

Tree Surveys

BS5837 – Pre-Planning – Mortgage – Risk Management & Prediction

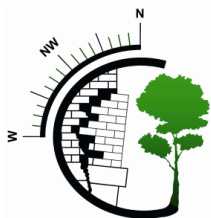
VISUAL TREE INSPECTION AND DECAY DETECTION AT THORNBURY GREEN TWYFORD



Prepared for:
Thornbury Green Management Co Ltd
C/O Homes Property Services (UK) Ltd
2-4 Broad Street
Wokingham
RG40 1AB

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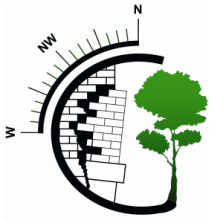
APPENDIX

- 1. Decay Detection Overview and Results**

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SUMMARY

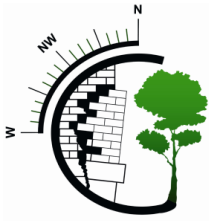
We visually inspected one individual tree and conducted decay detection with an IML Resi PD400 micro drill and Picus Sonic Tomogram (SoT) to assist with the assessment of the internal condition of the main stem. The micro drilling tests were conducted at an average height of 10 centimetres above ground level (AGL) and a control drilling was undertaken at 1.5 metres AGL. A total of 5 micro drillings were conducted, 4 at the cardinal points and 1 at 1.5 metres AGL on the north side. The Picus SoT was conducted using 10 sensors at 8 centimetres AGL.

The micro drill assessment was constrained by the micro drill length vis a vis the stem diameter. The drill has a maximum length of 40 centimetres and the tree diameter is 90 centimetres.

The Picus Tomogram indicates a small cross section exhibiting the early stages of decay (blue/purple pixels) between sensors 1 and 10 that may be linked to the wound observed encircling the north side of the stem. The Resi drillings test results show normal wood density (amplitude) with the exception of drilling 3 on the south side. There appears to be a sudden change in amplitude at 28 centimetres and this may be associated with incipient decay. Cedar are noted for their low wood density and the test results show no significant loss of wood density other than that produced at the start of the drillings as a result of the bark.

The physiological appearance, needle colour, needle density and extension growth are typical of the species.

The tree is located close to the highway and properties and has an obvious wound with some localised decay and is considered to be a medium risk and it would be prudent to visually inspect the tree on a regular basis (annually) and to conduct more detailed inspections every 3 years to monitor the structural condition.



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1. INTRODUCTION.

1.1 Instructions.

1.1.1 Tree Surveys was instructed by Kate Cullen, Property Manager at Homes Property Services (UK) Ltd to carry out a visual inspection and decay detection upon one cedar tree located opposite 7 Thornbury Green, Twyford, Berkshire RG10 9RH.

1.1.2 We are further instructed to provide a report commenting upon the structural condition, health and safety of the tree and to provide management recommendations as a result of our investigations.

1.2 Background information.

1.2.1 This is our first survey of the tree. We have no connections with any of the parties involved in this case that could influence the opinions expressed in this report.

1.3 Scope.

1.3.1 This report is concerned specifically with the physiological and structural characteristics of the tree. The primary purpose of this report is to establish the physiological and structural condition of the tree and formulate management proposals in line with industry best practice.

1.3.2 Decay diagnostic testing consisted of a combination of tests including decay detection drilling, sonic tomography, manual soundings with a nylon mallet, and use of a stainless-steel probe, with the primary focus on detecting wood decay or structural defect at ground level.

1.3.3 Recommendations were then drawn up taking into account the tree condition, type of site usage and the target area.

1.3.4 Please note: all abbreviations introduced in brackets are used throughout the report.

1.4 Plans and documents.

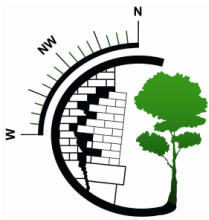
1.4.1 We have not provided a site plan as the tree is easily identifiable on site, opposite 7 Thornbury Green.

1.5 Site visit.

1.5.1 The site visit and tree inspection were undertaken by Simon Holmes MSc. MICFor. of Tree Surveys on Thursday 16 May 2024. The conditions were dry and bright and he had full access to the tree.

1.5.2 The information contained in this report covers only the tree that we examined and reflects the condition of the specimen at the time of inspection.

