



Project

Project Name: SHAPE ENG MIRFIELD

Project Description: WinCan Import in Miraculix WRc4 Standard

Project Date: 20/04/2021





Table of Contents

| Project Name | Project Number | Project Date |
|--------------------|----------------|--------------|
| SHAPE ENG MIRFIELD | | 20/04/2021 |

| | |
|---------------------------------------|-----|
| Project Information | P-1 |
| Scoring Summary | P-2 |
| Section Profile | P-3 |
| Section Summary | P-4 |
| Project Summary | P-7 |
| Section: 1; GY 1 > MAIN (GY 1X) | 1 |
| Section: 2; GY2 > MAIN (GY2X) | 3 |
| Section: 3; FW 1 > FW2 (FW 1X) | 5 |
| Section: 5; SW 1 > SW 2 (SW 1X) | 9 |
| Section: 6; A > FW 1 (AX) | 15 |



Project Information

| Project Name | Project Number | Project Date |
|--------------------|----------------|--------------|
| SHAPE ENG MIRFIELD | | 20/04/2021 |

Client

Company: Shape Consulting Engineers LTD
Description: Engineering Consultant
Contact: Gino Pizzimenti
Department: Enginnering Technician
Street: Southern Office
Phone: 01908 803903
Email: Gino@shapeengineering.co.uk



Site

Company: Shape Engineering
Description: Structural CCTV Investigation Survey
Street: Knowl Grove
Town or City: Mirfield
Post Code: WF14 9RU



Contractor

Company: Unity Service Group Ltd
Description: Utilities Division
Contact: Lee Parkes
Department: Utilities Director
Street: 4, Cherry Lane
Town or City: Liverpool
County: Merseyside
Post Code: L4 6UG
Mobile: 07983746619
Email: lee@unityservicegroup.co.uk





Scoring Summary

Project Name
SHAPE ENG MIRFIELD

Project Number

Project Date
20/04/2021

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.

| Section | PLR | Grade | Description |
|---------|-------|-------|--|
| 1 | GY 1X | 3 | Fracture, circumferential at joint from 4 o'clock to 6 o'clock |
| 3 | FW 1X | 4 | Multiple defects |
| 5 | SW 1X | 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.

| Section | PLR | Grade | Description |
|---------|-------|-------|---|
| 1 | GY 1X | 4 | Settled deposits, fine, 70% cross-sectional area loss |
| 2 | GY2X | 5 | Settled deposits, fine, 80% cross-sectional area loss |
| 5 | SW 1X | 3 | Multiple defects |
| 6 | AX | 4 | Settled deposits, fine, 50% cross-sectional area loss |

Abandoned Surveys

| Section | PLR | Description |
|---------|-------|------------------|
| 1 | GY 1X | Survey abandoned |
| 2 | GY2X | Survey abandoned |
| 6 | AX | Survey abandoned |

Information

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



Section Profile

Project Name
SHAPE ENG MIRFIELD

Project Number

Project Date
20/04/2021

Circular, 150 mm

| Section | Upstream Node | Downstream Node | Date | Road | Pipe Material | Total Length | Inspected Length |
|---------|---------------|-----------------|------------|--------------|---|--------------|------------------|
| 3 | FW 1 | FW 2 | 19/04/2021 | KNOWLE GROVE | Vitrified clay pipe (i.e. all clayware) | 32.83 m | 32.83 m |
| 5 | SW 1 | SW 2 | 19/04/2021 | KNOWLE GROVE | Vitrified clay pipe (i.e. all clayware) | 34.20 m | 34.20 m |

Total: 2 Inspections x Circular 150 mm = 67.03 m Total Length and 67.03 m Inspected Length

Total: 2 Inspections = 67.03 m Total Length and 67.03 m Inspected Length



Section Summary

| | | |
|---|-----------------------|-----------------------------------|
| Project Name SHAPE ENG MIRFIELD | Project Number | Project Date 20/04/2021 |
|---|-----------------------|-----------------------------------|

| | |
|--|----------|
| Number of sections | 5 |
| Total length of sewer network | 100.67 m |
| Total length of inspections | 100.67 m |
| Total length of abandoned inspections | 0.00 m |
| Total abandoned inspections | 3 |
| Number of section inspection photos | 29 |
| Number of section inspection videos | 5 |
| Number of section inspection scans | 0 |
| Number of section inclination measurements | 0 |

| | |
|---|---|
| PLR: GY 1X | Upstream Node: GY 1 |
| Inspection Direction: Downstream | Downstream Node: MAIN |
| Inspected Length: 11.81 m | Dia/Height: 150 mm |
| Total Length: 11.81 m | Pipe Material: Vitrified clay pipe (i.e. all clayware) |

| No. | m+ | Code | Observation |
|-----|-------|------|--|
| 1 | 0.20 | GY | Start node type, gully, reference number: GY 1 |
| 2 | 0.20 | WL | Water level, 5% of the vertical dimension |
| 3 | 0.67 | DES | Settled deposits, fine, 70% cross-sectional area loss |
| 4 | 1.25 | FCJ | Fracture, circumferential at joint from 4 o'clock to 6 o'clock |
| 5 | 9.10 | DES | Settled deposits, fine, 10% cross-sectional area loss |
| 6 | 11.15 | DES | Settled deposits, fine, 20% cross-sectional area loss |
| 7 | 11.81 | SA | Survey abandoned |

| | |
|---|---|
| PLR: GY2X | Upstream Node: GY2 |
| Inspection Direction: Downstream | Downstream Node: MAIN |
| Inspected Length: 0.66 m | Dia/Height: 100 mm |
| Total Length: 0.66 m | Pipe Material: Vitrified clay pipe (i.e. all clayware) |

| No. | m+ | Code | Observation |
|-----|------|------|---|
| 1 | 0.20 | GY | Start node type, gully, reference number: GY2 |
| 2 | 0.20 | WL | Water level, 5% of the vertical dimension |
| 3 | 0.41 | DES | Settled deposits, fine, 50% cross-sectional area loss |
| 4 | 0.64 | DES | Settled deposits, fine, 80% cross-sectional area loss |
| 5 | 0.66 | SA | Survey abandoned |

| | |
|---|---|
| PLR: FW 1X | Upstream Node: FW 1 |
| Inspection Direction: Downstream | Downstream Node: FW 2 |
| Inspected Length: 32.83 m | Dia/Height: 150 mm |
| Total Length: 32.83 m | Pipe Material: Vitrified clay pipe (i.e. all clayware) |



Section Summary

| | | |
|---|-----------------------|-----------------------------------|
| Project Name SHAPE ENG MIRFIELD | Project Number | Project Date 20/04/2021 |
|---|-----------------------|-----------------------------------|

| No. | m+ | Code | Observation |
|-----|-------|------|--|
| 1 | 0.20 | MH | Start node type, manhole, reference number: FW 1 |
| 2 | 0.20 | WL | Water level, 5% of the vertical dimension |
| 3 | 1.08 | BJ | Broken pipe at joint from 7 o'clock to 5 o'clock , |
| 4 | 1.09 | FL | Fracture, longitudinal at 4 o'clock |
| 5 | 1.09 | CL | Crack, longitudinal at 8 o'clock |
| 6 | 1.77 | FM | Fracture, multiple from 8 o'clock to 4 o'clock |
| 7 | 9.34 | JN | Junction at 2 o'clock, diameter: 150mm |
| 8 | 9.92 | FLJ | Fracture, longitudinal at joint at 5 o'clock |
| 9 | 12.84 | CCJ | Crack, circumferential at joint from 4 o'clock to 8 o'clock |
| 10 | 13.56 | CCJ | Crack, circumferential at joint from 6 o'clock to 11 o'clock |
| 11 | 16.21 | CCJ | Crack, circumferential at joint from 8 o'clock to 11 o'clock |
| 12 | 32.49 | WL | Water level, 80% of the vertical dimension |
| 13 | 32.83 | MHF | Finish node type, manhole, reference number: FW 2 |

