SLOFEC LS120 Pipe Inspection

Client:	**Client a**
Facility:	**Site b**
Items Inspected:	**6” pipeline**
Inspection Method:	**SLOFEC**
Commencement Date:	**14th April 2016**
Completion Date:	**19th April 2016**
Type of Report:	**Final**
Report Number:	**K00x-16US**
Job Number:	**J00x-16US**

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SLOFEC™ PIPE / VESSEL INSPECTION REPORT (LS120)

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Executive Summary

Innospection Ltd was requested by Client a, to conduct a SLOFEC™ (Saturation Low Frequency Eddy Current) inspection on the 6” LPG to LSFO pipeline.

The inspection was conducted at the site b on 14th April 2016 and was completed on 19th April 2016.

This inspection report documents in detail the specific inspection that has been conducted; the individual technique and equipment utilised, and the results, observations and conclusions obtained.

Indications above 40% wall loss were deemed as significant and instructed by Client to be directly marked on the pipeline. The SLOFEC™ inspection indicated no significant defects above 40%.

Four sections (22, 40, 48 & 49) of this pipeline were found to have isolated random indications with 20%-30% wall loss.

The inspection was carried out with the assistance of rope access and scissor lift, resulting in many short sections of scanned areas.

The specific pipeline had many adjacent pipelines and welds which the scanner couldn’t pass resulting in a dead-zone for SLOFEC™.

Where the painted surface had broken down topside scale was present – this scale produced an out of phase signal in the SLOFEC™ software. All spurious signals have been removed from the BMP images present within this report.

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1. Test Object Data

Object Identification : 6” Pipeline

Location of Object : 123

Orientation of Scan : Longitudinal

Wall Thickness : Nominal 7.11mm

Material : Carbon Steel

Surface Condition : Generally clean and free from loose debris – painted surface. Some areas the painted surface had broken down and topside scale was present and required light scraping.

2. Inspection Task

As requested by Client a, a SLOFEC™ (Saturation Low Frequency Eddy Current) inspection was performed on the 6” pipeline located at site b from 14th April 2016 to 19th April 2016.

The inspection was performed with a SLOFEC™ technology scanner, type LS120.

SLOFEC™ is regarded as a fast corrosion screening technique, detecting corrosion on either side of the wall inspected. This method of testing makes it practical to inspect the pipes from the external surface, whilst they are still in service and at operating temperatures.

The SLOFEC™ inspection team consisted of qualified engineers from Innospection Ltd.

All areas described in Section 4 − Inspection Volume were inspected with the SLOFEC™ scanner.

The inspection was carried out as a general inspection.

3. Inspection Personnel

Inspection Operator : Technician a
PCN L2 ET/UT - 000000

Inspection Assistant : Technician b
PCN L2 ET - 000000

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4. Inspection Volume

The SLOFEC™ scans were taken over 360º coverage of the general pipe body. The seam welds including the heat affected zones were not scanned.

All accessible areas of the pipe were targeted for inspection with the exception of specific dead zones, which could not be inspected due to the design of the scanner i.e. the wheels of the scanner butted against a circumferential weld bead.

The Dead Zone refers to the following areas:

- 130mm on either side of the pipe ends
- 130mm on either side of any weld
- 130mm on either side of any pipe supports
- Any other obstructions that interfered with the access

In discussion with the client areas with defects greater than 40% of the indicated wall thickness, would be directly identified and marked on the pipeline surface. This using the circumferential welds as a reference datum.

5. Inspection Equipment

5.1. SLOFEC™ Equipment

The inspection system consisted of the following SLOFEC™ equipment and accessories:

Scanner :	SLOFEC™ LS120 Scanner (width 120mm)
Description of Scanner :	The SLOFEC™ LS120 Scanner is a handheld system equipped with permanent magnets and multiplexed electronics. Four (4) sensors each with a width of 30mm are located between the pole shoes. A trigger encoder is connected via a belt drive to one wheel. The two (2) wheels at the front and two (2) wheels at the rear are adjustable in height for lift off.
Scanning Speed :	100% (approx. 24m/min)
Eddy Current Instrument :	IBM-AT-compatible computer with 2-frequency Eddy Current plug-in cards Type : Beltronic EMC07/08.01
Eddy Current Sensors :	4 x EC-B-30 mm
Software Version :	Slofec™ V5

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Cable :	20 metres of specific cable connection between the computer Eddy Current instrument and SLOFEC™ LS120 Scanner
Reference Plate :	7.11mm from Innospection, Serial No. 267
Reference Defect :	20%, 40%, 60%, 80% FBH

5.2. Ultrasonic Equipment

The Ultrasonic equipment consisted of the following accessories:

Panametrics-NDT EPOCH 4 Ultrasonic Flaw Detector
Serial No. 110097203

Capable of both "A" scan display and digital thickness readout
5.0 MHz 10mm Ø twin crystal transducer
2mm – 12mm carbon steel calibration step wedge

6. SLOFEC™ Equipment Setting

In general, the SLOFEC™ system is calibrated using sample test samples with artificial reference defects. The reference samples should be of the same material and thickness as the surface to be inspected.

In the case of a coating being present on the surface to be inspected, the average thickness of the coating (if applicable) should also be simulated on the reference sample for the calibration.

Typical reference defects that are used are flat bottom holes or conical bottom holes having a diameter of 5mm, 10mm and 20mm.

The depths of the artificial reference defects are typically 20%, 40%, 60%, 80% and 100%.

For calibration, the SLOFEC™ system is driven over the reference defects and the channels are set (one sensor per channel) to give a sufficient sensitivity level for the detection of internal and external corrosion defects.
The calibration is performed at the beginning, after breaks, at the end of every shift and when significant changes are made to the settings of the equipment.

The calibration results and reference defect data from the calibration sample is always stored in the system.

The Eddy Current signal analysis is done online. The computerised equipment and the software allow the analysis of the signal amplitude [in div.] and signal phase [in °].

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In discussion with the individual client, indications comparable with the reference defect indications can be marked on the pipeline and are usually recommended to be re-inspected by Ultrasonic (UT) examination.

7. SLOFEC™ Equipment Calibration

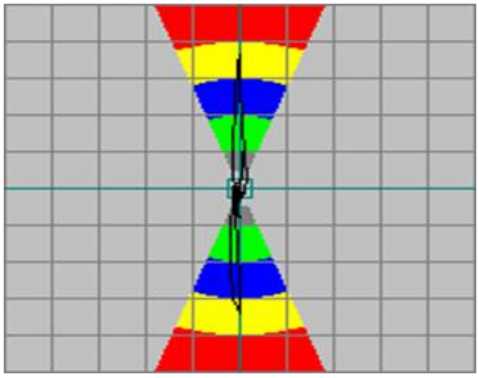
7.1. Equipment Calibration

For internal corrosion detection, the differential mode was used. The frequency setting used for Channel 1−4 (differential mode) was 80−100 kHz.

The amplitude of the signals was set so that the artificial reference defect (Ø 8mm 80% depth) was set to 8 screen divisions. This is only classed as the initial pre-calibration setup and may then be further adjusted when the first true indication is detected and evaluated for depth, this by utilising the Ultrasonic pulse echo technique.

Optimum signal/noise ratio and signal phase separation between the internal defect indications and other indications were considered when selecting a suitable test frequency.

The differential channels of all the sensors were set so that internal defects were indicated in the vertical signal phase direction as shown in the diagram below. By moving the scanner in the positive forward direction, the internal defect signal would show the first peak down, followed by the second peak up with an upward movement.



Sample signal display of internal defect

7.2. Calibration Control

The general setting and calibration was performed at the beginning of the inspection and all the calibration data was stored digitally. Calibration controls were performed at the beginning and end of each working shift as well as after any other significant interruption (i.e. breaks or lunch). Re-calibration is also deemed necessary when significant changes are made to the settings of the equipment.

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Calibration samples are used for the initial set-up and for the random check of operator’s settings. Accuracy of sensitivity settings can only be evaluated and achieved, when the first true indication found on the item undergoing the test is verified by an UT operator, with the corresponding depth of indication and SLOFEC™ sensitivity being adjusted accordingly. With this setting, external corrosion defects would be detected and distinguished by phase separation from the internal defects.

7.3. Calibration Samples

The calibration samples are manufactured by Innospection Ltd in accordance to the setting standard requirements.

7.4. Change of Settings

In the event of any scanner adjustment, re-calibration is performed.

8. Inspection Procedures

The inspection was performed according to the following valid procedure:

SLOFEC™ Pipe Procedure No. InnoPSloPIP-001-08 – Current Issue

9. Inspection Performance

9.1. Scanner Movement

The scanner assistant, who was in permanent communication with the SLOFEC™ operator, was responsible for positioning and moving the scanner on the pipe surface. The SLOFEC™ LS120 Scanner is marked clearly on the top with the FORWARD and BACKWARD directions so that all scan directions are made clear to the operator and assistant at all times. The use of Bluetooth headsets was required for communication between technician, assistant and rope access team.

The scanner was moved manually with the scanned tracks being overlapped at all times.

All scans for the inspection were recorded in the forward position.

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9.2. Scan Track Positioning

The pipelines were marked circumferentially into 5 equal tracks. The tracks were numbered in a clockwise direction while facing the direction of flow. Where no longitudinal seam weld was present, the top of the pipeline was used a reference.

9.3. Parameter Storage

The Eddy Current testing parameter was set during the calibration and digitally stored according to the scan direction and lift off.

10. Defect Analysis

All indications which showed a clear signal phase direction similar to that of the reference defects and had signal amplitude equivalent to that of the test piece were subjected to analysis.

Signals that are clearly out of the corrosion phase direction were not reported.

11. Comments to Inspection

The pipeline was generally clean however, some areas of the painted surface had broken down and topside scale was present. This required rope access to gently scrape this surface away to reduce spurious signals observed in the SLOFEC software.

The pipeline was within a pipe rack with many adjacent pipelines. Where the adjacent pipelines were in close proximity to the line being inspected, this restricted the scanner and certain tracks were not possible to scan.

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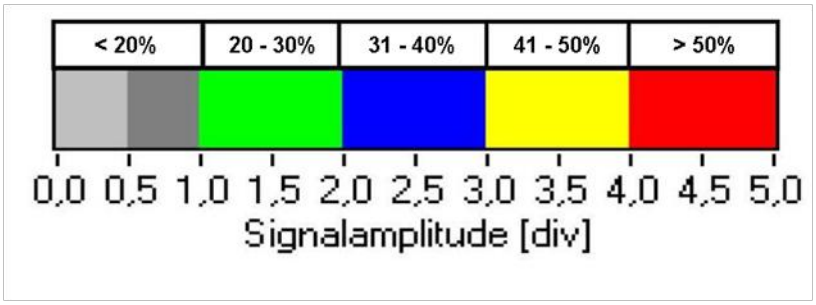
12. Result Overview

12.1. Sensitivity Settings

The general overview of the inspected areas with the results is presented in the attached colour scan reports with wall loss being represented in colour classes as shown in the Wall Loss Legend below:



Below 20% wall loss - Grey
20-30% wall loss - Green
31-40% wall loss - Blue
41-50% wall loss - Yellow
Above 50% wall loss - Red

Note

Eddy Current inspection is an evaluation method of NDT; hence all results obtained are based upon the test piece used. Material and wall thickness of the test piece should be as near as reasonably practicable to the item under inspection. Artificial defects should be as near in size and shape as to the type sought.

Because SLOFEC™ signal amplitudes are an indication of defect depth and volume, the defect depth analysis by signal amplitude can only be done in comparison with artificial reference defects having varying depths.

12.2. Result Overview

A summary of the inspection findings in each of the scanned section is given below:

Pipe Section No.	Pipe Length (mm)	Comments	Max % Wall Loss in Pipe Section
1	2000	No Significant Indications	0 - 20%
2	2000	No Significant Indications	0 - 20%
3	2000	No Significant Indications	0 - 20%
4	2000	No Significant Indications	0 - 20%
5	2740	No Significant Indications	0 - 20%

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6	2800	No Significant Indications	0 - 20%
7	5300	No Significant Indications	0 - 20%
8	1500	No Significant Indications	0 - 20%
9	4000	No Significant Indications	0 - 20%
12	2500	No Significant Indications	0 - 20%
13	2500	No Significant Indications	0 - 20%
14	2000	No Significant Indications	0 - 20%
15	3000	No Significant Indications	0 - 20%
16	2000	No Significant Indications	0 - 20%
17	1840	No Significant Indications	0 - 20%
18	1000	No Significant Indications	0 - 20%
19	1100	No Significant Indications	0 - 20%
20	2000	No Significant Indications	0 - 20%
21	2000	No Significant Indications	0 - 20%
22	2500	No Significant Indications	20 - 30%
23	2500	No Significant Indications	0 - 20%
24	1200	No Significant Indications	0 - 20%
25	3200	No Significant Indications	0 - 20%
26	3500	No Significant Indications	0 - 20%
27	3500	No Significant Indications	0 - 20%
29	2000	No Significant Indications	0 - 20%
30	2000	No Significant Indications	0 - 20%
31	4000	No Significant Indications	0 - 20%
32	5500	No Significant Indications	0 - 20%
33	1500	No Significant Indications	0 - 20%
34	3500	No Significant Indications	0 - 20%
35	3200	No Significant Indications	0 - 20%
36	3300	No Significant Indications	0 - 20%
37	3800	No Significant Indications	0 - 20%
38	3800	No Significant Indications	0 - 20%
39	3600	No Significant Indications	0 - 20%
40	2500	No Significant Indications	20 - 30%
41	2000	No Significant Indications	0 - 20%
42	3000	No Significant Indications	0 - 20%
43	3500	No Significant Indications	0 - 20%
44	3600	No Significant Indications	0 - 20%
45	3300	No Significant Indications	0 - 20%

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46	5400	No Significant Indications	0 - 20%
47	3300	No Significant Indications	0 - 20%
48	5400	No Significant Indications	20 - 30%
49	2500	No Significant Indications	20 - 30%
50	3300	No Significant Indications	0 - 20%
51	3600	No Significant Indications	0 - 20%
52	2400	No Significant Indications	0 - 20%
53	3200	No Significant Indications	0 - 20%
54	2000	No Significant Indications	0 - 20%
55	3100	No Significant Indications	0 - 20%
56	6800	No Significant Indications	0 - 20%
57	1300	No Significant Indications	0 - 20%
58	3200	No Significant Indications	0 - 20%
59	2500	No Significant Indications	0 - 20%

***Sections 10, 11, 28 are not present.**

13. Inspection Summary

Indications above 40% were deemed significant and were to be directly marked on the pipeline.

No sections were observed with indications above 40%.

Four pipe sections of numbers 22, 40, 48 & 49, were found with isolated 20-30% wall loss random indications. Ultrasonic’s was carried out on these areas however with the manual UT equipment available and difficult access in these areas, no confirmation was possible. These signals were classic Differential Eddy Current lissajous (Slofec) signals and repeatable, hence these have been left in for reference.

14. Documentation

The inspection result, parameters and data are stored in the Innospection Limited archive database system.

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15. Signature

Technician a
ET/UT Level 2
Innospection Limited

Level 3 Senior Engineer
PCN 00000
Innospection Limited

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APPENDIX 01

Scanned Sections 1-59

Client	Client a
Location	Site b
Pipe Identif.	6 Pipeline
Drawing	01
Area	5
Section	Section 1 (2.00 Metre)
Date	26 April 2016
K-No.	00-16

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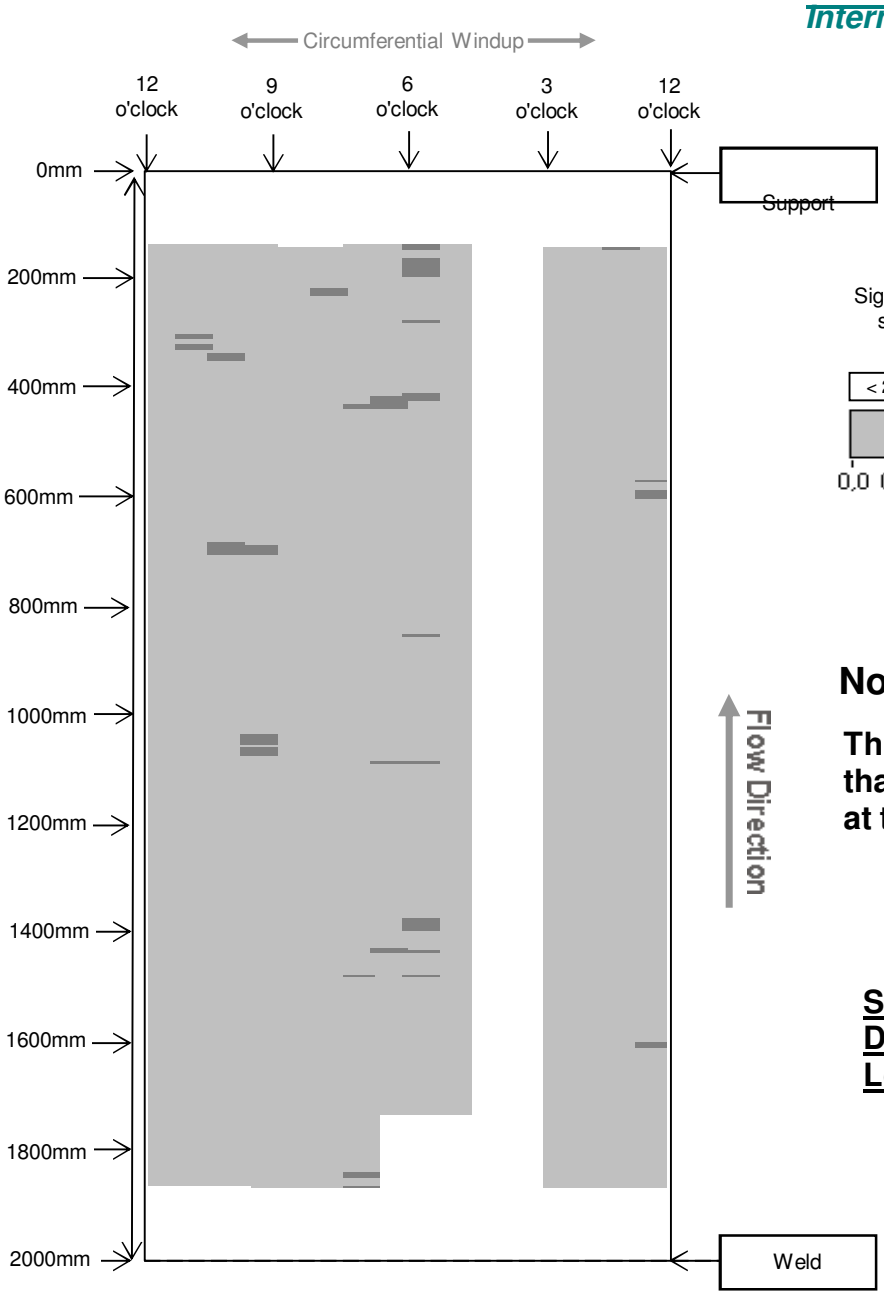
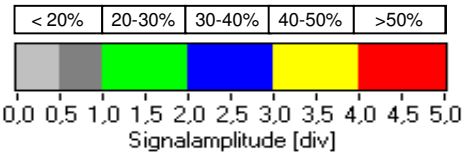
SLOFEC/MEC™
Internal Surface PipeScan Report



Signal Y-component / angle analysis window set for indication of internal defects with approx. depth information



Note:

This is a signal image BMP that is produced automatically at the time of the inspection

See Previous Drawing For Location Details

Client	Client a
Location	site b
Pipe Identif.	6 pipline
Drawing	01
Area	5
Section	Section 2 (2.00 Metre)
Date	26 April 2016
K-No.	00-16

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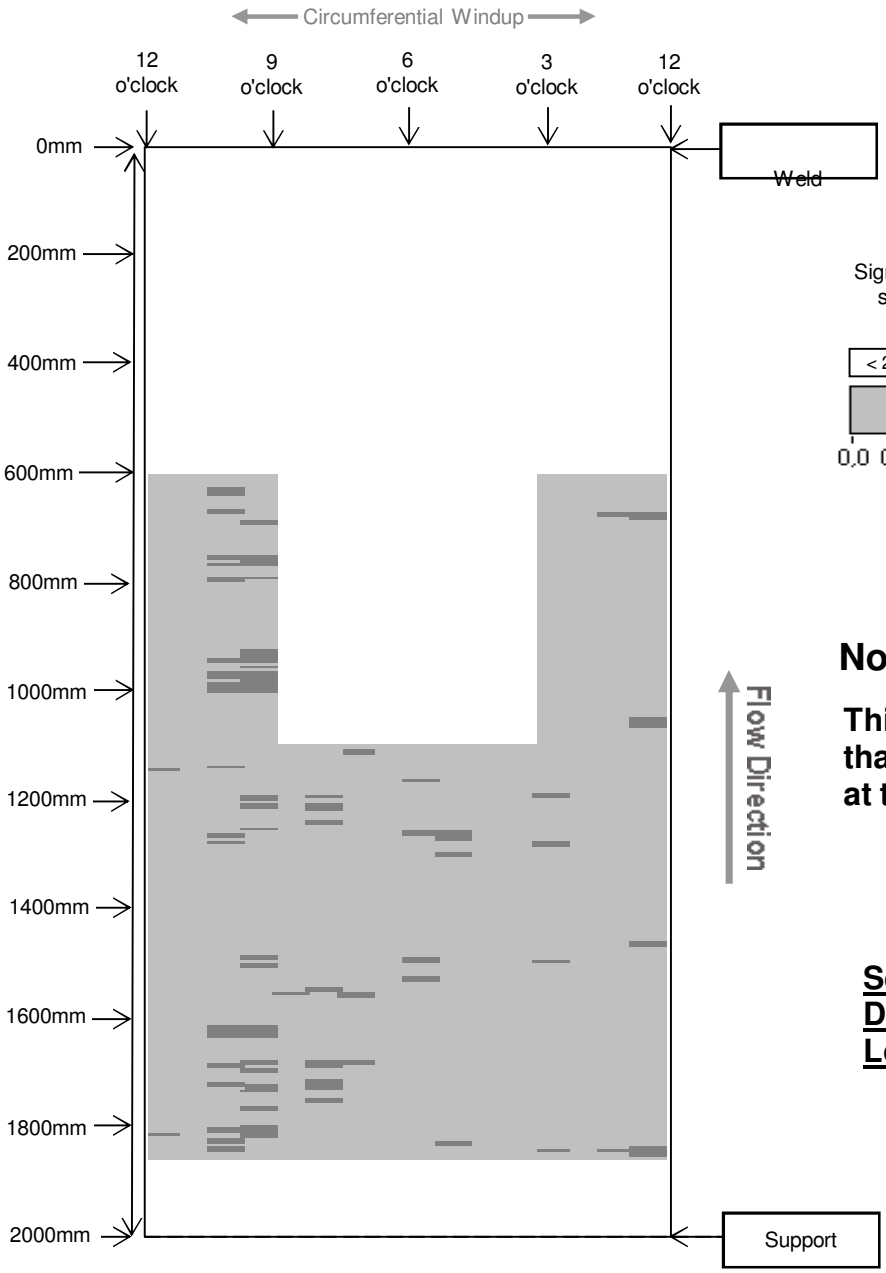
Internal Surface PipeScan Report



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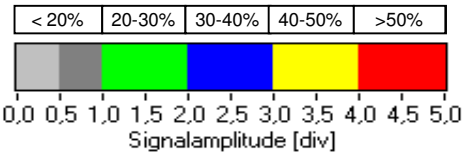

Note:

This is a signal image BMP that is produced automatically at the time of the inspection

See Previous Drawing For Location Details

Client	Client a
Location	site b
Pipe Identif.	6" pipeline
Drawing	01
Area	5H
Section	Section 3 (2.00 Metre)
Date	26 April 2016
K-No.	00-16

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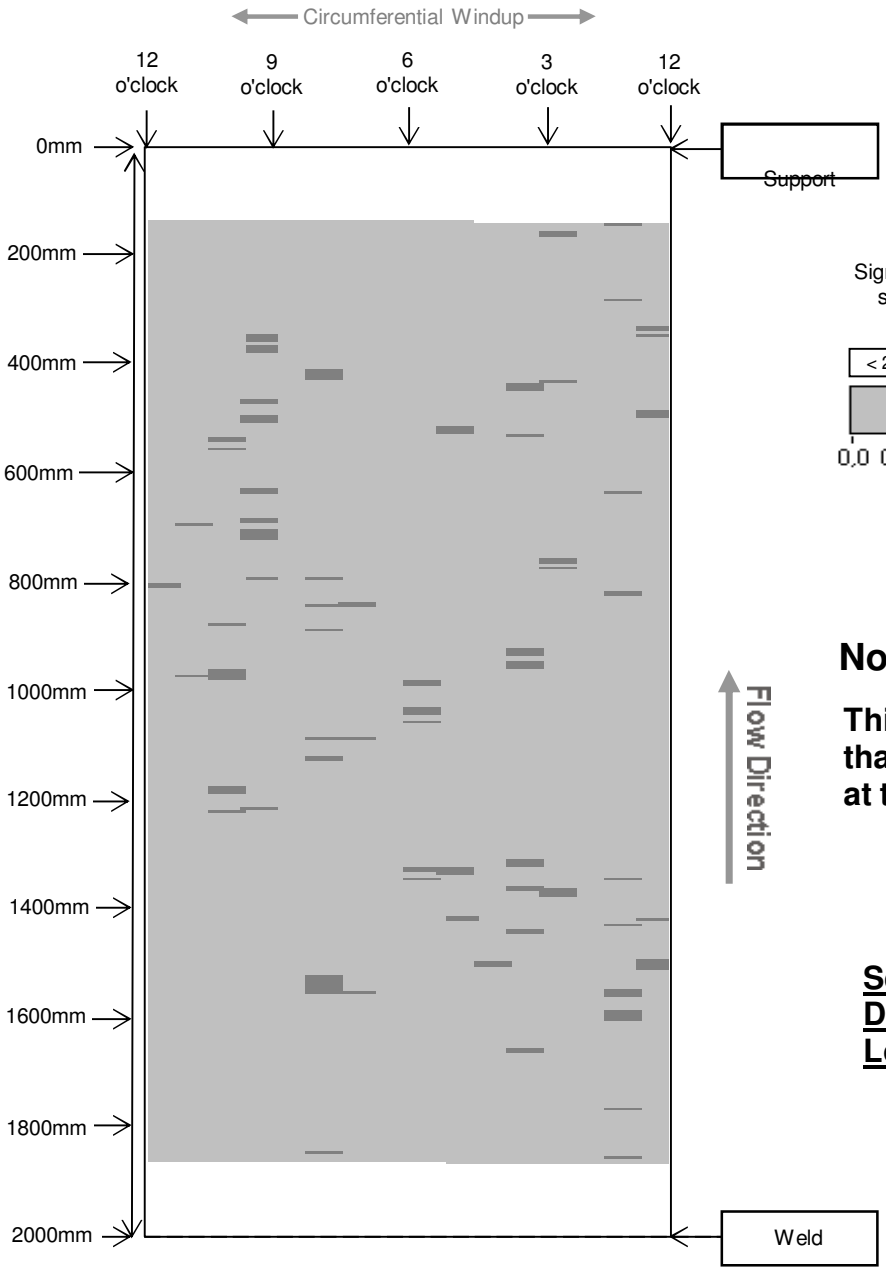
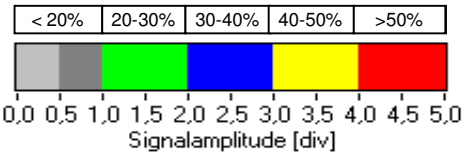
Internal Surface PipeScan Report



Signal Y-component / angle analysis window set for indication of internal defects with approx. depth information



Note:

This is a signal image BMP that is produced automatically at the time of the inspection

See Previous Drawing For Location Details

Client	Client a
Location	site b
Pipe Identif.	6" pipeline
Drawing	01
Area	5H
Section	Section 4 (2.00 Metre)
Date	26 April 2016
K-No.	00-16

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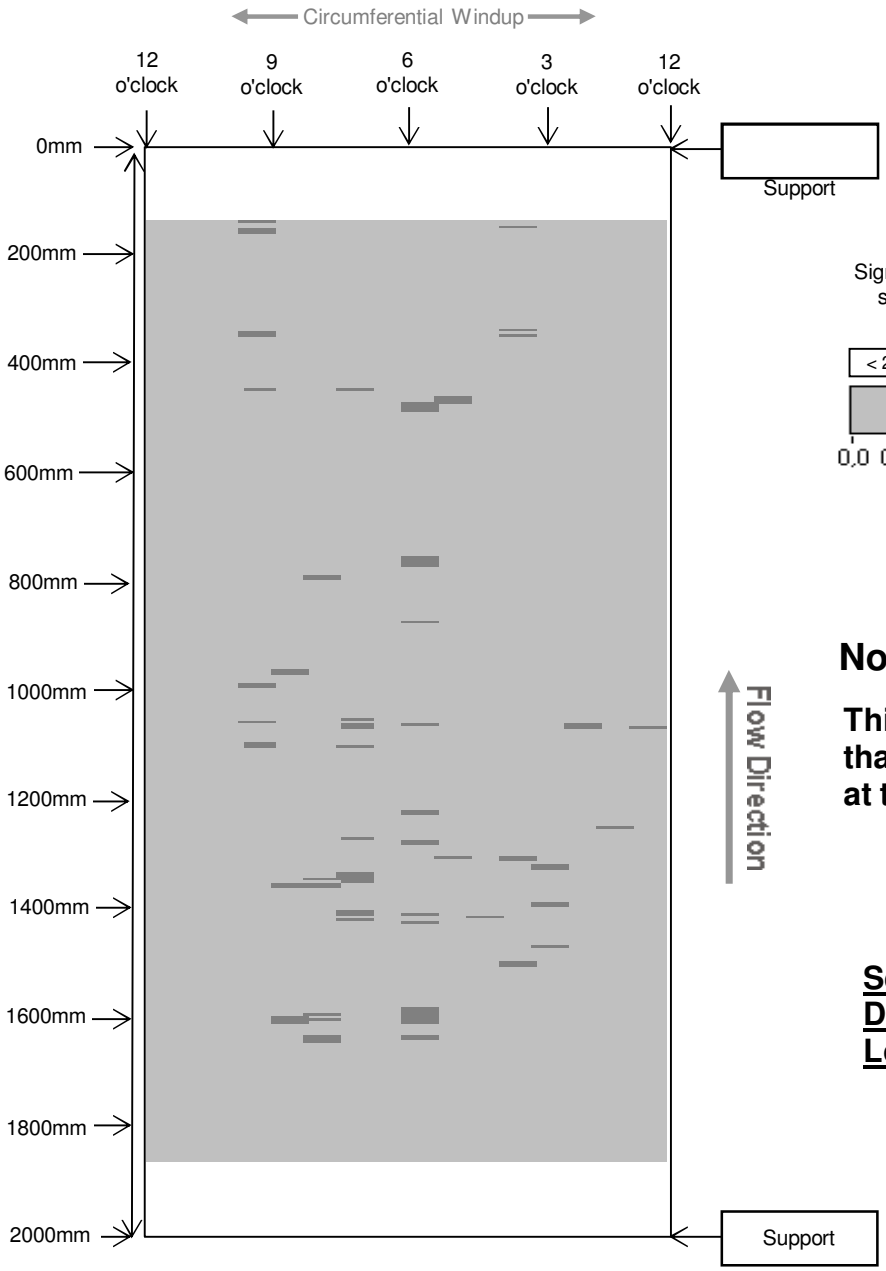
Internal Surface PipeScan Report



