
Quick Storage Estimates

Northern Catchment

Quick Storage Estimate

Input

Input Type

User Input

Area (ha)

7.742

Volumetric Runoff Coefficient

0.840

Discharge Rate (L/s)

171.3

Infiltration Rate (m/hr)

0.0

Safety Factor

2.0

Quick

Calculate

☐ Create New

☒ From Library

All

FEH - North 2022

FEH - South 2022

Method

FEH

Number of Storms

20

Max. Run Time (mins)

2880

Input

Results

2D Graph

OK

Cancel

Create New

Help

Quick Storage Estimate

Results

Quick Storage Estimate variables require approximate storage of between 3774m³ - 5327m³.

These values are estimates only and should not be used for final design purposes.

Input

Results

2D Graph

OK

Cancel

Create New

Help

Southern Catchment

Quick Storage Estimate

Input

Input Type

User Input

Area (ha)

17.384

Volumetric Runoff Coefficient

0.840

Discharge Rate (L/s)

366.5

Infiltration Rate (m/hr)

0.0

Safety Factor

2.0

Quick

Calculate

Create New

From Library

All

FEH - North 2022

FEH - South 2022

Method

FEH

Number of Storms

20

Max. Run Time (mins)

2880

Input

Results

2D Graph

OK

Cancel

Create New

Help

Quick Storage Estimate

Results

Quick Storage Estimate variables require approximate storage of between 8733m³ - 12307m³.

These values are estimates only and should not be used for final design purposes.

Input

Results

2D Graph

OK

Cancel

Create New

Help

Drainage Calculations

North Southwater:	Date: 09/01/2026			
	Designed by: KW	Checked by:	Approved By:	
Report Details:	Company Address:			
Type: Stormwater Controls Storm Phase: North				



Basin 3

Type : Pond

Dimensions

Exceedance Level (m)	57.400
Depth (m)	1.500
Base Level (m)	55.900
Freeboard (mm)	300
Initial Depth (m)	0.000
Porosity (%)	100
Average Slope (1:X)	3.00
Total Volume (m³)	427.176

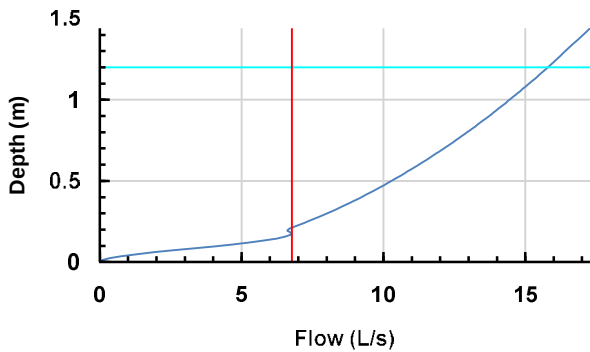
Depth (m)	Area (m²)	Volume (m³)
0.000	242.95	0.000
1.200	482.58	427.176
1.500	555.21	582.718

Outlets

Outlet

Outgoing Connection	(None)
Outlet Type	Hydro-Brake®
Invert Level (m)	55.900
Design Depth (m)	1.200
Design Flow (L/s)	15.8
Objective	Linear Discharge Profile
Application	Surface Water Only
Sump Available	☐

Unit Reference	CCU-0120-1580-1200-1580
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Advanced

Perimeter	Circular
Length (m)	70.733
Friction Scheme	Manning's n
n	0.045

North Southwater:	Date: 09/01/2026			
	Designed by: KW	Checked by:	Approved By:	
Report Details:	Company Address:			
Type: Stormwater Controls Storm Phase: North				

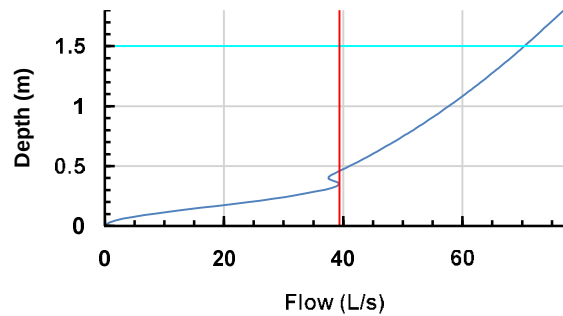


Basin 1

Type : Pond

Dimensions		
Exceedance Level (m)	49.500	
Depth (m)	1.800	
Base Level (m)	47.700	
Freeboard (mm)	300	
Initial Depth (m)	0.000	
Porosity (%)	100	
Average Slope (1:X)	3.255	
Total Volume (m³)	1873.425	
Depth (m)	Area (m²)	Volume (m³)
0.000	955.17	0.000
1.500	1567.91	1873.425
1.800	1704.91	2364.205

Outlets	
Outlet	
Outgoing Connection	(None)
Outlet Type	Hydro-Brake®
Invert Level (m)	47.700
Design Depth (m)	1.500
Design Flow (L/s)	70.4
Objective	Linear Discharge Profile
Application	Surface Water Only
Sump Available	☐
Unit Reference	CCU-0242-7040-1500-7040



Advanced	
Perimeter	Circular
Length (m)	55.636
Friction Scheme	Manning's n
n	0.045

North Southwater:	Date: 09/01/2026		
	Designed by: KW	Checked by:	Approved By:
Report Details: Type: Stormwater Controls Storm Phase: North	Company Address:		



Basin 2

Type : Pond

Dimensions

Exceedance Level (m)	52.100
Depth (m)	2.000
Base Level (m)	50.100
Freeboard (mm)	300
Initial Depth (m)	0.000
Porosity (%)	100
Average Slope (1:X)	4.148
Total Volume (m³)	1569.393

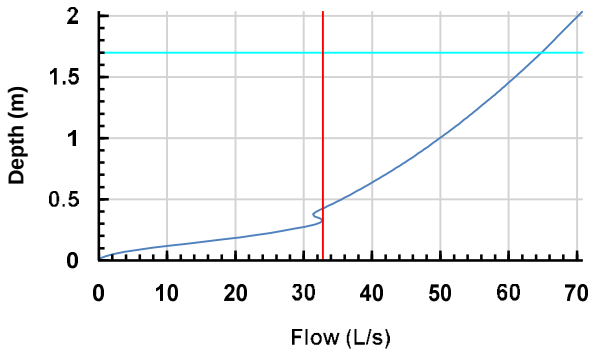
Depth (m)	Area (m²)	Volume (m³)
0.000	572.14	0.000
2.000	1491.80	1991.861

Outlets

Outlet

Outgoing Connection	(None)
Outlet Type	Hydro-Brake®
Invert Level (m)	50.100
Design Depth (m)	1.700
Design Flow (L/s)	64.8
Objective	Linear Discharge Profile
Application	Surface Water Only
Sump Available	☐

Unit Reference	CCU-0225-6480-1700-6480
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Advanced

Perimeter	Circular
Length (m)	106.758
Friction Scheme	Manning's n
n	0.045

North Southwater:	Date: 09/01/2026		
	Designed by: KW	Checked by:	Approved By:
Report Details: Type: Stormwater Controls Storm Phase: North	Company Address:		



Basin 10

Type : Pond

Dimensions

Exceedance Level (m)	54.500
Depth (m)	1.300
Base Level (m)	53.200
Freeboard (mm)	300
Initial Depth (m)	0.000
Porosity (%)	100
Average Slope (1:X)	3.525
Total Volume (m³)	152.609

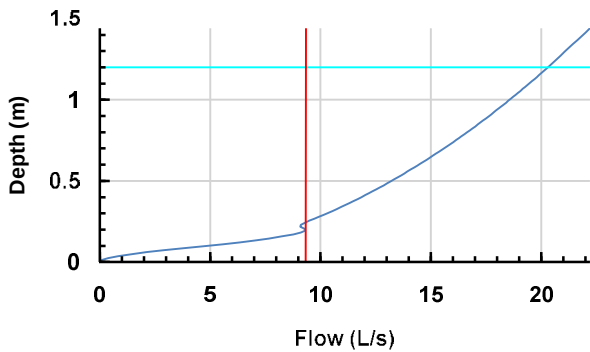
Depth (m)	Area (m²)	Volume (m³)
0.000	81.40	0.000
1.000	237.42	152.609
1.300	293.95	232.163

Outlets

Outlet

Outgoing Connection	(None)
Outlet Type	Hydro-Brake®
Invert Level (m)	53.200
Design Depth (m)	1.200
Design Flow (L/s)	20.3
Objective	Linear Discharge Profile
Application	Surface Water Only
Sump Available	☐

Unit Reference	CCU-0137-2030-1200-2030
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Advanced

