



**DRAINAGE SOLUTIONS LTD**

**CCTV Inspection Report**

**FOUL AND SURFACE WATER OUTFALLS FROM SITE COMPOUND  
WEST CUMBERLAND HOSPITAL  
HOMWOOD ROAD  
WHITEHAVEN**

**11/02/2022**

**Approved By: S. OAKES**

**Job Number: SK-S 160/21 WCH GRAHAMS (updated 11/02/2022)**

**SK Drainage Solutions**

31 Adams Road, Workington, Cumbria, CA14 3YS

Tel: 01900 268189

office@skds.ltd



## Project Information

Job Number <b>SK-S 160/21 WCH GRAHAMS</b> (updated 11/02/2022)	Surveyed by (Operator) <b>BEN HUGHES/ STEVE OAKES</b>	Base Unit <b>VJ7B51U7GO</b>	Date <b>11/02/2022</b>
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### Client Details:

GRAHAM UK

Client Contact Name: JOHN DEEGAN  
Client Contact Tel: 07384439874

### Site Details:

FOUL AND SURFACE WATER OUTFALLS FROM  
SITE COMPOUND  
WEST CUMBERLAND HOSPITAL  
HOMEWOOD ROAD  
WHITEHAVEN

Site Contact Name: JOHN DEEGAN  
Site Contact Tel: 07384439874

### Contractor Details:

SK Drainage Solutions Ltd  
31 Adams Road  
Workington  
Cumbria  
CA14 3YS

Office Contact Name: S. OAKES  
Office Contact Number: 01900268189

### Purpose of Survey:

CLEAN AND SURVEY ALL ACCESSIBLE DRAINAGE IN AREAS AS DIRECTED BY SITE REP. SUBMIT REPORT WHEN EVER A SECTION HAS BEEN COMPLETED.

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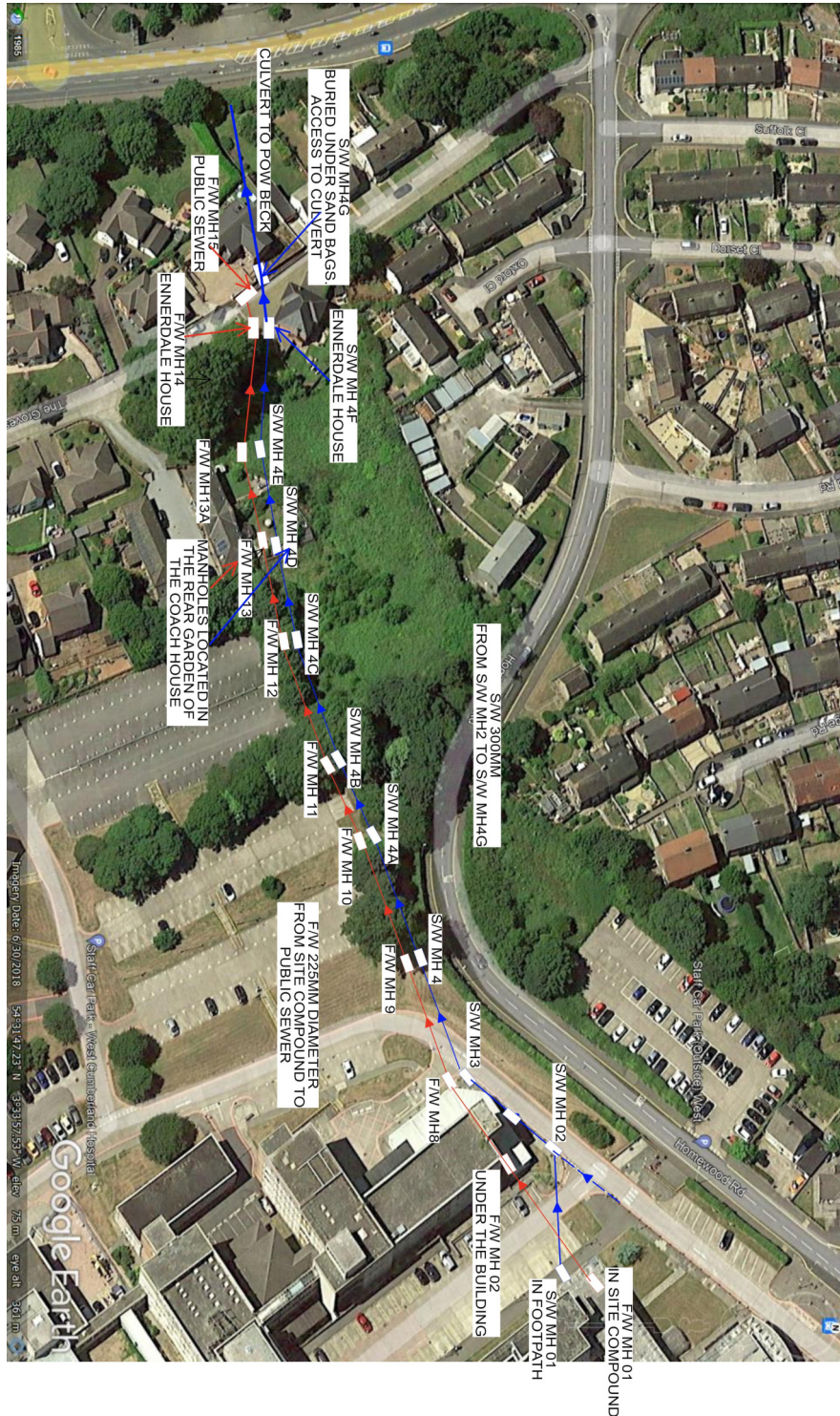
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# Site Drawings/Photos

Job Number <b>SK-S 160/21 WCH GRAHAMS</b> (updated 11/02/2022)	Surveyed by (Operator) <b>BEN HUGHES/ STEVE OAKES</b>	Base Unit <b>VJ7B51U7GO</b>	Date <b>11/02/2022</b>
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This sketch is not to scale and does not represent the exact routing of the drainage system



# Site Photos

<p>Job Number <b>SK-S 160/21 WCH GRAHAMS</b> (updated 11/02/2022)</p>	<p>Surveyed by (Operator) <b>BEN HUGHES/ STEVE OAKES</b></p>	<p>Base Unit <b>VJ7B51U7GO</b></p>	<p>Date <b>07/02/2022</b></p>
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**Manhole / Access Point:** FWMH13A Internal



**Access problems:** MH06 U/S MH05 LIMITED ACCESS FOR CCTV

# Report Summary

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## Job Information

Total Distance Surveyed: **467.51 metres**  
 Engineer: **BEN HUGHES/ STEVE OAKES**  
 Number of Surveys: **21**  
 Number of Surveys grade 4 or above: **9**

## Job Comments

SURVEY UPDATED FROM 27/08/21 VISIT.  
 STILL UNABLE TO PASS ROOT MASS AT 26.97M ON THE FOUL MH08 - MH09. RECOMMEND ROBOTIC ROOT CUTTING.  
 RETURN VISIT 20/09/21 -  
 EXPOSED AND LIFTED MH10 ON THE FOUL. THE CAMERA WAS ABLE TO REACH THE WATER AUTHORITY SEWER APPROX 111M DOWNSTREAM, PASSING THROUGH AN ADDITIONAL 3 MANHOLES. ROOTS AND ATTACHED DEPOSITS WERE NOTED THROUGHOUT.  
 MH10 - MH09 THE SURVEY WAS ABANDONED DUE TO A DEFECT. THIS DEFECT IS LIKELY TO COLLPASE AND A LOCALISED STRUCTURAL REPAIR LINER IS ADVISEABLE.  
 MH04A - MH04B ON THE SURFACE WAS SURVEYED AND AGAIN THE ROOT MASS PREVENTED PROGRESS.  
 RETURN VISITS MADE ON THE 15/10/2021 TO CONTINUE ROOT CUTTING.  
 FURTHER VISITS WERE MADE W/C 18/10/2021 TO REMOVE MORE ROOTS AND CONTINUE THE SURVEY OF THE OUTFALL DRAINAGE FROM THE OLD A&E BUILDING.  
 NUMEROUS DEFECTS HAVE BEEN NOTED IN BOTH THE FOUL AND SURFACE WATER SYSTEMS.  
 VISIT MADE 01/02/2022-  
 EXCAVATED AND EXPOSED F/W MH13A. THE BACK DROP CONNECTION HAS A MASS ROOT INGRESS. THE SURVEY CONTINUED TO F/W MH14 LOCATED IN THE GARDEN OF ENNERDALE HOUSE. IT THEN CONTINUES TO F/W 15 WHERE THE MANHOLE IS BURIED IN THE PUBLIC FOOTPATH. THIS IS BELIEVED TO BE THE PUBLIC SEWER.  
 FINAL VISIT MADE 07/02/2022-  
 TO CONFIRM THE ROUT OF THE F/W AND S/W DRAINAGE FROM THE SITE COMPOUND TO THE CORNER OF THE OLD A&E.

## Section 1 Overview (07/02/2022)

Manholes: **SW01 to SW02**  
 Pipe Length: **19.37 metres**  
 Structural Grade: **0**  
 Service Grade: **4**  
 Material: **Vitrified clay**  
 Pipe Size: **150mm**  
 Use: **Surface water**

MINOR ENCRUSTATION AT THE START. DEBRIS NEAR TO SW MH02 PREVENTING PROGRESS. WILL REQUIRE CLEANING WITH JET VAC.

## Section 2 Overview (07/02/2022)

Manholes: **SW02 to SW03**  
 Pipe Length: **23.36 metres**  
 Structural Grade: **2**  
 Service Grade: **4**  
 Material: **Vitrified clay**  
 Pipe Size: **300mm**  
 Use: **Surface water**

MINOR CRACKS. ENCRUSTATION FROM 3.96M - 6.98M. WOULD REQUIRE CLEANING WITH SUITABLE EQUIPMENT.

## Section 3 Overview (19/10/2021)

Manholes: **SWMH3 to SWMH4**  
 Pipe Length: **25.97 metres**  
 Structural Grade: **3**  
 Service Grade: **5**  
 Material: **Vitrified clay**  
 Pipe Size: **300mm**  
 Use: **Surface water**

SOME ROOT MASS RESTRICTING FLOW. MINOR CRACKS AND FRACTURES.

# Report Summary

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## Section 4 Overview (15/07/2021)

Manholes: **SWMH04 to SWMH04/A**  
Pipe Length: **34.37 metres**  
Structural Grade: **4**  
Service Grade: **5**  
Material: **Vitrified clay**  
Pipe Size: **300mm**  
Use: **Surface water**

ROOTS AND ENCRUSTATION THROUGHOUT THIS SECTION.

## Section 5 Overview (15/07/2021)

Manholes: **SWMH04/A to SWMH04/B**  
Pipe Length: **28.81 metres**  
Structural Grade: **0**  
Service Grade: **5**  
Material: **Vitrified clay**  
Pipe Size: **300mm**  
Use: **Surface water**

OBSTRUCTION AT THE START. ROOT MASS AT 27.4M WHICH IS RESTRICTING PROGRESS. FURTHER ROOT CUTTING REQUIRED.

## Section 6 Overview (18/10/2021)

Manholes: **SWMH4B to SWMH4C**  
Pipe Length: **23.3 metres**  
Structural Grade: **3**  
Service Grade: **5**  
Material: **Vitrified clay**  
Pipe Size: **300mm**  
Use: **Surface water**

SEVERAL DEFECTS NOTED. THE SURTVEY WAS ABANDONED AT 23.3M AS THE CAMERA COULD NOT PASS THE OBSTRUCTION. THE MANHOLE CAN BE SEEN IN THE DISTANCE. ACCESS TO SWMH4C WOULD BE REQUIRED SO JET VAC CLEANING CAN BE CONDUCTED.

## Section 7 Overview (19/10/2021)

Manholes: **SWMH4C to SWMH4D**  
Pipe Length: **14.56 metres**  
Structural Grade: **4**  
Service Grade: **2**  
Material: **Vitrified clay**  
Pipe Size: **300mm**  
Use: **Surface water**

MINOR DEFECTS NOTED THROUGHOUT.

## Section 8 Overview (19/10/2021)

Manholes: **SWMH4D to SWMH4E**  
Pipe Length: **21.52 metres**  
Structural Grade: **4**  
Service Grade: **4**  
Material: **Vitrified clay**  
Pipe Size: **300mm**  
Use: **Surface water**

VARIOUS DEFECTS NOTED THROUGHOUT.

## Section 9 Overview (01/02/2022)

Manholes: **SWMH4E to SWMH4F ENNERDALE HOUSE**  
Pipe Length: **30.48 metres**  
Structural Grade: **3**  
Service Grade: **3**  
Material: **Vitrified clay**  
Pipe Size: **300mm**  
Use: **Surface water**

MH IS IN DRIVE OF ENNERDALE HOUSE. ATTACHED DEPOSITATS AT THE START.



# Report Summary

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## Section 10 Overview (01/02/2022)

Manholes: **SWMH4F ENNERDALE HOUSE to SWMH4G**  
Pipe Length: **9.84 metres**  
Structural Grade: **5**  
Service Grade: **0**  
Material: **Vitrified clay**  
Pipe Size: **300mm**  
Use: **Surface water**

MH IS UNDER SAND BAGS IN ALLEY. BELIEVED TO JOIN POW BECK AT THIS POINT. NUMEROUS DEFECTS ON THIS SECTION.

## Section 11 Overview (07/02/2022)

Manholes: **FW01 to FW02**  
Pipe Length: **33.82 metres**  
Structural Grade: **4**  
Service Grade: **0**  
Material: **Vitrified clay**  
Pipe Size: **225mm**  
Use: **Foul**

FWMH02 IS UNDER THE BUILDING. TWO HOLES NOTED AT 9.43M AND 9.61M. RECOMMEND LINING THIS SECTION.

## Section 12 Overview (07/02/2022)

Manholes: **FW02 to FW08**  
Pipe Length: **17.35 metres**  
Structural Grade: **3**  
Service Grade: **0**  
Material: **Vitrified clay**  
Pipe Size: **225mm**  
Use: **Foul**

MINOR DEFECT NOTED AT 4.16M.

## Section 13 Overview (19/10/2021)

Manholes: **FWMH08 to FWMH09**  
Pipe Length: **26.68 metres**  
Structural Grade: **3**  
Service Grade: **2**  
Material: **Vitrified clay**  
Pipe Size: **225mm**  
Use: **Foul**

SURVEY WAS ABANDONED DUE TO A BLOCKAGE. REQUIRES CLEANING WITH A JET VAC AND RE-SURVEYED.

## Section 14 Overview (18/10/2021)

Manholes: **FWMH09 to FWMH10**  
Pipe Length: **20 metres**  
Structural Grade: **4**  
Service Grade: **4**  
Material: **Vitrified clay**  
Pipe Size: **225mm**  
Use: **Foul**

SURVEY ABANDONED AT 20.0M DUE TO A PARTIALLY COLLAPSED PIPE. SEVERAL DEFECTS NOTED UPTO THIS POINT. THE RECOMMENDATION WOULD TO INSTALL LOCALISED STRUCTURAL REPAIR LINERS AND CONTINUE ROOT CUTTING.

## Section 15 Overview (20/09/2021)

Manholes: **FWMH10 to FWMH09**  
Pipe Length: **6.99 metres**  
Structural Grade: **4**  
Service Grade: **0**  
Material: **Vitrified clay**  
Pipe Size: **225mm**  
Use: **Foul**

ATTEMPTS MADE TO TRAVEL UPSTREAM FROM MH10 - MH09. SURVEY ABANDONED AT 6.99M DUE TO A SEVERE DEFECT. RECOMMEND INSTALLING A LOCALISED STRUCTURAL REPAIR LINER TO STABILISE PIPE BEFORE A TOTAL COLLAPSE OCCURS.

# Report Summary

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## Section 16 Overview (18/10/2021)

Manholes: **FWMH10 to FWMH11**  
Pipe Length: **31.64 metres**  
Structural Grade: **4**  
Service Grade: **2**  
Material: **Vitrified clay**  
Pipe Size: **225mm**  
Use: **Foul**

DEFECTS AND ENCRUSTATION NOTED THROUGHOUT.

## Section 17 Overview (18/10/2021)

Manholes: **FWMH11 to FWMH12**  
Pipe Length: **23.71 metres**  
Structural Grade: **4**  
Service Grade: **3**  
Material: **Vitrified clay**  
Pipe Size: **225mm**  
Use: **Foul**

SEVERAL DEFECTS NOTED THROUGHOUT.

## Section 18 Overview (18/10/2021)

Manholes: **FWMH12 to FWMH13**  
Pipe Length: **15.68 metres**  
Structural Grade: **0**  
Service Grade: **3**  
Material: **Vitrified clay**  
Pipe Size: **225mm**  
Use: **Foul**

SOME ROOT INGRES IN VARIOUS JOINTS THROUGHOUT.  
FWMH13 IS LOCATED IN REAR GARDEN OF THE COACH HOUSE.

## Section 19 Overview (18/10/2021)

Manholes: **FWMH13 to FWMH13A**  
Pipe Length: **23.41 metres**  
Structural Grade: **0**  
Service Grade: **5**  
Material: **Vitrified clay**  
Pipe Size: **225mm**  
Use: **Foul**

VARIOUS SECTIONS HAVE FINE ROOTS AND ENCRUSTATION THROUGH THE JOINTS.  
LARGE OBSTRUCTION RESTRICTING FLOW AT 21.97M.  
ROOT MASS ON BACK DROP TO MANHOLE.  
MANHOLE WILL REQUIRE EXPOSING SO SURVEY CAN BE CONTINUED.

## Section 20 Overview (01/02/2022)

Manholes: **FWMH13A to FWMH14**  
**ENNERDALE HOUSE**  
Pipe Length: **30.18 metres**  
Structural Grade: **2**  
Service Grade: **5**  
Material: **Vitrified clay**  
Pipe Size: **225mm**  
Use: **Foul**

FWMH14 HAS BEEN LOCATED IN THE DRIVE OF ENNERDALE HOUSE.

## Section 21 Overview (01/02/2022)

Manholes: **FWMH14 ENNERDALE**  
**HOUSE to FWMH15**  
Pipe Length: **6.47 metres**  
Structural Grade: **0**  
Service Grade: **0**  
Material: **Vitrified clay**  
Pipe Size: **225mm**  
Use: **Foul**

FWMH14 IS IN DRIVE OF ENNERDALE HOUSE. FWMH15 IS NOT EXPOSED BELIEVED TO BE WATER AUTHORITY SEWER.

