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Molecular Microbiological Methods—Sample Handling and Laboratory Processing

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Foreword

A set of guidelines for collection, preservation, and molecular microbiological analyses (quantitative PCR and 16S rRNA-based taxonomic profiling) of environmental samples is described in this standard. The guidelines provided in this standard aim to provide common procedures and best practices for such analyses to be performed by different laboratories to generate comparable results.

Scope

This standard is applicable to operators, service companies, third-party laboratories, consultants, and universities that perform molecular techniques to identify microorganisms in industrial settings, including microorganisms involved in microbiologically influenced corrosion (MIC), biogenic production of hydrogen sulfide (a process also known as souring), and biofouling in industrial settings and organizations that manage assets affected by corrosion threats. This standard should be used to select appropriate procedures for sample collection, preservation, laboratory processing, and data analysis.

Rationale

As the use of Molecular Microbiological Methods (MMM) increases in numerous industries, the pursuit of consistent, comparable results by different users of these methods requires the standardization of procedures and methods.[1] This standard provides guidelines to enable different laboratories to utilize consistent methodologies to generate comparable genetic data on environmental samples.

Referenced Standards and Other Consensus Documents

Unless specifically dated, the latest edition, revision, or amendment of the documents listed in the table below shall apply.

AMPP/NACE/SSPC (www.ampp.org):	
NACE TM0212	Detection, Testing, and Evaluation of Microbiologically Influenced Corrosion on Internal Surfaces of Pipelines
NACE TM0194	Field Monitoring of Bacterial Growth in Oil and Gas Systems
NACE/ASTM G193	Standard Terminology and Acronyms Relating to Corrosion

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