Perimeter	Circular
Length (m)	39.835
Friction Scheme	Manning's n
n	0.045

North Southwater:	Date: 09/01/2026			
	Designed by: KW	Checked by:	Approved By:	
Report Details:	Company Address:			
Type: Stormwater Controls Storm Phase: North				

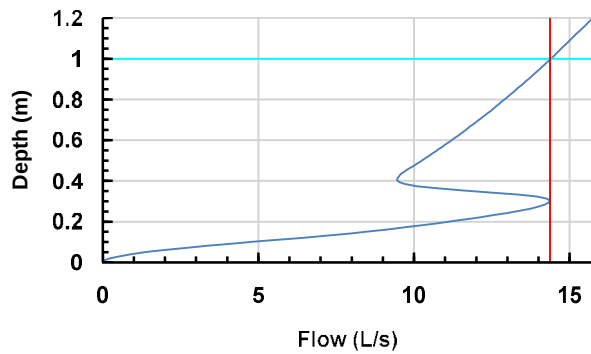


Tank 1

Type : Tank

Dimensions			
Exceedance Level (m)		56.000	
Depth (m)		2.000	
Base Level (m)		54.000	
Freeboard (mm)		300	
Initial Depth (m)		0.000	
Porosity (%)		95	
Average Slope (1:X)		-10.897	
Total Volume (m³)		357.068	
Depth (m)		Area (m²)	Volume (m³)
0.000		375.000	0.000
1.000		375.000	356.250
1.001		0.001	356.369

Outlets	
Outlet	
Outgoing Connection	No Delay
Outlet Type	Hydro-Brake®
Invert Level (m)	54.000
Design Depth (m)	1.000
Design Flow (L/s)	14.4
Objective	Minimise Upstream Storage Requirements
Application	Surface Water Only
Sump Available	☐
Unit Reference	CHE-0163-1440-1000-1440



Advanced	
Perimeter	Rectangular
Length (m)	18.636

North Southwater:	Date: 09/01/2026		
	Designed by: KW	Checked by:	Approved By:
Report Details: Type: Inflow Summary Storm Phase: North		Company Address:	



Inflow Label	Connected To	Flow (L/s)	Runoff Method	Area (ha)	Percentage Impervious (%)	Urban Creep (%)	Adjusted Percentage Impervious (%)	Area Analysed (ha)
Catchment Area	Tank 1		Time of Concentration	0.735	85	0	85	0.625
Catchment Area (15)	Basin 1		Time of Concentration	0.555	66	0	66	0.366
Catchment Area (16)	Basin 1		Time of Concentration	0.364	66	0	66	0.240
Catchment Area (17)	Basin 1		Time of Concentration	0.133	66	0	66	0.088
Catchment Area (18)	Basin 1		Time of Concentration	2.710	66	0	66	1.789
Catchment Area (20)	Basin 2		Time of Concentration	3.315	85	0	85	2.818
Catchment Area (21)	Basin 3		Time of Concentration	1.146	66	0	66	0.756
Catchment Area (24)	Basin 10		Time of Concentration	0.304	85	0	85	0.259
Catchment Area (25)	Basin 1		Time of Concentration	0.945	85	0	85	0.803
TOTAL		0.0		10.207				7.744

North Southwater:	Date: 09/01/2026			
	Designed by: KW	Checked by:	Approved By:	
Report Title: Rainfall Analysis Criteria	Company Address:			

Runoff Type	Dynamic
Output Interval (mins)	5
Time Step	Default
Urban Creep	Apply Global Value
Urban Creep Global Value (%)	0
Junction Flood Risk Margin (mm)	300
Perform No Discharge Analysis	☐

Rainfall		
FEH - North 2022		Type: FEH
Site Location	GB 515668 128281 TQ 15668 28281	
Rainfall Version	2022	
Summer	☒	
Winter	☒	

Return Period

Return Period (years)	Increase Rainfall (%)
100.0	45.000

Storm Durations

Duration (mins)	Run Time (mins)
60	120
120	240
180	360
240	480
360	720
480	960
600	1200
720	1440
960	1920
1440	2880

North Southwater:		Date: 09/01/2026			
		Designed by: KW	Checked by:		Approved By:
Report Details: Type: Stormwater Controls Summary Storm Phase: North		Company Address:			



FEH - North 2022: 100 years: Increase Rainfall (%): +45: Critical Storm Per Item:
Rank By: Max. Resident Volume

Stormwater Control	Storm Event	Max. US Level (m)	Max. DS Level (m)	Max. US Depth (m)	Max. DS Depth (m)	Max. Inflow (L/s)	Max. Resident Volume (m³)	Max. Flooded Volume (m³)	Total Lost Volume (m³)	Max. Outflow (L/s)	Total Discharge Volume (m³)	Percentage Available (%)	Status
Basin 3	FEH - North 2022: 100 years: +45 %: 180 mins: Winter	57.093	57.093	1.193	1.193	123.7	423.789	0.000	0.000	15.8	269.052	0.793	OK
Basin 1	FEH - North 2022: 100 years: +45 %: 180 mins: Winter	49.181	49.179	1.481	1.479	537.4	1842.589	0.000	0.000	69.9	1177.185	1.646	OK
Basin 2	FEH - North 2022: 100 years: +45 %: 180 mins: Winter	51.775	51.775	1.675	1.675	460.8	1535.883	0.000	0.000	64.3	1098.157	2.135	OK
Basin 10	FEH - North 2022: 100 years: +45 %: 240 mins: Winter	54.184	54.182	0.984	0.982	44.9	148.416	0.000	0.000	18.4	420.059	2.748	OK
Tank 1	FEH - North 2022: 100 years: +45 %: 180 mins: Winter	54.966	54.966	0.966	0.966	102.2	344.214	0.000	0.000	14.2	230.085	3.600	OK

North Southwater:	Date: 09/01/2026			
	Designed by: KW	Checked by:	Approved By:	
Report Details:	Company Address:			
Type: Stormwater Controls Storm Phase: South				



Basin 4A

Type : Pond

Dimensions

Exceedance Level (m)	57.600
Depth (m)	1.500
Base Level (m)	56.100
Freeboard (mm)	300
Initial Depth (m)	0.000
Porosity (%)	100
Average Slope (1:X)	6.462
Total Volume (m³)	1603.807

Depth (m)	Area (m²)	Volume (m³)
0.000	855.00	0.000
1.200	1885.00	1603.807
1.500	2155.00	2209.355

Outlets

Outlet

Outgoing Connection	Pipe
Outlet Type	Free Discharge

Advanced

Perimeter	Circular
Length (m)	91.699
Friction Scheme	Manning's n
n	0.045

North Southwater:	Date: 09/01/2026		
	Designed by: KW	Checked by:	Approved By:
Report Details: Type: Stormwater Controls Storm Phase: South	Company Address:		



Basin 5

Type : Pond

Dimensions

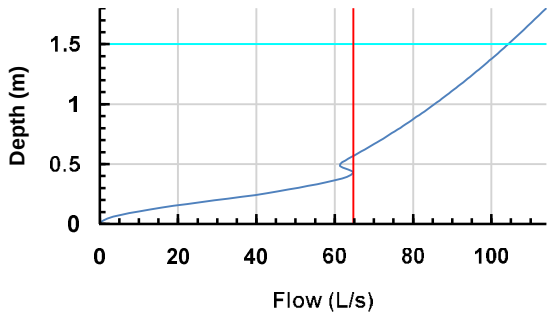
Exceedance Level (m)	55.000
Depth (m)	1.800
Base Level (m)	53.200
Freeboard (mm)	300
Initial Depth (m)	0.000
Porosity (%)	100
Average Slope (1:X)	3.00
Total Volume (m³)	2872.138

Depth (m)	Area (m²)	Volume (m³)
0.000	1576.83	0.000
1.500	2273.89	2872.138
1.800	2428.57	3577.381

Outlets

Outlet

Outgoing Connection	(None)
Outlet Type	Hydro-Brake®
Invert Level (m)	53.200
Design Depth (m)	1.500
Design Flow (L/s)	104.3
Objective	Linear Discharge Profile
Application	Surface Water Only
Sump Available	☐
Unit Reference	CCU-0295-1043-1500-1043



Advanced

Perimeter	Circular
Length (m)	69.855
Friction Scheme	Manning's n
n	0.045

North Southwater:	Date: 09/01/2026		
	Designed by: KW	Checked by:	Approved By:
Report Details: Type: Stormwater Controls Storm Phase: South	Company Address:		



