



## Survey Cover Page

Contractor Job Reference: [REDACTED]

Client Job Reference: [REDACTED]

### Client Details:

Company Name: [REDACTED]

### Contractor Details:

Company Name: Border Water Technologies Ltd

Contact Person: Mark Ennion

Address Line 1: River House

Address Line 2: Little Salkeld

Address Line 3: Penrith

Address Line 4: Cumbria

Telephone: 01768 881612 / 07831742828

FAX: 01768881612

Internet: [www.borderwatertechnonolgies.co.uk](http://www.borderwatertechnonolgies.co.uk)

Email: [www.markennion@tiscali.co.uk](mailto:www.markennion@tiscali.co.uk)



## Sewerage Rehabilitation Manual Codes

Contractor Job Reference: [REDACTED]

Client Job Reference: [REDACTED]

1.

Occurrences without damage: for example, laterals, joints etc.

**NO DEFECTS WERE DETECTED**

2.

Constructional deficiencies or occurrences with insignificant influence to tightness, hydraulic or static pressure of pipe: for example wide joints, badly torched intakes, minor deformation of plastic pipes, minor erosions etc.

**REHABILITATION CAN BE SCHEDULED LONG-TERM**

3.

Constructional deficiencies diminishing static, hydraulic and tightness: for example, open joints, untorched intakes, cracks, minor damages to pipe wall, individual root penetrations, corroded pipe walls etc.

**REHABILITATION IS NECESSARY MEDIUM-TERM WITHIN 2 TO 5 YEARS**

4.

Constructional damages with nonsufficient static safety, hydraulic or tightness :for example axial/radial pipe bursts, pipe deformations, visually noticeable infiltration/exfiltration, cavities in pipe-wall, severe protruding, laterals severe root penetrations, severe c corrosion of pipe walls etc.

**REHABILITATION PROCEDURE IS URGENT AND HAS TO BE COMPLETED AS A PRIORITY. NECESSITY FOR EMERGENCY OPERATIONS HAS TO BE EXAMINED**

5.

Pipe is already or will shortly be impermeable: for example collapsed pipe, deeply rooted pipe or other drainage obstructions. Pipe loses water or danger of backwater in basements etc.

**REHABILITATION IS URGENT AND SHORT TERM. IN ORDER TO PREVENT FURTHER DAMAGE, NECESSARY TEMPORARY SPOT REPAIR HAS TO BE CONDUCTED ON EMERGENCY LEVEL**



## Survey Notes

Contractor Job Reference: [REDACTED]

Client Job Reference: [REDACTED]

### Notes:

LOCATION: [REDACTED]

DATE: 31st October 2008

WEATHER: Showers +3 degrees

The sewer was surveyed upstream from the manhole located in the garden area of [REDACTED], to the first chamber located in the garden area of [REDACTED]. The pipe is 168mm diameter and is in sound condition between the chambers. There is 1 4" connection at approximately 5 metres into the run this connection is blocked and is possibly redundant. at approximately 7 metres there is a 4" connection which has been badly formed and intrudes into the drain line by 35 mm. From 12 metres on there are solids standing in the line reducing the flow down to 20%. at 16.8 metres the survey was stopped at the manhole chamber located in the garden area of [REDACTED] the flow is reduced down to 50% at this point and there is evidence of surcharging up the sides of the chamber.

Mark Ennion



## Survey Header Details

Contractor Job Reference: [REDACTED]

Client Job Reference: [REDACTED]

Client

[REDACTED]

Name of Surveyor

Mark Ennion

Client's Job reference

[REDACTED]

Contractor's Job reference

[REDACTED]

Drainage Area

49 to 50

Division/District

CA

Location (Street Name)

[REDACTED]

Location (Town or Village)

Penrith

Purpose of Inspection

Investigation of infiltration problems

Weather

Rain

Method of Inspection

CCTV

Video Image Storage

Other - further details should be recorded as a general remark

Video Image Location System

A machine dependant numeric counter

Photographic Storage

Still images held on computer

Site Address Line 3

Cumbria



## Section Report Header

Contractor Job Reference: [REDACTED]

Client Job Reference: [REDACTED]

Pipeline Length Reference

MH 49

Date

31/10/2008

Time

11:32

Location Type Code

Gardens (within private property)

Start Node Reference

MH 49

Depth at Start Node (m)

1.90

Finish Node Reference

unk

Depth at Finish Node (m)

0

Use of Drain

Foul

Type of Drain

Gravity drain/sewer

Direction

Survey upstream (camera pointing against flow)

Height or Diameter (mm)

168

Width (mm)

168

Shape

Circular

Material

Vitrified clay (i.e. all clayware)