Surveyed by (Operator) <b>BEN HUGHES/ STEVE OAKES</b>	Job Number <b>SK-S 160/21 WCH GRAHAMS (updated 11/02/2022)</b>	Pipe Length Reference(PLR) <b>SW01</b>	Date <b>07/02/2022</b>	Pre Cleaned <b>Not Cleaned</b>
Weather <b>1 - Dry</b>	Customer Present	Service Grade/Structural Grade <b>4/0</b>	Base Unit <b>VJ7B51U7GO</b>	Section Number <b>1</b>

Road <b>FOUL AND SURFACE WATER OUTFALLS FROM SITE COMPOUND</b> Place <b>WEST CUMBERLAND HOSPITAL</b> Location <b>HOMEWOOD ROAD</b>	Division District Location Details
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Purpose Duty <b>Surface water</b> Catchment	Shape/Size <b>150mm</b> Material <b>Vitrified clay</b> Category	Start Node <b>SW01</b> End Node <b>SW02</b> Total length <b>19.37 metres</b>
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Scale **1:1.00**  
Direction **Downstream**

Start Node Ref:SW01 | I/L : metres

Position	Code	Description	Photo	Type/Grade
0.00	MH	Start node type, manhole, reference SW01	6032559	Comment / 0
0.00	WL	Water level 0% height/diameter	6032560	Comment / 0
0.44	DEE (S1)	Attached deposits, encrustation from 10 to 5 o'clock 5% cross-sectional area loss, Start	6032660	Service / 2
2.89	DEEJ	Attached deposits, encrustation at 5 o'clock 5% cross-sectional area loss at joint	6032661	Service / 2
4.24	DEE (F1)	Attached deposits, encrustation from 10 to 5 o'clock 5% cross-sectional area loss, Finished	6032662	Service / 2
17.99	DER (S2)	Settled deposits coarse 50% cross-sectional area loss, Start	6032663	Service / 4
19.37	DER (F2)	Settled deposits coarse 50% cross-sectional area loss, Finished	6032664	Service / 4
19.37	SA	Survey abandoned - Remark: DEBRIS	6032561	Comment / 0

End Node Ref:SW02 | I/L : metres

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Start node type, manhole, reference SW01



Water level 0% height/diameter



Attached deposits, encrustation from 10 to 5 o'clock 5% cross-sectional area loss, Start



Attached deposits, encrustation at 5 o'clock 5% cross-sectional area loss at joint



Attached deposits, encrustation from 10 to 5 o'clock 5% cross-sectional area loss, Finished

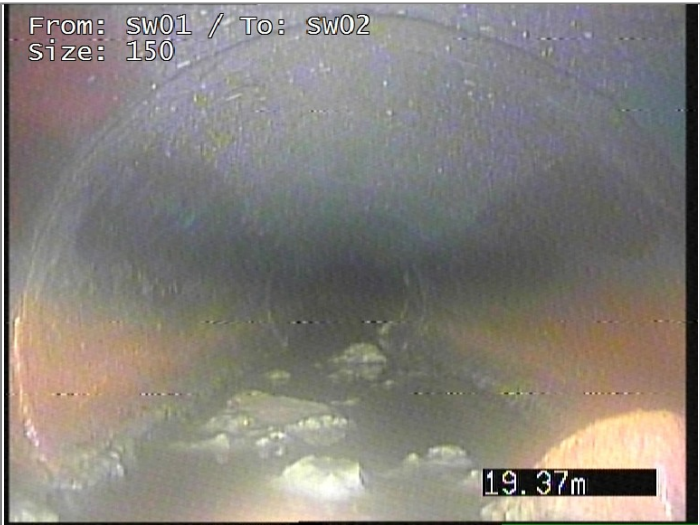


Settled deposits coarse 50% cross-sectional area loss, Start

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Settled deposits coarse 50% cross-sectional area loss, Finished



Survey abandoned - Remark: DEBRIS

Surveyed by (Operator) <b>BEN HUGHES/ STEVE OAKES</b>	Job Number <b>SK-S 160/21 WCH GRAHAMS (updated 11/02/2022)</b>	Pipe Length Reference(PLR) <b>SW02</b>	Date <b>07/02/2022</b>	Pre Cleaned <b>Not Cleaned</b>
Weather <b>1 - Dry</b>	Customer Present	Service Grade/Structural Grade <b>4/2</b>	Base Unit <b>VJ7B51U7GO</b>	Section Number <b>2</b>

Road <b>FOUL AND SURFACE WATER OUTFALLS FROM SITE COMPOUND</b> Place <b>WEST CUMBERLAND HOSPITAL</b> Location <b>HOMEWOOD ROAD</b>	Division District Location Details
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Purpose Duty <b>Surface water</b> Catchment	Shape/Size <b>300mm</b> Material <b>Vitrified clay</b> Category	Start Node <b>SW02</b> End Node <b>SW03</b> Total length <b>23.36 metres</b>
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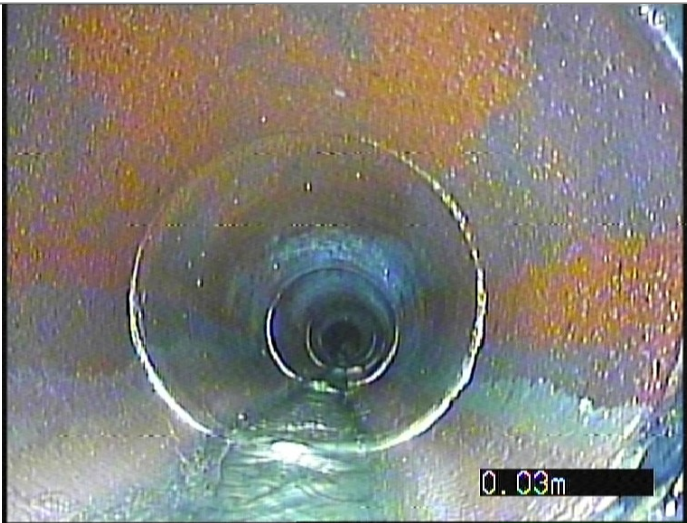
Scale **1:1.21**  
Direction **Downstream**

Start Node Ref:SW02 | I/L : metres

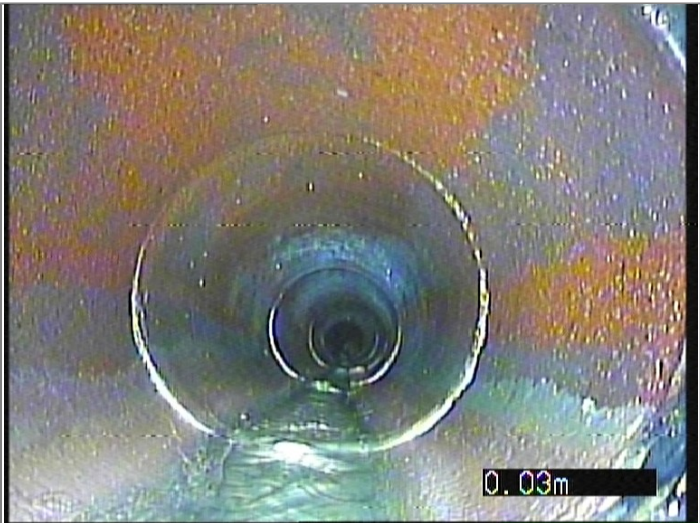
Position	Code	Description	Photo	Type/Grade
0.00	MH	Start node type, manhole, reference SW02	6032568	Comment / 0
0.00	WL	Water level 0% height/diameter	6032569	Comment / 0
2.21	CCJ	Crack circumferential from 9 to 11 o'clock at joint	6032665	Structural / 2
3.96	DEE (S1)	Attached deposits, encrustation from 4 to 6 o'clock 10% cross-sectional area loss, Start	6032666	Service / 3
4.94	DEE (F1)	Attached deposits, encrustation from 4 to 6 o'clock 10% cross-sectional area loss, Finished	6032667	Service / 3
4.94	DEE (S2)	Attached deposits, encrustation from 3 to 6 o'clock 25% cross-sectional area loss, Start	6032668	Service / 4
6.98	DEE (F2)	Attached deposits, encrustation from 3 to 6 o'clock 25% cross-sectional area loss, Finished	6032669	Service / 4
9.13	REM	SW02A	6032570	Comment / 0
15.15	CCJ	Crack circumferential from 1 to 3 o'clock at joint	6032670	Structural / 2
15.25	JN	Junction at 2 o'clock, diameter 150mm	6032671	Comment / 0
16.78	CCJ	Crack circumferential from 1 to 4 o'clock at joint	6032672	Structural / 2
22.91	JN	Junction at 6 o'clock, diameter 300mm - Remark: BACK DROP CONNECTION TO MANHOLE	6032673	Comment / 0
23.36	MHF	Finish node type, manhole, reference SW03	6032571	Comment / 0

End Node Ref:SW03 | I/L : metres

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Start node type, manhole, reference SW02



Water level 0% height/diameter



Crack circumferential from 9 to 11 o'clock at joint



Attached deposits, encrustation from 4 to 6 o'clock 10% cross-sectional area loss, Start



Attached deposits, encrustation from 4 to 6 o'clock 10% cross-sectional area loss, Finished



Attached deposits, encrustation from 3 to 6 o'clock 25% cross-sectional area loss, Start

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Attached deposits, encrustation from 3 to 6 o'clock 25% cross-sectional area loss, Finished



SW02A



Crack circumferential from 1 to 3 o'clock at joint



Junction at 2 o'clock, diameter 150mm



Crack circumferential from 1 to 4 o'clock at joint

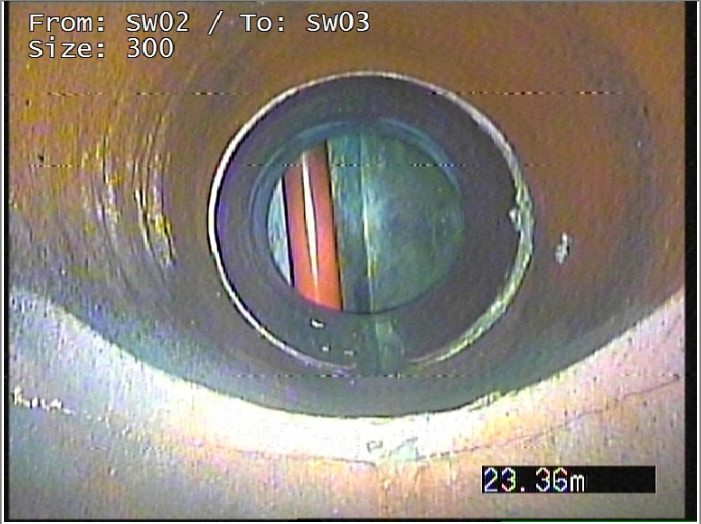


Junction at 6 o'clock, diameter 300mm - Remark: BACK DROP CONNECTION TO MANHOLE



# CCTV Inspection Photos

Job Number <b>SK-S 160/21 WCH GRAHAMS</b> (updated 11/02/2022)	Surveyed by (Operator) <b>BEN HUGHES/ STEVE OAKES</b>	Base Unit <b>VJ7B51U7GO</b>	Date <b>07/02/2022</b>
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Finish node type, manhole, reference SW03

Surveyed by (Operator) <b>BEN HUGHES/ STEVE OAKES</b>	Job Number <b>SK-S 160/21 WCH GRAHAMS (updated 11/02/2022)</b>	Pipe Length Reference(PLR) <b>SWMH3</b>	Date <b>19/10/2021</b>	Pre Cleaned <b>Not Cleaned</b>
Weather <b>1 - Dry</b>	Customer Present	Service Grade/Structural Grade <b>5/3</b>	Base Unit <b>VJ7B51U7GO</b>	Section Number <b>3</b>
Road <b>FOUL AND SURFACE WATER OUTFALLS FROM SITE COMPOUND</b> Place <b>WEST CUMBERLAND HOSPITAL</b> Location <b>HOMEWOOD ROAD</b>		Division District Location Details		
Purpose Duty <b>Surface water</b> Catchment	Shape/Size <b>300mm</b> Material <b>Vitrified clay</b> Category	Start Node <b>SWMH3</b> End Node <b>SWMH4</b> Total length <b>25.97 metres</b>		

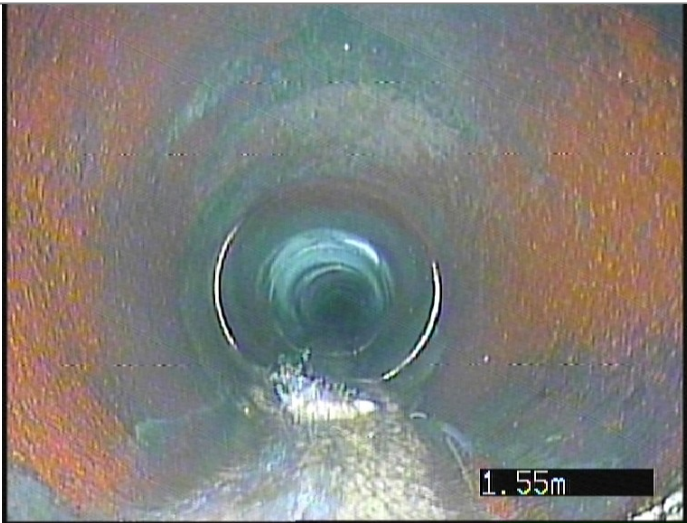
Scale **1:1.31**  
Direction **Downstream**

Start Node Ref:SWMH3 | I/L : metres

Position	Code	Description	Photo	Type/Grade
0.00	MH	Start node type, manhole, reference SWMH3	6032549	Comment / 0
0.00	WL	Water level 5% height/diameter	6032550	Comment / 0
				
19.90	CCJ	Crack circumferential from 2 to 5 o'clock at joint	6032552	Structural / 2
22.97	RFJ	Roots fine at joint	6032553	Service / 2
23.86	RMJ	Roots mass 25% cross-sectional area loss at joint	6032554	Service / 5
23.86	FCJ	Fracture circumferential from 3 to 6 o'clock at joint	6032674	Structural / 3
23.86	CCJ	Crack circumferential from 8 to 10 o'clock at joint	6032675	Structural / 2
25.69	JN	Junction at 6 o'clock, diameter 300mm - Remark: BACK DROP CONNECTION TO SWMH4	6032555	Comment / 0
25.97	MHF	Finish node type, manhole, reference SWMH4	6032551	Comment / 0

End Node Ref:SWMH4 | I/L : metres

Job Number <b>SK-S 160/21 WCH GRAHAMS</b> (updated 11/02/2022)	Surveyed by (Operator) <b>BEN HUGHES/ STEVE OAKES</b>	Base Unit <b>VJ7B51U7GO</b>	Date <b>19/10/2021</b>
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Start node type, manhole, reference SWMH3



Water level 5% height/diameter



Crack circumferential from 2 to 5 o'clock at joint



Roots fine at joint



Roots mass 25% cross-sectional area loss at joint



Fracture circumferential from 3 to 6 o'clock at joint

# CCTV Inspection Photos

Job Number <b>SK-S 160/21 WCH GRAHAMS</b> (updated 11/02/2022)	Surveyed by (Operator) <b>BEN HUGHES/ STEVE OAKES</b>	Base Unit <b>VJ7B51U7GO</b>	Date <b>19/10/2021</b>
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Crack circumferential from 8 to 10 o'clock at joint



Junction at 6 o'clock, diameter 300mm - Remark: BACK DROP CONNECTION TO SWMH4



Finish node type, manhole, reference SWMH4

Surveyed by (Operator) <b>BEN HUGHES/ STEVE OAKES</b>	Job Number <b>SK-S 160/21 WCH GRAHAMS (updated 11/02/2022)</b>	Pipe Length Reference(PLR) <b>SWMH04</b>	Date <b>15/07/2021</b>	Pre Cleaned <b>Not Cleaned</b>
Weather <b>1 - Dry</b>	Customer Present	Service Grade/Structural Grade <b>5/4</b>	Base Unit <b>VJ7B51U7GO</b>	Section Number <b>4</b>
Road <b>FOUL AND SURFACE WATER OUTFALLS FROM SITE COMPOUND</b> Place <b>WEST CUMBERLAND HOSPITAL</b> Location <b>HOMEWOOD ROAD</b>		Division District Location Details		
Purpose Duty <b>Surface water</b> Catchment	Shape/Size <b>300mm</b> Material <b>Vitrified clay</b> Category	Start Node <b>SWMH04</b> End Node <b>SWMH04/A</b> Total length <b>34.37 metres</b>		

Scale **1:1.78**  
Direction **Downstream**

Start Node Ref:SWMH04 | I/L : metres | Depth: 4.03 metres

Position	Code	Description	Photo	Type/Grade
0.00	MH	Start node type, manhole, reference SWMH04	6032254	Comment / 0
0.00	WL	Water level 0% height/diameter	6032255	Comment / 0
8.06	DEE	Attached deposits, encrustation at 7 o'clock 5% cross-sectional area loss	6032257	Service / 2
12.20	DEE (S01)	Attached deposits, encrustation at 7 o'clock 5% cross-sectional area loss, Start	6032258	Service / 2
14.03	DEE (F01)	Attached deposits, encrustation at 7 o'clock 5% cross-sectional area loss, Finished	6032259	Service / 2
14.03	RM (S02)	Roots mass 20% cross-sectional area loss, Start	6032260	Service / 5
16.58	RM (F02)	Roots mass 20% cross-sectional area loss, Finished	6032261	Service / 5
18.50	FM (S03)	Fracture multiple from 12 to 12 o'clock, Start	6032262	Structural / 4
31.19	FM (F03)	Fracture multiple from 12 to 12 o'clock, Finished	6032263	Structural / 4
32.37	JN	Junction at 3 o'clock, diameter 100mm	6032264	Comment / 0
34.37	MHF	Finish node type, manhole, reference SWMH04A	6032256	Comment / 0

End Node Ref:SWMH04/A | I/L : metres

Job Number <b>SK-S 160/21 WCH GRAHAMS</b> (updated 11/02/2022)	Surveyed by (Operator) <b>BEN HUGHES/ STEVE OAKES</b>	Base Unit <b>VJ7B51U7GO</b>	Date <b>15/07/2021</b>
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Start node type, manhole, reference SWMH04



Water level 0% height/diameter



Attached deposits, encrustation at 7 o'clock 5% cross-sectional area loss



Attached deposits, encrustation at 7 o'clock 5% cross-sectional area loss, Start



Attached deposits, encrustation at 7 o'clock 5% cross-sectional area loss, Finished



Roots mass 20% cross-sectional area loss, Start

Job Number <b>SK-S 160/21 WCH GRAHAMS</b> (updated 11/02/2022)	Surveyed by (Operator) <b>BEN HUGHES/ STEVE OAKES</b>	Base Unit <b>VJ7B51U7GO</b>	Date <b>15/07/2021</b>
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Roots mass 20% cross-sectional area loss, Finished



Fracture multiple from 12 to 12 o'clock, Start



Fracture multiple from 12 to 12 o'clock, Finished



Junction at 3 o'clock, diameter 100mm



Finish node type, manhole, reference SWMH04A

Surveyed by (Operator) <b>BEN HUGHES/ STEVE OAKES</b>	Job Number <b>SK-S 160/21 WCH GRAHAMS (updated 11/02/2022)</b>	Pipe Length Reference(PLR) <b>SWMH04/A</b>	Date <b>15/07/2021</b>	Pre Cleaned <b>Not Cleaned</b>
Weather <b>1 - Dry</b>	Customer Present	Service Grade/Structural Grade <b>5/0</b>	Base Unit <b>VJ7B51U7GO</b>	Section Number <b>5</b>
Road <b>FOUL AND SURFACE WATER OUTFALLS FROM SITE COMPOUND</b> Place <b>WEST CUMBERLAND HOSPITAL</b> Location <b>HOMEWOOD ROAD</b>		Division District Location Details		
Purpose Duty <b>Surface water</b> Catchment	Shape/Size <b>300mm</b> Material <b>Vitrified clay</b> Category	Start Node <b>SWMH04/A</b> End Node <b>SWMH04/B</b> Total length <b>28.81 metres</b>		