| | | | |
|------------------------------|------------|-------------------------|---|
| PLR: | SW 1X | Upstream Node: | SW 1 |
| Inspection Direction: | Downstream | Downstream Node: | SW 2 |
| Inspected Length: | 34.20 m | Dia/Height: | 150 mm |
| Total Length: | 34.20 m | Pipe Material: | Vitrified clay pipe (i.e. all clayware) |

| No. | m+ | Code | Observation |
|-----|-------|------|---|
| 1 | 0.20 | MH | Start node type, manhole, reference number: SW 1 |
| 2 | 0.20 | WL | Water level, 5% of the vertical dimension |
| 3 | 0.20 | B | Broken pipe from 10 o'clock to 6 o'clock |
| 4 | 0.63 | JN | Junction at 10 o'clock, diameter: 150mm |
| 5 | 6.09 | DEC | Settled deposits, hard or compacted, 5% cross-sectional area loss |
| 6 | 17.35 | FMJ | Fracture, multiple at joint from 8 o'clock to 4 o'clock |
| 7 | 17.67 | JN | Junction at 1 o'clock, diameter: 150mm |
| 8 | 17.67 | JN | Junction at 2 o'clock, diameter: 150mm |
| 9 | 19.97 | JN | Junction at 2 o'clock, diameter: 150mm |
| 10 | 19.99 | CC | Crack, circumferential from 8 o'clock to 11 o'clock |
| 11 | 21.95 | FCJ | Fracture, circumferential at joint from 2 o'clock to 4 o'clock |
| 12 | 22.48 | CCJ | Crack, circumferential at joint from 1 o'clock to 5 o'clock |
| 13 | 25.59 | DECJ | Settled deposits, hard or compacted at joint, 5% cross-sectional area loss |
| 14 | 26.27 | DECJ | Settled deposits, hard or compacted at joint, 5% cross-sectional area loss |
| 15 | 26.35 | DEC | Settled deposits, hard or compacted, 20% cross-sectional area loss |
| 16 | 26.75 | DECJ | Settled deposits, hard or compacted at joint, 10% cross-sectional area loss |
| 17 | 27.27 | DECJ | Settled deposits, hard or compacted at joint, 10% cross-sectional area loss |
| 18 | 27.84 | DECJ | Settled deposits, hard or compacted at joint, 5% cross-sectional area loss |
| 19 | 32.67 | DECJ | Settled deposits, hard or compacted at joint, 15% cross-sectional area loss |
| 20 | 34.20 | REM | General remark |
| 21 | 34.20 | MHF | Finish node type, manhole, reference number: SW 2 |

| | | | |
|------------------------------|----------|-------------------------|---|
| PLR: | AX | Upstream Node: | A |
| Inspection Direction: | Upstream | Downstream Node: | FW 1 |
| Inspected Length: | 21.17 m | Dia/Height: | 150 mm |
| Total Length: | 21.17 m | Pipe Material: | Vitrified clay pipe (i.e. all clayware) |



Section Summary

| | | |
|---|-----------------------|-----------------------------------|
| Project Name SHAPE ENG MIRFIELD | Project Number | Project Date 20/04/2021 |
|---|-----------------------|-----------------------------------|

| No. | m+ | Code | Observation |
|-----|-------|------|---|
| 1 | 0.20 | MH | Start node type, manhole, reference number: FW 1 |
| 2 | 0.20 | WL | Water level, 5% of the vertical dimension |
| 3 | 0.20 | LL | Line deviates left |
| 4 | 19.63 | LL | Line deviates left |
| 5 | 19.79 | CCJ | Crack, circumferential at joint from 9 o'clock to 2 o'clock |
| 6 | 21.17 | DES | Settled deposits, fine, 50% cross-sectional area loss |
| 7 | 21.17 | SA | Survey abandoned |



Project Summary

| | | |
|---|-----------------------|-----------------------------------|
| Project Name SHAPE ENG MIRFIELD | Project Number | Project Date 20/04/2021 |
|---|-----------------------|-----------------------------------|

Pipe Summary

| No. | Type | PLR | Upstream Node | Downstream Node | Road | Town | Use | Mat. | Profile | Length |
|---------------|------|-------|---------------|-----------------|--------------|----------|-----|------|----------------|-----------------|
| 1 | SEC | GY 1X | GY 1 | MAIN | Knowle Grove | Mirfield | S | VC | Circular 150mm | 11.81 m |
| 2 | SEC | GY2X | GY2 | MAIN | Knowle Grove | Mirfield | S | VC | Circular 100mm | 0.66 m |
| 3 | SEC | FW 1X | FW 1 | FW 2 | Knowle Grove | Mirfield | F | VC | Circular 150mm | 32.83 m |
| 4 | SEC | SW 1X | SW 1 | SW 2 | Knowle Grove | Mirfield | S | VC | Circular 150mm | 34.20 m |
| 5 | SEC | AX | A | FW 1 | Knowle Grove | Mirfield | F | VC | Circular 150mm | 21.17 m |
| Total: | | | | | | | | | | 100.67 m |

Pipe Levels

| No. | PLR | Upstream Node | Upstream C.L. | Upstream I.L. | Upstream I.D. | Downstream Node | Downstream C.L. | Downstream I.L. | Downstream I.D. |
|-----|-------|---------------|---------------|---------------|---------------|-----------------|-----------------|-----------------|-----------------|
| 1 | GY 1X | GY 1 | | | 0.000 m | MAIN | | | 0.000 m |
| 2 | GY2X | GY2 | | | 0.000 m | MAIN | | | 0.000 m |
| 3 | FW 1X | FW 1 | | | 0.000 m | FW 2 | | | 0.000 m |
| 4 | SW 1X | SW 1 | | | 0.000 m | SW 2 | | | 0.000 m |
| 5 | AX | A | | | 0.000 m | FW 1 | | | 0.000 m |

Pipe Summary by Profile

| Profile | Total Length | No. Pipes |
|------------------|-----------------|-----------|
| Circular 100mm | 0.66 m | |
| Circular 100mm = | 0.66 m | 1 |
| Circular 150mm | 11.81 m | |
| Circular 150mm | 32.83 m | |
| Circular 150mm | 34.20 m | |
| Circular 150mm | 21.17 m | |
| Circular 150mm = | 100.01 m | 4 |
| Total = | 100.67 m | 5 |



Project Summary

| | | |
|---|-----------------------|-----------------------------------|
| Project Name SHAPE ENG MIRFIELD | Project Number | Project Date 20/04/2021 |
|---|-----------------------|-----------------------------------|

Inspection Summary

| Pipe No. | Insp. No. | Upstream Node | Downstream Node | Dir. | Operator | Insp. Date | Insp. Time | Str | Ser | Final Observation | Length |
|---------------|-----------|---------------|-----------------|------|----------|------------|------------|-----|-----|-------------------|-----------------|
| 1 | 1 | GY 1 | MAIN | DS | Dean | 19/04/2021 | 0:00 | 3 | 4 | SA, SILT | 11.81 m |
| 2 | 1 | GY2 | MAIN | DS | Dean | 19/04/2021 | 0:00 | 1 | 5 | SA, SILT | 0.66 m |
| 3 | 1 | FW 1 | FW 2 | DS | Dean | 19/04/2021 | 0:00 | 4 | 1 | MHF, MH IN VIEW | 32.83 m |
| 4 | 1 | SW 1 | SW 2 | DS | Dean | 19/04/2021 | 0:00 | 4 | 3 | MHF, IN VIEW | 34.20 m |
| 5 | 1 | A | FW 1 | US | Dean | 19/04/2021 | 0:00 | 2 | 4 | SA, DUE TO DEBRIS | 21.17 m |
| Total: | | | | | | | | | | | 100.67 m |

Inspection Summary by Profile

| Profile | Total Length | No. Inspections |
|------------------|-----------------|-----------------|
| Circular 100mm | 0.66 m | |
| Circular 100mm = | 0.66 m | 1 |
| Circular 150mm | 11.81 m | |
| Circular 150mm | 32.83 m | |
| Circular 150mm | 34.20 m | |
| Circular 150mm | 21.17 m | |
| Circular 150mm = | 100.01 m | 4 |
| Total = | 100.67 m | 5 |