Pre-cleaned

No

General Remarks

good

Critical Drain

Code A

Flow Control Measures

No flow control

Pipe Unit Length (m)

1

Expected Length (m)

15

Year Constructed



# Section Report Observations

Contractor Job Reference: [REDACTED]

Client Job Reference: [REDACTED]

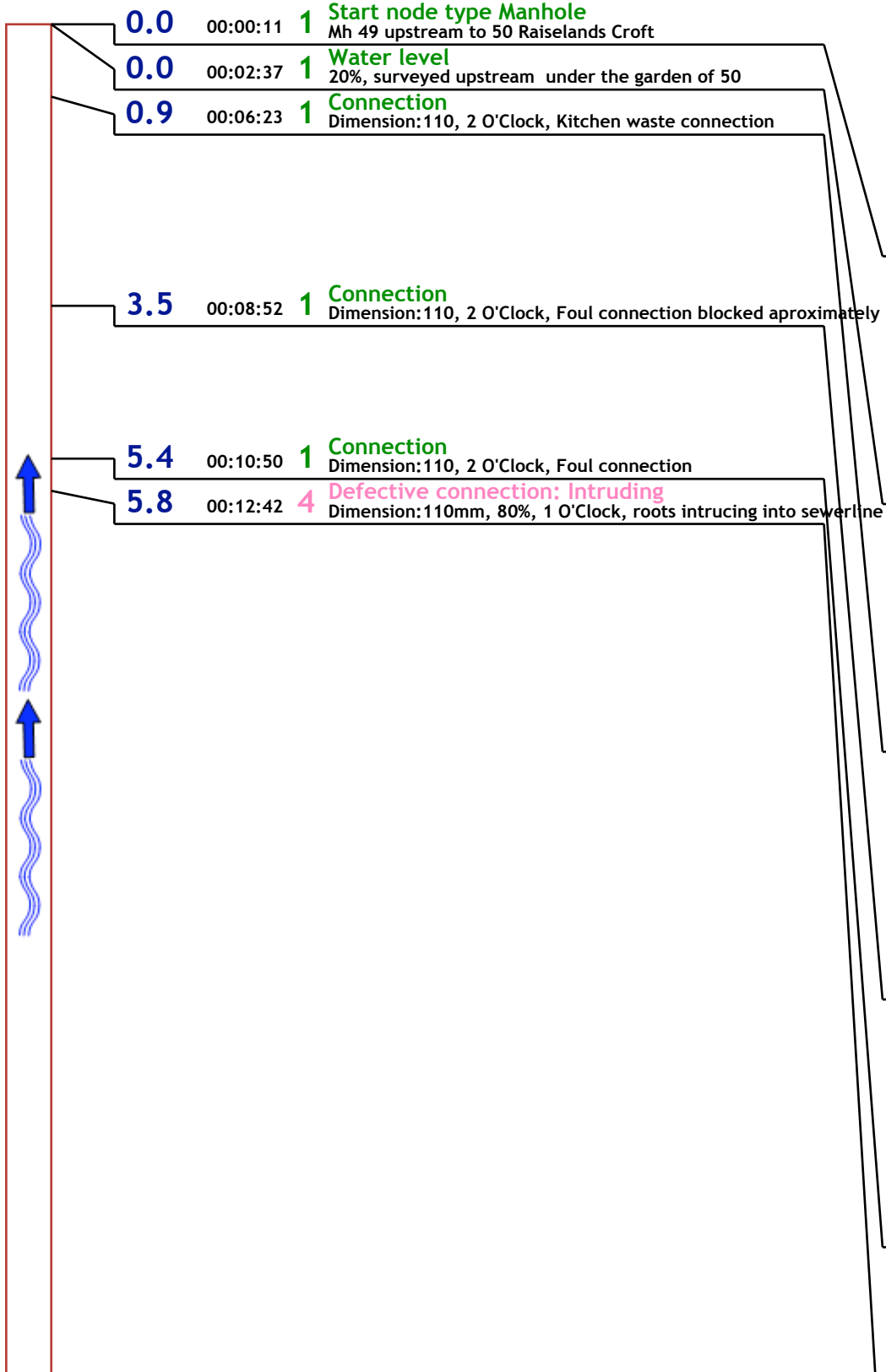


Image Ref 1

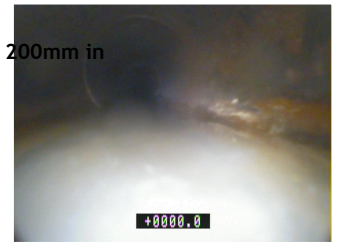


Image Ref 2



Image Ref 3



Image Ref 4



Image Ref 5



Image Ref 6



# Section Report Observations

Contractor Job Reference: [REDACTED]

Client Job Reference: [REDACTED]