Basin 6

Type : Pond

Dimensions

Exceedance Level (m)	52.500
Depth (m)	2.100
Base Level (m)	50.400
Freeboard (mm)	300
Initial Depth (m)	0.000
Porosity (%)	100
Average Slope (1:X)	3.00
Total Volume (m³)	961.169

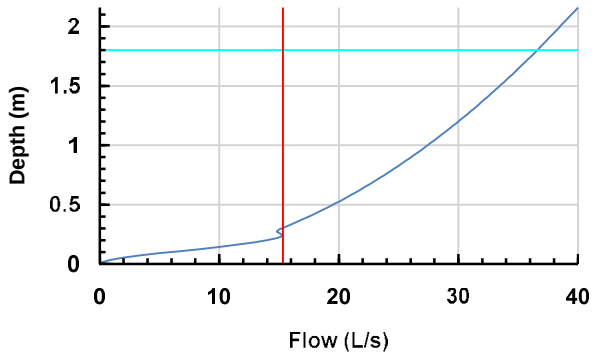
Depth (m)	Area (m²)	Volume (m³)
0.000	329.66	0.000
1.500	682.92	743.533
2.100	859.85	1205.344

Outlets

Outlet

Outgoing Connection	No Delay
Outlet Type	Hydro-Brake®
Invert Level (m)	50.400
Design Depth (m)	1.800
Design Flow (L/s)	36.6
Objective	Linear Discharge Profile
Application	Surface Water Only
Sump Available	☐

Unit Reference	CCU-0166-3660-1800-3660
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Advanced

Perimeter	Circular
Length (m)	68.212
Friction Scheme	Manning's n
n	0.045

North Southwater:	Date: 09/01/2026			
	Designed by: KW	Checked by:	Approved By:	
Report Details:	Company Address:			
Type: Stormwater Controls Storm Phase: South				

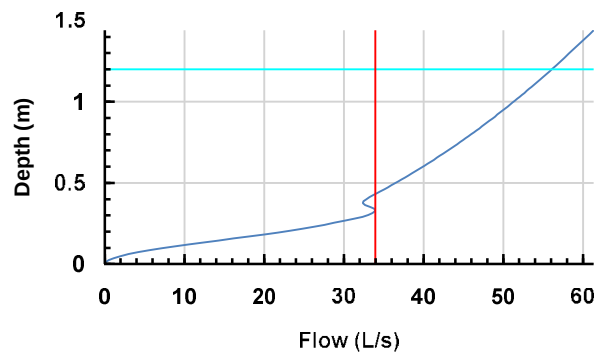


Basin 7

Type : Pond

Dimensions		
Exceedance Level (m)		50.800
Depth (m)		1.500
Base Level (m)		49.300
Freeboard (mm)		300
Initial Depth (m)		0.000
Porosity (%)		100
Average Slope (1:X)		3.672
Total Volume (m³)		538.182
Depth (m)	Area (m²)	Volume (m³)
0.000	292.65	0.000
1.200	625.10	538.182
1.500	721.90	740.059

Outlets	
Outlet	
Outgoing Connection	(None)
Outlet Type	Hydro-Brake®
Invert Level (m)	49.300
Design Depth (m)	1.200
Design Flow (L/s)	56.1
Objective	Linear Discharge Profile
Application	Surface Water Only
Sump Available	☐
Unit Reference	CCU-0228-5610-1200-5610



Advanced	
Perimeter	Circular
Length (m)	84.627
Friction Scheme	Manning's n
n	0.045

North Southwater:	Date: 09/01/2026		
	Designed by: KVV	Checked by:	Approved By:
Report Details:	Company Address:		
Type: Stormwater Controls Storm Phase: South			



Basin 8

Type : Pond

Dimensions

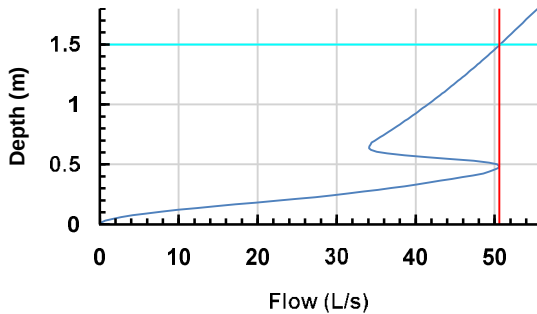
Exceedance Level (m)	45.000
Depth (m)	1.800
Base Level (m)	43.200
Freeboard (mm)	300
Initial Depth (m)	0.000
Porosity (%)	100
Average Slope (1:X)	3.00
Total Volume (m³)	1403.857

Depth (m)	Area (m²)	Volume (m³)
0.000	703.19	0.000
1.500	1189.82	1403.857
1.800	1302.42	1777.566

Outlets

Outlet

Outgoing Connection	(None)
Outlet Type	Hydro-Brake®
Invert Level (m)	43.200
Design Depth (m)	1.500
Design Flow (L/s)	50.7
Objective	Minimise Upstream Storage Requirements
Application	Surface Water Only
Sump Available	☐
Unit Reference	CHE-0272-5070-1500-5070



Advanced

Perimeter	Circular
Length (m)	73.145
Friction Scheme	Manning's n
n	0.045

North Southwater:	Date: 09/01/2026			
	Designed by: KW	Checked by:	Approved By:	
Report Details: Type: Stormwater Controls Storm Phase: South	Company Address:			

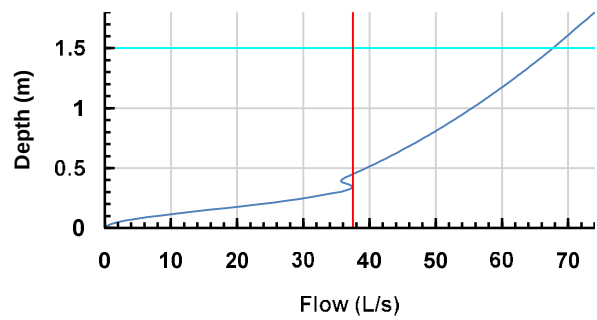


Basin 9

Type : Pond

Dimensions		
Exceedance Level (m)	54.000	
Depth (m)	1.800	
Base Level (m)	52.200	
Freeboard (mm)	300	
Initial Depth (m)	0.000	
Porosity (%)	100	
Average Slope (1:X)	3.367	
Total Volume (m³)	1842.814	
Depth (m)	Area (m²)	Volume (m³)
0.000	927.86	0.000
1.500	1556.15	1842.814
1.800	1697.76	2330.746

Outlets	
Outlet	
Outgoing Connection	(None)
Outlet Type	Hydro-Brake®
Invert Level (m)	52.200
Design Depth (m)	1.500
Design Flow (L/s)	67.7
Objective	Linear Discharge Profile
Application	Surface Water Only
Sump Available	☐
Unit Reference	CCU-0237-6770-1500-6770



Advanced	
Perimeter	Circular
Length (m)	64.695
Friction Scheme	Manning's n
n	0.045

North Southwater:	Date: 09/01/2026			
	Designed by: KW	Checked by:	Approved By:	
Report Details:	Company Address:			
Type: Stormwater Controls Storm Phase: South				



Basin 4B

Type : Pond

Dimensions

Exceedance Level (m)	57.400
Depth (m)	1.500
Base Level (m)	55.900
Freeboard (mm)	300
Initial Depth (m)	0.000
Porosity (%)	100
Average Slope (1:X)	3.384
Total Volume (m³)	1093.059

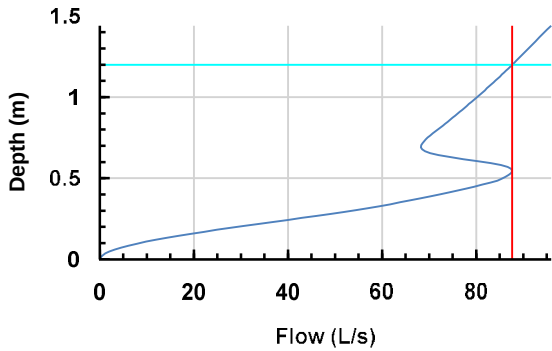
Depth (m)	Area (m²)	Volume (m³)
0.000	703.00	0.000
1.200	1136.00	1093.059
1.500	1261.00	1452.446

Outlets

Outlet

Outgoing Connection	(None)
Outlet Type	Hydro-Brake®
Invert Level (m)	55.900
Design Depth (m)	1.200
Design Flow (L/s)	87.7
Objective	Minimise Upstream Storage Requirements
Application	Surface Water Only
Sump Available	☐

Unit Reference	CHE-0350-8770-1200-8770
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Advanced