Scale **1:1.47**  
Direction **Downstream**

Start Node Ref:SWMH04/A | I/L : metres | Depth: 4 metres

Position	Code	Description	Photo	Type/Grade
0.00	MH	Start node type, manhole, reference SWMH04A	6032265	Comment / 0
0.00	WL	Water level 0% height/diameter	6032266	Comment / 0
0.42	DEE	Attached deposits, encrustation from 6 to 12 o'clock 25% cross-sectional area loss	6032676	Service / 4
27.40	RM	Roots mass 75% cross-sectional area loss	6032268	Service / 5
28.81	SA	Survey abandoned - Remark: UNABLE TO PASS ROOT MASS	6032269	Comment / 0

End Node Ref:SWMH04/B | I/L : metres | Depth: 0 metres



Job Number <b>SK-S 160/21 WCH GRAHAMS</b> (updated 11/02/2022)	Surveyed by (Operator) <b>BEN HUGHES/ STEVE OAKES</b>	Base Unit <b>VJ7B51U7GO</b>	Date <b>15/07/2021</b>
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Start node type, manhole, reference SWMH04A



Water level 0% height/diameter



Attached deposits, encrustation from 6 to 12 o'clock 25% cross-sectional area loss



Roots mass 75% cross-sectional area loss



Survey abandoned - Remark: UNABLE TO PASS ROOT MASS

Surveyed by (Operator) <b>BEN HUGHES/ STEVE OAKES</b>	Job Number <b>SK-S 160/21 WCH GRAHAMS (updated 11/02/2022)</b>	Pipe Length Reference(PLR) <b>SWMH4B</b>	Date <b>18/10/2021</b>	Pre Cleaned <b>Not Cleaned</b>
Weather <b>1 - Dry</b>	Customer Present	Service Grade/Structural Grade <b>5/3</b>	Base Unit <b>VJ7B51U7GO</b>	Section Number <b>6</b>

Road <b>FOUL AND SURFACE WATER OUTFALLS FROM SITE COMPOUND</b>	Division
Place <b>WEST CUMBERLAND HOSPITAL</b>	District
Location <b>HOMWOOD ROAD</b>	Location Details

Purpose Duty <b>Surface water</b> Catchment	Shape/Size <b>300mm</b> Material <b>Vitrified clay</b> Category	Start Node <b>SWMH4B</b> End Node <b>SWMH4C</b> Total length <b>23.3 metres</b>
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Scale **1:1.21**  
Direction **Downstream**

Start Node Ref:SWMH4B | I/L : metres

Position	Code	Description	Photo	Type/Grade
0.00	MH	Start node type, manhole, reference SWMH4B	6032447	Comment / 0
0.00	WL	Water level 5% height/diameter	6032448	Comment / 0
0.06	DEEJ	Attached deposits, encrustation from 12 to 6 o'clock 20% cross-sectional area loss at joint	6032451	Service / 3
1.66	DEEJ	Attached deposits, encrustation from 12 to 6 o'clock 10% cross-sectional area loss at joint	6032452	Service / 3
2.58	DEEJ	Attached deposits, encrustation from 1 to 9 o'clock 5% cross-sectional area loss at joint	6032453	Service / 2
3.32	DEEJ	Attached deposits, encrustation from 1 to 6 o'clock 5% cross-sectional area loss at joint	6032454	Service / 2
4.21	DEEJ	Attached deposits, encrustation from 1 to 6 o'clock 5% cross-sectional area loss at joint	6032455	Service / 2
8.68	CC	Crack circumferential from 9 to 11 o'clock	6032456	Structural / 2
17.00	RFJ	Roots fine at joint	6032457	Service / 2
18.12	RTJ	Roots tap at joint - Remark: 8 OCLOCK	6032458	Service / 4
19.72	RFJ	Roots fine at joint	6032459	Service / 2
21.31	RMJ	Roots mass 50% cross-sectional area loss at joint	6032460	Service / 5
22.09	OBZ	Other obstacles, other from 4 to 8 o'clock 40% cross-sectional area loss - Remark: DEBRIS OR SIMILAR RESTRICTING FLOW.	6032462	Service / 5
22.56	FL	Fracture longitudinal at 9 o'clock	6032461	Structural / 3
22.96	REM	MANHOLE VISIBLE IN THE DISTANCE.	6032463	Comment / 0
23.30	SA	Survey abandoned - Remark: UNABLE TO PASS DEFECT	6032450	Comment / 0

End Node Ref:SWMH4C | I/L : metres

Job Number <b>SK-S 160/21 WCH GRAHAMS</b> (updated 11/02/2022)	Surveyed by (Operator) <b>BEN HUGHES/ STEVE OAKES</b>	Base Unit <b>VJ7B51U7GO</b>	Date <b>18/10/2021</b>
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Start node type, manhole, reference SWMH4B



Water level 5% height/diameter



Attached deposits, encrustation from 12 to 6 o'clock 20% cross-sectional area loss at joint



Attached deposits, encrustation from 12 to 6 o'clock 10% cross-sectional area loss at joint



Attached deposits, encrustation from 1 to 9 o'clock 5% cross-sectional area loss at joint



Attached deposits, encrustation from 1 to 6 o'clock 5% cross-sectional area loss at joint

Job Number <b>SK-S 160/21 WCH GRAHAMS</b> (updated 11/02/2022)	Surveyed by (Operator) <b>BEN HUGHES/ STEVE OAKES</b>	Base Unit <b>VJ7B51U7GO</b>	Date <b>18/10/2021</b>
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Attached deposits, encrustation from 1 to 6 o'clock 5% cross-sectional area loss at joint



Crack circumferential from 9 to 11 o'clock



Roots fine at joint



Roots tap at joint - Remark: 8 OCLOCK



Roots fine at joint

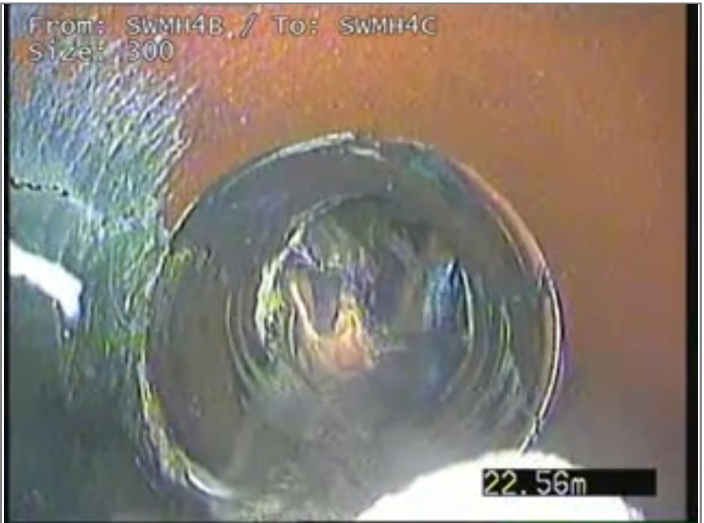


Roots mass 50% cross-sectional area loss at joint

Job Number <b>SK-S 160/21 WCH GRAHAMS</b> (updated 11/02/2022)	Surveyed by (Operator) <b>BEN HUGHES/ STEVE OAKES</b>	Base Unit <b>VJ7B51U7GO</b>	Date <b>18/10/2021</b>
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Other obstacles, other from 4 to 8 o'clock 40% cross-sectional area loss -  
Remark: DEBRIS OR SIMILAR RESTRICTING FLOW.



Fracture longitudinal at 9 o'clock



MANHOLE VISIBLE IN THE DISTANCE.



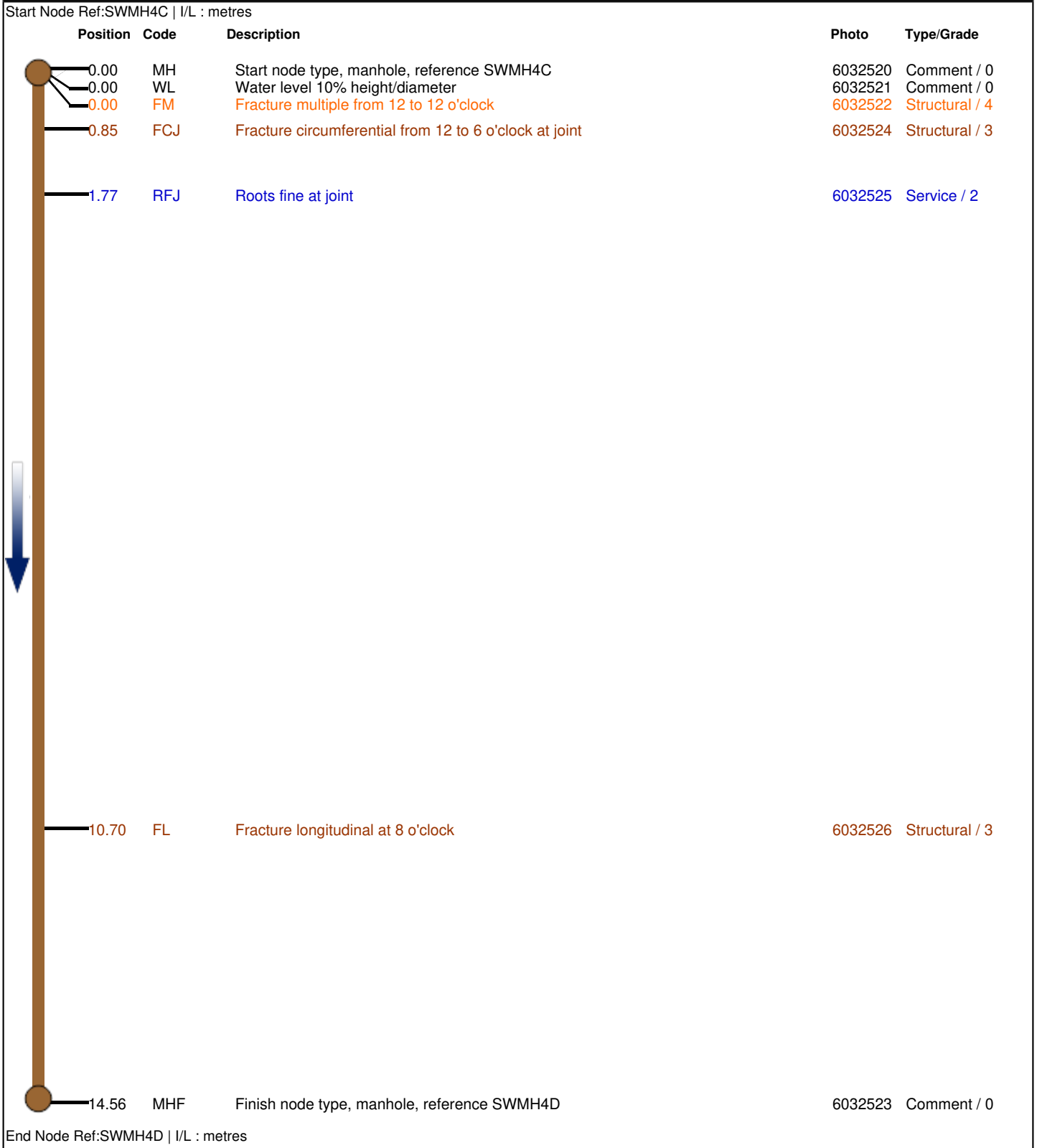
Survey abandoned - Remark: UNABLE TO PASS DEFECT

Surveyed by (Operator) <b>BEN HUGHES/ STEVE OAKES</b>	Job Number <b>SK-S 160/21 WCH GRAHAMS (updated 11/02/2022)</b>	Pipe Length Reference(PLR) <b>SWMH4C</b>	Date <b>19/10/2021</b>	Pre Cleaned <b>Not Cleaned</b>
Weather <b>1 - Dry</b>	Customer Present	Service Grade/Structural Grade <b>2/4</b>	Base Unit <b>VJ7B51U7GO</b>	Section Number <b>7</b>

Road <b>FOUL AND SURFACE WATER OUTFALLS FROM SITE COMPOUND</b> Place <b>WEST CUMBERLAND HOSPITAL</b> Location <b>HOMEWOOD ROAD</b>	Division District Location Details
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Purpose Duty <b>Surface water</b> Catchment	Shape/Size <b>300mm</b> Material <b>Vitrified clay</b> Category	Start Node <b>SWMH4C</b> End Node <b>SWMH4D</b> Total length <b>14.56 metres</b>
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Scale **1:0.73**  
Direction **Downstream**



Job Number <b>SK-S 160/21 WCH GRAHAMS</b> (updated 11/02/2022)	Surveyed by (Operator) <b>BEN HUGHES/ STEVE OAKES</b>	Base Unit <b>VJ7B51U7GO</b>	Date <b>19/10/2021</b>
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Start node type, manhole, reference SWMH4C



Water level 10% height/diameter



Fracture multiple from 12 to 12 o'clock



Fracture circumferential from 12 to 6 o'clock at joint



Roots fine at joint



Fracture longitudinal at 8 o'clock

# CCTV Inspection Photos

Job Number <b>SK-S 160/21 WCH GRAHAMS</b> (updated 11/02/2022)	Surveyed by (Operator) <b>BEN HUGHES/ STEVE OAKES</b>	Base Unit <b>VJ7B51U7GO</b>	Date <b>19/10/2021</b>
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Finish node type, manhole, reference SWMH4D



Surveyed by (Operator) <b>BEN HUGHES/ STEVE OAKES</b>	Job Number <b>SK-S 160/21 WCH GRAHAMS (updated 11/02/2022)</b>	Pipe Length Reference(PLR) <b>SWMH4D</b>	Date <b>19/10/2021</b>	Pre Cleaned <b>Not Cleaned</b>
Weather <b>1 - Dry</b>	Customer Present	Service Grade/Structural Grade <b>4/4</b>	Base Unit <b>VJ7B51U7GO</b>	Section Number <b>8</b>
Road <b>FOUL AND SURFACE WATER OUTFALLS FROM SITE COMPOUND</b> Place <b>WEST CUMBERLAND HOSPITAL</b> Location <b>HOMEWOOD ROAD</b>		Division District Location Details		
Purpose Duty <b>Surface water</b> Catchment	Shape/Size <b>300mm</b> Material <b>Vitrified clay</b> Category	Start Node <b>SWMH4D</b> End Node <b>SWMH4E</b> Total length <b>21.52 metres</b>		

Scale **1:1.10**  
Direction **Downstream**

Start Node Ref:SWMH4D | I/L : metres

Position	Code	Description	Photo	Type/Grade
0.00	MH	Start node type, manhole, reference SWMH4D	6032527	Comment / 0
0.00	WL	Water level 10% height/diameter	6032528	Comment / 0
4.02	FL	Fracture longitudinal at 2 o'clock	6032533	Structural / 3
6.62	CCJ	Crack circumferential from 2 to 5 o'clock at joint	6032534	Structural / 2
10.75	FM	Fracture multiple from 12 to 12 o'clock	6032529	Structural / 4
10.77	CXBI	Connection defective, connecting pipe is blocked at 3 o'clock, diameter 150mm, intrusion 10% - Remark: ROOTS NOTED IN CONNECTION	6032535	Structural / 4
11.26	RT	Roots tap	6032536	Service / 4
11.86	FC	Fracture circumferential from 7 to 10 o'clock	6032537	Structural / 3
14.07	FCJ	Fracture circumferential from 2 to 5 o'clock at joint	6032538	Structural / 3
16.46	RFJ	Roots fine at joint	6032539	Service / 2
17.52	DEEJ	Attached deposits, encrustation from 6 to 9 o'clock 5% cross-sectional area loss at joint	6032540	Service / 2
18.00	FM	Fracture multiple from 12 to 12 o'clock	6032530	Structural / 4
19.64	FM	Fracture multiple from 12 to 12 o'clock	6032531	Structural / 4
20.28	CCJ	Crack circumferential from 12 to 2 o'clock at joint	6032541	Structural / 2
21.52	JN	Junction at 6 o'clock, diameter 300mm - Remark: BACK DROP CONNECTION TO SWMH4E	6032542	Comment / 0
21.52	MHF	Finish node type, manhole, reference SWMH4E	6032532	Comment / 0

End Node Ref:SWMH4E | I/L : metres

# CCTV Inspection Photos

Job Number <b>SK-S 160/21 WCH GRAHAMS</b> (updated 11/02/2022)	Surveyed by (Operator) <b>BEN HUGHES/ STEVE OAKES</b>	Base Unit <b>VJ7B51U7GO</b>	Date <b>19/10/2021</b>
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Start node type, manhole, reference SWMH4D



Water level 10% height/diameter



Fracture longitudinal at 2 o'clock



Crack circumferential from 2 to 5 o'clock at joint



Fracture multiple from 12 to 12 o'clock



Connection defective, connecting pipe is blocked at 3 o'clock, diameter 150mm, intrusion 10% - Remark: ROOTS NOTED IN CONNECTION

Job Number <b>SK-S 160/21 WCH GRAHAMS</b> (updated 11/02/2022)	Surveyed by (Operator) <b>BEN HUGHES/ STEVE OAKES</b>	Base Unit <b>VJ7B51U7GO</b>	Date <b>19/10/2021</b>
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Roots tap



Fracture circumferential from 7 to 10 o'clock



Fracture circumferential from 2 to 5 o'clock at joint



Roots fine at joint



Attached deposits, encrustation from 6 to 9 o'clock 5% cross-sectional area loss at joint



Fracture multiple from 12 to 12 o'clock

# CCTV Inspection Photos

Job Number <b>SK-S 160/21 WCH GRAHAMS</b> (updated 11/02/2022)	Surveyed by (Operator) <b>BEN HUGHES/ STEVE OAKES</b>	Base Unit <b>VJ7B51U7GO</b>	Date <b>19/10/2021</b>
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Fracture multiple from 12 to 12 o'clock



Crack circumferential from 12 to 2 o'clock at joint



Junction at 6 o'clock, diameter 300mm - Remark: BACK DROP CONNECTION TO SWMH4E



Finish node type, manhole, reference SWMH4E

Surveyed by (Operator) <b>BEN HUGHES/ STEVE OAKES</b>	Job Number <b>SK-S 160/21 WCH GRAHAMS (updated 11/02/2022)</b>	Pipe Length Reference(PLR) <b>SWMH4E</b>	Date <b>01/02/2022</b>	Pre Cleaned <b>Not Cleaned</b>
Weather <b>1 - Dry</b>	Customer Present	Service Grade/Structural Grade <b>3/3</b>	Base Unit <b>VJ7B51U7GO</b>	Section Number <b>9</b>

