XML Specification for MSCC5 Sewer Inspection Data

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Version Control Table

Version number	Purpose	Issued by	Quality Checks Approved by	Date
V01	Draft document issued for testing .xsd file.	Line Poinel		3 October 2013
V02	Final draft before publication	Line Poinel		3 March 2014

Contents

List of Tables

1. General

The file shall start with a standard xml header

<?xml version="1.0" encoding = "UTF-8" standalone ="yes">

Followed by the reference to the the style sheet as follows:

<?xml-stylesheet
type="text/xsl"href="http://www.wrcplc.co.uk/srm/schemas/mscc5_cctv_stylesheet_final_draft.
xsl" ?>

The general structure for each survey shall be in two parts; the header information and the observations during the survey. For Drains and sewers, the structure of these shall be in the general form:

```
<SurveyGroup xmlns="http://www.wrcplc.co.uk/srm"
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xsi:schemalocation="http://www.wrcplc.co.uk/srm/schemas/mscc5_cctv_final_draft.xsd">
<Survey>
<Header>
<Client>-</Client>
etc
</Header>
<Observations>
<Observation>
<VideoRef>-</VideoRef>
<Distance>-</Distance>
etc
<!-- child tags as described in draft -->
</Observation>
<observation>
<!-- multiple observations possible -->
</Observation>
</Observations>
</Survey>
<Survey>
<!-- multiple survey per surveygroup -->
</Survey>
</SurveyGroup>
```

For manholes or inspection chambers it shall be of the general form:

```
<SurveyGroupxmlns="http://www.wrcplc.co.uk/srm"
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xsi:schemalocation="http://www.wrcplc.co.uk/srm/schemas/mscc5_cctv_final_draft.xsd">
<NodeSurvey> <Header> <Client>-</Client> etc </Header> <Observations> <Observation>
<VideoRef>-</VideoRef> <Distance>-</Distance> etc
<!-- child tags as described in draft -- > </Observation> <Observation>
<!-- multiple observations possible -- > </Observation> </Observations> </NodeSurvey >
<NodeSurvey >
<!-- multiple node surveys per surveygroup --> </NodeSurvey> </SurveyGroup>
```

Manhole surveys and pipe surveys may be mixed in the same Survey Group if desired in which case the Surveys should always precede the Node Surveys.

The header fields shall be in accordance with Section 2.1 or Section 3.1 and the Observation fields shall be in accordance with Section 2.2 or Section 3.2.

2.   DRAINS AND SEWERS

2.1   Header information

2.1.1   Introduction

The header information is described in Chapter 3 of the WRc Manual of Sewer Condition Classification 5th Edition.

This section specifies the XML element name for each data item, whether the inclusion of the field in the data file is mandatory and whether it is mandatory to provide a non-blank value for the field.

For convenience the type of data and, where specified, the list of codes are also reproduced from the Manual of Sewer Condition Classification. Where specified, the list of codes should be treated as a restrictive list. Any other validation rules are also included.

2.1.2   Field 1 - Client

Type of content = TEXT Maximum field length = 30 characters

XML element name = Client

XML element mandatory = No

Completion of field mandatory = No

2.1.3   Field 2 - Name of Surveyor

Type of content = TEXT

Maximum field length = 12 characters

XML element name = NameOfSurveyor

XML element mandatory = No

Completion of field mandatory = No

2.1.4   Field 3 - Client's Job reference

Type of content = TEXT

Maximum field length = 10 characters

XML element name = ClientsJobRef

XML element mandatory = No

Completion of field mandatory = No

2.1.5 Field 4 - Contractor's Job reference

Type of content = TEXT

Maximum field length = 10 characters

XML element name = ContractorsJobRef

XML element mandatory = No

Completion of field mandatory = No

2.1.6 Field 5 - Drainage Area

Type of content = TEXT or NUMBER

Maximum field length = 10 characters

XML element name = DrainageArea

XML element mandatory = No

Completion of field mandatory = No

2.1.7 Field 6 - Division / District

Type of content = TEXT

Maximum field length = 4 characters

XML element name = DivisionDistrict

XML element mandatory = No

Completion of field mandatory = No

2.1.8 Field 7 - Pipeline Length Reference

Type of content = TEXT

Maximum field length = 16 characters

XML element name = PipelineLengthRef

XML element mandatory = Yes

Completion of field mandatory = Yes

Rules:

The pipeline length reference should be either in accordance with STC25 (see MSCC5 Appendix A) or Highways Agency Specification HD 43/04 Drainage Data Management System for Highways (Design Manual for Roads and Bridges Volume 4 Section 2)

- Text format should be AB1234 5678X.
- Where there are more than 99 nodes in a 100m square the last two numbers in the STC25 reference may optionally be replaced by alphabetical characters or a mixture of alphabetic and numeric characters.
- The numeric part of the field may be split by any non-numeric character e.g.:
  - o space "AB1234 5678X "or "AB1234 56ABX" or "AB1234 5678a.1"; or
  - o underscore "AB1234_5678X" or "AB1234_56A8X" or "AB1234_5678a.1"; or
  - o slash "AB1234/5678X" or "AB1234/567BX" or "AB1234/5678a.1"; or
  - o no separator "12345678X" or "AB123456ABX" or "AB12345678a.1".
- For sewers the suffix may be X, Y or Z or not used.
- For highways the suffix is ".number"

2.1.9 Field 8 - Date

Type of content = DATE in ISO 8601 CCYY-MM-DD format

XML element name = Date

XML element mandatory = Yes

Completion of field mandatory = Yes

Rules:
- Blanks are to be zero filled.

2.1.10 Field 9 - Time

Type of content = TIME in ISO 8601 format hh:mm

XML element name = Time

XML element mandatory = No

Completion of field mandatory = No

Rules:
- Use the 24 hour clock
- Blanks are to be zero filled.

2.1.11 Field 10 - Location (Street Name)

Type of content = TEXT

Maximum field length = 50 characters

XML element name = LocationStreet

XML element mandatory = Yes

Completion of field mandatory = Yes

2.1.12 Field 11 - Location (Town or Village)

Type of content = TEXT

Maximum field length = 30 characters

XML element name = LocationTown

XML element mandatory = Yes

Completion of field mandatory = Yes

2.1.13 Field 12 - Location Type Code

Type of content = TEXT

Maximum field length = 3 characters

XML element name = LocationTypeCode

XML element mandatory = No

Completion of field mandatory = No

Rules:
- Use one of the codes in Table 2.1 and 2.2

Table 2.1   Codes for Location Type (Sewerage Undertakers and Domestic Drainage)

Code	Description
RD	Road
FWY	A footway beside a road
VG	Verge
PD	Other pedestrian area
FLD	Fields (farmland and public open space)
PR	Property with buildings
GDN	Gardens (within private property)
BLG	Under a permanent building
WLD	Woodland
DIF	Difficult access (motorway, railway, watercourse, inside building)
WWY	Under a waterway
Z	Other

Table 2.2   Codes for Location Type (Highways Authorities)

Code	Description	
	Roads other than motorways	Motorways
XS1	Left Outside Verge (adjacent to footway)	Not used
XS2	Left Footway	Not used
XS3	Left Verge	Verge
XS4	Lane 1	Hard Shoulder
XS5	Lane 2	Slow Lane
XS6	Lane 3	Central Lane
XS7	Lane 4	Fast Lane
XS8	Right Verge	Central reserve/Right verge
XS9	Right Footway	Not used