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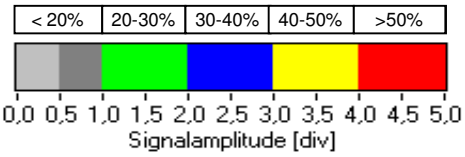

Note:

This is a signal image BMP that is produced automatically at the time of the inspection

See Previous Drawing For Location Details

Client	Client a
Location	site b
Pipe Identif.	6
Drawing	01
Area	5H
Section	Section 5 (2.74 Metre)
Date	26 April 2016
K-No.	00-16

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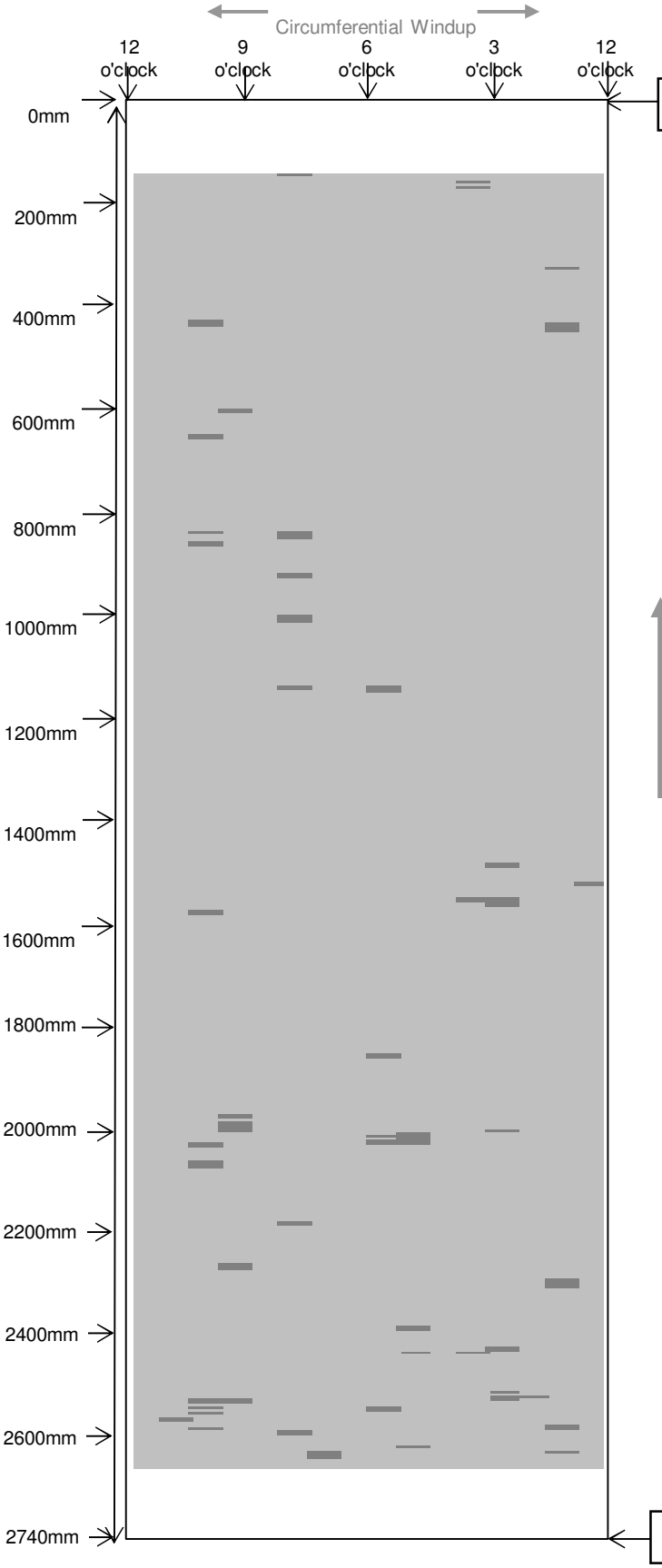
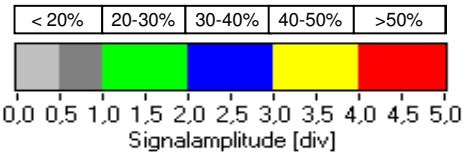
Internal Surface PipeScan Report



Signal Y-component / angle analysis window set for indication of internal defects with approx. depth information



Note:

This is a signal image BMP that is produced automatically at the time of the inspection

~~See Previous~~ Drawing For Location Details

Client	Client a
Location	site b
Pipe Identif.	6
Drawing	01
Area	5H
Section	Section 6 (2.80 Metre)
Date	26 April 2016
K-No.	00-16

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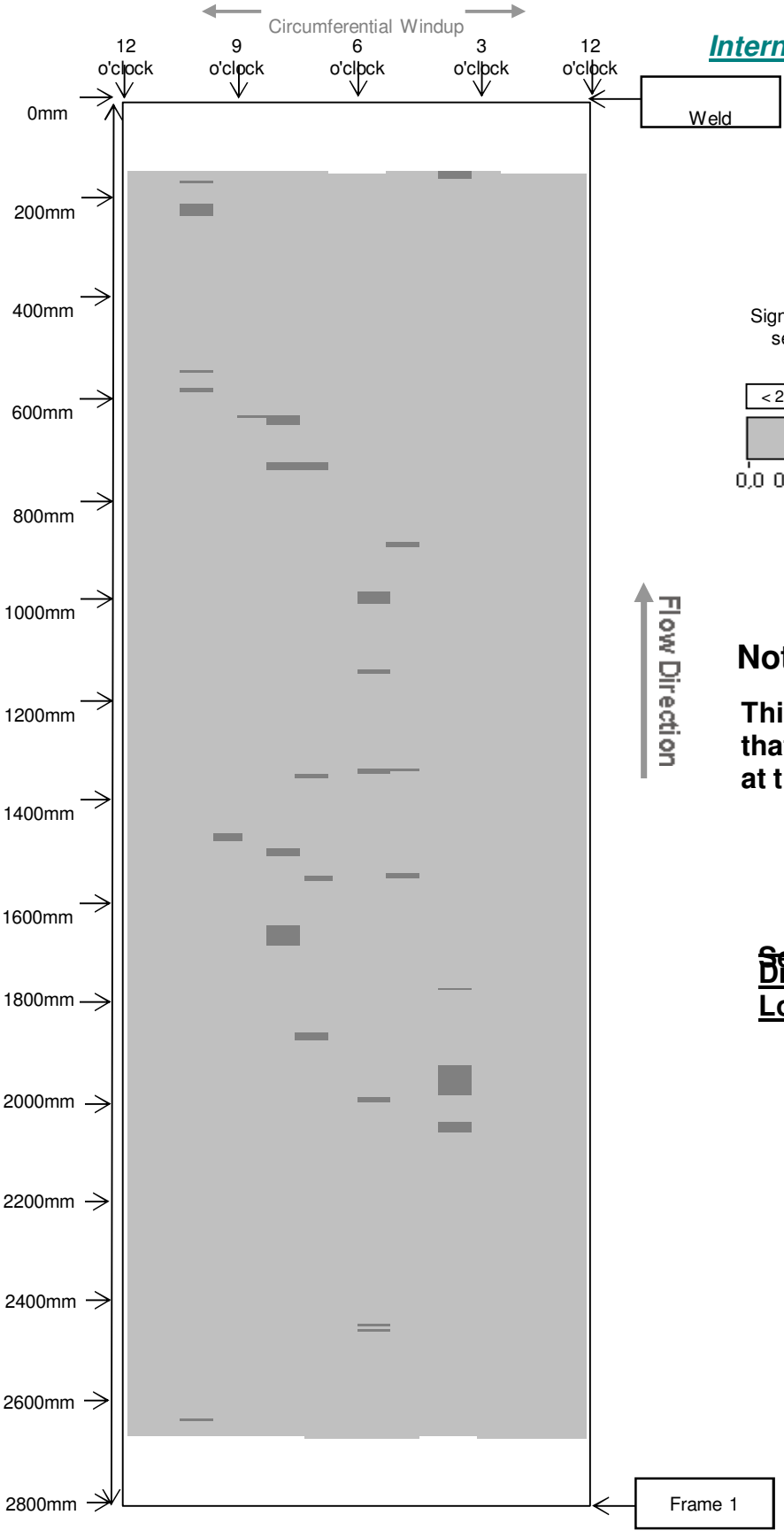
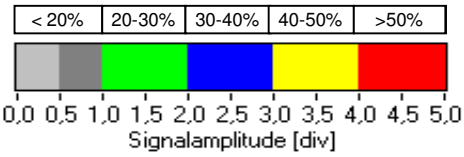
Internal Surface PipeScan Report



Signal Y-component / angle analysis window set for indication of internal defects with approx. depth information



Note:

This is a signal image BMP that is produced automatically at the time of the inspection

~~See Previous~~ Drawing For Location Details

Client	Client a
Location	site b
Pipe Identif.	6
Drawing	01
Area	5H
Section	Section 7 (5.30 Metre)
Date	26 April 2016
K-No.	00-16

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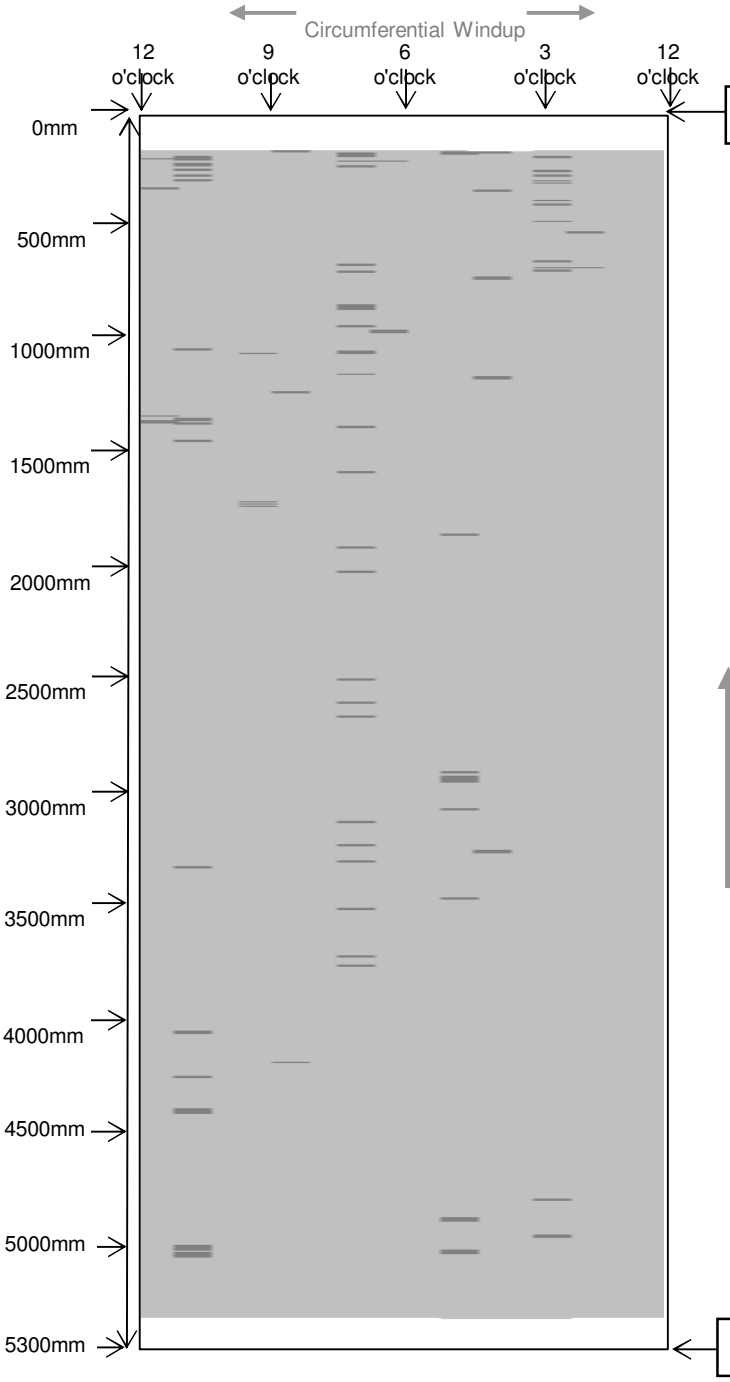
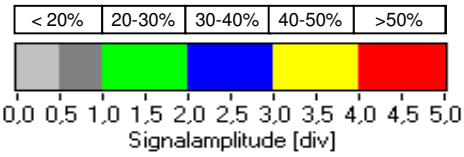
Internal Surface PipeScan Report



Signal Y-component / angle analysis window set for indication of internal defects with approx. depth information



Flow Direction

Note:

This is a signal image BMP that is produced automatically at the time of the inspection

~~See Previous~~ Drawing For Location Details

Client	Client a
Location	site b
Pipe Identif.	6
Drawing	01
Area	5H
Section	Section 8 (1.50 Metre)
Date	26 April 2016
K-No.	00-16

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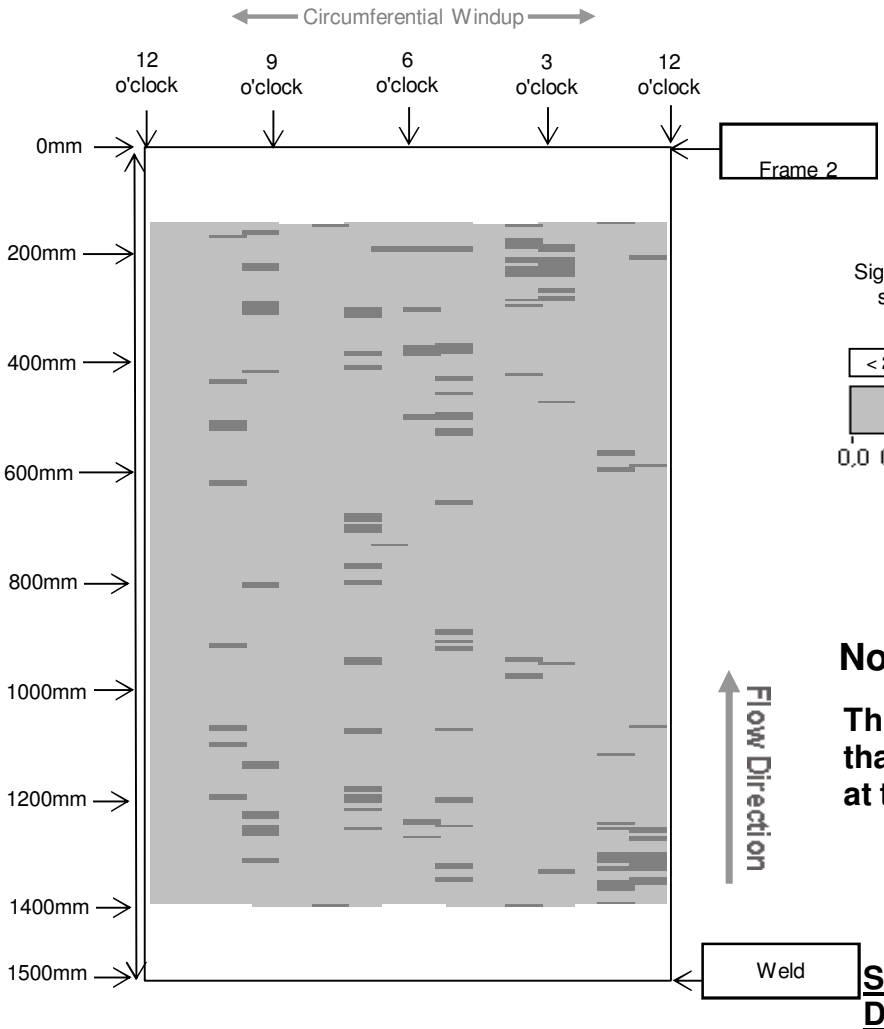
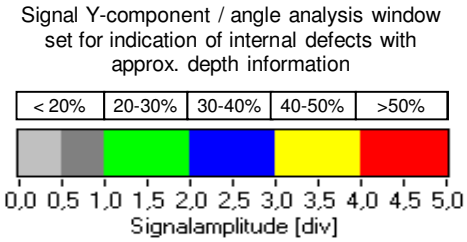
~~SLOFEC/MEC™~~
~~Internal Surface PipeScan Report~~





Note:

This is a signal image BMP that is produced automatically at the time of the inspection

See Previous Drawing For Location Details

Client	Client a
Location	site b
Pipe Identif.	6
Drawing	01
Area	5H
Section	Section 9 (4.00 Metre)
Date	26 April 2016
K-No.	00-16

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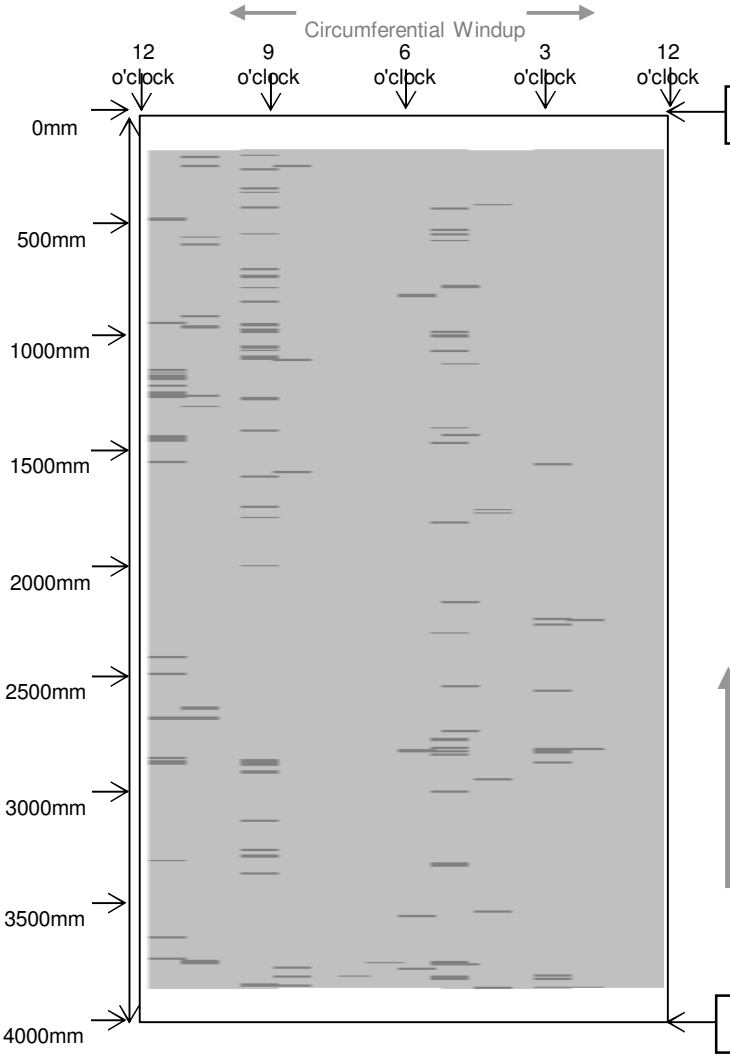
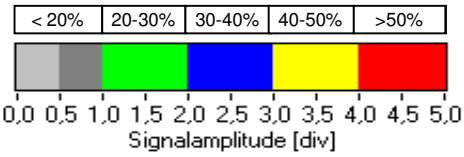
SLOFEC/MEC™
Internal Surface PipeScan Report



Signal Y-component / angle analysis window set for indication of internal defects with approx. depth information



Note:

This is a signal image BMP that is produced automatically at the time of the inspection

~~See Previous~~ Drawing For Location Details

Client	Client a
Location	site b
Pipe Identif.	6
Drawing	01
Area	5H
Section	Section 12 (2.50 Metre)
Date	26 April 2016
K-No.	00-16

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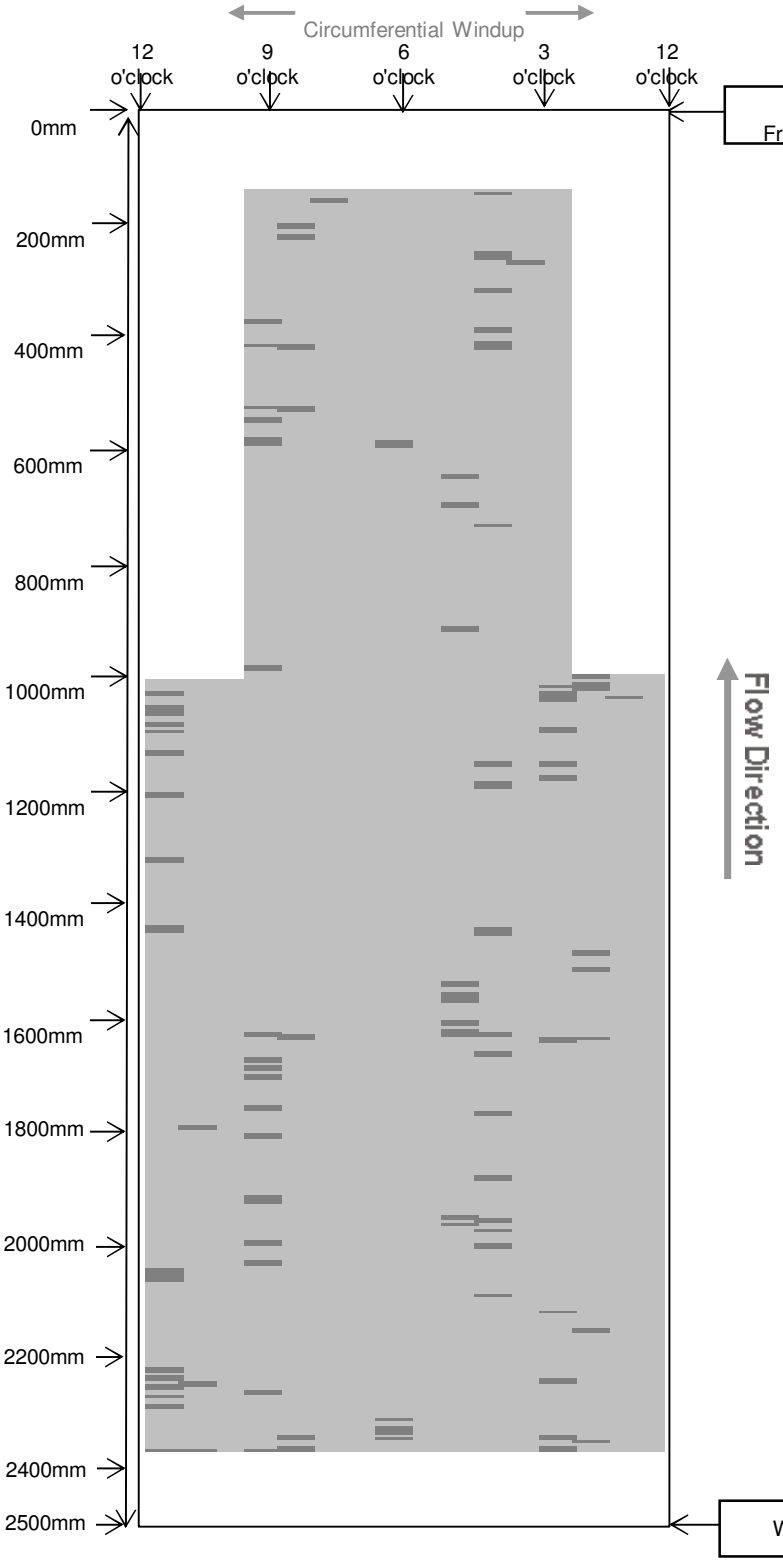
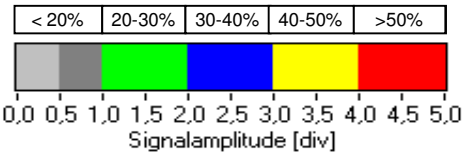
Internal Surface PipeScan Report



Flow Direction

Signal Y-component / angle analysis window set for indication of internal defects with approx. depth information



Note:

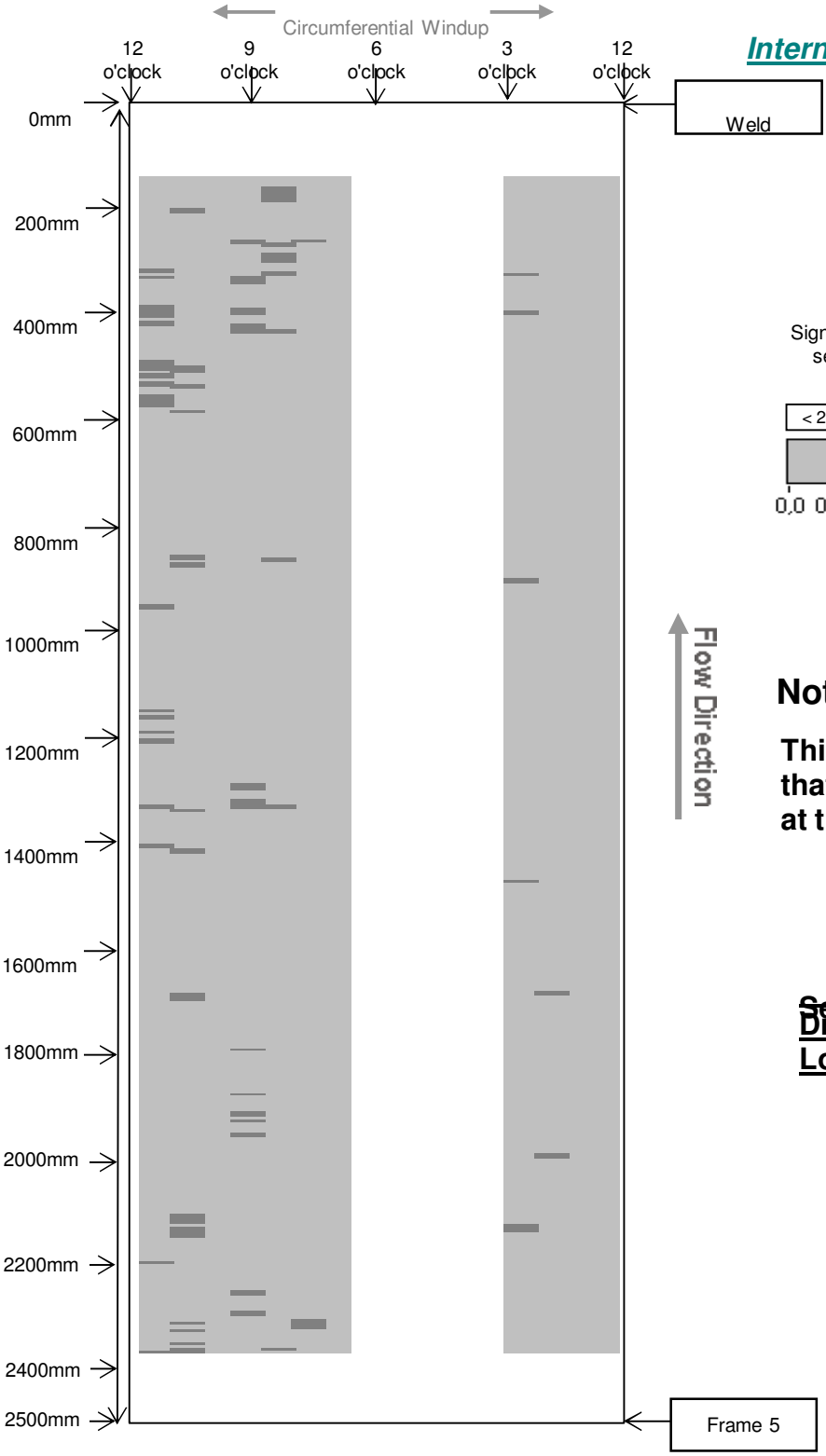
This is a signal image BMP that is produced automatically at the time of the inspection

~~See Previous~~ Drawing For Location Details

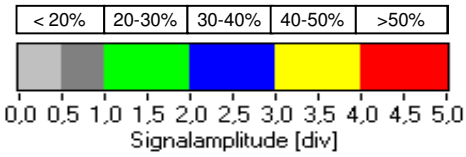
Client	Client a
Location	site b
Pipe Identif.	6
Drawing	01
Area	5H
Section	Section 13 (2.50 Metre)
Date	26 April 2016
K-No.	00-16

innospection

SLOFEC/MEC™
Internal Surface PipeScan Report



Signal Y-component / angle analysis window set for indication of internal defects with approx. depth information



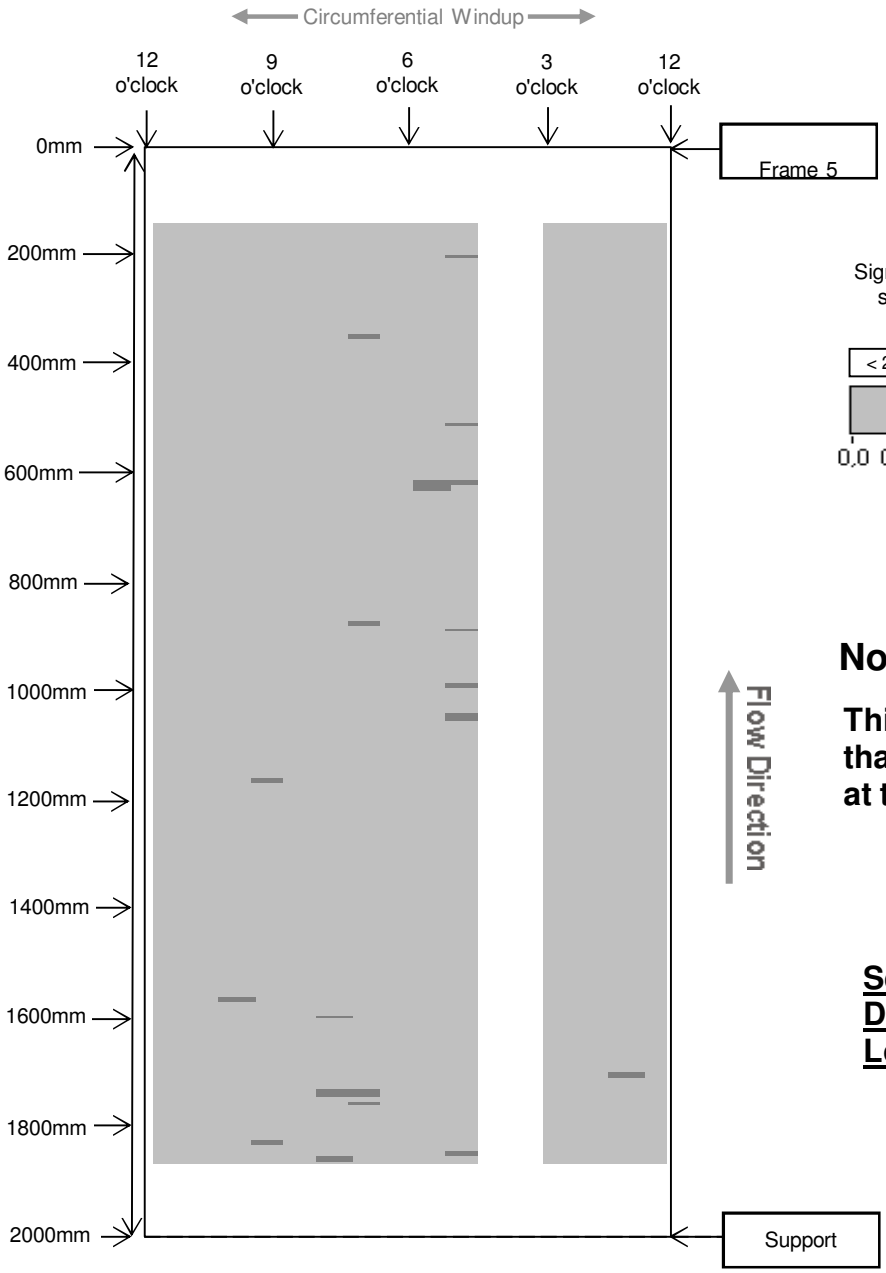
Note:

This is a signal image BMP that is produced automatically at the time of the inspection

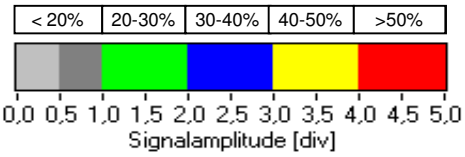
~~See Previous~~ Drawing For Location Details

Client	Client a
Location	site b
Pipe Identif.	6
Drawing	01
Area	5H
Section	Section 14 (2.00 Metre)
Date	26 April 2016
K-No.	00-16

SLOFEC/MEC™
Internal Surface PipeScan Report



Signal Y-component / angle analysis window set for indication of internal defects with approx. depth information



Note:

This is a signal image BMP that is produced automatically at the time of the inspection

See Previous Drawing For Location Details

Client	Client a
Location	site b
Pipe Identif.	6
Drawing	01
Area	5H
Section	Section 15 (3.00 Metre)
Date	26 April 2016
K-No.	00-16

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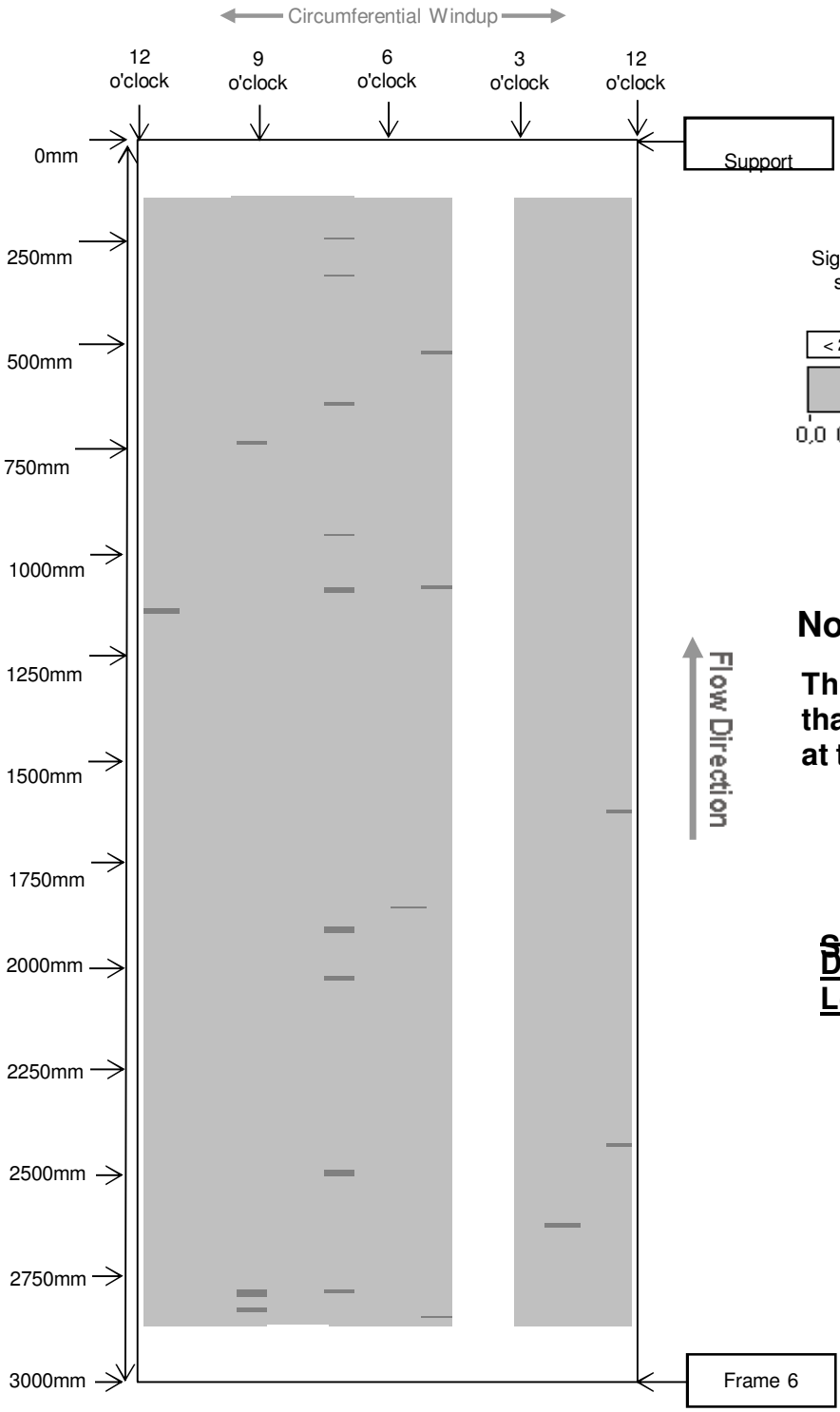
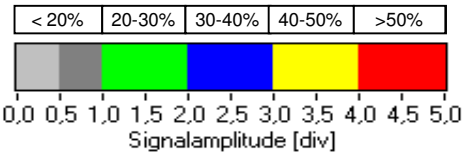
SLOFEC/MEC™
Internal Surface PipeScan Report



Signal Y-component / angle analysis window set for indication of internal defects with approx. depth information



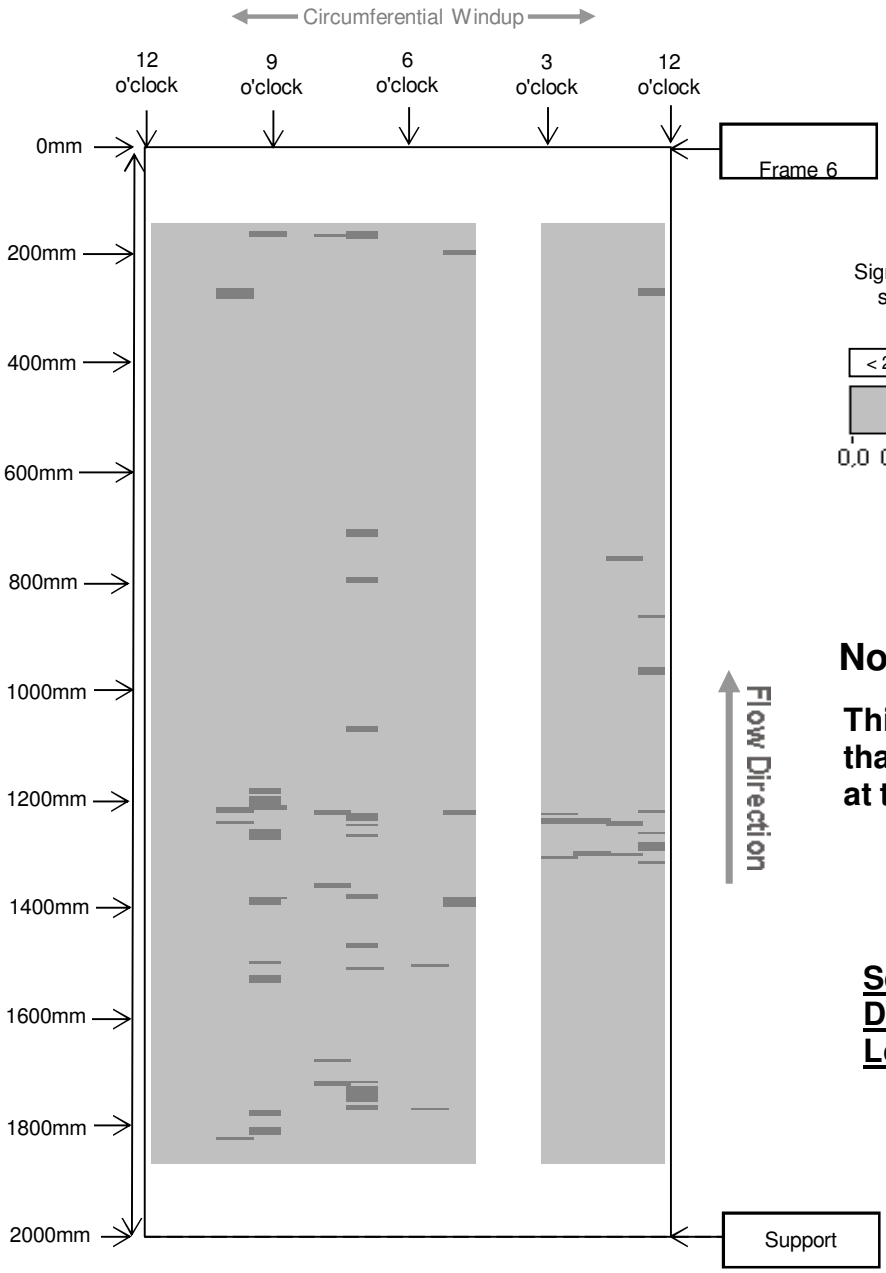
Note:

This is a signal image BMP that is produced automatically at the time of the inspection

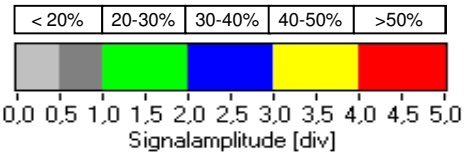
~~See Previous~~ **Drawing For Location Details**

Client	Client a
Location	site b
Pipe Identif.	6
Drawing	01
Area	5H
Section	Section 16 (2.00 Metre)
Date	26 April 2016
K-No.	00-16

SLOFEC/MEC™
Internal Surface PipeScan Report



Signal Y-component / angle analysis window set for indication of internal defects with approx. depth information



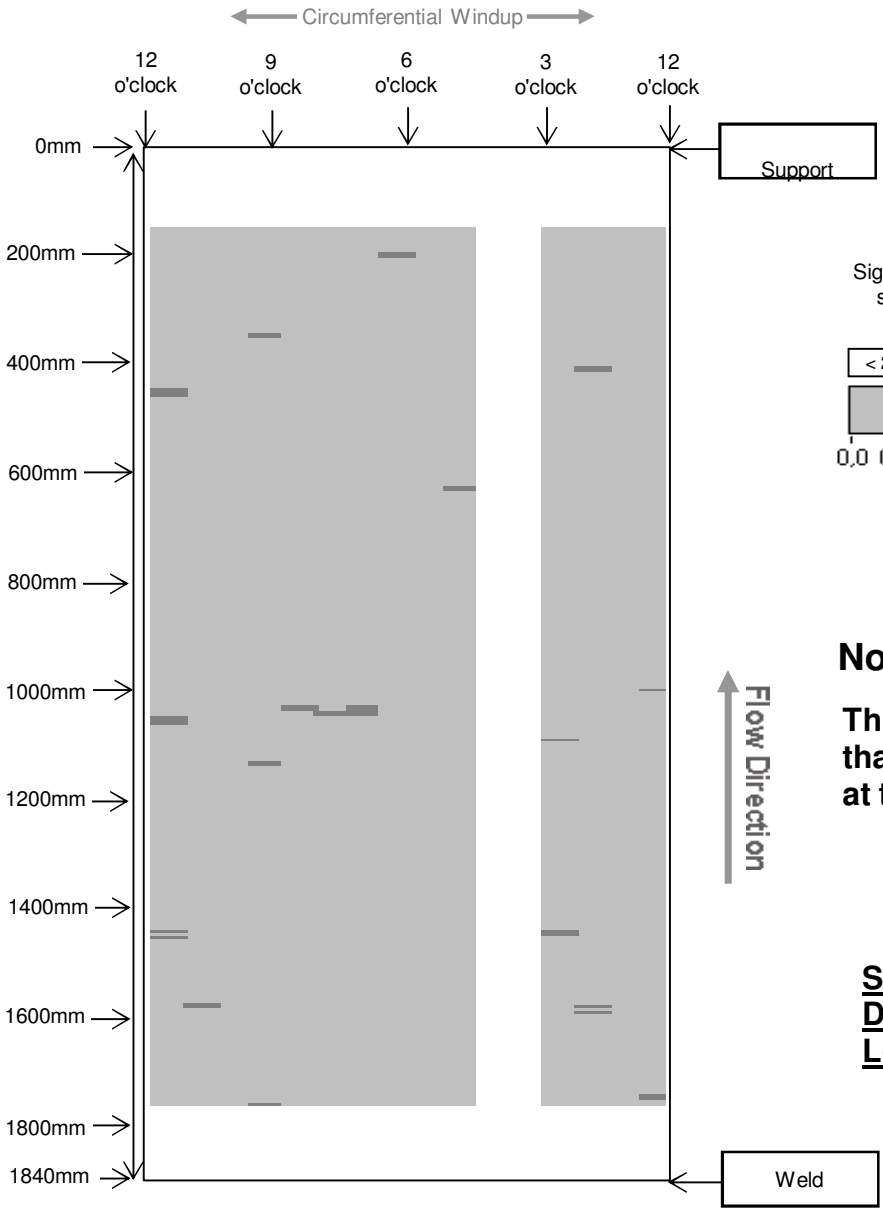
Note:

This is a signal image BMP that is produced automatically at the time of the inspection

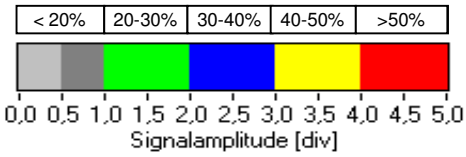
See Previous Drawing For Location Details

Client	Client a
Location	site b
Pipe Identif.	6
Drawing	01
Area	5H
Section	Section 17 (1.84 Metre)
Date	26 April 2016
K-No.	00-16

SLOFEC/MEC™
Internal Surface PipeScan Report



Signal Y-component / angle analysis window set for indication of internal defects with approx. depth information



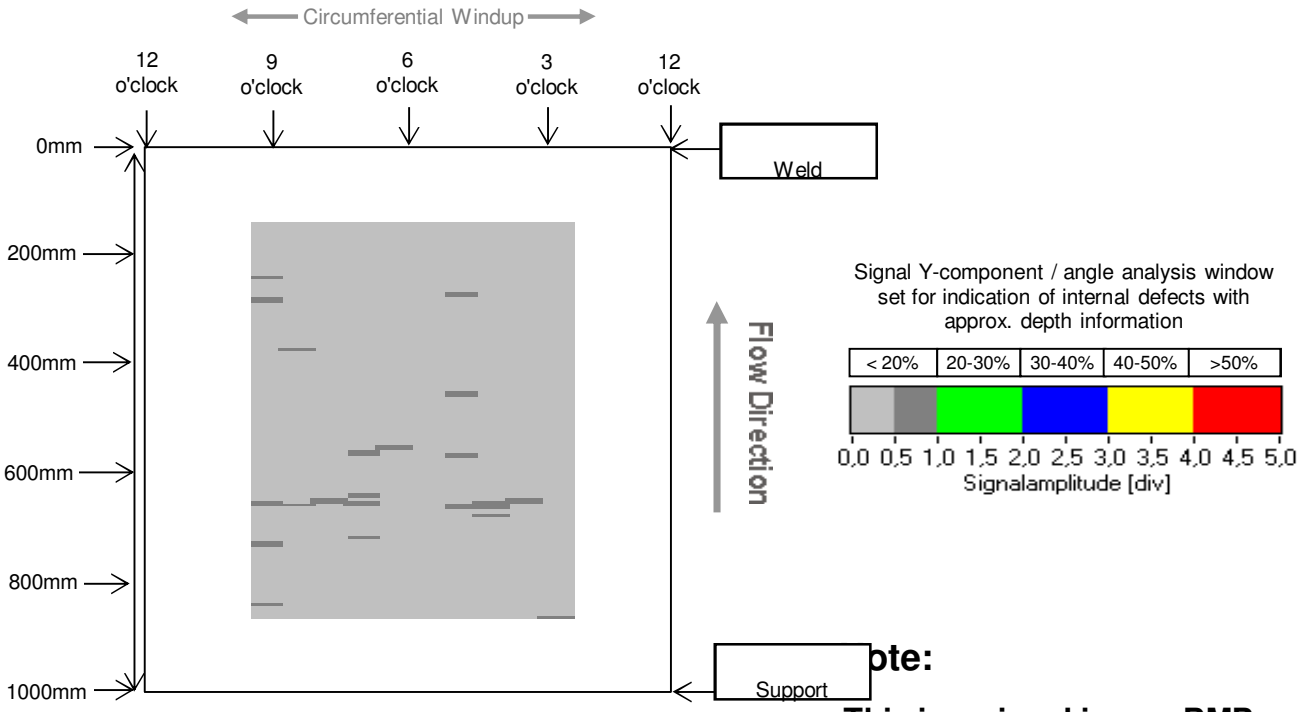
Note:

This is a signal image BMP that is produced automatically at the time of the inspection

See Previous Drawing For Location Details

Client	Client a
Location	site b
Pipe Identif.	6
Drawing	01
Area	5H
Section	Section 18 (1.00 Metre)
Date	26 April 2016
K-No.	00-16

SLOFEC/MEC™
Internal Surface PipeScan Report



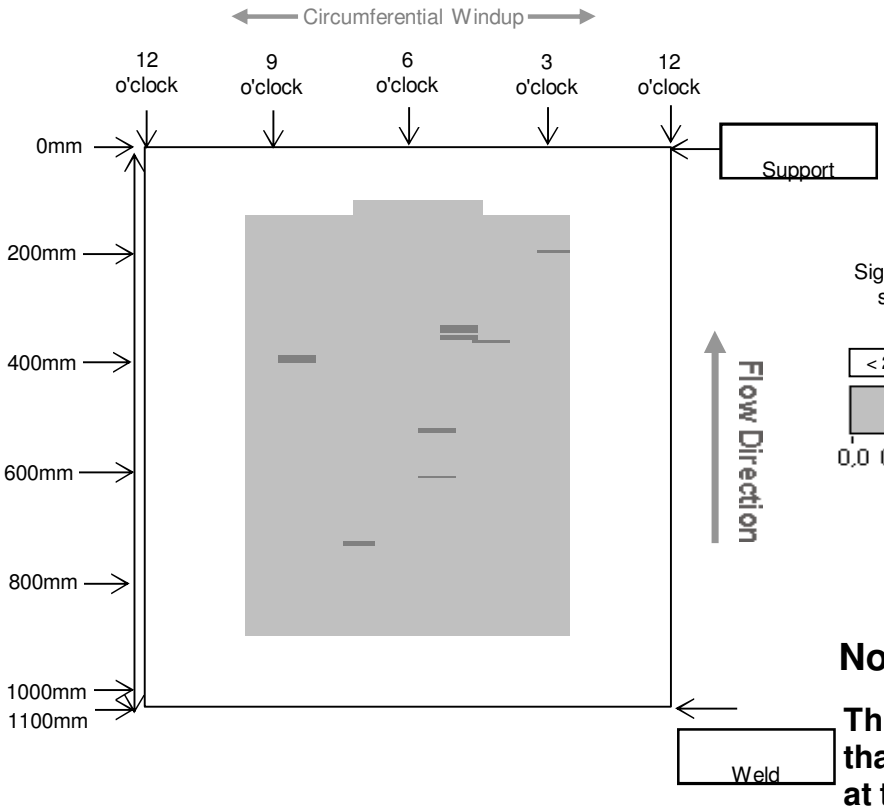
Note:

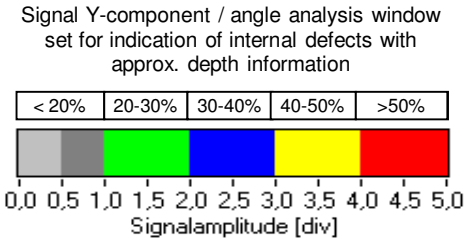
This is a signal image BMP that is produced automatically at the time of the inspection

See Previous Drawing For Location Details

Client	Client a
Location	site b
Pipe Identif.	6
Drawing	01
Area	5
Section	Section 19 (1.10 Metre)
Date	26 April 2016
K-No.	00-16

SLOFEC/MEC™
Internal Surface PipeScan Report





Note:

This is a signal image BMP that is produced automatically at the time of the inspection

See Previous Drawing For Location Details

Client	Client a
Location	site b
Pipe Identif.	6
Drawing	01
Area	5H
Section	Section 20 (2.00 Metre)
Date	26 April 2016
K-No.	00-16

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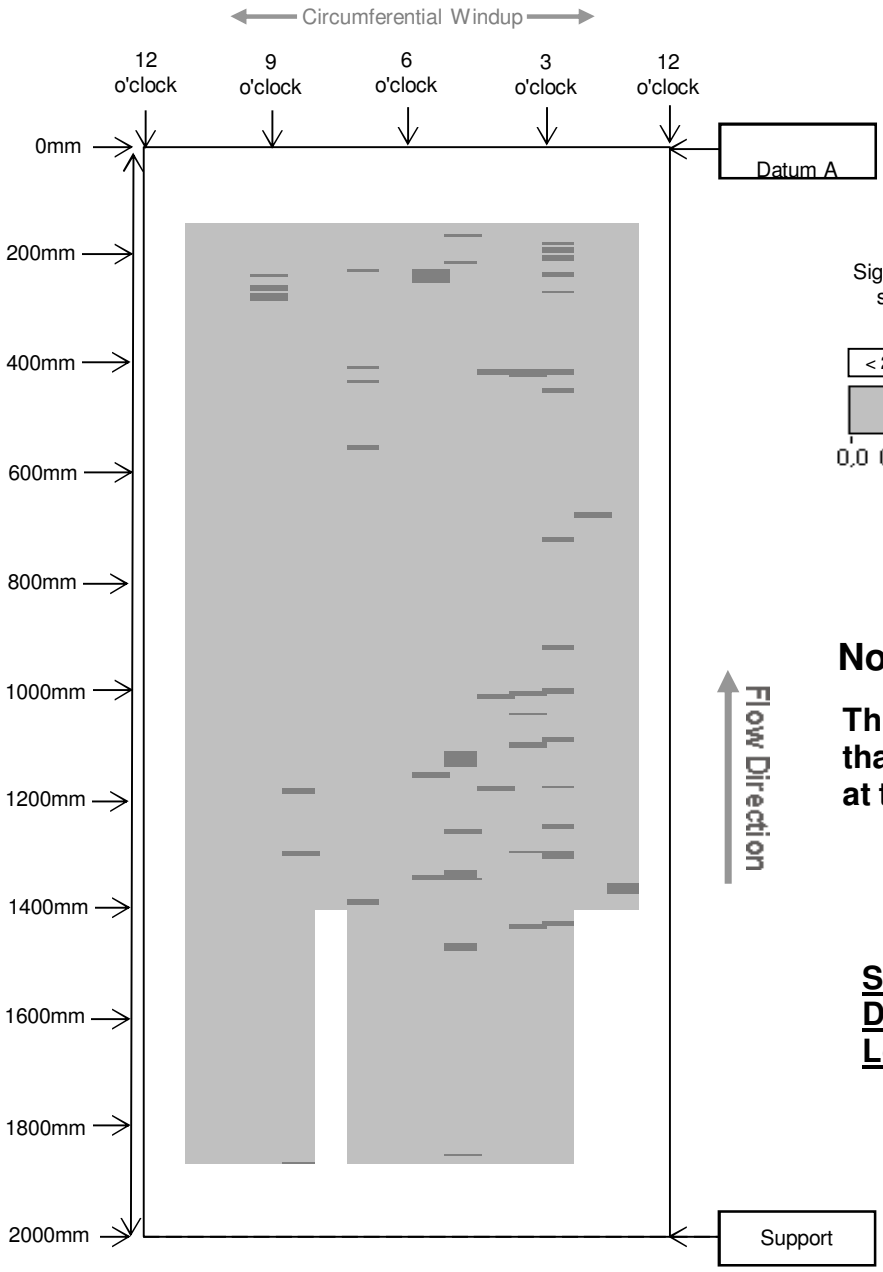
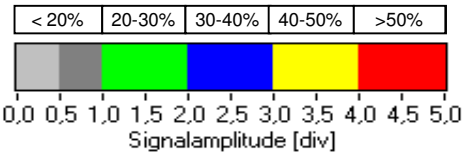
~~SLOFEC/MEC™~~
~~Internal Surface PipeScan Report~~



Signal Y-component / angle analysis window set for indication of internal defects with approx. depth information



Note:

This is a signal image BMP that is produced automatically at the time of the inspection

See Previous Drawing For Location Details

Client	Client a
Location	site a
Pipe Identif.	6
Drawing	01
Area	5H
Section	Section 21 (2.00 Metre)
Date	26 April 2016
K-No.	00-16

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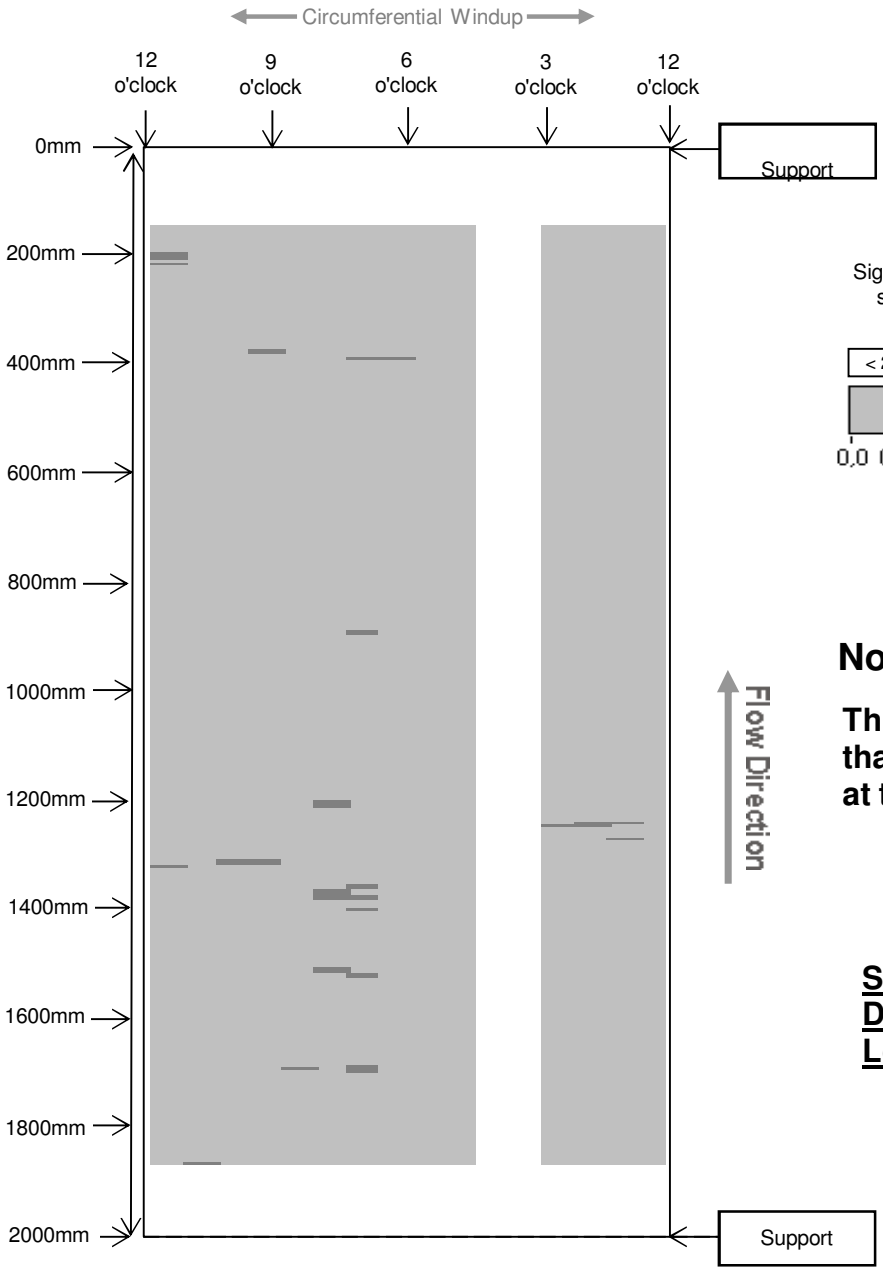
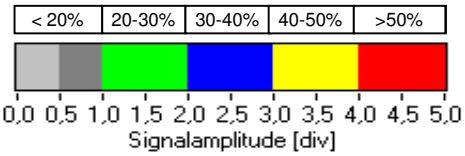
~~SLOFEC/MEC™~~
~~Internal Surface PipeScan Report~~



Signal Y-component / angle analysis window set for indication of internal defects with approx. depth information



Note:

This is a signal image BMP that is produced automatically at the time of the inspection

See Previous Drawing For Location Details

Client	Client a
Location	site b
Pipe Identif.	6
Drawing	01
Area	5H
Section	Section 22 (2.84 Metre)
Date	26 April 2016
K-No.	00-16