Road <b>FOUL AND SURFACE WATER OUTFALLS FROM SITE COMPOUND</b>	Division
Place <b>WEST CUMBERLAND HOSPITAL</b>	District
Location <b>HOMWOOD ROAD</b>	Location Details

Purpose Duty <b>Surface water</b> Catchment	Shape/Size <b>300mm</b> Material <b>Vitrified clay</b> Category	Start Node <b>SWMH4E</b> End Node <b>SWMH4F ENNERDALE HOUSE</b> Total length <b>30.48 metres</b>
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Scale **1:1.57**  
Direction **Downstream**

Start Node Ref:SWMH4E | I/L : metres

Position	Code	Description	Photo	Type/Grade
0.00	MH	Start node type, manhole, reference SWMH4E	6032646	Comment / 0
0.00	WL	Water level 5% height/diameter	6032647	Comment / 0
0.00	DEE (S1)	Attached deposits, encrustation from 5 to 6 o'clock 10% cross-sectional area loss, Start	6032680	Service / 3
8.13	CCJ	Crack circumferential from 9 to 12 o'clock, at joint	6032648	Structural / 2
16.27	CCJ	Crack circumferential from 1 to 3 o'clock, at joint	6032649	Structural / 2
28.00	FCJ	Fracture circumferential from 1 to 6 o'clock, at joint	6032650	Structural / 3
30.48	MHF	Finish node type, manhole, reference SWMH4F ENNERDALE HOUSE	6032651	Comment / 0

End Node Ref:SWMH4F ENNERDALE HOUSE | I/L : metres

Job Number <b>SK-S 160/21 WCH GRAHAMS</b> (updated 11/02/2022)	Surveyed by (Operator) <b>BEN HUGHES/ STEVE OAKES</b>	Base Unit <b>VJ7B51U7GO</b>	Date <b>01/02/2022</b>
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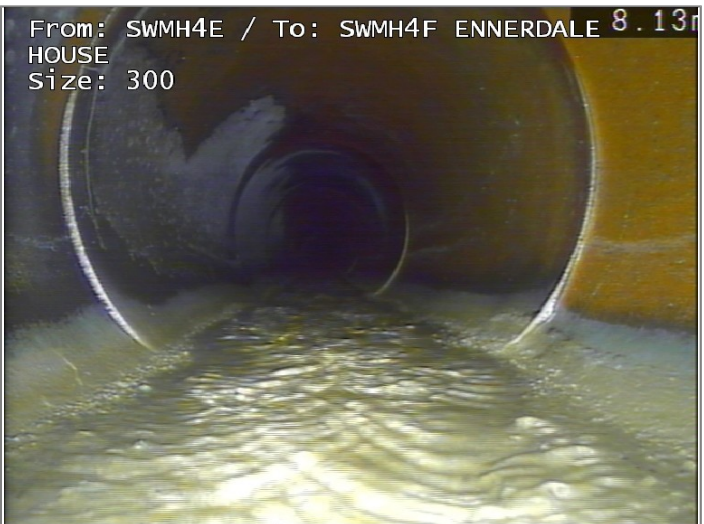
Start node type, manhole, reference SWMH4E



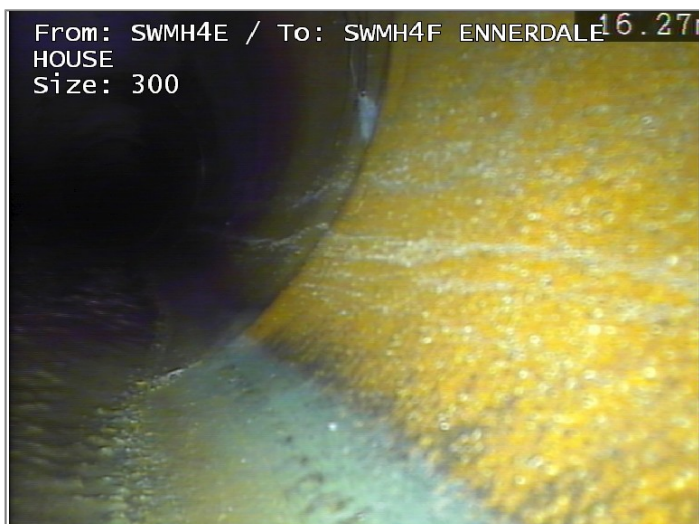
Water level 5% height/diameter



Attached deposits, encrustation from 5 to 6 o'clock 10% cross-sectional area loss, Start



Crack circumferential from 9 to 12 o'clock, at joint



Crack circumferential from 1 to 3 o'clock, at joint



Fracture circumferential from 1 to 6 o'clock, at joint

# CCTV Inspection Photos

Job Number <b>SK-S 160/21 WCH GRAHAMS</b> (updated 11/02/2022)	Surveyed by (Operator) <b>BEN HUGHES/ STEVE OAKES</b>	Base Unit <b>VJ7B51U7GO</b>	Date <b>01/02/2022</b>
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Finish node type, manhole, reference SWMH4F ENNERDALE HOUSE

Surveyed by (Operator) <b>BEN HUGHES/ STEVE OAKES</b>	Job Number <b>SK-S 160/21 WCH GRAHAMS (updated 11/02/2022)</b>	Pipe Length Reference(PLR) <b>SWMH4F ENN</b>	Date <b>01/02/2022</b>	Pre Cleaned <b>Not Cleaned</b>
Weather <b>1 - Dry</b>	Customer Present	Service Grade/Structural Grade <b>0/5</b>	Base Unit <b>VJ7B51U7GO</b>	Section Number <b>10</b>

Road <b>FOUL AND SURFACE WATER OUTFALLS FROM SITE COMPOUND</b> Place <b>WEST CUMBERLAND HOSPITAL</b> Location <b>HOMEWOOD ROAD</b>	Division District Location Details
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Purpose Duty <b>Surface water</b> Catchment	Shape/Size <b>300mm</b> Material <b>Vitrified clay</b> Category	Start Node <b>SWMH4F ENNERDALE HOUSE</b> End Node <b>SWMH4G</b> Total length <b>9.84 metres</b>
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Scale **1:0.47**  
Direction **Downstream**

Start Node Ref: **SWMH4F ENNERDALE HOUSE** | I/L : metres

Position	Code	Description	Photo	Type/Grade
0.00	MH	Start node type, manhole, reference SWMH4F ENNERDALE HOUSE	6032652	Comment / 0
0.00	WL	Water level 5% height/diameter	6032653	Comment / 0
0.74	CCJ	Crack circumferential from 1 to 5 o'clock, at joint	6032654	Structural / 2
1.13	H	Hole in drain/sewer from 10 to 2 o'clock	6032655	Structural / 5
6.28	FC	Fracture circumferential from 12 to 6 o'clock	6032656	Structural / 3
6.28	BJ	Broken pipe from 10 to 1 o'clock, at joint	6032657	Structural / 4
9.84	JN	Junction at 6 o'clock, diameter 300mm - Remark: BACK DROP CONNECTION TO MANHOLE	6032658	Comment / 0
9.84	MHF	Finish node type, manhole, reference SWMH4G UNDER SANDBAGS	6032659	Comment / 0

End Node Ref: **SWMH4G** | I/L : metres



<p>Job Number <b>SK-S 160/21 WCH GRAHAMS</b> (updated 11/02/2022)</p>	<p>Surveyed by (Operator) <b>BEN HUGHES/ STEVE OAKES</b></p>	<p>Base Unit <b>VJ7B51U7GO</b></p>	<p>Date <b>01/02/2022</b></p>
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Start node type, manhole, reference SWMH4F ENNERDALE HOUSE



Water level 5% height/diameter



Crack circumferential from 1 to 5 o'clock, at joint



Hole in drain/sewer from 10 to 2 o'clock



Fracture circumferential from 12 to 6 o'clock



Broken pipe from 10 to 1 o'clock, at joint

# CCTV Inspection Photos

Job Number <b>SK-S 160/21 WCH GRAHAMS</b> (updated 11/02/2022)	Surveyed by (Operator) <b>BEN HUGHES/ STEVE OAKES</b>	Base Unit <b>VJ7B51U7GO</b>	Date <b>01/02/2022</b>
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Junction at 6 o'clock, diameter 300mm - Remark: BACK DROP CONNECTION TO MANHOLE



Finish node type, manhole, reference SWMH4G UNDER SANDBAGS

Surveyed by (Operator) <b>BEN HUGHES/ STEVE OAKES</b>	Job Number <b>SK-S 160/21 WCH GRAHAMS (updated 11/02/2022)</b>	Pipe Length Reference(PLR) <b>FW01</b>	Date <b>07/02/2022</b>	Pre Cleaned <b>Not Cleaned</b>
Weather <b>1 - Dry</b>	Customer Present	Service Grade/Structural Grade <b>0/4</b>	Base Unit <b>VJ7B51U7GO</b>	Section Number <b>11</b>
Road <b>FOUL AND SURFACE WATER OUTFALLS FROM SITE COMPOUND</b> Place <b>WEST CUMBERLAND HOSPITAL</b> Location <b>HOMEWOOD ROAD</b>		Division District Location Details		
Purpose Duty <b>Foul</b> Catchment	Shape/Size <b>225mm</b> Material <b>Vitrified clay</b> Category	Start Node <b>FW01</b> End Node <b>FW02</b> Total length <b>33.82 metres</b>		

Scale **1:1.73**  
Direction **Downstream**

Start Node Ref:FW01 | I/L : metres

Position	Code	Description	Photo	Type/Grade
0.00	MH	Start node type, manhole, reference FW01	6032562	Comment / 0
0.00	WL	Water level 0% height/diameter	6032563	Comment / 0
0.00	CL	Crack longitudinal at 12 o'clock	6032684	Structural / 2
0.56	CCJ	Crack circumferential from 4 to 7 o'clock at joint	6032685	Structural / 2
1.93	CCJ	Crack circumferential from 5 to 7 o'clock at joint	6032686	Structural / 2
↓				
9.43	H	Hole in drain/sewer from 2 to 4 o'clock	6032689	Structural / 4
9.61	H	Hole in drain/sewer from 12 to 3 o'clock	6032690	Structural / 4
11.09	CL	Crack longitudinal at 12 o'clock	6032691	Structural / 2
↓				
20.66	CCJ	Crack circumferential from 3 to 6 o'clock at joint	6032692	Structural / 2
23.19	CR	Crack radiates from 9 o'clock	6032694	Structural / 3
↓				
33.82	MHF	Finish node type, manhole, reference FW02	6032564	Comment / 0

End Node Ref:FW02 | I/L : metres

Job Number <b>SK-S 160/21 WCH GRAHAMS</b> (updated 11/02/2022)	Surveyed by (Operator) <b>BEN HUGHES/ STEVE OAKES</b>	Base Unit <b>VJ7B51U7GO</b>	Date <b>07/02/2022</b>
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Start node type, manhole, reference FW01



Water level 0% height/diameter



Crack longitudinal at 12 o'clock



Crack circumferential from 4 to 7 o'clock at joint



Crack circumferential from 5 to 7 o'clock at joint



Hole in drain/sewer from 2 to 4 o'clock

# CCTV Inspection Photos

Job Number <b>SK-S 160/21 WCH GRAHAMS</b> (updated 11/02/2022)	Surveyed by (Operator) <b>BEN HUGHES/ STEVE OAKES</b>	Base Unit <b>VJ7B51U7GO</b>	Date <b>07/02/2022</b>
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Hole in drain/sewer from 12 to 3 o'clock



Crack longitudinal at 12 o'clock



Crack circumferential from 3 to 6 o'clock at joint



Crack radiates from 9 o'clock



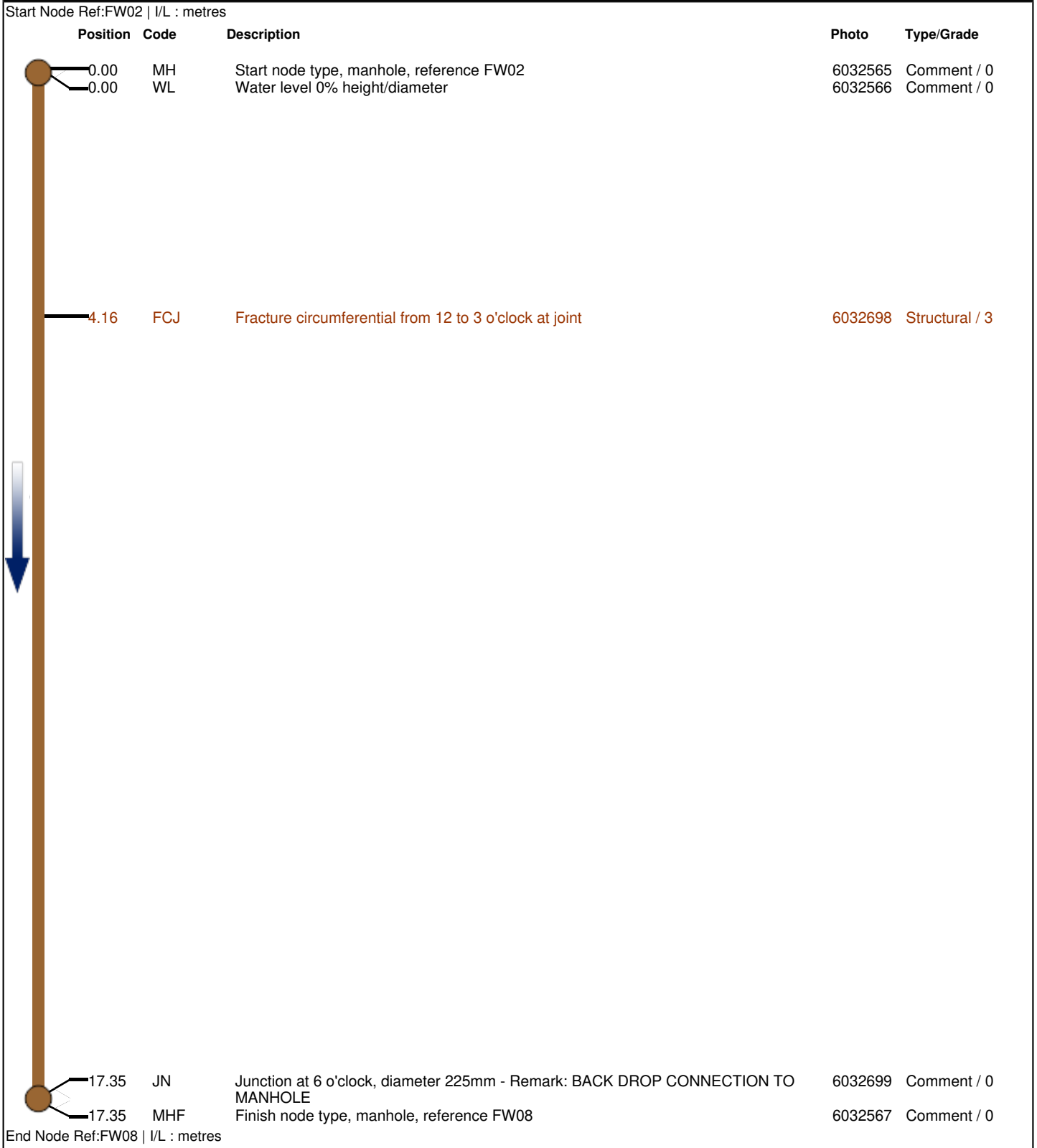
Finish node type, manhole, reference FW02

Surveyed by (Operator) <b>BEN HUGHES/ STEVE OAKES</b>	Job Number <b>SK-S 160/21 WCH GRAHAMS (updated 11/02/2022)</b>	Pipe Length Reference(PLR) <b>FW02</b>	Date <b>07/02/2022</b>	Pre Cleaned <b>Not Cleaned</b>
Weather <b>1 - Dry</b>	Customer Present	Service Grade/Structural Grade <b>0/3</b>	Base Unit <b>VJ7B51U7GO</b>	Section Number <b>12</b>

Road <b>FOUL AND SURFACE WATER OUTFALLS FROM SITE COMPOUND</b> Place <b>WEST CUMBERLAND HOSPITAL</b> Location <b>HOMWOOD ROAD</b>	Division District Location Details
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Purpose Duty <b>Foul</b> Catchment	Shape/Size <b>225mm</b> Material <b>Vitrified clay</b> Category	Start Node <b>FW02</b> End Node <b>FW08</b> Total length <b>17.35 metres</b>
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Scale **1:0.89**  
Direction **Downstream**



Job Number <b>SK-S 160/21 WCH GRAHAMS</b> (updated 11/02/2022)	Surveyed by (Operator) <b>BEN HUGHES/ STEVE OAKES</b>	Base Unit <b>VJ7B51U7GO</b>	Date <b>07/02/2022</b>
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Start node type, manhole, reference FW02



Water level 0% height/diameter



Fracture circumferential from 12 to 3 o'clock at joint



Junction at 6 o'clock, diameter 225mm - Remark: BACK DROP CONNECTION TO MANHOLE




Finish node type, manhole, reference FW08

Surveyed by (Operator) <b>BEN HUGHES/ STEVE OAKES</b>	Job Number <b>SK-S 160/21 WCH GRAHAMS (updated 11/02/2022)</b>	Pipe Length Reference(PLR) <b>FWMH08</b>	Date <b>19/10/2021</b>	Pre Cleaned <b>Not Cleaned</b>
Weather <b>1 - Dry</b>	Customer Present	Service Grade/Structural Grade <b>2/3</b>	Base Unit <b>VJ7B51U7GO</b>	Section Number <b>13</b>
Road <b>FOUL AND SURFACE WATER OUTFALLS FROM SITE COMPOUND</b> Place <b>WEST CUMBERLAND HOSPITAL</b> Location <b>HOMWOOD ROAD</b>		Division District Location Details		
Purpose Duty <b>Foul</b> Catchment	Shape/Size <b>225mm</b> Material <b>Vitrified clay</b> Category	Start Node <b>FWMH08</b> End Node <b>FWMH09</b> Total length <b>26.68 metres</b>		

Scale **1:1.36**  
Direction **Downstream**

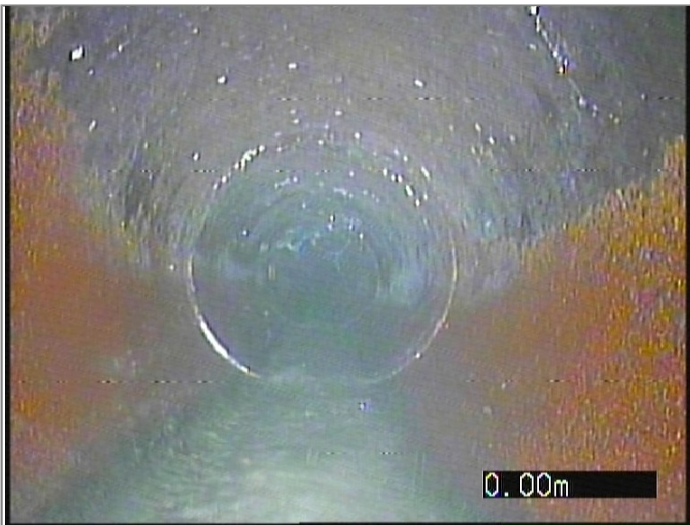
Start Node Ref:FWMH08 | I/L : metres

Position	Code	Description	Photo	Type/Grade
0.00	MH	Start node type, manhole, reference FWMH08	6032543	Comment / 0
0.00	WL	Water level 5% height/diameter	6032544	Comment / 0
				
