood	Low risk	Moderate risk	High risk	Very High Risk
Likely	Low risk	Low to moderate risk	Moderate risk	High risk
Low likelihood	Very low risk	Low risk	Low to moderate risk	Moderate risk
Unlikely	Very low risk	Very low risk	Low risk	Low to moderate risk
No Pollutant Linkage	No potential risk			
Consequence	Minor	Mild	Medium	Severe
Ratings	- No measurable effect on humans - Equivalent to insubstantial pollution incident with no observed effect on water quality or ecosystems - Repairable effects of damage to buildings, structures and services	- Exposure to human health unlikely to lead to "significant harm" - Equivalent to EA Category 3 pollution incident including minimal or short-lived effect on water quality; marginal effect on amenity value, agriculture or commerce - Minor or short lived damage to aquatic or other ecosystems, which is unlikely to result in a substantial adverse change in its functioning or harm to a species of special interest that would endanger the long term maintenance of the population - Minor damage to crops, buildings or property	- Elevated concentrations which could result in "significant harm" to humans health as defined by EPA 1990, Part 2A if exposure occurs - Equivalent to EA Category 2 pollution incident including significant effect on water quality; notification required to abstractors; reduction in amenity value or significant damage to agriculture or commerce - Significant damage to aquatic or other ecosystems, which may result in a substantial adverse change in its functioning or harm to a species of special interest that may endanger the long term maintenance of the population - Significant damage to crops, buildings or property	- Highly elevated concentrations likely to result in "significant harm" to humans health as defined by EPA 1990, Part 2A if exposure occurs - Equivalent to EA Category 1 pollution incident including persistent and/or extensive effects on water quality; leading to closure of a potable abstraction point; major impact on amenity value or major damage to agriculture or commerce - Major damage to aquatic or other ecosystems, which is likely to result in a substantial adverse change in its functioning or harm to a species of special interest that endangers the long term maintenance of the population - Catastrophic damage to crops, buildings or property
Probability	Unlikely	Low likelihood	Likely	High likelihood
Classification	Improbable that exposure/event would occur even in the long term	Possible that exposure/event could occur. However, not certain that even over a long period that exposure/event would occur and is less likely in the shorter term	Probable that exposure/event would occur. However, exposure/event is not inevitable, but is possible in the short term and likely over the long term.	Exposure/event very likely in the short term and almost inevitable over the long term, or evidence at the receptor of harm or pollution

APPENDIX 8

SURFACE WATER ATTENUATION CALCULATIONS / GREENFIELD RUNOFF RATE

Calculated by:	Jan Skibniewski
Site name:	Club Street, Manchester
Site location:	M11 1HR

This is an estimation of the greenfield runoff rates that are used to meet normal best practice criteria in line with Environment Agency guidance "Rainfall runoff management for developments", SC030219 (2013), the SuDS Manual C753 (Ciria, 2015) and the non-statutory standards for SuDS (Defra, 2015). This information on greenfield runoff rates may be the basis for setting consents for the drainage of surface water runoff from sites.

Runoff estimation approach IH124

Site characteristics

Total site area (ha): 0.583

Methodology

Q_{BAR} estimation method: Calculate from SPR and SAAR

SPR estimation method: Calculate from SOIL type

Soil characteristics Default Edited

SOIL type: 4 4

HOST class: N/A N/A

SPR/SPRHOST: 0.47 0.47

Hydrological characteristics Default Edited

SAAR (mm): 918 918

Hydrological region: 10 10

Growth curve factor 1 year: 0.87 0.87

Growth curve factor 30 years: 1.7 1.7

Growth curve factor 100 years: 2.08 2.08

Growth curve factor 200 years: 2.37 2.37

Notes

(1) Is Q_{BAR} < 2.0 l/s/ha?

When Q_{BAR} is < 2.0 l/s/ha then limiting discharge rates are set at 2.0 l/s/ha.

(2) Are flow rates < 5.0 l/s?

Where flow rates are less than 5.0 l/s consent for discharge is usually set at 5.0 l/s if blockage from vegetation and other materials is possible. Lower consent flow rates may be set where the blockage risk is addressed by using appropriate drainage elements.

(3) Is SPR/SPRHOST ≤ 0.3?

Where groundwater levels are low enough the use of soakaways to avoid discharge offsite would normally be preferred for disposal of surface water runoff.

Greenfield runoff rates Default Edited

Q_{BAR} (l/s): 3.87 3.87

1 in 1 year (l/s): 3.36 3.36

1 in 30 years (l/s): 6.57 6.57

1 in 100 year (l/s): 8.04 8.04

1 in 200 years (l/s): 9.16 9.16

This report was produced using the greenfield runoff tool developed by HR Wallingford and available at www.uksuds.com. The use of this tool is subject to the UK SuDS terms and conditions and licence agreement, which can both be found at www.uksuds.com/terms-and-conditions.htm. The outputs from this tool are estimates of greenfield runoff rates. The use of these results is the responsibility of the users of this tool. No liability will be accepted by HR Wallingford, the Environment Agency, CEH, Hydrosolutions or any other organisation for the use of this data in the design or operational characteristics of any drainage scheme.

Integra Consulting						Job No	Date
						3309	14.02.22
						Sheet	By
Calculations						01	JS
Job Title Club Street, Manchester							
Storm Water Flood Model							
M5-60 = 18.00		r = 0.36		Return, T = 30		Area (m²) = 3760	
				CC Factor = 0.00		Limit (l/s) = 5.0	
				Totals		92	92
D (mins)	M5-D (mm)	MT-D (mm)	Rate (mm/hr)	Flow (l/s)	CC Flow (l/s)	Storage (m³)	CC Storage (m³)
10.00	9.14	13.50	80.98	84.04	84.04	47.42	47.42
15.00	10.96	16.47	65.89	68.38	68.38	57.04	57.04
20.00	12.31	18.56	55.68	57.78	57.78	63.34	63.34
25.00	13.40	20.30	48.71	50.55	50.55	68.32	68.32
30.00	14.31	21.75	43.51	45.15	45.15	72.27	72.27
35.00	15.10	23.02	39.46	40.94	40.94	75.48	75.48
40.00	15.79	24.13	36.20	37.56	37.56	78.15	78.15
45.00	16.42	25.13	33.51	34.78	34.78	80.40	80.40
50.00	16.99	26.04	31.25	32.43	32.43	82.30	82.30
55.00	17.51	26.88	29.32	30.43	30.43	83.92	83.92
60.00	18.00	27.65	27.65	28.70	28.70	85.31	85.31
65.00	18.45	28.37	26.19	27.18	27.18	86.50	86.50
70.00	18.88	29.05	24.90	25.84	25.84	87.52	87.52
75.00	19.28	29.68	23.75	24.64	24.64	88.39	88.39
80.00	19.66	30.28	22.71	23.57	23.57	89.13	89.13
85.00	20.02	30.85	21.78	22.60	22.60	89.75	89.75
90.00	20.37	31.39	20.93	21.72	21.72	90.27	90.27
95.00	20.70	31.91	20.15	20.91	20.91	90.70	90.70
100.00	21.02	32.40	19.44	20.17	20.17	91.04	91.04
105.00	21.32	32.87	18.78	19.49	19.49	91.30	91.30
110.00	21.61	33.32	18.18	18.86	18.86	91.49	91.49
115.00	21.90	33.76	17.61	18.28	18.28	91.62	91.62
120.00	22.17	34.18	17.09	17.73	17.73	91.68	91.68
125.00	22.43	34.58	16.60	17.23	17.23	91.69	91.69
130.00	22.69	34.97	16.14	16.75	16.75	91.65	91.65
135.00	22.94	35.35	15.71	16.30	16.30	91.57	91.57
140.00	23.18	35.72	15.31	15.88	15.88	91.43	91.43
145.00	23.41	36.07	14.93	15.49	15.49	91.26	91.26
150.00	23.64	36.41	14.57	15.12	15.12	91.04	91.04
155.00	23.86	36.75	14.23	14.76	14.76	90.79	90.79
160.00	24.08	37.07	13.90	14.43	14.43	90.51	90.51
165.00	24.29	37.39	13.60	14.11	14.11	90.19	90.19
170.00	24.50	37.70	13.31	13.81	13.81	89.84	89.84
175.00	24.70	38.00	13.03	13.52	13.52	89.46	89.46
180.00	24.90	38.29	12.76	13.25	13.25	89.05	89.05
185.00	25.09	38.58	12.51	12.98	12.98	88.61	88.61
190.00	25.28	38.85	12.27	12.73	12.73	88.15	88.15
195.00	25.47	39.13	12.04	12.49	12.49	87.67	87.67
200.00	25.65	39.39	11.82	12.26	12.26	87.16	87.16

205.00	25.83	39.65	11.61	12.04	12.04	86.63	86.63
210.00	26.01	39.91	11.40	11.83	11.83	86.08	86.08
215.00	26.18	40.15	11.21	11.63	11.63	85.51	85.51
220.00	26.35	40.40	11.02	11.43	11.43	84.92	84.92
225.00	26.51	40.64	10.84	11.25	11.25	84.32	84.32
230.00	26.68	40.87	10.66	11.06	11.06	83.69	83.69
235.00	26.84	41.10	10.49	10.89	10.89	83.05	83.05
240.00	27.00	41.32	10.33	10.72	10.72	82.39	82.39
245.00	27.15	41.55	10.17	10.56	10.56	81.71	81.71
250.00	27.31	41.76	10.02	10.40	10.40	81.02	81.02
255.00	27.46	41.97	9.88	10.25	10.25	80.31	80.31
260.00	27.61	42.18	9.73	10.10	10.10	79.59	79.59
265.00	27.75	42.39	9.60	9.96	9.96	78.86	78.86
270.00	27.90	42.59	9.46	9.82	9.82	78.11	78.11
275.00	28.04	42.79	9.34	9.69	9.69	77.35	77.35
280.00	28.18	42.98	9.21	9.56	9.56	76.58	76.58
285.00	28.32	43.17	9.09	9.43	9.43	75.79	75.79
290.00	28.45	43.36	8.97	9.31	9.31	75.00	75.00
295.00	28.59	43.55	8.86	9.19	9.19	74.19	74.19
300.00	28.72	43.73	8.75	9.08	9.08	73.37	73.37
305.00	28.85	43.91	8.64	8.96	8.96	72.54	72.54
310.00	28.98	44.09	8.53	8.85	8.85	71.70	71.70
315.00	29.11	44.26	8.43	8.75	8.75	70.85	70.85
320.00	29.24	44.43	8.33	8.65	8.65	69.99	69.99
325.00	29.37	44.60	8.23	8.54	8.54	69.12	69.12
330.00	29.49	44.77	8.14	8.45	8.45	68.24	68.24
335.00	29.61	44.93	8.05	8.35	8.35	67.36	67.36
340.00	29.73	45.09	7.96	8.26	8.26	66.46	66.46
345.00	29.85	45.25	7.87	8.17	8.17	65.56	65.56
350.00	29.97	45.41	7.78	8.08	8.08	64.64	64.64
355.00	30.09	45.56	7.70	7.99	7.99	63.72	63.72
360.00	30.20	45.72	7.62	7.91	7.91	62.79	62.79
365.00	30.32	45.87	7.54	7.82	7.82	61.86	61.86
370.00	30.43	46.02	7.46	7.74	7.74	60.91	60.91
375.00	30.55	46.16	7.39	7.66	7.66	59.96	59.96
380.00	30.66	46.31	7.31	7.59	7.59	59.00	59.00
385.00	30.77	46.45	7.24	7.51	7.51	58.03	58.03
390.00	30.88	46.59	7.17	7.44	7.44	57.06	57.06
395.00	30.98	46.73	7.10	7.37	7.37	56.08	56.08
400.00	31.09	46.97	7.05	7.31	7.31	55.49	55.49
405.00	31.20	47.12	6.98	7.24	7.24	54.54	54.54
410.00	31.30	47.27	6.92	7.18	7.18	53.58	53.58
415.00	31.41	47.41	6.85	7.11	7.11	52.62	52.62
420.00	31.51	47.55	6.79	7.05	7.05	51.65	51.65
425.00	31.61	47.69	6.73	6.99	6.99	50.68	50.68
430.00	31.71	47.83	6.67	6.93	6.93	49.70	49.70
435.00	31.81	47.97	6.62	6.87	6.87	48.72	48.72
440.00	31.91	48.11	6.56	6.81	6.81	47.73	47.73
445.00	32.01	48.24	6.50	6.75	6.75	46.74	46.74
450.00	32.11	48.38	6.45	6.69	6.69	45.74	45.74

455.00	32.21	48.51	6.40	6.64	6.64	44.74	44.74
460.00	32.30	48.65	6.35	6.58	6.58	43.74	43.74
465.00	32.40	48.78	6.29	6.53	6.53	42.73	42.73
470.00	32.49	48.91	6.24	6.48	6.48	41.71	41.71
475.00	32.59	49.04	6.19	6.43	6.43	40.70	40.70
480.00	32.68	49.16	6.15	6.38	6.38	39.68	39.68
485.00	32.77	49.29	6.10	6.33	6.33	38.65	38.65
490.00	32.87	49.42	6.05	6.28	6.28	37.62	37.62
495.00	32.96	49.54	6.01	6.23	6.23	36.59	36.59
500.00	33.05	49.67	5.96	6.19	6.19	35.55	35.55
505.00	33.14	49.79	5.92	6.14	6.14	34.51	34.51
510.00	33.23	49.91	5.87	6.09	6.09	33.47	33.47
515.00	33.32	50.03	5.83	6.05	6.05	32.42	32.42
520.00	33.40	50.15	5.79	6.01	6.01	31.37	31.37
525.00	33.49	50.27	5.75	5.96	5.96	30.31	30.31
530.00	33.58	50.39	5.70	5.92	5.92	29.25	29.25
535.00	33.66	50.51	5.66	5.88	5.88	28.19	28.19
540.00	33.75	50.62	5.62	5.84	5.84	27.13	27.13
545.00	33.83	50.74	5.59	5.80	5.80	26.06	26.06
550.00	33.92	50.85	5.55	5.76	5.76	24.99	24.99
555.00	34.00	50.97	5.51	5.72	5.72	23.92	23.92
560.00	34.08	51.08	5.47	5.68	5.68	22.84	22.84
565.00	34.17	51.19	5.44	5.64	5.64	21.76	21.76
570.00	34.25	51.31	5.40	5.60	5.60	20.68	20.68
575.00	34.33	51.42	5.37	5.57	5.57	19.59	19.59
580.00	34.41	51.53	5.33	5.53	5.53	18.50	18.50
585.00	34.49	51.64	5.30	5.50	5.50	17.41	17.41
590.00	34.57	51.75	5.26	5.46	5.46	16.32	16.32
595.00	34.65	51.85	5.23	5.43	5.43	15.22	15.22
600.00	34.73	51.96	5.20	5.39	5.39	14.12	14.12
605.00	34.81	52.07	5.16	5.36	5.36	13.02	13.02
610.00	34.89	52.17	5.13	5.33	5.33	11.91	11.91
615.00	34.96	52.28	5.10	5.29	5.29	10.81	10.81
620.00	35.04	52.38	5.07	5.26	5.26	9.70	9.70
625.00	35.12	52.49	5.04	5.23	5.23	8.58	8.58
630.00	35.19	52.59	5.01	5.20	5.20	7.47	7.47
635.00	35.27	52.69	4.98	5.17	5.17	6.35	6.35
640.00	35.34	52.79	4.95	5.14	5.14	5.23	5.23
645.00	35.42	52.89	4.92	5.11	5.11	4.11	4.11
650.00	35.49	52.99	4.89	5.08	5.08	2.98	2.98
655.00	35.57	53.09	4.86	5.05	5.05	1.86	1.86
660.00	35.64	53.19	4.84	5.02	5.02	0.73	0.73
665.00	35.71	53.29	4.81	4.99	4.99	-0.40	-0.40
670.00	35.79	53.39	4.78	4.96	4.96	-1.54	-1.54
675.00	35.86	53.49	4.75	4.93	4.93	-2.67	-2.67
680.00	35.93	53.59	4.73	4.91	4.91	-3.81	-3.81
685.00	36.00	53.68	4.70	4.88	4.88	-4.95	-4.95
690.00	36.07	53.78	4.68	4.85	4.85	-6.09	-6.09
695.00	36.14	53.87	4.65	4.83	4.83	-7.23	-7.23
700.00	36.21	53.97	4.63	4.80	4.80	-8.38	-8.38

705.00	36.28	54.06	4.60	4.77	4.77	-9.53	-9.53
710.00	36.35	54.16	4.58	4.75	4.75	-10.68	-10.68
715.00	36.42	54.25	4.55	4.72	4.72	-11.83	-11.83
720.00	36.49	54.34	4.53	4.70	4.70	-12.98	-12.98
725.00	36.56	54.43	4.50	4.67	4.67	-14.14	-14.14
730.00	36.63	54.53	4.48	4.65	4.65	-15.30	-15.30
735.00	36.70	54.62	4.46	4.63	4.63	-16.46	-16.46
740.00	36.76	54.71	4.44	4.60	4.60	-17.62	-17.62
745.00	36.83	54.80	4.41	4.58	4.58	-18.78	-18.78
750.00	36.90	54.89	4.39	4.56	4.56	-19.95	-19.95
755.00	36.96	54.98	4.37	4.53	4.53	-21.11	-21.11
760.00	37.03	55.07	4.35	4.51	4.51	-22.28	-22.28
765.00	37.10	55.15	4.33	4.49	4.49	-23.45	-23.45
770.00	37.16	55.24	4.30	4.47	4.47	-24.62	-24.62
775.00	37.23	55.33	4.28	4.45	4.45	-25.80	-25.80
780.00	37.29	55.42	4.26	4.42	4.42	-26.97	-26.97
785.00	37.36	55.50	4.24	4.40	4.40	-28.15	-28.15
790.00	37.42	55.59	4.22	4.38	4.38	-29.33	-29.33
795.00	37.48	55.67	4.20	4.36	4.36	-30.51	-30.51
800.00	37.55	55.76	4.18	4.34	4.34	-31.69	-31.69
805.00	37.61	55.84	4.16	4.32	4.32	-32.87	-32.87
810.00	37.68	55.93	4.14	4.30	4.30	-34.06	-34.06
815.00	37.74	56.01	4.12	4.28	4.28	-35.24	-35.24
820.00	37.80	56.10	4.10	4.26	4.26	-36.43	-36.43
825.00	37.86	56.18	4.09	4.24	4.24	-37.62	-37.62
830.00	37.92	56.26	4.07	4.22	4.22	-38.81	-38.81
835.00	37.99	56.34	4.05	4.20	4.20	-40.00	-40.00
840.00	38.05	56.43	4.03	4.18	4.18	-41.20	-41.20
845.00	38.11	56.51	4.01	4.16	4.16	-42.39	-42.39
850.00	38.17	56.59	3.99	4.15	4.15	-43.59	-43.59
855.00	38.23	56.67	3.98	4.13	4.13	-44.79	-44.79
860.00	38.29	56.75	3.96	4.11	4.11	-45.99	-45.99
865.00	38.35	56.83	3.94	4.09	4.09	-47.19	-47.19
870.00	38.41	56.91	3.92	4.07	4.07	-48.39	-48.39
875.00	38.47	56.99	3.91	4.06	4.06	-49.59	-49.59
880.00	38.53	57.07	3.89	4.04	4.04	-50.80	-50.80
885.00	38.59	57.15	3.87	4.02	4.02	-52.00	-52.00
890.00	38.65	57.22	3.86	4.00	4.00	-53.21	-53.21
895.00	38.71	57.30	3.84	3.99	3.99	-54.42	-54.42
900.00	38.76	57.38	3.83	3.97	3.97	-55.63	-55.63
905.00	38.82	57.46	3.81	3.95	3.95	-56.84	-56.84
910.00	38.88	57.53	3.79	3.94	3.94	-58.05	-58.05
915.00	38.94	57.61	3.78	3.92	3.92	-59.27	-59.27
920.00	38.99	57.69	3.76	3.90	3.90	-60.48	-60.48
925.00	39.05	57.76	3.75	3.89	3.89	-61.70	-61.70
930.00	39.11	57.84	3.73	3.87	3.87	-62.92	-62.92
935.00	39.17	57.91	3.72	3.86	3.86	-64.14	-64.14
940.00	39.22	57.99	3.70	3.84	3.84	-65.36	-65.36
945.00	39.28	58.06	3.69	3.83	3.83	-66.58	-66.58
950.00	39.33	58.14	3.67	3.81	3.81	-67.80	-67.80

955.00	39.39	58.21	3.66	3.80	3.80	-69.02	-69.02
960.00	39.45	58.29	3.64	3.78	3.78	-70.25	-70.25
965.00	39.50	58.36	3.63	3.77	3.77	-71.47	-71.47
970.00	39.56	58.43	3.61	3.75	3.75	-72.70	-72.70
975.00	39.61	58.50	3.60	3.74	3.74	-73.93	-73.93
980.00	39.67	58.58	3.59	3.72	3.72	-75.16	-75.16
985.00	39.72	58.65	3.57	3.71	3.71	-76.39	-76.39
990.00	39.77	58.72	3.56	3.69	3.69	-77.62	-77.62
995.00	39.83	58.79	3.55	3.68	3.68	-78.85	-78.85
1000.00	39.88	58.86	3.53	3.67	3.67	-80.09	-80.09
1005.00	39.94	58.94	3.52	3.65	3.65	-81.32	-81.32
1010.00	39.99	59.01	3.51	3.64	3.64	-82.56	-82.56
1015.00	40.04	59.08	3.49	3.62	3.62	-83.79	-83.79
1020.00	40.10	59.15	3.48	3.61	3.61	-85.03	-85.03
1025.00	40.15	59.22	3.47	3.60	3.60	-86.27	-86.27
1030.00	40.20	59.29	3.45	3.58	3.58	-87.51	-87.51
1035.00	40.25	59.36	3.44	3.57	3.57	-88.75	-88.75
1040.00	40.31	59.43	3.43	3.56	3.56	-89.99	-89.99
1045.00	40.36	59.49	3.42	3.54	3.54	-91.23	-91.23
1050.00	40.41	59.56	3.40	3.53	3.53	-92.48	-92.48
1055.00	40.46	59.63	3.39	3.52	3.52	-93.72	-93.72
1060.00	40.51	59.70	3.38	3.51	3.51	-94.97	-94.97
1065.00	40.57	59.77	3.37	3.49	3.49	-96.21	-96.21
1070.00	40.62	59.83	3.36	3.48	3.48	-97.46	-97.46
1075.00	40.67	59.90	3.34	3.47	3.47	-98.71	-98.71
1080.00	40.72	59.97	3.33	3.46	3.46	-99.96	-99.96
1085.00	40.77	60.04	3.32	3.45	3.45	-101.21	-101.21
1090.00	40.82	60.10	3.31	3.43	3.43	-102.46	-102.46
1095.00	40.87	60.17	3.30	3.42	3.42	-103.71	-103.71
1100.00	40.92	60.23	3.29	3.41	3.41	-104.97	-104.97
1105.00	40.97	60.30	3.27	3.40	3.40	-106.22	-106.22
1110.00	41.02	60.37	3.26	3.39	3.39	-107.47	-107.47
1115.00	41.07	60.43	3.25	3.37	3.37	-108.73	-108.73
1120.00	41.12	60.50	3.24	3.36	3.36	-109.99	-109.99
1125.00	41.17	60.56	3.23	3.35	3.35	-111.24	-111.24
1130.00	41.22	60.63	3.22	3.34	3.34	-112.50	-112.50
1135.00	41.27	60.69	3.21	3.33	3.33	-113.76	-113.76
1140.00	41.32	60.76	3.20	3.32	3.32	-115.02	-115.02
1145.00	41.37	60.82	3.19	3.31	3.31	-116.28	-116.28
1150.00	41.42	60.88	3.18	3.30	3.30	-117.54	-117.54
1155.00	41.46	60.95	3.17	3.29	3.29	-118.81	-118.81
1160.00	41.51	61.01	3.16	3.27	3.27	-120.07	-120.07
1165.00	41.56	61.07	3.15	3.26	3.26	-121.33	-121.33
1170.00	41.61	61.14	3.14	3.25	3.25	-122.60	-122.60
1175.00	41.66	61.20	3.13	3.24	3.24	-123.86	-123.86
1180.00	41.70	61.26	3.12	3.23	3.23	-125.13	-125.13
1185.00	41.75	61.32	3.11	3.22	3.22	-126.40	-126.40
1190.00	41.80	61.39	3.10	3.21	3.21	-127.67	-127.67
1195.00	41.85	61.45	3.09	3.20	3.20	-128.93	-128.93
1200.00	41.89	61.51	3.08	3.19	3.19	-130.20	-130.20