Perimeter	Circular
Length (m)	72.117
Friction Scheme	Manning's n
n	0.045

North Southwater:		Date: 09/01/2026			
		Designed by: KW	Checked by:		Approved By:
Report Details: Type: Inflow Summary Storm Phase: South		Company Address:			

Inflow Label	Connected To	Flow (L/s)	Runoff Method	Area (ha)	Percentage Impervious (%)	Urban Creep (%)	Adjusted Percentage Impervious (%)	Area Analysed (ha)
Catchment Area	Basin 4A		Time of Concentration	5.503	66	0	66	3.632
Catchment Area (1)	Basin 4A		Time of Concentration	0.609	85	0	85	0.518
Catchment Area (2)	Basin 5		Time of Concentration	1.587	66	0	66	1.047
Catchment Area (3)	Basin 5		Time of Concentration	2.330	66	0	66	1.538
Catchment Area (4)	Basin 5		Time of Concentration	0.614	85	0	85	0.522
Catchment Area (5)	Basin 5		Time of Concentration	2.799	66	0	66	1.847
Catchment Area (6)	Basin 6		Time of Concentration	0.542	85	0	85	0.461
Catchment Area (7)	Basin 6		Time of Concentration	1.872	66	0	66	1.236
Catchment Area (8)	Basin 7		Time of Concentration	1.414	66	0	66	0.933
Catchment Area (9)	Basin 8		Time of Concentration	1.374	66	0	66	0.907
Catchment Area (10)	Basin 8		Time of Concentration	1.346	66	0	66	0.888
Catchment Area (11)	Basin 9		Time of Concentration	2.693	66	0	66	1.777
Catchment Area (12)	Basin 9		Time of Concentration	2.163	66	0	66	1.428
Catchment Area (13)	Basin 8		Time of Concentration	0.977	66	0	66	0.645
TOTAL		0.0		25.822				17.378

North Southwater:	Date: 09/01/2026			
	Designed by: KW	Checked by:	Approved By:	
Report Title: Rainfall Analysis Criteria	Company Address:			

Runoff Type	Dynamic
Output Interval (mins)	5
Time Step	Default
Urban Creep	Apply Global Value
Urban Creep Global Value (%)	0
Junction Flood Risk Margin (mm)	300
Perform No Discharge Analysis	☐

Rainfall		
FEH - South 2022		Type: FEH
Site Location	GB 515223 127060 TQ 15223 27060	
Rainfall Version	2022	
Summer	☒	
Winter	☒	

Return Period

Return Period (years)	Increase Rainfall (%)
100.0	45.000

Storm Durations

Duration (mins)	Run Time (mins)
60	120
120	240
180	360
240	480
360	720
480	960
600	1200
720	1440
960	1920
1440	2880

North Southwater:		Date: 09/01/2026			
		Designed by: KW	Checked by:		Approved By:
Report Details: Type: Stormwater Controls Summary Storm Phase: South		Company Address:			



FEH - South 2022: 100 years: Increase Rainfall (%): +45: Critical Storm Per Item:
Rank By: Max. Resident Volume

Stormwater Control	Storm Event	Max. US Level (m)	Max. DS Level (m)	Max. US Depth (m)	Max. DS Depth (m)	Max. Inflow (L/s)	Max. Resident Volume (m³)	Max. Flooded Volume (m³)	Total Lost Volume (m³)	Max. Outflow (L/s)	Total Discharge Volume (m³)	Percentage Available (%)	Status
Basin 4A	FEH - South 2022: 100 years: +45 %: 60 mins: Winter	57.289	57.289	1.189	1.189	1466.7	1583.214	0.000	0.000	340.1	1286.116	1.284	OK
Basin 5	FEH - South 2022: 100 years: +45 %: 240 mins: Winter	54.692	54.692	1.492	1.492	661.0	2853.211	0.000	0.000	104.0	2281.650	0.659	OK
Basin 6	FEH - South 2022: 100 years: +45 %: 180 mins: Winter	52.194	52.195	1.794	1.795	281.2	956.891	0.000	0.000	35.6	625.143	0.445	OK
Basin 7	FEH - South 2022: 100 years: +45 %: 180 mins: Winter	50.494	50.494	1.194	1.194	185.0	534.222	0.000	0.000	56.0	956.597	0.736	OK
Basin 8	FEH - South 2022: 100 years: +45 %: 180 mins: Winter	44.677	44.675	1.477	1.475	404.5	1374.472	0.000	0.000	50.3	877.126	2.093	OK
Basin 9	FEH - South 2022: 100 years: +45 %: 180 mins: Winter	53.694	53.695	1.494	1.495	531.4	1832.204	0.000	0.000	67.6	1140.100	0.576	OK
Basin 4B	FEH - South 2022: 100 years: +45 %: 240 mins: Winter	57.084	57.084	1.184	1.184	232.5	1074.356	0.000	0.000	87.4	1924.733	1.711	OK

CCTC Survey

Project ref: TV260608

05th June 2026

CLIENT: MK SURVEYS

SITE: Land Northwest of Southwater

Two Mile Aash Road

Horsham

RH13 0LA



CCTV Survey Report

Sewer Inspection, Cleaning and Repair

www.insewer.co.uk

Tel : 01634 861 768



*Embedded video links within
report for online viewing*



Project Information

Project Name
TV260608

Project Number

Project Date
05/06/2026

Client

Company: MK Surveys
Contact: Chris Peacock

Site

Department: Land Northwest of Southwater
Street: Two Mile Ash Road
Town or City: Horsham
Post Code: RH13 0LA

Contractor

Company: InSewer Surveys
Contact: Liam Sellar
Street: 16A Revenge Road
Town or City: Chatham
County: Kent
Post Code: ME5 8UD
Phone: 01634 861 768
Fax: 01634 201 376
Mobile: 07802 660 752
Email: liam@insewer.co.uk



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TV260608

Project Number

Project Date
05/06/2026

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Scoring Summary

Project Name
TV260608

Project Number

Project Date
05/06/2026

Structural Defects

- Grade 3: Best practice suggests consideration should be given to repairs in the medium term.
- Grade 4: Best practice suggests consideration should be given to repairs to avoid a potential collapse.
- Grade 5: Best practice suggests that this pipe is at risk of collapse at any time. Urgent consideration should be given to repairs to avoid total failure.

Item No.	PLR	Grade	Description
1	IC3X	5	Missing bricks from 12 o'clock to 12 o'clock
4	IC3-BX	5	Multiple defects
7	HW3X	4	Multiple defects

Service / Operational Condition

- Grade 3: Best practice suggests consideration should be given to maintenance activities in the medium term.
- Grade 4: Best practice suggests consideration should be given to maintenance activity to avoid potential blockages.
- Grade 5: Best practice suggests that this pipe is at a high risk of backing up or causing flooding.

Item No.	PLR	Grade	Description
1	IC3X	5	Other obstacles, external pipe or cable from 10 o'clock to 2 o'clock, 20% cross-sectional area loss
3	OF2X	5	Settled deposits, coarse, 100% cross-sectional area loss
4	IC3-BX	4	Multiple defects
5	IC1X	4	Connection defective, connecting pipe is intruding at 2 o'clock, 150mm dia intrusion: 20%

Abandoned Surveys

Item No.	PLR	Description
1	IC3X	Survey abandoned
2	IC3X	Survey abandoned
3	OF2X	Survey abandoned
4	IC3-BX	Survey abandoned

Information

These scoring summaries are based on the SRM grading from the WRc.



Site Photos



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HW1



HW1 RUN A



HW1 RUN B



HW2



IC1



LOCATION OF IC1



IC2



LOCATION OF IC2



IC2



OF1 INTO IC2



IC2—OF1—OF2



IC3



LOCATION OF IC3



OF2 INTO SLABBED CHAMBER



OF2 SLABBED NO ACCESS



OF2 CHAMBER



OF2 CHAMBER



HW3



LOCATION OF HW3



HW3 RUN X



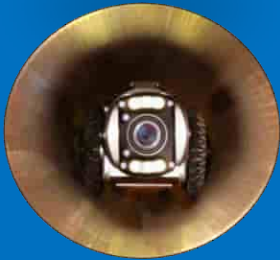
OF3



LOCATION OF OF3



Site Plan

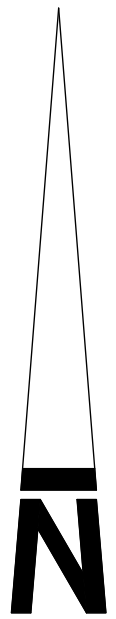


DETECTION SURVEY REPORT

CONNECTIVITY SURVEY
All drainage connectivity was carried out in accordance with PAS 128:2022 (Publicly Available Specification from BSI). Quality levels are determined by the detection methodology. Please refer to PAS 128:2022 Quality Level Guide for details.