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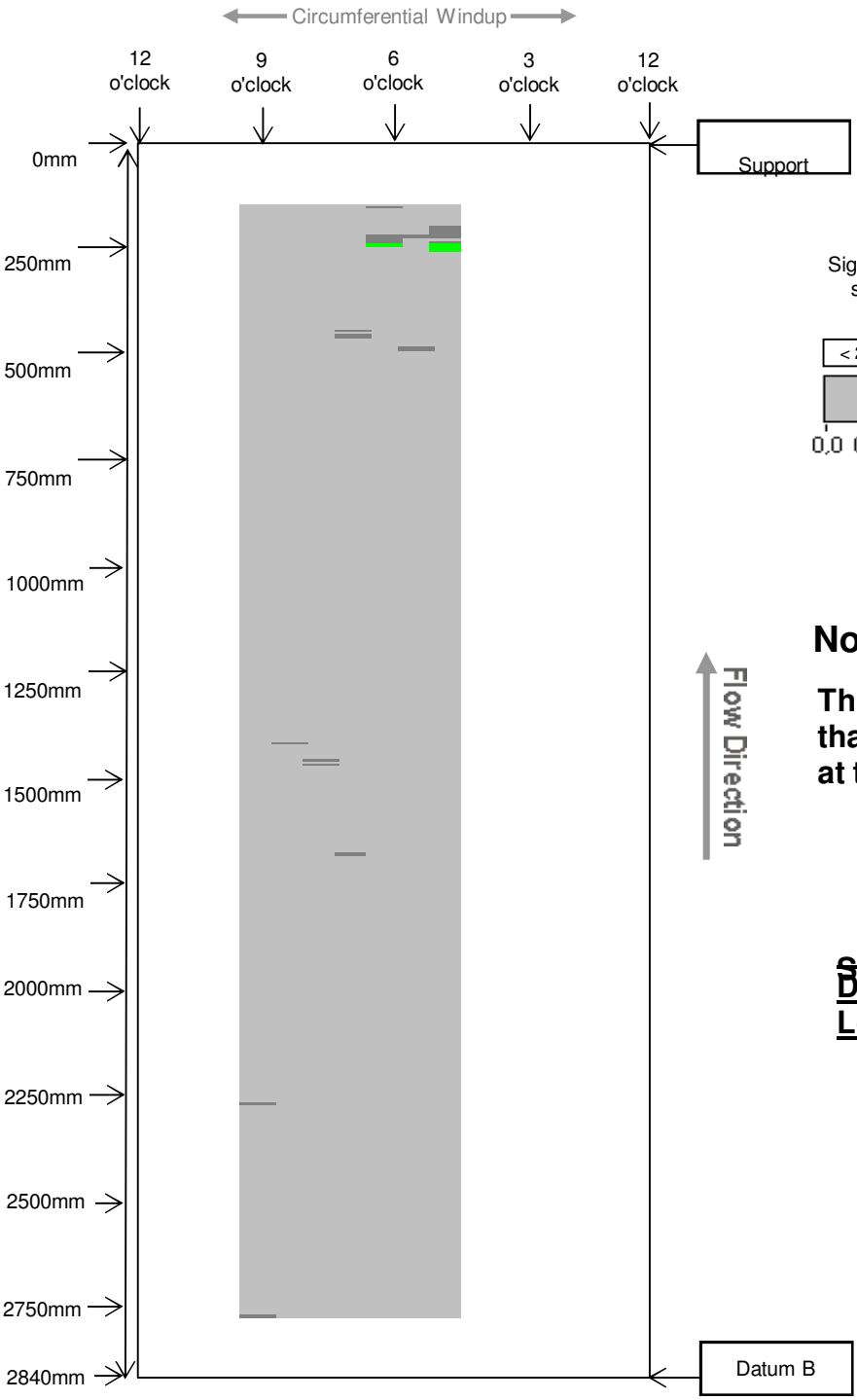
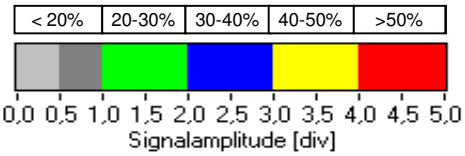
Internal Surface PipeScan Report



Signal Y-component / angle analysis window set for indication of internal defects with approx. depth information



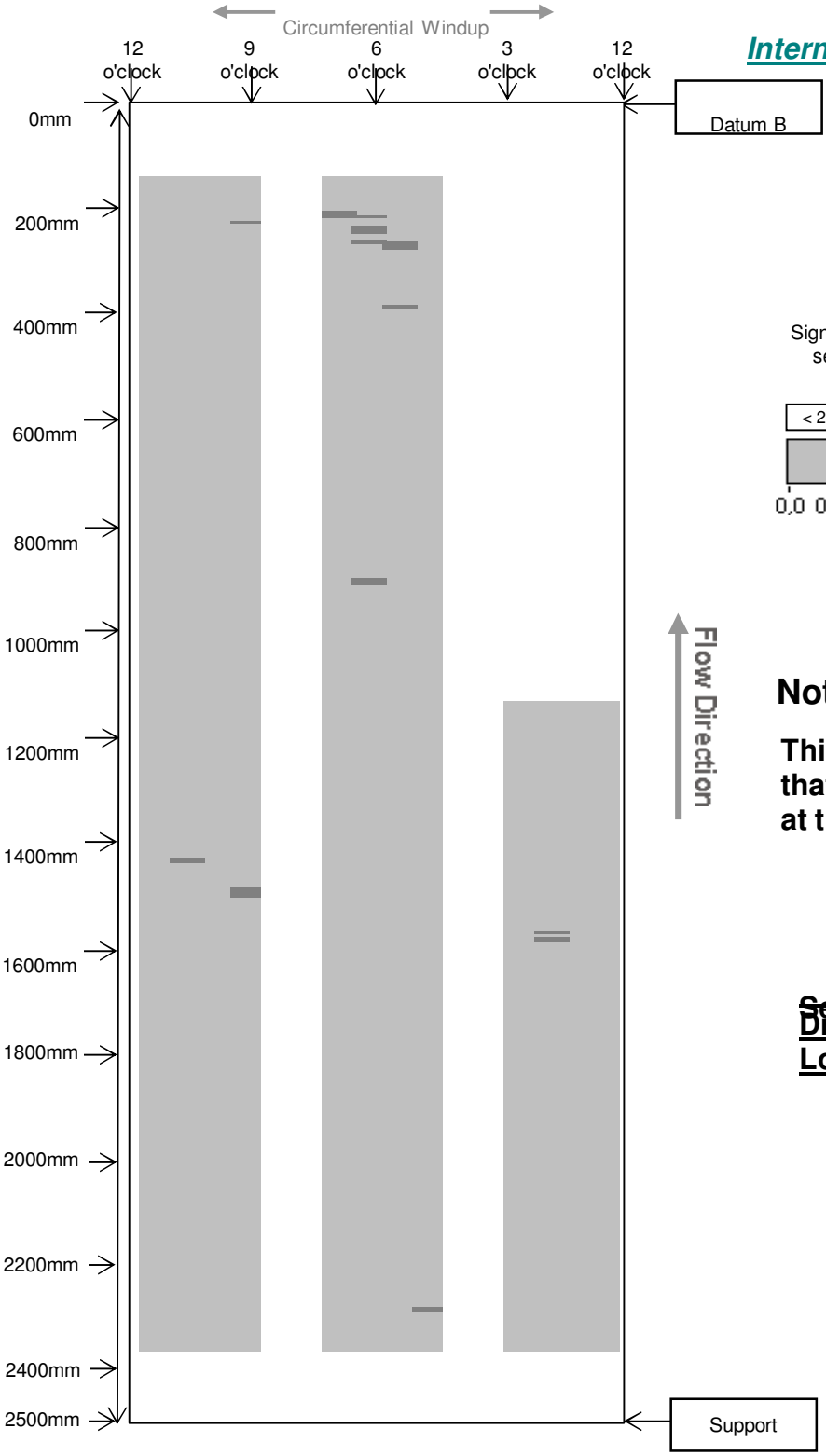
Note:

This is a signal image BMP that is produced automatically at the time of the inspection

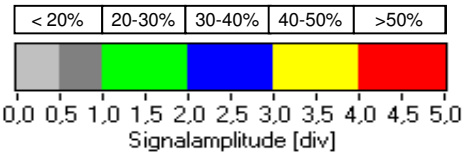
~~See Previous~~ Drawing For Location Details

Client	Client a
Location	site b
Pipe Identif.	6
Drawing	01
Area	5H
Section	Section 23 (2.50 Metre)
Date	26 April 2016
K-No.	00-16

SLOFEC/MEC™
Internal Surface PipeScan Report



Signal Y-component / angle analysis window set for indication of internal defects with approx. depth information



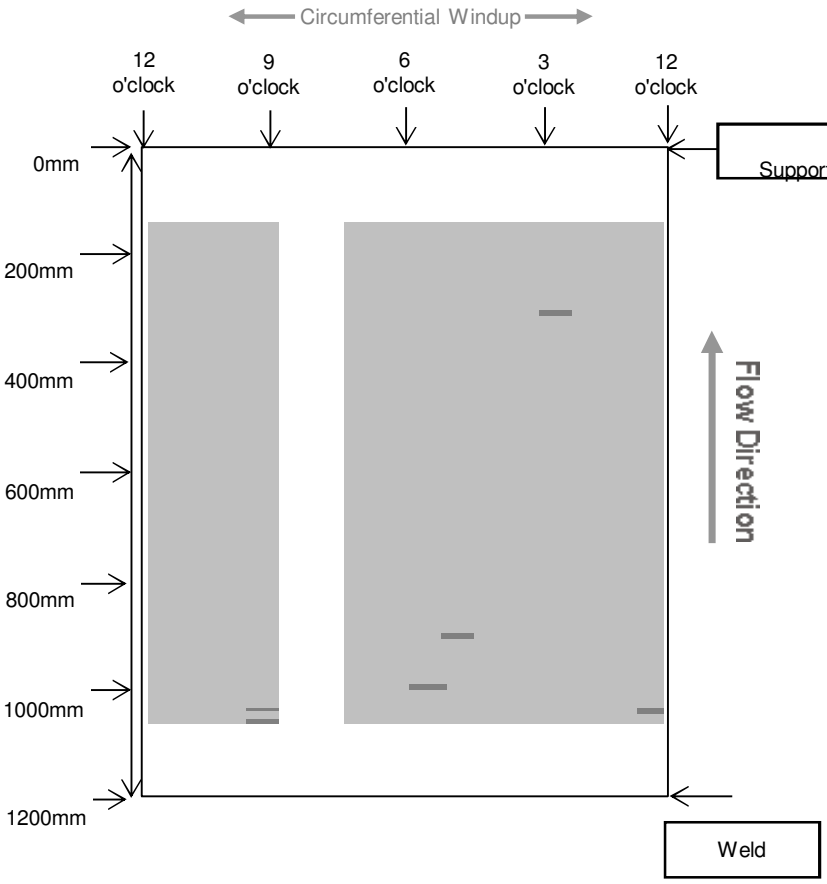
Note:

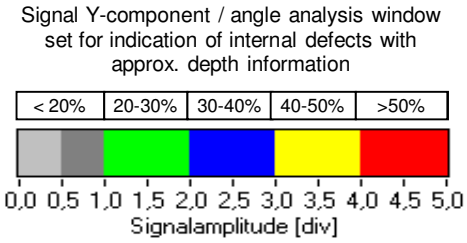
This is a signal image BMP that is produced automatically at the time of the inspection

~~See Previous~~ Drawing For Location Details

Client	Client a
Location	site b
Pipe Identif.	6
Drawing	01
Area	5H
Section	Section 24 (1.20 Metre)
Date	26 April 2016
K-No.	00-16

SLOFEC/MEC™
Internal Surface PipeScan Report





Note:

This is a signal image BMP that is produced automatically at the time of the inspection

See Previous Drawing For Location Details

Client	Client a
Location	site b
Pipe Identif.	6
Drawing	01
Area	5H
Section	Section 25 (3.20 Metre)
Date	26 April 2016
K-No.	00-16

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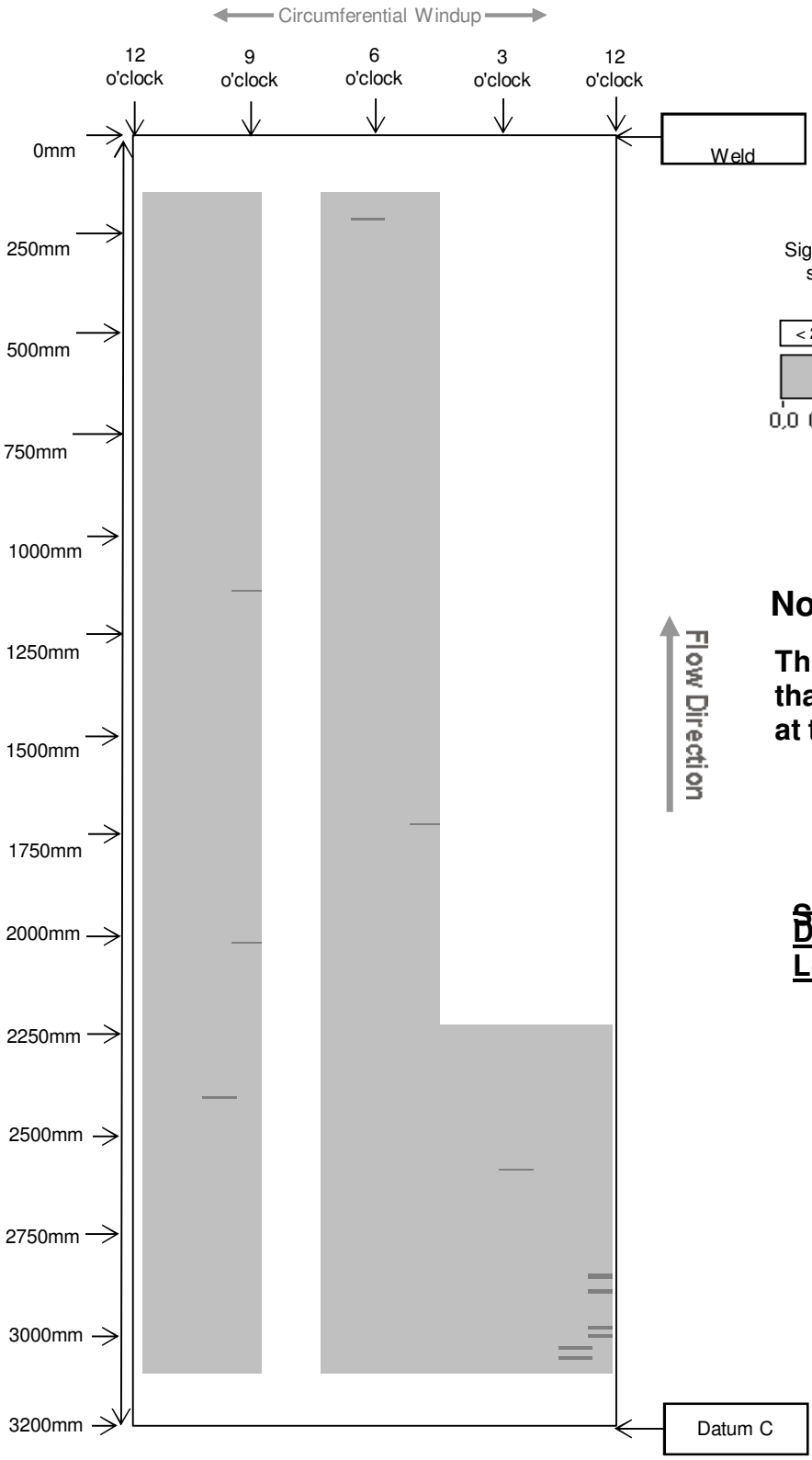
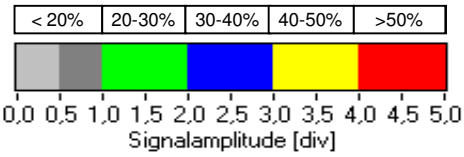
SLOFEC/MEC™
Internal Surface PipeScan Report



Signal Y-component / angle analysis window set for indication of internal defects with approx. depth information



Note:

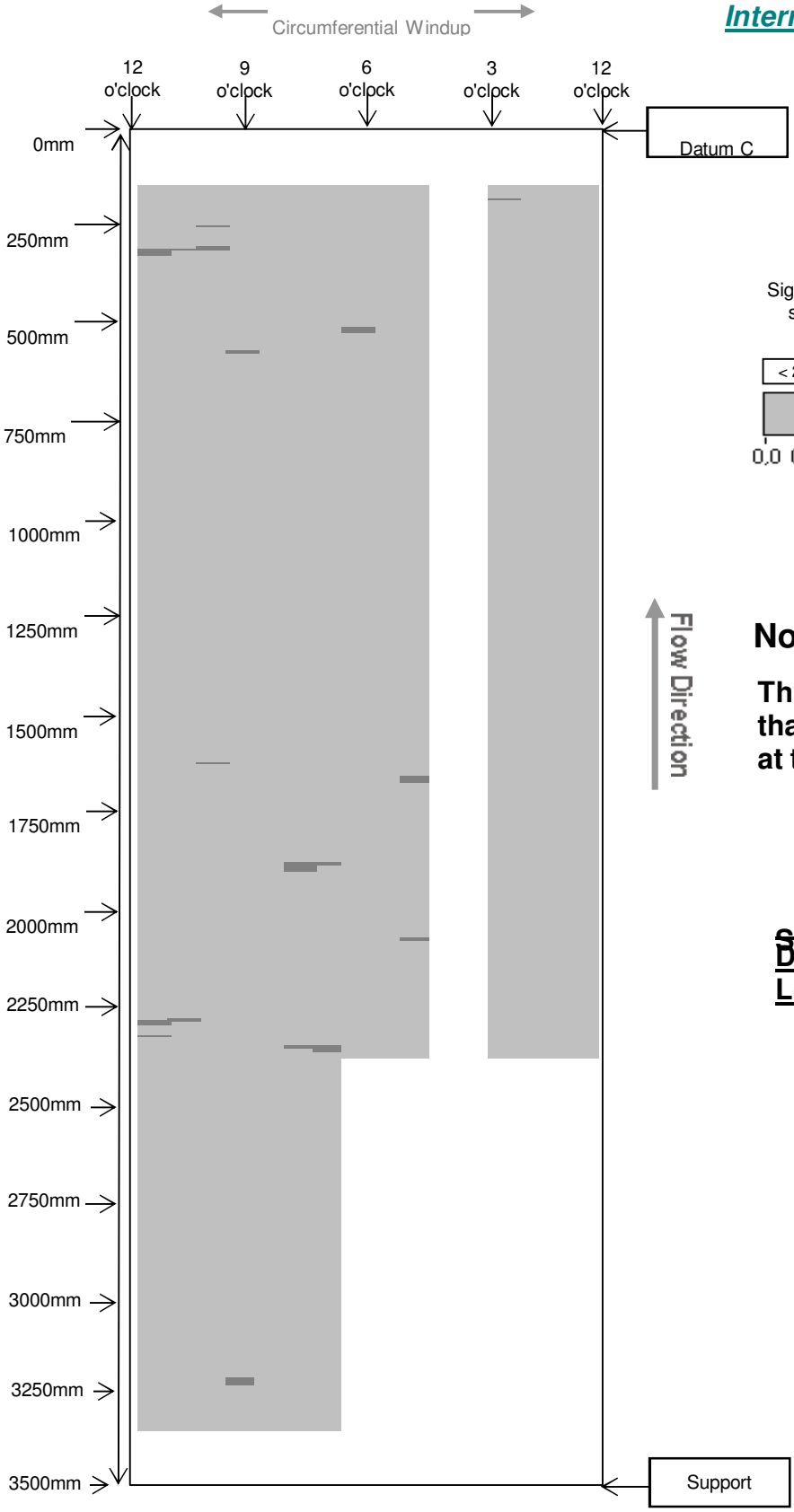
This is a signal image BMP that is produced automatically at the time of the inspection

~~See Previous~~ Drawing For Location Details

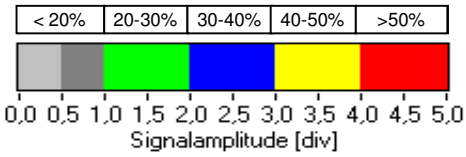
Client	Client a
Location	site b
Pipe Identif.	6
Drawing	01
Area	5H
Section	Section 26 (3.50 Metre)
Date	26 April 2016
K-No.	00-16

innospection

SLOFEC/MEC™
Internal Surface PipeScan Report



Signal Y-component / angle analysis window set for indication of internal defects with approx. depth information



Note:

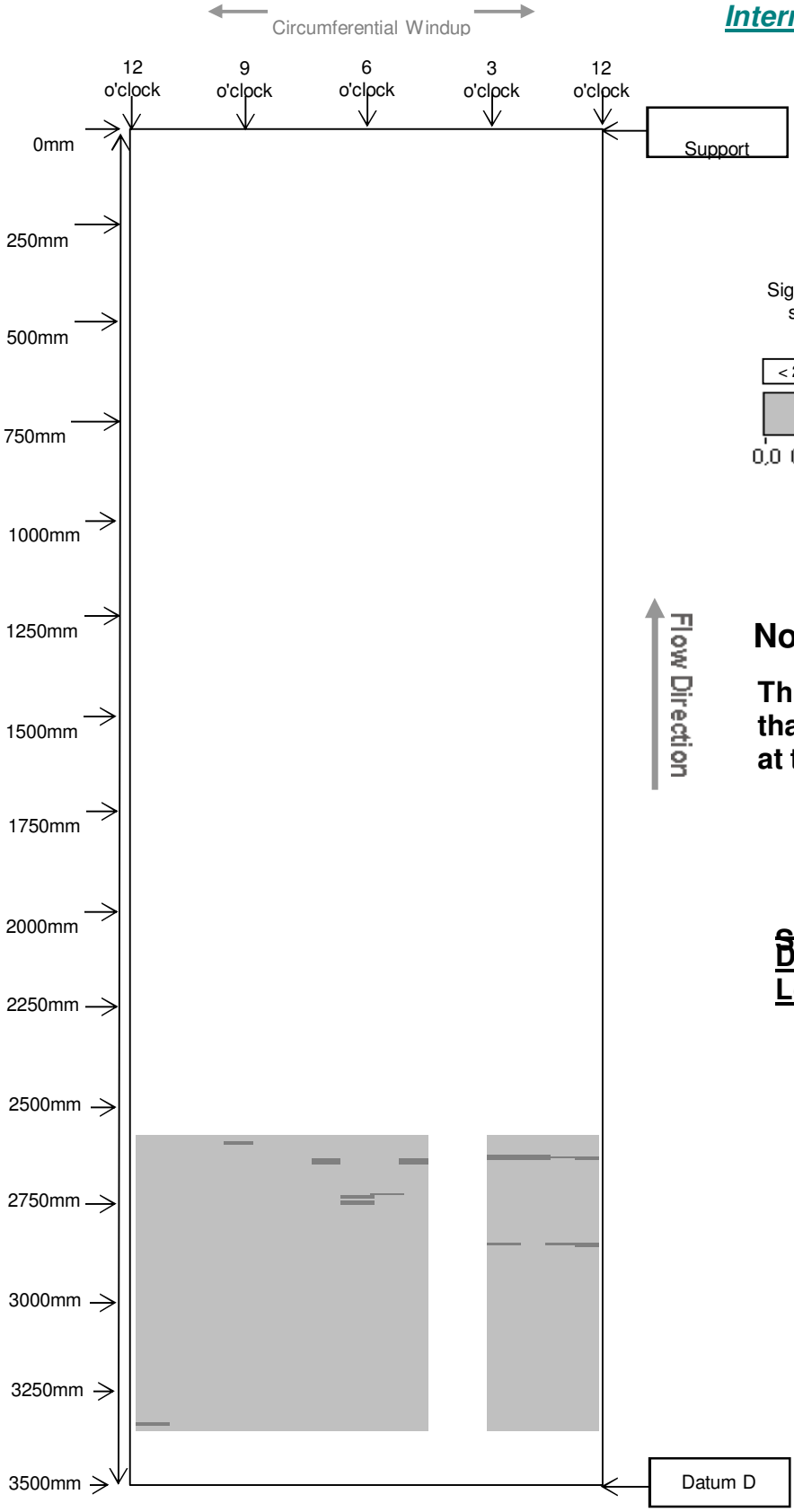
This is a signal image BMP that is produced automatically at the time of the inspection

See Previous Drawing For Location Details

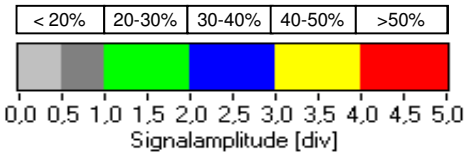
Client	Client a
Location	site b
Pipe Identif.	6
Drawing	01
Area	5H
Section	Section 27 (3.50 Metre)
Date	26 April 2016
K-No.	00-16

innospection

SLOFEC/MEC™
Internal Surface PipeScan Report



Signal Y-component / angle analysis window set for indication of internal defects with approx. depth information



Flow Direction

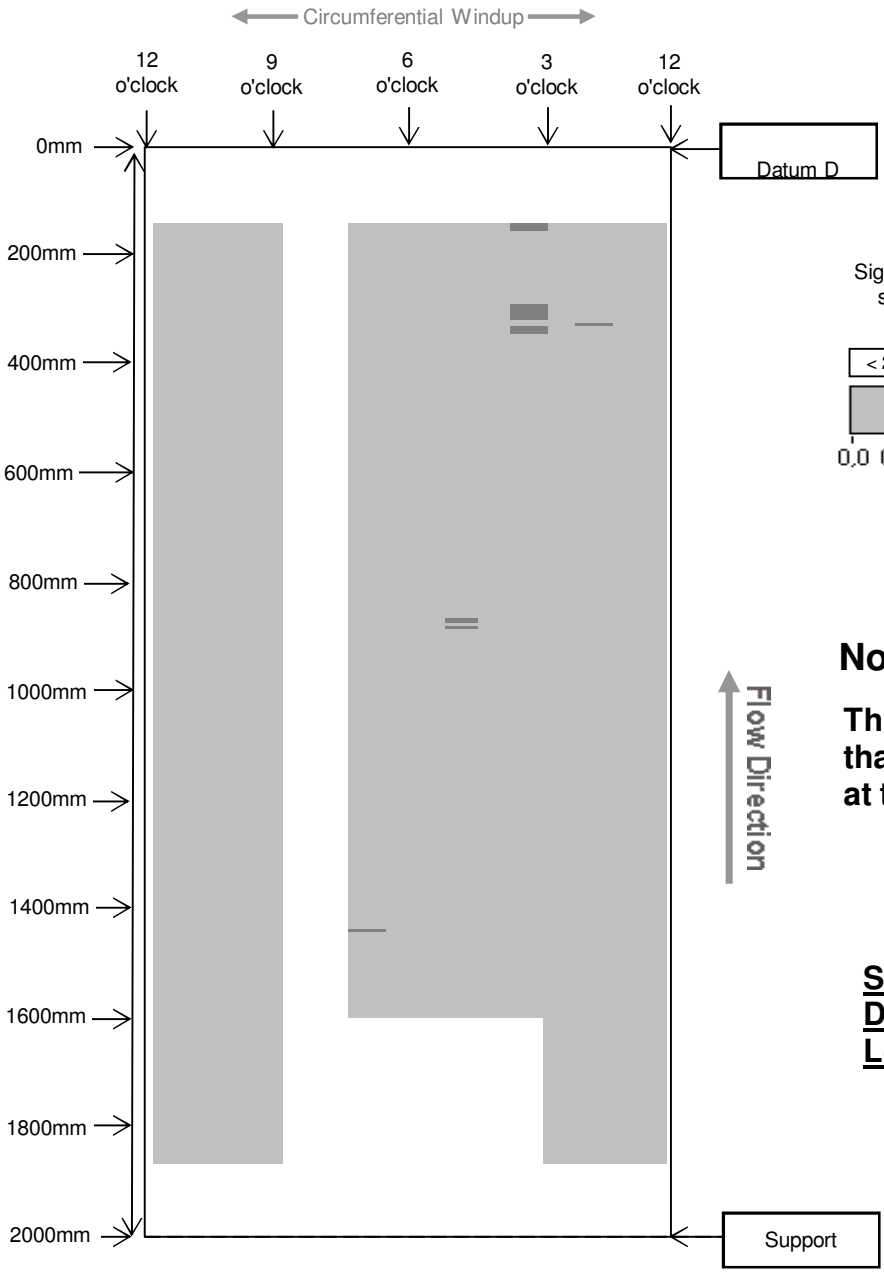
Note:

This is a signal image BMP that is produced automatically at the time of the inspection

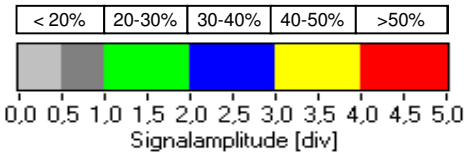
~~See Previous~~ Drawing For Location Details

Client	Client a
Location	site b
Pipe Identif.	6
Drawing	01
Area	5H
Section	Section 29 (2.00 Metre)
Date	26 April 2016
K-No.	00-16

SLOFEC/MEC™
Internal Surface PipeScan Report



Signal Y-component / angle analysis window set for indication of internal defects with approx. depth information



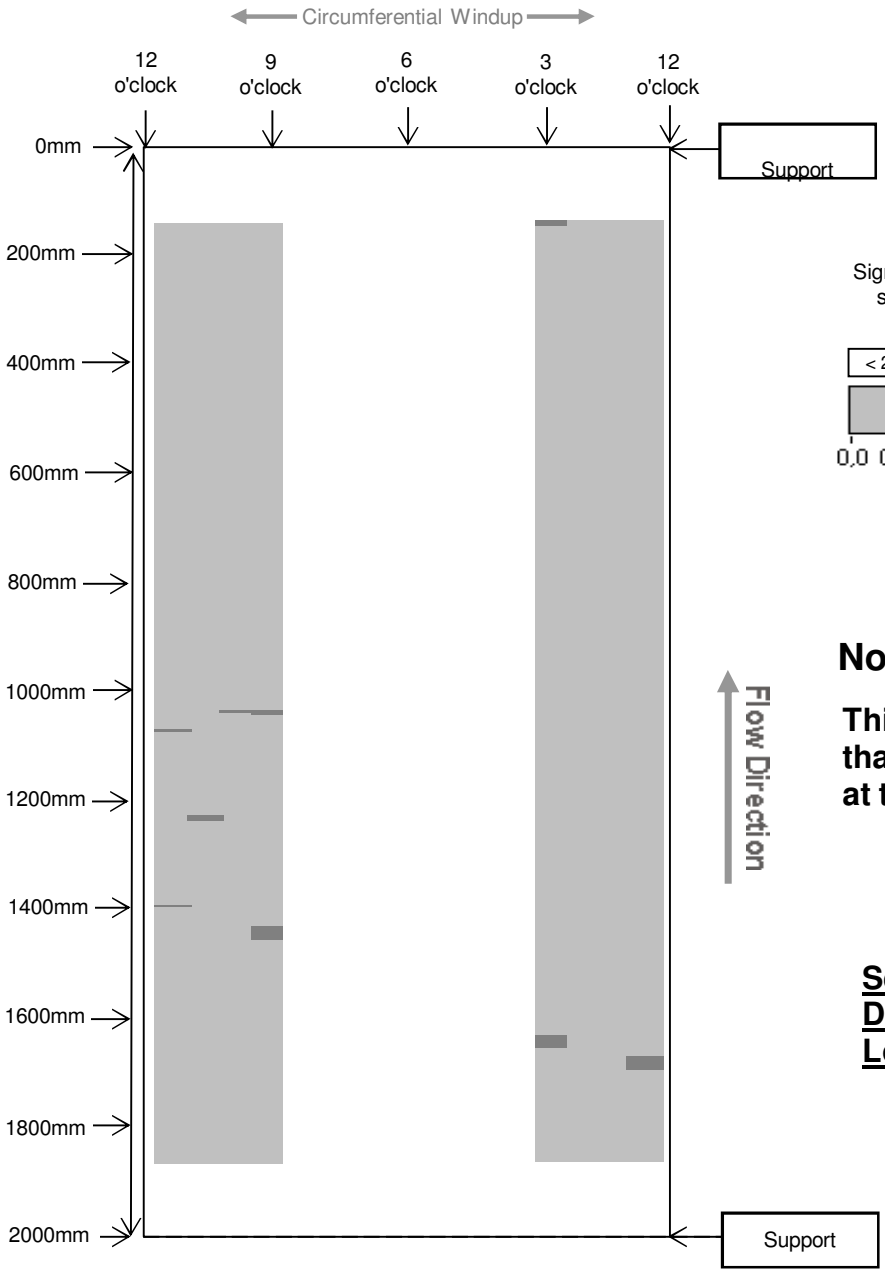
Note:

This is a signal image BMP that is produced automatically at the time of the inspection

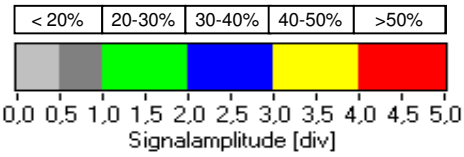
See Previous Drawing For Location Details

Client	Client a
Location	site b
Pipe Identif.	6
Drawing	01
Area	5H
Section	Section 30 (2.00 Metre)
Date	26 April 2016
K-No.	00-16

SLOFEC/MEC™
Internal Surface PipeScan Report



Signal Y-component / angle analysis window set for indication of internal defects with approx. depth information



Note:

This is a signal image BMP that is produced automatically at the time of the inspection

See Previous Drawing For Location Details

Client	Client a
Location	site b
Pipe Identif.	6
Drawing	01
Area	5H
Section	Section 31 (4.00 Metre)
Date	26 April 2016
K-No.	00-16

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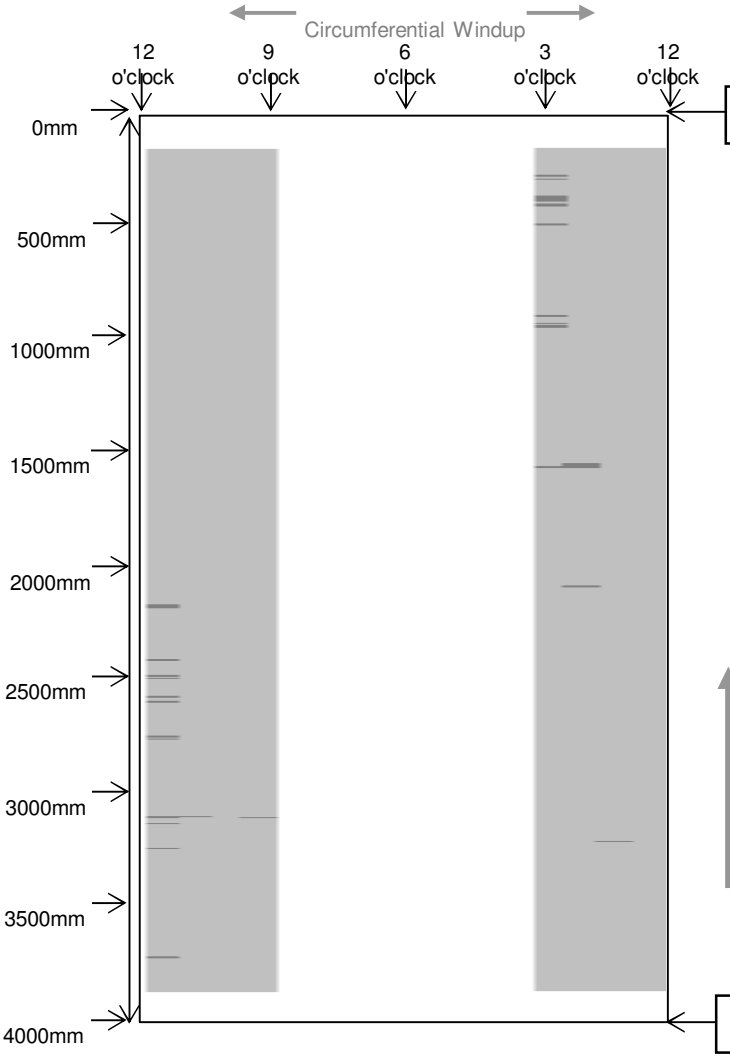
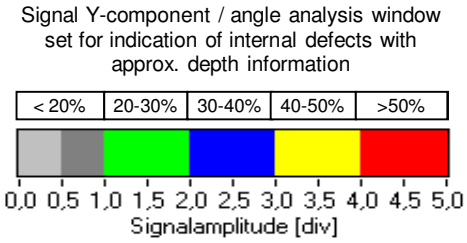
SLOFEC/MEC™
Internal Surface PipeScan Report





Note:

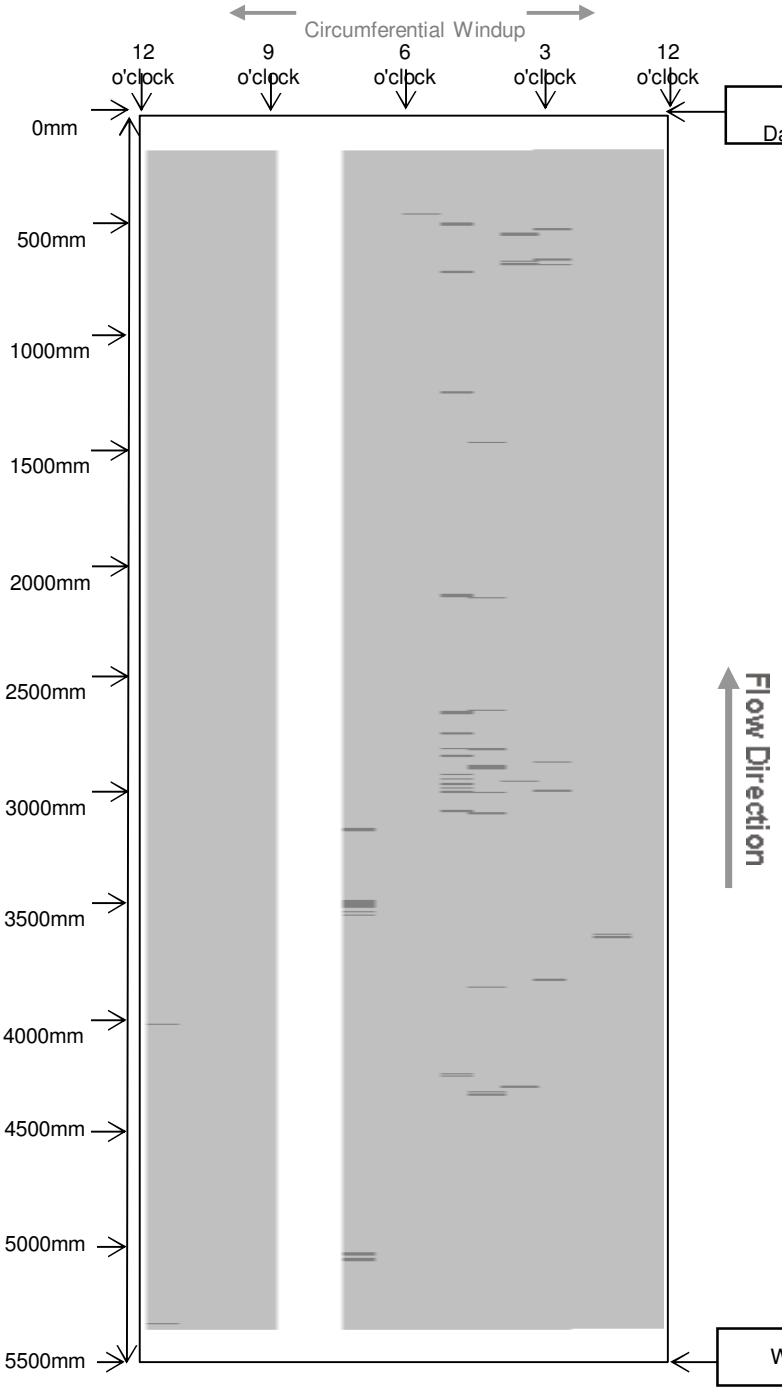
This is a signal image BMP that is produced automatically at the time of the inspection

~~See Previous Drawing For~~ Location Details

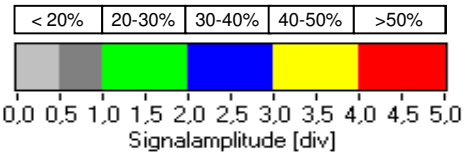
Client	Client a
Location	site b
Pipe Identif.	6
Drawing	01
Area	5H
Section	Section 32 (5.50 Metre)
Date	26 April 2016
K-No.	00-16

innospection

SLOFEC/MEC™
Internal Surface PipeScan Report



Signal Y-component / angle analysis window set for indication of internal defects with approx. depth information



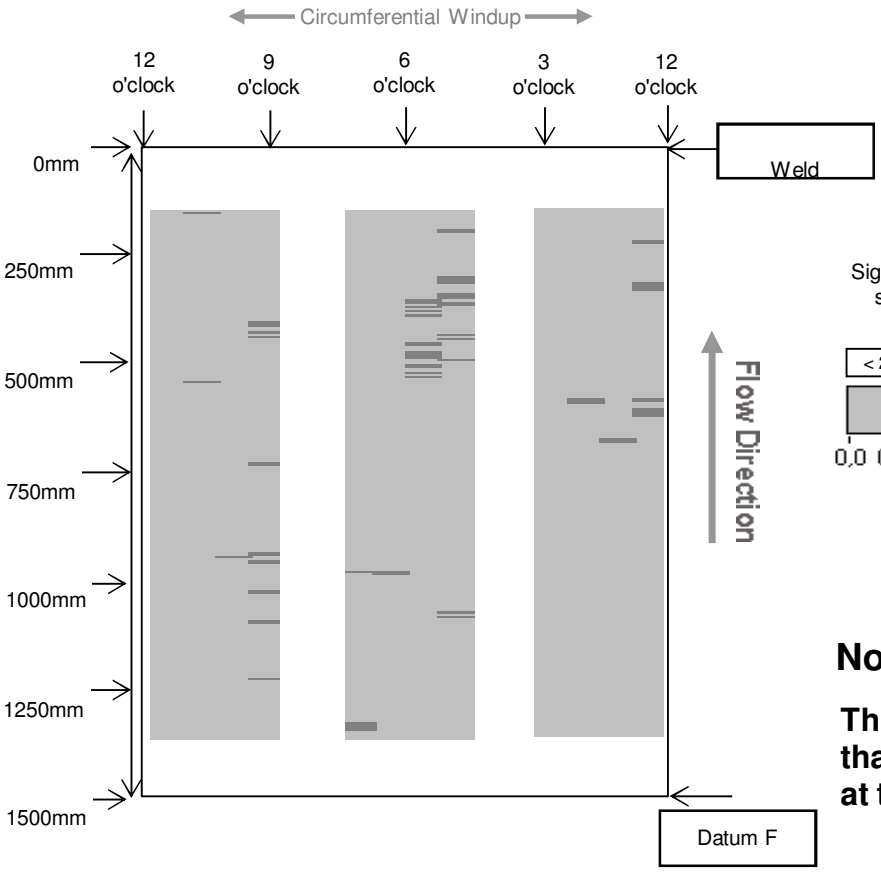
Note:

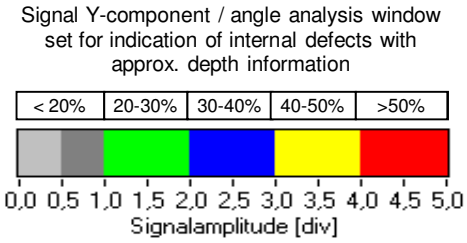
This is a signal image BMP that is produced automatically at the time of the inspection

~~See Previous~~ Drawing For Location Details

Client	Client a
Location	site b
Pipe Identif.	6
Drawing	01
Area	5H
Section	Section 33 (1.50 Metre)
Date	26 April 2016
K-No.	00-16

SLOFEC/MEC™
Internal Surface PipeScan Report





Note:

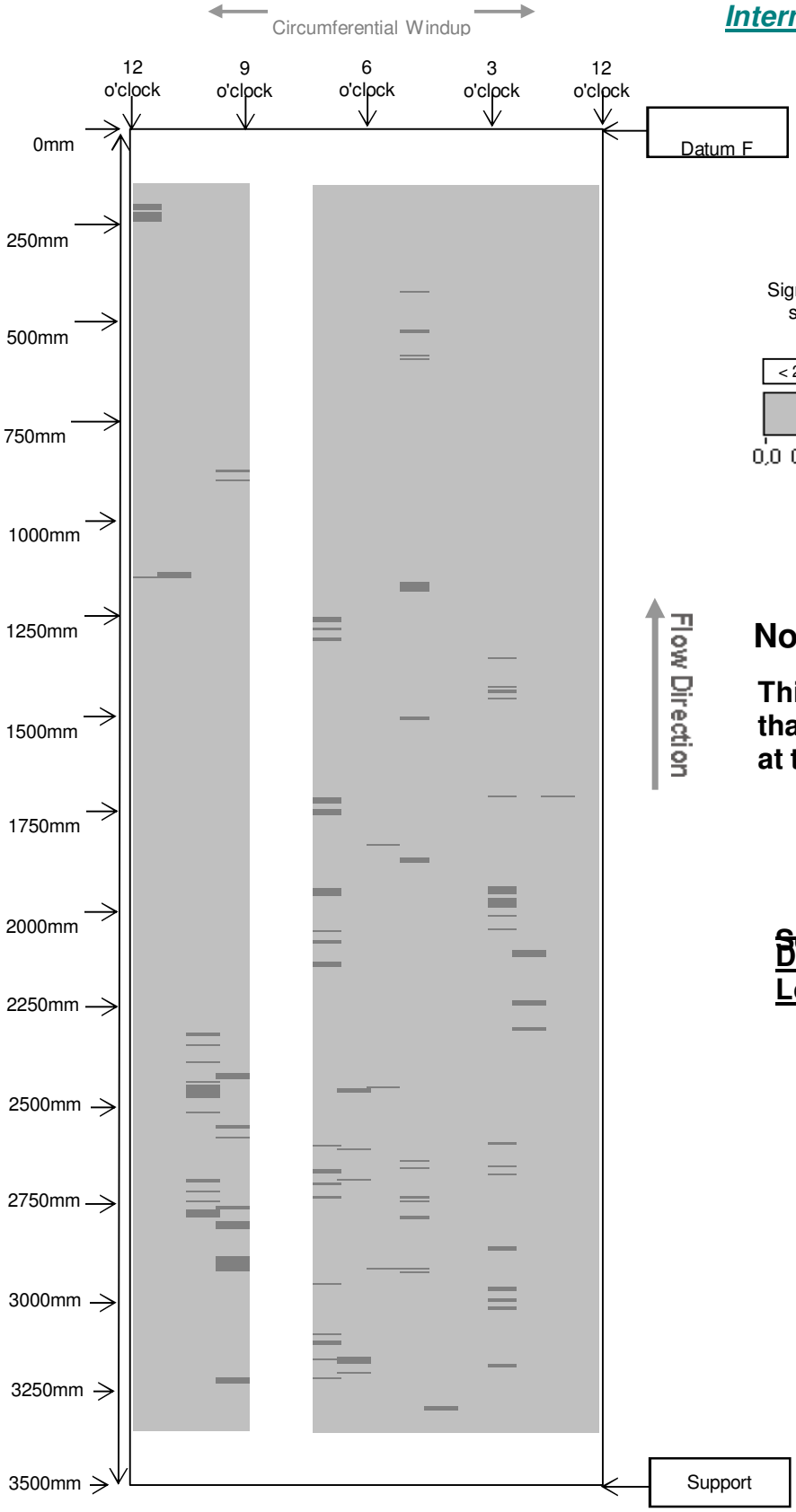
This is a signal image BMP that is produced automatically at the time of the inspection

See Previous Drawing For Location Details

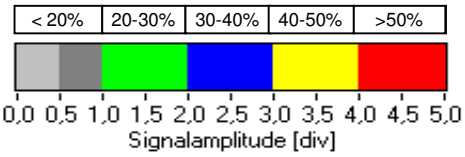
Client	Client a
Location	site b
Pipe Identif.	6
Drawing	01
Area	5H
Section	Section 34 (3.50 Metre)
Date	26 April 2016
K-No.	00-16

innospection

SLOFEC/MEC™
Internal Surface PipeScan Report



Signal Y-component / angle analysis window set for indication of internal defects with approx. depth information



Note:

This is a signal image BMP that is produced automatically at the time of the inspection

~~See Previous~~ Drawing For Location Details

Client	Client a
Location	site b
Pipe Identif.	6
Drawing	01
Area	5H
Section	Section 35 (3.20 Metre)
Date	26 April 2016
K-No.	00-16

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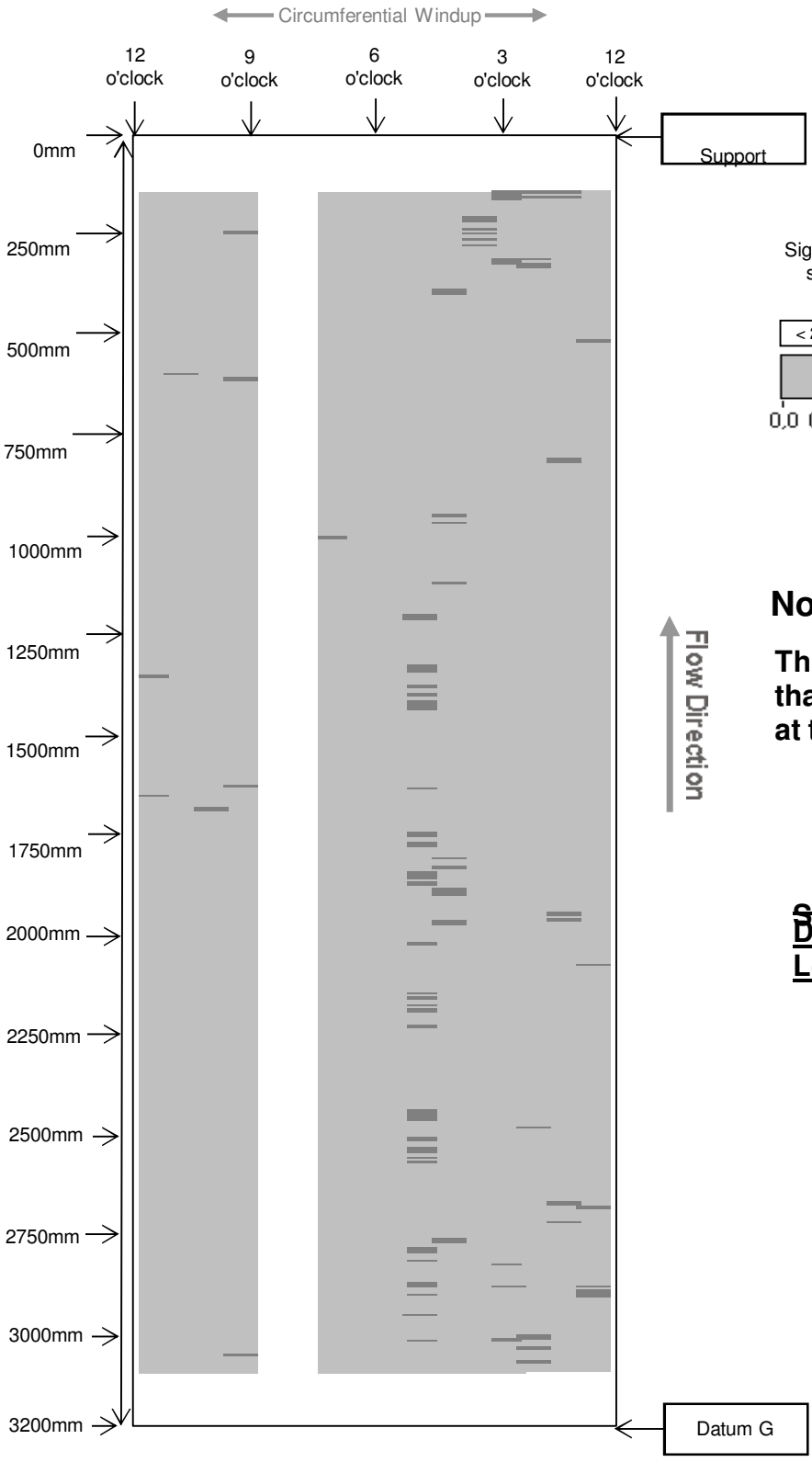
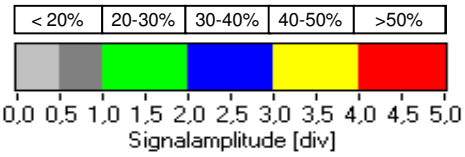
SLOFEC/MEC™
Internal Surface PipeScan Report



Signal Y-component / angle analysis window set for indication of internal defects with approx. depth information



Note:

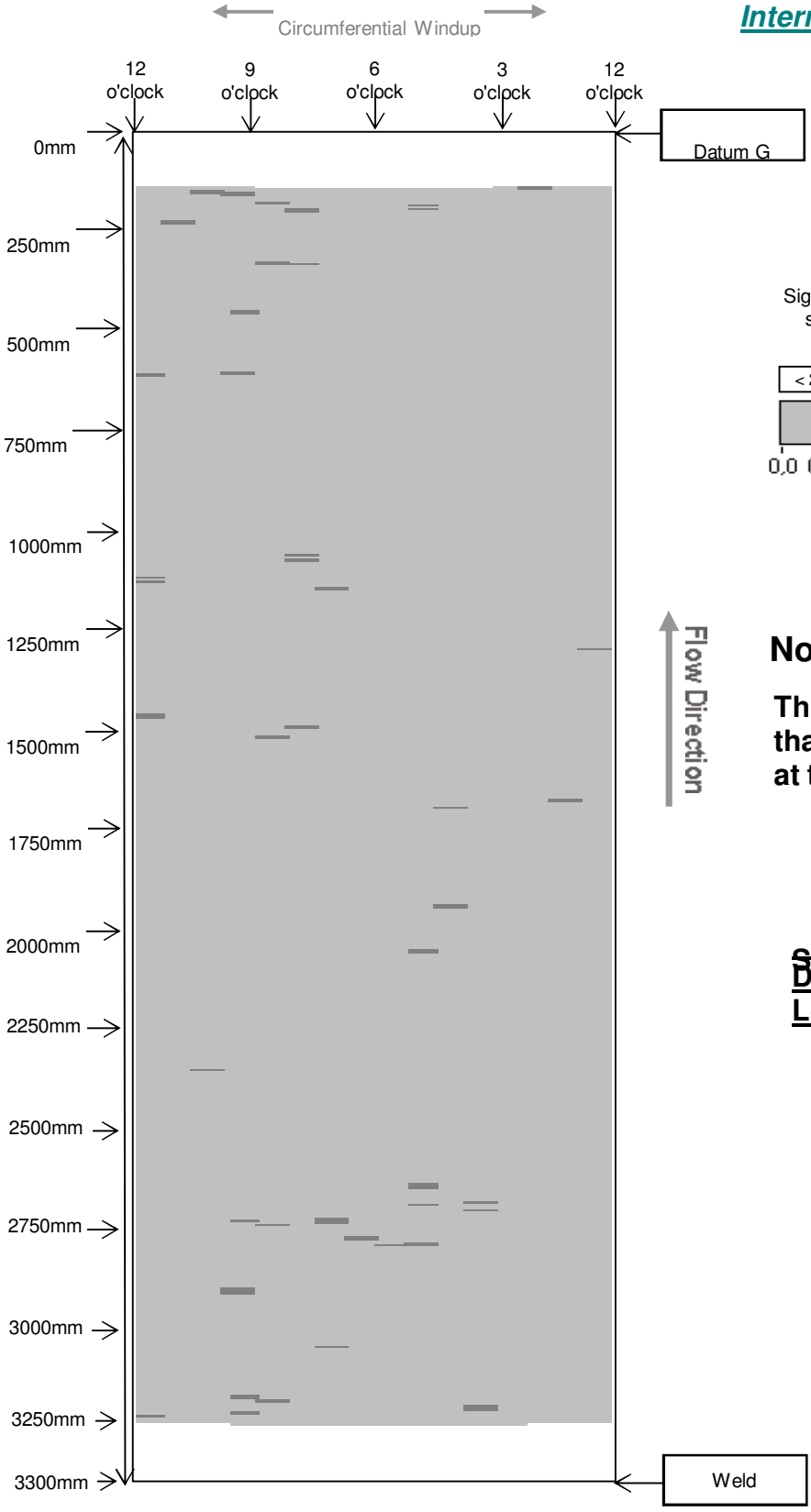
This is a signal image BMP that is produced automatically at the time of the inspection

~~See Previous~~ Drawing For Location Details

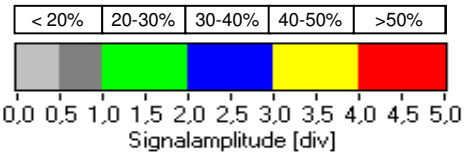
Client	Client a
Location	site b
Pipe Identif.	6
Drawing	01
Area	5H
Section	Section 36 (3.30 Metre)
Date	26 April 2016
K-No.	00-16

innospection

SLOFEC/MEC™
Internal Surface PipeScan Report



Signal Y-component / angle analysis window set for indication of internal defects with approx. depth information



Note:

This is a signal image BMP that is produced automatically at the time of the inspection

See Previous Drawing For Location Details

Client	Client a
Location	site b
Pipe Identif.	6
Drawing	01
Area	5H
Section	Section 37 (3.80 Metre)
Date	26 April 2016
K-No.	00-16

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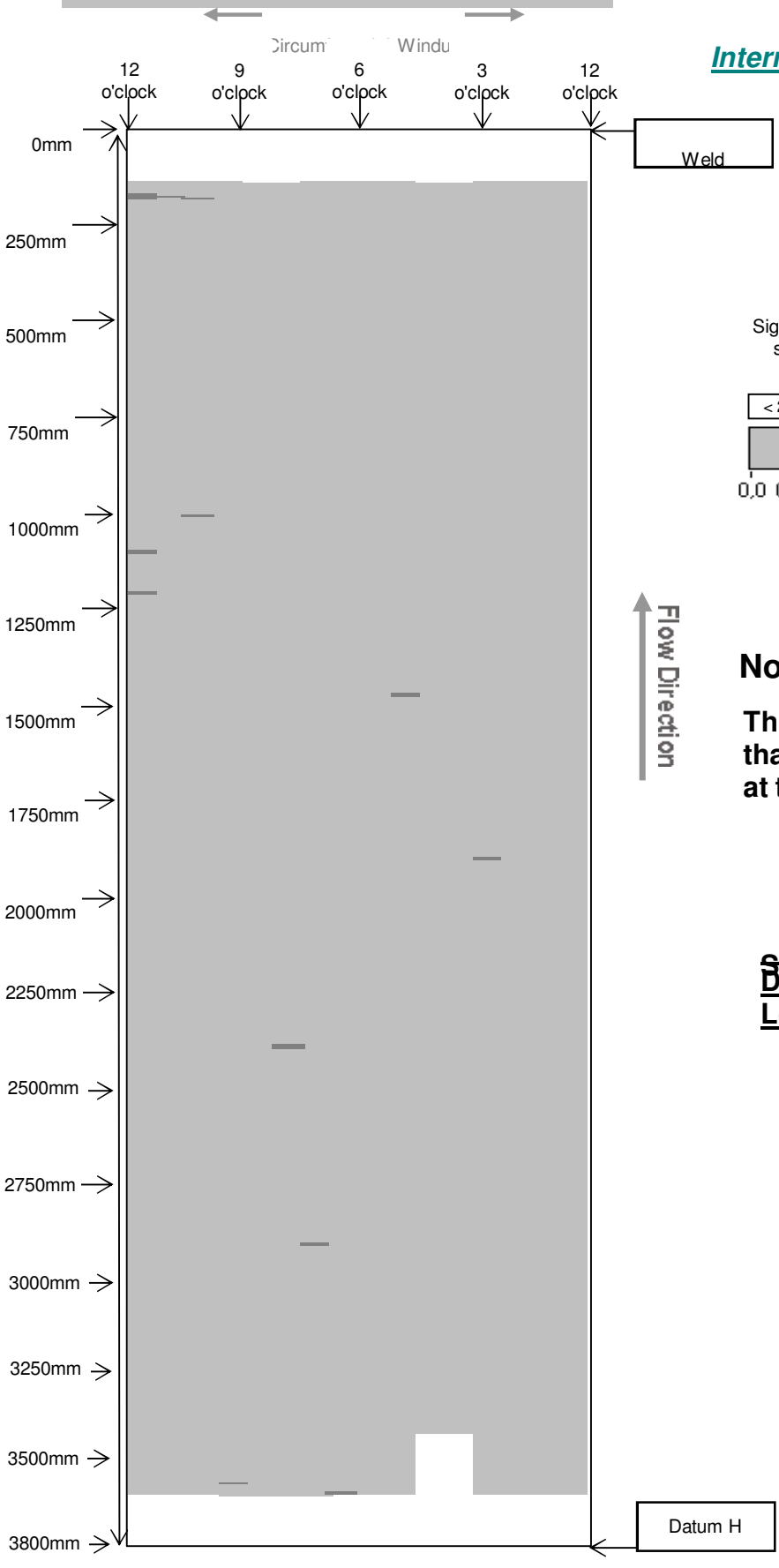
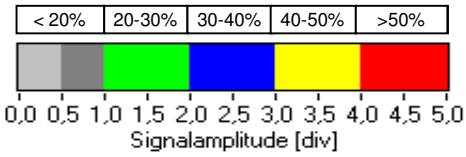
SLOFEC/MEC™
Internal Surface PipeScan Report



Signal Y-component / angle analysis window set for indication of internal defects with approx. depth information



Note:

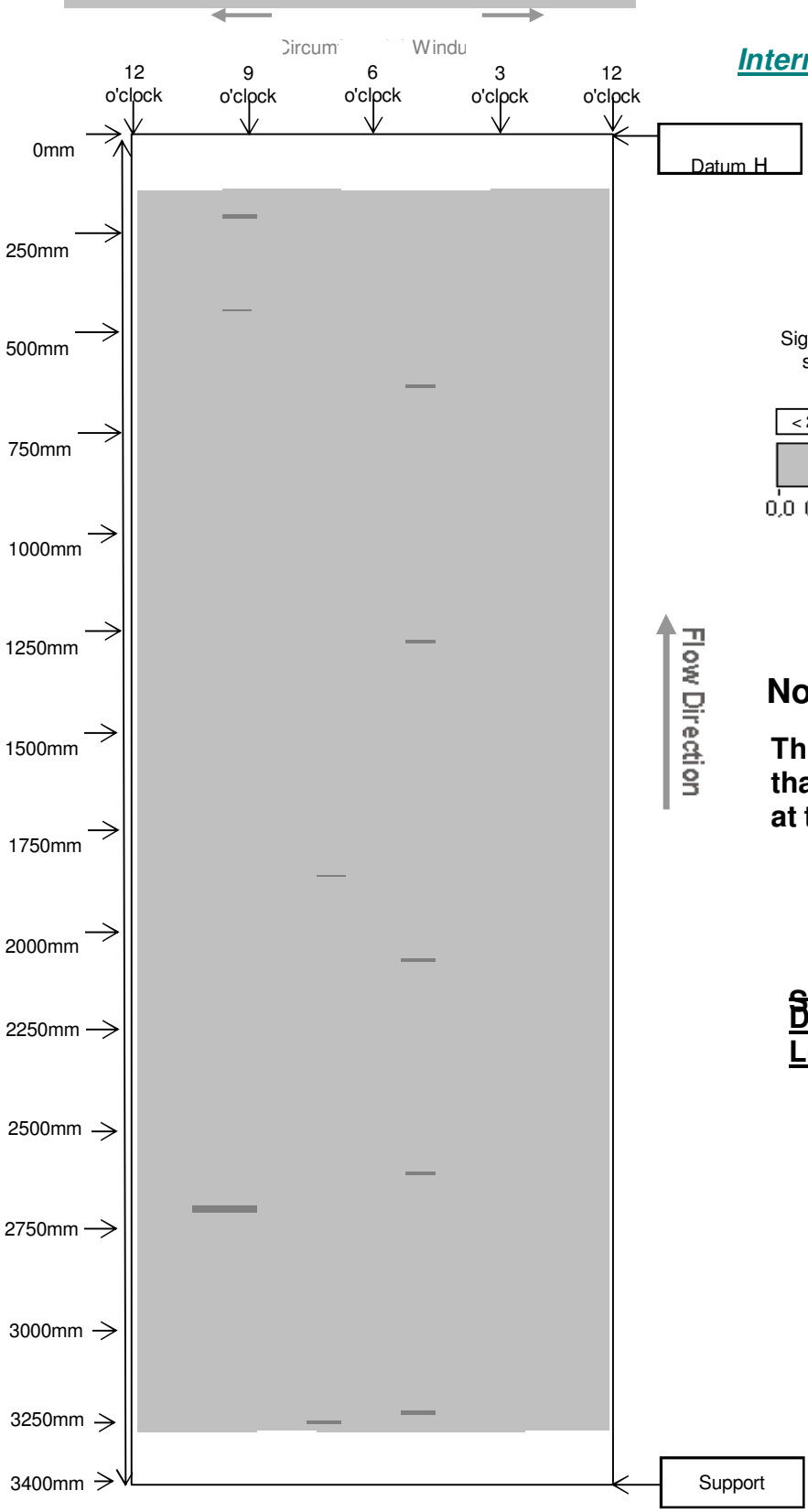
This is a signal image BMP that is produced automatically at the time of the inspection

~~See Previous~~ Drawing For Location Details

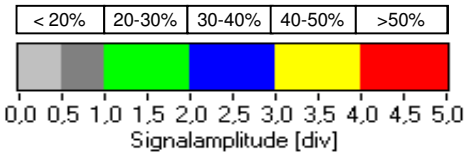
Client	Client a
Location	site b
Pipe Identif.	6
Drawing	01
Area	5H
Section	Section 38 (3.40 Metre)
Date	26 April 2016
K-No.	00-16

innospection

SLOFEC/MEC™
Internal Surface PipeScan Report



Signal Y-component / angle analysis window set for indication of internal defects with approx. depth information



Note:

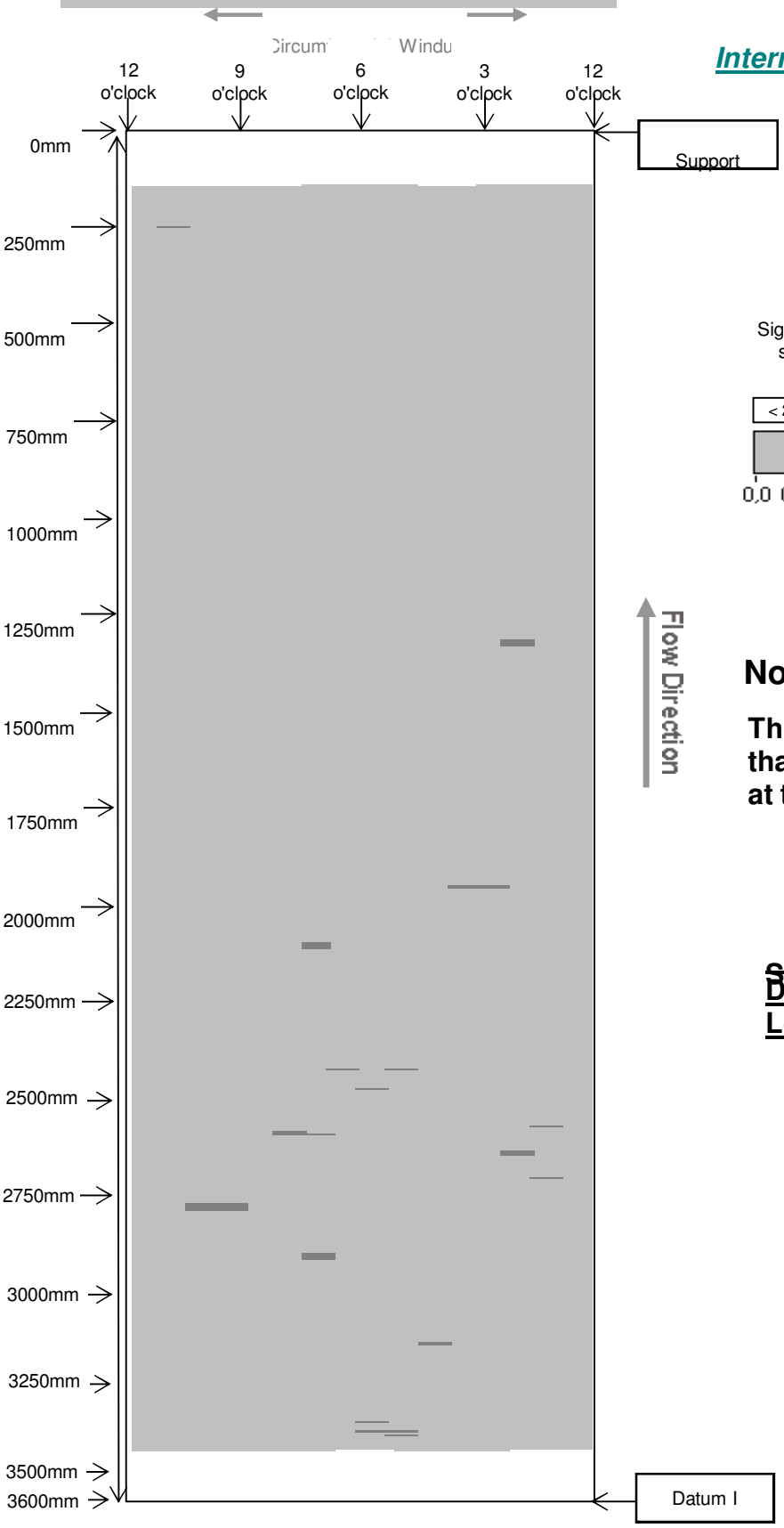
This is a signal image BMP that is produced automatically at the time of the inspection

~~See Previous~~ Drawing For Location Details

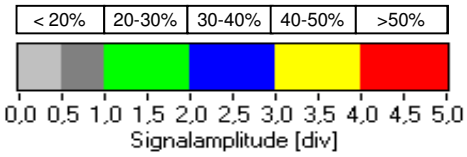
Client	Client a
Location	site b
Pipe Identif.	6
Drawing	01
Area	5H
Section	Section 39 (3.60 Metre)
Date	26 April 2016
K-No.	00-16

innospection

SLOFEC/MEC™
Internal Surface PipeScan Report



Signal Y-component / angle analysis window set for indication of internal defects with approx. depth information



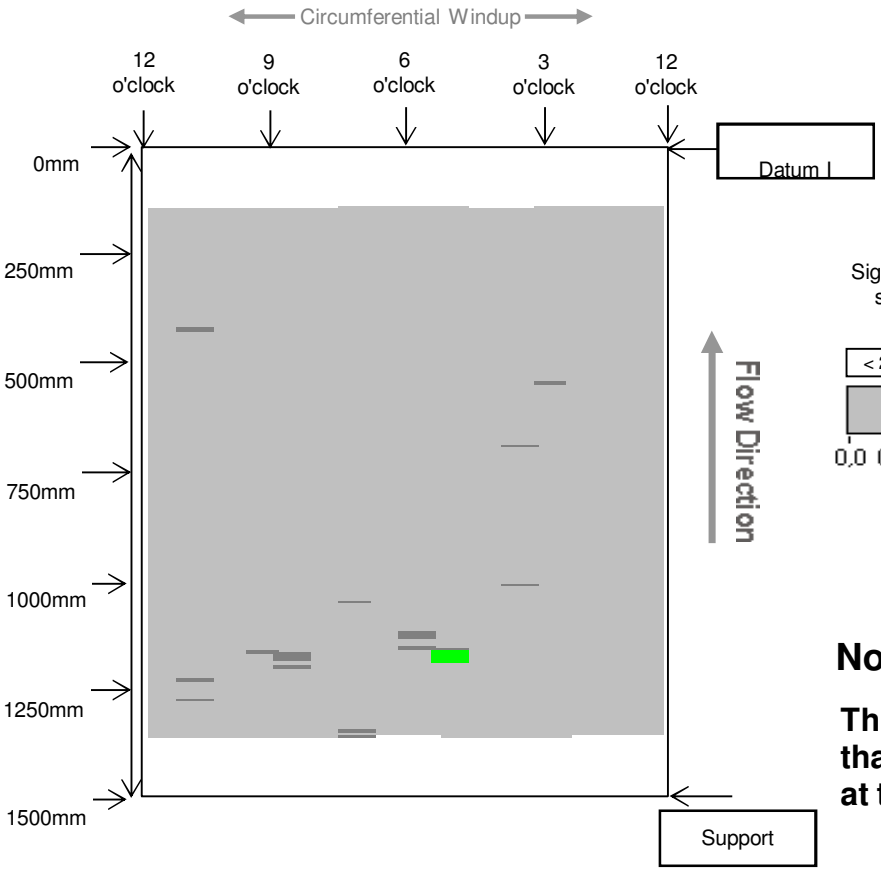
Note:

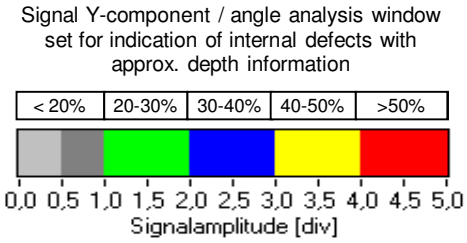
This is a signal image BMP that is produced automatically at the time of the inspection

~~See Previous~~ Drawing For Location Details

Client	Client a
Location	site b
Pipe Identif.	6
Drawing	01
Area	5H
Section	Section 40 (1.50 Metre)
Date	26 April 2016
K-No.	00-16

SLOFEC/MEC™
Internal Surface PipeScan Report





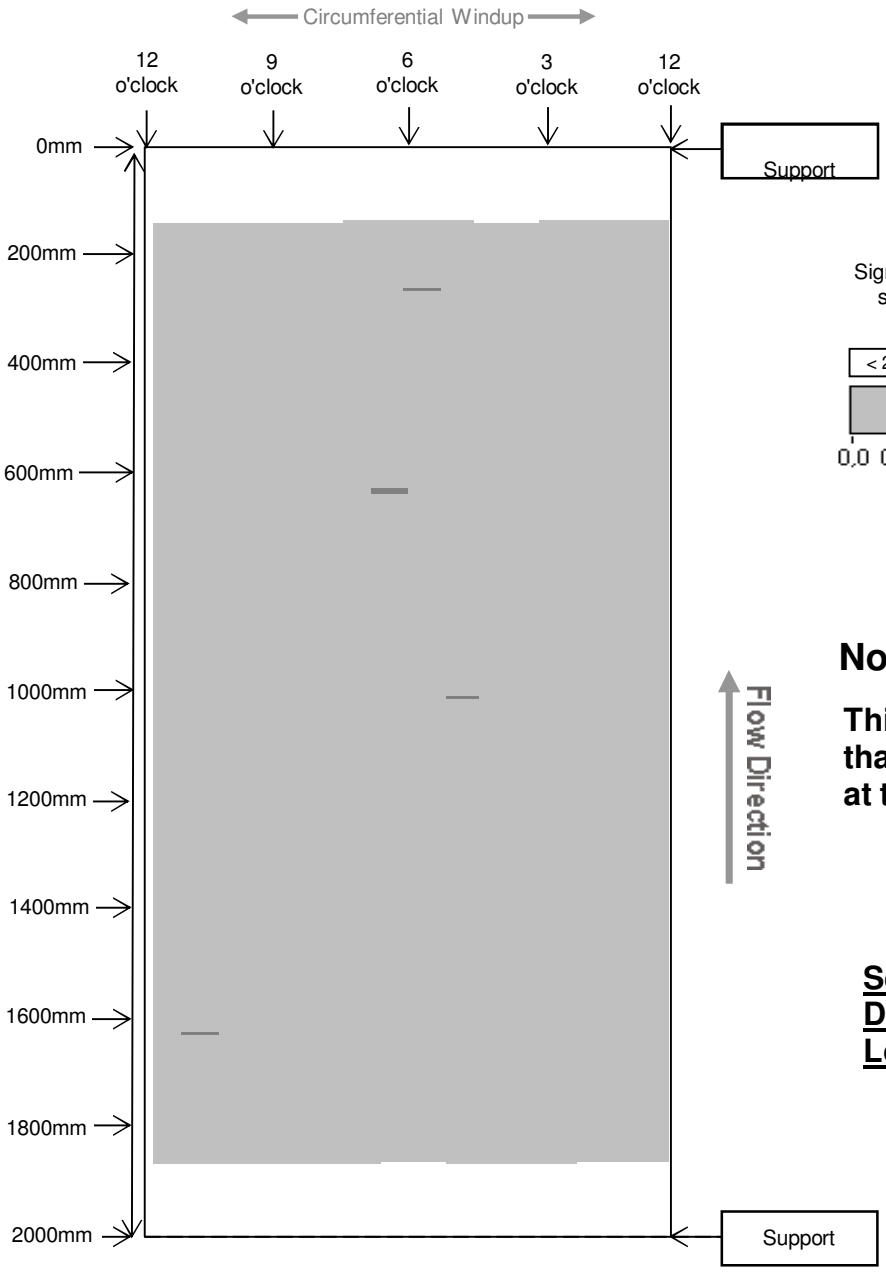
Note:

This is a signal image BMP that is produced automatically at the time of the inspection

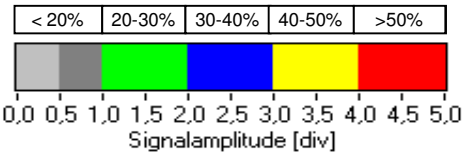
See Previous Drawing For Location Details

Client	Client a
Location	site b
Pipe Identif.	6
Drawing	0
Area	5H
Section	Section 41 (2.00 Metre)
Date	26 April 2016
K-No.	00-16

SLOFEC/MEC™
Internal Surface PipeScan Report



Signal Y-component / angle analysis window set for indication of internal defects with approx. depth information



Note:

This is a signal image BMP that is produced automatically at the time of the inspection

See Previous Drawing For Location Details

Client	Client a
Location	site b
Pipe Identif.	6
Drawing	01
Area	5H
Section	Section 42 (3.00 Metre)
Date	26 April 2016
K-No.	00-16

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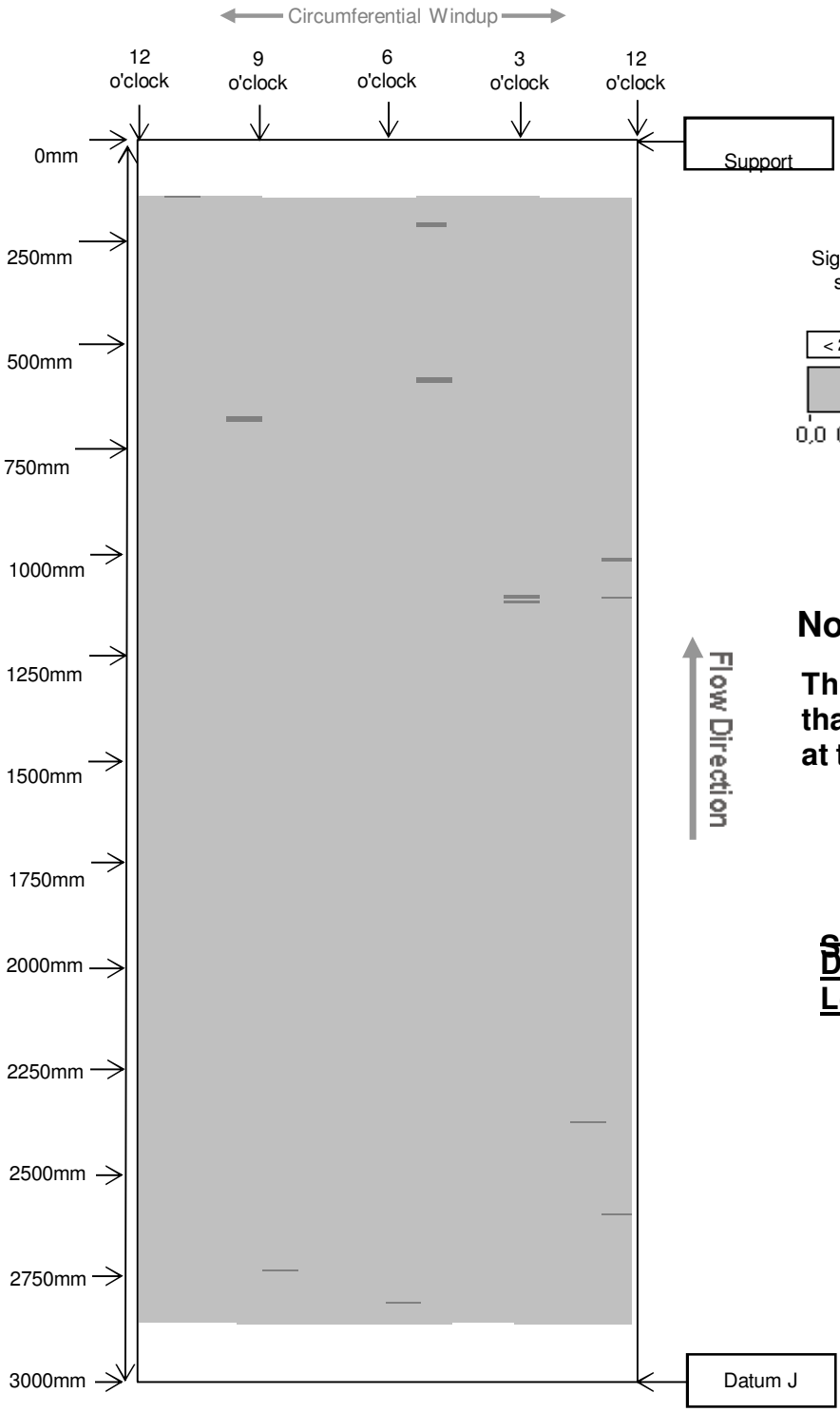
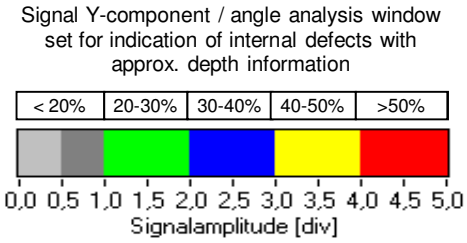
Internal Surface PipeScan Report





Note:

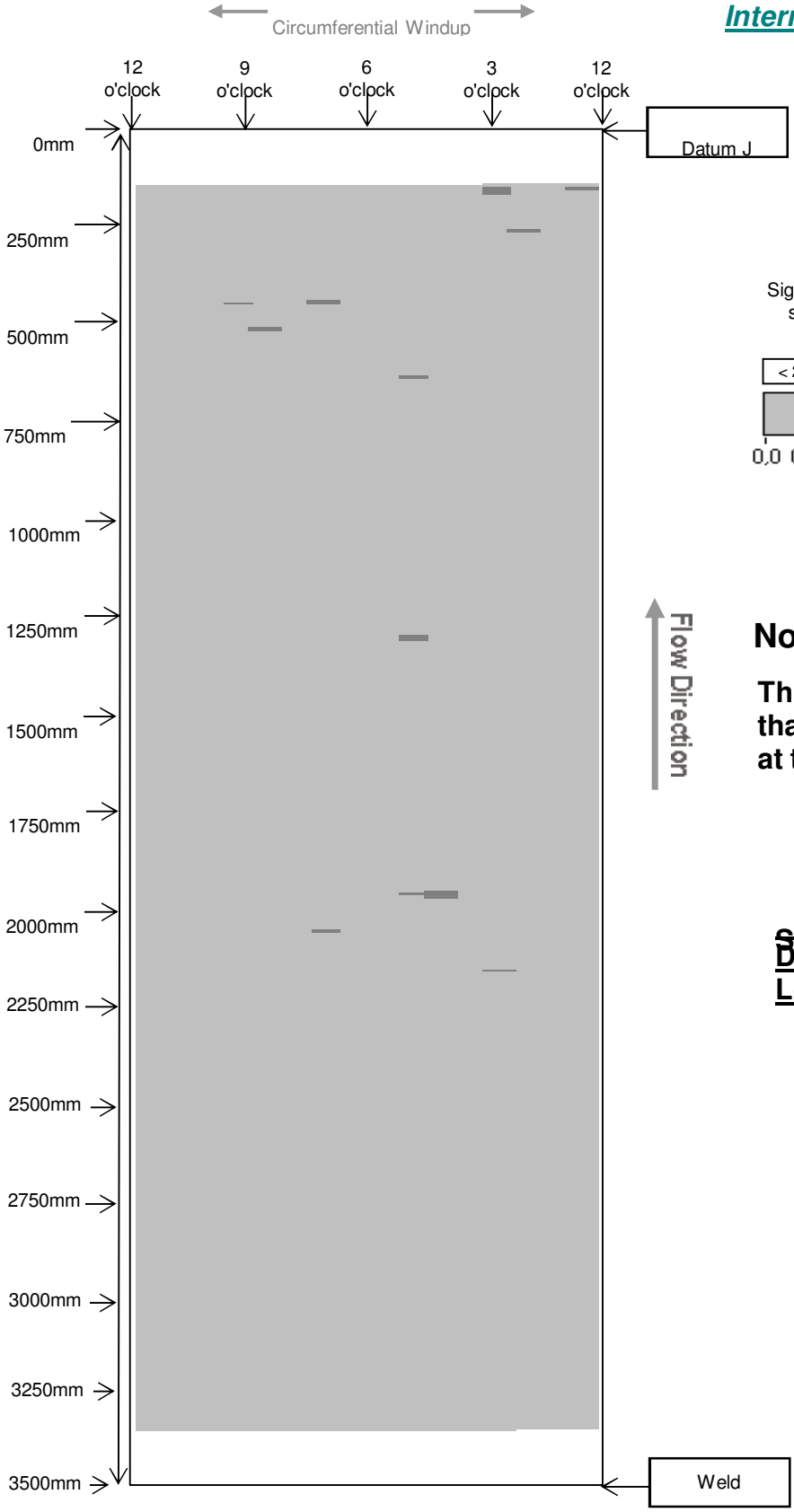
This is a signal image BMP that is produced automatically at the time of the inspection

~~See Previous~~ Drawing For Location Details

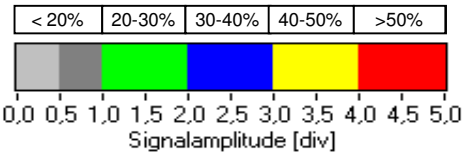
Client	Client a
Location	site b
Pipe Identif.	6
Drawing	01
Area	5H
Section	Section 43 (3.50 Metre)
Date	26 April 2016
K-No.	00-16

innospection

SLOFEC/MEC™
Internal Surface PipeScan Report



Signal Y-component / angle analysis window set for indication of internal defects with approx. depth information



Note:

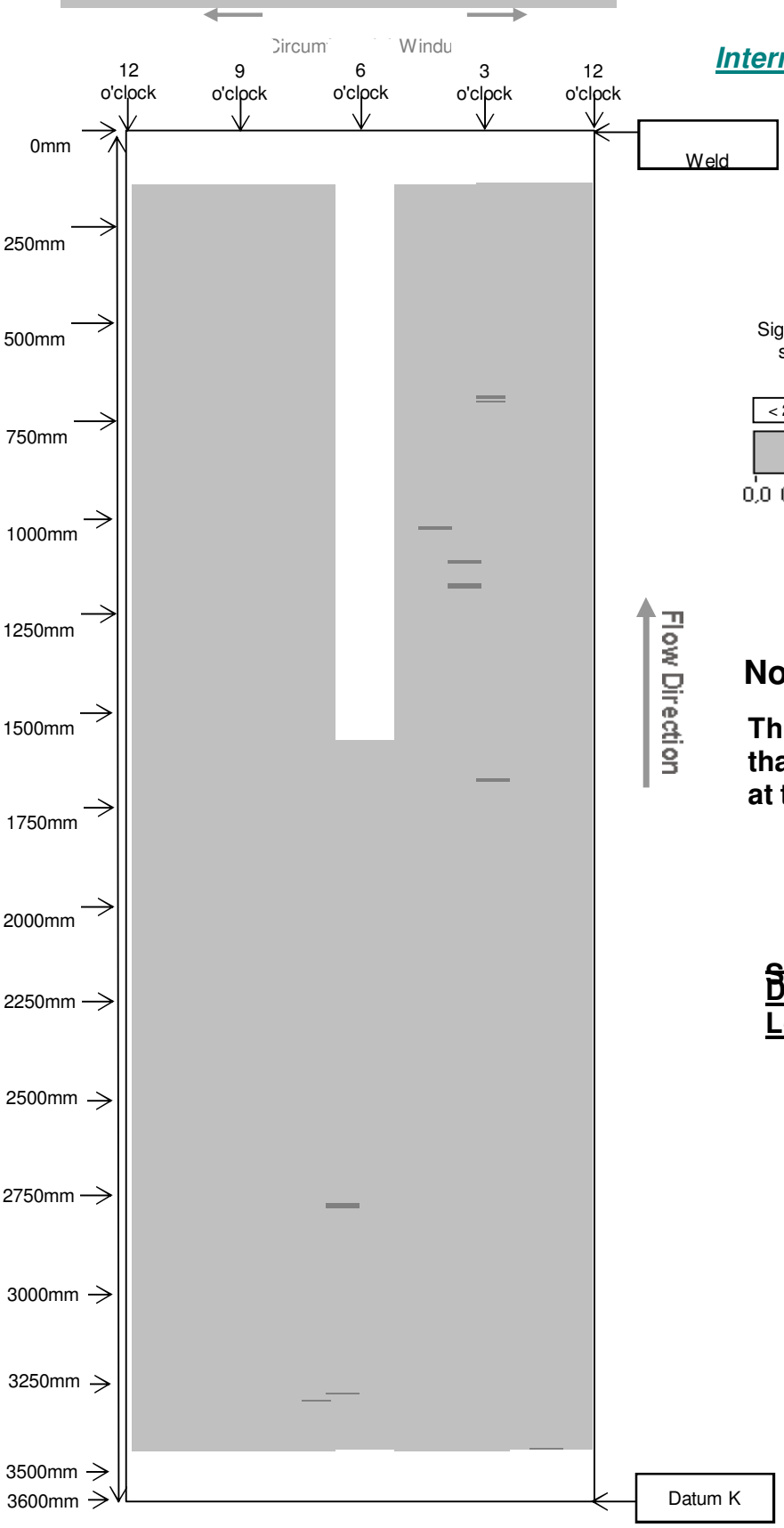
This is a signal image BMP that is produced automatically at the time of the inspection

~~See Previous~~ Drawing For Location Details

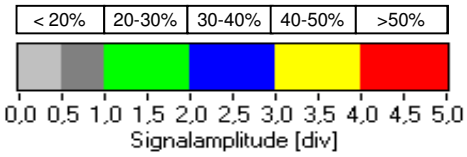
Client	Client a
Location	site b
Pipe Identif.	6
Drawing	01
Area	5H
Section	Section 44 (3.60 Metre)
Date	26 April 2016
K-No.	00-16

innospection

SLOFEC/MEC™
Internal Surface PipeScan Report



Signal Y-component / angle analysis window set for indication of internal defects with approx. depth information



Note:

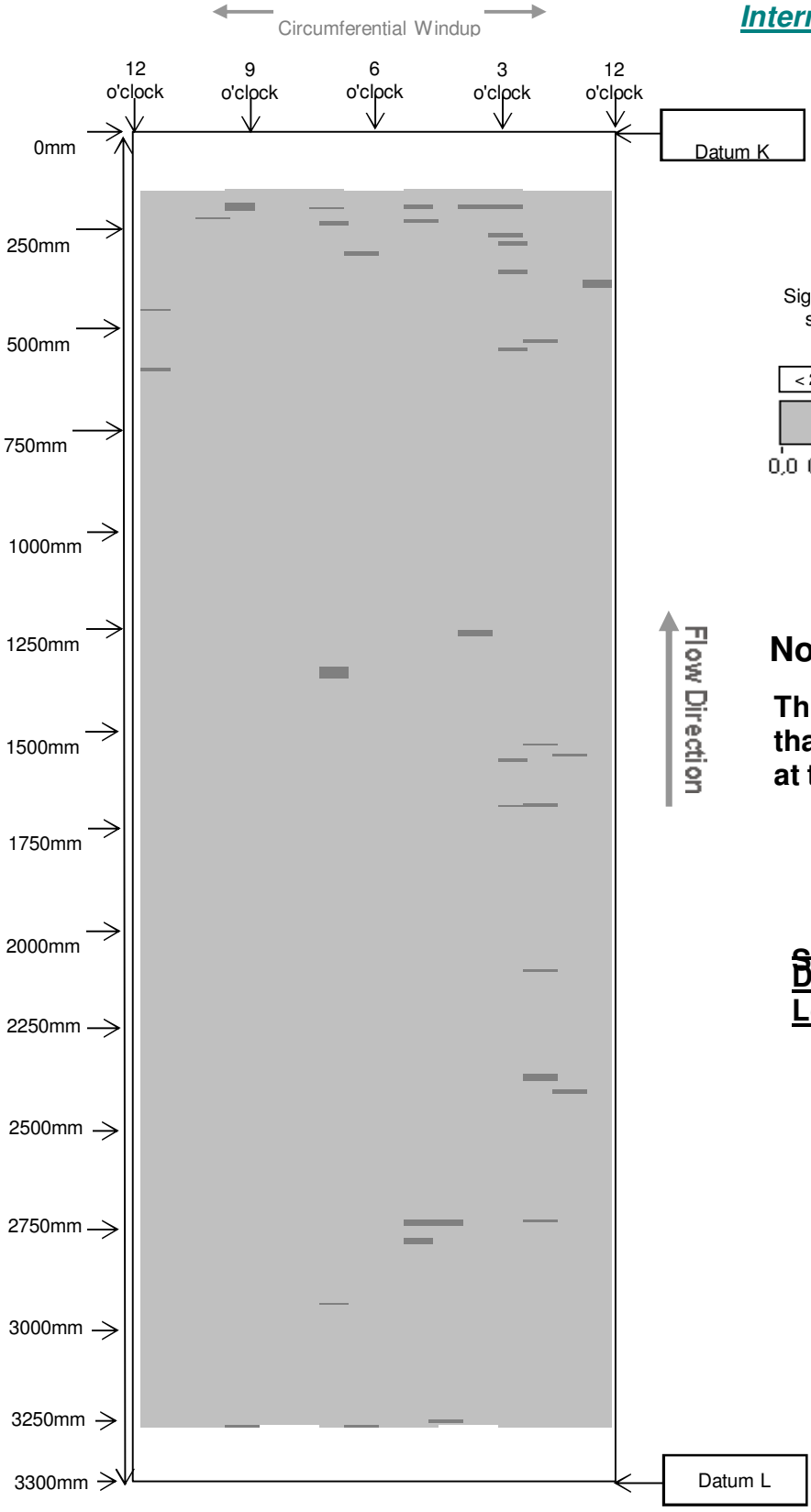
This is a signal image BMP that is produced automatically at the time of the inspection