XS0	Right Outside Verge (adjacent to footway)	Not used
XSE	Right turning lane	Not used
XSQ	Slip Road	Slip Road
XSR	Bus Lane	Not used
XST	Crawler lane	Crawler lane
XSW	Left turning lane	Not used
XSY	Any other option	Any other option

2.1.14 Field 13 – Land Ownership

Type of content = TEXT

Maximum field length = 2 characters

XML element name = LandOwner

XML element mandatory = No

Completion of field mandatory = No

Rules:
- Use one of the following codes:
  PR   Private
  PU   Public
  X   Not Known

2.1.15 Field 14 - Start Node Reference

Type of content = TEXT

Maximum field length = 14 characters

XML element name = StartNodeRef

XML element mandatory = Yes

Completion of field mandatory = Yes

Rules:
The node reference should be either in accordance with STC25 (see MSCC5 Appendix A) or Highways Agency Specification HD 43/04 Drainage Data Management System for Highways (Design Manual for Roads and Bridges Volume 4 Section 2)

- Text format should be AB1234 5678 or AB1234 5678a.
- Where there are more than 99 nodes in a 100m square the last two numbers in the STC25 reference may optionally be replaced by alphabetical characters or a mixture of alphabetic and numeric characters.
- The numeric part of the field may be split by a space, a hyphen, an underscore or a forward slash or there may be no separating character e.g.:
  - space "AB1234 5678"or "AB1234 56AB" or "AB1234 5678a"; or
  - underscore "AB1234_5678" or "AB1234_567B" or "AB1234_5678a"; or
  - slash "AB1234/5678" or "AB1234 56A8" or "AB1234/5678a"; or
  - no separator "AB12345678" or "AB123456AB" or "AB12345678a".

2.1.16 Field 15 – Start Node Coordinate

The field should contain text in the form of two integer numbers (the x coordinate and the y coordinate respectively) separated a space of any non-numerical character. The two integers and incorporate leading zeros where necessary. The OS 100km grid square characters should be converted to the numerical form and included in the coordinates. The two coordinates should be transferred separately as follows:

XML element name = StartNodeGridRef

XML element mandatory = No

XML sub-element name = StartNodeGridRefX

XML sub-element mandatory = No

Type of content = NUMBER (integer)

Minimum value = 000000

Maximum value = 999999

Number of decimal places = 0

Completion of field mandatory = No

XML element name = StartNodeGridRefY

XML sub-element mandatory = No

Type of content = NUMBER (integer)

Minimum value = 000000

Maximum value = 999999

Number of decimal places = 0

Completion of field mandatory = No

Example:

< StartNodeGridRef>

< StartNodeGridRefX>123456</ StartNodeGridRefX)

< StartNodeGridRefY>789012</ StartNodeGridRefY)

</ StartNodeGridRef>

2.1.17 Field 16 – Node 1 Reference

Type of content = TEXT

Maximum field length = 12 characters

XML element name = Node1Ref

XML element mandatory = Yes

Completion of field mandatory = Yes

Rules:
The node reference should be either in accordance with STC25 (see MSCC5 Appendix A) or Highways Agency Specification HD 43/04 Drainage Data Management System for Highways (Design Manual for Roads and Bridges Volume 4 Section 2)

- Text format should be AB1234 5678 or AB1234 5678a.
- Where there are more than 99 nodes in a 100m square the last two numbers in the STC25 reference may optionally be replaced by alphabetical characters or a mixture of alphabetic and numeric characters.
- The numeric part of the field may be split by a space, a hyphen, an underscore or a forward slash or there may be no separating character e.g.:
  o space "AB1234 5678"or "AB1234 56AB" or "AB1234 5678a"; or
  o underscore "AB1234_5678" or "AB1234_567B" or "AB1234_5678a"; or

- slash "AB1234/5678" or "AB1234 56A8" or "AB1234/5678a"; or
- no separator "AB12345678" or "AB123456AB" or "AB12345678a".

2.1.18 Field 17 – Node 1 Node Coordinate

The field should contain text in the form of two integer numbers (the x coordinate and the y coordinate respectively) separated a space of any non-numerical character. The two integers and incorporate leading zeros where necessary. The OS 100km grid square characters should be converted to the numerical form and included in the coordinates. The two coordinates should be transferred separately as follows:

XML element name = Node1GridRef

XML element mandatory = No

XML sub-element name = Node1GridRefX

XML sub-element mandatory = No

Type of content = NUMBER (integer)

Minimum value = 000000

Maximum value = 999999

Number of decimal places = 0

Completion of field mandatory = No

XML element name = Node1GridRefY

XML sub-element mandatory = No

Type of content = NUMBER (integer)

Minimum value = 000000

Maximum value = 999999

Number of decimal places = 0

Completion of field mandatory = No

Example:

< Node1GridRef>

< Node1GridRefX>123456</ Node1GridRefX)

< Node1GridRefY>789012</ Node1GridRefY)

</ Node1GridRef>

2.1.19 Field 18 - Depth at Start Node

Type of content = NUMBER

Minimum value = 00.00

Maximum value = 99.99

Number of decimal places = 2

XML element name = DepthAtStartNode

XML element mandatory = No

Completion of field mandatory = No

2.1.20 Field 19 - Finish Node or Node 2 Reference

Type of content = TEXT

Maximum field length = 12 characters

XML element name = FinishNodeRef

XML element mandatory = Yes

Completion of field mandatory = Yes

Rules:
The node reference should be either in accordance with STC25 (see MSCC5 Appendix A) or Highways Agency Specification HD 43/04 Drainage Data Management System for Highways (Design Manual for Roads and Bridges Volume 4 Section 2)

- Text format should be AB1234 5678 or AB1234 5678a.
- Where there are more than 99 nodes in a 100m square the last two numbers in the STC25 reference may optionally be replaced by alphabetical characters or a mixture of alphabetic and numeric characters.
- The numeric part of the field may be split by a space, a hyphen, an underscore or a forward slash or there may be no separating character e.g.:
  - space "AB1234 5678"or "AB1234 567B" or "AB1234 5678a"; or
  - underscore "AB1234_5678" or "AB1234_567B" or "AB1234_5678a"; or
  - slash "AB1234/5678" or "AB1234 56A8" or "AB1234/5678a"; or
  - no separator "AB12345678" or "AB123456AB" or "AB12345678a".

