

PERFORMANCE WORK STATEMENT
Independent Scientific Review of
TM 8540-2024-13 Corrosion Mitigation for Buried Metallic Water Pipe

1. INTRODUCTION

The Bureau of Reclamation is a water management agency with 490 dams and thousands of miles of canals and pipelines in the 17 western states. Reclamation operates and maintains much of this infrastructure, including corrosion control and prevention, the subject of the document at the center of this contract.

The draft “Technical Memorandum 8540-2024-13 Corrosion Mitigation for Buried Metallic Water Pipe” (TM 2024) provides minimum requirements for corrosion protection of buried metallic pipe on Reclamation water infrastructure projects. Reclamation employs various corrosion prevention measures to maintain the integrity of its buried metallic pipeline infrastructure and extend its useful life. Since 2004, Reclamation has used Technical Memorandum Number (No.) 8140-CC-2004-1: Corrosion Considerations for Buried Metallic Water Pipe to define minimum requirements for corrosion protection of its buried metallic pipelines, which will be superseded by TM 2024.

TM 2024 details Reclamation’s transition from a soil resistivity-based methodology to an approach that analyzes multiple environmental factors and multiple design factors in a risk-informed approach. This analysis can inform selection of an appropriate combination of corrosion mitigation techniques such as pipe material selection, corrosion monitoring, protective coatings, and cathodic protection.

The requirements outlined in TM 2024 are subject by law (Public Law 113-76 Section 203, subsection c) to independent scientific review by appropriate experts not employed or selected by the Bureau of Reclamation. Obtaining this independent, third-party review is the purpose of this contract.

2. SCOPE

Reclamation requires an independent scientific review by three (3) Subject Matter Experts (SMEs) in the field of corrosion engineering and mitigation of the draft Technical Memorandum 8540-2024-13 Corrosion Mitigation for Buried Metallic Water Pipe (TM 2024).

2.1. Tasks

Task A. Kickoff Meeting. The Contractor shall schedule and participate in a virtual kickoff meeting within seven (7) calendar days after award with Reclamation staff to reiterate the scope and deliverables of this contract and to review Government-furnished materials, including the draft TM that is the subject of this requirement.

Task B. Independent Scientific Review: The contractor shall provide three (3) SMEs to review TM 2024 against current state of the practice in corrosion prevention and control.

SMEs shall be tasked with providing responses relative to the following Review Questions:

- Were appropriate criteria and weighting used to categorize soil corrosivity and consequences of pipe failure?
- Will the corrosion prevention minimum requirements outlined in this report for buried metallic pipe reliably provide a minimum service life of 50 to 100 years?
- Are the estimated replacement rates proposed for Life Cycle Cost Analysis appropriate?

Task C. Consideration of Public Review Comments: The Government will conduct a public comment period concurrent to the independent scientific review and provide compiled comments to the Contractor. The Contractor shall provide these comments to SMEs and instruct them to consider the comments in their review.

Task D. Delivery of Findings: The contractor shall compile SME comments into a consolidated comment matrix and facilitate preparation of a single consolidated report of findings including recommendations from the SMEs. The contractor shall provide a digital copy of the consolidated report of findings and comment matrix to Reclamation.

D-1. Consolidated Comment Matrix:

- Spreadsheet format
- Columns shall include comment number, SME name, page number, paragraph/section number, comment, rationale for comment, and proposed change (if any), similar to the example below (see attached sample comment matrix)

Comment #	SME Name	Page #	Paragraph/ Section #	Comment	Rationale	Proposed Change (Optional)

D-2. Report of Findings:

- PDF format
- Contain a narrative of the consolidated reviews of the SMEs, including their attributed, individual answers to the three Review Questions noted in Task B.
- Include, but not limited to, the following sections:
 - executive summary,
 - introduction,
 - methodology,
 - key findings,
 - conclusions, and
 - recommendations from the SMEs.

2.2. Methodology of Review:

The independent scientific review shall be conducted by individual SMEs (not companies or corporations).

Each of the SMEs' identities will be disclosed in the Report of Findings, and review comments will be attributed to the individual SME. These will be publicly published by Reclamation as an Appendix to TM 2024.

The Contractor shall provide clear direction to the SMEs that they are to provide comment solely on the provided scientific information and how the information complies with current industry standards, and that decision-making and policy interpretation are sole responsibility of the Government.

3. PERSONNEL QUALIFICATIONS

3.1. Contractor Qualifications: Contractor shall demonstrate experience in performing independent engineering and science reviews by providing references of prior experience of key personnel to include type of review, dollar value, and year of review. Contractor's key personnel shall have a minimum of five years' experience and three completed independent engineering and science review projects.