1.5.3 The tree was assessed from the ground only; no climbing inspection was conducted.



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- 1.5.4 The decay detection offers no guarantee, either expressed or implied, of the internal condition of the tree beyond the various test locations furthermore, no warranty that problems or deficiencies may not arise in the future can be given.
- 1.5.5 Care has been taken to obtain all information from reliable sources, and all data has been verified where possible. However, no guarantee can be given of the accuracy of information provided by others.

2. THE SITE.

2.1 Site description.

- 2.1.1 We accessed the site from the Wargrave Road, Twyford. The site contains a number of residential properties including 7 Thornbury Green and is fronted by a number of mature trees including a cedar, the tree subject of this assessment.

3. SURVEY FINDINGS AND OPINION.

3.1 General.

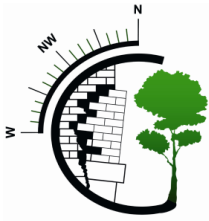
- 3.1.1 The tree is located 10.7 metres from the front elevation of 7 Thornbury Green. It is approximately 4.5 metres from the Wargrave road.

3.2 Findings and opinion.

- 3.2.1 The root zone was visually inspected, and no exposed roots or signs of root plate instability (cracking or soil heave) were observed. A large wound 1.2 metres tall was visible on the north side of the stem (see Figure 1 below), with a second wound of similar dimensions on the south side, see Figure 2 on page 6. Wound wood can be seen developing on the right-hand side of the north facing wound. We tested the stem with a nylon mallet, both dead and loose bark were detected at ground level between the wounds (clockwise), see Figure 3 on page 6. A small area of decayed wood was observed at ground level on the east side, see Figure 4 on page 6.

Figure 1. Wound, north side, Cedar 7 Thornbury Gardens. 16.05.2024





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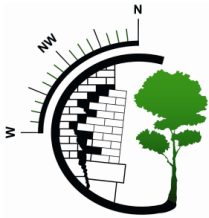