2.1.21 Field 20 - Depth at Finish Node

Type of content = NUMBER

Minimum value = 00.00

Maximum value = 99.99

Number of decimal places = 2

XML element name = DepthAtFinishNode

XML element mandatory = No

Completion of field mandatory = No

2.1.22 Field 21 - Node 2 Node Coordinate

The field should contain text in the form of two integer numbers (the x coordinate and the y coordinate respectively) separated a space of any non-numerical character. The two integers and incorporate leading zeros where necessary. The OS 100km grid square characters should be converted to the numerical form and included in the coordinates. The two coordinates should be transferred separately as follows:

XML element name = Node2GridRef

XML element mandatory = No

XML sub-element name = Node2GridRefX

XML sub-element mandatory = No

Type of content = NUMBER (integer)

Minimum value = 000000

Maximum value = 999999

Number of decimal places = 0

Completion of field mandatory = No

XML element name = Node2GridRefY

XML sub-element mandatory = No

Type of content = NUMBER (integer)

Minimum value = 000000

Maximum value = 999999

Number of decimal places = 0

Completion of field mandatory = No

Example:

< Node2GridRef>

< Node2GridRefX>123456</ Node2GridRefX)

< Node2GridRefY>789012</ Node2GridRefY)

</ Node2GridRef>

2.1.23 Field 22 – Node 3 Reference

Type of content = TEXT

Maximum field length = 12 characters

XML element name = Node3Ref

XML element mandatory = Yes

Completion of field mandatory = Yes

Rules:

The node reference should be either in accordance with STC25 (see MSCC5 Appendix A) or Highways Agency Specification HD 43/04 Drainage Data Management System for Highways (Design Manual for Roads and Bridges Volume 4 Section 2)

- Text format should be AB1234 5678 or AB1234 5678a.
- Where there are more than 99 nodes in a 100m square the last two numbers in the STC25 reference may optionally be replaced by alphabetical characters or a mixture of alphabetic and numeric characters.
- The numeric part of the field may be split by a space, a hyphen, an underscore or a forward slash or there may be no separating character e.g.:
  - space "AB1234 5678"or "AB1234 567B" or "AB1234 5678a"; or
  - underscore "AB1234_5678" or "AB1234_567B" or "AB1234_5678a"; or
  - slash "AB1234/5678" or "AB1234 56A8" or "AB1234/5678a"; or
  - no separator "AB12345678" or "AB123456AB" or "AB12345678a".

2.1.24 Field 23 – Node 3 Node Coordinate

The field should contain text in the form of two integer numbers (the x coordinate and the y coordinate respectively) separated a space of any non-numerical character. The two integers and incorporate leading zeros where necessary. The OS 100km grid square characters should be converted to the numerical form and included in the coordinates. The two coordinates should be transferred separately as follows:

XML element name = Node3GridRef

XML element mandatory = No

XML sub-element name = Node3GridRefX

XML sub-element mandatory = No

Type of content = NUMBER (integer)

Minimum value = 000000

Maximum value = 999999

Number of decimal places = 0

Completion of field mandatory = No

XML element name = Node3GridRefY

XML sub-element mandatory = No

Type of content = NUMBER (integer)

Minimum value = 000000

Maximum value = 999999

Number of decimal places = 0

Completion of field mandatory = No

Example:

< Node3GridRef>

< Node3GridRefX>123456</ Node3GridRefX)

< Node3GridRefY>789012</ Node3GridRefY)

</ Node3GridRef>

2.1.25 Field 24 Lateral Inspection Start Point

Type of content = TEXT

Maximum field length = 1 character

XML element name = LateralInspStart

XML element mandatory = No

Completion of field mandatory = No

Rules:
- Use one of the following codes:
  - A   Connection to the main sewer
  - B   Third node

2.1.26 Field 25 – Longitudinal Location of Start of Lateral

Type of content = NUMBER

Minimum value = 0.1

Maximum value = 999.9

Number of decimal places = 1

XML element name = LongLocStartLat

XML element mandatory = No

Completion of field mandatory = No

2.1.27 Field 26 – Circumferential Location of Start of Lateral

Type of content = NUMBER (integer)

Minimum value = 01

Maximum value = 12

Number of decimal places = 0

XML element name = CircLocStartLat

XML element mandatory = No

Completion of field mandatory = No

Rules:
- A number between 1 and 12
- Numbers 1 to 9 should be entered as 01, 02 etc.

2.1.28 Field 27 - Use of Drain/Sewer

Type of content = TEXT

Maximum field length = 2 character

XML element name = UseOfDrainSewer

XML element mandatory = No

Completion of field mandatory = No

Rules:

- Use one of the following codes.

C   Combined
F   Foul
S   Storm
T   Trade Effluent
W   Culverted Watercourse
LD   Subsoil or field drainage
Z   Other

2.1.29 Field 28 - Type of Drain/Sewer

Type of content = TEXT

Maximum field length = 1 character

XML element name = TypeOfDrainSewer

XML element mandatory = No

Completion of field mandatory = No

Rules:

- Use one of the following codes.

 A   Gravity drain/sewer
 B   Rising Main
 V   Vacuum

2.1.30 Field 29 - Direction

Type of content = TEXT

Maximum field length = 1 character

XML element name = Direction

XML element mandatory = Yes

Completion of field mandatory = Yes

Rules:

- Use one of the following codes.

 U   Survey Upstream (camera pointing against flow)
 D   Survey Downstream (camera pointing with flow)

Z   Not Known

2.1.31 Field 30 - Height or Diameter

Type of content = NUMBER (integer)

Minimum value = 20

Maximum value = 99999

Number of decimal places = 0

XML element name = HeightDiameter

XML element mandatory = No

Completion of field mandatory = No

2.1.32 Field 31 - Width

Type of content = NUMBER (integer)

Minimum value = 20

Maximum value = 99999

Number of decimal places = 0

XML element name = Width

XML element mandatory = No

Completion of field mandatory = No

Rules:
- May be left blank.

2.1.33 Field 32 - Shape

Type of content = TEXT

Maximum field length = 3 character

XML element name = Shape

XML element mandatory = No

Completion of field mandatory = No

Rules:
- Use one of the following codes.
  - A   Arched (with flat bottom)
  - B   Barrel (e.g. beer barrel shape)
  - C   Circular
  - E   Egg shaped
  - H   Horseshoe (i.e. inverted U)
  - O   Oval
  - R   Rectangular
  - T   Trapezoidal
  - U   U-shaped with flat top
  - K   Kerb block
  - CSC Circular with smaller channel
  - RSC Rectangular with smaller channel
  - Z   Other (state in Comments).

2.1.34 Field 33 - Material

Type of content = TEXT

Maximum field length = 3 characters

XML element name = Material

XML element mandatory = No

Completion of field mandatory = No

Rules:
- Use one of the following codes.
  - AC   Asbestos cement
  - BL   Bitumen (lining)
  - BR   Brick
  - CI   Cast iron
  - CL   Cement mortar (lining)
  - CO   Concrete
  - CS   Concrete segments
  - DI   Ductile iron
  - EP   Epoxy
  - FC   Fibre cement

FRP	Fibre reinforced plastics
GI	Grey cast iron
MAC	Masonry – in regular courses
MAR	Masonry – randomly coursed
MX	Mixed material construction
PVC	Polyvinyl chloride
PE	Polyethylene
PF	Pitch fibre
PP	Polypropylene
PS	Polyester
RC	Reinforced concrete
SPC	Sprayed concrete
ST	Steel
VC	Vitrified clay (i.e. all clayware)
X	Unidentified material
XI	Unidentified type of iron or steel
XP	Unidentified type of plastics
Z	Other (details should be recorded in the remarks section)

2.1.35 Field 34 - Lining Material

Type of content = TEXT

Maximum field length = 3 characters

XML element name = LiningMaterial

XML element mandatory = No

Completion of field mandatory = No

Rules:
• Use one of the Material codes from the table in Field 33 above.

2.1.36 Field 35 - Lining Type

Type of content = TEXT

Maximum field length = 3 characters

XML element name = LiningType

XML element mandatory = No

Completion of field mandatory = No

Rules:
- Use one of the following codes.
- May be left blank.

M	Lining inserted during manufacture
SP	Sprayed lining
CIP	Cured in place lining
SEG	Segmental linings
DP	Lining with discrete pipes
CP	Lining with continuous pipes
CF	Close fit lining
SW	Spirally wound lining
Z	Other - further remarks should be recorded using a general remark
Blank	No lining

2.1.37 Field 36 - Pre-cleaned

Type of content = TEXT

Maximum field length = 1 character

XML element name = Precleaned

XML element mandatory = Yes

Completion of field mandatory = Yes

Rules:
- Use the codes Y, N or Z.