1205.00	41.94	61.57	3.07	3.18	3.18	-131.47	-131.47
1210.00	41.99	61.63	3.06	3.17	3.17	-132.74	-132.74
1215.00	42.03	61.69	3.05	3.16	3.16	-134.02	-134.02
1220.00	42.08	61.75	3.04	3.15	3.15	-135.29	-135.29
1225.00	42.13	61.82	3.03	3.14	3.14	-136.56	-136.56
1230.00	42.17	61.88	3.02	3.13	3.13	-137.84	-137.84
1235.00	42.22	61.94	3.01	3.12	3.12	-139.11	-139.11
1240.00	42.26	62.00	3.00	3.11	3.11	-140.39	-140.39
1245.00	42.31	62.06	2.99	3.10	3.10	-141.66	-141.66
1250.00	42.36	62.12	2.98	3.09	3.09	-142.94	-142.94
1255.00	42.40	62.18	2.97	3.08	3.08	-144.22	-144.22
1260.00	42.45	62.23	2.96	3.08	3.08	-145.50	-145.50
1265.00	42.49	62.29	2.95	3.07	3.07	-146.77	-146.77
1270.00	42.54	62.35	2.95	3.06	3.06	-148.05	-148.05
1275.00	42.58	62.41	2.94	3.05	3.05	-149.33	-149.33
1280.00	42.63	62.47	2.93	3.04	3.04	-150.62	-150.62
1285.00	42.67	62.53	2.92	3.03	3.03	-151.90	-151.90
1290.00	42.72	62.59	2.91	3.02	3.02	-153.18	-153.18
1295.00	42.76	62.64	2.90	3.01	3.01	-154.46	-154.46
1300.00	42.81	62.70	2.89	3.00	3.00	-155.75	-155.75
1305.00	42.85	62.76	2.89	2.99	2.99	-157.03	-157.03
1310.00	42.89	62.82	2.88	2.99	2.99	-158.32	-158.32
1315.00	42.94	62.88	2.87	2.98	2.98	-159.60	-159.60
1320.00	42.98	62.93	2.86	2.97	2.97	-160.89	-160.89
1325.00	43.03	62.99	2.85	2.96	2.96	-162.18	-162.18
1330.00	43.07	63.05	2.84	2.95	2.95	-163.46	-163.46
1335.00	43.11	63.10	2.84	2.94	2.94	-164.75	-164.75
1340.00	43.16	63.16	2.83	2.93	2.93	-166.04	-166.04
1345.00	43.20	63.22	2.82	2.93	2.93	-167.33	-167.33
1350.00	43.24	63.27	2.81	2.92	2.92	-168.62	-168.62
1355.00	43.29	63.33	2.80	2.91	2.91	-169.91	-169.91
1360.00	43.33	63.38	2.80	2.90	2.90	-171.20	-171.20
1365.00	43.37	63.44	2.79	2.89	2.89	-172.49	-172.49
1370.00	43.41	63.49	2.78	2.89	2.89	-173.79	-173.79
1375.00	43.46	63.55	2.77	2.88	2.88	-175.08	-175.08
1380.00	43.50	63.61	2.77	2.87	2.87	-176.37	-176.37
1385.00	43.54	63.66	2.76	2.86	2.86	-177.67	-177.67
1390.00	43.58	63.72	2.75	2.85	2.85	-178.96	-178.96
1395.00	43.63	63.77	2.74	2.85	2.85	-180.26	-180.26
1400.00	43.67	63.82	2.74	2.84	2.84	-181.56	-181.56
1405.00	43.71	63.88	2.73	2.83	2.83	-182.85	-182.85
1410.00	43.75	63.93	2.72	2.82	2.82	-184.15	-184.15
1415.00	43.79	63.99	2.71	2.82	2.82	-185.45	-185.45
1420.00	43.84	64.04	2.71	2.81	2.81	-186.75	-186.75
1425.00	43.88	64.10	2.70	2.80	2.80	-188.04	-188.04
1430.00	43.92	64.15	2.69	2.79	2.79	-189.34	-189.34
1435.00	43.96	64.20	2.68	2.79	2.79	-190.64	-190.64
1440.00	44.00	64.26	2.68	2.78	2.78	-191.94	-191.94
1445.00	44.04	64.31	2.67	2.77	2.77	-193.25	-193.25
1450.00	44.08	64.36	2.66	2.76	2.76	-194.55	-194.55

1455.00	44.12	64.41	2.66	2.76	2.76	-195.85	-195.85
1460.00	44.16	64.47	2.65	2.75	2.75	-197.15	-197.15
1465.00	44.20	64.52	2.64	2.74	2.74	-198.46	-198.46
1470.00	44.25	64.57	2.64	2.74	2.74	-199.76	-199.76
1475.00	44.29	64.63	2.63	2.73	2.73	-201.06	-201.06
1480.00	44.33	64.68	2.62	2.72	2.72	-202.37	-202.37
1485.00	44.37	64.73	2.62	2.71	2.71	-203.68	-203.68
1490.00	44.41	64.78	2.61	2.71	2.71	-204.98	-204.98
1495.00	44.45	64.83	2.60	2.70	2.70	-206.29	-206.29
1500.00	44.49	64.88	2.60	2.69	2.69	-207.59	-207.59
1505.00	44.53	64.94	2.59	2.69	2.69	-208.90	-208.90
1510.00	44.57	64.99	2.58	2.68	2.68	-210.21	-210.21
1515.00	44.61	65.04	2.58	2.67	2.67	-211.52	-211.52
1520.00	44.65	65.09	2.57	2.67	2.67	-212.83	-212.83
1525.00	44.68	65.14	2.56	2.66	2.66	-214.14	-214.14
1530.00	44.72	65.19	2.56	2.65	2.65	-215.45	-215.45
1535.00	44.76	65.24	2.55	2.65	2.65	-216.76	-216.76
1540.00	44.80	65.29	2.54	2.64	2.64	-218.07	-218.07
1545.00	44.84	65.34	2.54	2.63	2.63	-219.38	-219.38
1550.00	44.88	65.39	2.53	2.63	2.63	-220.69	-220.69
1555.00	44.92	65.44	2.53	2.62	2.62	-222.01	-222.01
1560.00	44.96	65.49	2.52	2.61	2.61	-223.32	-223.32
1565.00	45.00	65.54	2.51	2.61	2.61	-224.63	-224.63
1570.00	45.04	65.59	2.51	2.60	2.60	-225.95	-225.95
1575.00	45.07	65.64	2.50	2.60	2.60	-227.26	-227.26
1580.00	45.11	65.69	2.49	2.59	2.59	-228.58	-228.58
1585.00	45.15	65.74	2.49	2.58	2.58	-229.89	-229.89
1590.00	45.19	65.79	2.48	2.58	2.58	-231.21	-231.21
1595.00	45.23	65.84	2.48	2.57	2.57	-232.52	-232.52
1600.00	45.27	65.89	2.47	2.56	2.56	-233.84	-233.84
1605.00	45.30	65.94	2.47	2.56	2.56	-235.16	-235.16
1610.00	45.34	65.99	2.46	2.55	2.55	-236.47	-236.47
1615.00	45.38	66.04	2.45	2.55	2.55	-237.79	-237.79
1620.00	45.42	66.08	2.45	2.54	2.54	-239.11	-239.11
1625.00	45.45	66.13	2.44	2.53	2.53	-240.43	-240.43
1630.00	45.49	66.18	2.44	2.53	2.53	-241.75	-241.75
1635.00	45.53	66.23	2.43	2.52	2.52	-243.07	-243.07
1640.00	45.57	66.28	2.42	2.52	2.52	-244.39	-244.39
1645.00	45.60	66.33	2.42	2.51	2.51	-245.71	-245.71
1650.00	45.64	66.37	2.41	2.50	2.50	-247.03	-247.03
1655.00	45.68	66.42	2.41	2.50	2.50	-248.35	-248.35
1660.00	45.72	66.47	2.40	2.49	2.49	-249.68	-249.68
1665.00	45.75	66.52	2.40	2.49	2.49	-251.00	-251.00
1670.00	45.79	66.56	2.39	2.48	2.48	-252.32	-252.32
1675.00	45.83	66.61	2.39	2.48	2.48	-253.64	-253.64
1680.00	45.86	66.66	2.38	2.47	2.47	-254.97	-254.97
1685.00	45.90	66.71	2.38	2.46	2.46	-256.29	-256.29
1690.00	45.94	66.75	2.37	2.46	2.46	-257.62	-257.62
1695.00	45.97	66.80	2.36	2.45	2.45	-258.94	-258.94
1700.00	46.01	66.85	2.36	2.45	2.45	-260.27	-260.27

1705.00	46.05	66.89	2.35	2.44	2.44	-261.59	-261.59
1710.00	46.08	66.94	2.35	2.44	2.44	-262.92	-262.92
1715.00	46.12	66.99	2.34	2.43	2.43	-264.25	-264.25
1720.00	46.15	67.03	2.34	2.43	2.43	-265.57	-265.57
1725.00	46.19	67.08	2.33	2.42	2.42	-266.90	-266.90
1730.00	46.23	67.12	2.33	2.42	2.42	-268.23	-268.23
1735.00	46.26	67.17	2.32	2.41	2.41	-269.56	-269.56
1740.00	46.30	67.22	2.32	2.41	2.41	-270.88	-270.88
1745.00	46.33	67.26	2.31	2.40	2.40	-272.21	-272.21
1750.00	46.37	67.31	2.31	2.39	2.39	-273.54	-273.54
1755.00	46.40	67.35	2.30	2.39	2.39	-274.87	-274.87
1760.00	46.44	67.40	2.30	2.38	2.38	-276.20	-276.20
1765.00	46.47	67.44	2.29	2.38	2.38	-277.53	-277.53
1770.00	46.51	67.49	2.29	2.37	2.37	-278.86	-278.86
1775.00	46.55	67.53	2.28	2.37	2.37	-280.20	-280.20
1780.00	46.58	67.58	2.28	2.36	2.36	-281.53	-281.53
1785.00	46.62	67.62	2.27	2.36	2.36	-282.86	-282.86
1790.00	46.65	67.67	2.27	2.35	2.35	-284.19	-284.19
1795.00	46.69	67.71	2.26	2.35	2.35	-285.52	-285.52
1800.00	46.72	67.76	2.26	2.34	2.34	-286.86	-286.86
1805.00	46.76	67.80	2.25	2.34	2.34	-288.19	-288.19
1810.00	46.79	67.85	2.25	2.33	2.33	-289.53	-289.53
1815.00	46.83	67.89	2.24	2.33	2.33	-290.86	-290.86
1820.00	46.86	67.94	2.24	2.32	2.32	-292.19	-292.19
1825.00	46.89	67.98	2.23	2.32	2.32	-293.53	-293.53
1830.00	46.93	68.02	2.23	2.31	2.31	-294.86	-294.86
1835.00	46.96	68.07	2.23	2.31	2.31	-296.20	-296.20
1840.00	47.00	68.11	2.22	2.30	2.30	-297.54	-297.54
1845.00	47.03	68.16	2.22	2.30	2.30	-298.87	-298.87
1850.00	47.07	68.20	2.21	2.30	2.30	-300.21	-300.21
1855.00	47.10	68.24	2.21	2.29	2.29	-301.55	-301.55
1860.00	47.13	68.29	2.20	2.29	2.29	-302.88	-302.88
1865.00	47.17	68.33	2.20	2.28	2.28	-304.22	-304.22
1870.00	47.20	68.37	2.19	2.28	2.28	-305.56	-305.56
1875.00	47.24	68.42	2.19	2.27	2.27	-306.90	-306.90
1880.00	47.27	68.46	2.18	2.27	2.27	-308.24	-308.24
1885.00	47.30	68.50	2.18	2.26	2.26	-309.58	-309.58
1890.00	47.34	68.55	2.18	2.26	2.26	-310.92	-310.92
1895.00	47.37	68.59	2.17	2.25	2.25	-312.26	-312.26
1900.00	47.40	68.63	2.17	2.25	2.25	-313.60	-313.60
1905.00	47.44	68.67	2.16	2.24	2.24	-314.94	-314.94
1910.00	47.47	68.72	2.16	2.24	2.24	-316.28	-316.28
1915.00	47.50	68.76	2.15	2.24	2.24	-317.62	-317.62
1920.00	47.54	68.80	2.15	2.23	2.23	-318.96	-318.96
1925.00	47.57	68.84	2.15	2.23	2.23	-320.30	-320.30
1930.00	47.60	68.89	2.14	2.22	2.22	-321.65	-321.65
1935.00	47.64	68.93	2.14	2.22	2.22	-322.99	-322.99
1940.00	47.67	68.97	2.13	2.21	2.21	-324.33	-324.33
1945.00	47.70	69.01	2.13	2.21	2.21	-325.67	-325.67
1950.00	47.74	69.05	2.12	2.20	2.20	-327.02	-327.02

1955.00	47.77	69.10	2.12	2.20	2.20	-328.36	-328.36
1960.00	47.80	69.14	2.12	2.20	2.20	-329.71	-329.71
1965.00	47.83	69.18	2.11	2.19	2.19	-331.05	-331.05
1970.00	47.87	69.22	2.11	2.19	2.19	-332.39	-332.39
1975.00	47.90	69.26	2.10	2.18	2.18	-333.74	-333.74
1980.00	47.93	69.30	2.10	2.18	2.18	-335.08	-335.08
1985.00	47.96	69.35	2.10	2.18	2.18	-336.43	-336.43
1990.00	48.00	69.39	2.09	2.17	2.17	-337.78	-337.78
1995.00	48.03	69.43	2.09	2.17	2.17	-339.12	-339.12
2000.00	48.06	69.47	2.08	2.16	2.16	-340.47	-340.47
2005.00	48.09	69.51	2.08	2.16	2.16	-341.82	-341.82
2010.00	48.13	69.55	2.08	2.15	2.15	-343.16	-343.16
2015.00	48.16	69.59	2.07	2.15	2.15	-344.51	-344.51
2020.00	48.19	69.63	2.07	2.15	2.15	-345.86	-345.86
2025.00	48.22	69.67	2.06	2.14	2.14	-347.21	-347.21
2030.00	48.25	69.71	2.06	2.14	2.14	-348.56	-348.56
2035.00	48.29	69.75	2.06	2.13	2.13	-349.90	-349.90
2040.00	48.32	69.79	2.05	2.13	2.13	-351.25	-351.25
2045.00	48.35	69.83	2.05	2.13	2.13	-352.60	-352.60
2050.00	48.38	69.87	2.05	2.12	2.12	-353.95	-353.95
2055.00	48.41	69.91	2.04	2.12	2.12	-355.30	-355.30
2060.00	48.44	69.95	2.04	2.11	2.11	-356.65	-356.65
2065.00	48.48	69.99	2.03	2.11	2.11	-358.00	-358.00
2070.00	48.51	70.03	2.03	2.11	2.11	-359.35	-359.35
2075.00	48.54	70.07	2.03	2.10	2.10	-360.71	-360.71
2080.00	48.57	70.11	2.02	2.10	2.10	-362.06	-362.06
2085.00	48.60	70.15	2.02	2.10	2.10	-363.41	-363.41
2090.00	48.63	70.19	2.02	2.09	2.09	-364.76	-364.76
2095.00	48.66	70.23	2.01	2.09	2.09	-366.11	-366.11
2100.00	48.70	70.27	2.01	2.08	2.08	-367.46	-367.46
2105.00	48.73	70.31	2.00	2.08	2.08	-368.82	-368.82
2110.00	48.76	70.35	2.00	2.08	2.08	-370.17	-370.17
2115.00	48.79	70.39	2.00	2.07	2.07	-371.52	-371.52
2120.00	48.82	70.43	1.99	2.07	2.07	-372.88	-372.88
2125.00	48.85	70.47	1.99	2.06	2.06	-374.23	-374.23
2130.00	48.88	70.51	1.99	2.06	2.06	-375.59	-375.59
2135.00	48.91	70.55	1.98	2.06	2.06	-376.94	-376.94
2140.00	48.94	70.59	1.98	2.05	2.05	-378.29	-378.29
2145.00	48.97	70.62	1.98	2.05	2.05	-379.65	-379.65
2150.00	49.00	70.66	1.97	2.05	2.05	-381.01	-381.01
2155.00	49.03	70.70	1.97	2.04	2.04	-382.36	-382.36
2160.00	49.06	70.74	1.97	2.04	2.04	-383.72	-383.72
2165.00	49.10	70.78	1.96	2.04	2.04	-385.07	-385.07
2170.00	49.13	70.82	1.96	2.03	2.03	-386.43	-386.43
2175.00	49.16	70.86	1.95	2.03	2.03	-387.79	-387.79
2180.00	49.19	70.89	1.95	2.02	2.02	-389.14	-389.14
2185.00	49.22	70.93	1.95	2.02	2.02	-390.50	-390.50
2190.00	49.25	70.97	1.94	2.02	2.02	-391.86	-391.86
2195.00	49.28	71.01	1.94	2.01	2.01	-393.21	-393.21
2200.00	49.31	71.05	1.94	2.01	2.01	-394.57	-394.57

2205.00	49.34	71.09	1.93	2.01	2.01	-395.93	-395.93
2210.00	49.37	71.12	1.93	2.00	2.00	-397.29	-397.29
2215.00	49.40	71.16	1.93	2.00	2.00	-398.65	-398.65
2220.00	49.43	71.20	1.92	2.00	2.00	-400.01	-400.01
2225.00	49.46	71.24	1.92	1.99	1.99	-401.37	-401.37
2230.00	49.49	71.27	1.92	1.99	1.99	-402.72	-402.72
2235.00	49.52	71.31	1.91	1.99	1.99	-404.08	-404.08
2240.00	49.55	71.35	1.91	1.98	1.98	-405.44	-405.44
2245.00	49.58	71.39	1.91	1.98	1.98	-406.80	-406.80
2250.00	49.61	71.42	1.90	1.98	1.98	-408.16	-408.16
2255.00	49.63	71.46	1.90	1.97	1.97	-409.53	-409.53
2260.00	49.66	71.50	1.90	1.97	1.97	-410.89	-410.89
2265.00	49.69	71.54	1.89	1.97	1.97	-412.25	-412.25
2270.00	49.72	71.57	1.89	1.96	1.96	-413.61	-413.61
2275.00	49.75	71.61	1.89	1.96	1.96	-414.97	-414.97
2280.00	49.78	71.65	1.89	1.96	1.96	-416.33	-416.33
2285.00	49.81	71.68	1.88	1.95	1.95	-417.69	-417.69
2290.00	49.84	71.72	1.88	1.95	1.95	-419.06	-419.06
2295.00	49.87	71.76	1.88	1.95	1.95	-420.42	-420.42
2300.00	49.90	71.79	1.87	1.94	1.94	-421.78	-421.78
2305.00	49.93	71.83	1.87	1.94	1.94	-423.15	-423.15
2310.00	49.96	71.87	1.87	1.94	1.94	-424.51	-424.51
2315.00	49.99	71.90	1.86	1.93	1.93	-425.87	-425.87
2320.00	50.01	71.94	1.86	1.93	1.93	-427.24	-427.24
2325.00	50.04	71.98	1.86	1.93	1.93	-428.60	-428.60
2330.00	50.07	72.01	1.85	1.92	1.92	-429.96	-429.96
2335.00	50.10	72.05	1.85	1.92	1.92	-431.33	-431.33
2340.00	50.13	72.09	1.85	1.92	1.92	-432.69	-432.69
2345.00	50.16	72.12	1.85	1.92	1.92	-434.06	-434.06
2350.00	50.19	72.16	1.84	1.91	1.91	-435.42	-435.42
2355.00	50.22	72.19	1.84	1.91	1.91	-436.79	-436.79
2360.00	50.24	72.23	1.84	1.91	1.91	-438.15	-438.15
2365.00	50.27	72.27	1.83	1.90	1.90	-439.52	-439.52
2370.00	50.30	72.30	1.83	1.90	1.90	-440.89	-440.89
2375.00	50.33	72.34	1.83	1.90	1.90	-442.25	-442.25
2380.00	50.36	72.37	1.82	1.89	1.89	-443.62	-443.62
2385.00	50.39	72.41	1.82	1.89	1.89	-444.99	-444.99
2390.00	50.41	72.44	1.82	1.89	1.89	-446.35	-446.35
2395.00	50.44	72.48	1.82	1.88	1.88	-447.72	-447.72
2400.00	50.47	72.52	1.81	1.88	1.88	-449.09	-449.09
2405.00	50.50	72.55	1.81	1.88	1.88	-450.46	-450.46
2410.00	50.53	72.59	1.81	1.88	1.88	-451.82	-451.82
2415.00	50.56	72.62	1.80	1.87	1.87	-453.19	-453.19
2420.00	50.58	72.66	1.80	1.87	1.87	-454.56	-454.56
2425.00	50.61	72.69	1.80	1.87	1.87	-455.93	-455.93
2430.00	50.64	72.73	1.80	1.86	1.86	-457.30	-457.30
2435.00	50.67	72.76	1.79	1.86	1.86	-458.67	-458.67
2440.00	50.70	72.80	1.79	1.86	1.86	-460.04	-460.04
2445.00	50.72	72.83	1.79	1.85	1.85	-461.40	-461.40
2450.00	50.75	72.87	1.78	1.85	1.85	-462.77	-462.77

2455.00	50.78	72.90	1.78	1.85	1.85	-464.14	-464.14
2460.00	50.81	72.94	1.78	1.85	1.85	-465.51	-465.51
2465.00	50.83	72.97	1.78	1.84	1.84	-466.88	-466.88
2470.00	50.86	73.01	1.77	1.84	1.84	-468.26	-468.26
2475.00	50.89	73.04	1.77	1.84	1.84	-469.63	-469.63
2480.00	50.92	73.07	1.77	1.83	1.83	-471.00	-471.00
2485.00	50.94	73.11	1.77	1.83	1.83	-472.37	-472.37
2490.00	50.97	73.14	1.76	1.83	1.83	-473.74	-473.74
2495.00	51.00	73.18	1.76	1.83	1.83	-475.11	-475.11
2500.00	51.03	73.21	1.76	1.82	1.82	-476.48	-476.48
2505.00	51.05	73.25	1.75	1.82	1.82	-477.85	-477.85
2510.00	51.08	73.28	1.75	1.82	1.82	-479.23	-479.23
2515.00	51.11	73.32	1.75	1.82	1.82	-480.60	-480.60
2520.00	51.14	73.35	1.75	1.81	1.81	-481.97	-481.97
2525.00	51.16	73.38	1.74	1.81	1.81	-483.34	-483.34
2530.00	51.19	73.42	1.74	1.81	1.81	-484.72	-484.72
2535.00	51.22	73.45	1.74	1.80	1.80	-486.09	-486.09
2540.00	51.24	73.49	1.74	1.80	1.80	-487.46	-487.46
2545.00	51.27	73.52	1.73	1.80	1.80	-488.84	-488.84
2550.00	51.30	73.55	1.73	1.80	1.80	-490.21	-490.21
2555.00	51.33	73.59	1.73	1.79	1.79	-491.58	-491.58
2560.00	51.35	73.62	1.73	1.79	1.79	-492.96	-492.96
2565.00	51.38	73.65	1.72	1.79	1.79	-494.33	-494.33
2570.00	51.41	73.69	1.72	1.79	1.79	-495.71	-495.71
2575.00	51.43	73.72	1.72	1.78	1.78	-497.08	-497.08
2580.00	51.46	73.75	1.72	1.78	1.78	-498.46	-498.46
2585.00	51.49	73.79	1.71	1.78	1.78	-499.83	-499.83
2590.00	51.51	73.82	1.71	1.77	1.77	-501.21	-501.21
2595.00	51.54	73.86	1.71	1.77	1.77	-502.58	-502.58
2600.00	51.57	73.89	1.71	1.77	1.77	-503.96	-503.96
2605.00	51.59	73.92	1.70	1.77	1.77	-505.33	-505.33
2610.00	51.62	73.95	1.70	1.76	1.76	-506.71	-506.71
2615.00	51.65	73.99	1.70	1.76	1.76	-508.09	-508.09
2620.00	51.67	74.02	1.70	1.76	1.76	-509.46	-509.46
2625.00	51.70	74.05	1.69	1.76	1.76	-510.84	-510.84
2630.00	51.73	74.09	1.69	1.75	1.75	-512.22	-512.22
2635.00	51.75	74.12	1.69	1.75	1.75	-513.59	-513.59
2640.00	51.78	74.15	1.69	1.75	1.75	-514.97	-514.97
2645.00	51.80	74.19	1.68	1.75	1.75	-516.35	-516.35
2650.00	51.83	74.22	1.68	1.74	1.74	-517.72	-517.72
2655.00	51.86	74.25	1.68	1.74	1.74	-519.10	-519.10
2660.00	51.88	74.28	1.68	1.74	1.74	-520.48	-520.48
2665.00	51.91	74.32	1.67	1.74	1.74	-521.86	-521.86
2670.00	51.94	74.35	1.67	1.73	1.73	-523.24	-523.24
2675.00	51.96	74.38	1.67	1.73	1.73	-524.62	-524.62
2680.00	51.99	74.41	1.67	1.73	1.73	-525.99	-525.99
2685.00	52.01	74.45	1.66	1.73	1.73	-527.37	-527.37
2690.00	52.04	74.48	1.66	1.72	1.72	-528.75	-528.75
2695.00	52.07	74.51	1.66	1.72	1.72	-530.13	-530.13
2700.00	52.09	74.54	1.66	1.72	1.72	-531.51	-531.51