Figure 2. Wound south side, Cedar 7 Thornbury Gardens. 16.05.2024

Figure 3. Dead bark, Cedar 7 Thornbury Gardens. 16.05.2024



Figure 4. Decay, east side, Cedar 7 Thornbury Gardens. 16.05.2024

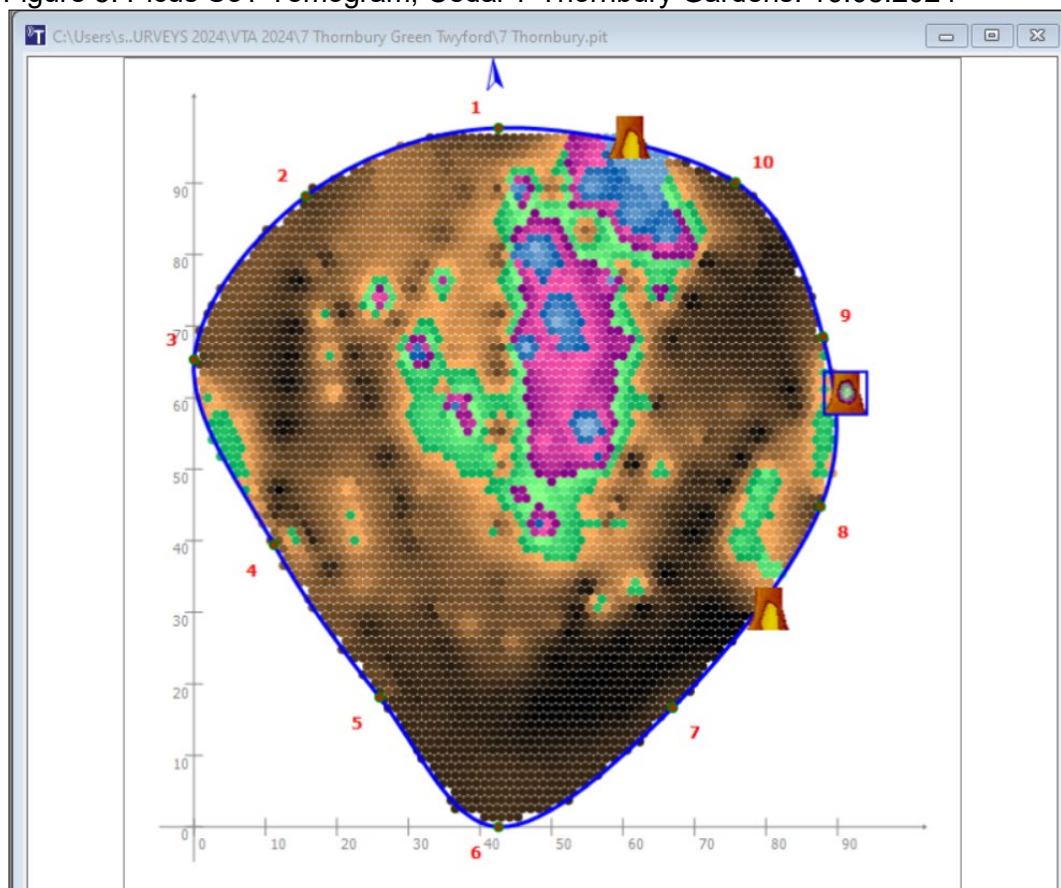


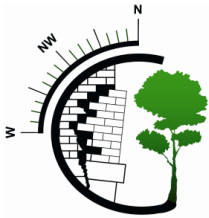
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- 3.2.2 The tree was drilled a total of 6 times with the decay detection drill (IML Resi PD400), four times around the base of the tree and twice at 1.5 metres above ground level (north and south) as controls, copies are included at Appendix 1.
- 3.2.3 Results from the micro drillings did not detect any significant cavities or advanced decay at the test locations. A sudden change in amplitude was detected in the south drilling at 28 centimetres, and this may be associated with the drop in wood density observed in the Picus SoT, indicating the early (incipient) stages of decay.
- 3.2.4 The results from the SoT can be seen in Figure 5 below. Black and brown pixels are normally associated with dense (sound) wood. Green pixels in species such as lime may indicate decay or incipient decay in other tree species. Decay or hollowing may be indicated by pink, blue and white pixels. North is indicated opposite sensor 1, with the bark wounds and decay indicated by graphics.

Figure 5. Picus SoT Tomogram, Cedar 7 Thornbury Gardens. 16.05.2024





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4. CONCLUSIONS.

4.1 General.

- 4.1.1 The bark wounds are substantial, but do not appear to have had any significant effect on the vascular system or tree vitality at the time of inspection. They are old and the extensive wound wood that has formed alongside the northern wound corroborates this opinion.
- 4.1.2 The Resi micro drillings indicate the stem is free from advanced decay or hollowing at the test locations and the change in amplitude observed in the south drilling may be indicative of incipient decay or internal defect.
- 4.1.3 The SoT does show some unusual activity (blue and purple pixels) that are indicative of slow sonic velocity (low wood density). Slow velocity may also be caused by other internal defects, radial wood cracks or wood shake and bark anomalies such as inclusions.
- 4.1.4 The combined evidence from manual sounding, probing and the decay detection indicates that the tree has a low level of decay, and that this appears to be centred around the south side of the stem at the root collar and incipient decay may be present in a small cross section of the stem at ground level.
- 4.1.5 The cause of the damage is unclear, but it is typical of that observed by mechanical wounding by machinery.
- 4.1.6 The tree is, in our opinion, a medium risk due to its condition and proximity to the Wargrave road and properties in Thornbury Gardens that are in constant use.

5. RECOMMENDATIONS.

5.1 Works required.

- 5.1.1 We recommended that the physiological and structural condition of this tree is monitored on a regular basis.
- 5.1.2 The tree should be visually inspected by a suitably qualified arboriculturist every 12 months, and the physiological condition recorded. It should also be inspected for evidence of root plate movement following any severe weather events, for example storm force winds.
- 5.1.3 The main stem should be re-tested to monitor the extent of decay by a suitably qualified arboriculturist in 3 years (June 2027).

6. LEGAL STATUS.

- 6.1 We are unable to advise on the legal status of the tree at this time and therefore, prior to undertaking any work to this tree, the local Planning Authority must be contacted to determine the legal status.



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7. ARBORICULTURAL STANDARDS.

- 7.1 Should pruning be required all tree works must be carried out in accordance with British Standard BS 3998:2010 Tree Work Recommendations and should be undertaken by a properly qualified and experienced tree contracting company. It is advised that they should carry public and products liability insurance of £5 million cover.