2.1.38 Field 37 - General Remarks

Type of content = TEXT

Maximum field length = 50 characters

XML element name = GeneralRemarks

XML element mandatory = No

Completion of field mandatory = No

2.1.39 Field 38 - Critical Drain/Sewer

Type of content = TEXT

Maximum field length = 3 character

XML element name = CriticalDrainSewer

XML element mandatory = No

Completion of field mandatory = No

Rules:

* Use the codes A, B, C or Z. This may optionally be followed by up to 2 additional characters

Note: Critical sewer categories are defined in Sewer Risk Management Website. Category A is most critical and Category C is non-critical and Z is not known.

2.1.40 Field 39 - Purpose of Inspection

Type of content = TEXT

Maximum field length = 1 character

XML element name = PurposeOfInspection

XML element mandatory = No

Completion of field mandatory = No

Rules:

* Use one of the following codes.

A	Investigation of known structural or service defects
B	Investigation of infiltration problems
C	Post completion inspection of repairs or renovations
D	Pre-adoption survey prior to vesting as public sewer
E	Post completion inspection of new sewers
F	Sample survey of sewers to determine asset condition of a sewer system
G	Routine inspection of condition
H	Investigation of a suspected operational problem
I	Investment planning
J	End of warranty period
X	Other (state in Comments)

2.1.41 Field 40 – Inspection Stage

Type of content = TEXT

Maximum field length = 1 character

XML element name = InspectionStage

XML element mandatory = No

Completion of field mandatory = No

Rules:
- Use one of the following codes.
    - A   Information provided by client
    - B   Information provided by the inspector to client
    - Z   Other

2.1.42 Field 41 - Flow Control Measures

Type of content = TEXT

Maximum field length = 2 characters

XML element name = FlowControlMeasures

XML element mandatory = No

Completion of field mandatory = No

Rules:
- Use one of the following codes.
    - N   No flow control
    - BL   Flows blocked upstream
    - PB   Flows partially blocked upstream
    - X   Other - further details should be recorded using a general remark

2.1.43 Field 42 - Weather

Type of content = TEXT

Maximum field length = 1 character

XML element name = Weather

XML element mandatory = No

Completion of field mandatory = No

Rules:
- Use one of the following codes.
    - D   No rain or snow
    - R   Rain
    - S   Melting snow or ice

2.1.44 Field 43 - Temperature

Type of content = TEXT

Maximum field length = 1 character

XML element name = Temperature

XML element mandatory = No

Completion of field mandatory = No

Rules:
- Enter either A or B.

2.1.45 Field 44 - Pipe Unit Length

Type of content = NUMBER

Minimum value = 0.1

Maximum value = 9.9

Number of decimal places = 1

XML element name = PipeUnitLength

XML element mandatory = No

Completion of field mandatory = No

Note: for continuous pipes, e.g. brick culvert, field not used.

2.1.46 Field 45 - Expected Length

Type of content = NUMBER

Minimum value = 0.1

Maximum value = 999.9

Number of decimal places = 1

XML element name = ExpectedLength

XML element mandatory = No

Completion of field mandatory = No

2.1.47 Field 46 - Year Constructed

Type of content = TEXT

Maximum field length = 9 characters

XML element name = YearConstructed

XML element mandatory = No

Completion of field mandatory = No

Rules:
- Enter the year either as a single year in CCYY format (e.g. 1923) or as a range in CCYY-CCYY format (e.g. 1923-1930).
- Enter Z if year is not known.

2.1.48 Field 47 - Method of Inspection

Type of content = TEXT

Maximum field length = 1 character

XML element name = MethodOfInspection

XML element mandatory = Yes

Completion of field mandatory = Yes

Rules:
- Use one of the following codes.

    A   Direct Inspection (man entry)

    B   CCTV

    C   Inspection from manhole or inspection chamber only

2.1.49 Field 48 - Standard

Type of content = TEXT

Maximum field length = 18 characters

XML element name = Standard

XML element mandatory = Yes

Completion of field mandatory = Yes

Rules:
- Enter the version of the standard, in the form BS EN 13508-2:2003.

2.1.50 Field 49 - Video Image Storage Media

Type of content = TEXT

Maximum field length = 3 characters

XML element name = VideoImageStorage

XML element mandatory = No

Completion of field mandatory = No

Rules:
- Use one of the following codes.

    VHS   VHS video cassette tape

    CD   CD

    DVD   DAD

    PHD   Portable hard drive

    X   Other – further details should be recorded in the General Remarks field

2.1.51 Field 50 - Video Image Location System

Type of content = TEXT

Maximum field length = 1 character

XML element name = VideoImageLocationSystem

XML element mandatory = No

Completion of field mandatory = No

Rules:
- Enter either A, B or X.

2.1.52 Field 51 - Video Image Format

Type of content = NUMBER or TEXT

Maximum field length = 30 characters

XML element name = VideoImageFormat

XML element mandatory = No

Completion of field mandatory = No

Rules:
- Use one of the following codes.

F	Fixed to media type
MPEG1	MPEG1
MPEG2	MPEG2
MPEG4	MPEG4
AVI	AVI
VOB	VOB
DIVX	DIVX
Z	Other

2.1.53 Field 52 – Video Image Filename

Type of content = TEXT

Maximum field length = 20 characters

XML element name = VideoImageFilename

XML element mandatory = No

Completion of field mandatory = No

2.1.54 Field 53 – Video Volume Reference

Type of content = TEXT

Maximum field length = 30 characters

XML element name = VideoVolumeRef

XML element mandatory = No

Completion of field mandatory = No

2.1.55 Field 54 - Photographic Image Storage Format

Type of content = TEXT

Maximum field length = 1 character

XML element name = PhotographicStorageFormat

XML element mandatory = No

Completion of field mandatory = No

Rules:
- Use one of the following codes.
  - A   Still photographs
  - C   Windows Meta File (WMF)
  - D   Graphics Image File (GIF)
  - E   JPEG file
  - F   TIF
  - G   PNG
  - X   Other – further details should be recorded in the General Remarks field

2.1.56 Field 55 - Photographic Volume Reference

Type of content = NUMBER or TEXT

Maximum field length = 10 characters

XML element name = PhotographicVolume

XML element mandatory = No

Completion of field mandatory = No

2.1.57 Fields 56 - 61 - Client Defined

Type of content = TEXT or NUMBER

Maximum field length = 30 characters

XML element name = ClientDefined1, ClientDefined2, ClientDefined3, ClientDefined4, ClientDefined5

XML element mandatory = No

Completion of field mandatory = No

2.2   Observations section

2.2.1   Introduction

The coding system is described in Chapters 2 & 4 of the WRc Manual of Sewer Condition Classification 5th Edition.

This section specifies the XML element name for each data item, whether the inclusion of the field in the data file is mandatory and whether it is mandatory to provide a non-blank value for the field.

Where the field length for a text entry is not specified it may be assumed to be 256 characters.

2.2.2   Initial records

The first records shall start at distance of 0.00m NOT at the cable calibration point. (See MSCC5 Section 1.5.3).

The first two codes used should always be (See MSCC5 Section 2.4):

- Start node type (e.g. MH). This is always the first piece of information to be entered in the data section.