2705.00	52.12	74.58	1.65	1.72	1.72	-532.89	-532.89
2710.00	52.14	74.61	1.65	1.71	1.71	-534.27	-534.27
2715.00	52.17	74.64	1.65	1.71	1.71	-535.65	-535.65
2720.00	52.19	74.67	1.65	1.71	1.71	-537.03	-537.03
2725.00	52.22	74.70	1.64	1.71	1.71	-538.41	-538.41
2730.00	52.25	74.74	1.64	1.70	1.70	-539.79	-539.79
2735.00	52.27	74.77	1.64	1.70	1.70	-541.17	-541.17
2740.00	52.30	74.80	1.64	1.70	1.70	-542.55	-542.55
2745.00	52.32	74.83	1.64	1.70	1.70	-543.93	-543.93
2750.00	52.35	74.86	1.63	1.70	1.70	-545.31	-545.31
2755.00	52.37	74.90	1.63	1.69	1.69	-546.69	-546.69
2760.00	52.40	74.93	1.63	1.69	1.69	-548.08	-548.08
2765.00	52.42	74.96	1.63	1.69	1.69	-549.46	-549.46
2770.00	52.45	74.99	1.62	1.69	1.69	-550.84	-550.84
2775.00	52.48	75.02	1.62	1.68	1.68	-552.22	-552.22
2780.00	52.50	75.05	1.62	1.68	1.68	-553.60	-553.60
2785.00	52.53	75.09	1.62	1.68	1.68	-554.99	-554.99
2790.00	52.55	75.12	1.62	1.68	1.68	-556.37	-556.37
2795.00	52.58	75.15	1.61	1.67	1.67	-557.75	-557.75
2800.00	52.60	75.18	1.61	1.67	1.67	-559.13	-559.13
2805.00	52.63	75.21	1.61	1.67	1.67	-560.52	-560.52
2810.00	52.65	75.24	1.61	1.67	1.67	-561.90	-561.90
2815.00	52.68	75.27	1.60	1.66	1.66	-563.28	-563.28
2820.00	52.70	75.30	1.60	1.66	1.66	-564.67	-564.67
2825.00	52.73	75.34	1.60	1.66	1.66	-566.05	-566.05
2830.00	52.75	75.37	1.60	1.66	1.66	-567.43	-567.43
2835.00	52.78	75.40	1.60	1.66	1.66	-568.82	-568.82
2840.00	52.80	75.43	1.59	1.65	1.65	-570.20	-570.20
2845.00	52.83	75.46	1.59	1.65	1.65	-571.59	-571.59
2850.00	52.85	75.49	1.59	1.65	1.65	-572.97	-572.97
2855.00	52.88	75.52	1.59	1.65	1.65	-574.36	-574.36
2860.00	52.90	75.55	1.59	1.64	1.64	-575.74	-575.74
2865.00	52.93	75.58	1.58	1.64	1.64	-577.13	-577.13
2870.00	52.95	75.61	1.58	1.64	1.64	-578.51	-578.51
2875.00	52.98	75.64	1.58	1.64	1.64	-579.90	-579.90
2880.00	53.00	75.68	1.58	1.64	1.64	-581.28	-581.28

Notes to User

Only values shown blue to be edited

Sheet only for england and wales

In M5-D	J0	J1	J2	Cr	In (MT-D/M5-D)	MT-D/M5-D
2.21	0.1699	0.0028	0.000114	0.205014	0.389773	1.476645
2.39	0.1699	0.0028	0.000114	0.214282	0.407393	1.502894
2.51	0.1644	0.005831	-0.00013	0.215837	0.410349	1.507344
2.60	0.1644	0.005831	-0.00013	0.218417	0.415254	1.514755
2.66	0.1644	0.005831	-0.00013	0.220337	0.418905	1.520296
2.71	0.1644	0.005831	-0.00013	0.22182	0.421723	1.524586
2.76	0.1644	0.005831	-0.00013	0.222992	0.423951	1.527987
2.80	0.1644	0.005831	-0.00013	0.223934	0.425743	1.530728
2.83	0.1644	0.005831	-0.00013	0.224701	0.427201	1.53296
2.86	0.1644	0.005831	-0.00013	0.225329	0.428394	1.534791
2.89	0.1644	0.005831	-0.00013	0.225845	0.429376	1.536298
2.92	0.1644	0.005831	-0.00013	0.226269	0.430183	1.537538
2.94	0.1644	0.005831	-0.00013	0.226617	0.430845	1.538556
2.96	0.1644	0.005831	-0.00013	0.226901	0.431384	1.539387
2.98	0.1644	0.005831	-0.00013	0.22713	0.431819	1.540056
3.00	0.1644	0.005831	-0.00013	0.227311	0.432164	1.540587
3.01	0.1644	0.005831	-0.00013	0.227451	0.43243	1.540998
3.03	0.1644	0.005831	-0.00013	0.227556	0.432628	1.541303
3.05	0.1644	0.005831	-0.00013	0.227628	0.432765	1.541515
3.06	0.1644	0.005831	-0.00013	0.227672	0.432849	1.541644
3.07	0.1644	0.005831	-0.00013	0.227691	0.432885	1.5417
3.09	0.1644	0.005831	-0.00013	0.227687	0.432879	1.541689
3.10	0.1644	0.005831	-0.00013	0.227664	0.432834	1.54162
3.11	0.1644	0.005831	-0.00013	0.227622	0.432754	1.541496
3.12	0.1644	0.005831	-0.00013	0.227563	0.432642	1.541325
3.13	0.1644	0.005831	-0.00013	0.227489	0.432502	1.541109
3.14	0.1644	0.005831	-0.00013	0.227402	0.432336	1.540852
3.15	0.1644	0.005831	-0.00013	0.227302	0.432145	1.540559
3.16	0.1644	0.005831	-0.00013	0.22719	0.431933	1.540232
3.17	0.1644	0.005831	-0.00013	0.227068	0.431701	1.539874
3.18	0.1644	0.005831	-0.00013	0.226936	0.43145	1.539488
3.19	0.1644	0.005831	-0.00013	0.226795	0.431182	1.539075
3.20	0.1644	0.005831	-0.00013	0.226645	0.430898	1.538638
3.21	0.1644	0.005831	-0.00013	0.226488	0.430599	1.538178
3.21	0.1644	0.005831	-0.00013	0.226324	0.430286	1.537698
3.22	0.1644	0.005831	-0.00013	0.226153	0.429961	1.537198
3.23	0.1644	0.005831	-0.00013	0.225975	0.429624	1.53668
3.24	0.1644	0.005831	-0.00013	0.225792	0.429276	1.536145
3.24	0.1644	0.005831	-0.00013	0.225604	0.428917	1.535594

3.25	0.1644	0.005831	-0.00013	0.22541	0.428549	1.535029
3.26	0.1644	0.005831	-0.00013	0.225212	0.428172	1.53445
3.26	0.1644	0.005831	-0.00013	0.225009	0.427787	1.533859
3.27	0.1644	0.005831	-0.00013	0.224802	0.427393	1.533255
3.28	0.1644	0.005831	-0.00013	0.224591	0.426992	1.53264
3.28	0.1644	0.005831	-0.00013	0.224377	0.426584	1.532015
3.29	0.1644	0.005831	-0.00013	0.224158	0.42617	1.53138
3.30	0.1644	0.005831	-0.00013	0.223937	0.425749	1.530736
3.30	0.1644	0.005831	-0.00013	0.223713	0.425322	1.530083
3.31	0.1644	0.005831	-0.00013	0.223485	0.42489	1.529422
3.31	0.1644	0.005831	-0.00013	0.223255	0.424453	1.528754
3.32	0.1644	0.005831	-0.00013	0.223023	0.424011	1.528078
3.32	0.1644	0.005831	-0.00013	0.222788	0.423564	1.527395
3.33	0.1644	0.005831	-0.00013	0.222551	0.423112	1.526706
3.33	0.1644	0.005831	-0.00013	0.222311	0.422657	1.526011
3.34	0.1644	0.005831	-0.00013	0.222069	0.422198	1.52531
3.34	0.1644	0.005831	-0.00013	0.221826	0.421735	1.524604
3.35	0.1644	0.005831	-0.00013	0.221581	0.421269	1.523894
3.35	0.1644	0.005831	-0.00013	0.221334	0.420799	1.523178
3.36	0.1644	0.005831	-0.00013	0.221085	0.420326	1.522458
3.36	0.1644	0.005831	-0.00013	0.220835	0.41985	1.521734
3.37	0.1644	0.005831	-0.00013	0.220583	0.419372	1.521005
3.37	0.1644	0.005831	-0.00013	0.22033	0.41889	1.520273
3.38	0.1644	0.005831	-0.00013	0.220075	0.418406	1.519538
3.38	0.1644	0.005831	-0.00013	0.219819	0.41792	1.518799
3.38	0.1644	0.005831	-0.00013	0.219563	0.417432	1.518058
3.39	0.1644	0.005831	-0.00013	0.219304	0.416941	1.517313
3.39	0.1644	0.005831	-0.00013	0.219045	0.416448	1.516566
3.40	0.1644	0.005831	-0.00013	0.218785	0.415954	1.515816
3.40	0.1644	0.005831	-0.00013	0.218524	0.415457	1.515064
3.40	0.1644	0.005831	-0.00013	0.218262	0.414959	1.514309
3.41	0.1644	0.005831	-0.00013	0.217999	0.414459	1.513552
3.41	0.1644	0.005831	-0.00013	0.217735	0.413958	1.512794
3.42	0.1644	0.005831	-0.00013	0.217471	0.413455	1.512033
3.42	0.1644	0.005831	-0.00013	0.217206	0.412951	1.511271
3.42	0.1644	0.005831	-0.00013	0.21694	0.412445	1.510507
3.43	0.1644	0.005831	-0.00013	0.216673	0.411939	1.509742
3.43	0.1644	0.005831	-0.00013	0.216406	0.411431	1.508975
3.43	0.1644	0.005831	-0.00013	0.216138	0.410922	1.508207
3.44	0.2644	-0.00162	3.15E-06	0.217046	0.412648	1.510812
3.44	0.2644	-0.00162	3.15E-06	0.216895	0.41236	1.510378
3.44	0.2644	-0.00162	3.15E-06	0.216745	0.412076	1.509948
3.45	0.2644	-0.00162	3.15E-06	0.216597	0.411794	1.509523
3.45	0.2644	-0.00162	3.15E-06	0.21645	0.411514	1.509102
3.45	0.2644	-0.00162	3.15E-06	0.216305	0.411238	1.508684
3.46	0.2644	-0.00162	3.15E-06	0.216161	0.410964	1.508271
3.46	0.2644	-0.00162	3.15E-06	0.216018	0.410692	1.507861
3.46	0.2644	-0.00162	3.15E-06	0.215876	0.410423	1.507456
3.47	0.2644	-0.00162	3.15E-06	0.215736	0.410157	1.507054
3.47	0.2644	-0.00162	3.15E-06	0.215597	0.409892	1.506655

3.47	0.2644	-0.00162	3.15E-06	0.215459	0.40963	1.506261
3.48	0.2644	-0.00162	3.15E-06	0.215322	0.40937	1.505869
3.48	0.2644	-0.00162	3.15E-06	0.215187	0.409113	1.505482
3.48	0.2644	-0.00162	3.15E-06	0.215053	0.408858	1.505097
3.48	0.2644	-0.00162	3.15E-06	0.214919	0.408604	1.504716
3.49	0.2644	-0.00162	3.15E-06	0.214787	0.408353	1.504338
3.49	0.2644	-0.00162	3.15E-06	0.214656	0.408104	1.503964
3.49	0.2644	-0.00162	3.15E-06	0.214526	0.407857	1.503592
3.50	0.2644	-0.00162	3.15E-06	0.214398	0.407612	1.503224
3.50	0.2644	-0.00162	3.15E-06	0.21427	0.407369	1.502858
3.50	0.2644	-0.00162	3.15E-06	0.214143	0.407128	1.502496
3.50	0.2644	-0.00162	3.15E-06	0.214017	0.406888	1.502136
3.51	0.2644	-0.00162	3.15E-06	0.213892	0.406651	1.50178
3.51	0.2644	-0.00162	3.15E-06	0.213768	0.406415	1.501426
3.51	0.2644	-0.00162	3.15E-06	0.213645	0.406181	1.501074
3.51	0.2644	-0.00162	3.15E-06	0.213523	0.405949	1.500726
3.52	0.2644	-0.00162	3.15E-06	0.213402	0.405719	1.50038
3.52	0.2644	-0.00162	3.15E-06	0.213281	0.40549	1.500037
3.52	0.2644	-0.00162	3.15E-06	0.213162	0.405263	1.499696
3.52	0.2644	-0.00162	3.15E-06	0.213043	0.405037	1.499358
3.53	0.2644	-0.00162	3.15E-06	0.212925	0.404813	1.499023
3.53	0.2644	-0.00162	3.15E-06	0.212809	0.404591	1.49869
3.53	0.2644	-0.00162	3.15E-06	0.212692	0.40437	1.498359
3.53	0.2644	-0.00162	3.15E-06	0.212577	0.404151	1.498031
3.54	0.2644	-0.00162	3.15E-06	0.212463	0.403934	1.497704
3.54	0.2644	-0.00162	3.15E-06	0.212349	0.403717	1.497381
3.54	0.2644	-0.00162	3.15E-06	0.212236	0.403503	1.497059
3.54	0.2644	-0.00162	3.15E-06	0.212124	0.403289	1.49674
3.55	0.2644	-0.00162	3.15E-06	0.212013	0.403078	1.496423
3.55	0.2644	-0.00162	3.15E-06	0.211902	0.402867	1.496108
3.55	0.2644	-0.00162	3.15E-06	0.211792	0.402658	1.495795
3.55	0.2644	-0.00162	3.15E-06	0.211683	0.40245	1.495485
3.55	0.2644	-0.00162	3.15E-06	0.211574	0.402244	1.495176
3.56	0.2644	-0.00162	3.15E-06	0.211466	0.402039	1.49487
3.56	0.2644	-0.00162	3.15E-06	0.211359	0.401835	1.494565
3.56	0.2644	-0.00162	3.15E-06	0.211253	0.401633	1.494262
3.56	0.2644	-0.00162	3.15E-06	0.211147	0.401432	1.493962
3.57	0.2644	-0.00162	3.15E-06	0.211042	0.401232	1.493663
3.57	0.2644	-0.00162	3.15E-06	0.210937	0.401033	1.493366
3.57	0.2644	-0.00162	3.15E-06	0.210833	0.400835	1.493071
3.57	0.2644	-0.00162	3.15E-06	0.21073	0.400639	1.492778
3.57	0.2644	-0.00162	3.15E-06	0.210627	0.400444	1.492487
3.58	0.2644	-0.00162	3.15E-06	0.210525	0.40025	1.492197
3.58	0.2644	-0.00162	3.15E-06	0.210424	0.400057	1.49191
3.58	0.2644	-0.00162	3.15E-06	0.210323	0.399865	1.491624
3.58	0.2644	-0.00162	3.15E-06	0.210223	0.399675	1.491339
3.58	0.2644	-0.00162	3.15E-06	0.210123	0.399485	1.491057
3.59	0.2644	-0.00162	3.15E-06	0.210024	0.399297	1.490776
3.59	0.2644	-0.00162	3.15E-06	0.209925	0.399109	1.490497
3.59	0.2644	-0.00162	3.15E-06	0.209827	0.398923	1.490219

3.59	0.2644	-0.00162	3.15E-06	0.20973	0.398738	1.489943
3.59	0.2644	-0.00162	3.15E-06	0.209633	0.398554	1.489669
3.60	0.2644	-0.00162	3.15E-06	0.209537	0.398371	1.489396
3.60	0.2644	-0.00162	3.15E-06	0.209441	0.398188	1.489125
3.60	0.2644	-0.00162	3.15E-06	0.209346	0.398007	1.488855
3.60	0.2644	-0.00162	3.15E-06	0.209251	0.397827	1.488587
3.60	0.2644	-0.00162	3.15E-06	0.209157	0.397648	1.48832
3.60	0.2644	-0.00162	3.15E-06	0.209063	0.39747	1.488054
3.61	0.2644	-0.00162	3.15E-06	0.208969	0.397292	1.487791
3.61	0.2644	-0.00162	3.15E-06	0.208877	0.397116	1.487528
3.61	0.2644	-0.00162	3.15E-06	0.208784	0.39694	1.487267
3.61	0.2644	-0.00162	3.15E-06	0.208693	0.396766	1.487008
3.61	0.2644	-0.00162	3.15E-06	0.208601	0.396592	1.48675
3.62	0.2644	-0.00162	3.15E-06	0.20851	0.396419	1.486493
3.62	0.2644	-0.00162	3.15E-06	0.20842	0.396248	1.486237
3.62	0.2644	-0.00162	3.15E-06	0.20833	0.396077	1.485983
3.62	0.2644	-0.00162	3.15E-06	0.208241	0.395907	1.48573
3.62	0.2644	-0.00162	3.15E-06	0.208152	0.395737	1.485479
3.62	0.2644	-0.00162	3.15E-06	0.208063	0.395569	1.485229
3.63	0.2644	-0.00162	3.15E-06	0.207975	0.395401	1.48498
3.63	0.2644	-0.00162	3.15E-06	0.207887	0.395234	1.484732
3.63	0.2644	-0.00162	3.15E-06	0.2078	0.395068	1.484486
3.63	0.2644	-0.00162	3.15E-06	0.207713	0.394903	1.484241
3.63	0.2644	-0.00162	3.15E-06	0.207627	0.394739	1.483997
3.63	0.2644	-0.00162	3.15E-06	0.20754	0.394575	1.483754
3.64	0.2644	-0.00162	3.15E-06	0.207455	0.394413	1.483513
3.64	0.2644	-0.00162	3.15E-06	0.20737	0.394251	1.483272
3.64	0.2644	-0.00162	3.15E-06	0.207285	0.394089	1.483033
3.64	0.2644	-0.00162	3.15E-06	0.2072	0.393929	1.482795
3.64	0.2644	-0.00162	3.15E-06	0.207116	0.393769	1.482558
3.64	0.2644	-0.00162	3.15E-06	0.207033	0.39361	1.482323
3.65	0.2644	-0.00162	3.15E-06	0.20695	0.393452	1.482088
3.65	0.2644	-0.00162	3.15E-06	0.206867	0.393294	1.481854
3.65	0.2644	-0.00162	3.15E-06	0.206784	0.393137	1.481622
3.65	0.2644	-0.00162	3.15E-06	0.206702	0.392981	1.481391
3.65	0.2644	-0.00162	3.15E-06	0.20662	0.392826	1.481161
3.65	0.2644	-0.00162	3.15E-06	0.206539	0.392671	1.480931
3.65	0.2644	-0.00162	3.15E-06	0.206458	0.392517	1.480703
3.66	0.2644	-0.00162	3.15E-06	0.206377	0.392364	1.480476
3.66	0.2644	-0.00162	3.15E-06	0.206297	0.392211	1.48025
3.66	0.2644	-0.00162	3.15E-06	0.206217	0.392059	1.480025
3.66	0.2644	-0.00162	3.15E-06	0.206137	0.391908	1.479801
3.66	0.2644	-0.00162	3.15E-06	0.206058	0.391757	1.479578
3.66	0.2644	-0.00162	3.15E-06	0.205979	0.391607	1.479356
3.66	0.2644	-0.00162	3.15E-06	0.205901	0.391458	1.479135
3.67	0.2644	-0.00162	3.15E-06	0.205822	0.391309	1.478915
3.67	0.2644	-0.00162	3.15E-06	0.205744	0.391161	1.478696
3.67	0.2644	-0.00162	3.15E-06	0.205667	0.391013	1.478478
3.67	0.2644	-0.00162	3.15E-06	0.20559	0.390866	1.478261
3.67	0.2644	-0.00162	3.15E-06	0.205513	0.39072	1.478045

3.67	0.2644	-0.00162	3.15E-06	0.205436	0.390574	1.47783
3.67	0.2644	-0.00162	3.15E-06	0.20536	0.390429	1.477615
3.68	0.2644	-0.00162	3.15E-06	0.205284	0.390285	1.477402
3.68	0.2644	-0.00162	3.15E-06	0.205208	0.390141	1.477189
3.68	0.2644	-0.00162	3.15E-06	0.205133	0.389998	1.476977
3.68	0.2644	-0.00162	3.15E-06	0.205058	0.389855	1.476767
3.68	0.2644	-0.00162	3.15E-06	0.204983	0.389713	1.476557
3.68	0.2644	-0.00162	3.15E-06	0.204908	0.389571	1.476348
3.68	0.2644	-0.00162	3.15E-06	0.204834	0.38943	1.47614
3.69	0.2644	-0.00162	3.15E-06	0.20476	0.38929	1.475932
3.69	0.2644	-0.00162	3.15E-06	0.204687	0.38915	1.475726
3.69	0.2644	-0.00162	3.15E-06	0.204613	0.389011	1.47552
3.69	0.2644	-0.00162	3.15E-06	0.20454	0.388872	1.475315
3.69	0.2644	-0.00162	3.15E-06	0.204468	0.388734	1.475111
3.69	0.2644	-0.00162	3.15E-06	0.204395	0.388596	1.474908
3.69	0.2644	-0.00162	3.15E-06	0.204323	0.388459	1.474706
3.70	0.2644	-0.00162	3.15E-06	0.204251	0.388322	1.474504
3.70	0.2644	-0.00162	3.15E-06	0.20418	0.388186	1.474304
3.70	0.2644	-0.00162	3.15E-06	0.204108	0.38805	1.474104
3.70	0.2644	-0.00162	3.15E-06	0.204037	0.387915	1.473905
3.70	0.2644	-0.00162	3.15E-06	0.203966	0.38778	1.473706
3.70	0.2644	-0.00162	3.15E-06	0.203896	0.387646	1.473509
3.70	0.2644	-0.00162	3.15E-06	0.203826	0.387513	1.473312
3.70	0.2644	-0.00162	3.15E-06	0.203756	0.38738	1.473116
3.71	0.2644	-0.00162	3.15E-06	0.203686	0.387247	1.47292
3.71	0.2644	-0.00162	3.15E-06	0.203616	0.387115	1.472726
3.71	0.2644	-0.00162	3.15E-06	0.203547	0.386983	1.472532
3.71	0.2644	-0.00162	3.15E-06	0.203478	0.386852	1.472339
3.71	0.2644	-0.00162	3.15E-06	0.203409	0.386721	1.472146
3.71	0.2644	-0.00162	3.15E-06	0.203341	0.386591	1.471954
3.71	0.2644	-0.00162	3.15E-06	0.203273	0.386461	1.471763
3.71	0.2644	-0.00162	3.15E-06	0.203205	0.386332	1.471573
3.72	0.2644	-0.00162	3.15E-06	0.203137	0.386203	1.471384
3.72	0.2644	-0.00162	3.15E-06	0.203069	0.386075	1.471195
3.72	0.2644	-0.00162	3.15E-06	0.203002	0.385947	1.471006
3.72	0.2644	-0.00162	3.15E-06	0.202935	0.385819	1.470819
3.72	0.2644	-0.00162	3.15E-06	0.202868	0.385692	1.470632
3.72	0.2644	-0.00162	3.15E-06	0.202802	0.385566	1.470446
3.72	0.2644	-0.00162	3.15E-06	0.202735	0.38544	1.47026
3.72	0.2644	-0.00162	3.15E-06	0.202669	0.385314	1.470076
3.72	0.2644	-0.00162	3.15E-06	0.202603	0.385189	1.469891
3.73	0.2644	-0.00162	3.15E-06	0.202537	0.385064	1.469708
3.73	0.2644	-0.00162	3.15E-06	0.202472	0.384939	1.469525
3.73	0.2644	-0.00162	3.15E-06	0.202407	0.384815	1.469343
3.73	0.2644	-0.00162	3.15E-06	0.202342	0.384692	1.469161
3.73	0.2644	-0.00162	3.15E-06	0.202277	0.384568	1.46898
3.73	0.2644	-0.00162	3.15E-06	0.202212	0.384446	1.4688
3.73	0.2644	-0.00162	3.15E-06	0.202148	0.384323	1.46862
3.73	0.2644	-0.00162	3.15E-06	0.202084	0.384201	1.468441
3.74	0.2644	-0.00162	3.15E-06	0.20202	0.38408	1.468263

3.74	0.2644	-0.00162	3.15E-06	0.201956	0.383959	1.468085
3.74	0.2644	-0.00162	3.15E-06	0.201893	0.383838	1.467908
3.74	0.2644	-0.00162	3.15E-06	0.201829	0.383718	1.467731
3.74	0.2644	-0.00162	3.15E-06	0.201766	0.383598	1.467555
3.74	0.2644	-0.00162	3.15E-06	0.201703	0.383478	1.467379
3.74	0.2644	-0.00162	3.15E-06	0.201641	0.383359	1.467204
3.74	0.2644	-0.00162	3.15E-06	0.201578	0.38324	1.46703
3.74	0.2644	-0.00162	3.15E-06	0.201516	0.383122	1.466856
3.75	0.2644	-0.00162	3.15E-06	0.201454	0.383004	1.466683
3.75	0.2644	-0.00162	3.15E-06	0.201392	0.382886	1.466511
3.75	0.2644	-0.00162	3.15E-06	0.20133	0.382769	1.466339
3.75	0.2644	-0.00162	3.15E-06	0.201269	0.382652	1.466167
3.75	0.2644	-0.00162	3.15E-06	0.201207	0.382535	1.465996
3.75	0.2644	-0.00162	3.15E-06	0.201146	0.382419	1.465826
3.75	0.2644	-0.00162	3.15E-06	0.201085	0.382303	1.465656
3.75	0.2644	-0.00162	3.15E-06	0.201025	0.382188	1.465487
3.75	0.2644	-0.00162	3.15E-06	0.200964	0.382073	1.465318
3.75	0.2644	-0.00162	3.15E-06	0.200904	0.381958	1.46515
3.76	0.2644	-0.00162	3.15E-06	0.200844	0.381843	1.464983
3.76	0.2644	-0.00162	3.15E-06	0.200784	0.381729	1.464815
3.76	0.2644	-0.00162	3.15E-06	0.200724	0.381616	1.464649
3.76	0.2644	-0.00162	3.15E-06	0.200664	0.381502	1.464483
3.76	0.2644	-0.00162	3.15E-06	0.200605	0.381389	1.464317
3.76	0.2644	-0.00162	3.15E-06	0.200545	0.381276	1.464152
3.76	0.2644	-0.00162	3.15E-06	0.200486	0.381164	1.463988
3.76	0.2644	-0.00162	3.15E-06	0.200427	0.381052	1.463824
3.76	0.2644	-0.00162	3.15E-06	0.200369	0.38094	1.46366
3.76	0.2644	-0.00162	3.15E-06	0.20031	0.380829	1.463497
3.77	0.2644	-0.00162	3.15E-06	0.200252	0.380718	1.463335
3.77	0.2644	-0.00162	3.15E-06	0.200194	0.380607	1.463173
3.77	0.2644	-0.00162	3.15E-06	0.200135	0.380497	1.463012
3.77	0.2644	-0.00162	3.15E-06	0.200078	0.380387	1.462851
3.77	0.2644	-0.00162	3.15E-06	0.20002	0.380277	1.46269
3.77	0.2644	-0.00162	3.15E-06	0.199962	0.380168	1.46253
3.77	0.2644	-0.00162	3.15E-06	0.199905	0.380059	1.46237
3.77	0.2644	-0.00162	3.15E-06	0.199848	0.37995	1.462211
3.77	0.2644	-0.00162	3.15E-06	0.199791	0.379842	1.462053
3.77	0.2644	-0.00162	3.15E-06	0.199734	0.379733	1.461895
3.78	0.2644	-0.00162	3.15E-06	0.199677	0.379626	1.461737
3.78	0.2644	-0.00162	3.15E-06	0.19962	0.379518	1.46158
3.78	0.2644	-0.00162	3.15E-06	0.199564	0.379411	1.461423
3.78	0.2644	-0.00162	3.15E-06	0.199508	0.379304	1.461267
3.78	0.2644	-0.00162	3.15E-06	0.199452	0.379197	1.461111
3.78	0.2644	-0.00162	3.15E-06	0.199396	0.379091	1.460956
3.78	0.2644	-0.00162	3.15E-06	0.19934	0.378985	1.460801
3.78	0.2644	-0.00162	3.15E-06	0.199284	0.378879	1.460646
3.78	0.2644	-0.00162	3.15E-06	0.199229	0.378774	1.460492
3.78	0.2644	-0.00162	3.15E-06	0.199174	0.378668	1.460339
3.79	0.2644	-0.00162	3.15E-06	0.199119	0.378564	1.460186
3.79	0.2644	-0.00162	3.15E-06	0.199064	0.378459	1.460033