We trust that our investigations and recommendations are of reassurance and assistance to you. Should you have any queries or concerns please do not hesitate to contact us.



Simon Holmes MSc, MICFor
Chartered Arboriculturist
Tree Surveys



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APPENDIX 1

Resi PD400: The Resi is a mechanical drilling machine with a constant drive, which measures the drilling resistance and rotational speed along a needle, when inserted into the tree. The result is displayed on a digital panel and stored electronically at a scale of 1:1, measurement is in metric units.

The drilling and advance rate may be varied for hard or softwoods. The drilling resistance is correlated with the mechanical properties, and defective areas that have developed within the tree may be detected and assessed.

Examples of defects detected by the Resi may be dysfunctional areas such as internal cracks, areas of decay and hollowing. Remaining wall thickness may be determined to a depth of 400 millimetres. The instrument is adept at detecting the early stages of decay in white rots as well as detecting brown rots at an early stage.

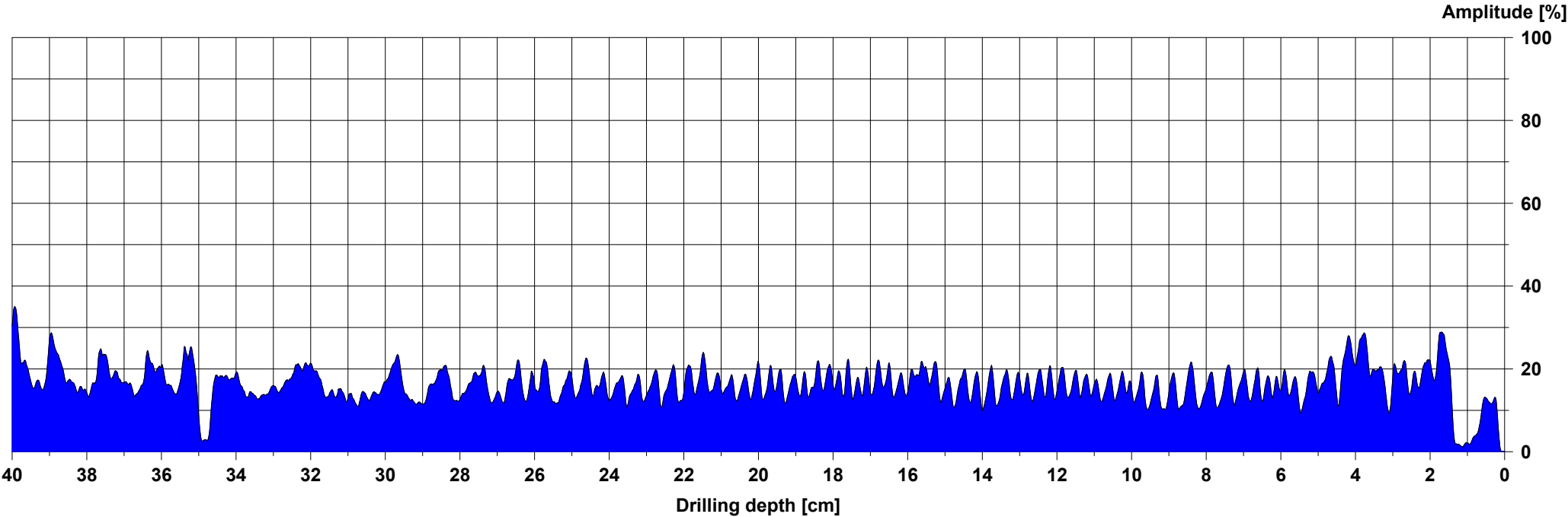
The drilling needle is specially formed and the tip is only 3 millimetres wide with a shaft diameter of 1.5 millimetres, thereby keeping internal damage to a minimum and reducing the risk of further fungal infection.

Interpreting these drilling readings:

The object data field (top left of each page) provides information on the date, depth, needle speed and site specific information. The assessment field (bottom left of each page) provides a detailed analysis of specific areas of dysfunction and is often colour coded. Readings are normally from right (entry into the tree) to left, with any specific comments in the box bottom right.

