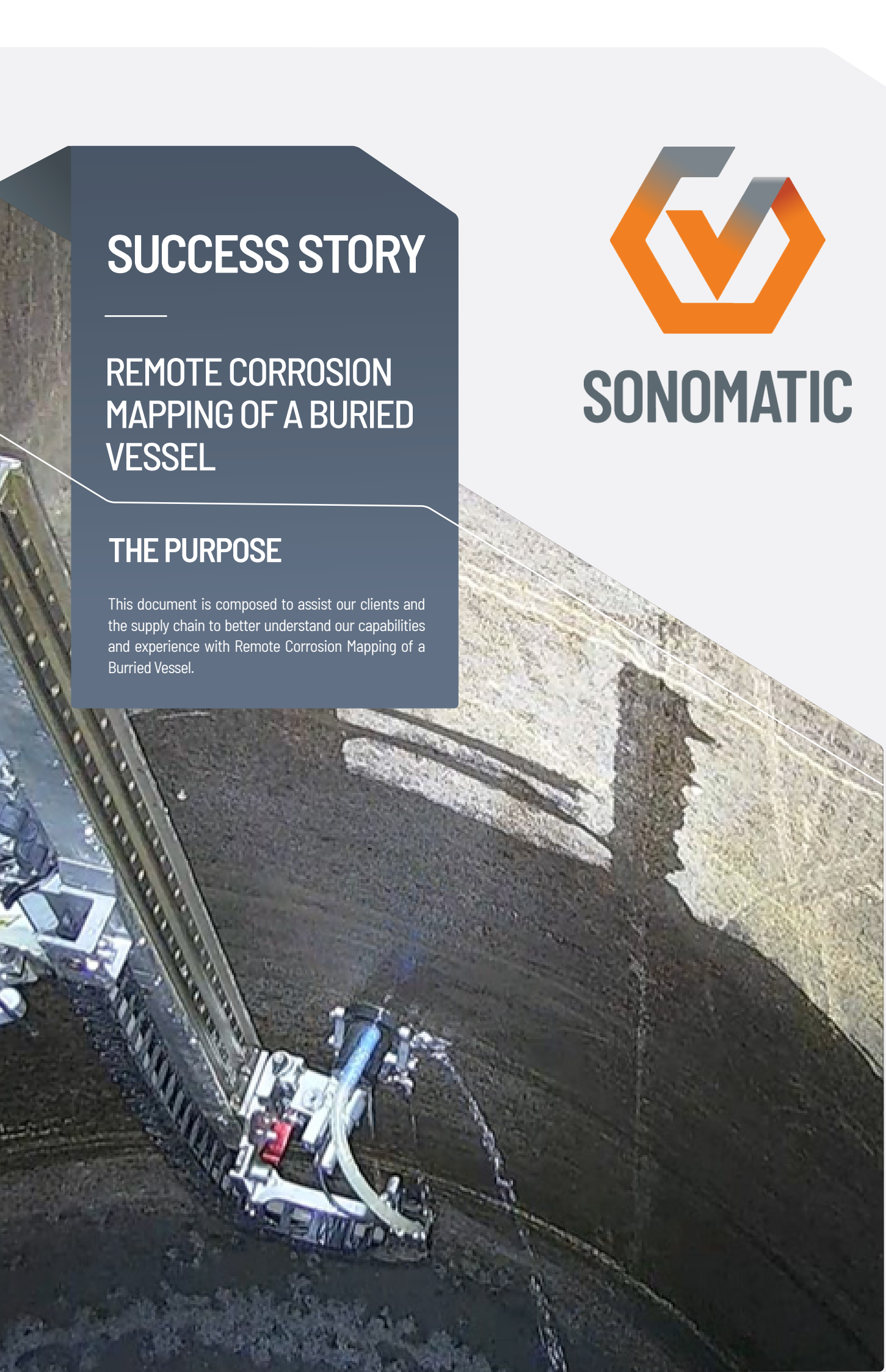
SUCCESS STORY

REMOTE CORROSION MAPPING OF A BURIED VESSEL

SONOMATIC



THE PURPOSE

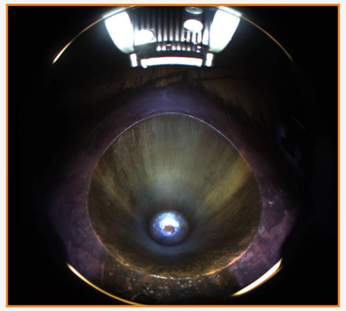
This document is composed to assist our clients and the supply chain to better understand our capabilities and experience with Remote Corrosion Mapping of a Burried Vessel.