3.79	0.2644	-0.00162	3.15E-06	0.199009	0.378355	1.459881
3.79	0.2644	-0.00162	3.15E-06	0.198954	0.378251	1.459729
3.79	0.2644	-0.00162	3.15E-06	0.198899	0.378147	1.459577
3.79	0.2644	-0.00162	3.15E-06	0.198845	0.378044	1.459426
3.79	0.2644	-0.00162	3.15E-06	0.198791	0.37794	1.459276
3.79	0.2644	-0.00162	3.15E-06	0.198737	0.377837	1.459126
3.79	0.2644	-0.00162	3.15E-06	0.198683	0.377735	1.458976
3.79	0.2644	-0.00162	3.15E-06	0.198629	0.377633	1.458827
3.79	0.2644	-0.00162	3.15E-06	0.198575	0.37753	1.458678
3.80	0.2644	-0.00162	3.15E-06	0.198522	0.377429	1.458529
3.80	0.2644	-0.00162	3.15E-06	0.198468	0.377327	1.458381
3.80	0.2644	-0.00162	3.15E-06	0.198415	0.377226	1.458234
3.80	0.2644	-0.00162	3.15E-06	0.198362	0.377125	1.458086
3.80	0.2644	-0.00162	3.15E-06	0.198309	0.377024	1.45794
3.80	0.2644	-0.00162	3.15E-06	0.198256	0.376924	1.457793
3.80	0.2644	-0.00162	3.15E-06	0.198203	0.376823	1.457647
3.80	0.2644	-0.00162	3.15E-06	0.198151	0.376724	1.457501
3.80	0.2644	-0.00162	3.15E-06	0.198098	0.376624	1.457356
3.80	0.2644	-0.00162	3.15E-06	0.198046	0.376524	1.457211
3.80	0.2644	-0.00162	3.15E-06	0.197994	0.376425	1.457067
3.80	0.2644	-0.00162	3.15E-06	0.197942	0.376326	1.456922
3.81	0.2644	-0.00162	3.15E-06	0.19789	0.376228	1.456779
3.81	0.2644	-0.00162	3.15E-06	0.197838	0.376129	1.456635
3.81	0.2644	-0.00162	3.15E-06	0.197786	0.376031	1.456492
3.81	0.2644	-0.00162	3.15E-06	0.197735	0.375933	1.45635
3.81	0.2644	-0.00162	3.15E-06	0.197684	0.375835	1.456208
3.81	0.2644	-0.00162	3.15E-06	0.197632	0.375738	1.456066
3.81	0.2644	-0.00162	3.15E-06	0.197581	0.375641	1.455924
3.81	0.2644	-0.00162	3.15E-06	0.19753	0.375544	1.455783
3.81	0.2644	-0.00162	3.15E-06	0.197479	0.375447	1.455642
3.81	0.2644	-0.00162	3.15E-06	0.197429	0.375351	1.455502
3.81	0.2644	-0.00162	3.15E-06	0.197378	0.375255	1.455362
3.82	0.2644	-0.00162	3.15E-06	0.197328	0.375159	1.455222
3.82	0.2644	-0.00162	3.15E-06	0.197277	0.375063	1.455083
3.82	0.2644	-0.00162	3.15E-06	0.197227	0.374967	1.454944
3.82	0.2644	-0.00162	3.15E-06	0.197177	0.374872	1.454805
3.82	0.2644	-0.00162	3.15E-06	0.197127	0.374777	1.454667
3.82	0.2644	-0.00162	3.15E-06	0.197077	0.374682	1.454529
3.82	0.2644	-0.00162	3.15E-06	0.197027	0.374588	1.454392
3.82	0.2644	-0.00162	3.15E-06	0.196978	0.374493	1.454254
3.82	0.2644	-0.00162	3.15E-06	0.196928	0.374399	1.454117
3.82	0.2644	-0.00162	3.15E-06	0.196879	0.374305	1.453981
3.82	0.2644	-0.00162	3.15E-06	0.196829	0.374212	1.453845
3.82	0.2644	-0.00162	3.15E-06	0.19678	0.374118	1.453709
3.82	0.2644	-0.00162	3.15E-06	0.196731	0.374025	1.453573
3.83	0.2644	-0.00162	3.15E-06	0.196682	0.373932	1.453438
3.83	0.2644	-0.00162	3.15E-06	0.196633	0.373839	1.453303
3.83	0.2644	-0.00162	3.15E-06	0.196585	0.373746	1.453169
3.83	0.2644	-0.00162	3.15E-06	0.196536	0.373654	1.453035
3.83	0.2644	-0.00162	3.15E-06	0.196488	0.373562	1.452901

3.83	0.2644	-0.00162	3.15E-06	0.196439	0.37347	1.452767
3.83	0.2644	-0.00162	3.15E-06	0.196391	0.373378	1.452634
3.83	0.2644	-0.00162	3.15E-06	0.196343	0.373287	1.452501
3.83	0.2644	-0.00162	3.15E-06	0.196295	0.373196	1.452368
3.83	0.2644	-0.00162	3.15E-06	0.196247	0.373105	1.452236
3.83	0.2644	-0.00162	3.15E-06	0.196199	0.373014	1.452104
3.83	0.2644	-0.00162	3.15E-06	0.196152	0.372923	1.451973
3.84	0.2644	-0.00162	3.15E-06	0.196104	0.372833	1.451841
3.84	0.2644	-0.00162	3.15E-06	0.196057	0.372742	1.45171
3.84	0.2644	-0.00162	3.15E-06	0.196009	0.372652	1.45158
3.84	0.2644	-0.00162	3.15E-06	0.195962	0.372562	1.451449
3.84	0.2644	-0.00162	3.15E-06	0.195915	0.372473	1.451319
3.84	0.2644	-0.00162	3.15E-06	0.195868	0.372383	1.451189
3.84	0.2644	-0.00162	3.15E-06	0.195821	0.372294	1.45106
3.84	0.2644	-0.00162	3.15E-06	0.195774	0.372205	1.450931
3.84	0.2644	-0.00162	3.15E-06	0.195727	0.372116	1.450802
3.84	0.2644	-0.00162	3.15E-06	0.195681	0.372028	1.450673
3.84	0.2644	-0.00162	3.15E-06	0.195634	0.371939	1.450545
3.84	0.2644	-0.00162	3.15E-06	0.195588	0.371851	1.450417
3.84	0.2644	-0.00162	3.15E-06	0.195542	0.371763	1.450289
3.84	0.2644	-0.00162	3.15E-06	0.195495	0.371675	1.450162
3.85	0.2644	-0.00162	3.15E-06	0.195449	0.371588	1.450035
3.85	0.2644	-0.00162	3.15E-06	0.195403	0.3715	1.449908
3.85	0.2644	-0.00162	3.15E-06	0.195357	0.371413	1.449782
3.85	0.2644	-0.00162	3.15E-06	0.195312	0.371326	1.449655
3.85	0.2644	-0.00162	3.15E-06	0.195266	0.371239	1.449529
3.85	0.2644	-0.00162	3.15E-06	0.19522	0.371152	1.449404
3.85	0.2644	-0.00162	3.15E-06	0.195175	0.371066	1.449278
3.85	0.2644	-0.00162	3.15E-06	0.195129	0.370979	1.449153
3.85	0.2644	-0.00162	3.15E-06	0.195084	0.370893	1.449029
3.85	0.2644	-0.00162	3.15E-06	0.195039	0.370807	1.448904
3.85	0.2644	-0.00162	3.15E-06	0.194994	0.370722	1.44878
3.85	0.2644	-0.00162	3.15E-06	0.194949	0.370636	1.448656
3.85	0.2644	-0.00162	3.15E-06	0.194904	0.370551	1.448532
3.86	0.2644	-0.00162	3.15E-06	0.194859	0.370465	1.448409
3.86	0.2644	-0.00162	3.15E-06	0.194814	0.37038	1.448286
3.86	0.2644	-0.00162	3.15E-06	0.19477	0.370296	1.448163
3.86	0.2644	-0.00162	3.15E-06	0.194725	0.370211	1.44804
3.86	0.2644	-0.00162	3.15E-06	0.194681	0.370126	1.447918
3.86	0.2644	-0.00162	3.15E-06	0.194636	0.370042	1.447796
3.86	0.2644	-0.00162	3.15E-06	0.194592	0.369958	1.447674
3.86	0.2644	-0.00162	3.15E-06	0.194548	0.369874	1.447552
3.86	0.2644	-0.00162	3.15E-06	0.194504	0.36979	1.447431
3.86	0.2644	-0.00162	3.15E-06	0.19446	0.369707	1.44731
3.86	0.2644	-0.00162	3.15E-06	0.194416	0.369623	1.447189
3.86	0.2644	-0.00162	3.15E-06	0.194372	0.36954	1.447069
3.86	0.2644	-0.00162	3.15E-06	0.194329	0.369457	1.446949
3.86	0.2644	-0.00162	3.15E-06	0.194285	0.369374	1.446829
3.86	0.2644	-0.00162	3.15E-06	0.194241	0.369291	1.446709
3.87	0.2644	-0.00162	3.15E-06	0.194198	0.369209	1.446589

3.87	0.2644	-0.00162	3.15E-06	0.194155	0.369126	1.44647
3.87	0.2644	-0.00162	3.15E-06	0.194111	0.369044	1.446351
3.87	0.2644	-0.00162	3.15E-06	0.194068	0.368962	1.446232
3.87	0.2644	-0.00162	3.15E-06	0.194025	0.36888	1.446114
3.87	0.2644	-0.00162	3.15E-06	0.193982	0.368798	1.445996
3.87	0.2644	-0.00162	3.15E-06	0.193939	0.368717	1.445878
3.87	0.2644	-0.00162	3.15E-06	0.193896	0.368635	1.44576
3.87	0.2644	-0.00162	3.15E-06	0.193854	0.368554	1.445643
3.87	0.2644	-0.00162	3.15E-06	0.193811	0.368473	1.445526
3.87	0.2644	-0.00162	3.15E-06	0.193768	0.368392	1.445409
3.87	0.2644	-0.00162	3.15E-06	0.193726	0.368311	1.445292
3.87	0.2644	-0.00162	3.15E-06	0.193684	0.368231	1.445175
3.87	0.2644	-0.00162	3.15E-06	0.193641	0.36815	1.445059
3.88	0.2644	-0.00162	3.15E-06	0.193599	0.36807	1.444943
3.88	0.2644	-0.00162	3.15E-06	0.193557	0.36799	1.444827
3.88	0.2644	-0.00162	3.15E-06	0.193515	0.36791	1.444712
3.88	0.2644	-0.00162	3.15E-06	0.193473	0.36783	1.444596
3.88	0.2644	-0.00162	3.15E-06	0.193431	0.36775	1.444481
3.88	0.2644	-0.00162	3.15E-06	0.193389	0.367671	1.444367
3.88	0.2644	-0.00162	3.15E-06	0.193347	0.367592	1.444252
3.88	0.2644	-0.00162	3.15E-06	0.193306	0.367512	1.444138
3.88	0.2644	-0.00162	3.15E-06	0.193264	0.367433	1.444023
3.88	0.2644	-0.00162	3.15E-06	0.193223	0.367354	1.44391
3.88	0.2644	-0.00162	3.15E-06	0.193181	0.367276	1.443796
3.88	0.2644	-0.00162	3.15E-06	0.19314	0.367197	1.443682
3.88	0.2644	-0.00162	3.15E-06	0.193099	0.367119	1.443569
3.88	0.2644	-0.00162	3.15E-06	0.193058	0.36704	1.443456
3.88	0.2644	-0.00162	3.15E-06	0.193016	0.366962	1.443343
3.88	0.2644	-0.00162	3.15E-06	0.192975	0.366884	1.443231
3.89	0.2644	-0.00162	3.15E-06	0.192934	0.366806	1.443119
3.89	0.2644	-0.00162	3.15E-06	0.192894	0.366729	1.443007
3.89	0.2644	-0.00162	3.15E-06	0.192853	0.366651	1.442895
3.89	0.2644	-0.00162	3.15E-06	0.192812	0.366574	1.442783
3.89	0.2644	-0.00162	3.15E-06	0.192771	0.366497	1.442672
3.89	0.2644	-0.00162	3.15E-06	0.192731	0.36642	1.44256
3.89	0.2644	-0.00162	3.15E-06	0.19269	0.366343	1.442449
3.89	0.2644	-0.00162	3.15E-06	0.19265	0.366266	1.442339
3.89	0.2644	-0.00162	3.15E-06	0.19261	0.366189	1.442228
3.89	0.2644	-0.00162	3.15E-06	0.19257	0.366113	1.442118
3.89	0.2644	-0.00162	3.15E-06	0.192529	0.366036	1.442008
3.89	0.2644	-0.00162	3.15E-06	0.192489	0.36596	1.441898
3.89	0.2644	-0.00162	3.15E-06	0.192449	0.365884	1.441788
3.89	0.2644	-0.00162	3.15E-06	0.192409	0.365808	1.441678
3.89	0.2644	-0.00162	3.15E-06	0.192369	0.365732	1.441569
3.89	0.2644	-0.00162	3.15E-06	0.19233	0.365657	1.44146
3.90	0.2644	-0.00162	3.15E-06	0.19229	0.365581	1.441351
3.90	0.2644	-0.00162	3.15E-06	0.19225	0.365506	1.441243
3.90	0.2644	-0.00162	3.15E-06	0.192211	0.36543	1.441134
3.90	0.2644	-0.00162	3.15E-06	0.192171	0.365355	1.441026
3.90	0.2644	-0.00162	3.15E-06	0.192132	0.36528	1.440918

3.90	0.2644	-0.00162	3.15E-06	0.192092	0.365205	1.44081
3.90	0.2644	-0.00162	3.15E-06	0.192053	0.365131	1.440702
3.90	0.2644	-0.00162	3.15E-06	0.192014	0.365056	1.440595
3.90	0.2644	-0.00162	3.15E-06	0.191975	0.364982	1.440488
3.90	0.2644	-0.00162	3.15E-06	0.191936	0.364907	1.440381
3.90	0.2644	-0.00162	3.15E-06	0.191897	0.364833	1.440274
3.90	0.2644	-0.00162	3.15E-06	0.191858	0.364759	1.440167
3.90	0.2644	-0.00162	3.15E-06	0.191819	0.364685	1.440061
3.90	0.2644	-0.00162	3.15E-06	0.19178	0.364611	1.439954
3.90	0.2644	-0.00162	3.15E-06	0.191741	0.364538	1.439848
3.90	0.2644	-0.00162	3.15E-06	0.191703	0.364464	1.439743
3.91	0.2644	-0.00162	3.15E-06	0.191664	0.364391	1.439637
3.91	0.2644	-0.00162	3.15E-06	0.191625	0.364318	1.439531
3.91	0.2644	-0.00162	3.15E-06	0.191587	0.364245	1.439426
3.91	0.2644	-0.00162	3.15E-06	0.191549	0.364172	1.439321
3.91	0.2644	-0.00162	3.15E-06	0.19151	0.364099	1.439216
3.91	0.2644	-0.00162	3.15E-06	0.191472	0.364026	1.439112
3.91	0.2644	-0.00162	3.15E-06	0.191434	0.363953	1.439007
3.91	0.2644	-0.00162	3.15E-06	0.191396	0.363881	1.438903
3.91	0.2644	-0.00162	3.15E-06	0.191358	0.363809	1.438799
3.91	0.2644	-0.00162	3.15E-06	0.19132	0.363736	1.438695
3.91	0.2644	-0.00162	3.15E-06	0.191282	0.363664	1.438591
3.91	0.2644	-0.00162	3.15E-06	0.191244	0.363592	1.438487
3.91	0.2644	-0.00162	3.15E-06	0.191206	0.36352	1.438384
3.91	0.2644	-0.00162	3.15E-06	0.191168	0.363449	1.438281
3.91	0.2644	-0.00162	3.15E-06	0.191131	0.363377	1.438178
3.91	0.2644	-0.00162	3.15E-06	0.191093	0.363306	1.438075
3.91	0.2644	-0.00162	3.15E-06	0.191055	0.363234	1.437973
3.92	0.2644	-0.00162	3.15E-06	0.191018	0.363163	1.43787
3.92	0.2644	-0.00162	3.15E-06	0.190981	0.363092	1.437768
3.92	0.2644	-0.00162	3.15E-06	0.190943	0.363021	1.437666
3.92	0.2644	-0.00162	3.15E-06	0.190906	0.36295	1.437564
3.92	0.2644	-0.00162	3.15E-06	0.190869	0.362879	1.437462
3.92	0.2644	-0.00162	3.15E-06	0.190832	0.362809	1.437361
3.92	0.2644	-0.00162	3.15E-06	0.190795	0.362738	1.437259
3.92	0.2644	-0.00162	3.15E-06	0.190757	0.362668	1.437158
3.92	0.2644	-0.00162	3.15E-06	0.190721	0.362597	1.437057
3.92	0.2644	-0.00162	3.15E-06	0.190684	0.362527	1.436956
3.92	0.2644	-0.00162	3.15E-06	0.190647	0.362457	1.436856
3.92	0.2644	-0.00162	3.15E-06	0.19061	0.362387	1.436755
3.92	0.2644	-0.00162	3.15E-06	0.190573	0.362317	1.436655
3.92	0.2644	-0.00162	3.15E-06	0.190537	0.362248	1.436555
3.92	0.2644	-0.00162	3.15E-06	0.1905	0.362178	1.436455
3.92	0.2644	-0.00162	3.15E-06	0.190463	0.362109	1.436355
3.92	0.2644	-0.00162	3.15E-06	0.190427	0.362039	1.436255
3.92	0.2644	-0.00162	3.15E-06	0.190391	0.36197	1.436156
3.93	0.2644	-0.00162	3.15E-06	0.190354	0.361901	1.436057
3.93	0.2644	-0.00162	3.15E-06	0.190318	0.361832	1.435958
3.93	0.2644	-0.00162	3.15E-06	0.190282	0.361763	1.435859
3.93	0.2644	-0.00162	3.15E-06	0.190246	0.361694	1.43576

3.93	0.2644	-0.00162	3.15E-06	0.190209	0.361626	1.435661
3.93	0.2644	-0.00162	3.15E-06	0.190173	0.361557	1.435563
3.93	0.2644	-0.00162	3.15E-06	0.190137	0.361489	1.435465
3.93	0.2644	-0.00162	3.15E-06	0.190101	0.36142	1.435367
3.93	0.2644	-0.00162	3.15E-06	0.190066	0.361352	1.435269
3.93	0.2644	-0.00162	3.15E-06	0.19003	0.361284	1.435171
3.93	0.2644	-0.00162	3.15E-06	0.189994	0.361216	1.435073
3.93	0.2644	-0.00162	3.15E-06	0.189958	0.361148	1.434976
3.93	0.2644	-0.00162	3.15E-06	0.189923	0.36108	1.434879
3.93	0.2644	-0.00162	3.15E-06	0.189887	0.361013	1.434782
3.93	0.2644	-0.00162	3.15E-06	0.189851	0.360945	1.434685
3.93	0.2644	-0.00162	3.15E-06	0.189816	0.360878	1.434588
3.93	0.2644	-0.00162	3.15E-06	0.189781	0.36081	1.434491
3.93	0.2644	-0.00162	3.15E-06	0.189745	0.360743	1.434395
3.94	0.2644	-0.00162	3.15E-06	0.18971	0.360676	1.434298
3.94	0.2644	-0.00162	3.15E-06	0.189675	0.360609	1.434202
3.94	0.2644	-0.00162	3.15E-06	0.189639	0.360542	1.434106
3.94	0.2644	-0.00162	3.15E-06	0.189604	0.360475	1.434011
3.94	0.2644	-0.00162	3.15E-06	0.189569	0.360408	1.433915
3.94	0.2644	-0.00162	3.15E-06	0.189534	0.360342	1.433819
3.94	0.2644	-0.00162	3.15E-06	0.189499	0.360275	1.433724
3.94	0.2644	-0.00162	3.15E-06	0.189464	0.360209	1.433629
3.94	0.2644	-0.00162	3.15E-06	0.189429	0.360143	1.433534
3.94	0.2644	-0.00162	3.15E-06	0.189395	0.360076	1.433439
3.94	0.2644	-0.00162	3.15E-06	0.18936	0.36001	1.433344
3.94	0.2644	-0.00162	3.15E-06	0.189325	0.359944	1.43325
3.94	0.2644	-0.00162	3.15E-06	0.18929	0.359878	1.433155
3.94	0.2644	-0.00162	3.15E-06	0.189256	0.359813	1.433061
3.94	0.2644	-0.00162	3.15E-06	0.189221	0.359747	1.432967
3.94	0.2644	-0.00162	3.15E-06	0.189187	0.359681	1.432873
3.94	0.2644	-0.00162	3.15E-06	0.189152	0.359616	1.432779
3.94	0.2644	-0.00162	3.15E-06	0.189118	0.359551	1.432685
3.94	0.2644	-0.00162	3.15E-06	0.189084	0.359485	1.432592
3.94	0.2644	-0.00162	3.15E-06	0.189049	0.35942	1.432499
3.95	0.2644	-0.00162	3.15E-06	0.189015	0.359355	1.432405
3.95	0.2644	-0.00162	3.15E-06	0.188981	0.35929	1.432312
3.95	0.2644	-0.00162	3.15E-06	0.188947	0.359225	1.432219
3.95	0.2644	-0.00162	3.15E-06	0.188913	0.35916	1.432127
3.95	0.2644	-0.00162	3.15E-06	0.188879	0.359096	1.432034
3.95	0.2644	-0.00162	3.15E-06	0.188845	0.359031	1.431942
3.95	0.2644	-0.00162	3.15E-06	0.188811	0.358967	1.431849
3.95	0.2644	-0.00162	3.15E-06	0.188777	0.358902	1.431757
3.95	0.2644	-0.00162	3.15E-06	0.188743	0.358838	1.431665
3.95	0.2644	-0.00162	3.15E-06	0.188709	0.358774	1.431573
3.95	0.2644	-0.00162	3.15E-06	0.188676	0.35871	1.431481
3.95	0.2644	-0.00162	3.15E-06	0.188642	0.358646	1.43139
3.95	0.2644	-0.00162	3.15E-06	0.188608	0.358582	1.431298
3.95	0.2644	-0.00162	3.15E-06	0.188575	0.358518	1.431207
3.95	0.2644	-0.00162	3.15E-06	0.188541	0.358454	1.431116
3.95	0.2644	-0.00162	3.15E-06	0.188508	0.358391	1.431025