19.93	FC	Fracture circumferential from 2 to 4 o'clock	6032546	Structural / 3
22.64	RFJ	Roots fine at joint	6032547	Service / 2
24.66	WL	Water level 50% height/diameter	6032548	Comment / 0
26.68	SA	Survey abandoned - Remark: LINE REQUIRES TANKER HPWJ	6032545	Comment / 0

End Node Ref:FWMH09 | I/L : metres



Job Number <b>SK-S 160/21 WCH GRAHAMS</b> (updated 11/02/2022)	Surveyed by (Operator) <b>BEN HUGHES/ STEVE OAKES</b>	Base Unit <b>VJ7B51U7GO</b>	Date <b>19/10/2021</b>
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Start node type, manhole, reference FWMH08



Water level 5% height/diameter



Fracture circumferential from 2 to 4 o'clock



Roots fine at joint



Water level 50% height/diameter



Survey abandoned - Remark: LINE REQUIRES TANKER HPWJ

Surveyed by (Operator) <b>BEN HUGHES/ STEVE OAKES</b>	Job Number <b>SK-S 160/21 WCH GRAHAMS (updated 11/02/2022)</b>	Pipe Length Reference(PLR) <b>FWMH09</b>	Date <b>18/10/2021</b>	Pre Cleaned <b>Not Cleaned</b>
Weather <b>1 - Dry</b>	Customer Present	Service Grade/Structural Grade <b>4/4</b>	Base Unit <b>VJ7B51U7GO</b>	Section Number <b>14</b>

Road <b>FOUL AND SURFACE WATER OUTFALLS FROM SITE COMPOUND</b> Place <b>WEST CUMBERLAND HOSPITAL</b> Location <b>HOMEWOOD ROAD</b>	Division District Location Details
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Purpose Duty <b>Foul</b> Catchment	Shape/Size <b>225mm</b> Material <b>Vitrified clay</b> Category	Start Node <b>FWMH09</b> End Node <b>FWMH10</b> Total length <b>20 metres</b>
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Scale **1:1.05**  
Direction **Downstream**

Start Node Ref:FWMH09 | I/L : metres

Position	Code	Description	Photo	Type/Grade
0.00	MH	Start node type, manhole, reference FWMH09	6032391	Comment / 0
0.00	WL	Water level 5% height/diameter	6032392	Comment / 0
0.70	RTJ	Roots tap at joint - Remark: <b>SOME ROOT REMAINING AFTER ROOT CUTTING.</b>	6032405	Service / 4
0.70	FC	Fracture circumferential from 10 to 12 o'clock	6032393	Structural / 3
1.67	CCJ	Crack circumferential from 3 to 8 o'clock at joint	6032406	Structural / 2
1.67	RFJ	Roots fine at joint - Remark: <b>ROOT REMAINING POST ROOT CUTTING.</b>	6032407	Service / 2
5.23	CCJ	Crack circumferential from 1 to 5 o'clock at joint	6032408	Structural / 2
5.62	FC	Fracture circumferential from 12 to 5 o'clock	6032394	Structural / 3
6.34	RFJ	Roots fine at joint - Remark: <b>FINE ROOTS REMAIN POST ROOT CUTTING</b>	6032409	Service / 2
6.36	FC	Fracture circumferential from 1 to 5 o'clock	6032395	Structural / 3
6.96	CCJ	Crack circumferential from 2 to 4 o'clock at joint	6032410	Structural / 2
7.55	FM (S01)	Fracture multiple from 12 to 12 o'clock, Start	6032396	Structural / 4
9.28	FM (F01)	Fracture multiple from 12 to 12 o'clock, Finished	6032397	Structural / 4
9.52	FC	Fracture circumferential from 12 to 12 o'clock	6032398	Structural / 3
10.50	RFJ	Roots fine at joint - Remark: <b>FINE ROOTS REMAIN POST ROOT CUT.</b>	6032411	Service / 2
10.50	FM	Fracture multiple from 12 to 12 o'clock	6032399	Structural / 4
10.78	FL	Fracture longitudinal at 11 o'clock	6032412	Structural / 3
11.42	FM (S02)	Fracture multiple from 12 to 12 o'clock, Start	6032400	Structural / 4
11.95	FL	Fracture longitudinal at 4 o'clock	6032413	Structural / 3
12.24	FCJ	Fracture circumferential from 1 to 3 o'clock at joint	6032414	Structural / 3
12.88	FL	Fracture longitudinal at 12 o'clock	6032415	Structural / 3
13.18	RFJ	Roots fine at joint - Remark: <b>FINE ROOTS REMAIN POST ROOT CUT.</b>	6032416	Service / 2
14.11	FM (F02)	Fracture multiple from 12 to 12 o'clock, Finished	6032401	Structural / 4
14.95	CCJ	Crack circumferential from 2 to 3 o'clock at joint	6032417	Structural / 2
15.81	CCJ	Crack circumferential from 2 to 3 o'clock at joint	6032418	Structural / 2
17.82	B	Broken pipe from 2 to 8 o'clock	6032402	Structural / 4
19.03	B	Broken pipe from 3 to 9 o'clock	6032403	Structural / 4
20.00	SA	Survey abandoned - Remark: <b>UNABLE TO CONTINUE WITH ROOT CUT AND CCTV REPAIRS WILL NEED TO BE MADE TO LINE</b>	6032404	Comment / 0

End Node Ref:FWMH10 | I/L : metres

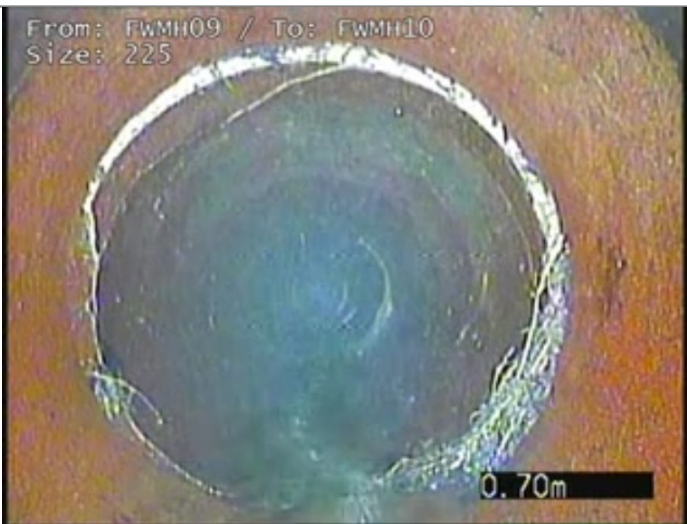
Job Number <b>SK-S 160/21 WCH GRAHAMS</b> (updated 11/02/2022)	Surveyed by (Operator) <b>BEN HUGHES/ STEVE OAKES</b>	Base Unit <b>VJ7B51U7GO</b>	Date <b>18/10/2021</b>
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Start node type, manhole, reference FWMH09



Water level 5% height/diameter



Roots tap at joint - Remark: SOME ROOT REMAINING AFTER ROOT CUTTING.



Fracture circumferential from 10 to 12 o'clock



Crack circumferential from 3 to 8 o'clock at joint



Roots fine at joint - Remark: ROOT REMAINING POST ROOT CUTTING.

Job Number <b>SK-S 160/21 WCH GRAHAMS</b> (updated 11/02/2022)	Surveyed by (Operator) <b>BEN HUGHES/ STEVE OAKES</b>	Base Unit <b>VJ7B51U7GO</b>	Date <b>18/10/2021</b>
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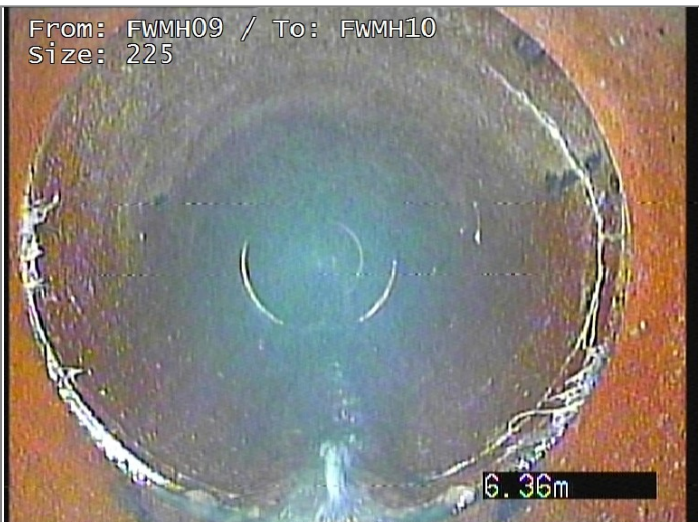
Crack circumferential from 1 to 5 o'clock at joint



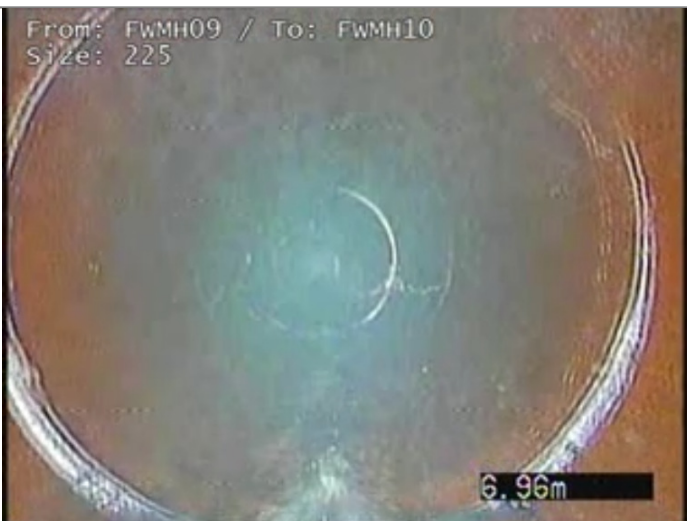
Fracture circumferential from 12 to 5 o'clock



Roots fine at joint - Remark: FINE ROOTS REMAIN POST ROOT CUTTING



Fracture circumferential from 1 to 5 o'clock



Crack circumferential from 2 to 4 o'clock at joint



Fracture multiple from 12 to 12 o'clock, Start

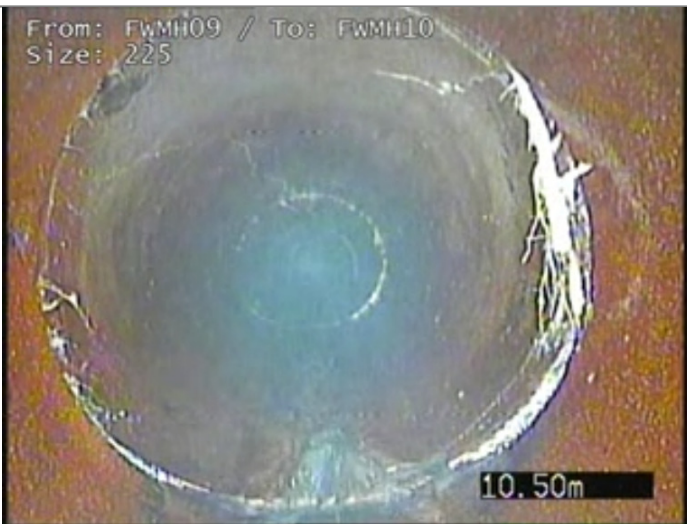
Job Number <b>SK-S 160/21 WCH GRAHAMS</b> (updated 11/02/2022)	Surveyed by (Operator) <b>BEN HUGHES/ STEVE OAKES</b>	Base Unit <b>VJ7B51U7GO</b>	Date <b>18/10/2021</b>
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Fracture multiple from 12 to 12 o'clock, Finished



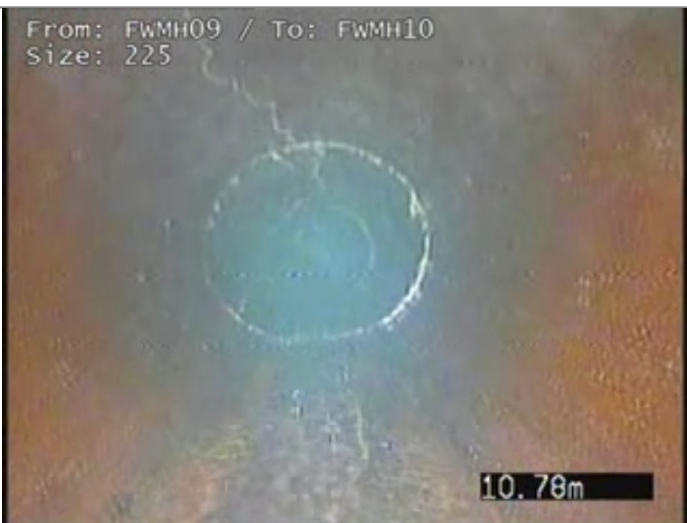
Fracture circumferential from 12 to 12 o'clock



Roots fine at joint - Remark: FINE ROOTS REMAIN POST ROOT CUT.



Fracture multiple from 12 to 12 o'clock



Fracture longitudinal at 11 o'clock



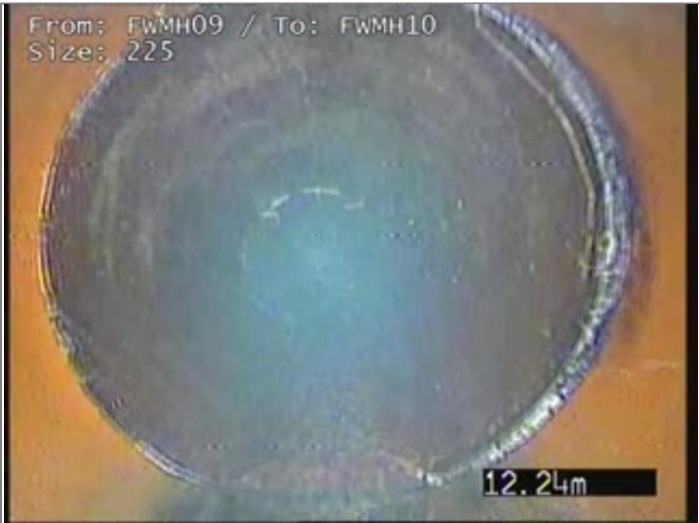
Fracture multiple from 12 to 12 o'clock, Start

# CCTV Inspection Photos

Job Number <b>SK-S 160/21 WCH GRAHAMS</b> (updated 11/02/2022)	Surveyed by (Operator) <b>BEN HUGHES/ STEVE OAKES</b>	Base Unit <b>VJ7B51U7GO</b>	Date <b>18/10/2021</b>
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Fracture longitudinal at 4 o'clock



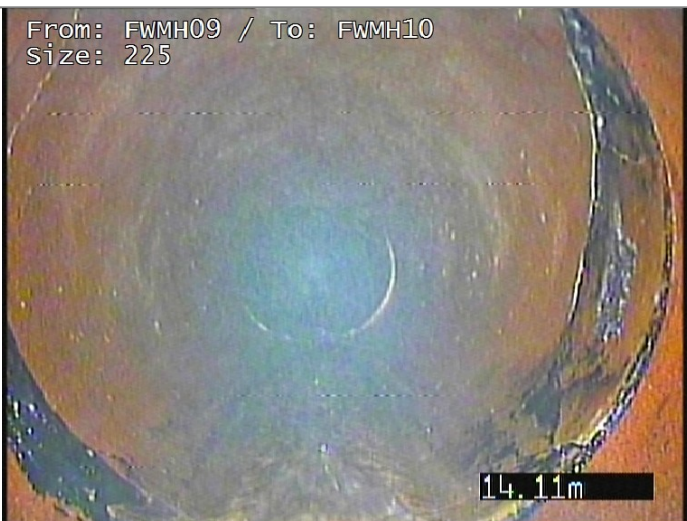
Fracture circumferential from 1 to 3 o'clock at joint



Fracture longitudinal at 12 o'clock



Roots fine at joint - Remark: FINE ROOTS REMAIN POST ROOT CUT.



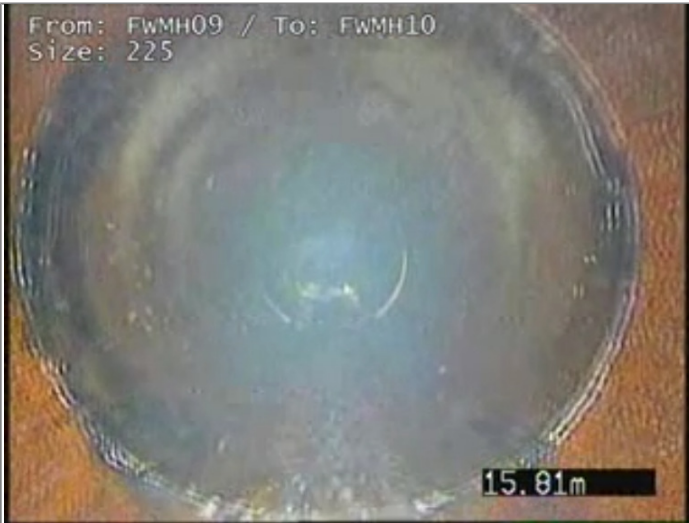
Fracture multiple from 12 to 12 o'clock, Finished



Crack circumferential from 2 to 3 o'clock at joint

# CCTV Inspection Photos

Job Number <b>SK-S 160/21 WCH GRAHAMS</b> (updated 11/02/2022)	Surveyed by (Operator) <b>BEN HUGHES/ STEVE OAKES</b>	Base Unit <b>VJ7B51U7GO</b>	Date <b>18/10/2021</b>
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Crack circumferential from 2 to 3 o'clock at joint