Project Summary

| | | |
|---|-----------------------|-----------------------------------|
| Project Name SHAPE ENG MIRFIELD | Project Number | Project Date 20/04/2021 |
|---|-----------------------|-----------------------------------|

| Defect Summary | | | | CCTV Drainage Survey Observation Count | | | | | | | | | | | | | | | | | | | | | |
|-----------------------|-----------|---------------|-----------------|---|--------------------|------------------|--------------------|-----------------------------|-----------|----------|----------|-----------|-------|----------------|------------------|--------------------------|-------|--------------|--------------|------|----------|-------------|-------------|---------------|----------|
| | | | | General | | | | Structural Condition | | | | | | | | Service Condition | | | | | | | | | |
| Sect. No. | Insp. No. | Upstream Node | Downstream Node | Insp. Length (m) | No. Grade 4/5 Obs. | Survey Abandoned | Camera Under Water | Cracks | Fractures | Broken | Deformed | Collapsed | Holes | Surface Damage | Displaced Joints | Open Joints | Roots | Infiltration | Encrustation | Silt | Grease | Obstruction | Water Level | Line Deviates | |
| 1 | 1 | GY 1 | MAIN | 11.8 | 1 | 1 | | | 1 | | | | | | | | | | | | 3 | | | 1 | |
| 2 | 1 | GY2 | MAIN | 0.7 | 2 | 1 | | | | | | | | | | | | | | | 2 | | | 1 | |
| 3 | 1 | FW 1 | FW 2 | 32.8 | 2 | | | 4 | 3 | 1 | | | | | | | | | | | | | 2 | | |
| 4 | 1 | SW 1 | SW 2 | 34.2 | 2 | | | 2 | 2 | 1 | | | | | | | | | | | | | 1 | | |
| 5 | 1 | A | FW 1 | 21.2 | 1 | 1 | | 1 | | | | | | | | | | | | | | | 1 | 2 | |
| Total: | | | | 100.7 | 8 | 3 | | 7 | 6 | 2 | | | | | | | | | | | 6 | | | 6 | 2 |



Section Inspection - 19/04/2021 - GY 1X

| | | | | | | | |
|------------------|-----------------|--------------------------|---------------|---------------------------------------|--------------------------------|-------------------------------|---------------------|
| Section 1 | Inspection 1 | Date 19/04/21 | Time 10:08 | Client's Job Ref SHAPE ENGINEERING | Weather No Rain Or Snow | Pre Cleaned No | PLR GY 1X |
| Operator DEAN | | Vehicle Not Specified | | Camera Not Specified | Preset Length Not Specified | Legal Status Not Specified | Alternative ID 1 |

| | | | | | |
|---------------------|--|-----------------------|---|------------------------|------|
| Town or Village: | Mirfield | Inspection Direction: | Downstream | Upstream Node: | GY 1 |
| Road: | Knowle Grove | Inspected Length: | 11.81 m | Upstream Pipe Depth: | |
| Location: | Road | Total Length: | 11.81 m | Downstream Node: | MAIN |
| Surface Type: | | Joint Length: | 0.00 m | Downstream Pipe Depth: | |
| Use: | Surface water | Pipe Shape: | Circular | | |
| Type of Pipe: | Gravity drain/sewer | Dia/Height: | 150 mm | | |
| Year Constructed: | | Pipe Material: | Vitrified clay pipe (i.e. all clayware) | | |
| Flow Control: | No flow control | Lining Type: | No Lining | | |
| Inspection Purpose: | Sample survey to determine asset condition | Lining Material: | No Lining | | |

Comments:
Recommendations:

| Scale: | 1:103 | Position [m] | Code | Observation | MPEG | Photo | Grade | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|----------|--|-----------|------------------------------------|-------------|----------|----------|-----------|-----------|--|----------|--|--|--|------|----|---|----------|--|--|--|------|-----|---|----------|-------------------------|---|--|------|-----|--|----------|-------------------------|---|--|------|-----|---|----------|--|---|--|-------|-----|---|----------|--|---|--|-------|----|------------------------|----------|--|--|--|
| <div style="display: flex; align-items: flex-start;"> <div style="width: 20%;"> <p>Depth: m GY 1</p> </div> <table border="1" style="width: 80%; border-collapse: collapse;"> <tr> <td style="width: 10%; text-align: right;">0.20</td> <td style="width: 10%;">GY</td> <td style="width: 40%;">Start node type, gully, reference number: GY 1</td> <td style="width: 10%;">00:00:01</td> <td></td> <td></td> <td></td> </tr> <tr> <td style="text-align: right;">0.20</td> <td>WL</td> <td>Water level, 5% of the vertical dimension</td> <td>00:00:01</td> <td></td> <td></td> <td></td> </tr> <tr> <td style="text-align: right;">0.67</td> <td>DES</td> <td>Settled deposits, fine, 70% cross-sectional area loss</td> <td>00:00:12</td> <td>KNOWLE GROVE_0 -67m_101</td> <td>4</td> <td></td> </tr> <tr> <td style="text-align: right;">1.25</td> <td>FCJ</td> <td>Fracture, circumferential at joint from 4 o'clock to 6 o'clock</td> <td>00:00:29</td> <td>KNOWLE GROVE_1 -25m_101</td> <td>3</td> <td></td> </tr> <tr> <td style="text-align: right;">9.10</td> <td>DES</td> <td>Settled deposits, fine, 10% cross-sectional area loss</td> <td>00:01:12</td> <td></td> <td>3</td> <td></td> </tr> <tr> <td style="text-align: right;">11.15</td> <td>DES</td> <td>Settled deposits, fine, 20% cross-sectional area loss</td> <td>00:01:30</td> <td></td> <td>3</td> <td></td> </tr> <tr> <td style="text-align: right;">11.81</td> <td>SA</td> <td>Survey abandoned: SILT</td> <td>00:01:41</td> <td></td> <td></td> <td></td> </tr> </table> </div> | | | | | | | | 0.20 | GY | Start node type, gully, reference number: GY 1 | 00:00:01 | | | | 0.20 | WL | Water level, 5% of the vertical dimension | 00:00:01 | | | | 0.67 | DES | Settled deposits, fine, 70% cross-sectional area loss | 00:00:12 | KNOWLE GROVE_0 -67m_101 | 4 | | 1.25 | FCJ | Fracture, circumferential at joint from 4 o'clock to 6 o'clock | 00:00:29 | KNOWLE GROVE_1 -25m_101 | 3 | | 9.10 | DES | Settled deposits, fine, 10% cross-sectional area loss | 00:01:12 | | 3 | | 11.15 | DES | Settled deposits, fine, 20% cross-sectional area loss | 00:01:30 | | 3 | | 11.81 | SA | Survey abandoned: SILT | 00:01:41 | | | |
| 0.20 | GY | Start node type, gully, reference number: GY 1 | 00:00:01 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 0.20 | WL | Water level, 5% of the vertical dimension | 00:00:01 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 0.67 | DES | Settled deposits, fine, 70% cross-sectional area loss | 00:00:12 | KNOWLE GROVE_0 -67m_101 | 4 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1.25 | FCJ | Fracture, circumferential at joint from 4 o'clock to 6 o'clock | 00:00:29 | KNOWLE GROVE_1 -25m_101 | 3 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 9.10 | DES | Settled deposits, fine, 10% cross-sectional area loss | 00:01:12 | | 3 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 11.15 | DES | Settled deposits, fine, 20% cross-sectional area loss | 00:01:30 | | 3 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 11.81 | SA | Survey abandoned: SILT | 00:01:41 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 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 | 40.0 | 3.4 | 40.0 | 3.0 | 3 | 8.0 | 1.0 | 12.0 | 4.0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |



Section Pictures - 19/04/2021 - GY 1X

| Section | Inspection Direction | PLR | Client's Job Ref | Contractor's Job Ref |
|---------|----------------------|-------|-------------------|----------------------|
| 1 | Downstream | GY 1X | SHAPE ENGINEERING | KNOWLE GROVE |



KNOWLE GROVE_0-67m_101221.jpg, 00:00:12, 0.67 m
Settled deposits, fine, 70% cross-sectional area loss



KNOWLE GROVE_1-25m_101251.jpg, 00:00:29, 1.25 m
Fracture, circumferential at joint from 4 o'clock to 6 o'clock



Section Inspection - 19/04/2021 - GY2X

| | | | | | | | |
|------------------|-----------------|--------------------------|---------------|---------------------------------------|--------------------------------|-------------------------------|---------------------|
| Section 2 | Inspection 2 | Date 19/04/21 | Time 10:18 | Client's Job Ref SHAPE ENGINEERING | Weather No Rain Or Snow | Pre Cleaned No | PLR GY2X |
| Operator DEAN | | Vehicle Not Specified | | Camera Not Specified | Preset Length Not Specified | Legal Status Not Specified | Alternative ID 1 |

| | | | | | |
|---------------------|--|-----------------------|---|------------------------|------|
| Town or Village: | Mirfield | Inspection Direction: | Downstream | Upstream Node: | GY2 |
| Road: | Knowle Grove | Inspected Length: | 0.66 m | Upstream Pipe Depth: | |
| Location: | Road | Total Length: | 0.66 m | Downstream Node: | MAIN |
| Surface Type: | | Joint Length: | 0.00 m | Downstream Pipe Depth: | |
| Use: | Surface water | Pipe Shape: | Circular | | |
| Type of Pipe: | Gravity drain/sewer | Dia/Height: | 100 mm | | |
| Year Constructed: | | Pipe Material: | Vitrified clay pipe (i.e. all clayware) | | |
| Flow Control: | No flow control | Lining Type: | No Lining | | |
| Inspection Purpose: | Sample survey to determine asset condition | Lining Material: | No Lining | | |

Comments:

Recommendations:

| Scale: | 1:50 | Position [m] | Code | Observation | MPEG | Photo | Grade | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|------|---|----------|----------------------|------|-------|-------|------|----|---|----------|--|--|--|--|------|----|---|----------|--|--|--|--|------|-----|---|----------|----------------------|------|---|------|-----|---|----------|----------------------|------|---|------|----|------------------------|----------|--|--|--|
| <div style="display: flex; align-items: flex-start;"> <div style="margin-right: 20px;"> <p>Depth: m GY2</p> </div> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 10%; text-align: right;">0.20</td> <td style="width: 10%;">GY</td> <td style="width: 40%;">Start node type, gully, reference number: GY2</td> <td style="width: 10%;">00:00:00</td> <td colspan="4"></td> </tr> <tr> <td style="text-align: right;">0.20</td> <td>WL</td> <td>Water level, 5% of the vertical dimension</td> <td>00:00:01</td> <td colspan="4"></td> </tr> <tr> <td style="text-align: right;">0.41</td> <td>DES</td> <td>Settled deposits, fine, 50% cross-sectional area loss</td> <td>00:00:09</td> <td style="width: 10%;">GY2_0-41 m_101942</td> <td style="width: 10%;">-jpg</td> <td style="width: 10%;">4</td> </tr> <tr> <td style="text-align: right;">0.64</td> <td>DES</td> <td>Settled deposits, fine, 80% cross-sectional area loss</td> <td>00:00:18</td> <td>GY2_0-64 m_102002</td> <td>-jpg</td> <td>5</td> </tr> <tr> <td style="text-align: right;">0.66</td> <td>SA</td> <td>Survey abandoned: SILT</td> <td>00:00:20</td> <td colspan="3"></td> </tr> </table> </div> | | | | | | | | 0.20 | GY | Start node type, gully, reference number: GY2 | 00:00:00 | | | | | 0.20 | WL | Water level, 5% of the vertical dimension | 00:00:01 | | | | | 0.41 | DES | Settled deposits, fine, 50% cross-sectional area loss | 00:00:09 | GY2_0-41 m_101942 | -jpg | 4 | 0.64 | DES | Settled deposits, fine, 80% cross-sectional area loss | 00:00:18 | GY2_0-64 m_102002 | -jpg | 5 | 0.66 | SA | Survey abandoned: SILT | 00:00:20 | | | |
| 0.20 | GY | Start node type, gully, reference number: GY2 | 00:00:00 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 0.20 | WL | Water level, 5% of the vertical dimension | 00:00:01 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 0.41 | DES | Settled deposits, fine, 50% cross-sectional area loss | 00:00:09 | GY2_0-41 m_101942 | -jpg | 4 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 0.64 | DES | Settled deposits, fine, 80% cross-sectional area loss | 00:00:18 | GY2_0-64 m_102002 | -jpg | 5 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 0.66 | SA | Survey abandoned: SILT | 00:00:20 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

Construction Features

Miscellaneous Features

Structural Defects

Service & Operational Observations

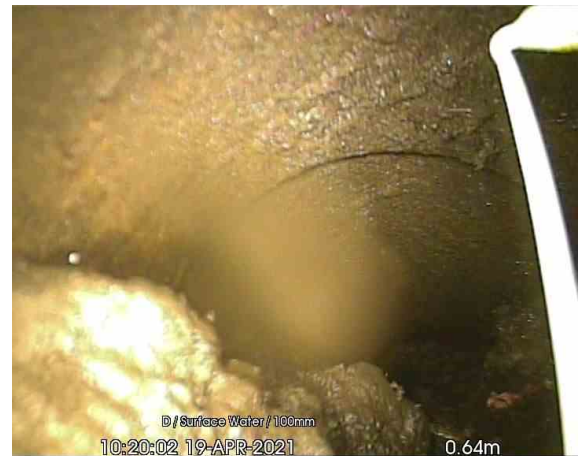
| STR No. Def | STR Peak | STR Mean | STR Total | STR Grade | SER No. Def | SER Peak | SER Mean | SER Total | SER Grade |
|-------------|----------|----------|-----------|-----------|-------------|----------|----------|-----------|-----------|
| 0 | 0.0 | 0.0 | 0.0 | 1.0 | 2 | 10.0 | 22.7 | 15.0 | 5.0 |

Section Pictures - 19/04/2021 - GY2X

| Section | Inspection Direction | PLR | Client's Job Ref | Contractor's Job Ref |
|---------|----------------------|------|-------------------|----------------------|
| 2 | Downstream | GY2X | SHAPE ENGINEERING | KNOWLE GROVE |



GY2_0-41m_101942.jpg, 00:00:09, 0.41 m
Settled deposits, fine, 50% cross-sectional area loss



GY2_0-64m_102002.jpg, 00:00:18, 0.64 m
Settled deposits, fine, 80% cross-sectional area loss



Section Inspection - 19/04/2021 - FW 1X

| | | | | | | | |
|------------------|-----------------|--------------------------|---------------|---------------------------------------|--------------------------------|-------------------------------|---------------------|
| Section 3 | Inspection 3 | Date 19/04/21 | Time 10:28 | Client's Job Ref SHAPE ENGINEERING | Weather No Rain Or Snow | Pre Cleaned No | PLR FW 1X |
| Operator DEAN | | Vehicle Not Specified | | Camera Not Specified | Preset Length Not Specified | Legal Status Not Specified | Alternative ID 1 |

| | | | | | |
|---------------------|--|-----------------------|---|------------------------|------|
| Town or Village: | Mirfield | Inspection Direction: | Downstream | Upstream Node: | FW 1 |
| Road: | Knowle Grove | Inspected Length: | 32.83 m | Upstream Pipe Depth: | |
| Location: | Road | Total Length: | 32.83 m | Downstream Node: | FW 2 |
| Surface Type: | | Joint Length: | 0.00 m | Downstream Pipe Depth: | |
| Use: | Foul | Pipe Shape: | Circular | | |
| Type of Pipe: | Gravity drain/sewer | Dia/Height: | 150 mm | | |
| Year Constructed: | | Pipe Material: | Vitrified clay pipe (i.e. all clayware) | | |
| Flow Control: | No flow control | Lining Type: | No Lining | | |
| Inspection Purpose: | Sample survey to determine asset condition | Lining Material: | No Lining | | |