- Water level, WL, is always the second piece of information to be entered in the data section. After this initial entry only changes in water level are recorded. Enter the water

level in terms of percentage height in the % column. If there is no flow in the sewer, zero (0) is entered.

The uses of the various columns are described below.

2.2.3 Video reference Type of content = NUMBER

Minimum value = 0:00:00

Maximum value = 9:59:59

Number of decimal places = N/A

XML element name = VideoRef

XML element mandatory = Yes

Completion of field mandatory = Yes (for CCTV inspection)

The time reference in the format h:mm:ss (e.g. 1:23:30 indicates a time 1 hour 23 minutes and 30 seconds from the start of the tape or recording).

2.2.4 Photograph reference

Type of content = TEXT or NUMBER

Maximum field length = 50 characters

XML element name = PhotographRefs

XML sub element name = PhotographRef

XML element mandatory = No

Completion of field mandatory = No

A reference will only be given where a still image or photograph is taken.

Enter the still image file name or a photograph number. It is usual to number photographs consecutively.

Where there is more than one filename the sub-element is repeated.

2.2.5 Distance

Type of content = NUMBER (to 1 decimal place)

Minimum value = 0.0

Maximum value = 999.9

Number of decimal places = 1

XML element name = Distance

XML element mandatory = Yes

Completion of field mandatory = Yes

Enter the distance in metres of each structural, service, constructional or miscellaneous code from the start of the survey length. Spaces can be zero filled or left blank.

First entry should be 0.0.

2.2.6 Continuous defect

Type of content = TEXT Maximum field length = 3 characters

Letter (S = start, C = Change or F = finish) followed by a number (integer) between 01 and 99.

XML element name = ContinuousDefect

XML element mandatory = No

Completion of field mandatory = No

Rules:
- Must start with 01 and run through numbers consecutively
- No duplication of numbers (S01, C01 and F01 may only appear once etc.)
- F01 or C01 can't be entered before S01 etc.
- There must be an F code for all S codes before the SA (survey abandoned code).

2.2.7 Code

Type of content = TEXT

Maximum field length = 5 characters

XML element name = Code

XML element mandatory = Yes

Completion of field mandatory = Yes

Enter the appropriate structural, service, constructional or miscellaneous code (see Section 4). The code is composed of a number of elements. There is a basic code which may be further described by ancillary codes. For example the basic code F (fracture) may be further described by the ancillary code L (longitudinal).

These may then be further described by:

2.2.8 Joint

Type of content = TEXT

Maximum field length = 1 character

XML element name = Joint

XML element mandatory = No

Completion of field mandatory = No

Rules:
- Only letter J should be used
- This column should not be used where the Code column contains JD or OJ codes at the same distance.

2.2.9 Material

Type of content = TEXT

Maximum field length = 3 characters

XML element name = Material

XML element mandatory = No

Completion of field mandatory = No

Rules:
- This column should only be used where the **Code** column contains MC or LC codes.

2.2.10 Band

Type of content = TEXT

Maximum field length = 1 character

XML element name = Band

XML element mandatory = No

Completion of field mandatory = No

Rules:
- Only letters M or L should be used
- This column should only be used where the **Code** column contains JD or OJ codes.

2.2.11 Dimension 1 & 2

Type of content = TEXT or NUMBER

Maximum field length = Dimension 1 - 30 characters, Dimension 2 - 12 characters

XML element name = Dimension1

XML element mandatory = No

Completion of field mandatory = No

XML element name = Dimension2

XML element mandatory = No

Completion of field mandatory = No

Rules:
- Data shall be entered in the **Dimension 1** column first.
- The **Dimension 2** column shall only be used where a second dimension is required, otherwise it will be left blank.

2.2.12 Percentage

Type of content = Text

Minimum value = 00

Maximum value = 100

Number of decimal places = 0

XML element name = Percentage

XML element mandatory = No

Completion of field mandatory = No

Rules:
- Data shall be entered in 5 % increments.
- Leading zeros to be included (e.g. 5% shall be entered as 05).

2.2.13 Clock reference At/From & To

Type of content = TEXT

Minimum value = 01

Maximum value = 12

Number of decimal places = 0

XML element name = ClockRefAtFrom

XML element mandatory = No

Completion of field mandatory = No

XML element name = ClockRefTo

XML element mandatory = No

Completion of field mandatory = No

Rules:
- A number between 1 and 12
- Numbers 1 to 9 should be entered as 01, 02 etc.
- If a single clock ref is required it shall be entered in the **At/From** column.
- If two clock references are required both columns shall be completed.

2.2.14 Remarks

Type of content = TEXT

Maximum field length = 50 characters

XML element name = Remarks

XML element mandatory = No

Completion of field mandatory = No

Rules:

- If the REM code is used in the **Code** column then there should be an accompanying remark in this column.

3. MANHOLES AND INSPECTION CHAMBERS

3.1 Header information

3.1.1 Introduction

The header information is described in Chapter 6 of the WRc Manual of Sewer Condition Classification 5th Edition.

This section specifies the XML element name for each data item, whether the inclusion of the field in the data file is mandatory and whether it is mandatory to provide a non-blank value for the field.

For convenience the type of data and, where specified, the list of codes are also reproduced from the Manual of Sewer Condition Classification. Where specified, the list of codes should be treated as a restrictive list. Any other validation rules are also included.

3.1.2 Field 1 - Client

Type of content = TEXT

Maximum field length = 30 characters

XML element name = Client

XML element mandatory = No

Completion of field mandatory = No

3.1.3 Field 2 - Name of Surveyor

Type of content = TEXT

Maximum field length = 12 characters

XML element name = NameOfSurveyor

XML element mandatory = No

Completion of field mandatory = No

3.1.4 Field 3 - Client's Job reference

Type of content = TEXT

Maximum field length = 20 characters

XML element name = ClientsJobRef

XML element mandatory = No

Completion of field mandatory = No

3.1.5 Field 4 - Contractor's Job reference

Type of content = TEXT

Maximum field length = 10 characters

XML element name = ContractorsJobRef

XML element mandatory = No

Completion of field mandatory = No

3.1.6 Field 5 - Drainage Area

Type of content = TEXT or NUMBER

Maximum field length = 10 characters

XML element name = DrainageArea

XML element mandatory = No

Completion of field mandatory = No

3.1.7 Field 6 - Division / District

Type of content = TEXT

Maximum field length = 4 characters

XML element name = DivisionDistrict

XML element mandatory = No

Completion of field mandatory = No

3.1.8 Field 7 – Node Type

Type of content = TEXT

Maximum field length = 2 characters

XML element name = MHNodeType

XML element mandatory = No

Completion of field mandatory = No

Rules:
- Use one of the following codes

MH	Manhole
IC	Inspection Chamber
RE	Rodding Eye
LH	Lamphole
OF	Outfall
BR	Major Connection without manhole
GY	Gully
CP	Catchpit
SK	Soakaway
OS	Oil Separator
RG	Running Trap
BN	Buchan Trap
WR	Winser Trap
OC	Other special chamber

3.1.9 Field 8 - Manhole/Node Reference

Type of content = TEXT

Maximum field length = 12 characters

XML element name = ManholeRef

XML element mandatory = Yes

Completion of field mandatory = Yes

Rules:

The node reference should be either in accordance with STC25 (see MSCC5 Appendix A) or Highways Agency Specification HD 43/04 Drainage Data Management System for Highways (Design Manual for Roads and Bridges Volume 4 Section 2)