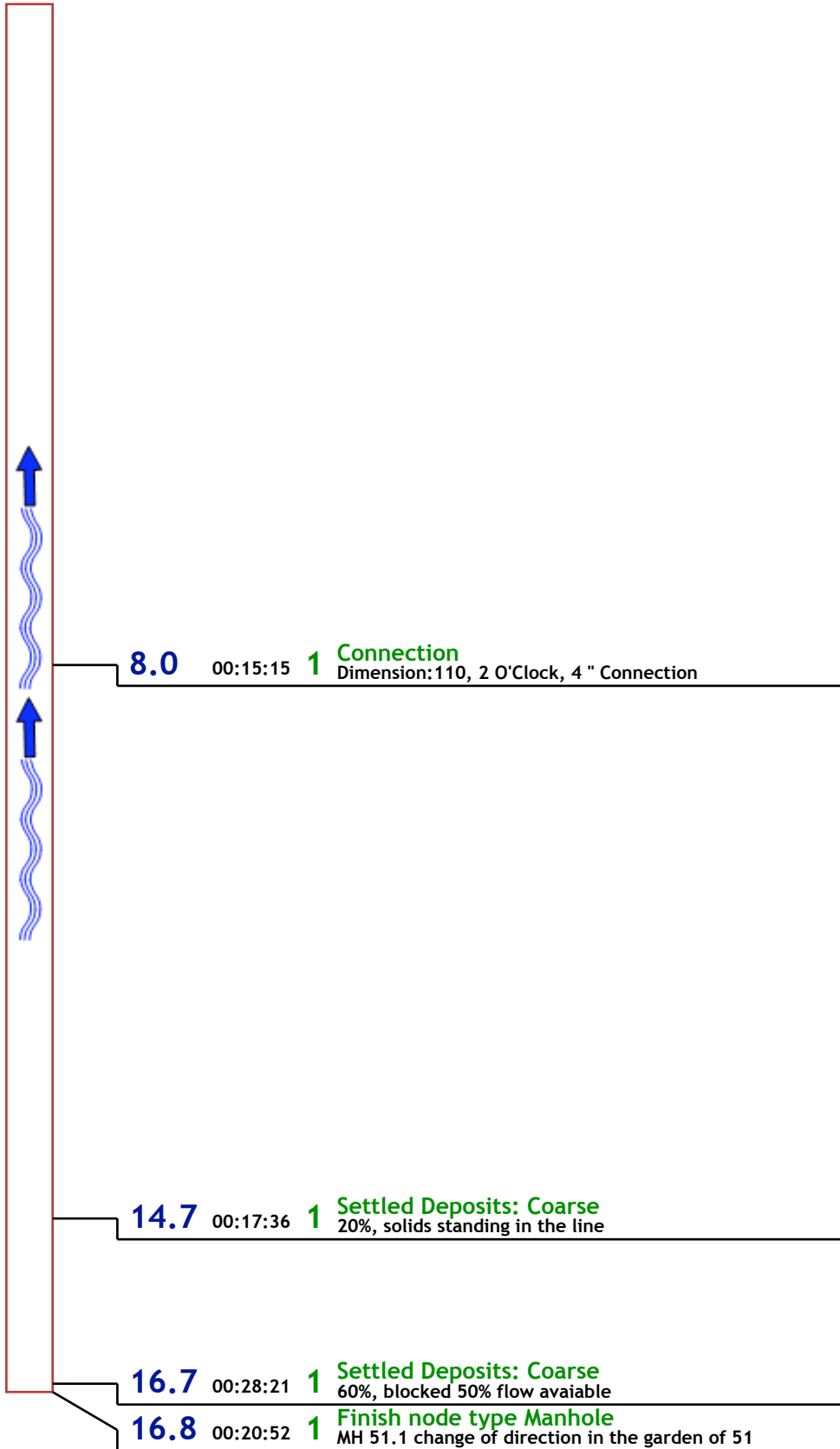


Image Ref 7



Image Ref 8



Image Ref 10

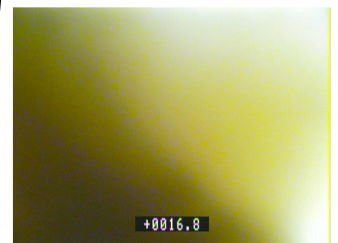


Image Ref 9





# Section Report Images

Contractor Job Reference: [REDACTED]

Client Job Reference: [REDACTED]



Image Ref 1



Image Ref 2



Image Ref 3



Image Ref 4



Image Ref 5



Image Ref 6





## Section Report Images

Contractor Job Reference: [REDACTED]

Client Job Reference: [REDACTED]



Image Ref 7



Image Ref 8



Image Ref 10



Image Ref 9