TARGETED CCTV SURVEY
Drainage was lifted with pipe sizes and invert levels recorded. Wherever possible the chamber sizes have been recorded and positioned on the drawing. If the drain / sewer has been CCTV surveyed, saddle connections and line deviations are indicative and not positioned via Ground penetrating radar (GPR) or Electromagnetic locator (EML). All connections from gullies, external rainwater pipes and external soil stacks should be treated as assumed, unless proven with a CCTV Survey. Where a saddle connection / line deviation is present the position is assumed only until proven to QB2 or above. In instances where other detection methods were unsuccessful connections between manholes have been assumed to be straight and labelled as QB4. All sub surface drainage positions should be cross checked in critical areas by EML, GPR survey or hand dug trial holes (verification survey type A). Attempts have been made to carry out CCTV surveys of all sewers within the scope of work at the 2 no. areas highlighted by the client. As pre-cleaning via high pressure water jetting has not taken place, surveys may have been abandoned due to a build up of silt/debris and any other obstruction/obstacle. In other cases, structural defects within the system may prevent completion of CCTV surveys between assets.

Information regarding the drainage system has been added to the drawing. For all information regarding the CCTV survey, please refer to TV260608 CCTV Report.



Nouthern Culvert

128700 N

128600 N

515500 E

515600 E

515500 E

515600 E

Southern Culvert

127700 N

127600 N

515100 E

515200 E

515100 E

515200 E

- Notes :
1. DRAINAGE INFORMATION ADDED TO TOPOGRAPHICAL SURVEY PRODUCED BY MK SURVEYS. JOB No. 25205, R1. DATE FEBRUARY 2022. NO SITE VERIFICATION CARRIED OUT BY MK SURVEYS, INCLUDING COVER LEVELS. ANY ADDITIONAL FEATURES SURVEYED BY MK SURVEYS HAVE BEEN ADDED RELATIVE TO THE PROVIDED TOPOGRAPHICAL SURVEY.
 2. DRAINAGE INFORMATION HAS BEEN DETERMINED WITHOUT MAN ENTRY INTO CHAMBERS AND WHILST EVERY EFFORT HAS BEEN MADE TO CORRECTLY IDENTIFY THIS INFORMATION, IT SHOULD ALWAYS BE CHECKED IN AREAS THAT ARE CRITICAL TO THE FUTURE PROPOSAL.
 3. ALL SEWERS ARE PRESUMED TO BE STRAIGHT BETWEEN CHAMBERS, WITH ROUTES / CONNECTIVITY OBTAINED USING ACOUSTIC METHODS ONLY. THESE ARE TO BE CONSIDERED ASSUMED AND SHOULD BE INVESTIGATED FURTHER IN CRITICAL AREAS. KINKS AND DEVIATIONS ARE INDICATIVE AND UNLESS SPECIFIED HAVE NOT BEEN ACCURATELY POSITIONED VIA ELECTROMAGNETIC LOCATOR (EML), GROUND PENETRATING RADAR (GPR). ALL SUB SURFACE DRAINAGE POSITIONS SHOULD BE CROSS CHECKED IN CRITICAL AREAS BY EML OR GPR SURVEY OR HAND DIG TRIAL HOLES.
 4. CONNECTIONS FROM RAIN WATER PIPES, GULLIES, KERB OUTLETS, SOIL PIPES ETC SHOULD BE TREATED AS ASSUMED ONLY, UNLESS PROVEN WITH A CCTV SURVEY.
 5. SURVEY TO BE READ IN CONJUNCTION WITH TV260608 CCTV REPORT.

DRAINAGE KEY			
ABBREVIATIONS			
(AG)	ABOVE GROUND	OU	OUTFALL
(AR)	ASSUMED ROUTE	PF	PITCH FIBRE
BD	BACKDROP LEVEL	PP	POLYPROPYLENE
Bd	BASE DEPTH	POW	PIPE ON WALL
BK	BRICK	PT	P-TRAP
BL	BASE LEVEL	PTG	PIPE TO GROUND
CI	CAST IRON	PTS	PIPE TO SURFACE
CL	COVER LEVEL	PVC	POLYVINYL CHLORIDE
CO	CONCRETE	PVC-U	ULTRA RIB (PVC)
CU	CULVERT	(R)	ROUTE FROM RECORDS
CP	CATCHPIT	RE	RODDING EYE
CWL	CROWN LEVEL	RM	RAIN MAIN
CW	COMBINED WATER	RWP	RAIN WATER PIPE
DCH	DRAINAGE CHANNEL	SD	SILT DEPTH
DI	DUCTILE IRON	SL	SILT LEVEL
DI	FILTER DRAIN	SO	SOAKAWAY
FW	FOUL WATER	SOF	SOFFIT OF BISCUIT
GY	GULLY	SP	SOIL PIPE
IC	INSPECTION COVER	SVP	SOIL VENT PIPE
ID	INVERT DEPTH	SW	SURFACE WATER
IL	INVERT LEVEL	TOW	TOP OF WALL
INT	INTERCEPTOR	TW	TRADE EFFLUENT WATER
IT	INLET	UTL	UNABLE TO LOCATE
KO	KERB OUTLET	UTR	UNABLE TO RAISE
LH	LAMP HOLE	UTS	UNABLE TO SURVEY
MH	MANHOLE	VC	VITRIFIED CLAY
NP	NO PIPES VISIBLE	VP	VENT PIPE
OL	OUTLET	WL	WATER LEVEL
LEGEND			
COMBINED SEWER		P-TRAP	
FOUL SEWER		BACK DROP (EXTERNAL)	
SURFACE SEWER		BACK DROP (INTERNAL)	
TRADE EFFLUENT SEWER		UNABLE TO CCTV SURVEY	
UNIDENTIFIED SEWER		UNABLE TO RAISE	
RISEING MAIN		UNABLE TO SURVEY	
MANHOLE		VITRIFIED CLAY	
UNDERGROUND CHAMBER		VENT PIPE	
		WATER LEVEL	

PAS 128:2022 Quality Level Guide		
Quality Level	Description	Accuracy
QB4 (QL-B4)	A utility is expected to exist but cannot be detected - (AR), (R), (V)	Undefined
QB3 (QL-B3) QB3P (QL-B3P)	Horizontal location only using one geophysical technique. No depth information - NDI	+/- 500mm Horizontal Undefined Vertical
QB2 (QL-B2) QB2P (QL-B2P)	Horizontal and vertical location only using one geophysical technique.	+/- 250mm or +/- 40% of depth whichever is greater
QB1 (QL-B1) QB1P (QL-B1P)	Horizontal and vertical location only using two geophysical techniques.	+/- 150mm or +/- 15% of depth whichever is greater
QA (QL-A)	Service verified in an open excavation, inside an inspection chamber / draw pit, or at the point the service enters / exits the ground.	+/- 50mm Horizontal +/- 50mm Vertical

Revision	Description	Surv. by	Check by	Appr. by	Date						
m	5	10	15	20	25	30	35	40	45	50	55

Drainage and CCTV Survey

Berkeley

Southwater
Horsham
West Sussex

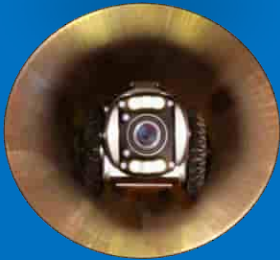
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1:500	A1	1	June 2026	
Project Number:	Rev:	Surveyed by:	Checked by:	Approved by:
38205	-	RG	CP	CP

mksurveys

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Report



www.insewer.co.uk

Tel : 01634 861 768





Section Inspection - 05/06/2026 - IC3X



Item No.	Insp. No.	Date	Time	Client's Job Ref	Weather	Pre Cleaned	PLR
1	1	05/06/26	8:48	TV260608	No Rain Or Snow	No	IC3X
Operator		Vehicle		Camera	Preset Length	Legal Status	Alternative ID
InSewer DW		Not Specified		Not Specified	Not Specified	-	-

Town or Village:	Horsham	Inspection Direction:	Upstream	Upstream Node:	IC3
Road:	Two Mile Ash Road	Inspected Length:	26.20 m	Upstream Pipe Depth:	1.470 m
Location:	Verge	Total Length:	26.20 m	Downstream Node:	HW1
Surface Type:		Joint Length:		Downstream Pipe Depth:	
Use:	Surface water	Pipe Shape:	Rectangular		
Type of Pipe:	-	Dia/Height:	620 mm	Width:	600 mm
Flow Control:	-	Material:	Brick		
Year Constructed:	Not Specified	Lining Type:	No Lining		
Inspection Purpose:	Routine inspection	Lining Material:	No Lining		
Comments:					
Recommendations:	-				