Comments:
Recommendations:

| Scale: | 1:286 | Position [m] | Code | Observation | MPEG | Photo | Grade | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|--|-------|---|------|-------------|----------------------------|-------|-------|------|----|--|--|----------|--|--|------|----|---|--|----------|--|--|------|----|--|--|----------|----------------------------|---|------|----|-------------------------------------|--|----------|----------------------------|---|------|----|----------------------------------|--|----------|----------------------------|---|------|----|--|--|----------|----------------------------|---|------|----|--|--|----------|--|--|------|-----|--|--|----------|----------------------------|---|-------|-----|---|--|----------|---------------------------|---|-------|-----|--|--|----------|---------------------------|---|-------|-----|--|--|----------|---------------------------|---|-------|----|--|--|----------|---------------------------|--|-------|-----|---|--|----------|--|--|
| <div style="display: flex; align-items: center;"> <div style="width: 20%;"> <p style="text-align: center;">Depth: m FW 1</p> <p style="text-align: center;">FW 2 Depth: m</p> </div> <table border="1" style="width: 80%; border-collapse: collapse;"> <tr> <td style="width: 10%; text-align: right;">0.20</td> <td style="width: 10%;">MH</td> <td colspan="2">Start node type, manhole, reference number: FW 1</td> <td style="width: 10%;">00:00:01</td> <td></td> <td></td> </tr> <tr> <td style="text-align: right; color: blue;">0.20</td> <td>WL</td> <td colspan="2">Water level, 5% of the vertical dimension</td> <td>00:00:01</td> <td></td> <td></td> </tr> <tr> <td style="text-align: right; color: red;">1.08</td> <td>BJ</td> <td colspan="2">Broken pipe at joint from 7 o'clock to 5 o'clock ,</td> <td>00:00:20</td> <td>FW 1-FW 2_1-08m_103033.jpg</td> <td style="text-align: center;">4</td> </tr> <tr> <td style="text-align: right; color: red;">1.09</td> <td>FL</td> <td colspan="2">Fracture, longitudinal at 4 o'clock</td> <td>00:00:23</td> <td>FW 1-FW 2_1-09m_103042.jpg</td> <td style="text-align: center;">3</td> </tr> <tr> <td style="text-align: right; color: red;">1.09</td> <td>CL</td> <td colspan="2">Crack, longitudinal at 8 o'clock</td> <td>00:00:26</td> <td>FW 1-FW 2_1-09m_103054.jpg</td> <td style="text-align: center;">2</td> </tr> <tr> <td style="text-align: right; color: red;">1.77</td> <td>FM</td> <td colspan="2">Fracture, multiple from 8 o'clock to 4 o'clock</td> <td>00:00:43</td> <td>FW 1-FW 2_1-77m_103119.jpg</td> <td style="text-align: center;">4</td> </tr> <tr> <td style="text-align: right;">9.34</td> <td>JN</td> <td colspan="2">Junction at 2 o'clock, diameter: 150mm</td> <td>00:01:19</td> <td></td> <td></td> </tr> <tr> <td style="text-align: right; color: red;">9.92</td> <td>FLJ</td> <td colspan="2">Fracture, longitudinal at joint at 5 o'clock</td> <td>00:01:24</td> <td>FW 1-FW 2_9-92m_103216.jpg</td> <td style="text-align: center;">3</td> </tr> <tr> <td style="text-align: right; color: red;">12.84</td> <td>CCJ</td> <td colspan="2">Crack, circumferential at joint from 4 o'clock to 8 o'clock</td> <td>00:01:41</td> <td>FW 1-FW 2_12-84m_103243.j</td> <td style="text-align: center;">2</td> </tr> <tr> <td style="text-align: right; color: red;">13.56</td> <td>CCJ</td> <td colspan="2">Crack, circumferential at joint from 6 o'clock to 11 o'clock</td> <td>00:02:11</td> <td>FW 1-FW 2_13-56m_103325.j</td> <td style="text-align: center;">2</td> </tr> <tr> <td style="text-align: right; color: red;">16.21</td> <td>CCJ</td> <td colspan="2">Crack, circumferential at joint from 8 o'clock to 11 o'clock</td> <td>00:02:38</td> <td>FW 1-FW 2_16-21m_103401.j</td> <td style="text-align: center;">2</td> </tr> <tr> <td style="text-align: right; color: blue;">32.49</td> <td>WL</td> <td colspan="2">Water level, 80% of the vertical dimension: BLOCKED</td> <td>00:04:11</td> <td>FW 1-FW 2_32-49m_103547.j</td> <td></td> </tr> <tr> <td style="text-align: right;">32.83</td> <td>MHF</td> <td colspan="2">Finish node type, manhole, reference number: FW 2: MH IN VIEW</td> <td>00:05:05</td> <td></td> <td></td> </tr> </table> </div> | | | | | | | | 0.20 | MH | Start node type, manhole, reference number: FW 1 | | 00:00:01 | | | 0.20 | WL | Water level, 5% of the vertical dimension | | 00:00:01 | | | 1.08 | BJ | Broken pipe at joint from 7 o'clock to 5 o'clock , | | 00:00:20 | FW 1-FW 2_1-08m_103033.jpg | 4 | 1.09 | FL | Fracture, longitudinal at 4 o'clock | | 00:00:23 | FW 1-FW 2_1-09m_103042.jpg | 3 | 1.09 | CL | Crack, longitudinal at 8 o'clock | | 00:00:26 | FW 1-FW 2_1-09m_103054.jpg | 2 | 1.77 | FM | Fracture, multiple from 8 o'clock to 4 o'clock | | 00:00:43 | FW 1-FW 2_1-77m_103119.jpg | 4 | 9.34 | JN | Junction at 2 o'clock, diameter: 150mm | | 00:01:19 | | | 9.92 | FLJ | Fracture, longitudinal at joint at 5 o'clock | | 00:01:24 | FW 1-FW 2_9-92m_103216.jpg | 3 | 12.84 | CCJ | Crack, circumferential at joint from 4 o'clock to 8 o'clock | | 00:01:41 | FW 1-FW 2_12-84m_103243.j | 2 | 13.56 | CCJ | Crack, circumferential at joint from 6 o'clock to 11 o'clock | | 00:02:11 | FW 1-FW 2_13-56m_103325.j | 2 | 16.21 | CCJ | Crack, circumferential at joint from 8 o'clock to 11 o'clock | | 00:02:38 | FW 1-FW 2_16-21m_103401.j | 2 | 32.49 | WL | Water level, 80% of the vertical dimension: BLOCKED | | 00:04:11 | FW 1-FW 2_32-49m_103547.j | | 32.83 | MHF | Finish node type, manhole, reference number: FW 2: MH IN VIEW | | 00:05:05 | | |
| 0.20 | MH | Start node type, manhole, reference number: FW 1 | | 00:00:01 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 0.20 | WL | Water level, 5% of the vertical dimension | | 00:00:01 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1.08 | BJ | Broken pipe at joint from 7 o'clock to 5 o'clock , | | 00:00:20 | FW 1-FW 2_1-08m_103033.jpg | 4 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1.09 | FL | Fracture, longitudinal at 4 o'clock | | 00:00:23 | FW 1-FW 2_1-09m_103042.jpg | 3 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1.09 | CL | Crack, longitudinal at 8 o'clock | | 00:00:26 | FW 1-FW 2_1-09m_103054.jpg | 2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1.77 | FM | Fracture, multiple from 8 o'clock to 4 o'clock | | 00:00:43 | FW 1-FW 2_1-77m_103119.jpg | 4 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 9.34 | JN | Junction at 2 o'clock, diameter: 150mm | | 00:01:19 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 9.92 | FLJ | Fracture, longitudinal at joint at 5 o'clock | | 00:01:24 | FW 1-FW 2_9-92m_103216.jpg | 3 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 12.84 | CCJ | Crack, circumferential at joint from 4 o'clock to 8 o'clock | | 00:01:41 | FW 1-FW 2_12-84m_103243.j | 2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 13.56 | CCJ | Crack, circumferential at joint from 6 o'clock to 11 o'clock | | 00:02:11 | FW 1-FW 2_13-56m_103325.j | 2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 16.21 | CCJ | Crack, circumferential at joint from 8 o'clock to 11 o'clock | | 00:02:38 | FW 1-FW 2_16-21m_103401.j | 2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 32.49 | WL | Water level, 80% of the vertical dimension: BLOCKED | | 00:04:11 | FW 1-FW 2_32-49m_103547.j | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 32.83 | MHF | Finish node type, manhole, reference number: FW 2: MH IN VIEW | | 00:05:05 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

| 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 |
| 8 | 130.0 | 8.5 | 280.0 | 4.0 | 0 | 0.0 | 0.0 | 0.0 | 1.0 |