3.95	0.2644	-0.00162	3.15E-06	0.188475	0.358327	1.430934
3.95	0.2644	-0.00162	3.15E-06	0.188441	0.358264	1.430843
3.95	0.2644	-0.00162	3.15E-06	0.188408	0.358201	1.430752
3.95	0.2644	-0.00162	3.15E-06	0.188375	0.358137	1.430662
3.96	0.2644	-0.00162	3.15E-06	0.188341	0.358074	1.430572
3.96	0.2644	-0.00162	3.15E-06	0.188308	0.358011	1.430482
3.96	0.2644	-0.00162	3.15E-06	0.188275	0.357948	1.430391
3.96	0.2644	-0.00162	3.15E-06	0.188242	0.357885	1.430302
3.96	0.2644	-0.00162	3.15E-06	0.188209	0.357823	1.430212
3.96	0.2644	-0.00162	3.15E-06	0.188176	0.35776	1.430122
3.96	0.2644	-0.00162	3.15E-06	0.188143	0.357697	1.430033
3.96	0.2644	-0.00162	3.15E-06	0.18811	0.357635	1.429943
3.96	0.2644	-0.00162	3.15E-06	0.188077	0.357572	1.429854
3.96	0.2644	-0.00162	3.15E-06	0.188045	0.35751	1.429765
3.96	0.2644	-0.00162	3.15E-06	0.188012	0.357448	1.429676
3.96	0.2644	-0.00162	3.15E-06	0.187979	0.357386	1.429587
3.96	0.2644	-0.00162	3.15E-06	0.187947	0.357324	1.429498
3.96	0.2644	-0.00162	3.15E-06	0.187914	0.357262	1.42941
3.96	0.2644	-0.00162	3.15E-06	0.187881	0.3572	1.429321
3.96	0.2644	-0.00162	3.15E-06	0.187849	0.357138	1.429233
3.96	0.2644	-0.00162	3.15E-06	0.187817	0.357076	1.429145
3.96	0.2644	-0.00162	3.15E-06	0.187784	0.357015	1.429057
3.96	0.2644	-0.00162	3.15E-06	0.187752	0.356953	1.428969
3.96	0.2644	-0.00162	3.15E-06	0.187719	0.356892	1.428881
3.97	0.2644	-0.00162	3.15E-06	0.187687	0.35683	1.428794
3.97	0.2644	-0.00162	3.15E-06	0.187655	0.356769	1.428706
3.97	0.2644	-0.00162	3.15E-06	0.187623	0.356708	1.428619
3.97	0.2644	-0.00162	3.15E-06	0.187591	0.356647	1.428531
3.97	0.2644	-0.00162	3.15E-06	0.187559	0.356586	1.428444
3.97	0.2644	-0.00162	3.15E-06	0.187527	0.356525	1.428357
3.97	0.2644	-0.00162	3.15E-06	0.187495	0.356464	1.428271
3.97	0.2644	-0.00162	3.15E-06	0.187463	0.356404	1.428184
3.97	0.2644	-0.00162	3.15E-06	0.187431	0.356343	1.428097
3.97	0.2644	-0.00162	3.15E-06	0.187399	0.356282	1.428011
3.97	0.2644	-0.00162	3.15E-06	0.187367	0.356222	1.427924
3.97	0.2644	-0.00162	3.15E-06	0.187335	0.356161	1.427838

Location Index	
England and Wales	1
Scotland and Ireland	2

From Design and Analysis of Urban Storm Drainage, The Wallingford Procedure, Vol 1

Table 6.1 Values of Constants to calculate Cr

Geographic Location	Range of M5-D	Location Index	J0	J1	J2
England and Wales	0-10	1	0.1699	0.0028	0.000114
	11-30		0.1644	0.005831	-0.00013
	31-75		0.2644	-0.00162	3.15E-06
	76-150		0.2718	-0.00195	6.19E-06
	>150		0.1454	-0.00019	1.14E-07

Integra Consulting Calculations						Job No	Date
						3309	14.02.22
						Sheet 01	By JS
Job Title Club Street, Manchester							
Storm Water Flood Model M5-60 = 18.00 r = 0.36 Return, T = 100 Area (m²) = 3760 CC Factor = 0.40 Limit (l/s) = 5.0 Totals 134211							
D (mins)	M5-D (mm)	MT-D (mm)	Rate (mm/hr)	Flow (l/s)	CC Flow (l/s)	Storage (m ³)	CC Storage (m ³)
10.00	9.14	17.27	103.65	107.56	150.59	61.54	87.35
15.00	10.96	21.32	85.28	88.50	123.90	75.15	107.01
20.00	12.31	24.07	72.21	74.93	104.91	83.92	119.89
25.00	13.40	26.40	63.36	65.75	92.05	91.13	130.58
30.00	14.31	28.36	56.72	58.87	82.41	96.96	139.34
35.00	15.10	30.06	51.53	53.48	74.87	101.81	146.73
40.00	15.79	31.56	47.34	49.13	68.78	105.92	153.08
45.00	16.42	32.91	43.88	45.54	63.75	109.45	158.63
50.00	16.99	34.13	40.96	42.51	59.51	112.53	163.54
55.00	17.51	35.26	38.46	39.91	55.88	115.22	167.91
60.00	18.00	36.29	36.29	37.66	52.73	117.59	171.83
65.00	18.45	37.26	34.39	35.69	49.97	119.70	175.37
70.00	18.88	38.16	32.71	33.94	47.52	121.56	178.59
75.00	19.28	39.01	31.21	32.38	45.34	123.23	181.52
80.00	19.66	39.81	29.85	30.98	43.37	124.71	184.20
85.00	20.02	40.56	28.63	29.71	41.60	126.03	186.65
90.00	20.37	41.28	27.52	28.56	39.98	127.21	188.90
95.00	20.70	41.96	26.50	27.50	38.50	128.26	190.97
100.00	21.02	42.61	25.57	26.53	37.15	129.20	192.88
105.00	21.32	43.24	24.71	25.64	35.89	130.02	194.63
110.00	21.61	43.83	23.91	24.81	34.74	130.75	196.25
115.00	21.90	44.40	23.17	24.04	33.66	131.39	197.75
120.00	22.17	44.95	22.48	23.33	32.66	131.95	199.13
125.00	22.43	45.48	21.83	22.66	31.72	132.43	200.40
130.00	22.69	45.99	21.23	22.03	30.84	132.83	201.57
135.00	22.94	46.49	20.66	21.44	30.02	133.18	202.65
140.00	23.18	46.96	20.13	20.89	29.24	133.45	203.64
145.00	23.41	47.42	19.62	20.37	28.51	133.68	204.55
150.00	23.64	47.87	19.15	19.87	27.82	133.84	205.38
155.00	23.86	48.30	18.70	19.40	27.17	133.96	206.14
160.00	24.08	48.72	18.27	18.96	26.55	134.02	206.83
165.00	24.29	49.13	17.87	18.54	25.96	134.04	207.46
170.00	24.50	49.52	17.48	18.14	25.40	134.02	208.03
175.00	24.70	49.91	17.11	17.76	24.86	133.96	208.54
180.00	24.90	50.28	16.76	17.39	24.35	133.86	209.00
185.00	25.09	50.65	16.43	17.05	23.87	133.72	209.40
190.00	25.28	51.00	16.11	16.71	23.40	133.54	209.76
195.00	25.47	51.35	15.80	16.40	22.95	133.33	210.07
200.00	25.65	51.69	15.51	16.09	22.53	133.09	210.33

205.00	25.83	52.01	15.22	15.80	22.12	132.82	210.55
210.00	26.01	52.33	14.95	15.52	21.72	132.52	210.73
215.00	26.18	52.65	14.69	15.25	21.35	132.19	210.87
220.00	26.35	52.95	14.44	14.99	20.98	131.83	210.97
225.00	26.51	53.25	14.20	14.74	20.63	131.45	211.03
230.00	26.68	53.55	13.97	14.50	20.29	131.05	211.07
235.00	26.84	53.83	13.74	14.26	19.97	130.62	211.06
240.00	27.00	54.11	13.53	14.04	19.65	130.16	211.03
245.00	27.15	54.39	13.32	13.82	19.35	129.69	210.96
250.00	27.31	54.66	13.12	13.61	19.06	129.19	210.87
255.00	27.46	54.92	12.92	13.41	18.77	128.67	210.74
260.00	27.61	55.18	12.73	13.21	18.50	128.13	210.59
265.00	27.75	55.43	12.55	13.02	18.23	127.58	210.41
270.00	27.90	55.68	12.37	12.84	17.98	127.00	210.20
275.00	28.04	55.92	12.20	12.66	17.73	126.41	209.97
280.00	28.18	56.16	12.03	12.49	17.48	125.80	209.72
285.00	28.32	56.39	11.87	12.32	17.25	125.17	209.44
290.00	28.45	56.62	11.71	12.16	17.02	124.53	209.14
295.00	28.59	56.84	11.56	12.00	16.80	123.87	208.82
300.00	28.72	57.07	11.41	11.84	16.58	123.19	208.47
305.00	28.85	57.28	11.27	11.69	16.37	122.50	208.11
310.00	28.98	57.50	11.13	11.55	16.17	121.80	207.72
315.00	29.11	57.71	10.99	11.41	15.97	121.08	207.32
320.00	29.24	57.91	10.86	11.27	15.78	120.35	206.89
325.00	29.37	58.11	10.73	11.13	15.59	119.61	206.45
330.00	29.49	58.31	10.60	11.00	15.40	118.85	205.99
335.00	29.61	58.51	10.48	10.87	15.22	118.08	205.51
340.00	29.73	58.70	10.36	10.75	15.05	117.30	205.01
345.00	29.85	58.89	10.24	10.63	14.88	116.50	204.50
350.00	29.97	59.07	10.13	10.51	14.71	115.70	203.98
355.00	30.09	59.26	10.02	10.39	14.55	114.88	203.43
360.00	30.20	59.44	9.91	10.28	14.39	114.05	202.87
365.00	30.32	59.61	9.80	10.17	14.24	113.21	202.30
370.00	30.43	59.79	9.70	10.06	14.09	112.36	201.71
375.00	30.55	59.96	9.59	9.96	13.94	111.51	201.11
380.00	30.66	60.13	9.49	9.85	13.79	110.64	200.49
385.00	30.77	60.29	9.40	9.75	13.65	109.76	199.86
390.00	30.88	60.46	9.30	9.65	13.51	108.87	199.22
395.00	30.98	60.62	9.21	9.56	13.38	107.97	198.56
400.00	31.09	61.00	9.15	9.50	13.29	107.90	199.05
405.00	31.20	61.18	9.06	9.41	13.17	107.07	198.49
410.00	31.30	61.36	8.98	9.32	13.05	106.23	197.92
415.00	31.41	61.53	8.90	9.23	12.93	105.39	197.34
420.00	31.51	61.71	8.82	9.15	12.81	104.54	196.75
425.00	31.61	61.88	8.74	9.07	12.69	103.68	196.15
430.00	31.71	62.05	8.66	8.99	12.58	102.82	195.55
435.00	31.81	62.22	8.58	8.91	12.47	101.95	194.93
440.00	31.91	62.39	8.51	8.83	12.36	101.08	194.31
445.00	32.01	62.55	8.43	8.75	12.25	100.20	193.67
450.00	32.11	62.72	8.36	8.68	12.15	99.31	193.03

455.00	32.21	62.88	8.29	8.61	12.05	98.42	192.39
460.00	32.30	63.04	8.22	8.53	11.95	97.52	191.73
465.00	32.40	63.20	8.16	8.46	11.85	96.62	191.07
470.00	32.49	63.36	8.09	8.39	11.75	95.71	190.40
475.00	32.59	63.52	8.02	8.33	11.66	94.80	189.72
480.00	32.68	63.67	7.96	8.26	11.56	93.88	189.03
485.00	32.77	63.83	7.90	8.19	11.47	92.96	188.34
490.00	32.87	63.98	7.83	8.13	11.38	92.03	187.64
495.00	32.96	64.13	7.77	8.07	11.29	91.10	186.94
500.00	33.05	64.28	7.71	8.01	11.21	90.16	186.22
505.00	33.14	64.43	7.66	7.94	11.12	89.22	185.50
510.00	33.23	64.58	7.60	7.88	11.04	88.27	184.78
515.00	33.32	64.73	7.54	7.83	10.96	87.32	184.05
520.00	33.40	64.87	7.49	7.77	10.88	86.36	183.31
525.00	33.49	65.02	7.43	7.71	10.80	85.40	182.57
530.00	33.58	65.16	7.38	7.66	10.72	84.44	181.82
535.00	33.66	65.30	7.32	7.60	10.64	83.47	181.06
540.00	33.75	65.45	7.27	7.55	10.56	82.50	180.30
545.00	33.83	65.59	7.22	7.49	10.49	81.52	179.53
550.00	33.92	65.72	7.17	7.44	10.42	80.54	178.76
555.00	34.00	65.86	7.12	7.39	10.34	79.56	177.98
560.00	34.08	66.00	7.07	7.34	10.27	78.57	177.20
565.00	34.17	66.14	7.02	7.29	10.20	77.58	176.41
570.00	34.25	66.27	6.98	7.24	10.13	76.58	175.62
575.00	34.33	66.40	6.93	7.19	10.07	75.58	174.82
580.00	34.41	66.54	6.88	7.14	10.00	74.58	174.01
585.00	34.49	66.67	6.84	7.10	9.93	73.57	173.20
590.00	34.57	66.80	6.79	7.05	9.87	72.57	172.39
595.00	34.65	66.93	6.75	7.00	9.81	71.55	171.57
600.00	34.73	67.06	6.71	6.96	9.74	70.54	170.75
605.00	34.81	67.19	6.66	6.92	9.68	69.52	169.92
610.00	34.89	67.32	6.62	6.87	9.62	68.49	169.09
615.00	34.96	67.44	6.58	6.83	9.56	67.47	168.25
620.00	35.04	67.57	6.54	6.79	9.50	66.44	167.41
625.00	35.12	67.69	6.50	6.74	9.44	65.40	166.56
630.00	35.19	67.82	6.46	6.70	9.38	64.37	165.71
635.00	35.27	67.94	6.42	6.66	9.33	63.33	164.86
640.00	35.34	68.07	6.38	6.62	9.27	62.29	164.00
645.00	35.42	68.19	6.34	6.58	9.22	61.24	163.14
650.00	35.49	68.31	6.31	6.54	9.16	60.19	162.27
655.00	35.57	68.43	6.27	6.50	9.11	59.14	161.40
660.00	35.64	68.55	6.23	6.47	9.05	58.09	160.53
665.00	35.71	68.67	6.20	6.43	9.00	57.03	159.65
670.00	35.79	68.78	6.16	6.39	8.95	55.98	158.77
675.00	35.86	68.90	6.12	6.36	8.90	54.91	157.88
680.00	35.93	69.02	6.09	6.32	8.85	53.85	156.99
685.00	36.00	69.13	6.06	6.28	8.80	52.78	156.10
690.00	36.07	69.25	6.02	6.25	8.75	51.71	155.20
695.00	36.14	69.36	5.99	6.21	8.70	50.64	154.30
700.00	36.21	69.48	5.96	6.18	8.65	49.57	153.39

705.00	36.28	69.59	5.92	6.15	8.60	48.49	152.48
710.00	36.35	69.70	5.89	6.11	8.56	47.41	151.57
715.00	36.42	69.82	5.86	6.08	8.51	46.33	150.66
720.00	36.49	69.93	5.83	6.05	8.47	45.24	149.74
725.00	36.56	70.04	5.80	6.02	8.42	44.16	148.82
730.00	36.63	70.15	5.77	5.98	8.38	43.07	147.89
735.00	36.70	70.26	5.74	5.95	8.33	41.97	146.96
740.00	36.76	70.37	5.71	5.92	8.29	40.88	146.03
745.00	36.83	70.47	5.68	5.89	8.25	39.78	145.10
750.00	36.90	70.58	5.65	5.86	8.20	38.69	144.16
755.00	36.96	70.69	5.62	5.83	8.16	37.59	143.22
760.00	37.03	70.79	5.59	5.80	8.12	36.48	142.28
765.00	37.10	70.90	5.56	5.77	8.08	35.38	141.33
770.00	37.16	71.01	5.53	5.74	8.04	34.27	140.38
775.00	37.23	71.11	5.51	5.71	8.00	33.16	139.43
780.00	37.29	71.21	5.48	5.68	7.96	32.05	138.47
785.00	37.36	71.32	5.45	5.66	7.92	30.94	137.51
790.00	37.42	71.42	5.42	5.63	7.88	29.82	136.55
795.00	37.48	71.52	5.40	5.60	7.84	28.70	135.58
800.00	37.55	71.62	5.37	5.57	7.80	27.58	134.62
805.00	37.61	71.73	5.35	5.55	7.77	26.46	133.65
810.00	37.68	71.83	5.32	5.52	7.73	25.34	132.67
815.00	37.74	71.93	5.30	5.50	7.69	24.21	131.70
820.00	37.80	72.03	5.27	5.47	7.66	23.09	130.72
825.00	37.86	72.13	5.25	5.44	7.62	21.96	129.74
830.00	37.92	72.22	5.22	5.42	7.59	20.83	128.76
835.00	37.99	72.32	5.20	5.39	7.55	19.69	127.77
840.00	38.05	72.42	5.17	5.37	7.52	18.56	126.78
845.00	38.11	72.52	5.15	5.34	7.48	17.42	125.79
850.00	38.17	72.61	5.13	5.32	7.45	16.28	124.80
855.00	38.23	72.71	5.10	5.30	7.41	15.14	123.80
860.00	38.29	72.81	5.08	5.27	7.38	14.00	122.80
865.00	38.35	72.90	5.06	5.25	7.35	12.86	121.80
870.00	38.41	73.00	5.03	5.22	7.31	11.71	120.80
875.00	38.47	73.09	5.01	5.20	7.28	10.57	119.79
880.00	38.53	73.19	4.99	5.18	7.25	9.42	118.79
885.00	38.59	73.28	4.97	5.16	7.22	8.27	117.78
890.00	38.65	73.37	4.95	5.13	7.19	7.12	116.76
895.00	38.71	73.47	4.93	5.11	7.16	5.96	115.75
900.00	38.76	73.56	4.90	5.09	7.12	4.81	114.73
905.00	38.82	73.65	4.88	5.07	7.09	3.65	113.71
910.00	38.88	73.74	4.86	5.05	7.06	2.49	112.69
915.00	38.94	73.83	4.84	5.02	7.03	1.33	111.67
920.00	38.99	73.92	4.82	5.00	7.00	0.17	110.64
925.00	39.05	74.01	4.80	4.98	6.98	-0.99	109.61
930.00	39.11	74.10	4.78	4.96	6.95	-2.15	108.58
935.00	39.17	74.19	4.76	4.94	6.92	-3.32	107.55
940.00	39.22	74.28	4.74	4.92	6.89	-4.49	106.52
945.00	39.28	74.37	4.72	4.90	6.86	-5.66	105.48
950.00	39.33	74.46	4.70	4.88	6.83	-6.83	104.44

955.00	39.39	74.55	4.68	4.86	6.80	-8.00	103.40
960.00	39.45	74.63	4.66	4.84	6.78	-9.17	102.36
965.00	39.50	74.72	4.65	4.82	6.75	-10.34	101.32
970.00	39.56	74.81	4.63	4.80	6.72	-11.52	100.27
975.00	39.61	74.89	4.61	4.78	6.70	-12.70	99.22
980.00	39.67	74.98	4.59	4.76	6.67	-13.88	98.17
985.00	39.72	75.07	4.57	4.75	6.64	-15.06	97.12
990.00	39.77	75.15	4.55	4.73	6.62	-16.24	96.07
995.00	39.83	75.24	4.54	4.71	6.59	-17.42	95.01
1000.00	39.88	75.32	4.52	4.69	6.57	-18.60	93.95
1005.00	39.94	75.41	4.50	4.67	6.54	-19.79	92.89
1010.00	39.99	75.49	4.48	4.65	6.52	-20.98	91.83
1015.00	40.04	75.57	4.47	4.64	6.49	-22.16	90.77
1020.00	40.10	75.66	4.45	4.62	6.47	-23.35	89.71
1025.00	40.15	75.74	4.43	4.60	6.44	-24.54	88.64
1030.00	40.20	75.82	4.42	4.58	6.42	-25.74	87.57
1035.00	40.25	75.90	4.40	4.57	6.39	-26.93	86.50
1040.00	40.31	75.99	4.38	4.55	6.37	-28.12	85.43
1045.00	40.36	76.07	4.37	4.53	6.35	-29.32	84.36
1050.00	40.41	76.15	4.35	4.52	6.32	-30.51	83.28
1055.00	40.46	76.23	4.34	4.50	6.30	-31.71	82.20
1060.00	40.51	76.31	4.32	4.48	6.28	-32.91	81.12
1065.00	40.57	76.39	4.30	4.47	6.25	-34.11	80.04
1070.00	40.62	76.47	4.29	4.45	6.23	-35.31	78.96
1075.00	40.67	76.55	4.27	4.43	6.21	-36.52	77.88
1080.00	40.72	76.63	4.26	4.42	6.19	-37.72	76.79
1085.00	40.77	76.71	4.24	4.40	6.16	-38.92	75.71
1090.00	40.82	76.79	4.23	4.39	6.14	-40.13	74.62
1095.00	40.87	76.87	4.21	4.37	6.12	-41.34	73.53
1100.00	40.92	76.94	4.20	4.36	6.10	-42.54	72.44
1105.00	40.97	77.02	4.18	4.34	6.08	-43.75	71.34
1110.00	41.02	77.10	4.17	4.32	6.05	-44.96	70.25
1115.00	41.07	77.18	4.15	4.31	6.03	-46.18	69.15
1120.00	41.12	77.25	4.14	4.29	6.01	-47.39	68.06
1125.00	41.17	77.33	4.12	4.28	5.99	-48.60	66.96
1130.00	41.22	77.41	4.11	4.27	5.97	-49.82	65.86
1135.00	41.27	77.48	4.10	4.25	5.95	-51.03	64.76
1140.00	41.32	77.56	4.08	4.24	5.93	-52.25	63.65
1145.00	41.37	77.63	4.07	4.22	5.91	-53.47	62.55
1150.00	41.42	77.71	4.05	4.21	5.89	-54.69	61.44
1155.00	41.46	77.78	4.04	4.19	5.87	-55.90	60.33
1160.00	41.51	77.86	4.03	4.18	5.85	-57.13	59.22
1165.00	41.56	77.93	4.01	4.17	5.83	-58.35	58.11
1170.00	41.61	78.01	4.00	4.15	5.81	-59.57	57.00
1175.00	41.66	78.08	3.99	4.14	5.79	-60.79	55.89
1180.00	41.70	78.15	3.97	4.12	5.77	-62.02	54.77
1185.00	41.75	78.23	3.96	4.11	5.75	-63.24	53.66
1190.00	41.80	78.30	3.95	4.10	5.74	-64.47	52.54
1195.00	41.85	78.37	3.94	4.08	5.72	-65.70	51.42
1200.00	41.89	78.45	3.92	4.07	5.70	-66.93	50.30

1205.00	41.94	78.52	3.91	4.06	5.68	-68.16	49.18
1210.00	41.99	78.59	3.90	4.04	5.66	-69.39	48.06
1215.00	42.03	78.66	3.88	4.03	5.64	-70.62	46.93
1220.00	42.08	78.73	3.87	4.02	5.63	-71.85	45.81
1225.00	42.13	78.81	3.86	4.01	5.61	-73.08	44.68
1230.00	42.17	78.88	3.85	3.99	5.59	-74.32	43.55
1235.00	42.22	78.95	3.84	3.98	5.57	-75.55	42.42
1240.00	42.26	79.02	3.82	3.97	5.56	-76.79	41.29
1245.00	42.31	79.09	3.81	3.96	5.54	-78.03	40.16
1250.00	42.36	79.16	3.80	3.94	5.52	-79.26	39.03
1255.00	42.40	79.23	3.79	3.93	5.50	-80.50	37.90
1260.00	42.45	79.30	3.78	3.92	5.49	-81.74	36.76
1265.00	42.49	79.37	3.76	3.91	5.47	-82.98	35.62
1270.00	42.54	79.44	3.75	3.89	5.45	-84.22	34.49
1275.00	42.58	79.51	3.74	3.88	5.44	-85.47	33.35
1280.00	42.63	79.58	3.73	3.87	5.42	-86.71	32.21
1285.00	42.67	79.64	3.72	3.86	5.40	-87.95	31.07
1290.00	42.72	79.71	3.71	3.85	5.39	-89.20	29.92
1295.00	42.76	79.78	3.70	3.84	5.37	-90.44	28.78
1300.00	42.81	79.85	3.69	3.82	5.35	-91.69	27.64
1305.00	42.85	79.92	3.67	3.81	5.34	-92.93	26.49
1310.00	42.89	79.98	3.66	3.80	5.32	-94.18	25.34
1315.00	42.94	80.05	3.65	3.79	5.31	-95.43	24.20
1320.00	42.98	80.12	3.64	3.78	5.29	-96.68	23.05
1325.00	43.03	80.19	3.63	3.77	5.28	-97.93	21.90
1330.00	43.07	80.25	3.62	3.76	5.26	-99.18	20.75
1335.00	43.11	80.32	3.61	3.75	5.24	-100.43	19.59
1340.00	43.16	80.39	3.60	3.74	5.23	-101.69	18.44
1345.00	43.20	80.45	3.59	3.72	5.21	-102.94	17.29
1350.00	43.24	80.52	3.58	3.71	5.20	-104.19	16.13
1355.00	43.29	80.58	3.57	3.70	5.18	-105.45	14.97
1360.00	43.33	80.65	3.56	3.69	5.17	-106.70	13.81
1365.00	43.37	80.71	3.55	3.68	5.15	-107.96	12.66
1370.00	43.41	80.78	3.54	3.67	5.14	-109.22	11.50
1375.00	43.46	80.84	3.53	3.66	5.13	-110.47	10.34
1380.00	43.50	80.91	3.52	3.65	5.11	-111.73	9.17
1385.00	43.54	80.97	3.51	3.64	5.10	-112.99	8.01
1390.00	43.58	81.04	3.50	3.63	5.08	-114.25	6.85
1395.00	43.63	81.10	3.49	3.62	5.07	-115.51	5.68
1400.00	43.67	81.16	3.48	3.61	5.05	-116.77	4.52
1405.00	43.71	81.23	3.47	3.60	5.04	-118.04	3.35
1410.00	43.75	81.29	3.46	3.59	5.03	-119.30	2.18
1415.00	43.79	81.35	3.45	3.58	5.01	-120.56	1.01
1420.00	43.84	81.42	3.44	3.57	5.00	-121.83	-0.16
1425.00	43.88	81.48	3.43	3.56	4.98	-123.09	-1.33
1430.00	43.92	81.54	3.42	3.55	4.97	-124.36	-2.50
1435.00	43.96	81.61	3.41	3.54	4.96	-125.62	-3.67
1440.00	44.00	81.67	3.40	3.53	4.94	-126.89	-4.85
1445.00	44.04	81.73	3.39	3.52	4.93	-128.16	-6.02
1450.00	44.08	81.79	3.38	3.51	4.92	-129.43	-7.20