~~See Previous~~ Drawing For Location Details

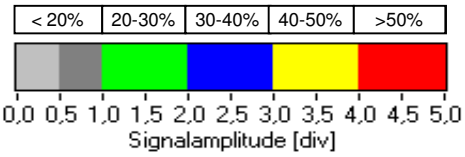
Client	Client a
Location	site b
Pipe Identif.	6
Drawing	01
Area	5H
Section	Section 45 (3.30 Metre)
Date	26 April 2016
K-No.	004-16

innospection

SLOFEC/MEC™
Internal Surface PipeScan Report



Signal Y-component / angle analysis window set for indication of internal defects with approx. depth information



Note:

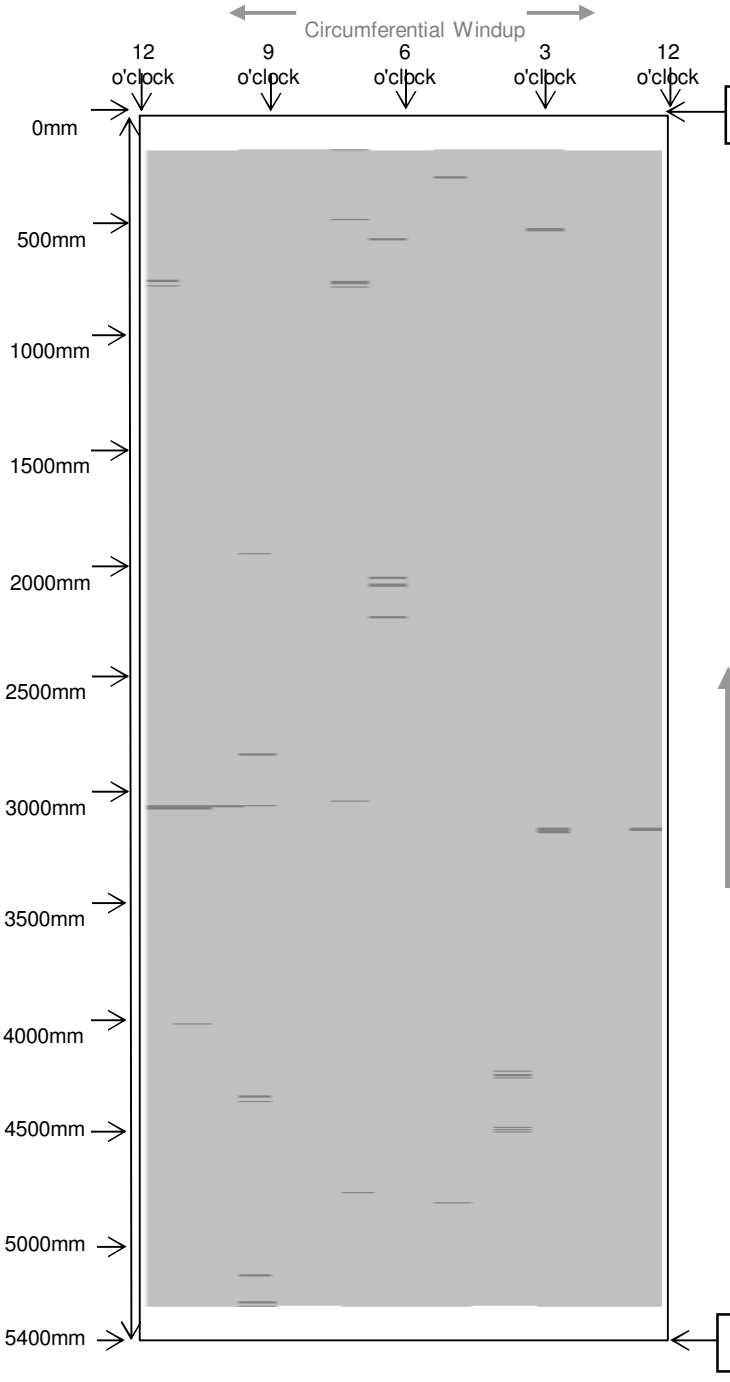
This is a signal image BMP that is produced automatically at the time of the inspection

~~See Previous~~ Drawing For Location Details

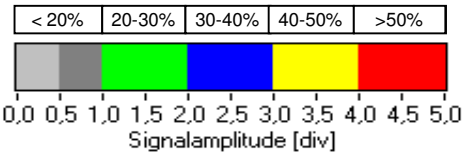
Client	Client a
Location	site b
Pipe Identif.	6
Drawing	01
Area	5H
Section	Section 46 (5.40 Metre)
Date	26 April 2016
K-No.	00-16

innospection

SLOFEC/MEC™
Internal Surface PipeScan Report



Signal Y-component / angle analysis window set for indication of internal defects with approx. depth information



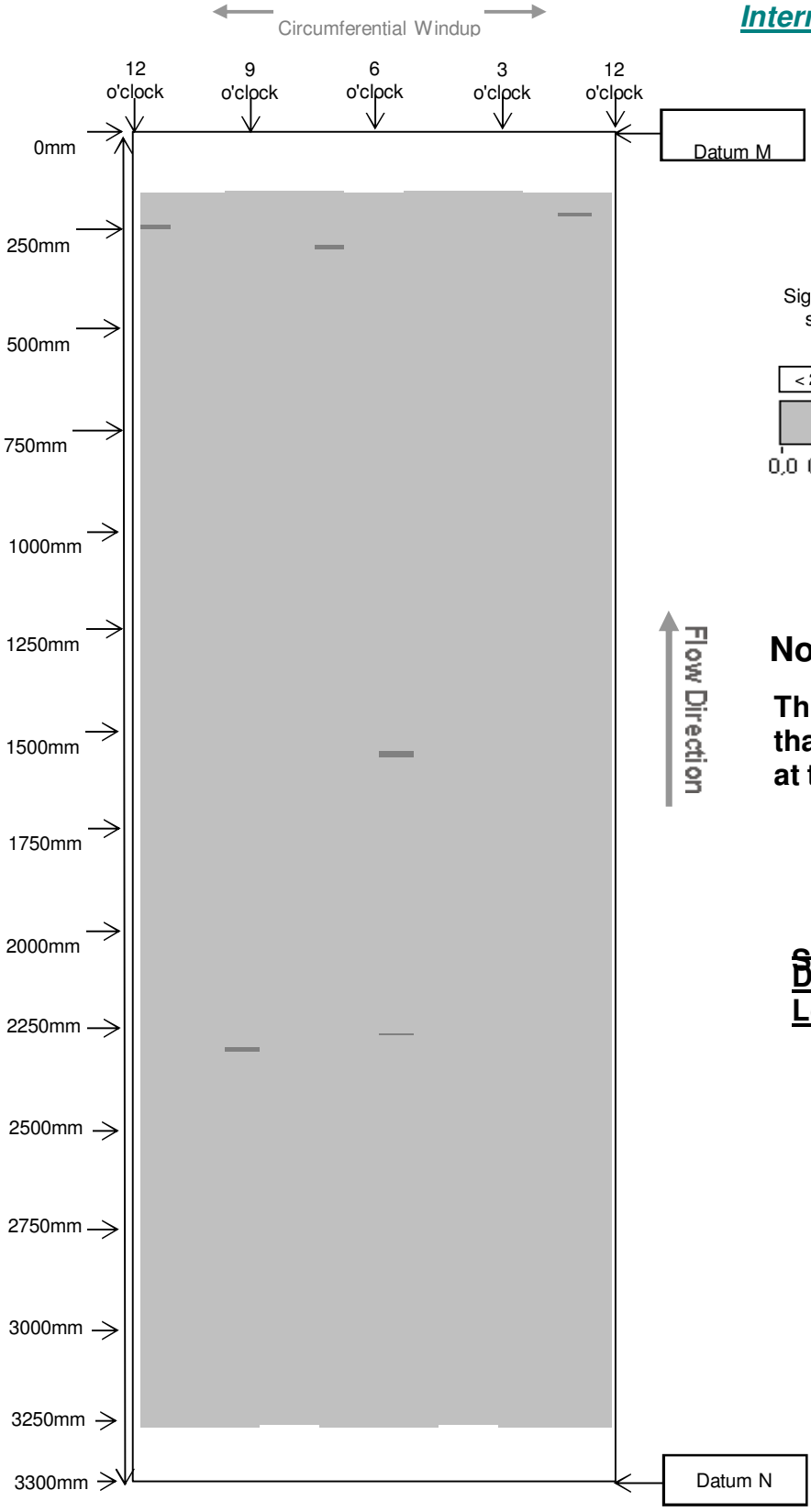
Note:

This is a signal image BMP that is produced automatically at the time of the inspection

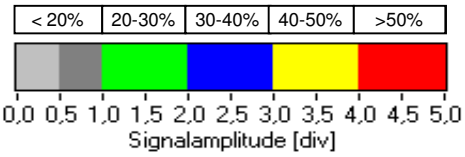
~~See Previous~~ Drawing For Location Details

Client	Client a
Location	site b
Pipe Identif.	6
Drawing	01
Area	5H
Section	Section 47 (3.30 Metre)
Date	26 April 2016
K-No.	00-16

SLOFEC/MEC™
Internal Surface PipeScan Report



Signal Y-component / angle analysis window set for indication of internal defects with approx. depth information



Note:

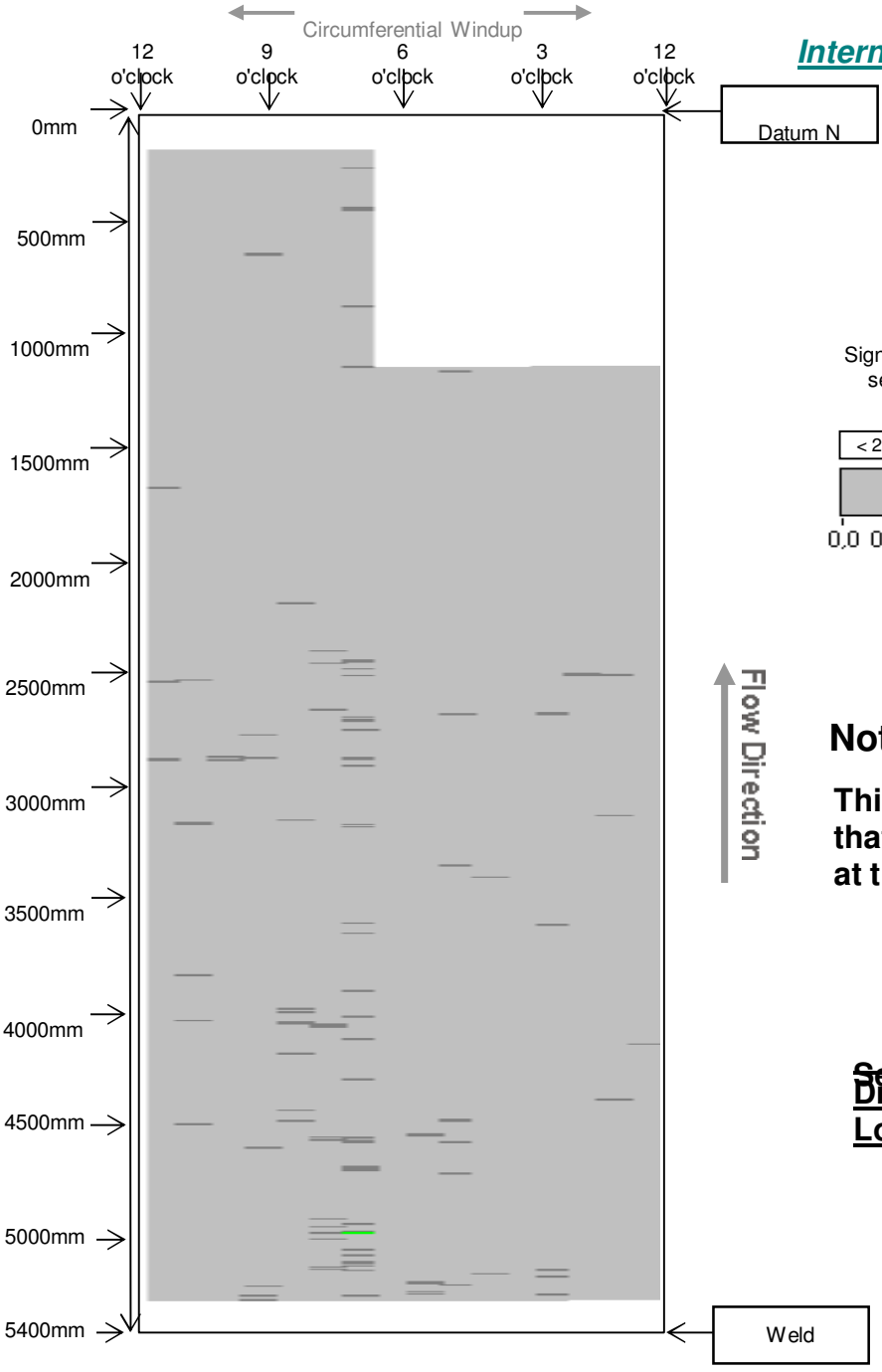
This is a signal image BMP that is produced automatically at the time of the inspection

~~See Previous~~ Drawing For Location Details

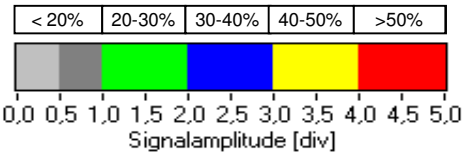
Client	Client a
Location	site b
Pipe Identif.	6
Drawing	01
Area	5H
Section	Section 48 (5.40 Metre)
Date	26 April 2016
K-No.	00-16

innospection

SLOFEC/MEC™
Internal Surface PipeScan Report



Signal Y-component / angle analysis window set for indication of internal defects with approx. depth information



Note:

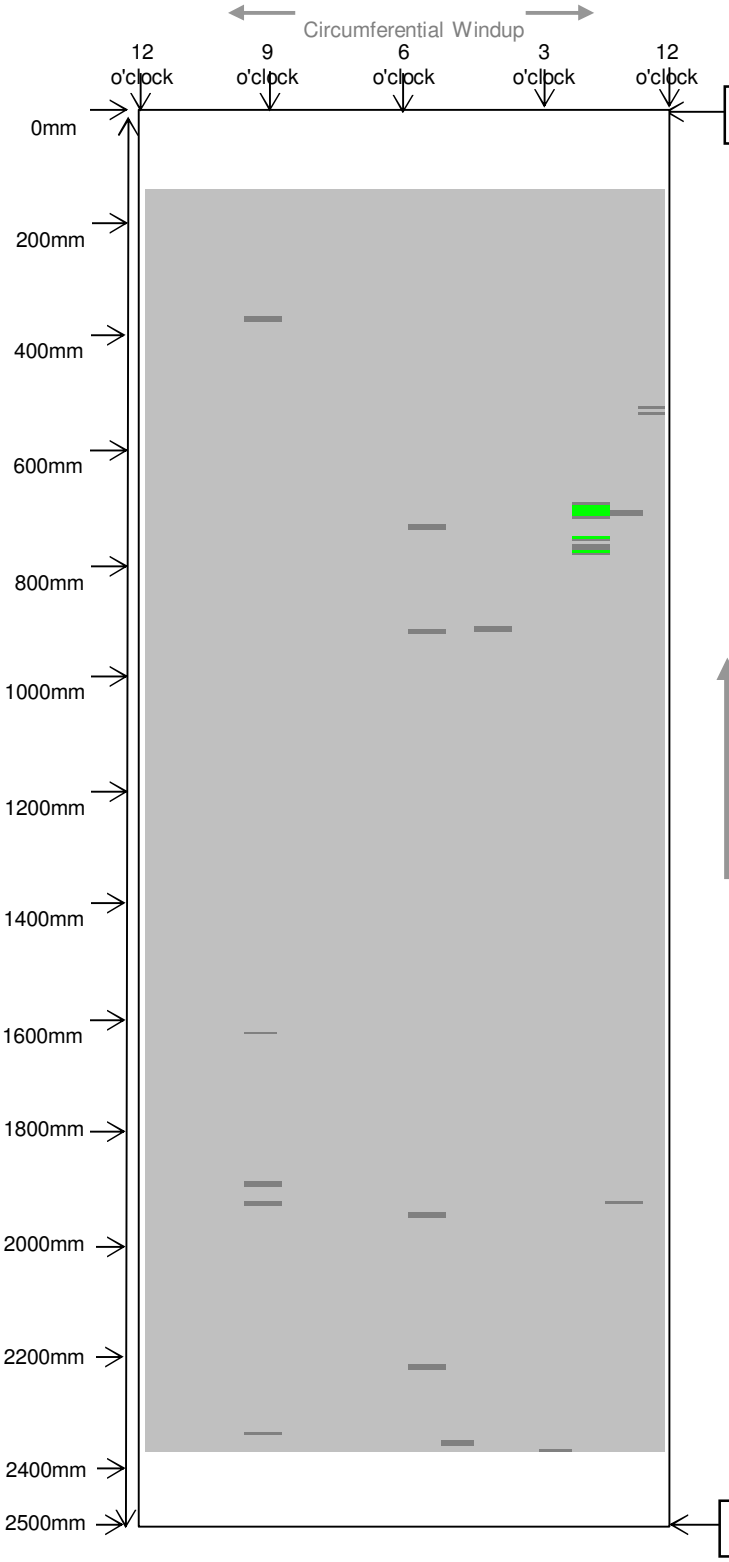
This is a signal image BMP that is produced automatically at the time of the inspection

~~See Previous~~ Drawing For Location Details

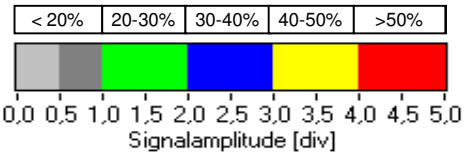
Client	Client a
Location	site b
Pipe Identif.	6
Drawing	01
Area	5H
Section	Section 49 (2.50 Metre)
Date	26 April 2016
K-No.	00-16

innospection

SLOFEC/MEC™
Internal Surface PipeScan Report



Signal Y-component / angle analysis window set for indication of internal defects with approx. depth information



Note:

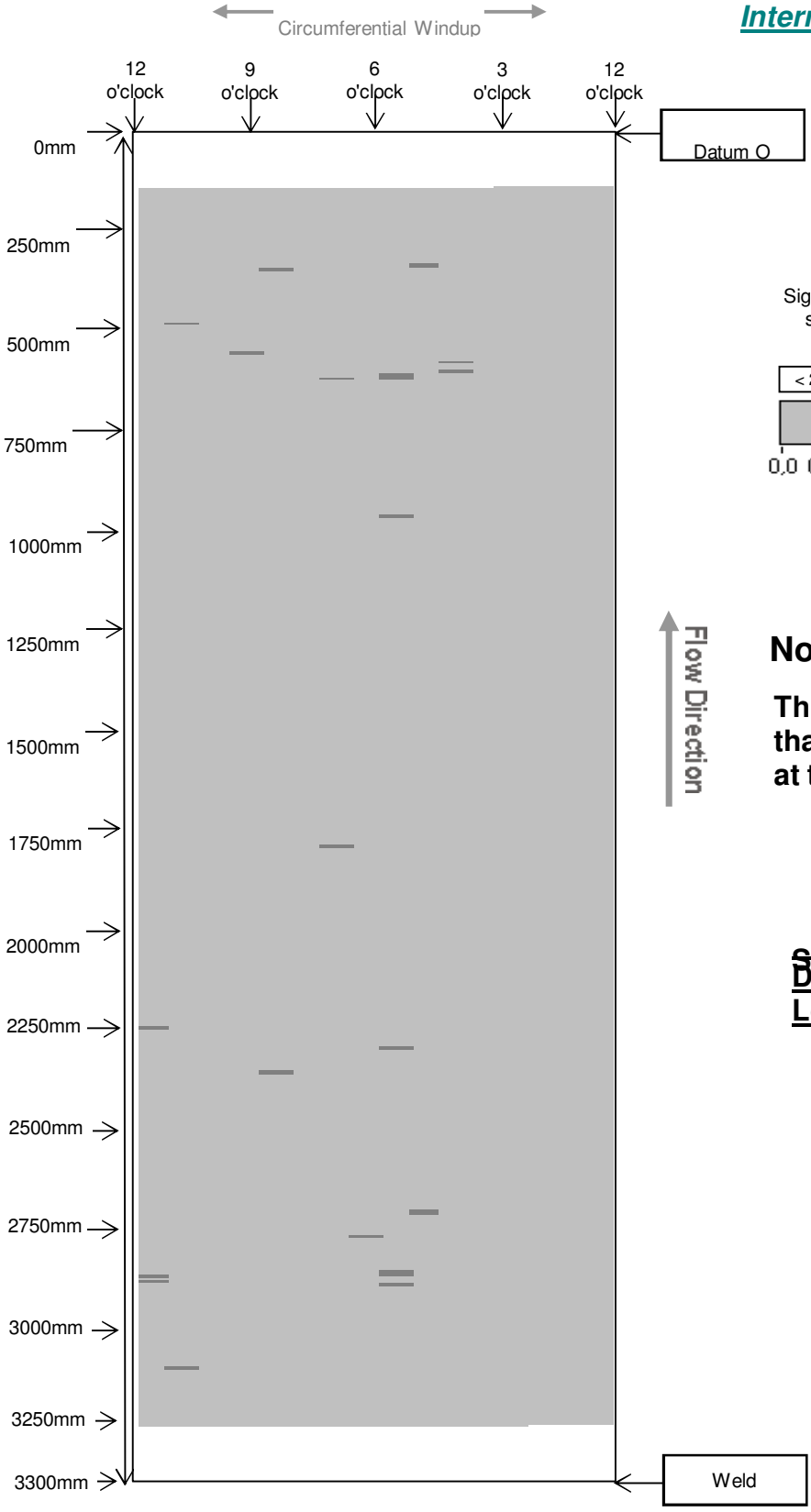
This is a signal image BMP that is produced automatically at the time of the inspection

~~See Previous~~ Drawing For Location Details

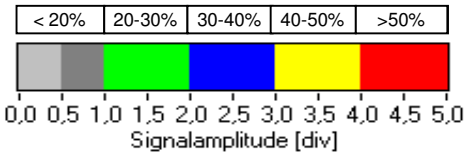
Client	Client a
Location	site b
Pipe Identif.	6
Drawing	01
Area	5H
Section	Section 50 (3.30 Metre)
Date	26 April 2016
K-No.	00-16

innospection

SLOFEC/MEC™
Internal Surface PipeScan Report



Signal Y-component / angle analysis window set for indication of internal defects with approx. depth information



Note:

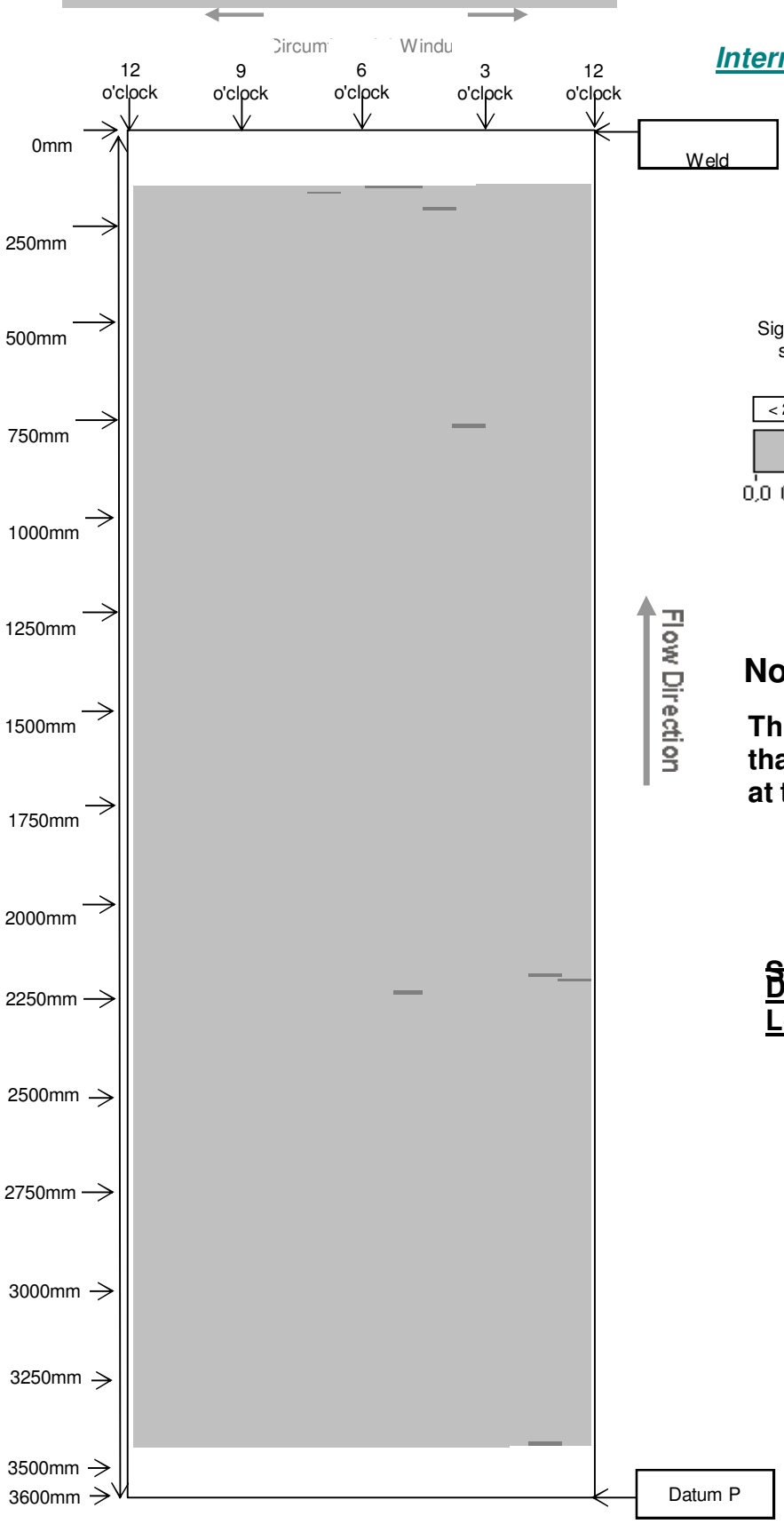
This is a signal image BMP that is produced automatically at the time of the inspection

See Previous Drawing For Location Details

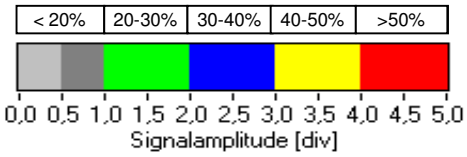
Client	Client a
Location	site b
Pipe Identif.	6
Drawing	01
Area	5H
Section	Section 51 (3.60 Metre)
Date	26 April 2016
K-No.	00-16

innospection

SLOFEC/MEC™
Internal Surface PipeScan Report



Signal Y-component / angle analysis window set for indication of internal defects with approx. depth information



Note:

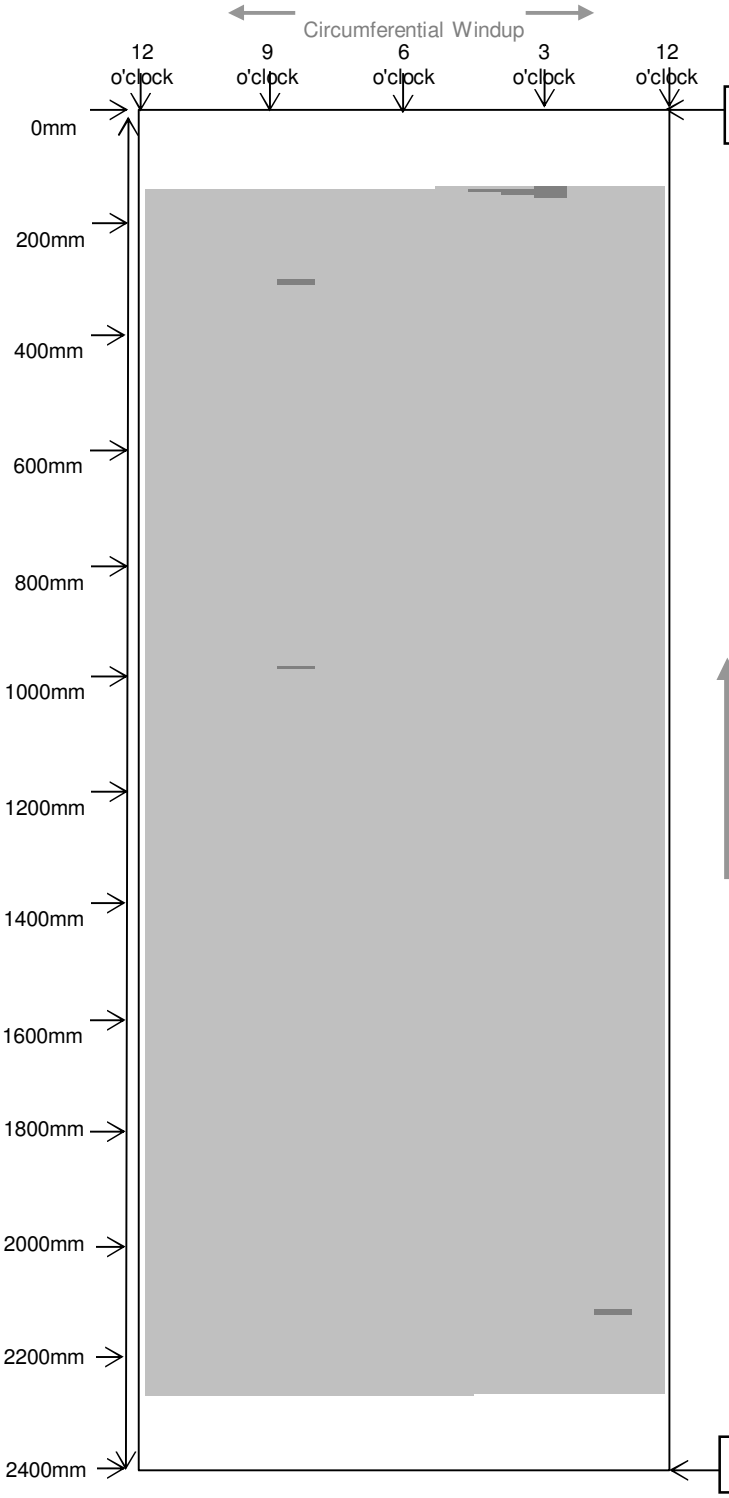
This is a signal image BMP that is produced automatically at the time of the inspection