Section Pictures - 19/04/2021 - FW 1X

| Section | Inspection Direction | PLR | Client's Job Ref | Contractor's Job Ref |
|---------|----------------------|-------|-------------------|----------------------|
| 3 | Downstream | FW 1X | SHAPE ENGINEERING | KNOWLE GROVE |



FW 1-FW 2_1-08m_103033.jpg, 00:00:20, 1.08 m
Broken pipe at joint from 7 o'clock to 5 o'clock ,



FW 1-FW 2_1-09m_103042.jpg, 00:00:23, 1.09 m
Fracture, longitudinal at 4 o'clock



FW 1-FW 2_1-09m_103054.jpg, 00:00:26, 1.09 m
Crack, longitudinal at 8 o'clock

Section Pictures - 19/04/2021 - FW 1X

| Section | Inspection Direction | PLR | Client's Job Ref | Contractor's Job Ref |
|---------|----------------------|-------|-------------------|----------------------|
| 3 | Downstream | FW 1X | SHAPE ENGINEERING | KNOWLE GROVE |



FW 1-FW 2_9-92m_103216.jpg, 00:01:24, 9.92 m
Fracture, longitudinal at joint at 5 o'clock



FW 1-FW 2_12-84m_103243.jpg, 00:01:41, 12.84 m
Crack, circumferential at joint from 4 o'clock to 8 o'clock



FW 1-FW 2_13-56m_103325.jpg, 00:02:11, 13.56 m
Crack, circumferential at joint from 6 o'clock to 11 o'clock



FW 1-FW 2_16-21m_103401.jpg, 00:02:38, 16.21 m
Crack, circumferential at joint from 8 o'clock to 11 o'clock



Section Pictures - 19/04/2021 - FW 1X

| | | | | |
|---------------------|---|---------------------|--|---|
| Section 3 | Inspection Direction Downstream | PLR FW 1X | Client's Job Ref SHAPE ENGINEERING | Contractor's Job Ref KNOWLE GROVE |
|---------------------|---|---------------------|--|---|



FW 1-FW 2_32-49m_103547.jpg, 00:04:11, 32.49 m
Water level, 80% of the vertical dimension, BLOCKED



Section Inspection - 19/04/2021 - SW 1X

| | | | | | | | |
|------------------|-----------------|--------------------------|---------------|---------------------------------------|--------------------------------|-------------------------------|---------------------|
| Section 5 | Inspection 5 | Date 19/04/21 | Time 10:53 | Client's Job Ref SHAPE ENGINEERING | Weather No Rain Or Snow | Pre Cleaned No | PLR SW 1X |
| Operator DEAN | | Vehicle Not Specified | | Camera Not Specified | Preset Length Not Specified | Legal Status Not Specified | Alternative ID 1 |

| | | | | | |
|---------------------|--|-----------------------|---|------------------------|------|
| Town or Village: | Mirfield | Inspection Direction: | Downstream | Upstream Node: | SW 1 |
| Road: | Knowle Grove | Inspected Length: | 34.20 m | Upstream Pipe Depth: | |
| Location: | Road | Total Length: | 34.20 m | Downstream Node: | SW 2 |
| Surface Type: | | Joint Length: | 0.00 m | Downstream Pipe Depth: | |
| Use: | Surface water | Pipe Shape: | Circular | | |
| Type of Pipe: | Gravity drain/sewer | Dia/Height: | 150 mm | | |
| Year Constructed: | | Pipe Material: | Vitrified clay pipe (i.e. all clayware) | | |
| Flow Control: | No flow control | Lining Type: | No Lining | | |
| Inspection Purpose: | Sample survey to determine asset condition | Lining Material: | No Lining | | |

Comments:
Recommendations:

| Scale: | 1:231 | Position [m] | Code | Observation | MPEG | Photo | Grade |
|--------|-------|------------------|------|--|----------|---------------------------|-------|
| | | Depth: m SW 1 | | | | | |
| | | 0.20 | MH | Start node type, manhole, reference number: SW 1 | 00:00:01 | | |
| | | 0.20 | WL | Water level, 5% of the vertical dimension | 00:00:01 | | |
| | | 0.20 | B | Broken pipe from 10 o'clock to 6 o'clock | 00:00:04 | SW1-SW2_0-20m_105447.jpg | 4 |
| | | 0.63 | JN | Junction at 10 o'clock, diameter: 150mm | 00:00:09 | | |
| | | 6.09 | DEC | Settled deposits, hard or compacted, 5% cross-sectional area loss | 00:01:16 | SW1-SW2_6-09m_105628.jpg | 2 |
| | | 17.35 | FMJ | Fracture, multiple at joint from 8 o'clock to 4 o'clock | 00:02:57 | SW1-SW2_17-35m_105825.jpg | 4 |
| | | 17.67 | JN | Junction at 1 o'clock, diameter: 150mm | 00:03:03 | | |
| | | 17.67 | JN | Junction at 2 o'clock, diameter: 150mm | 00:03:05 | | |
| | | 19.97 | JN | Junction at 2 o'clock, diameter: 150mm | 00:03:35 | | |
| | | 19.99 | CC | Crack, circumferential from 8 o'clock to 11 o'clock | 00:03:38 | SW1-SW2_19-99m_105936.jpg | 2 |
| | | 21.95 | FCJ | Fracture, circumferential at joint from 2 o'clock to 4 o'clock | 00:04:04 | SW1-SW2_21-95m_110026.jpg | 3 |
| | | 22.48 | CCJ | Crack, circumferential at joint from 1 o'clock to 5 o'clock | 00:04:21 | SW1-SW2_22-48m_110054.jpg | 2 |
| | | 25.59 | DECJ | Settled deposits, hard or compacted at joint, 5% cross-sectional area loss | 00:05:29 | SW1-SW2_25-59m_110216.jpg | 2 |
| | | 26.27 | DECJ | Settled deposits, hard or compacted at joint, 5% cross-sectional area loss | 00:05:53 | SW1-SW2_26-27m_110253.jpg | 2 |
| | | 26.35 | DEC | Settled deposits, hard or compacted, 20% cross-sectional area loss | 00:06:08 | SW1-SW2_26-35m_110316.jpg | 3 |