Scale:	1:227	Position [m]	Code	Observation	Grade
		0.00	OF	Start node, outfall, reference: HW1	
		0.00	WL	Water level, 5% of the vertical dimension	
		6.06	LR	Line deviates right	
		16.51	S01	Line deviates left, start: Sweeping	
		19.01	S02	Settled deposits, fine, 20% cross-sectional area loss, start	4
		20.65	F01	Line deviates left, finish: Sweeping	
		21.13	MB	Missing bricks from 12 o'clock to 12 o'clock	5
		22.54	OBP	Other obstacles, external pipe or cable from 10 o'clock to 2 o'clock, 20% cross-sectional area loss	5
		26.20	SA	Survey abandoned: Unable to continue	



MB - 21.13



OBP - 22.54



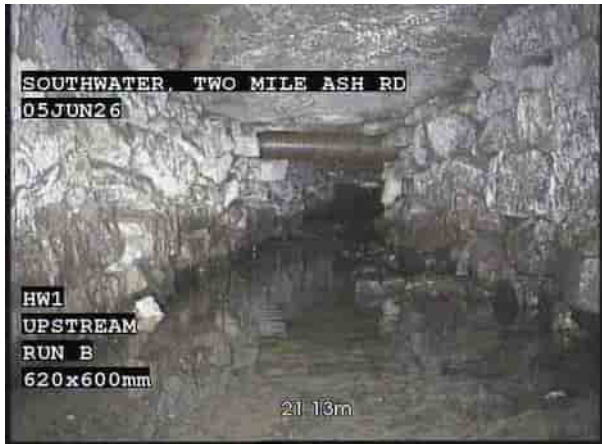
SA - 26.20

Construction Features					Miscellaneous Features				
Structural Defects					Service & Operational Observations				
STR No. Def	STR Peak	STR Mean	STR Total	STR Grade	SER No. Def	SER Peak	SER Mean	SER Total	SER Grade
1	165.0	6.3	165.0	5.0	2	10.0	0.6	15.0	5.0

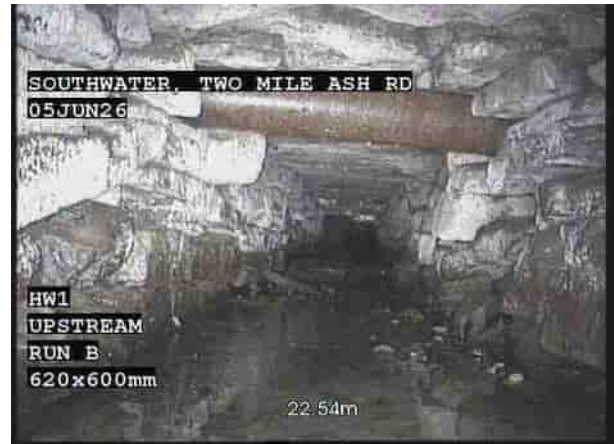


Section Pictures - 05/06/2026 - IC3X

Item No.	Inspection Direction	PLR	Client's Job Ref	Contractor's Job Ref
1	Upstream	IC3X	TV260608	



1, 00:02:31, 21.13 m
Missing bricks from 12 o'clock to 12 o'clock



2, 00:03:06, 22.54 m
Other obstacles, external pipe or cable from 10 o'clock to 2 o'clock, 20% cross-sectional area loss



3, 00:04:55, 26.20 m
Survey abandoned, Unable to continue

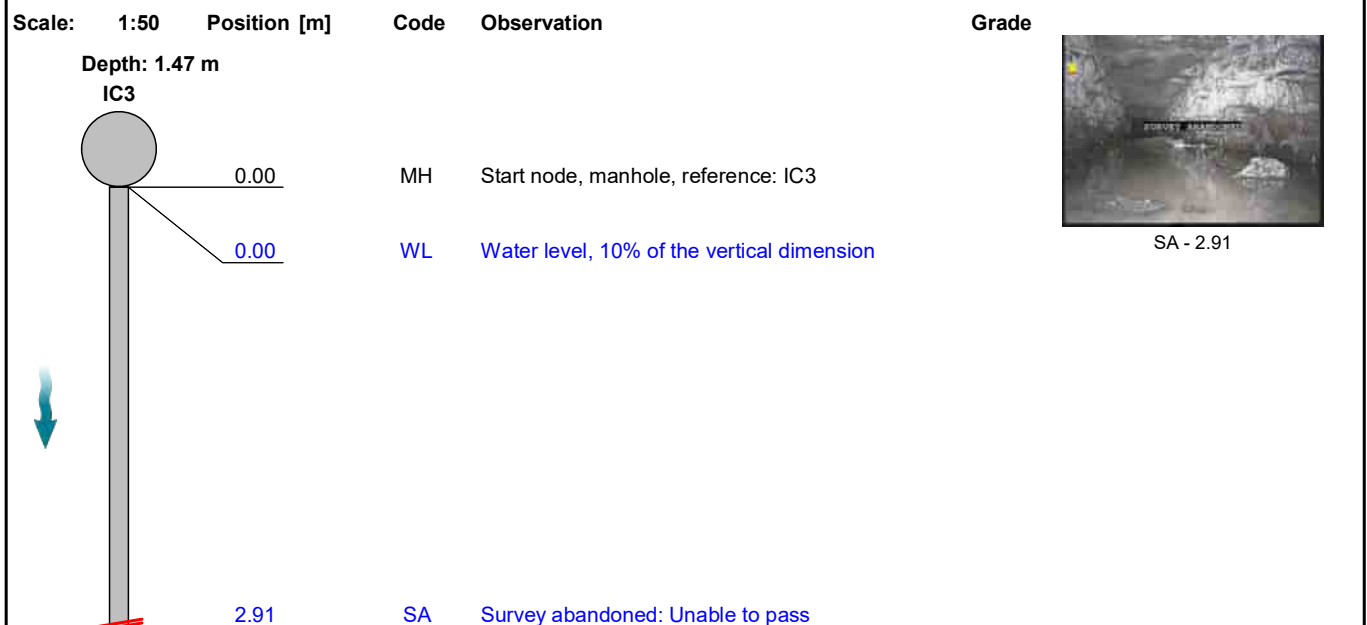


Section Inspection - 05/06/2026 - IC3X



Item No. 2	Insp. No. 1	Date 05/06/26	Time 9:54	Client's Job Ref TV260608	Weather No Rain Or Snow	Pre Cleaned No	PLR IC3X
Operator InSewer DW		Vehicle Not Specified		Camera Not Specified	Preset Length Not Specified	Legal Status -	Alternative ID -

Town or Village:	Horsham	Inspection Direction:	Downstream	Upstream Node:	IC3
Road:	Two Mile Ash Road	Inspected Length:	2.91 m	Upstream Pipe Depth:	1.470 m
Location:	Verge	Total Length:	2.91 m	Downstream Node:	HW1
Surface Type:		Joint Length:		Downstream Pipe Depth:	
Use:	Surface water	Pipe Shape:	Rectangular		
Type of Pipe:	-	Dia/Height:	620 mm	Width:	600 mm
Flow Control:	-	Material:	Brick		
Year Constructed:	Not Specified	Lining Type:	No Lining		
Inspection Purpose:	Routine inspection	Lining Material:	No Lining		
Comments:					
Recommendations:	-				



Construction Features					Miscellaneous Features				
Structural Defects					Service & Operational Observations				
STR No. Def	STR Peak	STR Mean	STR Total	STR Grade	SER No. Def	SER Peak	SER Mean	SER Total	SER Grade
0	0.0	0.0	0.0	1.0	0	0.0	0.0	0.0	1.0



Section Pictures - 05/06/2026 - IC3X

Item No.	Inspection Direction	PLR	Client's Job Ref	Contractor's Job Ref
2	Downstream	IC3X	TV260608	



1, 00:00:29, 2.91 m
Survey abandoned, Unable to pass



Section Inspection - 05/06/2026 - OF2X



Item No. 3	Insp. No. 1	Date 05/06/26	Time 9:56	Client's Job Ref TV260608	Weather No Rain Or Snow	Pre Cleaned No	PLR OF2X
Operator InSewer DW		Vehicle Not Specified		Camera Not Specified	Preset Length Not Specified	Legal Status -	Alternative ID -