1455.00	44.12	81.85	3.38	3.50	4.90	-130.70	-8.37
1460.00	44.16	81.92	3.37	3.49	4.89	-131.97	-9.55
1465.00	44.20	81.98	3.36	3.48	4.88	-133.24	-10.73
1470.00	44.25	82.04	3.35	3.47	4.86	-134.51	-11.91
1475.00	44.29	82.10	3.34	3.47	4.85	-135.78	-13.09
1480.00	44.33	82.16	3.33	3.46	4.84	-137.05	-14.27
1485.00	44.37	82.22	3.32	3.45	4.83	-138.32	-15.45
1490.00	44.41	82.28	3.31	3.44	4.81	-139.60	-16.64
1495.00	44.45	82.34	3.30	3.43	4.80	-140.87	-17.82
1500.00	44.49	82.40	3.30	3.42	4.79	-142.15	-19.00
1505.00	44.53	82.46	3.29	3.41	4.78	-143.42	-20.19
1510.00	44.57	82.52	3.28	3.40	4.76	-144.70	-21.38
1515.00	44.61	82.58	3.27	3.39	4.75	-145.97	-22.56
1520.00	44.65	82.64	3.26	3.39	4.74	-147.25	-23.75
1525.00	44.68	82.70	3.25	3.38	4.73	-148.53	-24.94
1530.00	44.72	82.76	3.25	3.37	4.72	-149.81	-26.13
1535.00	44.76	82.82	3.24	3.36	4.70	-151.09	-27.32
1540.00	44.80	82.88	3.23	3.35	4.69	-152.37	-28.51
1545.00	44.84	82.94	3.22	3.34	4.68	-153.65	-29.71
1550.00	44.88	83.00	3.21	3.33	4.67	-154.93	-30.90
1555.00	44.92	83.06	3.20	3.33	4.66	-156.21	-32.09
1560.00	44.96	83.11	3.20	3.32	4.64	-157.49	-33.29
1565.00	45.00	83.17	3.19	3.31	4.63	-158.77	-34.48
1570.00	45.04	83.23	3.18	3.30	4.62	-160.06	-35.68
1575.00	45.07	83.29	3.17	3.29	4.61	-161.34	-36.88
1580.00	45.11	83.35	3.17	3.28	4.60	-162.63	-38.08
1585.00	45.15	83.40	3.16	3.28	4.59	-163.91	-39.28
1590.00	45.19	83.46	3.15	3.27	4.58	-165.20	-40.48
1595.00	45.23	83.52	3.14	3.26	4.56	-166.48	-41.68
1600.00	45.27	83.57	3.13	3.25	4.55	-167.77	-42.88
1605.00	45.30	83.63	3.13	3.24	4.54	-169.06	-44.08
1610.00	45.34	83.69	3.12	3.24	4.53	-170.34	-45.28
1615.00	45.38	83.75	3.11	3.23	4.52	-171.63	-46.49
1620.00	45.42	83.80	3.10	3.22	4.51	-172.92	-47.69
1625.00	45.45	83.86	3.10	3.21	4.50	-174.21	-48.90
1630.00	45.49	83.91	3.09	3.21	4.49	-175.50	-50.10
1635.00	45.53	83.97	3.08	3.20	4.48	-176.79	-51.31
1640.00	45.57	84.03	3.07	3.19	4.47	-178.08	-52.52
1645.00	45.60	84.08	3.07	3.18	4.46	-179.37	-53.72
1650.00	45.64	84.14	3.06	3.18	4.45	-180.67	-54.93
1655.00	45.68	84.19	3.05	3.17	4.43	-181.96	-56.14
1660.00	45.72	84.25	3.05	3.16	4.42	-183.25	-57.35
1665.00	45.75	84.30	3.04	3.15	4.41	-184.55	-58.56
1670.00	45.79	84.36	3.03	3.15	4.40	-185.84	-59.78
1675.00	45.83	84.41	3.02	3.14	4.39	-187.13	-60.99
1680.00	45.86	84.47	3.02	3.13	4.38	-188.43	-62.20
1685.00	45.90	84.52	3.01	3.12	4.37	-189.73	-63.42
1690.00	45.94	84.58	3.00	3.12	4.36	-191.02	-64.63
1695.00	45.97	84.63	3.00	3.11	4.35	-192.32	-65.85
1700.00	46.01	84.69	2.99	3.10	4.34	-193.62	-67.06

1705.00	46.05	84.74	2.98	3.09	4.33	-194.91	-68.28
1710.00	46.08	84.79	2.98	3.09	4.32	-196.21	-69.50
1715.00	46.12	84.85	2.97	3.08	4.31	-197.51	-70.71
1720.00	46.15	84.90	2.96	3.07	4.30	-198.81	-71.93
1725.00	46.19	84.96	2.95	3.07	4.29	-200.11	-73.15
1730.00	46.23	85.01	2.95	3.06	4.28	-201.41	-74.37
1735.00	46.26	85.06	2.94	3.05	4.27	-202.71	-75.59
1740.00	46.30	85.12	2.94	3.05	4.26	-204.01	-76.82
1745.00	46.33	85.17	2.93	3.04	4.25	-205.31	-78.04
1750.00	46.37	85.22	2.92	3.03	4.25	-206.62	-79.26
1755.00	46.40	85.28	2.92	3.03	4.24	-207.92	-80.48
1760.00	46.44	85.33	2.91	3.02	4.23	-209.22	-81.71
1765.00	46.47	85.38	2.90	3.01	4.22	-210.52	-82.93
1770.00	46.51	85.43	2.90	3.01	4.21	-211.83	-84.16
1775.00	46.55	85.49	2.89	3.00	4.20	-213.13	-85.39
1780.00	46.58	85.54	2.88	2.99	4.19	-214.44	-86.61
1785.00	46.62	85.59	2.88	2.99	4.18	-215.74	-87.84
1790.00	46.65	85.64	2.87	2.98	4.17	-217.05	-89.07
1795.00	46.69	85.69	2.86	2.97	4.16	-218.36	-90.30
1800.00	46.72	85.75	2.86	2.97	4.15	-219.66	-91.53
1805.00	46.76	85.80	2.85	2.96	4.14	-220.97	-92.76
1810.00	46.79	85.85	2.85	2.95	4.13	-222.28	-93.99
1815.00	46.83	85.90	2.84	2.95	4.13	-223.58	-95.22
1820.00	46.86	85.95	2.83	2.94	4.12	-224.89	-96.45
1825.00	46.89	86.00	2.83	2.93	4.11	-226.20	-97.68
1830.00	46.93	86.05	2.82	2.93	4.10	-227.51	-98.92
1835.00	46.96	86.10	2.82	2.92	4.09	-228.82	-100.15
1840.00	47.00	86.15	2.81	2.92	4.08	-230.13	-101.38
1845.00	47.03	86.21	2.80	2.91	4.07	-231.44	-102.62
1850.00	47.07	86.26	2.80	2.90	4.06	-232.75	-103.86
1855.00	47.10	86.31	2.79	2.90	4.06	-234.07	-105.09
1860.00	47.13	86.36	2.79	2.89	4.05	-235.38	-106.33
1865.00	47.17	86.41	2.78	2.88	4.04	-236.69	-107.57
1870.00	47.20	86.46	2.77	2.88	4.03	-238.00	-108.80
1875.00	47.24	86.51	2.77	2.87	4.02	-239.32	-110.04
1880.00	47.27	86.56	2.76	2.87	4.01	-240.63	-111.28
1885.00	47.30	86.61	2.76	2.86	4.01	-241.94	-112.52
1890.00	47.34	86.66	2.75	2.85	4.00	-243.26	-113.76
1895.00	47.37	86.71	2.75	2.85	3.99	-244.57	-115.00
1900.00	47.40	86.76	2.74	2.84	3.98	-245.89	-116.24
1905.00	47.44	86.80	2.73	2.84	3.97	-247.20	-117.49
1910.00	47.47	86.85	2.73	2.83	3.96	-248.52	-118.73
1915.00	47.50	86.90	2.72	2.83	3.96	-249.84	-119.97
1920.00	47.54	86.95	2.72	2.82	3.95	-251.15	-121.22
1925.00	47.57	87.00	2.71	2.81	3.94	-252.47	-122.46
1930.00	47.60	87.05	2.71	2.81	3.93	-253.79	-123.70
1935.00	47.64	87.10	2.70	2.80	3.92	-255.11	-124.95
1940.00	47.67	87.15	2.70	2.80	3.92	-256.43	-126.20
1945.00	47.70	87.20	2.69	2.79	3.91	-257.74	-127.44
1950.00	47.74	87.24	2.68	2.79	3.90	-259.06	-128.69

1955.00	47.77	87.29	2.68	2.78	3.89	-260.38	-129.94
1960.00	47.80	87.34	2.67	2.77	3.88	-261.70	-131.19
1965.00	47.83	87.39	2.67	2.77	3.88	-263.02	-132.43
1970.00	47.87	87.44	2.66	2.76	3.87	-264.34	-133.68
1975.00	47.90	87.48	2.66	2.76	3.86	-265.67	-134.93
1980.00	47.93	87.53	2.65	2.75	3.85	-266.99	-136.18
1985.00	47.96	87.58	2.65	2.75	3.85	-268.31	-137.43
1990.00	48.00	87.63	2.64	2.74	3.84	-269.63	-138.69
1995.00	48.03	87.67	2.64	2.74	3.83	-270.95	-139.94
2000.00	48.06	87.72	2.63	2.73	3.82	-272.28	-141.19
2005.00	48.09	87.77	2.63	2.73	3.82	-273.60	-142.44
2010.00	48.13	87.82	2.62	2.72	3.81	-274.93	-143.70
2015.00	48.16	87.86	2.62	2.72	3.80	-276.25	-144.95
2020.00	48.19	87.91	2.61	2.71	3.79	-277.57	-146.20
2025.00	48.22	87.96	2.61	2.70	3.79	-278.90	-147.46
2030.00	48.25	88.00	2.60	2.70	3.78	-280.22	-148.71
2035.00	48.29	88.05	2.60	2.69	3.77	-281.55	-149.97
2040.00	48.32	88.10	2.59	2.69	3.76	-282.88	-151.23
2045.00	48.35	88.14	2.59	2.68	3.76	-284.20	-152.48
2050.00	48.38	88.19	2.58	2.68	3.75	-285.53	-153.74
2055.00	48.41	88.24	2.58	2.67	3.74	-286.86	-155.00
2060.00	48.44	88.28	2.57	2.67	3.74	-288.18	-156.26
2065.00	48.48	88.33	2.57	2.66	3.73	-289.51	-157.52
2070.00	48.51	88.37	2.56	2.66	3.72	-290.84	-158.78
2075.00	48.54	88.42	2.56	2.65	3.71	-292.17	-160.04
2080.00	48.57	88.47	2.55	2.65	3.71	-293.50	-161.30
2085.00	48.60	88.51	2.55	2.64	3.70	-294.83	-162.56
2090.00	48.63	88.56	2.54	2.64	3.69	-296.16	-163.82
2095.00	48.66	88.60	2.54	2.63	3.69	-297.49	-165.08
2100.00	48.70	88.65	2.53	2.63	3.68	-298.82	-166.34
2105.00	48.73	88.69	2.53	2.62	3.67	-300.15	-167.61
2110.00	48.76	88.74	2.52	2.62	3.67	-301.48	-168.87
2115.00	48.79	88.78	2.52	2.61	3.66	-302.81	-170.13
2120.00	48.82	88.83	2.51	2.61	3.65	-304.14	-171.40
2125.00	48.85	88.87	2.51	2.60	3.65	-305.47	-172.66
2130.00	48.88	88.92	2.50	2.60	3.64	-306.81	-173.93
2135.00	48.91	88.96	2.50	2.59	3.63	-308.14	-175.19
2140.00	48.94	89.01	2.50	2.59	3.63	-309.47	-176.46
2145.00	48.97	89.05	2.49	2.59	3.62	-310.80	-177.73
2150.00	49.00	89.10	2.49	2.58	3.61	-312.14	-178.99
2155.00	49.03	89.14	2.48	2.58	3.61	-313.47	-180.26
2160.00	49.06	89.19	2.48	2.57	3.60	-314.81	-181.53
2165.00	49.10	89.23	2.47	2.57	3.59	-316.14	-182.80
2170.00	49.13	89.27	2.47	2.56	3.59	-317.47	-184.06
2175.00	49.16	89.32	2.46	2.56	3.58	-318.81	-185.33
2180.00	49.19	89.36	2.46	2.55	3.57	-320.15	-186.60
2185.00	49.22	89.41	2.46	2.55	3.57	-321.48	-187.87
2190.00	49.25	89.45	2.45	2.54	3.56	-322.82	-189.14
2195.00	49.28	89.49	2.45	2.54	3.55	-324.15	-190.42
2200.00	49.31	89.54	2.44	2.53	3.55	-325.49	-191.69

2205.00	49.34	89.58	2.44	2.53	3.54	-326.83	-192.96
2210.00	49.37	89.63	2.43	2.53	3.54	-328.17	-194.23
2215.00	49.40	89.67	2.43	2.52	3.53	-329.50	-195.50
2220.00	49.43	89.71	2.42	2.52	3.52	-330.84	-196.78
2225.00	49.46	89.76	2.42	2.51	3.52	-332.18	-198.05
2230.00	49.49	89.80	2.42	2.51	3.51	-333.52	-199.33
2235.00	49.52	89.84	2.41	2.50	3.50	-334.86	-200.60
2240.00	49.55	89.88	2.41	2.50	3.50	-336.20	-201.87
2245.00	49.58	89.93	2.40	2.49	3.49	-337.54	-203.15
2250.00	49.61	89.97	2.40	2.49	3.49	-338.88	-204.43
2255.00	49.63	90.01	2.40	2.49	3.48	-340.22	-205.70
2260.00	49.66	90.06	2.39	2.48	3.47	-341.56	-206.98
2265.00	49.69	90.10	2.39	2.48	3.47	-342.90	-208.26
2270.00	49.72	90.14	2.38	2.47	3.46	-344.24	-209.53
2275.00	49.75	90.18	2.38	2.47	3.46	-345.58	-210.81
2280.00	49.78	90.23	2.37	2.46	3.45	-346.92	-212.09
2285.00	49.81	90.27	2.37	2.46	3.44	-348.26	-213.37
2290.00	49.84	90.31	2.37	2.46	3.44	-349.60	-214.65
2295.00	49.87	90.35	2.36	2.45	3.43	-350.95	-215.93
2300.00	49.90	90.40	2.36	2.45	3.43	-352.29	-217.21
2305.00	49.93	90.44	2.35	2.44	3.42	-353.63	-218.49
2310.00	49.96	90.48	2.35	2.44	3.41	-354.98	-219.77
2315.00	49.99	90.52	2.35	2.43	3.41	-356.32	-221.05
2320.00	50.01	90.56	2.34	2.43	3.40	-357.66	-222.33
2325.00	50.04	90.60	2.34	2.43	3.40	-359.01	-223.61
2330.00	50.07	90.65	2.33	2.42	3.39	-360.35	-224.89
2335.00	50.10	90.69	2.33	2.42	3.39	-361.70	-226.18
2340.00	50.13	90.73	2.33	2.41	3.38	-363.04	-227.46
2345.00	50.16	90.77	2.32	2.41	3.37	-364.39	-228.74
2350.00	50.19	90.81	2.32	2.41	3.37	-365.73	-230.03
2355.00	50.22	90.85	2.31	2.40	3.36	-367.08	-231.31
2360.00	50.24	90.89	2.31	2.40	3.36	-368.43	-232.60
2365.00	50.27	90.94	2.31	2.39	3.35	-369.77	-233.88
2370.00	50.30	90.98	2.30	2.39	3.35	-371.12	-235.17
2375.00	50.33	91.02	2.30	2.39	3.34	-372.47	-236.45
2380.00	50.36	91.06	2.30	2.38	3.34	-373.81	-237.74
2385.00	50.39	91.10	2.29	2.38	3.33	-375.16	-239.02
2390.00	50.41	91.14	2.29	2.37	3.32	-376.51	-240.31
2395.00	50.44	91.18	2.28	2.37	3.32	-377.86	-241.60
2400.00	50.47	91.22	2.28	2.37	3.31	-379.20	-242.89
2405.00	50.50	91.26	2.28	2.36	3.31	-380.55	-244.17
2410.00	50.53	91.30	2.27	2.36	3.30	-381.90	-245.46
2415.00	50.56	91.34	2.27	2.36	3.30	-383.25	-246.75
2420.00	50.58	91.38	2.27	2.35	3.29	-384.60	-248.04
2425.00	50.61	91.42	2.26	2.35	3.29	-385.95	-249.33
2430.00	50.64	91.46	2.26	2.34	3.28	-387.30	-250.62
2435.00	50.67	91.50	2.25	2.34	3.28	-388.65	-251.91
2440.00	50.70	91.54	2.25	2.34	3.27	-390.00	-253.20
2445.00	50.72	91.58	2.25	2.33	3.27	-391.35	-254.49
2450.00	50.75	91.62	2.24	2.33	3.26	-392.70	-255.78

2455.00	50.78	91.66	2.24	2.32	3.25	-394.05	-257.07
2460.00	50.81	91.70	2.24	2.32	3.25	-395.40	-258.37
2465.00	50.83	91.74	2.23	2.32	3.24	-396.76	-259.66
2470.00	50.86	91.78	2.23	2.31	3.24	-398.11	-260.95
2475.00	50.89	91.82	2.23	2.31	3.23	-399.46	-262.24
2480.00	50.92	91.86	2.22	2.31	3.23	-400.81	-263.54
2485.00	50.94	91.90	2.22	2.30	3.22	-402.17	-264.83
2490.00	50.97	91.94	2.22	2.30	3.22	-403.52	-266.13
2495.00	51.00	91.98	2.21	2.30	3.21	-404.87	-267.42
2500.00	51.03	92.02	2.21	2.29	3.21	-406.23	-268.72
2505.00	51.05	92.06	2.20	2.29	3.20	-407.58	-270.01
2510.00	51.08	92.10	2.20	2.28	3.20	-408.93	-271.31
2515.00	51.11	92.14	2.20	2.28	3.19	-410.29	-272.60
2520.00	51.14	92.17	2.19	2.28	3.19	-411.64	-273.90
2525.00	51.16	92.21	2.19	2.27	3.18	-413.00	-275.20
2530.00	51.19	92.25	2.19	2.27	3.18	-414.35	-276.49
2535.00	51.22	92.29	2.18	2.27	3.17	-415.71	-277.79
2540.00	51.24	92.33	2.18	2.26	3.17	-417.06	-279.09
2545.00	51.27	92.37	2.18	2.26	3.16	-418.42	-280.38
2550.00	51.30	92.41	2.17	2.26	3.16	-419.77	-281.68
2555.00	51.33	92.45	2.17	2.25	3.15	-421.13	-282.98
2560.00	51.35	92.48	2.17	2.25	3.15	-422.49	-284.28
2565.00	51.38	92.52	2.16	2.25	3.14	-423.84	-285.58
2570.00	51.41	92.56	2.16	2.24	3.14	-425.20	-286.88
2575.00	51.43	92.60	2.16	2.24	3.13	-426.56	-288.18
2580.00	51.46	92.64	2.15	2.24	3.13	-427.91	-289.48
2585.00	51.49	92.68	2.15	2.23	3.13	-429.27	-290.78
2590.00	51.51	92.71	2.15	2.23	3.12	-430.63	-292.08
2595.00	51.54	92.75	2.14	2.23	3.12	-431.99	-293.38
2600.00	51.57	92.79	2.14	2.22	3.11	-433.35	-294.68
2605.00	51.59	92.83	2.14	2.22	3.11	-434.70	-295.99
2610.00	51.62	92.86	2.13	2.22	3.10	-436.06	-297.29
2615.00	51.65	92.90	2.13	2.21	3.10	-437.42	-298.59
2620.00	51.67	92.94	2.13	2.21	3.09	-438.78	-299.89
2625.00	51.70	92.98	2.13	2.21	3.09	-440.14	-301.20
2630.00	51.73	93.02	2.12	2.20	3.08	-441.50	-302.50
2635.00	51.75	93.05	2.12	2.20	3.08	-442.86	-303.80
2640.00	51.78	93.09	2.12	2.20	3.07	-444.22	-305.11
2645.00	51.80	93.13	2.11	2.19	3.07	-445.58	-306.41
2650.00	51.83	93.17	2.11	2.19	3.06	-446.94	-307.72
2655.00	51.86	93.20	2.11	2.19	3.06	-448.30	-309.02
2660.00	51.88	93.24	2.10	2.18	3.06	-449.66	-310.33
2665.00	51.91	93.28	2.10	2.18	3.05	-451.02	-311.63
2670.00	51.94	93.31	2.10	2.18	3.05	-452.38	-312.94
2675.00	51.96	93.35	2.09	2.17	3.04	-453.75	-314.24
2680.00	51.99	93.39	2.09	2.17	3.04	-455.11	-315.55
2685.00	52.01	93.43	2.09	2.17	3.03	-456.47	-316.86
2690.00	52.04	93.46	2.08	2.16	3.03	-457.83	-318.16
2695.00	52.07	93.50	2.08	2.16	3.02	-459.19	-319.47
2700.00	52.09	93.54	2.08	2.16	3.02	-460.56	-320.78

2705.00	52.12	93.57	2.08	2.15	3.02	-461.92	-322.09
2710.00	52.14	93.61	2.07	2.15	3.01	-463.28	-323.40
2715.00	52.17	93.65	2.07	2.15	3.01	-464.65	-324.71
2720.00	52.19	93.68	2.07	2.14	3.00	-466.01	-326.01
2725.00	52.22	93.72	2.06	2.14	3.00	-467.37	-327.32
2730.00	52.25	93.75	2.06	2.14	2.99	-468.74	-328.63
2735.00	52.27	93.79	2.06	2.14	2.99	-470.10	-329.94
2740.00	52.30	93.83	2.05	2.13	2.99	-471.47	-331.25
2745.00	52.32	93.86	2.05	2.13	2.98	-472.83	-332.56
2750.00	52.35	93.90	2.05	2.13	2.98	-474.20	-333.87
2755.00	52.37	93.94	2.05	2.12	2.97	-475.56	-335.19
2760.00	52.40	93.97	2.04	2.12	2.97	-476.93	-336.50
2765.00	52.42	94.01	2.04	2.12	2.96	-478.29	-337.81
2770.00	52.45	94.04	2.04	2.11	2.96	-479.66	-339.12
2775.00	52.48	94.08	2.03	2.11	2.96	-481.02	-340.43
2780.00	52.50	94.12	2.03	2.11	2.95	-482.39	-341.74
2785.00	52.53	94.15	2.03	2.10	2.95	-483.76	-343.06
2790.00	52.55	94.19	2.03	2.10	2.94	-485.12	-344.37
2795.00	52.58	94.22	2.02	2.10	2.94	-486.49	-345.68
2800.00	52.60	94.26	2.02	2.10	2.93	-487.86	-347.00
2805.00	52.63	94.29	2.02	2.09	2.93	-489.22	-348.31
2810.00	52.65	94.33	2.01	2.09	2.93	-490.59	-349.63
2815.00	52.68	94.37	2.01	2.09	2.92	-491.96	-350.94
2820.00	52.70	94.40	2.01	2.08	2.92	-493.32	-352.25
2825.00	52.73	94.44	2.01	2.08	2.91	-494.69	-353.57
2830.00	52.75	94.47	2.00	2.08	2.91	-496.06	-354.88
2835.00	52.78	94.51	2.00	2.08	2.91	-497.43	-356.20
2840.00	52.80	94.54	2.00	2.07	2.90	-498.80	-357.52
2845.00	52.83	94.58	1.99	2.07	2.90	-500.17	-358.83
2850.00	52.85	94.61	1.99	2.07	2.89	-501.53	-360.15
2855.00	52.88	94.65	1.99	2.06	2.89	-502.90	-361.47
2860.00	52.90	94.68	1.99	2.06	2.89	-504.27	-362.78
2865.00	52.93	94.72	1.98	2.06	2.88	-505.64	-364.10
2870.00	52.95	94.75	1.98	2.06	2.88	-507.01	-365.42
2875.00	52.98	94.79	1.98	2.05	2.87	-508.38	-366.73
2880.00	53.00	94.82	1.98	2.05	2.87	-509.75	-368.05