- Text format should be AB1234 5678 or AB1234 5678a.
- Where there are more than 99 nodes in a 100m square the last two numbers in the STC25 reference may optionally be replaced by alphabetical characters or a mixture of alphabetic and numeric characters.
- The numeric part of the field may be split by a space, a hyphen, an underscore or a forward slash or there may be no separating character e.g.:
    - space "AB1234 5678"or "AB1234 56AB" or "AB1234 5678a"; or
    - underscore "AB1234_5678" or "AB1234_567B" or "AB1234_5678a"; or
    - slash "AB1234/5678" or "AB1234 56A8" or "AB1234/5678a"; or
    - no separator "AB12345678" or "AB123456AB" or "AB12345678a";

3.1.10 Manhole/Node Coordinates

The field should contain text in the form of two integer numbers (the x coordinate and the y coordinate respectively) separated a space of any non-numerical character. The two integers and incorporate leading zeros where necessary. The OS 100km grid square characters should be converted to the numerical form and included in the coordinates. The two coordinates should be transferred separately as follows:

XML element name = ManholeGridRef

XML element mandatory = No

XML sub-element name = ManholeGridRefX

XML sub-element mandatory = No

Type of content = NUMBER (integer)

Minimum value = 000000

Maximum value = 999999

Number of decimal places = 0

Completion of field mandatory = No

XML element name = ManholeGridRefY

XML sub-element mandatory = No

Type of content = NUMBER (integer)

Minimum value = 000000

Maximum value = 999999

Number of decimal places = 0

Completion of field mandatory = No

Example:

<ManholeGridRef>

<ManholeGridRefX>123456</ ManholeGridRefX)

<ManholeGridRefY>789012</ ManholeGridRefY)

</ManholeGridRef>

3.1.11 Field 10 - Date

Type of content = DATE in ISO 8601 CCYY-MM-DD format

XML element name = Date

XML element mandatory = Yes

Completion of field mandatory = Yes

Rules:
- Blanks are to be zero filled.

3.1.12 Field 11 - Time

Type of content = TIME in ISO 8601 format hh:mm

XML element name = Time

XML element mandatory = No

Completion of field mandatory = No

Rules:
- Use the 24 hour clock
- Blanks are to be zero filled.

3.1.13 Field 12 - Location (Street Name)

Type of content = TEXT

Maximum field length = 50 characters

XML element name = LocationStreet

XML element mandatory = Yes

Completion of field mandatory = Yes

3.1.14 Field 13 - Location (Town or Village)

Type of content = TEXT

Maximum field length = 30 characters

XML element name = LocationTown

XML element mandatory = Yes

Completion of field mandatory = Yes

3.1.15 Field 14 - Location Type Code

Type of content = TEXT

Maximum field length = 3 characters

XML element name = LocationTypeCode

XML element mandatory = No

Completion of field mandatory = No

Rules:
- Use one of the codes in Tables 3.1 and 3.2

Table 3.1   Codes for Location Type (Sewerage Undertakers and Domestic Drainage)

Code	Description
RD	Road
FWY	A footway beside a road
VG	Verge
PD	Other pedestrian area
FLD	Fields (farmland and public open space)
PR	Property with buildings
GDN	Gardens (within private property)
BLG	Under a permanent building
WLD	Woodland
DIF	Difficult access (motorway, railway, watercourse, inside building)
WWY	Under a waterway
Z	Other

Table 3.2   Codes for Location Type (Highways Authorities)

Code	Description	
	Roads other than motorways	Motorways
XS1	Left Outside Verge (adjacent to footway)	Not used
XS2	Left Footway	Not used
XS3	Left Verge	Verge
XS4	Lane 1	Hard Shoulder
XS5	Lane 2	Slow Lane
XS6	Lane 3	Central Lane
XS7	Lane 4	Fast Lane
XS8	Right Verge	Central reserve/Right verge
XS9	Right Footway	Not used
XS0	Right Outside Verge (adjacent to footway)	Not used
XSE	Right turning lane	Not used
XSQ	Slip Road	Slip Road
XSR	Bus Lane	Not used
XST	Crawler lane	Crawler lane
XSW	Left turning lane	Not used
XSY	Any other option	Any other option

3.1.16 Field 15 - Land Ownership

Type of content = TEXT

Maximum field length = 2 characters

XML element name = LandOwnership

XML element mandatory = No

Completion of field mandatory = No

Rules:
- Use one of the following codes.

PU	Public
PR	Private
X	Not known

3.1.17 Field 16 - Vertical Reference Point

Type of content = TEXT

Maximum field length = 2 characters

XML element name = VerticalRef

XML element mandatory = Yes

Completion of field mandatory = Yes

Rules:
- Use one of the following codes.

I	Invert lowest outgoing pipe in the manhole/inspection chamber
C	Cover (highest corner of frame or highest point on a circular frame)
OD	National Datum
LD	Local Datum
Z	Other

3.1.18 Field 17 - Circumferential Reference Point

Type of content = NUMBER (2 digit integer)

Minimum value = 06

Maximum value = 06

Number of decimal places = 0

XML element name = CircumferentialRef

XML element mandatory = Yes

Completion of field mandatory = Yes

Rules:
- Leading zero to be included.

3.1.19 Field 18 - Use of Manhole/Inspection Chamber

Type of content = TEXT

Maximum field length = 1 character

XML element name = UseOfManhole

XML element mandatory = No

Completion of field mandatory = No

Rules:
- Use one of the following codes.

C	Combined
F	Foul
S	Surface water
T	Trade effluent
W	Culverted watercourse
Z	Other (state in Comments)

3.1.20 Field 19 - General Remarks

Type of content = TEXT

Maximum field length = 50 characters

XML element name = GeneralRemarks

XML element mandatory = No

Completion of field mandatory = No

3.1.21 Field 20 - Shape of Cover

Type of content = TEXT

Maximum field length = 2 characters

XML element name = ShapeOfCover

XML element mandatory = No

Completion of field mandatory = No

Rules:

- Use one of the following codes.

R	Rectangular
C	Circular
T	Triangular
OV	Oval
HX	Hexagonal
OC	Octagonal
Z	Other (state in Comments)

3.1.22 Field 21 - Material of Cover

Type of content = TEXT

Maximum field length = 3 characters

XML element name = MaterialOfCover

XML element mandatory = No

Completion of field mandatory = No

Rules:

- Use one of the following codes.

AC	Asbestos cement
BL	Bitumen (lining)
BR	Brick
CI	Cast iron
CL	Cement mortar (lining)
CO	Concrete

CS	Concrete segments
DI	Ductile iron
EP	Epoxy
FC	Fibre cement
FRP	Fibre reinforced plastics
GI	Grey cast iron
MAC	Masonry – in regular courses
MAR	Masonry – randomly coursed
MX	Mixed material construction
PVC	Polyvinyl chloride
PE	Polyethylene
PF	Pitch fibre
PP	Polypropylene
PS	Polyester
RC	Reinforced concrete
SPC	Sprayed concrete
ST	Steel
VC	Vitrified clay (i.e. all clayware)
X	Unidentified material
XI	Unidentified type of iron or steel
XP	Unidentified type of plastics
Z	Other (details should be recorded in the remarks section)

3.1.23 Field 22 - Width of Cover

Type of content = NUMBER (integer)

Minimum value = 10

Maximum value = 999

Number of decimal places = 0

XML element name = WidthOfCover

XML element mandatory = No

Completion of field mandatory = No

Rules:
- May be left blank.