Measuring / object data

Measurement no.:	5	Speed	: 2500 r/min	Diameter:	90,00 cm
ID number	: 7 THORNBURY	Needle state:	---	Level	: 150cm
Drilling depth	: 40,00 cm	Tilt	: -1°	Direction:	North
Date	: 16.05.2024	Offset	: 77 / 271	Species	: Cedar
Time	: 11:54:56	Avg. curve	: off / off	Location:	Opp 7 Thornbury Gn
Feed	: 150 cm/min	Name	: HPS Kate Cullen		



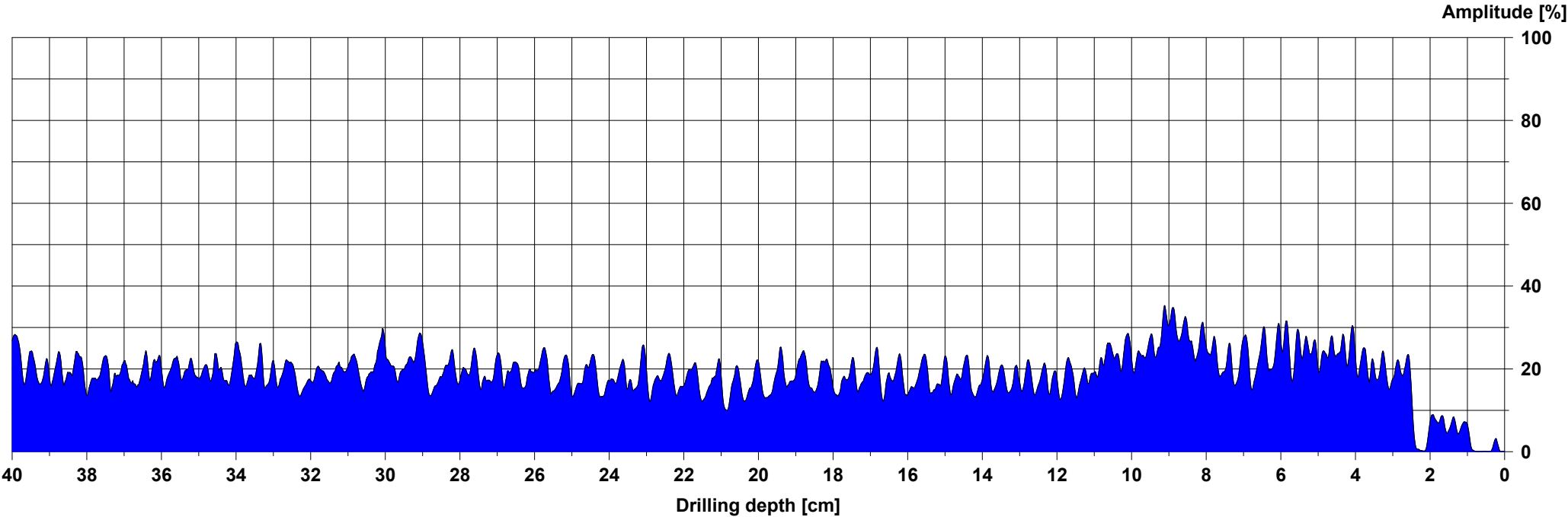
Assessment

Comment

Control drilling north side, 1.5m AGL no significant decay or hollowing at the test location.

Measuring / object data

Measurement no.:	6	Speed	: 2500 r/min	Diameter:	90,00 cm
ID number	: 7 THORNBURY	Needle state:	---	Level	: 150cm
Drilling depth	: 40,00 cm	Tilt	: 0°	Direction:	South
Date	: 16.05.2024	Offset	: 78 / 281	Species	: Cedar
Time	: 11:55:41	Avg. curve	: off / off	Location:	Opp 7 Thornbury Gn
Feed	: 150 cm/min	Name	: HPS Kate Cullen		