Notes to User

Only values shown blue to be edited

Sheet only for england and wales

In M5-D	J0	J1	J2	Cr	In (MT-D/M5-D)	MT-D/M5-D
2.21	0.1699	0.0028	0.000114	0.205014	0.636605	1.890053
2.39	0.1699	0.0028	0.000114	0.214282	0.665383	1.945235
2.51	0.1644	0.005831	-0.00013	0.215837	0.670212	1.954651
2.60	0.1644	0.005831	-0.00013	0.218417	0.678221	1.97037
2.66	0.1644	0.005831	-0.00013	0.220337	0.684185	1.982156
2.71	0.1644	0.005831	-0.00013	0.22182	0.688788	1.9913
2.76	0.1644	0.005831	-0.00013	0.222992	0.692427	1.998561
2.80	0.1644	0.005831	-0.00013	0.223934	0.695354	2.004418
2.83	0.1644	0.005831	-0.00013	0.224701	0.697734	2.009195
2.86	0.1644	0.005831	-0.00013	0.225329	0.699684	2.013116
2.89	0.1644	0.005831	-0.00013	0.225845	0.701287	2.016345
2.92	0.1644	0.005831	-0.00013	0.226269	0.702605	2.019005
2.94	0.1644	0.005831	-0.00013	0.226617	0.703686	2.021189
2.96	0.1644	0.005831	-0.00013	0.226901	0.704567	2.02297
2.98	0.1644	0.005831	-0.00013	0.22713	0.705277	2.024408
3.00	0.1644	0.005831	-0.00013	0.227311	0.70584	2.025548
3.01	0.1644	0.005831	-0.00013	0.227451	0.706275	2.02643
3.03	0.1644	0.005831	-0.00013	0.227556	0.706599	2.027085
3.05	0.1644	0.005831	-0.00013	0.227628	0.706823	2.02754
3.06	0.1644	0.005831	-0.00013	0.227672	0.70696	2.027818
3.07	0.1644	0.005831	-0.00013	0.227691	0.707019	2.027937
3.09	0.1644	0.005831	-0.00013	0.227687	0.707008	2.027915
3.10	0.1644	0.005831	-0.00013	0.227664	0.706934	2.027766
3.11	0.1644	0.005831	-0.00013	0.227622	0.706804	2.027501
3.12	0.1644	0.005831	-0.00013	0.227563	0.706622	2.027132
3.13	0.1644	0.005831	-0.00013	0.227489	0.706393	2.026668
3.14	0.1644	0.005831	-0.00013	0.227402	0.706121	2.026117
3.15	0.1644	0.005831	-0.00013	0.227302	0.70581	2.025488
3.16	0.1644	0.005831	-0.00013	0.22719	0.705464	2.024786
3.17	0.1644	0.005831	-0.00013	0.227068	0.705084	2.024017
3.18	0.1644	0.005831	-0.00013	0.226936	0.704674	2.023188
3.19	0.1644	0.005831	-0.00013	0.226795	0.704236	2.022302
3.20	0.1644	0.005831	-0.00013	0.226645	0.703772	2.021364
3.21	0.1644	0.005831	-0.00013	0.226488	0.703284	2.020377
3.21	0.1644	0.005831	-0.00013	0.226324	0.702774	2.019346
3.22	0.1644	0.005831	-0.00013	0.226153	0.702243	2.018274
3.23	0.1644	0.005831	-0.00013	0.225975	0.701692	2.017163
3.24	0.1644	0.005831	-0.00013	0.225792	0.701124	2.016017
3.24	0.1644	0.005831	-0.00013	0.225604	0.700538	2.014837

3.25	0.1644	0.005831	-0.00013	0.22541	0.699937	2.013626
3.26	0.1644	0.005831	-0.00013	0.225212	0.699321	2.012386
3.26	0.1644	0.005831	-0.00013	0.225009	0.698691	2.011119
3.27	0.1644	0.005831	-0.00013	0.224802	0.698049	2.009827
3.28	0.1644	0.005831	-0.00013	0.224591	0.697394	2.008511
3.28	0.1644	0.005831	-0.00013	0.224377	0.696727	2.007173
3.29	0.1644	0.005831	-0.00013	0.224158	0.69605	2.005815
3.30	0.1644	0.005831	-0.00013	0.223937	0.695363	2.004437
3.30	0.1644	0.005831	-0.00013	0.223713	0.694666	2.00304
3.31	0.1644	0.005831	-0.00013	0.223485	0.69396	2.001627
3.31	0.1644	0.005831	-0.00013	0.223255	0.693246	2.000198
3.32	0.1644	0.005831	-0.00013	0.223023	0.692524	1.998754
3.32	0.1644	0.005831	-0.00013	0.222788	0.691794	1.997296
3.33	0.1644	0.005831	-0.00013	0.222551	0.691057	1.995825
3.33	0.1644	0.005831	-0.00013	0.222311	0.690314	1.994341
3.34	0.1644	0.005831	-0.00013	0.222069	0.689564	1.992846
3.34	0.1644	0.005831	-0.00013	0.221826	0.688807	1.991339
3.35	0.1644	0.005831	-0.00013	0.221581	0.688046	1.989823
3.35	0.1644	0.005831	-0.00013	0.221334	0.687279	1.988297
3.36	0.1644	0.005831	-0.00013	0.221085	0.686506	1.986762
3.36	0.1644	0.005831	-0.00013	0.220835	0.685729	1.985219
3.37	0.1644	0.005831	-0.00013	0.220583	0.684947	1.983667
3.37	0.1644	0.005831	-0.00013	0.22033	0.684161	1.982109
3.38	0.1644	0.005831	-0.00013	0.220075	0.683371	1.980543
3.38	0.1644	0.005831	-0.00013	0.219819	0.682577	1.978971
3.38	0.1644	0.005831	-0.00013	0.219563	0.681779	1.977393
3.39	0.1644	0.005831	-0.00013	0.219304	0.680978	1.975809
3.39	0.1644	0.005831	-0.00013	0.219045	0.680173	1.974219
3.40	0.1644	0.005831	-0.00013	0.218785	0.679365	1.972625
3.40	0.1644	0.005831	-0.00013	0.218524	0.678554	1.971026
3.40	0.1644	0.005831	-0.00013	0.218262	0.677741	1.969423
3.41	0.1644	0.005831	-0.00013	0.217999	0.676925	1.967816
3.41	0.1644	0.005831	-0.00013	0.217735	0.676106	1.966206
3.42	0.1644	0.005831	-0.00013	0.217471	0.675284	1.964592
3.42	0.1644	0.005831	-0.00013	0.217206	0.674461	1.962974
3.42	0.1644	0.005831	-0.00013	0.21694	0.673635	1.961354
3.43	0.1644	0.005831	-0.00013	0.216673	0.672807	1.959731
3.43	0.1644	0.005831	-0.00013	0.216406	0.671978	1.958106
3.43	0.1644	0.005831	-0.00013	0.216138	0.671146	1.956478
3.44	0.2644	-0.00162	3.15E-06	0.217046	0.673965	1.962001
3.44	0.2644	-0.00162	3.15E-06	0.216895	0.673496	1.961081
3.44	0.2644	-0.00162	3.15E-06	0.216745	0.673031	1.960169
3.45	0.2644	-0.00162	3.15E-06	0.216597	0.672571	1.959267
3.45	0.2644	-0.00162	3.15E-06	0.21645	0.672115	1.958374
3.45	0.2644	-0.00162	3.15E-06	0.216305	0.671663	1.95749
3.46	0.2644	-0.00162	3.15E-06	0.216161	0.671215	1.956614
3.46	0.2644	-0.00162	3.15E-06	0.216018	0.670772	1.955746
3.46	0.2644	-0.00162	3.15E-06	0.215876	0.670332	1.954887
3.47	0.2644	-0.00162	3.15E-06	0.215736	0.669897	1.954035
3.47	0.2644	-0.00162	3.15E-06	0.215597	0.669465	1.953192

3.47	0.2644	-0.00162	3.15E-06	0.215459	0.669037	1.952356
3.48	0.2644	-0.00162	3.15E-06	0.215322	0.668613	1.951528
3.48	0.2644	-0.00162	3.15E-06	0.215187	0.668192	1.950708
3.48	0.2644	-0.00162	3.15E-06	0.215053	0.667775	1.949894
3.48	0.2644	-0.00162	3.15E-06	0.214919	0.667362	1.949088
3.49	0.2644	-0.00162	3.15E-06	0.214787	0.666951	1.948289
3.49	0.2644	-0.00162	3.15E-06	0.214656	0.666545	1.947496
3.49	0.2644	-0.00162	3.15E-06	0.214526	0.666141	1.946711
3.50	0.2644	-0.00162	3.15E-06	0.214398	0.665741	1.945931
3.50	0.2644	-0.00162	3.15E-06	0.21427	0.665344	1.945159
3.50	0.2644	-0.00162	3.15E-06	0.214143	0.66495	1.944393
3.50	0.2644	-0.00162	3.15E-06	0.214017	0.664559	1.943633
3.51	0.2644	-0.00162	3.15E-06	0.213892	0.664171	1.942879
3.51	0.2644	-0.00162	3.15E-06	0.213768	0.663786	1.942131
3.51	0.2644	-0.00162	3.15E-06	0.213645	0.663404	1.941389
3.51	0.2644	-0.00162	3.15E-06	0.213523	0.663025	1.940653
3.52	0.2644	-0.00162	3.15E-06	0.213402	0.662648	1.939923
3.52	0.2644	-0.00162	3.15E-06	0.213281	0.662275	1.939198
3.52	0.2644	-0.00162	3.15E-06	0.213162	0.661904	1.938479
3.52	0.2644	-0.00162	3.15E-06	0.213043	0.661535	1.937765
3.53	0.2644	-0.00162	3.15E-06	0.212925	0.66117	1.937057
3.53	0.2644	-0.00162	3.15E-06	0.212809	0.660807	1.936354
3.53	0.2644	-0.00162	3.15E-06	0.212692	0.660446	1.935656
3.53	0.2644	-0.00162	3.15E-06	0.212577	0.660088	1.934963
3.54	0.2644	-0.00162	3.15E-06	0.212463	0.659733	1.934276
3.54	0.2644	-0.00162	3.15E-06	0.212349	0.65938	1.933593
3.54	0.2644	-0.00162	3.15E-06	0.212236	0.659029	1.932915
3.54	0.2644	-0.00162	3.15E-06	0.212124	0.658681	1.932242
3.55	0.2644	-0.00162	3.15E-06	0.212013	0.658335	1.931573
3.55	0.2644	-0.00162	3.15E-06	0.211902	0.657991	1.93091
3.55	0.2644	-0.00162	3.15E-06	0.211792	0.65765	1.93025
3.55	0.2644	-0.00162	3.15E-06	0.211683	0.65731	1.929596
3.55	0.2644	-0.00162	3.15E-06	0.211574	0.656973	1.928945
3.56	0.2644	-0.00162	3.15E-06	0.211466	0.656639	1.928299
3.56	0.2644	-0.00162	3.15E-06	0.211359	0.656306	1.927658
3.56	0.2644	-0.00162	3.15E-06	0.211253	0.655975	1.92702
3.56	0.2644	-0.00162	3.15E-06	0.211147	0.655646	1.926387
3.57	0.2644	-0.00162	3.15E-06	0.211042	0.65532	1.925758
3.57	0.2644	-0.00162	3.15E-06	0.210937	0.654995	1.925133
3.57	0.2644	-0.00162	3.15E-06	0.210833	0.654673	1.924512
3.57	0.2644	-0.00162	3.15E-06	0.21073	0.654352	1.923895
3.57	0.2644	-0.00162	3.15E-06	0.210627	0.654033	1.923282
3.58	0.2644	-0.00162	3.15E-06	0.210525	0.653716	1.922673
3.58	0.2644	-0.00162	3.15E-06	0.210424	0.653401	1.922067
3.58	0.2644	-0.00162	3.15E-06	0.210323	0.653088	1.921466
3.58	0.2644	-0.00162	3.15E-06	0.210223	0.652777	1.920868
3.58	0.2644	-0.00162	3.15E-06	0.210123	0.652467	1.920273
3.59	0.2644	-0.00162	3.15E-06	0.210024	0.65216	1.919682
3.59	0.2644	-0.00162	3.15E-06	0.209925	0.651854	1.919095
3.59	0.2644	-0.00162	3.15E-06	0.209827	0.65155	1.918511

3.59	0.2644	-0.00162	3.15E-06	0.20973	0.651247	1.917931
3.59	0.2644	-0.00162	3.15E-06	0.209633	0.650946	1.917354
3.60	0.2644	-0.00162	3.15E-06	0.209537	0.650647	1.916781
3.60	0.2644	-0.00162	3.15E-06	0.209441	0.650349	1.91621
3.60	0.2644	-0.00162	3.15E-06	0.209346	0.650054	1.915643
3.60	0.2644	-0.00162	3.15E-06	0.209251	0.649759	1.91508
3.60	0.2644	-0.00162	3.15E-06	0.209157	0.649467	1.914519
3.60	0.2644	-0.00162	3.15E-06	0.209063	0.649175	1.913962
3.61	0.2644	-0.00162	3.15E-06	0.208969	0.648886	1.913408
3.61	0.2644	-0.00162	3.15E-06	0.208877	0.648598	1.912857
3.61	0.2644	-0.00162	3.15E-06	0.208784	0.648311	1.912309
3.61	0.2644	-0.00162	3.15E-06	0.208693	0.648026	1.911763
3.61	0.2644	-0.00162	3.15E-06	0.208601	0.647742	1.911221
3.62	0.2644	-0.00162	3.15E-06	0.20851	0.64746	1.910682
3.62	0.2644	-0.00162	3.15E-06	0.20842	0.64718	1.910146
3.62	0.2644	-0.00162	3.15E-06	0.20833	0.6469	1.909613
3.62	0.2644	-0.00162	3.15E-06	0.208241	0.646623	1.909082
3.62	0.2644	-0.00162	3.15E-06	0.208152	0.646346	1.908554
3.62	0.2644	-0.00162	3.15E-06	0.208063	0.646071	1.908029
3.63	0.2644	-0.00162	3.15E-06	0.207975	0.645797	1.907507
3.63	0.2644	-0.00162	3.15E-06	0.207887	0.645525	1.906988
3.63	0.2644	-0.00162	3.15E-06	0.2078	0.645254	1.906471
3.63	0.2644	-0.00162	3.15E-06	0.207713	0.644984	1.905957
3.63	0.2644	-0.00162	3.15E-06	0.207627	0.644716	1.905445
3.63	0.2644	-0.00162	3.15E-06	0.20754	0.644449	1.904936
3.64	0.2644	-0.00162	3.15E-06	0.207455	0.644183	1.90443
3.64	0.2644	-0.00162	3.15E-06	0.20737	0.643918	1.903926
3.64	0.2644	-0.00162	3.15E-06	0.207285	0.643655	1.903425
3.64	0.2644	-0.00162	3.15E-06	0.2072	0.643393	1.902926
3.64	0.2644	-0.00162	3.15E-06	0.207116	0.643132	1.902429
3.64	0.2644	-0.00162	3.15E-06	0.207033	0.642872	1.901935
3.65	0.2644	-0.00162	3.15E-06	0.20695	0.642613	1.901444
3.65	0.2644	-0.00162	3.15E-06	0.206867	0.642356	1.900955
3.65	0.2644	-0.00162	3.15E-06	0.206784	0.6421	1.900468
3.65	0.2644	-0.00162	3.15E-06	0.206702	0.641845	1.899983
3.65	0.2644	-0.00162	3.15E-06	0.20662	0.641591	1.899501
3.65	0.2644	-0.00162	3.15E-06	0.206539	0.641338	1.899021
3.65	0.2644	-0.00162	3.15E-06	0.206458	0.641087	1.898543
3.66	0.2644	-0.00162	3.15E-06	0.206377	0.640836	1.898068
3.66	0.2644	-0.00162	3.15E-06	0.206297	0.640587	1.897595
3.66	0.2644	-0.00162	3.15E-06	0.206217	0.640339	1.897124
3.66	0.2644	-0.00162	3.15E-06	0.206137	0.640092	1.896655
3.66	0.2644	-0.00162	3.15E-06	0.206058	0.639846	1.896188
3.66	0.2644	-0.00162	3.15E-06	0.205979	0.6396	1.895723
3.66	0.2644	-0.00162	3.15E-06	0.205901	0.639356	1.895261
3.67	0.2644	-0.00162	3.15E-06	0.205822	0.639113	1.8948
3.67	0.2644	-0.00162	3.15E-06	0.205744	0.638872	1.894342
3.67	0.2644	-0.00162	3.15E-06	0.205667	0.638631	1.893886
3.67	0.2644	-0.00162	3.15E-06	0.20559	0.638391	1.893431
3.67	0.2644	-0.00162	3.15E-06	0.205513	0.638152	1.892979

3.67	0.2644	-0.00162	3.15E-06	0.205436	0.637914	1.892529
3.67	0.2644	-0.00162	3.15E-06	0.20536	0.637677	1.89208
3.68	0.2644	-0.00162	3.15E-06	0.205284	0.637441	1.891634
3.68	0.2644	-0.00162	3.15E-06	0.205208	0.637206	1.891189
3.68	0.2644	-0.00162	3.15E-06	0.205133	0.636972	1.890747
3.68	0.2644	-0.00162	3.15E-06	0.205058	0.636739	1.890306
3.68	0.2644	-0.00162	3.15E-06	0.204983	0.636507	1.889867
3.68	0.2644	-0.00162	3.15E-06	0.204908	0.636275	1.889431
3.68	0.2644	-0.00162	3.15E-06	0.204834	0.636045	1.888995
3.69	0.2644	-0.00162	3.15E-06	0.20476	0.635816	1.888562
3.69	0.2644	-0.00162	3.15E-06	0.204687	0.635587	1.888131
3.69	0.2644	-0.00162	3.15E-06	0.204613	0.63536	1.887701
3.69	0.2644	-0.00162	3.15E-06	0.20454	0.635133	1.887273
3.69	0.2644	-0.00162	3.15E-06	0.204468	0.634907	1.886847
3.69	0.2644	-0.00162	3.15E-06	0.204395	0.634682	1.886423
3.69	0.2644	-0.00162	3.15E-06	0.204323	0.634458	1.886
3.70	0.2644	-0.00162	3.15E-06	0.204251	0.634235	1.885579
3.70	0.2644	-0.00162	3.15E-06	0.20418	0.634013	1.88516
3.70	0.2644	-0.00162	3.15E-06	0.204108	0.633791	1.884742
3.70	0.2644	-0.00162	3.15E-06	0.204037	0.63357	1.884326
3.70	0.2644	-0.00162	3.15E-06	0.203966	0.63335	1.883912
3.70	0.2644	-0.00162	3.15E-06	0.203896	0.633131	1.883499
3.70	0.2644	-0.00162	3.15E-06	0.203826	0.632913	1.883088
3.70	0.2644	-0.00162	3.15E-06	0.203756	0.632696	1.882679
3.71	0.2644	-0.00162	3.15E-06	0.203686	0.632479	1.882271
3.71	0.2644	-0.00162	3.15E-06	0.203616	0.632263	1.881865
3.71	0.2644	-0.00162	3.15E-06	0.203547	0.632048	1.88146
3.71	0.2644	-0.00162	3.15E-06	0.203478	0.631834	1.881057
3.71	0.2644	-0.00162	3.15E-06	0.203409	0.631621	1.880656
3.71	0.2644	-0.00162	3.15E-06	0.203341	0.631408	1.880256
3.71	0.2644	-0.00162	3.15E-06	0.203273	0.631196	1.879857
3.71	0.2644	-0.00162	3.15E-06	0.203205	0.630985	1.87946
3.72	0.2644	-0.00162	3.15E-06	0.203137	0.630774	1.879065
3.72	0.2644	-0.00162	3.15E-06	0.203069	0.630565	1.878671
3.72	0.2644	-0.00162	3.15E-06	0.203002	0.630356	1.878278
3.72	0.2644	-0.00162	3.15E-06	0.202935	0.630147	1.877887
3.72	0.2644	-0.00162	3.15E-06	0.202868	0.62994	1.877498
3.72	0.2644	-0.00162	3.15E-06	0.202802	0.629733	1.87711
3.72	0.2644	-0.00162	3.15E-06	0.202735	0.629527	1.876723
3.72	0.2644	-0.00162	3.15E-06	0.202669	0.629322	1.876338
3.72	0.2644	-0.00162	3.15E-06	0.202603	0.629117	1.875954
3.73	0.2644	-0.00162	3.15E-06	0.202537	0.628913	1.875571
3.73	0.2644	-0.00162	3.15E-06	0.202472	0.62871	1.87519
3.73	0.2644	-0.00162	3.15E-06	0.202407	0.628507	1.87481
3.73	0.2644	-0.00162	3.15E-06	0.202342	0.628306	1.874432
3.73	0.2644	-0.00162	3.15E-06	0.202277	0.628104	1.874055
3.73	0.2644	-0.00162	3.15E-06	0.202212	0.627904	1.873679
3.73	0.2644	-0.00162	3.15E-06	0.202148	0.627704	1.873305
3.73	0.2644	-0.00162	3.15E-06	0.202084	0.627505	1.872932
3.74	0.2644	-0.00162	3.15E-06	0.20202	0.627306	1.87256

3.74	0.2644	-0.00162	3.15E-06	0.201956	0.627109	1.872189
3.74	0.2644	-0.00162	3.15E-06	0.201893	0.626911	1.87182
3.74	0.2644	-0.00162	3.15E-06	0.201829	0.626715	1.871452
3.74	0.2644	-0.00162	3.15E-06	0.201766	0.626519	1.871086
3.74	0.2644	-0.00162	3.15E-06	0.201703	0.626324	1.87072
3.74	0.2644	-0.00162	3.15E-06	0.201641	0.626129	1.870356
3.74	0.2644	-0.00162	3.15E-06	0.201578	0.625935	1.869993
3.74	0.2644	-0.00162	3.15E-06	0.201516	0.625741	1.869632
3.75	0.2644	-0.00162	3.15E-06	0.201454	0.625549	1.869271
3.75	0.2644	-0.00162	3.15E-06	0.201392	0.625356	1.868912
3.75	0.2644	-0.00162	3.15E-06	0.20133	0.625165	1.868554
3.75	0.2644	-0.00162	3.15E-06	0.201269	0.624974	1.868197
3.75	0.2644	-0.00162	3.15E-06	0.201207	0.624783	1.867841
3.75	0.2644	-0.00162	3.15E-06	0.201146	0.624594	1.867487
3.75	0.2644	-0.00162	3.15E-06	0.201085	0.624405	1.867134
3.75	0.2644	-0.00162	3.15E-06	0.201025	0.624216	1.866782
3.75	0.2644	-0.00162	3.15E-06	0.200964	0.624028	1.866431
3.75	0.2644	-0.00162	3.15E-06	0.200904	0.62384	1.866081
3.76	0.2644	-0.00162	3.15E-06	0.200844	0.623654	1.865732
3.76	0.2644	-0.00162	3.15E-06	0.200784	0.623467	1.865385
3.76	0.2644	-0.00162	3.15E-06	0.200724	0.623282	1.865038
3.76	0.2644	-0.00162	3.15E-06	0.200664	0.623096	1.864693
3.76	0.2644	-0.00162	3.15E-06	0.200605	0.622912	1.864349
3.76	0.2644	-0.00162	3.15E-06	0.200545	0.622728	1.864006
3.76	0.2644	-0.00162	3.15E-06	0.200486	0.622544	1.863664
3.76	0.2644	-0.00162	3.15E-06	0.200427	0.622361	1.863323
3.76	0.2644	-0.00162	3.15E-06	0.200369	0.622179	1.862983
3.76	0.2644	-0.00162	3.15E-06	0.20031	0.621997	1.862644
3.77	0.2644	-0.00162	3.15E-06	0.200252	0.621816	1.862306
3.77	0.2644	-0.00162	3.15E-06	0.200194	0.621635	1.86197
3.77	0.2644	-0.00162	3.15E-06	0.200135	0.621455	1.861634
3.77	0.2644	-0.00162	3.15E-06	0.200078	0.621275	1.8613
3.77	0.2644	-0.00162	3.15E-06	0.20002	0.621096	1.860966
3.77	0.2644	-0.00162	3.15E-06	0.199962	0.620917	1.860634
3.77	0.2644	-0.00162	3.15E-06	0.199905	0.620739	1.860302
3.77	0.2644	-0.00162	3.15E-06	0.199848	0.620561	1.859972
3.77	0.2644	-0.00162	3.15E-06	0.199791	0.620384	1.859642
3.77	0.2644	-0.00162	3.15E-06	0.199734	0.620207	1.859314
3.78	0.2644	-0.00162	3.15E-06	0.199677	0.620031	1.858986
3.78	0.2644	-0.00162	3.15E-06	0.19962	0.619856	1.85866
3.78	0.2644	-0.00162	3.15E-06	0.199564	0.61968	1.858334
3.78	0.2644	-0.00162	3.15E-06	0.199508	0.619506	1.85801
3.78	0.2644	-0.00162	3.15E-06	0.199452	0.619332	1.857686
3.78	0.2644	-0.00162	3.15E-06	0.199396	0.619158	1.857363
3.78	0.2644	-0.00162	3.15E-06	0.19934	0.618985	1.857042
3.78	0.2644	-0.00162	3.15E-06	0.199284	0.618812	1.856721
3.78	0.2644	-0.00162	3.15E-06	0.199229	0.61864	1.856401
3.78	0.2644	-0.00162	3.15E-06	0.199174	0.618468	1.856083
3.79	0.2644	-0.00162	3.15E-06	0.199119	0.618297	1.855765
3.79	0.2644	-0.00162	3.15E-06	0.199064	0.618126	1.855448