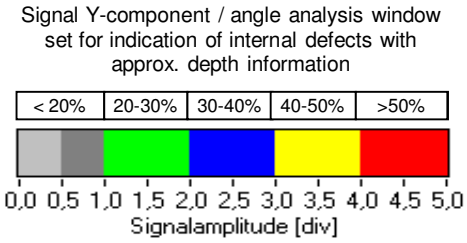
~~See Previous~~ Drawing For Location Details

Client	Client a
Location	site b
Pipe Identif.	6
Drawing	01
Area	5H
Section	Section 52 (2.40 Metre)
Date	26 April 2016
K-No.	00-16

innospection

SLOFEC/MEC™
Internal Surface PipeScan Report





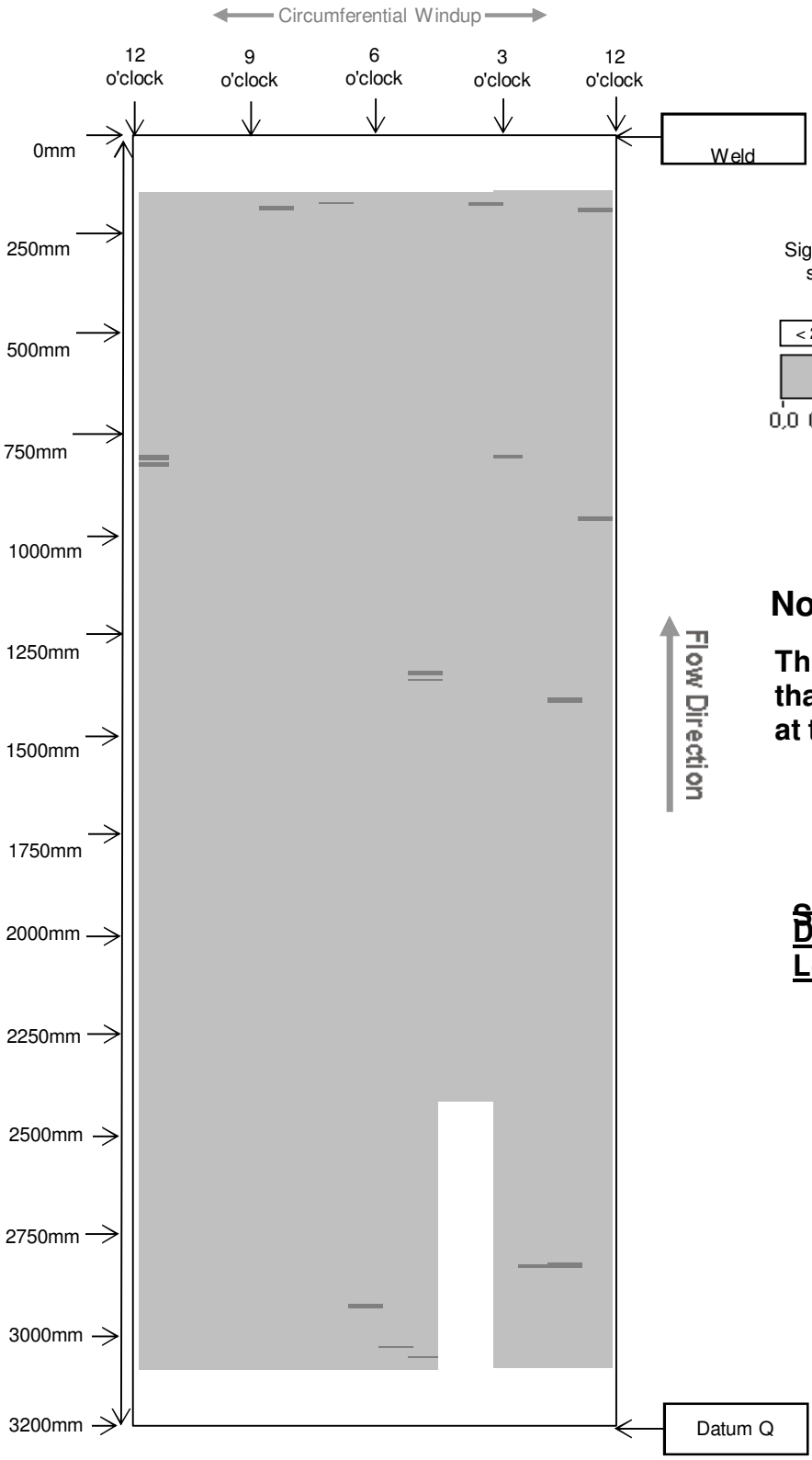
Note:

This is a signal image BMP that is produced automatically at the time of the inspection

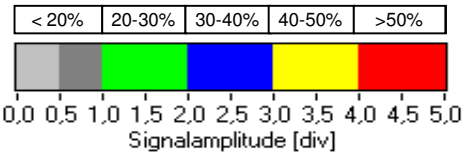
~~See Previous~~ Drawing For Location Details

Client	Client a
Location	site b
Pipe Identif.	6
Drawing	01
Area	5H
Section	Section 53 (3.20 Metre)
Date	26 April 2016
K-No.	00-16

SLOFEC/MEC™
Internal Surface PipeScan Report



Signal Y-component / angle analysis window set for indication of internal defects with approx. depth information



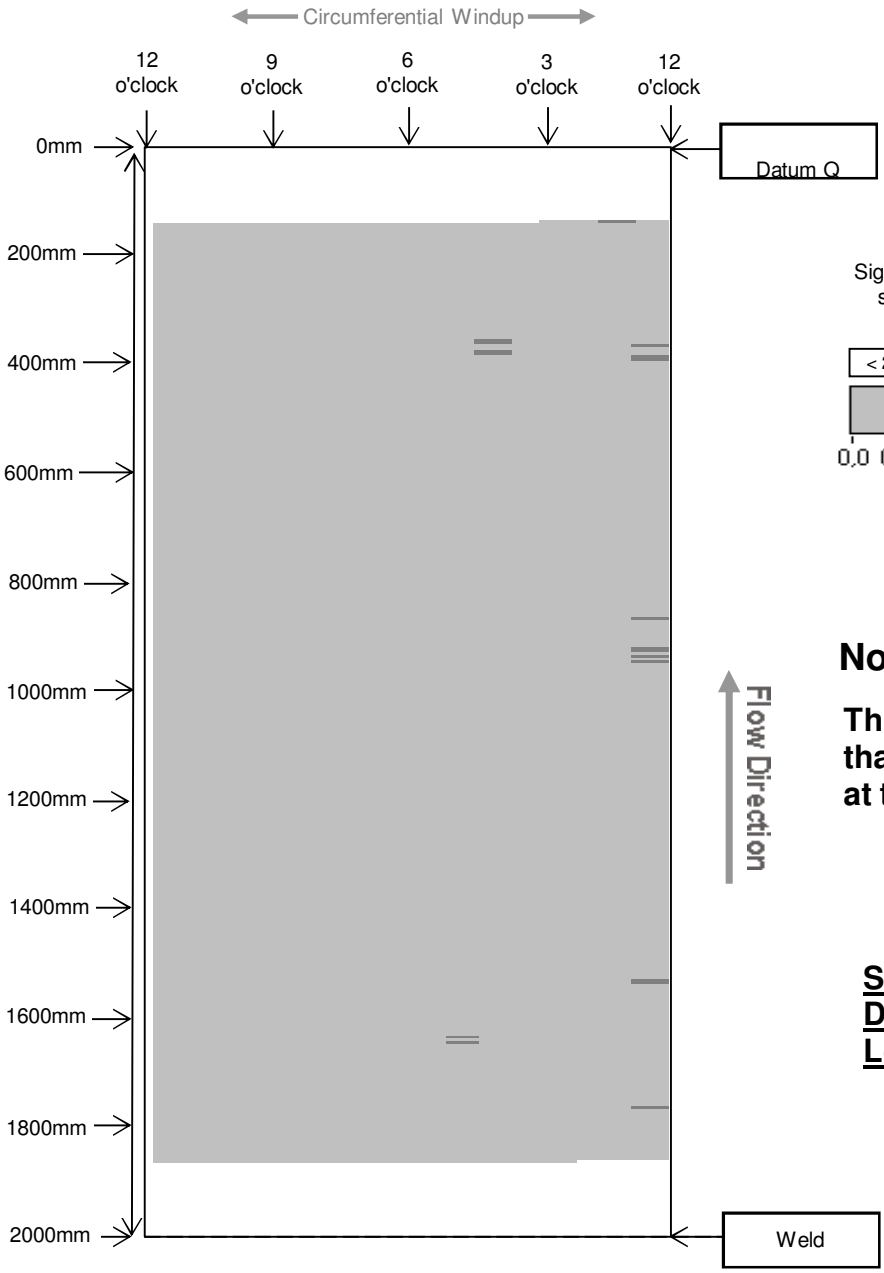
Note:

This is a signal image BMP that is produced automatically at the time of the inspection

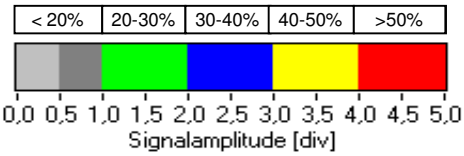
~~See Previous~~ Drawing For Location Details

Client	Client a
Location	site b
Pipe Identif.	6
Drawing	01
Area	5H
Section	Section 54 (2.00 Metre)
Date	26 April 2016
K-No.	00-16

SLOFEC/MEC™
Internal Surface PipeScan Report



Signal Y-component / angle analysis window set for indication of internal defects with approx. depth information



Note:

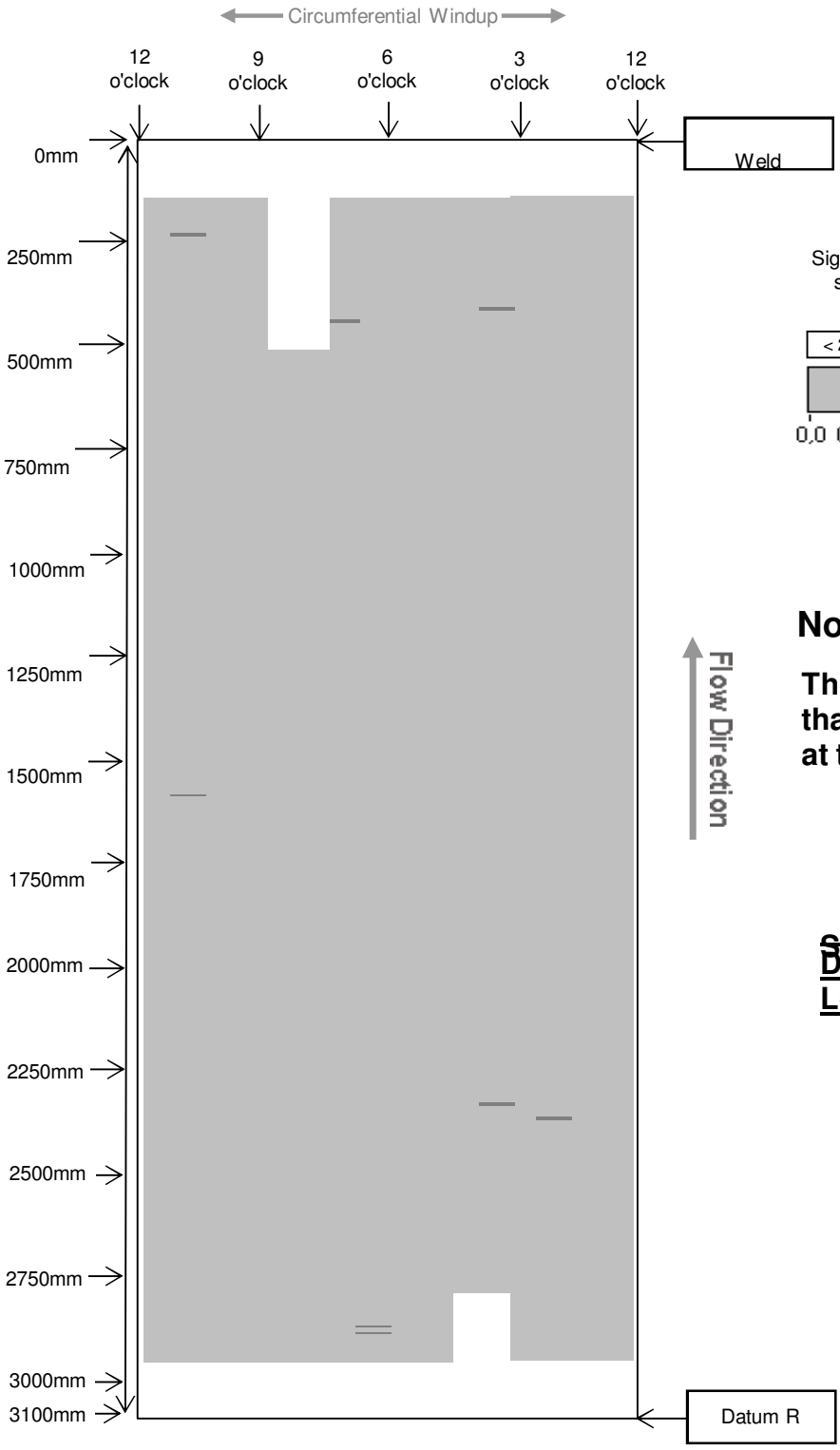
This is a signal image BMP that is produced automatically at the time of the inspection

See Previous Drawing For Location Details

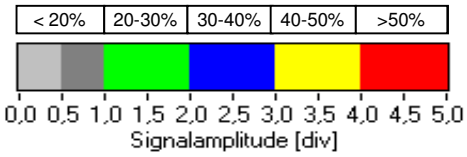
Client	Client a
Location	site b
Pipe Identif.	6
Drawing	01
Area	5H
Section	Section 55 (3.10 Metre)
Date	26 April 2016
K-No.	00-16

innospection

SLOFEC/MEC™
Internal Surface PipeScan Report



Signal Y-component / angle analysis window set for indication of internal defects with approx. depth information



Note:

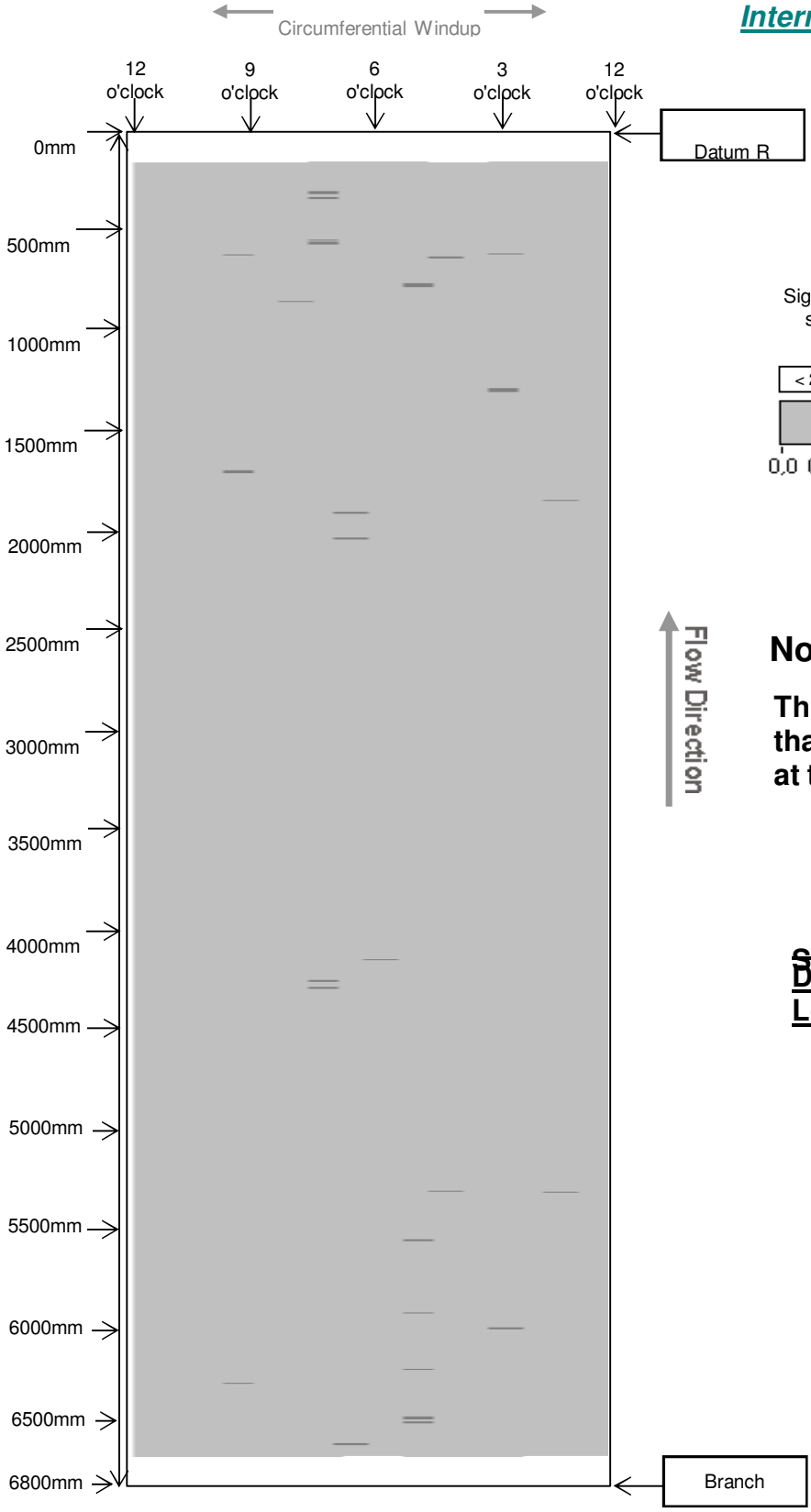
This is a signal image BMP that is produced automatically at the time of the inspection

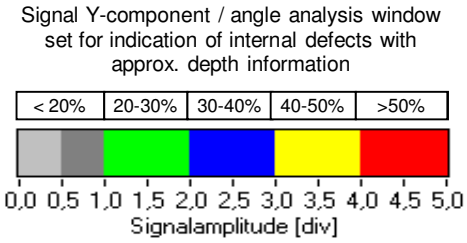
See Previous Drawing For Location Details

Client	Client a
Location	site b
Pipe Identif.	6
Drawing	01
Area	5H
Section	Section 56 (6.80 Metre)
Date	26 April 2016
K-No.	00-16

innospection

SLOFEC/MEC™
Internal Surface PipeScan Report





Flow Direction

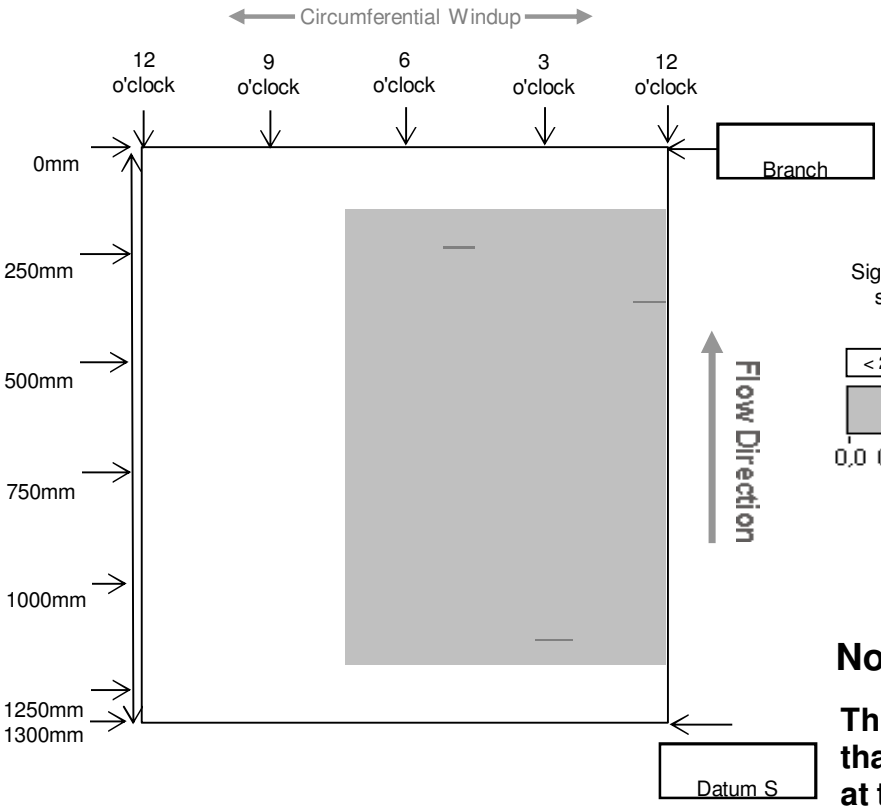
Note:

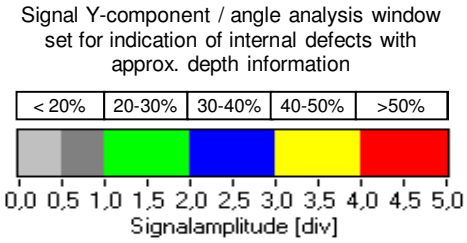
This is a signal image BMP that is produced automatically at the time of the inspection

~~See Previous~~ Drawing For Location Details

Client	Client a
Location	site b
Pipe Identif.	6
Drawing	01
Area	5H
Section	Section 57 (1.30 Metre)
Date	26 April 2016
K-No.	00-16

SLOFEC/MEC™
Internal Surface PipeScan Report





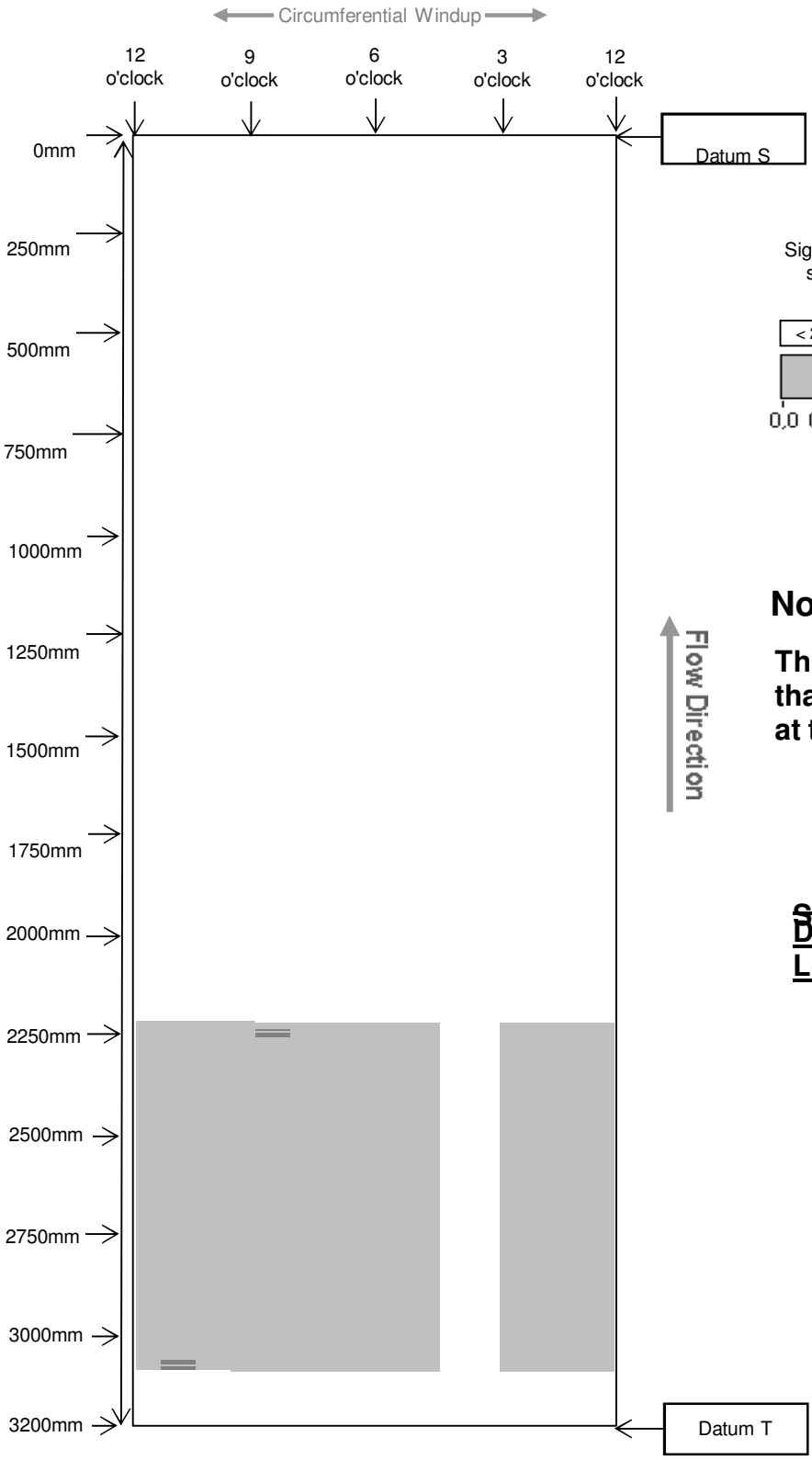
Note:

This is a signal image BMP that is produced automatically at the time of the inspection

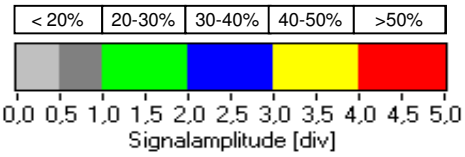
See Previous Drawing For Location Details

Client	Client a
Location	site b
Pipe Identif.	6
Drawing	01
Area	5H
Section	Section 58 (3.20 Metre)
Date	26 April 2016
K-No.	00-16

SLOFEC/MEC™
Internal Surface PipeScan Report



Signal Y-component / angle analysis window set for indication of internal defects with approx. depth information



Note:

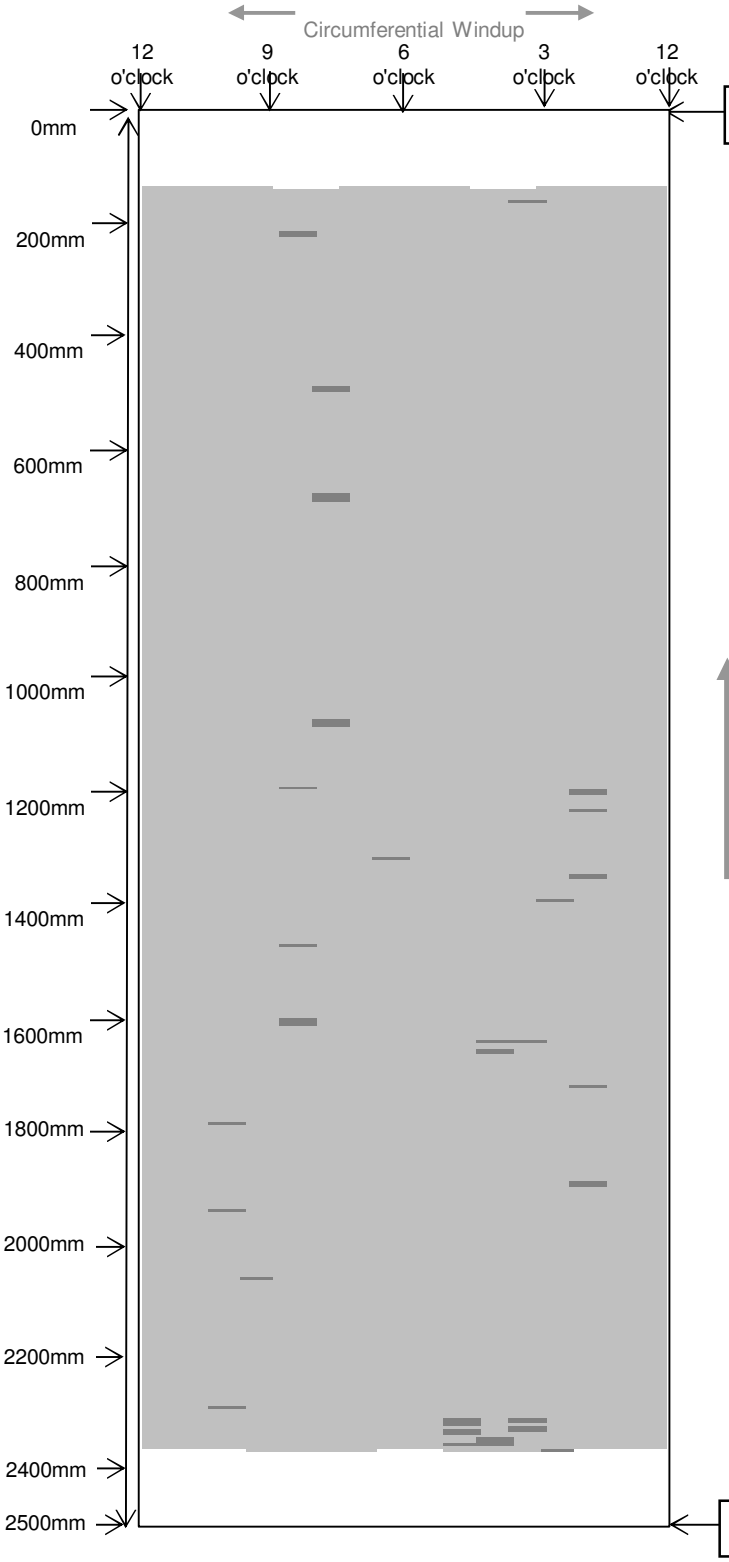
This is a signal image BMP that is produced automatically at the time of the inspection

See Previous Drawing For Location Details

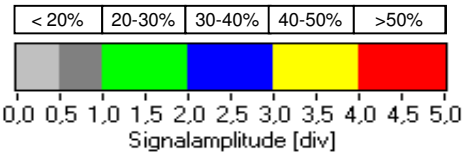
Client	Client a
Location	site b
Pipe Identif.	6
Drawing	01
Area	5H
Section	Section 59 (2.50 Metre)
Date	26 April 2016
K-No.	00-16

innospection

SLOFEC/MEC™
Internal Surface PipeScan Report



Signal Y-component / angle analysis window set for indication of internal defects with approx. depth information



Note:

This is a signal image BMP that is produced automatically at the time of the inspection

~~See Previous~~ Drawing For Location Details