Section Inspection - 19/04/2021 - SW 1X

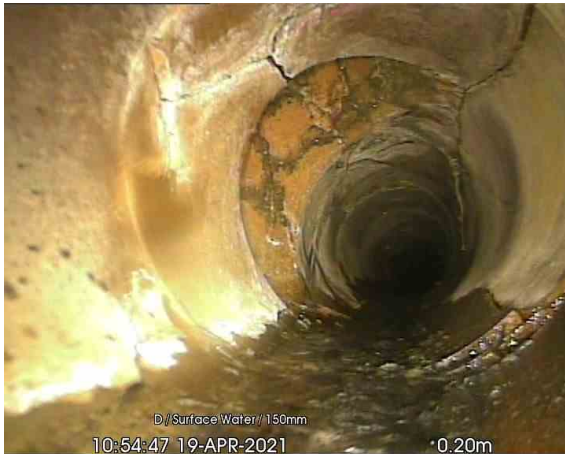
| | | | | | | | |
|------------------|-----------------|--------------------------|---------------|---------------------------------------|--------------------------------|-------------------------------|---------------------|
| Section 5 | Inspection 5 | Date 19/04/21 | Time 10:53 | Client's Job Ref SHAPE ENGINEERING | Weather No Rain Or Snow | Pre Cleaned No | PLR SW 1X |
| Operator DEAN | | Vehicle Not Specified | | Camera Not Specified | Preset Length Not Specified | Legal Status Not Specified | Alternative ID 1 |

| Scale: | 1:231 | Position [m] | Code | Observation | MPEG | Photo | Grade |
|--------|-------|--------------|------|---|----------|---------------------------|-------|
| | | 26.75 | DECJ | Settled deposits, hard or compacted at joint, 10% cross-sectional area loss | 00:06:18 | SW1-SW2_26-75m_110339.jpg | 3 |
| | | 27.27 | DECJ | Settled deposits, hard or compacted at joint, 10% cross-sectional area loss | 00:06:30 | SW1-SW2_27-27m_110401.jpg | 3 |
| | | 27.84 | DECJ | Settled deposits, hard or compacted at joint, 5% cross-sectional area loss | 00:06:41 | SW1-SW2_27-84m_110424.jpg | 2 |
| | | 32.67 | DECJ | Settled deposits, hard or compacted at joint, 15% cross-sectional area loss | 00:07:20 | SW1-SW2_32-67m_110519.jpg | 3 |
| | | 34.20 | REM | General remark: DROP SHAFT | 00:07:40 | SW1-SW2_34-20m_110553.jpg | |
| | | 34.20 | MHF | Finish node type, manhole, reference number: SW 2: IN VIEW | 00:07:42 | | |

| 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 |
| 5 | 80.0 | 6.4 | 220.0 | 4.0 | 8 | 2.0 | 0.4 | 12.0 | 3.0 |

Section Pictures - 19/04/2021 - SW 1X

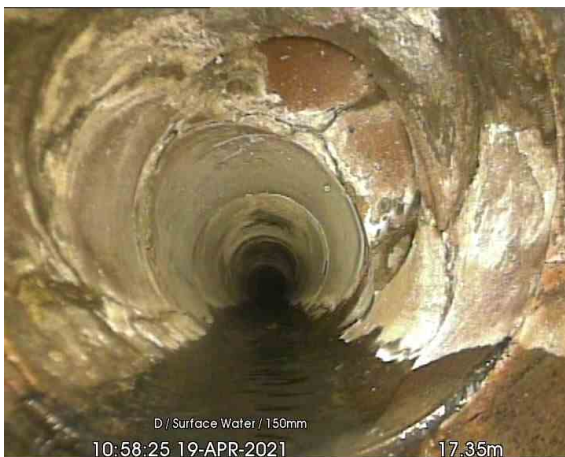
| Section | Inspection Direction | PLR | Client's Job Ref | Contractor's Job Ref |
|---------|----------------------|-------|-------------------|----------------------|
| 5 | Downstream | SW 1X | SHAPE ENGINEERING | KNOWLE GROVE |



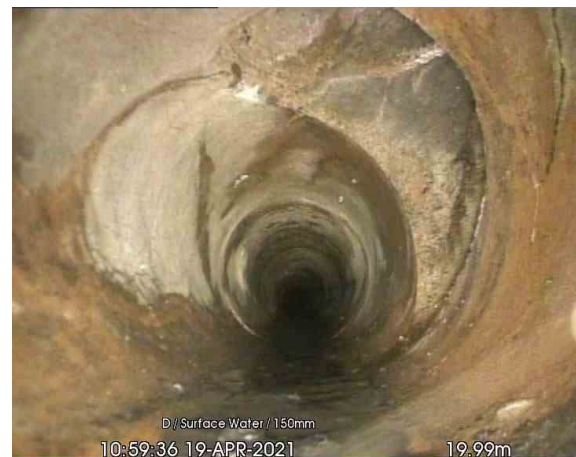
SW1-SW2_0-20m_105447.jpg, 00:00:04, 0.20 m
Broken pipe from 10 o'clock to 6 o'clock



SW1-SW2_6-09m_105628.jpg, 00:01:16, 6.09 m
Settled deposits, hard or compacted, 5% cross-sectional area loss



SW1-SW2_17-35m_105825.jpg, 00:02:57, 17.35 m
Fracture, multiple at joint from 8 o'clock to 4 o'clock



SW1-SW2_19-99m_105936.jpg, 00:03:38, 19.99 m
Crack, circumferential from 8 o'clock to 11 o'clock

Section Pictures - 19/04/2021 - SW 1X

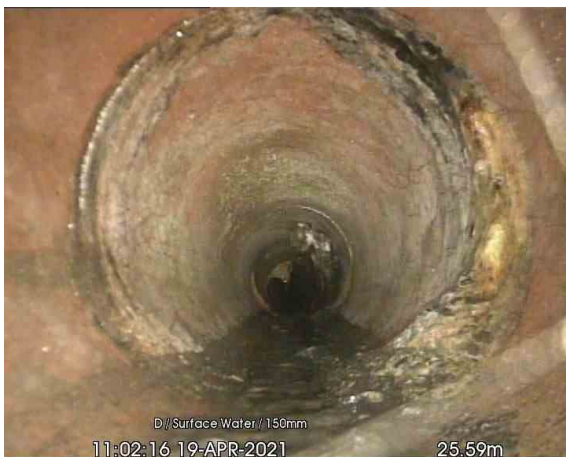
| Section | Inspection Direction | PLR | Client's Job Ref | Contractor's Job Ref |
|---------|----------------------|-------|-------------------|----------------------|
| 5 | Downstream | SW 1X | SHAPE ENGINEERING | KNOWLE GROVE |



SW1-SW2_21-95m_110026.jpg, 00:04:04, 21.95 m
Fracture, circumferential at joint from 2 o'clock to 4 o'clock



SW1-SW2_22-48m_110054.jpg, 00:04:21, 22.48 m
Crack, circumferential at joint from 1 o'clock to 5 o'clock



SW1-SW2_25-59m_110216.jpg, 00:05:29, 25.59 m
Settled deposits, hard or compacted at joint, 5%
cross-sectional area loss



SW1-SW2_26-27m_110253.jpg, 00:05:53, 26.27 m
Settled deposits, hard or compacted at joint, 5%
cross-sectional area loss

Section Pictures - 19/04/2021 - SW 1X

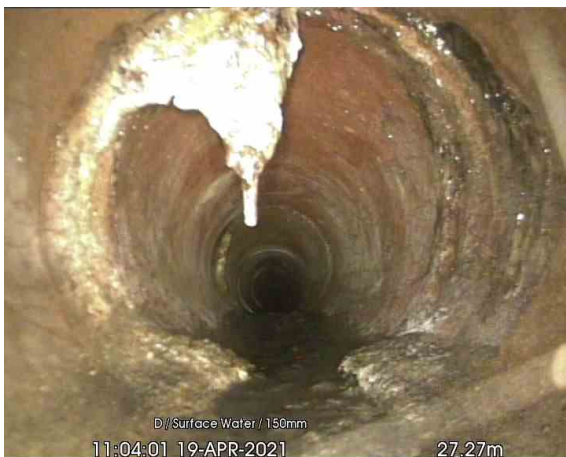
| Section | Inspection Direction | PLR | Client's Job Ref | Contractor's Job Ref |
|---------|----------------------|-------|-------------------|----------------------|
| 5 | Downstream | SW 1X | SHAPE ENGINEERING | KNOWLE GROVE |



SW1-SW2_26-35m_110316.jpg, 00:06:08, 26.35 m
Settled deposits, hard or compacted, 20% cross-sectional area loss



SW1-SW2_26-75m_110339.jpg, 00:06:18, 26.75 m
Settled deposits, hard or compacted at joint, 10% cross-sectional area loss