3.1.24 Field 23 - Breadth of Cover

Type of content = NUMBER (integer)

Minimum value = 10

Maximum value = 999

Number of decimal places = 0

XML element name = BreadthOfCover

XML element mandatory = No

Completion of field mandatory = No

Rules:
- May be left blank.

3.1.25 Field 24 – Cover Level

Type of content = NUMBER

Minimum value = 0

Maximum value = 999

Number of decimal places = 2

XML element name = CoverLevel

XML element mandatory = No

Completion of field mandatory = No

Rules:
- May be left blank.

3.1.26 Field 25 - Shape of Access

Type of content = TEXT

Maximum field length = 2 characters

XML element name = ShapeOfAccess

XML element mandatory = No

Completion of field mandatory = No

Rules:
- Use one of the following codes.
  - C   Circular
  - HX   Hexagonal
  - OC   Octagonal
  - OV   Oval
  - R   Rectangular
  - T   Triangular
  - Z   Other (state in Comments)

3.1.27 Field 26 - Width of Access

Type of content = NUMBER (integer)

Minimum value = 10

Maximum value = 999

Number of decimal places = 0

XML element name = WidthOfAccess

XML element mandatory = No

Completion of field mandatory = No

Rules:
- May be left blank.

3.1.28 Field 27 - Breadth of Access

Type of content = NUMBER (integer)

Minimum value = 10

Maximum value = 999

Number of decimal places = 0

XML element name = BreadthOfAccess

XML element mandatory = No

Completion of field mandatory = No

Rules:
- May be left blank.

3.1.29 Field 28 - Material

Type of content = TEXT

Maximum field length = 3 characters

XML element name = Material

XML element mandatory = No

Completion of field mandatory = No

Rules:
- Use one of the following codes.

AC	Asbestos cement
BL	Bitumen (lining)
BR	Brick
CI	Cast iron
CL	Cement mortar (lining)
CO	Concrete
CS	Concrete segments
DI	Ductile iron
EP	Epoxy
FC	Fibre cement
FRP	Fibre reinforced plastics
GI	Grey cast iron
MAC	Masonry – in regular courses
MAR	Masonry – randomly coursed
MX	Mixed material construction
PVC	Polyvinyl chloride
PE	Polyethylene
PF	Pitch fibre
PP	Polypropylene
PS	Polyester
RC	Reinforced concrete

SPC	Sprayed concrete
ST	Steel
VC	Vitrified clay (i.e. all clayware)
X	Unidentified material
XI	Unidentified type of iron or steel
XP	Unidentified type of plastics
Z	Other (details should be recorded in the remarks section)

3.1.30 Field 29 - Type of Steps

Type of content = TEXT

Maximum field length = 1 character

XML element name = TypeOfSteps

XML element mandatory = No

Completion of field mandatory = No

Rules:

- Use one of the following codes:

S	Single width - wide enough for one foot only
D	Double width - wide enough for both feet
L	Ladder
T	Toe holes in benching or wall of chamber or shaft
N	No steps provided
Z	Other

3.1.31 Field 30 - Material of Steps

Type of content = TEXT

Maximum field length = 2 characters

XML element name = MaterialOfSteps

XML element mandatory = No

Completion of field mandatory = No

Rules:

- Use one of the following codes:

AL	Aluminium

GI	Galvanised Iron
IR	Iron/Steel
PL	Plastic
PM	Metal encapsulatedin plastic
SS	Stainless steel
Z	Other

3.1.32 Field 31 - Pre-cleaned

Type of content = TEXT

Maximum field length = 1 character

XML element name = Precleaned

XML element mandatory = No

Completion of field mandatory = No

Rules:
* Use the codes Y, N or Z.

3.1.33 Field 32 – Strategic Drain/Sewer

Type of content = TEXT

Maximum field length = 1 character

XML element name = StrategicDrain

XML element mandatory = No

Completion of field mandatory = No

Rules:
* Use the codes A, B, C or Z.

Note: Critical sewer categories are defined in Volume 1 of the Sewerage Rehabilitation Manual. Category A is most critical and Category C is non-critical and Z is not known.

3.1.34 Field 33 - Purpose of Inspection

Type of content = TEXT

Maximum field length = 1 character

XML element name = PurposeOfInspection

XML element mandatory = No

Completion of field mandatory = No

Rules:
- Use one of the following codes:
A	Investigation of known structural or service defects
B	Investigation of infiltration problems
C	Post completion inspection of repairs or renovations
D	Pre-adoption survey prior to vesting as public sewer
E	Post completion inspection of new sewers
F	Sample survey of sewers to determine asset condition of a sewer system
G	Routine inspection of condition
H	Investigation of a suspected operational problem
I	Investment planning
J	End of warranty period
X	Other (state in Comments)

3.1.35 Inspection Stage

Type of content = TEXT

Maximum field length = 1 character

XML element name = InspectionStage

XML element mandatory = No

Completion of field mandatory = No

Rules:
- Use one of the following codes:
A	Information provided by client
B	Information provided by the inspector to client
Z	Other

3.1.36 Field 35 - Flow Control Measures

Type of content = TEXT

Maximum field length = 2 characters

XML element name = FlowControlMeasures

XML element mandatory = No

Completion of field mandatory = No

Rules:
- Use one of the following codes:
  - N   No flow control
  - BL   Flows blocked upstream
  - PB   Flows partially blocked upstream
  - X   Other - further details should be recorded using a general remark

3.1.37 Field 36 - Weather

Type of content = TEXT

Maximum field length = 1 character

XML element name = Weather

XML element mandatory = No

Completion of field mandatory = No

Rules:
- Use one of the following codes:
  - D   No rain or snow
  - R   Rain
  - S   Melting snow or ice

3.1.38 Field 37 - Temperature

Type of content = TEXT

Maximum field length = 1 character

XML element name = Temperature

XML element mandatory = No

Completion of field mandatory = No

Rules:

- Enter either A or B.

3.1.39 Field 38 - Chamber Unit Length

Type of content = NUMBER

Minimum value = 0.1

Maximum value = 9.9

Number of decimal places = 1

XML element name = ChamberUnitLength

XML element mandatory = No

Completion of field mandatory = No

3.1.40 Field 39 - Year Constructed

Type of content = TEXT

Maximum field length = 9 characters

XML element name = YearConstructed

XML element mandatory = No

Completion of field mandatory = No

Rules:
- Enter the year either as a single year in CCYY format (e.g. 1923) or as a range in CCYY-CCYY format (e.g. 1923-1930).
- Enter Z if year is not known.

3.1.41 Field 40 - Method of Inspection

Type of content = TEXT

Maximum field length = 1 character

XML element name = MethodOfInspection

XML element mandatory = Yes

Completion of field mandatory = Yes

Rules:
- Enter either A, B or C.

3.1.42 Field 41 - Standard

Type of content = TEXT

Maximum field length = 18 characters

XML element name = Standard

XML element mandatory = Yes

Completion of field mandatory = Yes

Rules:
- Enter the version of the standard, in the form BS EN 13508-2:2003.

3.1.43 Field 42 - Video Image Storage Media

Type of content = TEXT

Maximum field length = 3 characters

XML element name = VideoImageStorage

XML element mandatory = No

Completion of field mandatory = No

Rules:
- Use one of the following codes:
VHS	VHS video cassette tape
CD	CD
DVD	DAD
PHD	Portable hard drive
X	Other – further details should be recorded in the General Remarks field

3.1.44 Field 43 - Video Image Location System

Type of content = TEXT

Maximum field length = 1 character

XML element name = VideoImageLocationSystem

XML element mandatory = No

Completion of field mandatory = No

Rules:
* Enter either A, B or X.