Town or Village:	Horsham	Inspection Direction:	Upstream	Upstream Node:	OF2
Road:	Two Mile Ash Road	Inspected Length:	46.15 m	Upstream Pipe Depth:	
Location:	Verge	Total Length:	46.15 m	Downstream Node:	IC3
Surface Type:		Joint Length:		Downstream Pipe Depth:	1.470 m
Use:	Surface water	Pipe Shape:	Circular		
Type of Pipe:	-	Dia/Height:	375 mm		
Flow Control:	-	Material:	Vitrified clay		
Year Constructed:	Not Specified	Lining Type:	No Lining		
Inspection Purpose:	Routine inspection	Lining Material:	No Lining		
Comments:					
Recommendations: -					

Scale: 1:400	Position [m]	Code	Observation	Grade
Depth: 1.47 m IC3				
0.00	MH	Start node, manhole, reference: IC3		
0.00	WL	Water level, 5% of the vertical dimension		
17.60	REM	General remark: Pipe wonders		
24.74	LL	Line deviates left		
25.46	DEEJ	Attached deposits, encrustation at joint from 6 o'clock to 9 o'clock, 15% cross-sectional area loss	3	
33.09	LR	Line deviates right		
46.15	DER	Settled deposits, coarse, 100% cross-sectional area loss	5	
46.15	SA	Survey abandoned: At OF2 chamber - debris filled		



Construction Features					Miscellaneous Features				
Structural Defects					Service & Operational Observations				
STR No. Def	STR Peak	STR Mean	STR Total	STR Grade	SER No. Def	SER Peak	SER Mean	SER Total	SER Grade
0	0.0	0.0	0.0	1.0	2	10.0	0.3	12.0	5.0



Section Pictures - 05/06/2026 - OF2X

Item No.	Inspection Direction	PLR	Client's Job Ref	Contractor's Job Ref
3	Upstream	OF2X	TV260608	



1, 00:04:00, 46.15 m
Settled deposits, coarse, 100% cross-sectional area loss



2, 00:04:08, 46.15 m
Survey abandoned, At OF2 chamber - debris filled



WEB PROJECT
CLICK TO OPEN THIS SECTION

Construction Features					Miscellaneous Features				
Structural Defects					Service & Operational Observations				
STR No. Def	STR Peak	STR Mean	STR Total	STR Grade	SER No. Def	SER Peak	SER Mean	SER Total	SER Grade
4	245.0	280.0	490.0	5.0	4	8.0	9.1	16.0	5.0



Section Pictures - 05/06/2026 - IC3-BX

Item No.	Inspection Direction	PLR	Client's Job Ref	Contractor's Job Ref
4	Upstream	IC3-BX	TV260608	



1, 00:00:12, 1.20 m
Fractures, multiple from 12 o'clock to 12 o'clock, start



2, 00:00:18, 1.20 m
Deformed sewer or drain, 20%, start



3, 00:00:25, 1.20 m
Settled deposits, fine, 10% cross-sectional area loss, start



4, 00:00:42, 1.75 m
Deformed sewer or drain, 50%



5, 00:00:49, 1.75 m
Broken pipe from 12 o'clock to 12 o'clock



6, 00:00:57, 1.75 m
Survey abandoned, Unable to pass - assumed redundant

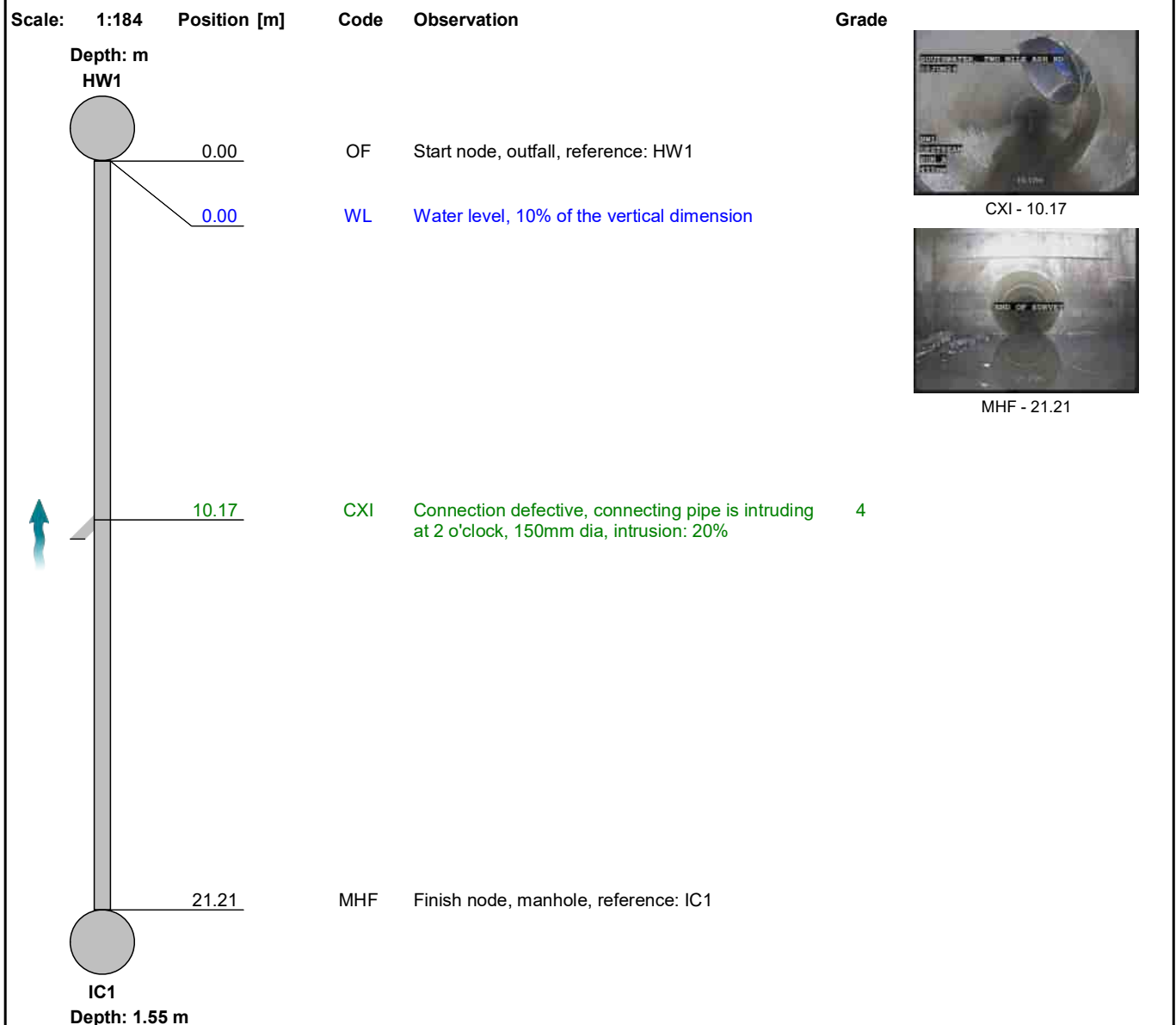


Section Inspection - 05/06/2026 - IC1X



Item No. 5	Insp. No. 1	Date 05/06/26	Time 9:05	Client's Job Ref TV260608	Weather No Rain Or Snow	Pre Cleaned No	PLR IC1X
Operator InSewer DW		Vehicle Not Specified		Camera Not Specified	Preset Length Not Specified	Legal Status -	Alternative ID -

Town or Village:	Horsham	Inspection Direction:	Upstream	Upstream Node:	IC1
Road:	Two Mile Ash Road	Inspected Length:	21.21 m	Upstream Pipe Depth:	1.550 m
Location:	Verge	Total Length:	21.21 m	Downstream Node:	HW1
Surface Type:		Joint Length:		Downstream Pipe Depth:	
Use:	Surface water	Pipe Shape:	Circular		
Type of Pipe:	-	Dia/Height:	450 mm		
Flow Control:	-	Material:	Concrete		
Year Constructed:	Not Specified	Lining Type:	No Lining		
Inspection Purpose:	Routine inspection	Lining Material:	No Lining		
Comments:					
Recommendations: -					



Construction Features					Miscellaneous Features				
Structural Defects					Service & Operational Observations				
STR No. Def	STR Peak	STR Mean	STR Total	STR Grade	SER No. Def	SER Peak	SER Mean	SER Total	SER Grade
0	0.0	0.0	0.0	1.0	1	5.0	0.2	5.0	4.0



Section Pictures - 05/06/2026 - IC1X

Item No.	Inspection Direction	PLR	Client's Job Ref	Contractor's Job Ref
5	Upstream	IC1X	TV260608	