SW1-SW2_27-27m_110401.jpg, 00:06:30, 27.27 m
Settled deposits, hard or compacted at joint, 10% cross-sectional area loss



SW1-SW2_27-84m_110424.jpg, 00:06:41, 27.84 m
Settled deposits, hard or compacted at joint, 5% cross-sectional area loss

Section Pictures - 19/04/2021 - SW 1X

| | | | | |
|---------------------|---|---------------------|--|---|
| Section 5 | Inspection Direction Downstream | PLR SW 1X | Client's Job Ref SHAPE ENGINEERING | Contractor's Job Ref KNOWLE GROVE |
|---------------------|---|---------------------|--|---|



SW1-SW2_32-67m_110519.jpg, 00:07:20, 32.67 m
Settled deposits, hard or compacted at joint, 15%
cross-sectional area loss



SW1-SW2_34-20m_110553.jpg, 00:07:40, 34.20 m
General remark, DROP SHAFT



Section Inspection - 19/04/2021 - AX

| | | | | | | | |
|------------------|-----------------|--------------------------|---------------|---------------------------------------|--------------------------------|-------------------------------|---------------------|
| Section 6 | Inspection 6 | Date 19/04/21 | Time 11:16 | Client's Job Ref SHAPE ENGINEERING | Weather No Rain Or Snow | Pre Cleaned No | PLR AX |
| Operator DEAN | | Vehicle Not Specified | | Camera Not Specified | Preset Length Not Specified | Legal Status Not Specified | Alternative ID 1 |

| | | | | | |
|---------------------|--|-----------------------|---|------------------------|------|
| Town or Village: | Mirfield | Inspection Direction: | Upstream | Upstream Node: | A |
| Road: | Knowle Grove | Inspected Length: | 21.17 m | Upstream Pipe Depth: | |
| Location: | Road | Total Length: | 21.17 m | Downstream Node: | FW 1 |
| Surface Type: | | Joint Length: | 0.00 m | Downstream Pipe Depth: | |
| Use: | Foul | Pipe Shape: | Circular | | |
| Type of Pipe: | Gravity drain/sewer | Dia/Height: | 150 mm | | |
| Year Constructed: | | Pipe Material: | Vitrified clay pipe (i.e. all clayware) | | |
| Flow Control: | No flow control | Lining Type: | No Lining | | |
| Inspection Purpose: | Sample survey to determine asset condition | Lining Material: | No Lining | | |

Comments:

Recommendations:

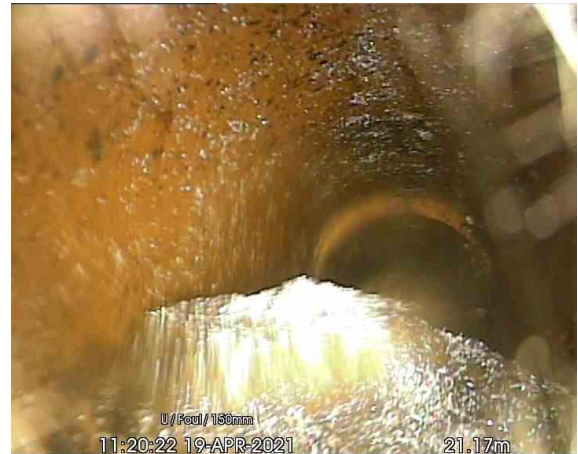
| Scale: | 1:185 | Position [m] | Code | Observation | MPEG | Photo | Grade | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|--|----------|---|-----------|------------------------------------|-------------|----------|----------|-----------|-----------|--|----------|--|--|--|------|----|---|----------|--|--|--|------|----|--------------------|----------|--|--|--|-------|----|--------------------|----------|--|--|--|-------|-----|---|----------|--------------------------------|--|---|-------|-----|---|----------|--------------------------------|--|---|-------|----|---------------------------------|----------|--|--|--|
| <div style="display: flex; align-items: flex-start;"> <div style="margin-right: 20px;"> <p>Depth: m FW 1</p> </div> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 10%; text-align: right;">0.20</td> <td style="width: 10%;">MH</td> <td style="width: 40%;">Start node type, manhole, reference number: FW 1</td> <td style="width: 10%;">00:00:00</td> <td></td> <td></td> <td></td> </tr> <tr> <td style="text-align: right; color: blue;">0.20</td> <td>WL</td> <td style="color: blue;">Water level, 5% of the vertical dimension</td> <td>00:00:01</td> <td></td> <td></td> <td></td> </tr> <tr> <td style="text-align: right; color: green;">0.20</td> <td>LL</td> <td style="color: green;">Line deviates left</td> <td>00:00:02</td> <td></td> <td></td> <td></td> </tr> <tr> <td style="text-align: right; color: green;">19.63</td> <td>LL</td> <td style="color: green;">Line deviates left</td> <td>00:01:06</td> <td></td> <td></td> <td></td> </tr> <tr> <td style="text-align: right; color: red;">19.79</td> <td>CCJ</td> <td style="color: red;">Crack, circumferential at joint from 9 o'clock to 2 o'clock</td> <td>00:01:06</td> <td style="color: red;">FW 1- A_19-79m _111952.j</td> <td></td> <td style="color: red;">2</td> </tr> <tr> <td style="text-align: right; color: green;">21.17</td> <td>DES</td> <td style="color: green;">Settled deposits, fine, 50% cross-sectional area loss</td> <td>00:01:27</td> <td style="color: green;">FW 1- A_21-17m _112022.j</td> <td></td> <td style="color: green;">4</td> </tr> <tr> <td style="text-align: right; color: blue;">21.17</td> <td>SA</td> <td style="color: blue;">Survey abandoned: DUE TO DEBRIS</td> <td>00:01:29</td> <td></td> <td></td> <td></td> </tr> </table> </div> | | | | | | | | 0.20 | MH | Start node type, manhole, reference number: FW 1 | 00:00:00 | | | | 0.20 | WL | Water level, 5% of the vertical dimension | 00:00:01 | | | | 0.20 | LL | Line deviates left | 00:00:02 | | | | 19.63 | LL | Line deviates left | 00:01:06 | | | | 19.79 | CCJ | Crack, circumferential at joint from 9 o'clock to 2 o'clock | 00:01:06 | FW 1- A_19-79m _111952.j | | 2 | 21.17 | DES | Settled deposits, fine, 50% cross-sectional area loss | 00:01:27 | FW 1- A_21-17m _112022.j | | 4 | 21.17 | SA | Survey abandoned: DUE TO DEBRIS | 00:01:29 | | | |
| 0.20 | MH | Start node type, manhole, reference number: FW 1 | 00:00:00 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 0.20 | WL | Water level, 5% of the vertical dimension | 00:00:01 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 0.20 | LL | Line deviates left | 00:00:02 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 19.63 | LL | Line deviates left | 00:01:06 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 19.79 | CCJ | Crack, circumferential at joint from 9 o'clock to 2 o'clock | 00:01:06 | FW 1- A_19-79m _111952.j | | 2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 21.17 | DES | Settled deposits, fine, 50% cross-sectional area loss | 00:01:27 | FW 1- A_21-17m _112022.j | | 4 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 21.17 | SA | Survey abandoned: DUE TO DEBRIS | 00:01:29 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 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 | 10.0 | 0.5 | 10.0 | 2.0 | 1 | 5.0 | 0.2 | 5.0 | 4.0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

Section Pictures - 19/04/2021 - AX

| Section | Inspection Direction | PLR | Client's Job Ref | Contractor's Job Ref |
|---------|----------------------|-----|-------------------|----------------------|
| 6 | Upstream | AX | SHAPE ENGINEERING | KNOWLE GROVE |



FW 1- A_19-79m_111952.jpg, 00:01:06, 19.79 m
Crack, circumferential at joint from 9 o'clock to 2 o'clock



FW 1- A_21-17m_112022.jpg, 00:01:27, 21.17 m
Settled deposits, fine, 50% cross-sectional area loss