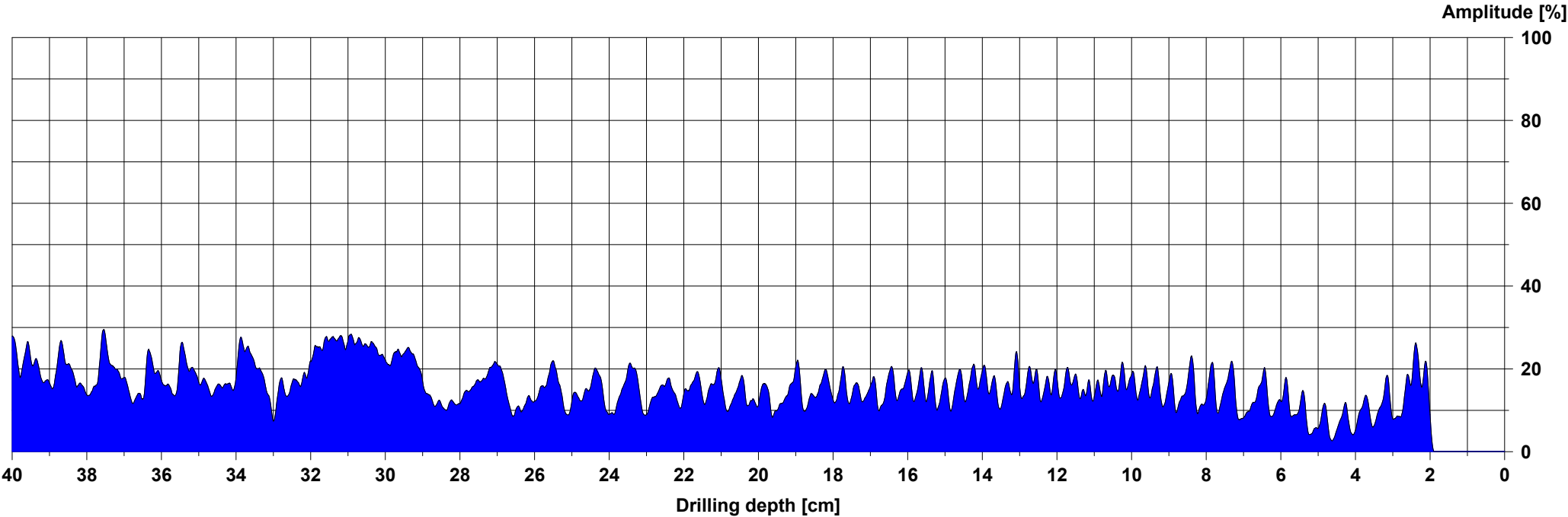
Assessment

Comment

Control drilling south side, 1.5m AGL no significant decay or hollwoing at the test location.

Measuring / object data

Measurement no.:	2	Speed	: 2500 r/min	Diameter:	90,00 cm
ID number	: 7 THORNBURY	Needle state:	---	Level	: 10cm
Drilling depth	: 40,00 cm	Tilt	: 0°	Direction:	East
Date	: 16.05.2024	Offset	: 84 / 269	Species	: Cedar
Time	: 11:52:40	Avg. curve	: off / off	Location:	Opp 7 Thornbury Gn
Feed	: 150 cm/min	Name	: HPS Kate Cullen		