3.1.45 Field 44 - Video Image Format

Type of content = NUMBER or TEXT

Maximum field length = 30 characters

XML element name = VideoImageFormat

XML element mandatory = No

Completion of field mandatory = No

Rules:
* Use one of the following codes:

F	Fixed to media type
MPEG1	MPEG1
MPEG2	MPEG2
MPEG4	MPEG4
AVI	AVI
VOB	VOB
DIVX	DIVX
Z	Other

3.1.46 Field 45 – Video Image Filename

Type of content = TEXT

Maximum field length = 20 characters

XML element name = VideoImageFilename

XML element mandatory = No

Completion of field mandatory = No

3.1.47 Field 46 – Video Volume Reference

Type of content = TEXT

Maximum field length = 30 characters

XML element name = VideoVolumeRef

XML element mandatory = No

Completion of field mandatory = No

3.1.48 Field 47 - Photographic Image Storage Format

Type of content = TEXT

Maximum field length = 1 character

XML element name = PhotographicStorageFormat

XML element mandatory = No

Completion of field mandatory = No

Rules:
- Use one of the following codes.
  A   Still photographs
  C   Windows Meta File (WMF)
  D   Graphics Image File (GIF)
  E   JPEG file
  F   TIF
  G   PNG
  X   Other – further details should be recorded in the General Remarks field

3.1.49 Field 48 - Photographic Volume Reference

Type of content = NUMBER or TEXT

Maximum field length = 10 characters

XML element name = PhotographicVolume

XML element mandatory = No

Completion of field mandatory = No

3.1.50 Fields 49 - 53 - Client Defined

Type of content = TEXT or NUMBER

Maximum field length = 30 characters

XML element name = ClientDefined1, ClientDefined2, ClientDefined3, ClientDefined4, ClientDefined5

XML element mandatory = No

Completion of field mandatory = No

3.2   Observations section

3.2.1 Introduction

The coding system is described in Chapters 5 & 7 of the WRc Manual of Sewer Condition Classification 5th Edition.

This section specifies the XML element name for each data item, whether the inclusion of the field in the data file is mandatory and whether it is mandatory to provide a non-blank value for the field.

The use of the various columns is described below.

3.2.2 Video reference

Type of content = NUMBER

Minimum value = 0:00:00

Maximum value = 9:59:59

Number of decimal places = N/A

XML element name = VideoRef

XML element mandatory = Yes

Completion of field mandatory = Yes (for CCTV inspection)

The time reference in the format h:mm:ss (e.g. 1:23:30 indicates a time 1 hour 23 minutes and 30 seconds from the start of the tape or recording).

3.2.3 Photograph reference

Type of content = TEXT or NUMBER

Maximum field length = 50 characters

XML element name = PhotographRefs

XML sub element name = PhotographRef

XML element mandatory = No

Completion of field mandatory = No

A reference will only be given where a still image or photograph is taken.

Enter the still image file name or a photograph number. It is usual to number photographs consecutively.

Where there is more than one filename the sub-element is repeated.

3.2.4 Distance

Type of content = NUMBER

Minimum value = 0.0

Maximum value = 99.9

Number of decimal places = 1

XML element name = Distance

XML element mandatory =

Yes Completion of field mandatory = Yes

Enter the distance in metres of each structural, service, constructional or miscellaneous code from the start of the survey length. Spaces can be zero filled or left blank.

First entry should be 0.0.

3.2.5 Continuous defect

Type of content = TEXT Maximum field length = 3 characters

Letter (S = start, C = change or F = finish) followed by a number (integer) between 01 and 99.

XML element name = ContinuousDefect

XML element mandatory = No

Completion of field mandatory = No

Rules:

- Must start with 01 and run through numbers consecutively

- No duplication of numbers (S01, C01 and F01 may only appear once etc.)

- C01 and F01 can't be entered before S01 etc.

- There must be an F code for all S codes before the SA (survey abandoned code).

3.2.6 Code

Type of content = TEXT

Maximum field length = 5 characters

XML element name = Code

XML element mandatory = Yes

Completion of field mandatory = Yes

Enter the appropriate structural, service, constructional or miscellaneous code (see Section 7). The code is composed of a number of elements. There is a basic code which may be

further described by ancillary codes. For example the basic code F (fracture) may be further described by the ancillary code H (horizontal).

These may then be further described by:

3.2.7 Joint

Type of content = TEXT

Maximum field length = 1 character

XML element name = Joint

XML element mandatory = No

Completion of field mandatory = No

Rules:
- Only letter J should be used
- This column should not be used where the Code column contains JD or OJ codes at the same distance.

3.2.8 Material

Type of content = TEXT

Maximum field length = 3 characters

XML element name = Material

XML element mandatory = No

Completion of field mandatory = No

Rules:
- This column should only be used where the Code column contains MC or LC codes.

3.2.9 Band

Type of content = TEXT

Maximum field length = 1 character

XML element name = Band

XML element mandatory = No

Completion of field mandatory = No

Rules:
- Only letters M or L should be used
- This column should only be used where the Code column contains JD or OJ codes.

3.2.10 Dimension 1 & 2

Type of content = TEXT

Maximum field length = Dimension 1 - 30 characters, Dimension 2 - 12 characters

XML element name = Dimension1

XML element mandatory = No

Completion of field mandatory = No

XML element name = Dimension2

XML element mandatory = No

Completion of field mandatory = No

Rules:
- Data shall be entered in the **Dimension 1** column first.
- The **Dimension 2** column shall only be used where a second dimension is required, otherwise it will be left blank.

3.2.11 Percentage

Type of content = Text

Minimum value = 00

Maximum value = 100

Number of decimal places = 0

XML element name = Percentage

XML element mandatory = No

Completion of field mandatory = No

Rules:
- Data shall be entered in 5 % increments.
- Leading zeros to be included (e.g. 5% shall be entered as 05).

3.2.12 Clock reference At/From & To

Type of content = NUMBER (integer)

Minimum value = 01

Maximum value = 12

Number of decimal places = 0

XML element name = ClockRefAtFrom

XML element mandatory = No

Completion of field mandatory = No

XML element name = ClockRefTo

XML element mandatory = No

Completion of field mandatory = No

Rules:
- A number between 1 and 12
- Numbers 1 to 9 should be entered as 01, 02 etc.
- If a single clock ref is required it shall be entered in the At/From column.
- If two clock references are required both columns shall be completed.
- Clock references should be given with reference to the circumferential reference point.

3.2.13 Location of observation

Type of content = TEXT

Maximum field length = 3 characters

XML element name = LocationOfObservation

XML element mandatory = Yes

Completion of field mandatory = Yes

Rules:
- Use one of the following codes:
    - CF   Cover and frame
    - AC   Adjusting construction
    - S   Shaft
    - T   Taper
    - RS   Reducing slab
    - CH   Chamber
    - L   Landing
    - B   Benching
    - CHL   Channel
    - I   Invert

3.2.14 Remarks

Type of content = TEXT

Maximum field length = 50 characters

XML element name = Remarks

XML element mandatory = No

Completion of field mandatory = No

Rules:
- If the REM code is used in the Code column then there should be an accompanying remark in this column.