BURIED VESSEL INSPECTION

PROJECT DESCRIPTION

In 2023, Sonomatic was approached by a client seeking a remote intrusive inspection of buried vessels at an onshore facility. The primary requirement: no personnel entry into the vessel, while still achieving comprehensive corrosion mapping coverage of all internal surfaces.

The project involves assessing a buried closed drains vessel, where only the tops of two nozzles are accessible above ground, with the objective of mapping corrosion across the shell, domes, and nozzles using remote access methods exclusively.

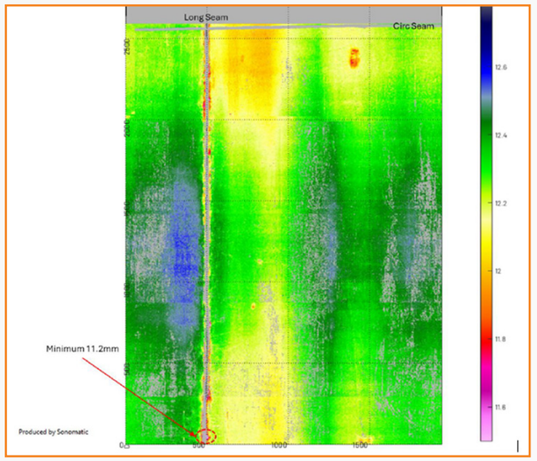


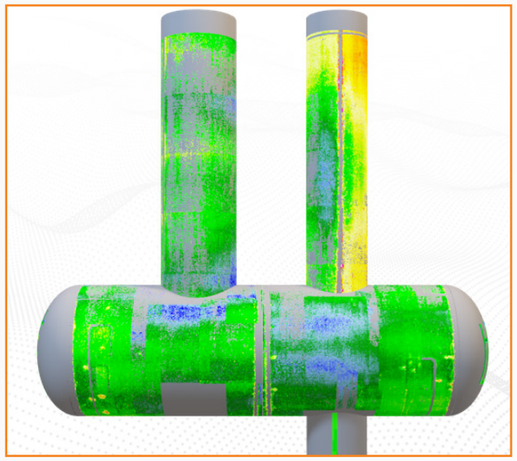
CHALLENGES AND SOLUTIONS

- **Access:** With no manway entry, all inspection equipment had to be deployed via the nozzles.
- **Corrosion Mapping:** The automated crawler, integrated with Sonomatic's Microplus system, was used for high-resolution mapping.
- **Real-Time Monitoring:** The video surveillance Robot enabled visual inspection and scanner positioning, ensuring safe and effective operation from above ground.
- **Nozzle and Shell Deployment:** Custom-designed deployment and retrieval plates allowed the crawler to be positioned at various elevations within the nozzles and shell, overcoming the limitations of magnetic wheel detachment in confined spaces.
- **Dome Inspection:** For the domes, where standard scanners could not operate due to the smaller diameter, the surveillance robot was outfitted with specialised probes to collect sufficient data coverage.

DATA AND OUTCOMES

All data was processed in Sonomatic's SIMS platform, providing detailed vessel models and supporting ongoing integrity management. The project confirmed the vessel's suitability for continued service and highlighted areas for future improvement, such as enhanced deployment systems and alternative probe technologies for complex geometries.





LESSONS LEARNED

- Deployment plates provide an effective means for deploying and retrieving the scanning system. Current development efforts focus on improving efficiency and extending deployment reach.
- Smaller diameter dome mapping requires bespoke Multiplex / PA probe and scan arm arrangement to facilitate more effective coverage on smaller diameter vessel domes.

CONCLUSION

Sonomatic's remote inspection methodology delivered a safe, efficient, and comprehensive solution for buried vessel integrity assessment, setting a new standard for non-intrusive asset inspection.

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