Broken pipe from 2 to 8 o'clock



Broken pipe from 3 to 9 o'clock

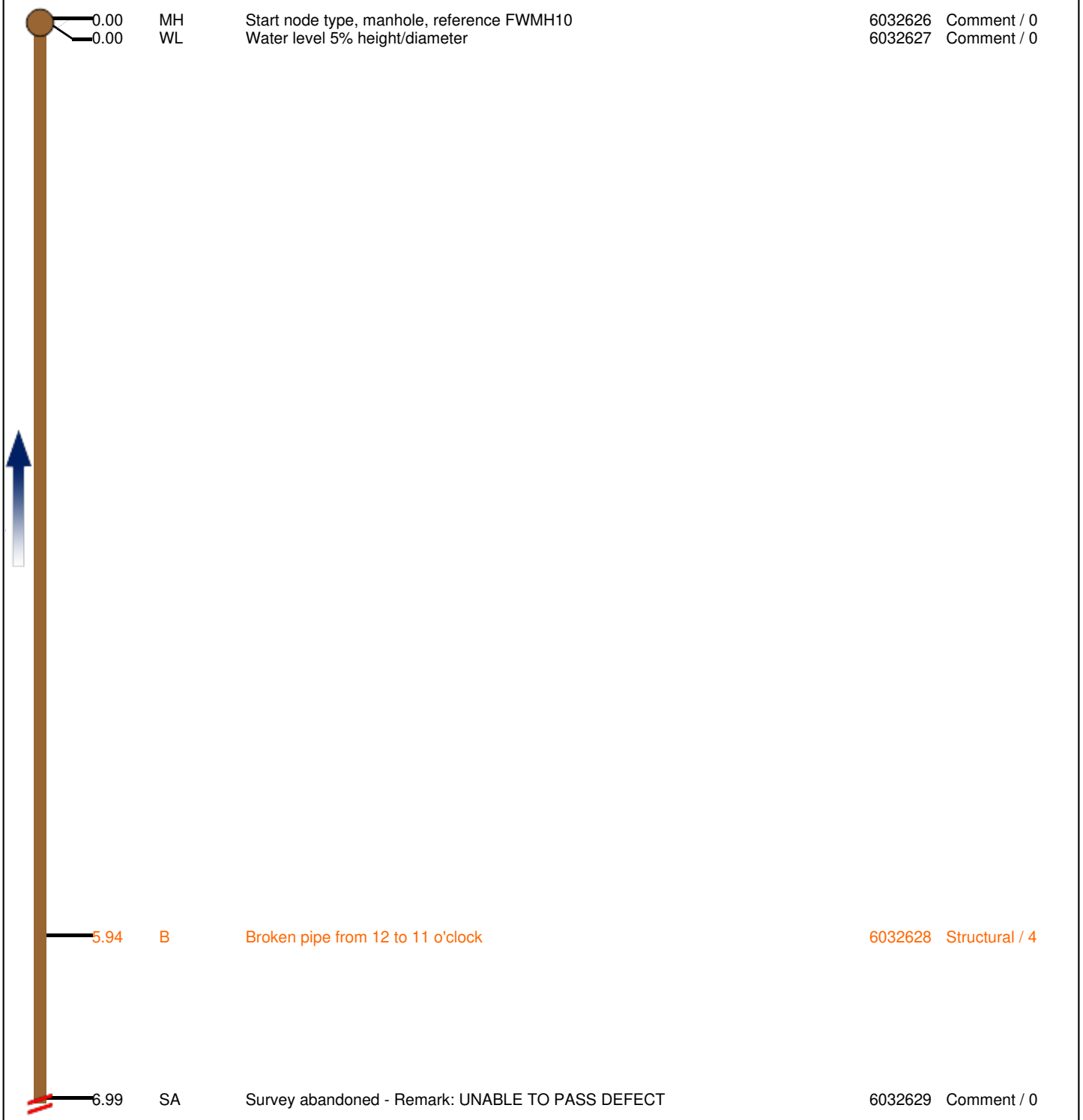


Survey abandoned - Remark: UNABLE TO CONTINUE WITH ROOT CUT AND CCTV REPAIRS WILL NEED TO BE MADE TO LINE

Surveyed by (Operator) <b>BEN HUGHES/ STEVE OAKES</b>	Job Number <b>SK-S 160/21 WCH GRAHAMS (updated 11/02/2022)</b>	Pipe Length Reference(PLR) <b>FWMH09</b>	Date <b>20/09/2021</b>	Pre Cleaned <b>Not Cleaned</b>
Weather <b>1 - Dry</b>	Customer Present	Service Grade/Structural Grade <b>0/4</b>	Base Unit <b>VJ7B51U7GO</b>	Section Number <b>15</b>
Road <b>FOUL AND SURFACE WATER OUTFALLS FROM SITE COMPOUND</b> Place <b>WEST CUMBERLAND HOSPITAL</b> Location <b>HOMWOOD ROAD</b>		Division District Location Details		
Purpose Duty <b>Foul</b> Catchment	Shape/Size <b>225mm</b> Material <b>Vitrified clay</b> Category	Start Node <b>FWMH10</b> End Node <b>FWMH09</b> Total length <b>6.99 metres</b>		

Scale **1:0.31**  
Direction **Upstream**

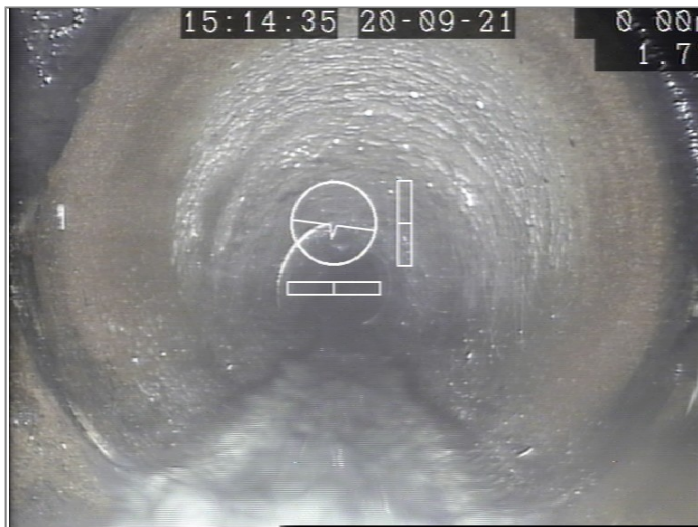
Start Node Ref:FWMH10 | I/L : metres

Position	Code	Description	Photo	Type/Grade
0.00	MH	Start node type, manhole, reference FWMH10	6032626	Comment / 0
0.00	WL	Water level 5% height/diameter	6032627	Comment / 0
				
5.94	B	Broken pipe from 12 to 11 o'clock	6032628	Structural / 4
6.99	SA	Survey abandoned - Remark: UNABLE TO PASS DEFECT	6032629	Comment / 0

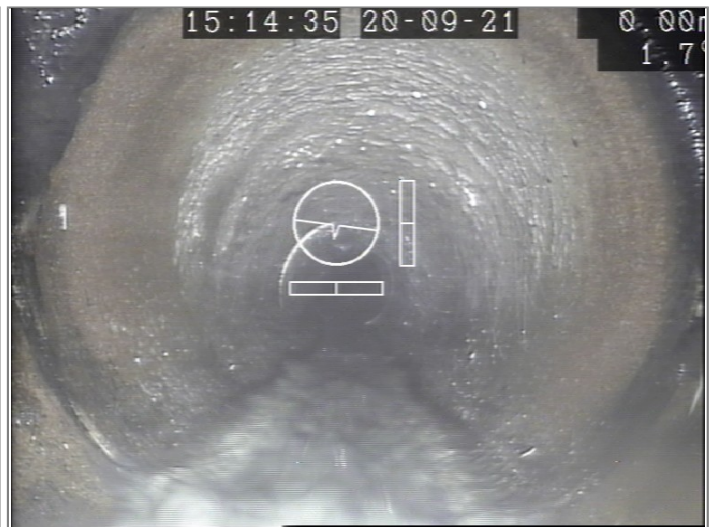
End Node Ref:FWMH09 | I/L : metres



Job Number <b>SK-S 160/21 WCH GRAHAMS</b> (updated 11/02/2022)	Surveyed by (Operator) <b>BEN HUGHES/ STEVE OAKES</b>	Base Unit <b>VJ7B51U7GO</b>	Date <b>20/09/2021</b>
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Start node type, manhole, reference FWMH10



Water level 5% height/diameter



Broken pipe from 12 to 11 o'clock



Survey abandoned - Remark: UNABLE TO PASS DEFECT

Surveyed by (Operator) <b>BEN HUGHES/ STEVE OAKES</b>	Job Number <b>SK-S 160/21 WCH GRAHAMS (updated 11/02/2022)</b>	Pipe Length Reference(PLR) <b>FWMH10</b>	Date <b>18/10/2021</b>	Pre Cleaned <b>Not Cleaned</b>
Weather <b>1 - Dry</b>	Customer Present	Service Grade/Structural Grade <b>2/4</b>	Base Unit <b>VJ7B51U7GO</b>	Section Number <b>16</b>
Road <b>FOUL AND SURFACE WATER OUTFALLS FROM SITE COMPOUND</b> Place <b>WEST CUMBERLAND HOSPITAL</b> Location <b>HOMWOOD ROAD</b>		Division District Location Details		
Purpose Duty <b>Foul</b> Catchment	Shape/Size <b>225mm</b> Material <b>Vitrified clay</b> Category	Start Node <b>FWMH10</b> End Node <b>FWMH11</b> Total length <b>31.64 metres</b>		

Scale **1:1.63**  
Direction **Downstream**

Start Node Ref:FWMH10 | I/L : metres

Position	Code	Description	Photo	Type/Grade
0.00	MH	Start node type, manhole, reference FWMH10	6032464	Comment / 0
0.00	WL	Water level 0% height/diameter	6032465	Comment / 0
8.08	FM	Fracture multiple from 12 to 6 o'clock	6032466	Structural / 4
10.72	FM	Fracture multiple from 12 to 12 o'clock	6032467	Structural / 4
17.64	DEEJ	Attached deposits, encrustation from 6 to 11 o'clock 5% cross-sectional area loss at joint	6032470	Service / 2
23.13	DEEJ	Attached deposits, encrustation from 6 to 9 o'clock 5% cross-sectional area loss at joint	6032471	Service / 2
24.78	DEEJ	Attached deposits, encrustation from 3 to 5 o'clock 5% cross-sectional area loss at joint	6032472	Service / 2
29.58	FC	Fracture circumferential from 7 to 10 o'clock	6032468	Structural / 3
31.64	MHF	Finish node type, manhole, reference FWMH11	6032469	Comment / 0

End Node Ref:FWMH11 | I/L : metres

# CCTV Inspection Photos

Job Number <b>SK-S 160/21 WCH GRAHAMS</b> (updated 11/02/2022)	Surveyed by (Operator) <b>BEN HUGHES/ STEVE OAKES</b>	Base Unit <b>VJ7B51U7GO</b>	Date <b>18/10/2021</b>
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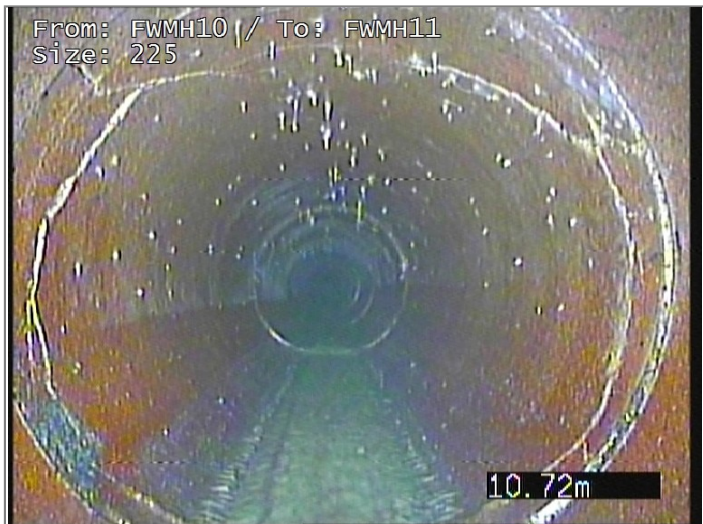
Start node type, manhole, reference FWMH10



Water level 0% height/diameter



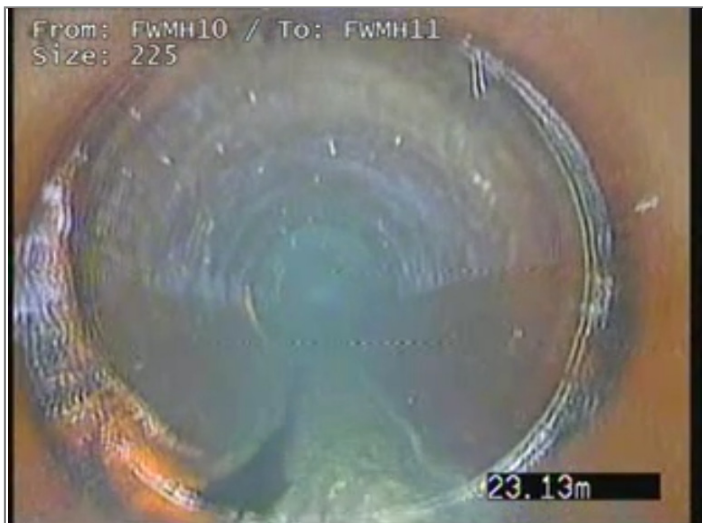
Fracture multiple from 12 to 6 o'clock



Fracture multiple from 12 to 12 o'clock

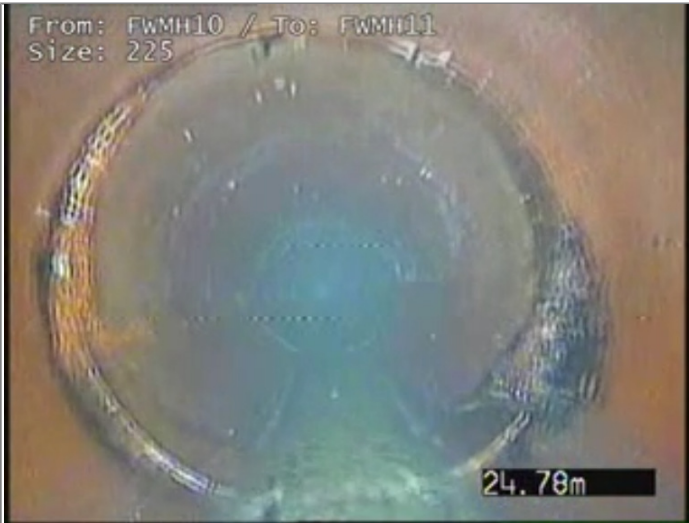


Attached deposits, encrustation from 6 to 11 o'clock 5% cross-sectional area loss at joint



Attached deposits, encrustation from 6 to 9 o'clock 5% cross-sectional area loss at joint

Job Number <b>SK-S 160/21 WCH GRAHAMS</b> (updated 11/02/2022)	Surveyed by (Operator) <b>BEN HUGHES/ STEVE OAKES</b>	Base Unit <b>VJ7B51U7GO</b>	Date <b>18/10/2021</b>
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Attached deposits, encrustation from 3 to 5 o'clock 5% cross-sectional area loss at joint



Fracture circumferential from 7 to 10 o'clock



Finish node type, manhole, reference FWMH11

Surveyed by (Operator) <b>BEN HUGHES/ STEVE OAKES</b>	Job Number <b>SK-S 160/21 WCH GRAHAMS (updated 11/02/2022)</b>	Pipe Length Reference(PLR) <b>FWMH11</b>	Date <b>18/10/2021</b>	Pre Cleaned <b>Not Cleaned</b>
Weather <b>1 - Dry</b>	Customer Present	Service Grade/Structural Grade <b>3/4</b>	Base Unit <b>VJ7B51U7GO</b>	Section Number <b>17</b>

Road <b>FOUL AND SURFACE WATER OUTFALLS FROM SITE COMPOUND</b>	Division
Place <b>WEST CUMBERLAND HOSPITAL</b>	District
Location <b>HOMWOOD ROAD</b>	Location Details

Purpose Duty <b>Foul</b> Catchment	Shape/Size <b>225mm</b> Material <b>Vitrified clay</b> Category	Start Node <b>FWMH11</b> End Node <b>FWMH12</b> Total length <b>23.71 metres</b>
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Scale **1:1.21**  
Direction **Downstream**

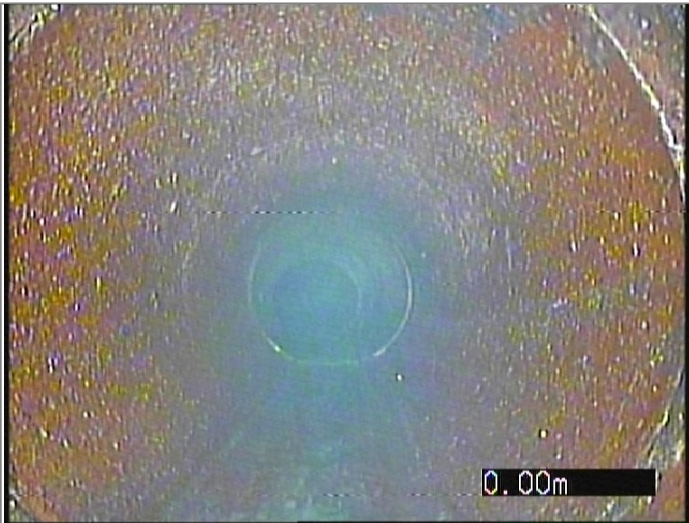
Start Node Ref:FWMH11 | I/L : metres

Position	Code	Description	Photo	Type/Grade
0.00	MH	Start node type, manhole, reference FWMH11	6032473	Comment / 0
0.00	WL	Water level 0% height/diameter	6032474	Comment / 0
4.81	RFJ	Roots fine at joint	6032484	Service / 2
4.81	CCJ	Crack circumferential from 4 to 5 o'clock at joint	6032485	Structural / 2
7.37	RFJ	Roots fine at joint	6032486	Service / 2
8.35	RFJ	Roots fine at joint	6032487	Service / 2
8.35	CCJ	Crack circumferential from 12 to 4 o'clock at joint	6032488	Structural / 2
8.87	FC	Fracture circumferential from 12 to 3 o'clock	6032475	Structural / 3
10.00	FC	Fracture circumferential from 6 to 12 o'clock	6032476	Structural / 3
10.27	FCJ	Fracture circumferential from 4 to 8 o'clock at joint	6032489	Structural / 3
10.99	FL	Fracture longitudinal at 12 o'clock	6032490	Structural / 3
11.58	FL	Fracture longitudinal at 12 o'clock	6032477	Structural / 3
11.88	FM	Fracture multiple from 12 to 12 o'clock	6032478	Structural / 4
13.22	FC	Fracture circumferential from 12 to 6 o'clock	6032479	Structural / 3
16.65	FM	Fracture multiple from 6 to 12 o'clock	6032480	Structural / 4
19.83	FM (S01)	Fracture multiple from 12 to 12 o'clock, Start	6032481	Structural / 4
20.34	RFJ	Roots fine at joint	6032491	Service / 2
21.18	FL	Fracture longitudinal at 4 o'clock	6032492	Structural / 3
21.62	FL	Fracture longitudinal at 10 o'clock	6032493	Structural / 3
22.11	FC	Fracture circumferential from 7 to 5 o'clock	6032494	Structural / 3
22.63	LD	Line of drain/sewer deviates down BENDS DOWN TO THE NEXT MANHOLE.	6032495	Comment / 0
23.09	FL	Fracture longitudinal at 4 o'clock	6032496	Structural / 3
23.51	RM	Roots mass 10% cross-sectional area loss - Remark: IN MANHOLE	6032497	Service / 3
23.70	FM (F01)	Fracture multiple from 12 to 12 o'clock, Finished	6032482	Structural / 4
23.71	MHF	Finish node type, manhole, reference FWMH12	6032483	Comment / 0