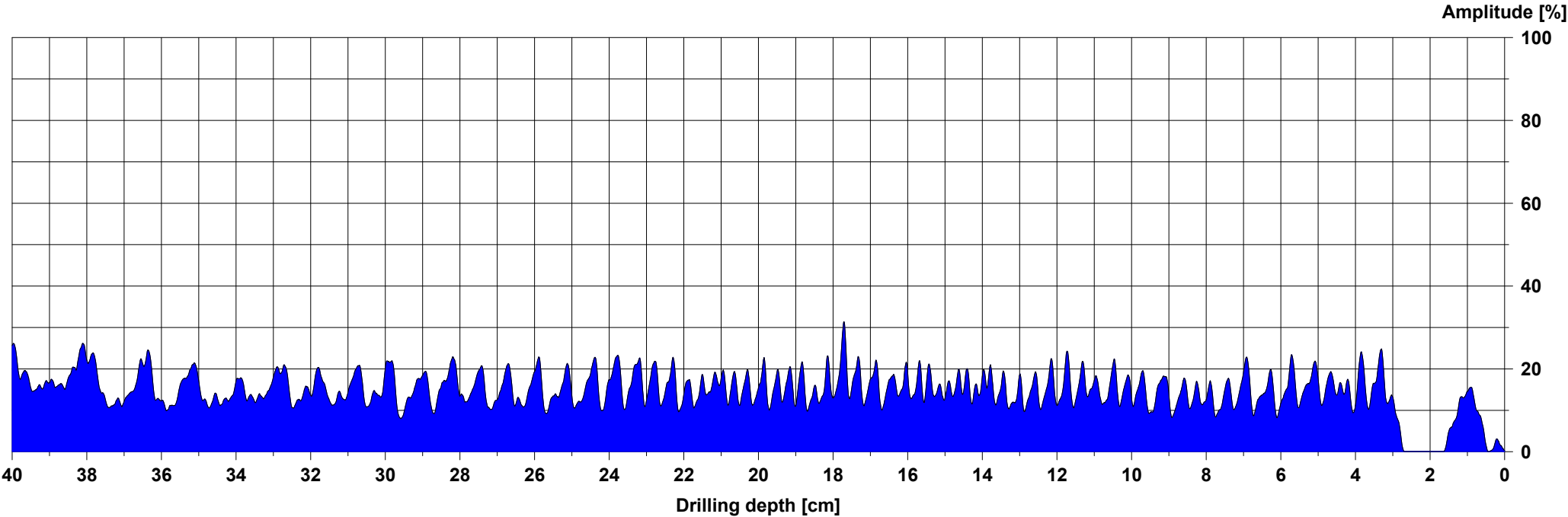
Assessment

Comment

East side, no significant decay at the test location.

Measuring / object data

Measurement no.:	1	Speed	: 2500 r/min	Diameter:	90,00 cm
ID number	: 7 THORNBURY	Needle state:	---	Level	: 10cm
Drilling depth	: 40,00 cm	Tilt	: +1°	Direction:	North
Date	: 16.05.2024	Offset	: 90 / 299	Species	: Cedar
Time	: 11:51:57	Avg. curve	: off / off	Location:	Opp 7 Thornbury Gn
Feed	: 150 cm/min	Name	: HPS Kate Cullen		



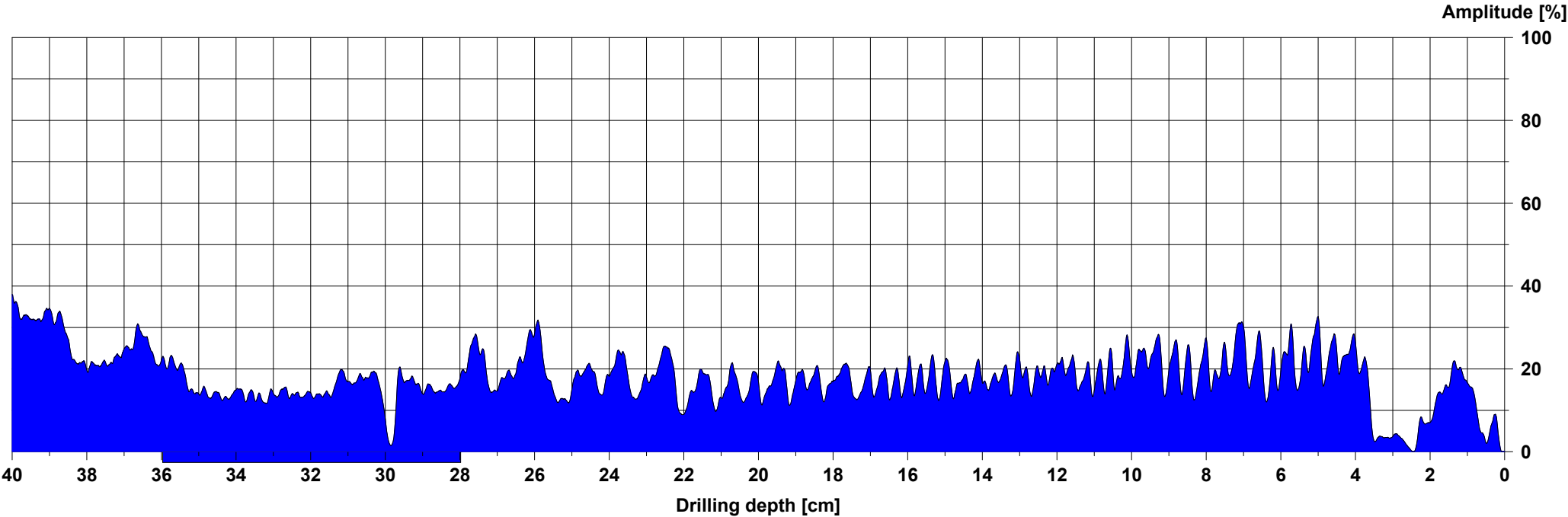
Assessment

Comment

North side, no significant decay at the test location.