1, 00:00:57, 10.17 m
Connection defective, connecting pipe is intruding at 2 o'clock,
150mm dia, intrusion: 20%



2, 00:01:43, 21.21 m
Finish node, manhole, reference: IC1

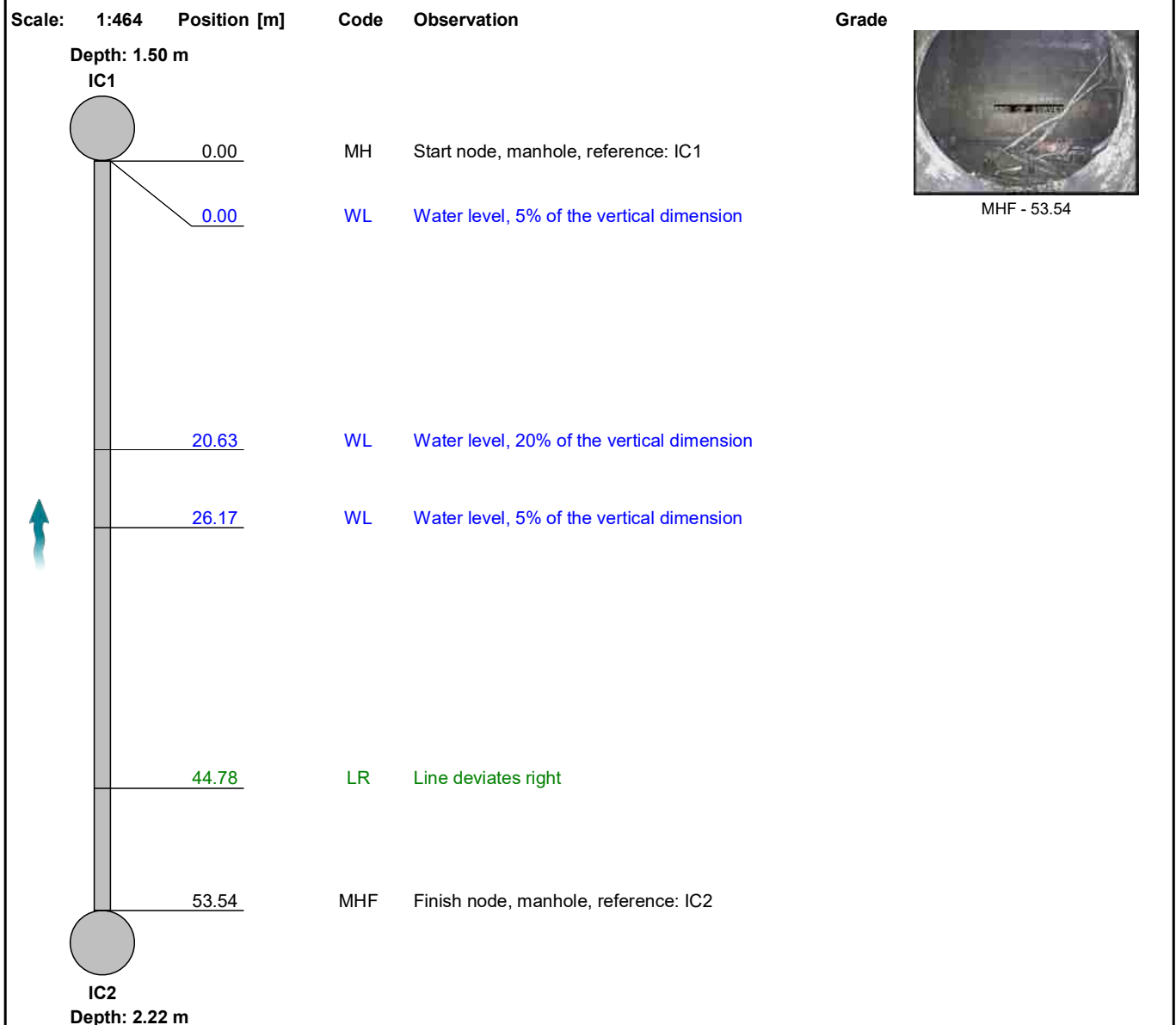


Section Inspection - 05/06/2026 - IC2X



Item No. 6	Insp. No. 1	Date 05/06/26	Time 9:14	Client's Job Ref TV260608	Weather No Rain Or Snow	Pre Cleaned No	PLR IC2X
Operator InSewer DW		Vehicle Not Specified		Camera Not Specified	Preset Length Not Specified	Legal Status -	Alternative ID -

Town or Village:	Horsham	Inspection Direction:	Upstream	Upstream Node:	IC2
Road:	Two Mile Ash Road	Inspected Length:	53.54 m	Upstream Pipe Depth:	2.220 m
Location:	Verge	Total Length:	53.54 m	Downstream Node:	IC1
Surface Type:		Joint Length:		Downstream Pipe Depth:	1.500 m
Use:	Surface water	Pipe Shape:	Circular		
Type of Pipe:	-	Dia/Height:	450 mm		
Flow Control:	-	Material:	Concrete		
Year Constructed:	Not Specified	Lining Type:	No Lining		
Inspection Purpose:	Routine inspection	Lining Material:	No Lining		
Comments:					
Recommendations: -					



Construction Features					Miscellaneous Features				
Structural Defects					Service & Operational Observations				
STR No. Def	STR Peak	STR Mean	STR Total	STR Grade	SER No. Def	SER Peak	SER Mean	SER Total	SER Grade
0	0.0	0.0	0.0	1.0	0	0.0	0.0	0.0	1.0



Section Pictures - 05/06/2026 - IC2X

Item No.	Inspection Direction	PLR	Client's Job Ref	Contractor's Job Ref
6	Upstream	IC2X	TV260608	



1, 00:03:53, 53.54 m
Finish node, manhole, reference: IC2



Section Inspection - 05/06/2026 - HW3X



Item No.	Insp. No.	Date	Time	Client's Job Ref	Weather	Pre Cleaned	PLR
7	1	05/06/26	10:45	TV260608	No Rain Or Snow	No	HW3X
Operator		Vehicle		Camera	Preset Length	Legal Status	Alternative ID
InSewer DW		Not Specified		Not Specified	Not Specified	-	-

Town or Village:	Horsham	Inspection Direction:	Downstream	Upstream Node:	HW3
Road:	Two Mile Ash Road	Inspected Length:	12.23 m	Upstream Pipe Depth:	
Location:	Verge	Total Length:	12.23 m	Downstream Node:	OF3
Surface Type:		Joint Length:		Downstream Pipe Depth:	
Use:	Surface water	Pipe Shape:	Circular		
Type of Pipe:	-	Dia/Height:	225 mm		
Flow Control:	-	Material:	Concrete		
Year Constructed:	Not Specified	Lining Type:	No Lining		
Inspection Purpose:	Routine inspection	Lining Material:	No Lining		
Comments:					
Recommendations:	-				

Scale: 1:106	Position [m]	Code	Observation	Grade
Depth: m HW3				
	0.00	OF	Start node, outfall, reference: HW3	
	0.00	WL	Water level, 5% of the vertical dimension	
	0.33	VV	Void visible beyond defect	
	0.33	B	Broken pipe from 10 o'clock to 4 o'clock	4
	0.88	FM	Fractures, multiple from 12 o'clock to 12 o'clock	4 / 2
	6.78	LL	Line deviates left: Slight	
	8.00	LL	Line deviates left: Slight	
	8.92	LL	Line deviates left: Slight	
	8.92	WL	Water level, 10% of the vertical dimension	
	9.91	LL	Line deviates left	
	10.39	WL	Water level, 45% of the vertical dimension	
OF3 Depth: m	12.23	OFF	Finish node, outfall, reference: OF3	

Construction Features					Miscellaneous Features				
Structural Defects					Service & Operational Observations				
STR No. Def	STR Peak	STR Mean	STR Total	STR Grade	SER No. Def	SER Peak	SER Mean	SER Total	SER Grade
2	80.0	13.1	160.0	4.0	1	1.0	0.1	1.0	2.0



Section Pictures - 05/06/2026 - HW3X

Item No.	Inspection Direction	PLR	Client's Job Ref	Contractor's Job Ref
7	Downstream	HW3X	TV260608	



1, 00:00:32, 0.33 m
Void visible beyond defect



2, 00:00:40, 0.33 m
Broken pipe from 10 o'clock to 4 o'clock



3, 00:01:02, 0.88 m
Fractures, multiple from 12 o'clock to 12 o'clock



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