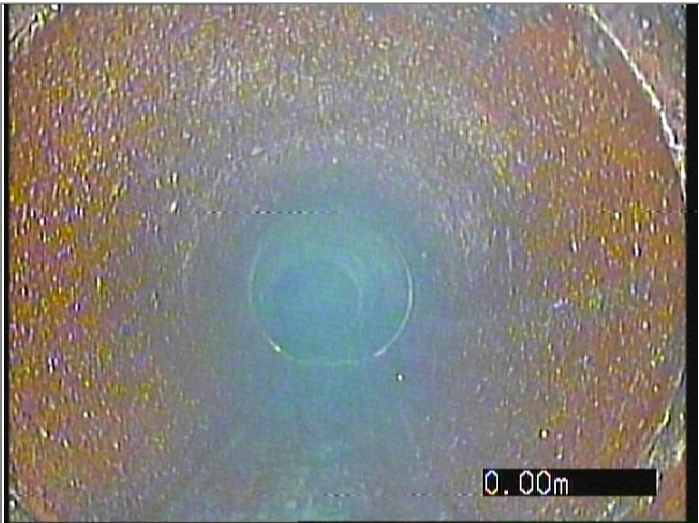
End Node Ref:FWMH12 | I/L : metres

# CCTV Inspection Photos

Job Number <b>SK-S 160/21 WCH GRAHAMS</b> (updated 11/02/2022)	Surveyed by (Operator) <b>BEN HUGHES/ STEVE OAKES</b>	Base Unit <b>VJ7B51U7GO</b>	Date <b>18/10/2021</b>
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Start node type, manhole, reference FWMH11



Water level 0% height/diameter



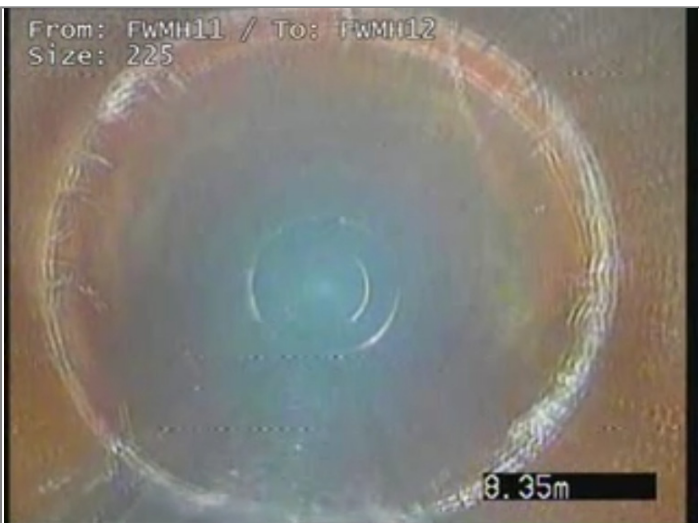
Roots fine at joint



Crack circumferential from 4 to 5 o'clock at joint

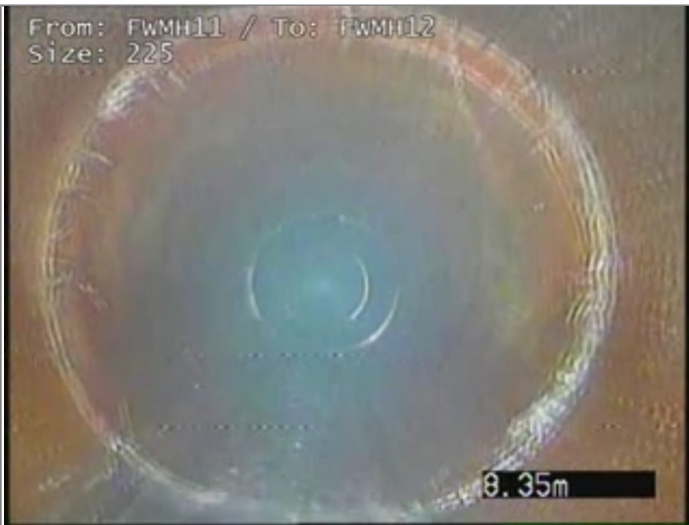


Roots fine at joint



Roots fine at joint

Job Number <b>SK-S 160/21 WCH GRAHAMS</b> (updated 11/02/2022)	Surveyed by (Operator) <b>BEN HUGHES/ STEVE OAKES</b>	Base Unit <b>VJ7B51U7GO</b>	Date <b>18/10/2021</b>
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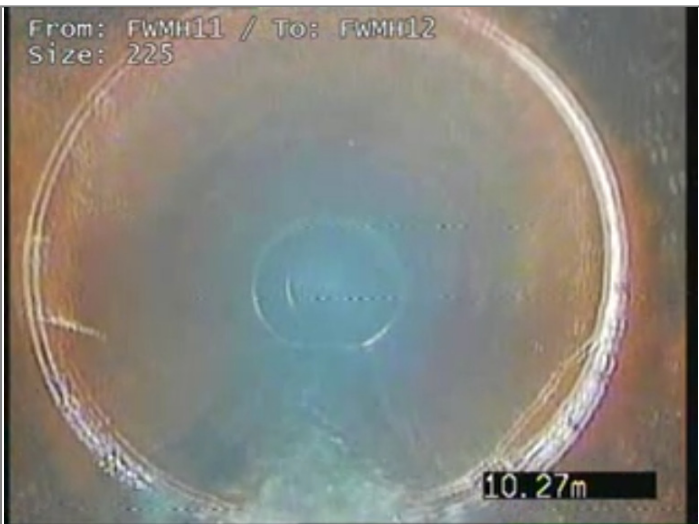
Crack circumferential from 12 to 4 o'clock at joint



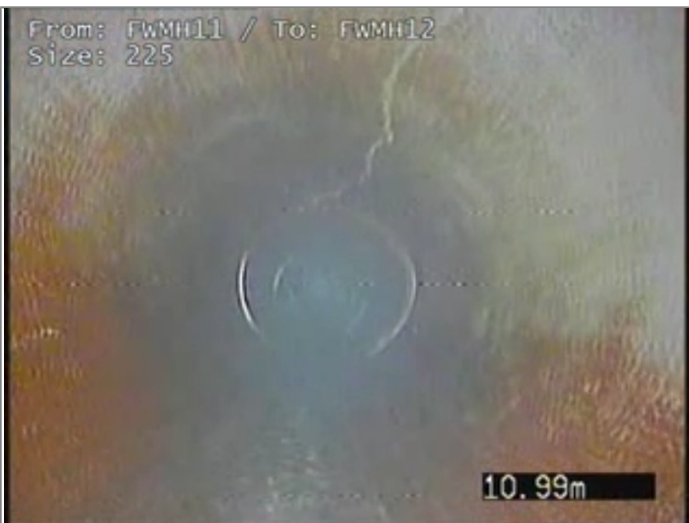
Fracture circumferential from 12 to 3 o'clock



Fracture circumferential from 6 to 12 o'clock



Fracture circumferential from 4 to 8 o'clock at joint



Fracture longitudinal at 12 o'clock



Fracture longitudinal at 12 o'clock

Job Number <b>SK-S 160/21 WCH GRAHAMS</b> (updated 11/02/2022)	Surveyed by (Operator) <b>BEN HUGHES/ STEVE OAKES</b>	Base Unit <b>VJ7B51U7GO</b>	Date <b>18/10/2021</b>
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Fracture multiple from 12 to 12 o'clock



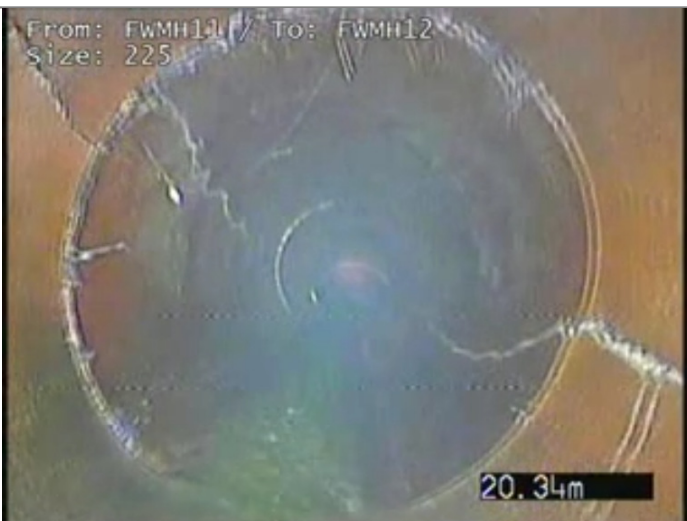
Fracture circumferential from 12 to 6 o'clock



Fracture multiple from 6 to 12 o'clock



Fracture multiple from 12 to 12 o'clock, Start



Roots fine at joint



Fracture longitudinal at 4 o'clock



Job Number <b>SK-S 160/21 WCH GRAHAMS</b> (updated 11/02/2022)	Surveyed by (Operator) <b>BEN HUGHES/ STEVE OAKES</b>	Base Unit <b>VJ7B51U7GO</b>	Date <b>18/10/2021</b>
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Fracture longitudinal at 10 o'clock



Fracture circumferential from 7 to 5 o'clock



Line of drain/sewer deviates down BENDS DOWN TO THE NEXT MANHOLE.



Fracture longitudinal at 4 o'clock



Roots mass 10% cross-sectional area loss - Remark: IN MANHOLE



Fracture multiple from 12 to 12 o'clock, Finished

# CCTV Inspection Photos

Job Number <b>SK-S 160/21 WCH GRAHAMS</b> (updated 11/02/2022)	Surveyed by (Operator) <b>BEN HUGHES/ STEVE OAKES</b>	Base Unit <b>VJ7B51U7GO</b>	Date <b>18/10/2021</b>
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Finish node type, manhole, reference FWMH12

Surveyed by (Operator) <b>BEN HUGHES/ STEVE OAKES</b>	Job Number <b>SK-S 160/21 WCH GRAHAMS (updated 11/02/2022)</b>	Pipe Length Reference(PLR) <b>FWMH12</b>	Date <b>18/10/2021</b>	Pre Cleaned <b>Not Cleaned</b>
Weather <b>1 - Dry</b>	Customer Present	Service Grade/Structural Grade <b>3/0</b>	Base Unit <b>VJ7B51U7GO</b>	Section Number <b>18</b>
Road <b>FOUL AND SURFACE WATER OUTFALLS FROM SITE COMPOUND</b> Place <b>WEST CUMBERLAND HOSPITAL</b> Location <b>HOMEWOOD ROAD</b>		Division District Location Details		
Purpose Duty <b>Foul</b> Catchment	Shape/Size <b>225mm</b> Material <b>Vitrified clay</b> Category	Start Node <b>FWMH12</b> End Node <b>FWMH13</b> Total length <b>15.68 metres</b>		

Scale **1:0.79**  
Direction **Downstream**

Start Node Ref:FWMH12 | I/L : metres

Position	Code	Description	Photo	Type/Grade
0.00	MH	Start node type, manhole, reference FWMH12	6032498	Comment / 0
0.00	WL	Water level 5% height/diameter	6032499	Comment / 0
0.44	RFJ	Roots fine at joint	6032501	Service / 2
1.73	RFJ	Roots fine at joint	6032502	Service / 2
2.84	RMJ	Roots mass 5% cross-sectional area loss at joint	6032503	Service / 3
4.74	RFJ	Roots fine at joint	6032504	Service / 2
5.77	RMJ	Roots mass 5% cross-sectional area loss at joint	6032505	Service / 3
7.63	RFJ	Roots fine at joint	6032506	Service / 2
8.57	RFJ	Roots fine at joint	6032507	Service / 2
10.51	RMJ	Roots mass 5% cross-sectional area loss at joint	6032508	Service / 3
11.31	RFJ	Roots fine at joint	6032509	Service / 2
15.68	MHF	Finish node type, manhole, reference FWMH13	6032500	Comment / 0

End Node Ref:FWMH13 | I/L : metres

Job Number <b>SK-S 160/21 WCH GRAHAMS</b> (updated 11/02/2022)	Surveyed by (Operator) <b>BEN HUGHES/ STEVE OAKES</b>	Base Unit <b>VJ7B51U7GO</b>	Date <b>18/10/2021</b>
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Start node type, manhole, reference FWMH12



Water level 5% height/diameter



Roots fine at joint



Roots fine at joint



Roots mass 5% cross-sectional area loss at joint



Roots fine at joint

<p>Job Number <b>SK-S 160/21 WCH GRAHAMS</b> (updated 11/02/2022)</p>	<p>Surveyed by (Operator) <b>BEN HUGHES/ STEVE OAKES</b></p>	<p>Base Unit <b>VJ7B51U7GO</b></p>	<p>Date <b>18/10/2021</b></p>
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Roots mass 5% cross-sectional area loss at joint



Roots fine at joint



Roots fine at joint



Roots mass 5% cross-sectional area loss at joint



Roots fine at joint




Finish node type, manhole, reference FWMH13

Surveyed by (Operator) <b>BEN HUGHES/ STEVE OAKES</b>	Job Number <b>SK-S 160/21 WCH GRAHAMS (updated 11/02/2022)</b>	Pipe Length Reference(PLR) <b>FWMH13</b>	Date <b>18/10/2021</b>	Pre Cleaned <b>Not Cleaned</b>
Weather <b>1 - Dry</b>	Customer Present	Service Grade/Structural Grade <b>5/0</b>	Base Unit <b>VJ7B51U7GO</b>	Section Number <b>19</b>
Road <b>FOUL AND SURFACE WATER OUTFALLS FROM SITE COMPOUND</b> Place <b>WEST CUMBERLAND HOSPITAL</b> Location <b>HOMEWOOD ROAD</b>		Division District Location Details		
Purpose Duty <b>Foul</b> Catchment	Shape/Size <b>225mm</b> Material <b>Vitrified clay</b> Category	Start Node <b>FWMH13</b> End Node <b>FWMH13A</b> Total length <b>23.41 metres</b>		

Scale **1:1.21**  
Direction **Downstream**

Start Node Ref:FWMH13 | I/L : metres

Position	Code	Description	Photo	Type/Grade	
	0.00	MH	Start node type, manhole, reference FWMH13	6032510	Comment / 0
	0.00	WL	Water level 5% height/diameter	6032511	Comment / 0
	0.00	RFJ	Roots fine at joint	6032513	Service / 2
12.30	DEEJ	Attached deposits, encrustation from 12 to 4 o'clock 5% cross-sectional area loss at joint	6032514	Service / 2	
17.90	DEEJ	Attached deposits, encrustation at 9 o'clock 5% cross-sectional area loss at joint	6032515	Service / 2	
18.87	WL	Water level 50% height/diameter	6032516	Comment / 0	
20.54	CUW (S1)	Loss of vision, camera under water, Start	6032517	Comment / 0	
21.36	CUW (F1)	Loss of vision, camera under water, Finished	6032518	Comment / 0	
21.97	OBZ	Other obstacles, other from 3 to 9 o'clock 50% cross-sectional area loss - Remark: UNKNOWN OBSTRUCTION RESTRICTING FLOW.	6032519	Service / 5	
23.41	MHF	Finish node type, manhole, reference FWMH13A	6032512	Comment / 0	

End Node Ref:FWMH13A | I/L : metres

Job Number <b>SK-S 160/21 WCH GRAHAMS</b> (updated 11/02/2022)	Surveyed by (Operator) <b>BEN HUGHES/ STEVE OAKES</b>	Base Unit <b>VJ7B51U7GO</b>	Date <b>18/10/2021</b>
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Start node type, manhole, reference FWMH13



Water level 5% height/diameter



Roots fine at joint



Attached deposits, encrustation from 12 to 4 o'clock 5% cross-sectional area loss at joint



Attached deposits, encrustation at 9 o'clock 5% cross-sectional area loss at joint



Water level 50% height/diameter

# CCTV Inspection Photos

Job Number <b>SK-S 160/21 WCH GRAHAMS</b> (updated 11/02/2022)	Surveyed by (Operator) <b>BEN HUGHES/ STEVE OAKES</b>	Base Unit <b>VJ7B51U7GO</b>	Date <b>18/10/2021</b>
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Loss of vision, camera under water, Start



Loss of vision, camera under water, Finished



Other obstacles, other from 3 to 9 o'clock 50% cross-sectional area loss -  
Remark: UNKNOWN OBSTRUCTION RESTRICTING FLOW.



Finish node type, manhole, reference FwMH13A



Surveyed by (Operator) <b>BEN HUGHES/ STEVE OAKES</b>	Job Number <b>SK-S 160/21 WCH GRAHAMS (updated 11/02/2022)</b>	Pipe Length Reference(PLR) <b>FWMH13A</b>	Date <b>01/02/2022</b>	Pre Cleaned <b>Not Cleaned</b>
Weather <b>1 - Dry</b>	Customer Present	Service Grade/Structural Grade <b>5/2</b>	Base Unit <b>VJ7B51U7GO</b>	Section Number <b>20</b>

Road <b>FOUL AND SURFACE WATER OUTFALLS FROM SITE COMPOUND</b>	Division
Place <b>WEST CUMBERLAND HOSPITAL</b>	District
Location <b>HOMEWOOD ROAD</b>	Location Details

Purpose Duty <b>Foul</b> Catchment	Shape/Size <b>225mm</b> Material <b>Vitrified clay</b> Category	Start Node <b>FWMH13A</b> End Node <b>FWMH14 ENNERDALE HOUSE</b> Total length <b>30.18 metres</b>
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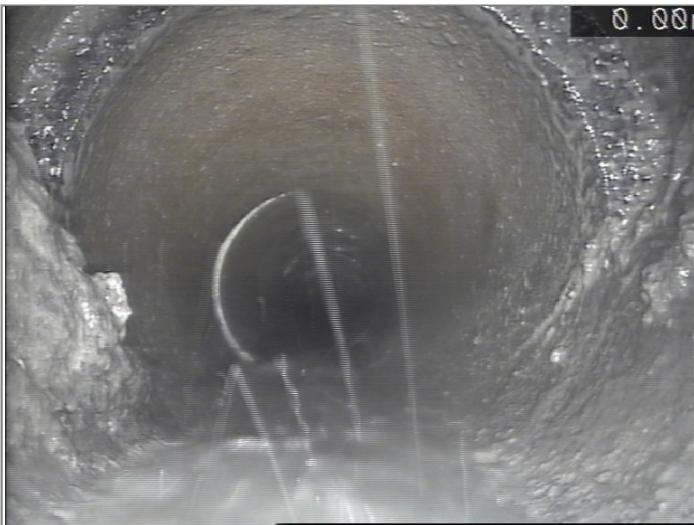
Scale **1:1.57**  
Direction **Downstream**

Start Node Ref:FWMH13A | I/L : metres

Position	Code	Description	Photo	Type/Grade
0.00	MH	Start node type, manhole, reference FWMH13A	6032636	Comment / 0
0.00	WL	Water level 5% height/diameter	6032637	Comment / 0
0.00	DEE	Attached deposits, encrustation from 6 to 10 o'clock 10% cross-sectional area loss - Remark: ON OUTLET OF MANHOLE.	6032711	Service / 3
1.11	CCJ	Crack circumferential from 2 to 6 o'clock, at joint	6032638	Structural / 2
				
18.39	RM	Roots mass 25% cross-sectional area loss	6032639	Service / 5
26.78	DEEJ	Attached deposits, encrustation from 9 to 12 o'clock 5% cross-sectional area loss, at joint	6032640	Service / 2
30.18	MHF	Finish node type, manhole, reference FWMH14	6032641	Comment / 0

End Node Ref:FWMH14 ENNERDALE HOUSE | I/L : metres

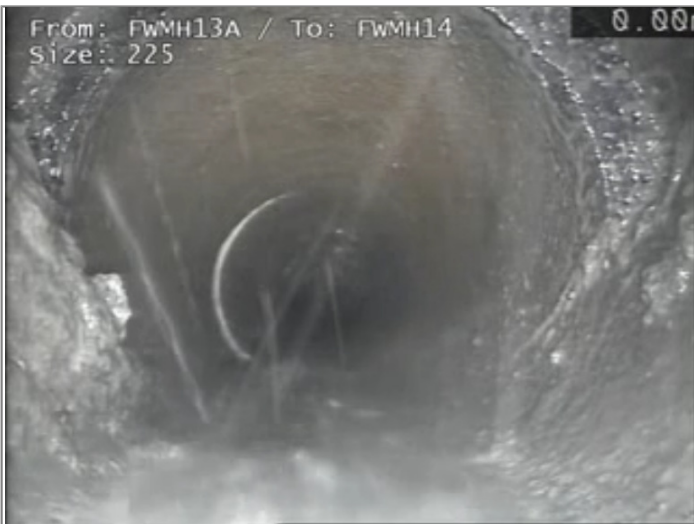
Job Number <b>SK-S 160/21 WCH GRAHAMS</b> (updated 11/02/2022)	Surveyed by (Operator) <b>BEN HUGHES/ STEVE OAKES</b>	Base Unit <b>VJ7B51U7GO</b>	Date <b>01/02/2022</b>
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Start node type, manhole, reference FWMH13A



Water level 5% height/diameter



Attached deposits, encrustation from 6 to 10 o'clock 10% cross-sectional area loss - Remark: ON OUTLET OF MANHOLE.