Measuring / object data

Measurement no.:	3	Speed	: 2500 r/min	Diameter:	90,00 cm
ID number	: 7 THORNBURY	Needle state:	---	Level	: 10cm
Drilling depth	: 40,00 cm	Tilt	: 0°	Direction:	South
Date	: 16.05.2024	Offset	: 80 / 268	Species	: Cedar
Time	: 11:53:25	Avg. curve	: off / off	Location:	Opp 7 Thornbury Gn
Feed	: 150 cm/min			Name	: HPS Kate Cullen



Assessment

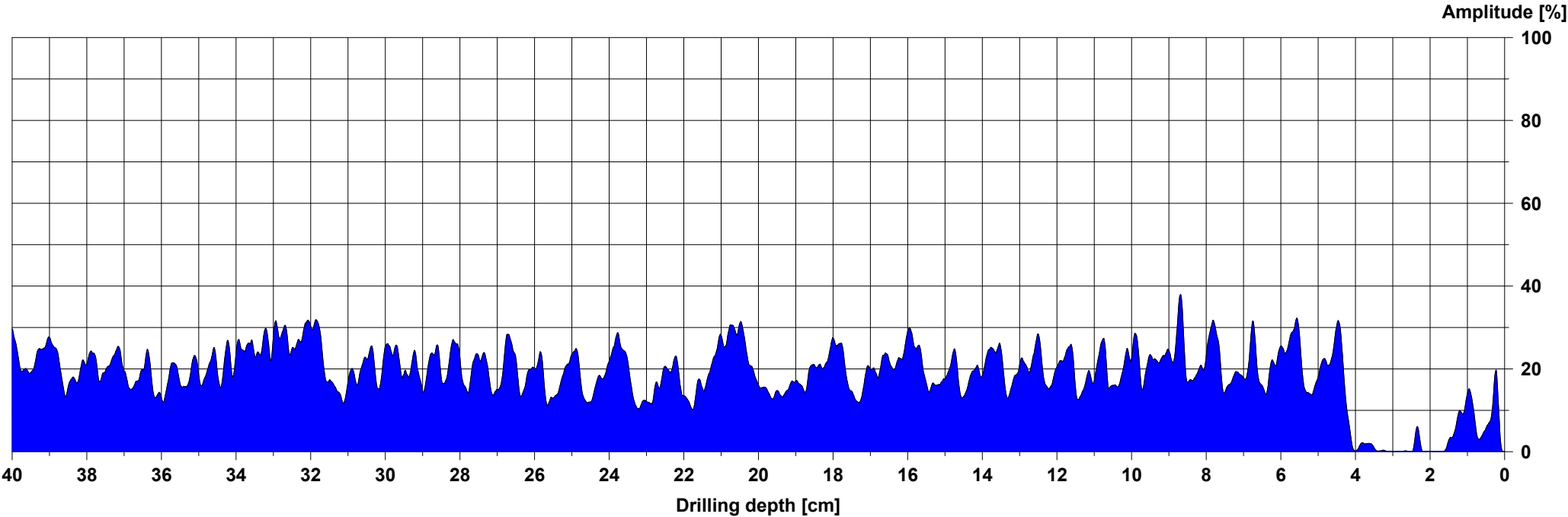
From 27,98 cm to 35,97 cm : Incipient decay

Comment

South side, change in amplitude at 28cm and irregular pattern may be associated with incipient decay however there is no evidence of significant decay or hollowing at the test location.

Measuring / object data

Measurement no.:	4	Speed	: 2500 r/min	Diameter:	90,00 cm
ID number	: 7 THORNBURY	Needle state:	---	Level	: 10cm
Drilling depth	: 40,00 cm	Tilt	: 0°	Direction:	West
Date	: 16.05.2024	Offset	: 76 / 278	Species	: Cedar
Time	: 11:54:05	Avg. curve	: off / off	Location:	Opp 7 Thornbury Gn
Feed	: 150 cm/min			Name	: HPS Kate Cullen



Assessment

Comment

West side, no significant decay at the test location.