3.79	0.2644	-0.00162	3.15E-06	0.199009	0.617956	1.855132
3.79	0.2644	-0.00162	3.15E-06	0.198954	0.617786	1.854817
3.79	0.2644	-0.00162	3.15E-06	0.198899	0.617616	1.854502
3.79	0.2644	-0.00162	3.15E-06	0.198845	0.617447	1.854189
3.79	0.2644	-0.00162	3.15E-06	0.198791	0.617279	1.853877
3.79	0.2644	-0.00162	3.15E-06	0.198737	0.617111	1.853565
3.79	0.2644	-0.00162	3.15E-06	0.198683	0.616943	1.853255
3.79	0.2644	-0.00162	3.15E-06	0.198629	0.616776	1.852945
3.79	0.2644	-0.00162	3.15E-06	0.198575	0.616609	1.852636
3.80	0.2644	-0.00162	3.15E-06	0.198522	0.616443	1.852328
3.80	0.2644	-0.00162	3.15E-06	0.198468	0.616277	1.852021
3.80	0.2644	-0.00162	3.15E-06	0.198415	0.616112	1.851715
3.80	0.2644	-0.00162	3.15E-06	0.198362	0.615947	1.851409
3.80	0.2644	-0.00162	3.15E-06	0.198309	0.615783	1.851105
3.80	0.2644	-0.00162	3.15E-06	0.198256	0.615618	1.850801
3.80	0.2644	-0.00162	3.15E-06	0.198203	0.615455	1.850498
3.80	0.2644	-0.00162	3.15E-06	0.198151	0.615292	1.850196
3.80	0.2644	-0.00162	3.15E-06	0.198098	0.615129	1.849895
3.80	0.2644	-0.00162	3.15E-06	0.198046	0.614966	1.849594
3.80	0.2644	-0.00162	3.15E-06	0.197994	0.614804	1.849295
3.80	0.2644	-0.00162	3.15E-06	0.197942	0.614643	1.848996
3.81	0.2644	-0.00162	3.15E-06	0.19789	0.614482	1.848698
3.81	0.2644	-0.00162	3.15E-06	0.197838	0.614321	1.848401
3.81	0.2644	-0.00162	3.15E-06	0.197786	0.614161	1.848105
3.81	0.2644	-0.00162	3.15E-06	0.197735	0.614001	1.847809
3.81	0.2644	-0.00162	3.15E-06	0.197684	0.613841	1.847514
3.81	0.2644	-0.00162	3.15E-06	0.197632	0.613682	1.84722
3.81	0.2644	-0.00162	3.15E-06	0.197581	0.613523	1.846927
3.81	0.2644	-0.00162	3.15E-06	0.19753	0.613365	1.846635
3.81	0.2644	-0.00162	3.15E-06	0.197479	0.613207	1.846343
3.81	0.2644	-0.00162	3.15E-06	0.197429	0.613049	1.846052
3.81	0.2644	-0.00162	3.15E-06	0.197378	0.612892	1.845762
3.82	0.2644	-0.00162	3.15E-06	0.197328	0.612736	1.845473
3.82	0.2644	-0.00162	3.15E-06	0.197277	0.612579	1.845184
3.82	0.2644	-0.00162	3.15E-06	0.197227	0.612423	1.844897
3.82	0.2644	-0.00162	3.15E-06	0.197177	0.612268	1.844609
3.82	0.2644	-0.00162	3.15E-06	0.197127	0.612112	1.844323
3.82	0.2644	-0.00162	3.15E-06	0.197077	0.611958	1.844038
3.82	0.2644	-0.00162	3.15E-06	0.197027	0.611803	1.843753
3.82	0.2644	-0.00162	3.15E-06	0.196978	0.611649	1.843469
3.82	0.2644	-0.00162	3.15E-06	0.196928	0.611495	1.843185
3.82	0.2644	-0.00162	3.15E-06	0.196879	0.611342	1.842903
3.82	0.2644	-0.00162	3.15E-06	0.196829	0.611189	1.842621
3.82	0.2644	-0.00162	3.15E-06	0.19678	0.611036	1.842339
3.82	0.2644	-0.00162	3.15E-06	0.196731	0.610884	1.842059
3.83	0.2644	-0.00162	3.15E-06	0.196682	0.610732	1.841779
3.83	0.2644	-0.00162	3.15E-06	0.196633	0.61058	1.8415
3.83	0.2644	-0.00162	3.15E-06	0.196585	0.610429	1.841222
3.83	0.2644	-0.00162	3.15E-06	0.196536	0.610278	1.840944
3.83	0.2644	-0.00162	3.15E-06	0.196488	0.610128	1.840667

3.83	0.2644	-0.00162	3.15E-06	0.196439	0.609978	1.840391
3.83	0.2644	-0.00162	3.15E-06	0.196391	0.609828	1.840115
3.83	0.2644	-0.00162	3.15E-06	0.196343	0.609679	1.83984
3.83	0.2644	-0.00162	3.15E-06	0.196295	0.609529	1.839566
3.83	0.2644	-0.00162	3.15E-06	0.196247	0.609381	1.839292
3.83	0.2644	-0.00162	3.15E-06	0.196199	0.609232	1.839019
3.83	0.2644	-0.00162	3.15E-06	0.196152	0.609084	1.838747
3.84	0.2644	-0.00162	3.15E-06	0.196104	0.608937	1.838475
3.84	0.2644	-0.00162	3.15E-06	0.196057	0.608789	1.838204
3.84	0.2644	-0.00162	3.15E-06	0.196009	0.608642	1.837934
3.84	0.2644	-0.00162	3.15E-06	0.195962	0.608495	1.837664
3.84	0.2644	-0.00162	3.15E-06	0.195915	0.608349	1.837395
3.84	0.2644	-0.00162	3.15E-06	0.195868	0.608203	1.837127
3.84	0.2644	-0.00162	3.15E-06	0.195821	0.608057	1.836859
3.84	0.2644	-0.00162	3.15E-06	0.195774	0.607912	1.836592
3.84	0.2644	-0.00162	3.15E-06	0.195727	0.607767	1.836326
3.84	0.2644	-0.00162	3.15E-06	0.195681	0.607622	1.83606
3.84	0.2644	-0.00162	3.15E-06	0.195634	0.607478	1.835795
3.84	0.2644	-0.00162	3.15E-06	0.195588	0.607334	1.835531
3.84	0.2644	-0.00162	3.15E-06	0.195542	0.60719	1.835267
3.84	0.2644	-0.00162	3.15E-06	0.195495	0.607046	1.835003
3.85	0.2644	-0.00162	3.15E-06	0.195449	0.606903	1.834741
3.85	0.2644	-0.00162	3.15E-06	0.195403	0.60676	1.834479
3.85	0.2644	-0.00162	3.15E-06	0.195357	0.606618	1.834217
3.85	0.2644	-0.00162	3.15E-06	0.195312	0.606476	1.833956
3.85	0.2644	-0.00162	3.15E-06	0.195266	0.606334	1.833696
3.85	0.2644	-0.00162	3.15E-06	0.19522	0.606192	1.833437
3.85	0.2644	-0.00162	3.15E-06	0.195175	0.606051	1.833178
3.85	0.2644	-0.00162	3.15E-06	0.195129	0.60591	1.832919
3.85	0.2644	-0.00162	3.15E-06	0.195084	0.605769	1.832661
3.85	0.2644	-0.00162	3.15E-06	0.195039	0.605629	1.832404
3.85	0.2644	-0.00162	3.15E-06	0.194994	0.605489	1.832148
3.85	0.2644	-0.00162	3.15E-06	0.194949	0.605349	1.831892
3.85	0.2644	-0.00162	3.15E-06	0.194904	0.60521	1.831636
3.86	0.2644	-0.00162	3.15E-06	0.194859	0.60507	1.831381
3.86	0.2644	-0.00162	3.15E-06	0.194814	0.604932	1.831127
3.86	0.2644	-0.00162	3.15E-06	0.19477	0.604793	1.830873
3.86	0.2644	-0.00162	3.15E-06	0.194725	0.604655	1.83062
3.86	0.2644	-0.00162	3.15E-06	0.194681	0.604517	1.830367
3.86	0.2644	-0.00162	3.15E-06	0.194636	0.604379	1.830115
3.86	0.2644	-0.00162	3.15E-06	0.194592	0.604242	1.829864
3.86	0.2644	-0.00162	3.15E-06	0.194548	0.604104	1.829613
3.86	0.2644	-0.00162	3.15E-06	0.194504	0.603968	1.829363
3.86	0.2644	-0.00162	3.15E-06	0.19446	0.603831	1.829113
3.86	0.2644	-0.00162	3.15E-06	0.194416	0.603695	1.828864
3.86	0.2644	-0.00162	3.15E-06	0.194372	0.603559	1.828615
3.86	0.2644	-0.00162	3.15E-06	0.194329	0.603423	1.828367
3.86	0.2644	-0.00162	3.15E-06	0.194285	0.603288	1.828119
3.86	0.2644	-0.00162	3.15E-06	0.194241	0.603153	1.827872
3.87	0.2644	-0.00162	3.15E-06	0.194198	0.603018	1.827626

3.87	0.2644	-0.00162	3.15E-06	0.194155	0.602883	1.82738
3.87	0.2644	-0.00162	3.15E-06	0.194111	0.602749	1.827134
3.87	0.2644	-0.00162	3.15E-06	0.194068	0.602615	1.826889
3.87	0.2644	-0.00162	3.15E-06	0.194025	0.602481	1.826645
3.87	0.2644	-0.00162	3.15E-06	0.193982	0.602347	1.826401
3.87	0.2644	-0.00162	3.15E-06	0.193939	0.602214	1.826158
3.87	0.2644	-0.00162	3.15E-06	0.193896	0.602081	1.825915
3.87	0.2644	-0.00162	3.15E-06	0.193854	0.601949	1.825673
3.87	0.2644	-0.00162	3.15E-06	0.193811	0.601816	1.825431
3.87	0.2644	-0.00162	3.15E-06	0.193768	0.601684	1.82519
3.87	0.2644	-0.00162	3.15E-06	0.193726	0.601552	1.824949
3.87	0.2644	-0.00162	3.15E-06	0.193684	0.60142	1.824709
3.87	0.2644	-0.00162	3.15E-06	0.193641	0.601289	1.824469
3.88	0.2644	-0.00162	3.15E-06	0.193599	0.601158	1.82423
3.88	0.2644	-0.00162	3.15E-06	0.193557	0.601027	1.823991
3.88	0.2644	-0.00162	3.15E-06	0.193515	0.600896	1.823753
3.88	0.2644	-0.00162	3.15E-06	0.193473	0.600766	1.823515
3.88	0.2644	-0.00162	3.15E-06	0.193431	0.600636	1.823278
3.88	0.2644	-0.00162	3.15E-06	0.193389	0.600506	1.823041
3.88	0.2644	-0.00162	3.15E-06	0.193347	0.600377	1.822805
3.88	0.2644	-0.00162	3.15E-06	0.193306	0.600247	1.822569
3.88	0.2644	-0.00162	3.15E-06	0.193264	0.600118	1.822334
3.88	0.2644	-0.00162	3.15E-06	0.193223	0.599989	1.822099
3.88	0.2644	-0.00162	3.15E-06	0.193181	0.599861	1.821865
3.88	0.2644	-0.00162	3.15E-06	0.19314	0.599732	1.821631
3.88	0.2644	-0.00162	3.15E-06	0.193099	0.599604	1.821398
3.88	0.2644	-0.00162	3.15E-06	0.193058	0.599476	1.821165
3.88	0.2644	-0.00162	3.15E-06	0.193016	0.599349	1.820933
3.88	0.2644	-0.00162	3.15E-06	0.192975	0.599221	1.820701
3.89	0.2644	-0.00162	3.15E-06	0.192934	0.599094	1.820469
3.89	0.2644	-0.00162	3.15E-06	0.192894	0.598967	1.820238
3.89	0.2644	-0.00162	3.15E-06	0.192853	0.598841	1.820008
3.89	0.2644	-0.00162	3.15E-06	0.192812	0.598714	1.819778
3.89	0.2644	-0.00162	3.15E-06	0.192771	0.598588	1.819548
3.89	0.2644	-0.00162	3.15E-06	0.192731	0.598462	1.819319
3.89	0.2644	-0.00162	3.15E-06	0.19269	0.598337	1.819091
3.89	0.2644	-0.00162	3.15E-06	0.19265	0.598211	1.818862
3.89	0.2644	-0.00162	3.15E-06	0.19261	0.598086	1.818635
3.89	0.2644	-0.00162	3.15E-06	0.19257	0.597961	1.818407
3.89	0.2644	-0.00162	3.15E-06	0.192529	0.597836	1.818181
3.89	0.2644	-0.00162	3.15E-06	0.192489	0.597712	1.817954
3.89	0.2644	-0.00162	3.15E-06	0.192449	0.597588	1.817728
3.89	0.2644	-0.00162	3.15E-06	0.192409	0.597464	1.817503
3.89	0.2644	-0.00162	3.15E-06	0.192369	0.59734	1.817278
3.89	0.2644	-0.00162	3.15E-06	0.19233	0.597216	1.817053
3.90	0.2644	-0.00162	3.15E-06	0.19229	0.597093	1.816829
3.90	0.2644	-0.00162	3.15E-06	0.19225	0.59697	1.816605
3.90	0.2644	-0.00162	3.15E-06	0.192211	0.596847	1.816382
3.90	0.2644	-0.00162	3.15E-06	0.192171	0.596724	1.816159
3.90	0.2644	-0.00162	3.15E-06	0.192132	0.596602	1.815937

3.90	0.2644	-0.00162	3.15E-06	0.192092	0.596479	1.815715
3.90	0.2644	-0.00162	3.15E-06	0.192053	0.596357	1.815493
3.90	0.2644	-0.00162	3.15E-06	0.192014	0.596235	1.815272
3.90	0.2644	-0.00162	3.15E-06	0.191975	0.596114	1.815052
3.90	0.2644	-0.00162	3.15E-06	0.191936	0.595993	1.814831
3.90	0.2644	-0.00162	3.15E-06	0.191897	0.595871	1.814612
3.90	0.2644	-0.00162	3.15E-06	0.191858	0.59575	1.814392
3.90	0.2644	-0.00162	3.15E-06	0.191819	0.59563	1.814173
3.90	0.2644	-0.00162	3.15E-06	0.19178	0.595509	1.813955
3.90	0.2644	-0.00162	3.15E-06	0.191741	0.595389	1.813736
3.90	0.2644	-0.00162	3.15E-06	0.191703	0.595269	1.813519
3.91	0.2644	-0.00162	3.15E-06	0.191664	0.595149	1.813301
3.91	0.2644	-0.00162	3.15E-06	0.191625	0.595029	1.813084
3.91	0.2644	-0.00162	3.15E-06	0.191587	0.59491	1.812868
3.91	0.2644	-0.00162	3.15E-06	0.191549	0.594791	1.812652
3.91	0.2644	-0.00162	3.15E-06	0.19151	0.594672	1.812436
3.91	0.2644	-0.00162	3.15E-06	0.191472	0.594553	1.812221
3.91	0.2644	-0.00162	3.15E-06	0.191434	0.594434	1.812006
3.91	0.2644	-0.00162	3.15E-06	0.191396	0.594316	1.811791
3.91	0.2644	-0.00162	3.15E-06	0.191358	0.594198	1.811577
3.91	0.2644	-0.00162	3.15E-06	0.19132	0.59408	1.811364
3.91	0.2644	-0.00162	3.15E-06	0.191282	0.593962	1.81115
3.91	0.2644	-0.00162	3.15E-06	0.191244	0.593845	1.810937
3.91	0.2644	-0.00162	3.15E-06	0.191206	0.593727	1.810725
3.91	0.2644	-0.00162	3.15E-06	0.191168	0.59361	1.810513
3.91	0.2644	-0.00162	3.15E-06	0.191131	0.593493	1.810301
3.91	0.2644	-0.00162	3.15E-06	0.191093	0.593376	1.81009
3.91	0.2644	-0.00162	3.15E-06	0.191055	0.59326	1.809879
3.92	0.2644	-0.00162	3.15E-06	0.191018	0.593143	1.809668
3.92	0.2644	-0.00162	3.15E-06	0.190981	0.593027	1.809458
3.92	0.2644	-0.00162	3.15E-06	0.190943	0.592911	1.809248
3.92	0.2644	-0.00162	3.15E-06	0.190906	0.592796	1.809039
3.92	0.2644	-0.00162	3.15E-06	0.190869	0.59268	1.80883
3.92	0.2644	-0.00162	3.15E-06	0.190832	0.592565	1.808621
3.92	0.2644	-0.00162	3.15E-06	0.190795	0.592449	1.808413
3.92	0.2644	-0.00162	3.15E-06	0.190757	0.592334	1.808205
3.92	0.2644	-0.00162	3.15E-06	0.190721	0.59222	1.807997
3.92	0.2644	-0.00162	3.15E-06	0.190684	0.592105	1.80779
3.92	0.2644	-0.00162	3.15E-06	0.190647	0.591991	1.807583
3.92	0.2644	-0.00162	3.15E-06	0.19061	0.591876	1.807377
3.92	0.2644	-0.00162	3.15E-06	0.190573	0.591762	1.807171
3.92	0.2644	-0.00162	3.15E-06	0.190537	0.591649	1.806965
3.92	0.2644	-0.00162	3.15E-06	0.1905	0.591535	1.80676
3.92	0.2644	-0.00162	3.15E-06	0.190463	0.591422	1.806555
3.92	0.2644	-0.00162	3.15E-06	0.190427	0.591308	1.80635
3.92	0.2644	-0.00162	3.15E-06	0.190391	0.591195	1.806146
3.93	0.2644	-0.00162	3.15E-06	0.190354	0.591082	1.805942
3.93	0.2644	-0.00162	3.15E-06	0.190318	0.59097	1.805738
3.93	0.2644	-0.00162	3.15E-06	0.190282	0.590857	1.805535
3.93	0.2644	-0.00162	3.15E-06	0.190246	0.590745	1.805332

3.93	0.2644	-0.00162	3.15E-06	0.190209	0.590633	1.80513
3.93	0.2644	-0.00162	3.15E-06	0.190173	0.590521	1.804928
3.93	0.2644	-0.00162	3.15E-06	0.190137	0.590409	1.804726
3.93	0.2644	-0.00162	3.15E-06	0.190101	0.590297	1.804525
3.93	0.2644	-0.00162	3.15E-06	0.190066	0.590186	1.804324
3.93	0.2644	-0.00162	3.15E-06	0.19003	0.590075	1.804123
3.93	0.2644	-0.00162	3.15E-06	0.189994	0.589963	1.803923
3.93	0.2644	-0.00162	3.15E-06	0.189958	0.589853	1.803723
3.93	0.2644	-0.00162	3.15E-06	0.189923	0.589742	1.803523
3.93	0.2644	-0.00162	3.15E-06	0.189887	0.589631	1.803324
3.93	0.2644	-0.00162	3.15E-06	0.189851	0.589521	1.803125
3.93	0.2644	-0.00162	3.15E-06	0.189816	0.589411	1.802926
3.93	0.2644	-0.00162	3.15E-06	0.189781	0.589301	1.802728
3.93	0.2644	-0.00162	3.15E-06	0.189745	0.589191	1.80253
3.94	0.2644	-0.00162	3.15E-06	0.18971	0.589081	1.802332
3.94	0.2644	-0.00162	3.15E-06	0.189675	0.588972	1.802135
3.94	0.2644	-0.00162	3.15E-06	0.189639	0.588863	1.801938
3.94	0.2644	-0.00162	3.15E-06	0.189604	0.588753	1.801741
3.94	0.2644	-0.00162	3.15E-06	0.189569	0.588645	1.801545
3.94	0.2644	-0.00162	3.15E-06	0.189534	0.588536	1.801349
3.94	0.2644	-0.00162	3.15E-06	0.189499	0.588427	1.801153
3.94	0.2644	-0.00162	3.15E-06	0.189464	0.588319	1.800958
3.94	0.2644	-0.00162	3.15E-06	0.189429	0.58821	1.800763
3.94	0.2644	-0.00162	3.15E-06	0.189395	0.588102	1.800568
3.94	0.2644	-0.00162	3.15E-06	0.18936	0.587994	1.800374
3.94	0.2644	-0.00162	3.15E-06	0.189325	0.587887	1.80018
3.94	0.2644	-0.00162	3.15E-06	0.18929	0.587779	1.799986
3.94	0.2644	-0.00162	3.15E-06	0.189256	0.587672	1.799793
3.94	0.2644	-0.00162	3.15E-06	0.189221	0.587564	1.7996
3.94	0.2644	-0.00162	3.15E-06	0.189187	0.587457	1.799407
3.94	0.2644	-0.00162	3.15E-06	0.189152	0.58735	1.799215
3.94	0.2644	-0.00162	3.15E-06	0.189118	0.587244	1.799023
3.94	0.2644	-0.00162	3.15E-06	0.189084	0.587137	1.798831
3.94	0.2644	-0.00162	3.15E-06	0.189049	0.58703	1.798639
3.95	0.2644	-0.00162	3.15E-06	0.189015	0.586924	1.798448
3.95	0.2644	-0.00162	3.15E-06	0.188981	0.586818	1.798257
3.95	0.2644	-0.00162	3.15E-06	0.188947	0.586712	1.798067
3.95	0.2644	-0.00162	3.15E-06	0.188913	0.586606	1.797877
3.95	0.2644	-0.00162	3.15E-06	0.188879	0.586501	1.797687
3.95	0.2644	-0.00162	3.15E-06	0.188845	0.586395	1.797497
3.95	0.2644	-0.00162	3.15E-06	0.188811	0.58629	1.797308
3.95	0.2644	-0.00162	3.15E-06	0.188777	0.586185	1.797119
3.95	0.2644	-0.00162	3.15E-06	0.188743	0.58608	1.79693
3.95	0.2644	-0.00162	3.15E-06	0.188709	0.585975	1.796742
3.95	0.2644	-0.00162	3.15E-06	0.188676	0.58587	1.796554
3.95	0.2644	-0.00162	3.15E-06	0.188642	0.585766	1.796366
3.95	0.2644	-0.00162	3.15E-06	0.188608	0.585661	1.796179
3.95	0.2644	-0.00162	3.15E-06	0.188575	0.585557	1.795991
3.95	0.2644	-0.00162	3.15E-06	0.188541	0.585453	1.795805
3.95	0.2644	-0.00162	3.15E-06	0.188508	0.585349	1.795618

3.95	0.2644	-0.00162	3.15E-06	0.188475	0.585245	1.795432
3.95	0.2644	-0.00162	3.15E-06	0.188441	0.585142	1.795246
3.95	0.2644	-0.00162	3.15E-06	0.188408	0.585038	1.79506
3.95	0.2644	-0.00162	3.15E-06	0.188375	0.584935	1.794875
3.96	0.2644	-0.00162	3.15E-06	0.188341	0.584832	1.79469
3.96	0.2644	-0.00162	3.15E-06	0.188308	0.584729	1.794505
3.96	0.2644	-0.00162	3.15E-06	0.188275	0.584626	1.79432
3.96	0.2644	-0.00162	3.15E-06	0.188242	0.584524	1.794136
3.96	0.2644	-0.00162	3.15E-06	0.188209	0.584421	1.793952
3.96	0.2644	-0.00162	3.15E-06	0.188176	0.584319	1.793768
3.96	0.2644	-0.00162	3.15E-06	0.188143	0.584216	1.793585
3.96	0.2644	-0.00162	3.15E-06	0.18811	0.584114	1.793402
3.96	0.2644	-0.00162	3.15E-06	0.188077	0.584012	1.793219
3.96	0.2644	-0.00162	3.15E-06	0.188045	0.583911	1.793037
3.96	0.2644	-0.00162	3.15E-06	0.188012	0.583809	1.792855
3.96	0.2644	-0.00162	3.15E-06	0.187979	0.583708	1.792673
3.96	0.2644	-0.00162	3.15E-06	0.187947	0.583606	1.792491
3.96	0.2644	-0.00162	3.15E-06	0.187914	0.583505	1.79231
3.96	0.2644	-0.00162	3.15E-06	0.187881	0.583404	1.792128
3.96	0.2644	-0.00162	3.15E-06	0.187849	0.583303	1.791948
3.96	0.2644	-0.00162	3.15E-06	0.187817	0.583202	1.791767
3.96	0.2644	-0.00162	3.15E-06	0.187784	0.583102	1.791587
3.96	0.2644	-0.00162	3.15E-06	0.187752	0.583001	1.791407
3.96	0.2644	-0.00162	3.15E-06	0.187719	0.582901	1.791227
3.97	0.2644	-0.00162	3.15E-06	0.187687	0.582801	1.791048
3.97	0.2644	-0.00162	3.15E-06	0.187655	0.582701	1.790869
3.97	0.2644	-0.00162	3.15E-06	0.187623	0.582601	1.79069
3.97	0.2644	-0.00162	3.15E-06	0.187591	0.582501	1.790511
3.97	0.2644	-0.00162	3.15E-06	0.187559	0.582401	1.790333
3.97	0.2644	-0.00162	3.15E-06	0.187527	0.582302	1.790155
3.97	0.2644	-0.00162	3.15E-06	0.187495	0.582203	1.789977
3.97	0.2644	-0.00162	3.15E-06	0.187463	0.582104	1.789799
3.97	0.2644	-0.00162	3.15E-06	0.187431	0.582004	1.789622
3.97	0.2644	-0.00162	3.15E-06	0.187399	0.581906	1.789445
3.97	0.2644	-0.00162	3.15E-06	0.187367	0.581807	1.789268
3.97	0.2644	-0.00162	3.15E-06	0.187335	0.581708	1.789092

Location Index	
England and Wales	1
Scotland and Ireland	2

From Design and Analysis of Urban Storm Drainage, The Wallingford Procedure, Vol 1

Table 6.1 Values of Constants to calculate Cr

Geographic Location	Range of M5-D	Location Index	J0	J1	J2
England and Wales	0-10	1	0.1699	0.0028	0.000114
	11-30		0.1644	0.005831	-0.00013
	31-75		0.2644	-0.00162	3.15E-06
	76-150		0.2718	-0.00195	6.19E-06
	>150		0.1454	-0.00019	1.14E-07

Calculations

Job Title Club Street, Manchester

Site location = M11 IHR

MS-60 = 18,00

R = 0,36

Site area = 5830 m²

Proposed catchments area = 3760 m² (65%)

Greenfield runoff = 3,87 l/s (usc min 5,0 l/s)

Attenuation estimated: (based on 5,0 l/s)

lin 30 = 92 m³

lin 100 + 40% CC = 211 m³