Crack circumferential from 2 to 6 o'clock, at joint



Roots mass 25% cross-sectional area loss



Attached deposits, encrustation from 9 to 12 o'clock 5% cross-sectional area loss, at joint

# CCTV Inspection Photos

Job Number <b>SK-S 160/21 WCH GRAHAMS</b> (updated 11/02/2022)	Surveyed by (Operator) <b>BEN HUGHES/ STEVE OAKES</b>	Base Unit <b>VJ7B51U7GO</b>	Date <b>01/02/2022</b>
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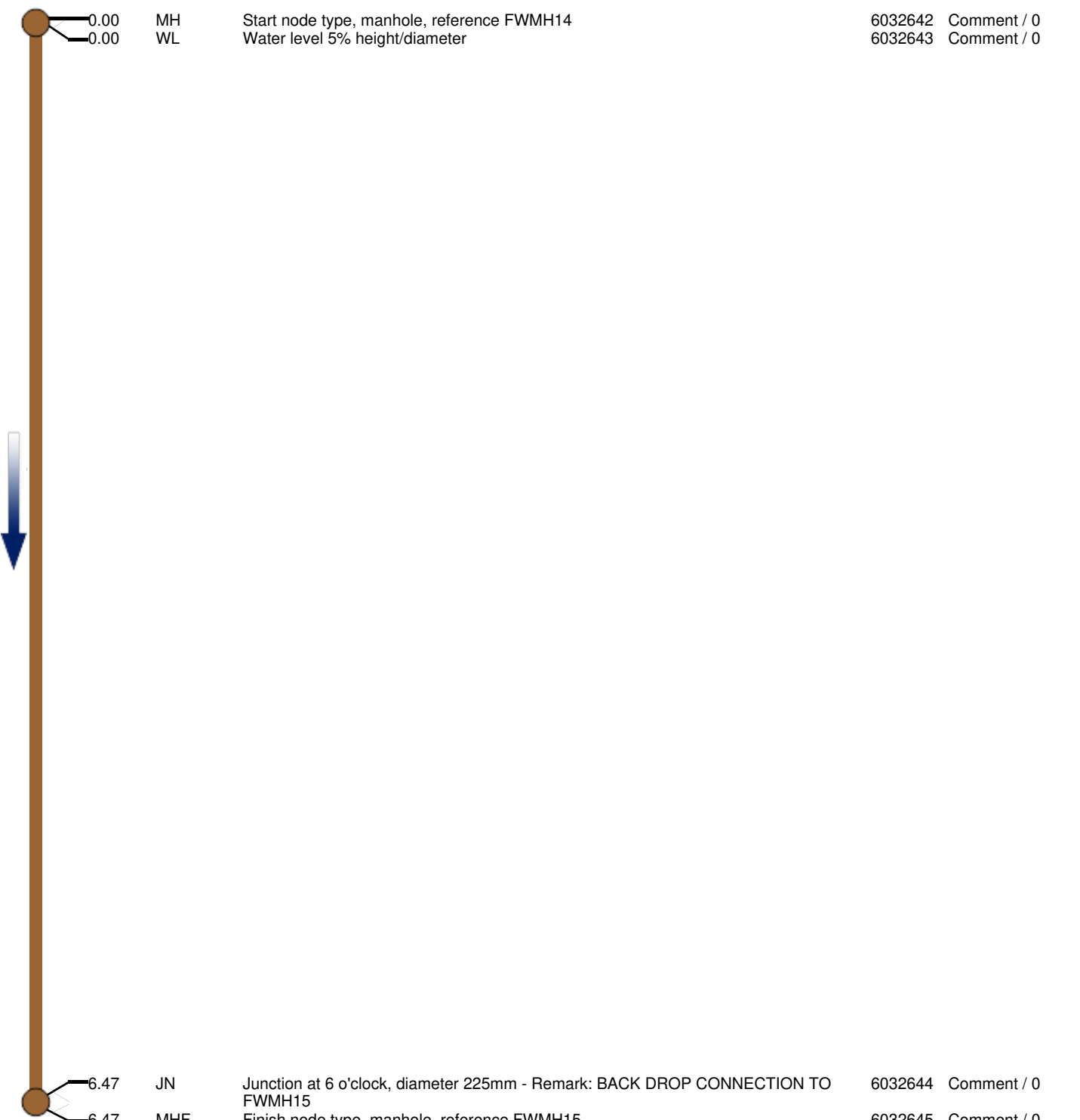


Finish node type, manhole, reference FWMH14

Surveyed by (Operator) <b>BEN HUGHES/ STEVE OAKES</b>	Job Number <b>SK-S 160/21 WCH GRAHAMS (updated 11/02/2022)</b>	Pipe Length Reference(PLR) <b>FWMH14 ENN</b>	Date <b>01/02/2022</b>	Pre Cleaned <b>Not Cleaned</b>
Weather <b>1 - Dry</b>	Customer Present	Service Grade/Structural Grade <b>0/0</b>	Base Unit <b>VJ7B51U7GO</b>	Section Number <b>21</b>
Road <b>FOUL AND SURFACE WATER OUTFALLS FROM SITE COMPOUND</b> Place <b>WEST CUMBERLAND HOSPITAL</b> Location <b>HOMWOOD ROAD</b>		Division District Location Details		
Purpose Duty <b>Foul</b> Catchment	Shape/Size <b>225mm</b> Material <b>Vitrified clay</b> Category	Start Node <b>FWMH14 ENNERDALE HOUSE</b> End Node <b>FWMH15</b> Total length <b>6.47 metres</b>		

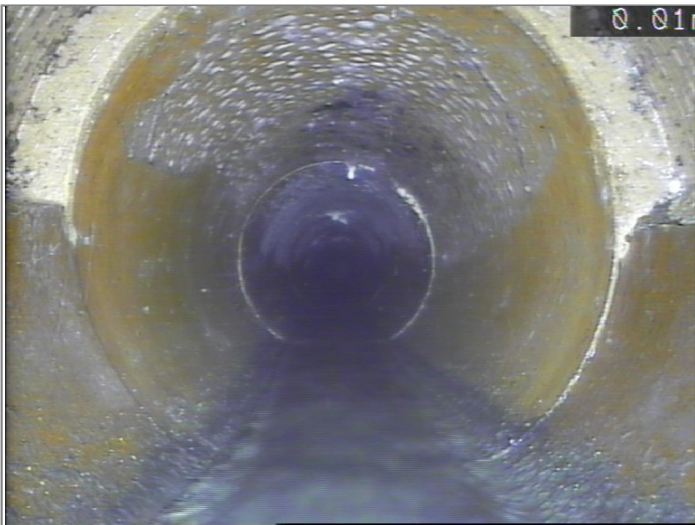
Scale **1:0.31**  
Direction **Downstream**

Start Node Ref:FWMH14 ENNERDALE HOUSE | I/L : metres

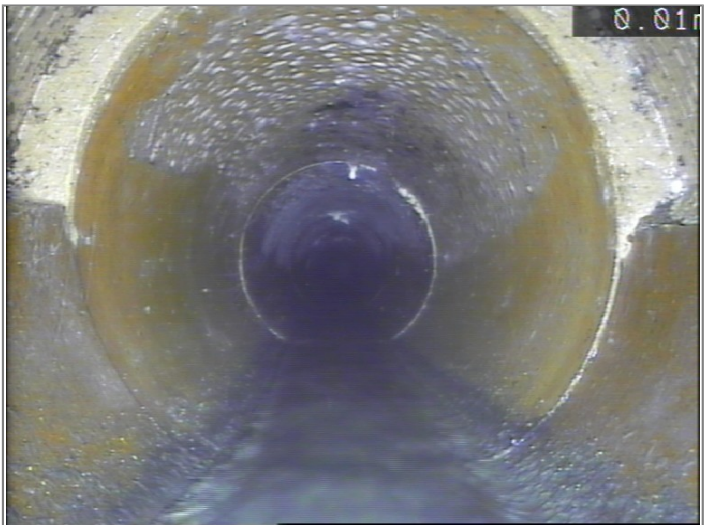
Position	Code	Description	Photo	Type/Grade
0.00	MH	Start node type, manhole, reference FWMH14	6032642	Comment / 0
0.00	WL	Water level 5% height/diameter	6032643	Comment / 0
				
6.47	JN	Junction at 6 o'clock, diameter 225mm - Remark: BACK DROP CONNECTION TO FWMH15	6032644	Comment / 0
6.47	MHF	Finish node type, manhole, reference FWMH15	6032645	Comment / 0

End Node Ref:FWMH15 | I/L : metres

Job Number <b>SK-S 160/21 WCH GRAHAMS</b> (updated 11/02/2022)	Surveyed by (Operator) <b>BEN HUGHES/ STEVE OAKES</b>	Base Unit <b>VJ7B51U7GO</b>	Date <b>01/02/2022</b>
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Start node type, manhole, reference FWMH14



Water level 5% height/diameter



Junction at 6 o'clock, diameter 225mm - Remark: BACK DROP CONNECTION TO FWMH15



Finish node type, manhole, reference FWMH15

## Structural Defects (SRM 4)

Job Number <b>SK-S 160/21 WCH GRAHAMS</b> (updated 11/02/2022)				Surveyed by (Operator) <b>BEN HUGHES/ STEVE OAKES</b>			Base Unit <b>VJ7B51U7GO</b>			Date <b>11/02/2022</b>			
No.	PLR	Dir.	Use	Shape/Size	Date	Mat.	Total Length	Inspection Length	Cat.	Peak Score	Grade	Mean Score	Total Score
1	SW01	D	S	150	11/02/2022	Vitrified clay	19.37 metres	19.37		0	1	0	0
2	SW02	D	S	300	11/02/2022	Vitrified clay	23.36 metres	23.36		10	2	1.28	30
3	SWMH3	D	S	300	11/02/2022	Vitrified clay	25.97 metres	25.97		40	3	2.31	60
4	SWMH04	D	S	300	11/02/2022	Vitrified clay	34.37 metres	34.37		80	4	4.66	160
5	SWMH04/A	D	S	300	11/02/2022	Vitrified clay	28.81 metres	28.81		0	1	0	0
6	SWMH4B	D	S	300	11/02/2022	Vitrified clay	23.3 metres	23.3		40	3	2.15	50
7	SWMH4C	D	S	300	11/02/2022	Vitrified clay	14.56 metres	14.56		80	4	10.99	160
8	SWMH4D	D	S	300	11/02/2022	Vitrified clay	21.52 metres	21.52		80	4	21.38	460
9	SWMH4E	D	S	300	11/02/2022	Vitrified clay	30.48 metres	30.48		40	3	1.97	60
10	SWMH4F ENN	D	S	300	11/02/2022	Vitrified clay	9.84 metres	9.84		165	5	29.98	295
11	FW01	D	F	225	11/02/2022	Vitrified clay	33.82 metres	33.82		80	4	7.39	250
12	FW02	D	F	225	11/02/2022	Vitrified clay	17.35 metres	17.35		40	3	2.31	40
13	FWMH08	D	F	225	11/02/2022	Vitrified clay	26.68 metres	26.68		40	3	1.50	40
14	FWMH09	D	F	225	11/02/2022	Vitrified clay	20 metres	20		80	4	46.50	930
15	FWMH09	U	F	225	11/02/2022	Vitrified clay	6.99 metres	6.99		80	4	11.44	80
16	FWMH10	D	F	225	11/02/2022	Vitrified clay	31.64 metres	31.64		80	4	6.32	200
17	FWMH11	D	F	225	11/02/2022	Vitrified clay	23.71 metres	23.71		80	4	31.21	740
18	FWMH12	D	F	225	11/02/2022	Vitrified clay	15.68 metres	15.68		0	1	0	0
19	FWMH13	D	F	225	11/02/2022	Vitrified clay	23.41 metres	23.41		0	1	0	0
20	FWMH13A	D	F	225	11/02/2022	Vitrified clay	30.18 metres	30.18		10	2	0.33	10
21	FWMH14 ENN	D	F	225	11/02/2022	Vitrified clay	6.47 metres	6.47		0	1	0	0

## Service Defects (SRM 4)

Job Number <b>SK-S 160/21 WCH GRAHAMS</b> (updated 11/02/2022)				Surveyed by (Operator) <b>BEN HUGHES/ STEVE OAKES</b>			Base Unit <b>VJ7B51U7GO</b>			Date <b>11/02/2022</b>			
No.	PLR	Dir.	Use	Shape/Size	Date	Mat.	Total Length	Inspection Length	Cat.	Peak Score	Grade	Mean Score	Total Score
1	SW01	D	S	150	11/02/2022	Vitrified clay	19.37 metres	19.37		5	4	0.67	13
2	SW02	D	S	300	11/02/2022	Vitrified clay	23.36 metres	23.36		5	4	0.60	14
3	SWMH3	D	S	300	11/02/2022	Vitrified clay	25.97 metres	25.97		10	5	0.42	11
4	SWMH04	D	S	300	11/02/2022	Vitrified clay	34.37 metres	34.37		10	5	0.67	23
5	SWMH04/A	D	S	300	11/02/2022	Vitrified clay	28.81 metres	28.81		20	5	0.87	25
6	SWMH4B	D	S	300	11/02/2022	Vitrified clay	23.3 metres	23.3		10	5	1.46	34
7	SWMH4C	D	S	300	11/02/2022	Vitrified clay	14.56 metres	14.56		1	2	0.07	1
8	SWMH4D	D	S	300	11/02/2022	Vitrified clay	21.52 metres	21.52		5	4	0.33	7
9	SWMH4E	D	S	300	11/02/2022	Vitrified clay	30.48 metres	30.48		2	3	0.07	2
10	SWMH4F ENN	D	S	300	11/02/2022	Vitrified clay	9.84 metres	9.84		0	1	0	0
11	FW01	D	F	225	11/02/2022	Vitrified clay	33.82 metres	33.82		0	1	0	0
12	FW02	D	F	225	11/02/2022	Vitrified clay	17.35 metres	17.35		0	1	0	0
13	FWMH08	D	F	225	11/02/2022	Vitrified clay	26.68 metres	26.68		1	2	0.04	1
14	FWMH09	D	F	225	11/02/2022	Vitrified clay	20 metres	20		5	4	0.45	9
15	FWMH09	U	F	225	11/02/2022	Vitrified clay	6.99 metres	6.99		0	1	0	0
16	FWMH10	D	F	225	11/02/2022	Vitrified clay	31.64 metres	31.64		1	2	0.09	3
17	FWMH11	D	F	225	11/02/2022	Vitrified clay	23.71 metres	23.71		4	3	0.34	8
18	FWMH12	D	F	225	11/02/2022	Vitrified clay	15.68 metres	15.68		2	3	0.77	12
19	FWMH13	D	F	225	11/02/2022	Vitrified clay	23.41 metres	23.41		10	5	0.56	13
20	FWMH13A	D	F	225	11/02/2022	Vitrified clay	30.18 metres	30.18		10	5	0.43	13
21	FWMH14 ENN	D	F	225	11/02/2022	Vitrified clay	6.47 metres	6.47		0	1	0	0

## Defect Grade Descriptions

Job Number <b>SK-S 160/21 WCH GRAHAMS</b> (updated 11/02/2022)	Surveyed by (Operator) <b>BEN HUGHES/ STEVE OAKES</b>	Base Unit <b>VJ7B51U7GO</b>	Date <b>11/02/2022</b>
<p>1: Occurrences without damage. For example, laterals, joints, etc.</p> <p><b>NO DEFECTS WERE DETECTED.</b></p>			
<p>2: Constructional deficiencies or occurrences with insignificant influence to tightness, hydraulic or static pressure or pipe: Eg. wide joints, badly torched intakes, minor deformation of plastic pipes, minor erosions etc.</p> <p><b>REHABILITATION CAN BE SCHEDULED LONG-TERM.</b></p>			
<p>3: Constructional deficiencies diminishing static, hydraulic and tightness: Eg. untorched intakes, cracks, minor drainage obstructions such as calcite build ups, protruding laterals, minor damages to pipe wall, individual root penetrations, corroded pipe walls etc.</p> <p><b>REHABILITATION IS NECESSARY MEDIUM-TERM WITHIN 3 TO 5 YEARS.</b></p>			
<p>4: Constructional damages with insufficient static safety, hydraulic or tightness: Eg. axial/radial pipe bursts, pipe deformations, visually noticeable infiltration/exfiltration, cavities, in pipe-wall, severe protruding, laterals severe root penetrations, severe corrosion of pipe wall etc.</p> <p><b>REHABILITATION PROCEDURE IS URGENT AND HAS TO BE COMPLETED WITHIN 1 TO 2 YEARS. NECESSITY FOR EMERGENCY OPERATIONS HAS TO BE EXAMINED.</b></p>			
<p>5: Pipe is already or will shortly be impermeable: Eg. collapsed pipe, deeply rooted pipe or other drainage obstructions. Pipe loses water or danger of backwater in basements etc.</p> <p><b>REHABILITATION IS URGENT AND SHORT-TERM. IN ORDER TO PREVENT FURTHER DAMAGE, NECESSARY TEMPORARY SPOT REPAIR HAS TO BE CONDUCTED ON EMERGENCY LEVEL.</b></p>			