3.2. Subject Matter Expert (SME) Qualifications: Expertise is the most important factor in selecting SMEs. The Contractor should target SMEs that have established, high-caliber engineering and scientific credentials (based upon past performance) in corrosion mitigation.

3.2.1. Each of the SMEs selected by the contractor shall have or hold **all** of the following:

- a. a minimum of 25 years of professional engineering experience,
- b. an engineering degree from an ABET accredited institution,
- c. professional experience implementing industry standards in corrosion engineering that includes NACE SP0169 "Control of External Corrosion on Underground or Submerged Metallic Piping Systems,"
- d. extensive knowledge and continuous professional experience in corrosion control of buried metallic water pipe systems and demonstrated work products in this area in the past five years, and
- e. demonstrated professional experience in water infrastructure.

3.2.2. Each of the SMEs selected by the contractor shall hold at a minimum of one of the following:

- a. a current Professional Engineering (P.E.) license,
- b. a Doctor of Philosophy (Ph.D.) in engineering,
- c. a NACE Cathodic Protection Specialist (CP4) certification (attach proof of credential to resume).

3.2.3. All SMEs selected shall be actively working in the following categories of expertise (One (1) each SME per category):

- a. **Category 1:** Water utility representatives with a minimum of 15 years of corrosion control and prevention experience and practical knowledge of the requirements and responsibilities of water utility owners and operators.
- b. **Category 2:** Consultants with a minimum of 15 years of corrosion control and prevention experience and practical knowledge of the requirements for corrosion control design and implementation on water infrastructure construction projects.
- c. **Category 3:** Academic professors with a minimum of 15 years of experience in corrosion science and a demonstrated understanding of the practical

implementation of corrosion mitigation guidance on water infrastructure projects.

3.2.4. The contractor shall provide with their proposal the required documents to demonstrate each of the SME's qualifications as stated above in 3.2.1 through 3.2.3.

NOTE: The contractor shall redact SME identities in the proposal.

3.3. Conflicts of Interest: Contractor shall assure SMEs do not have a conflict of interest. For this review, a person having a conflict of interest is a current or former employee of Reclamation, has a financial interest or represents an entity with a financial interest in the outcome of this review, or has a competing interest that could otherwise influence their responsibilities as an SME.

4. KEY PERSONNEL

At any time during performance of this contract, the Contractor shall make no substitutions of key personnel unless the substitution is necessitated by illness, death, or termination of employment. The Contractor shall notify the Contracting Officer (CO), Contract Specialist (CS), or Contracting Officer's Representative (COR) within fourteen (14) calendar days after the occurrence of any of these events. The contractor shall provide a detailed explanation of the circumstances necessitating the proposed substitutions, complete resumes for the proposed substitutes, and any additional information requested by the CO/CS/COR. Proposed substitutions shall have comparable qualifications equal to or exceeding those of the persons being replaced. Changes to key personnel will require government approval, which will be documented as a modification to the contract.

Contractors Key Personnel (To be listed at Award)

Name	Position

5. PERIOD OF PERFORMANCE

The preferred period of performance of the contract is 90 days from the receipt of the award; however, the contractor may submit an alternate completion date with justification.

6. SCHEDULE / DELIVERY TABLE

Activities and deliverables shall follow the below delivery schedule:

Paragraph	Activity/Deliverable	Responsible Party	Due	Deliver To
3.1	Contractor Qualifications	Contractor	with proposal	1 electronic copy to COR

3.2.4	SME Qualifications	Contractor	with proposal	1 electronic copy to COR
7	TM 2024	Reclamation	upon award, prior to Kickoff Meeting	1 electronic copy to Contractor
2.1 Task A	Kickoff Meeting	Contractor and Reclamation	within 7 calendar days after award	virtual meeting
2.1 Task C	Compiled Public Comments	Reclamation	35 calendar days after award	1 electronic copy to Contractor
2.1 Task D	Consolidated Comment Matrix	Contractor	60 calendar days after award	1 electronic copy to COR
2.1 Task D	Report of Findings	Contractor	60 calendar days after award	1 electronic copy to COR

7. GOVERNMENT-FURNISHED EQUIPMENT AND MATERIALS

7.1. A copy of draft TM 2024 will be provided to the contractor by the Government after award and prior to the scheduled Kickoff Meeting. The document to be reviewed will be in a PDF format and consist of 49 total pages; main document body including references, of 19 pages with 10 tables, 2 figures, 44 references; one appendix of 9 pages with 5 tables.

7.2. A sample comment matrix spreadsheet file as shown in Task D-1.

7.3. Upon request, the Government will provide a copy of Technical Memorandum Number (No.) 8140-CC-2004-1: Corrosion Considerations for Buried Metallic Water Pipe (2004).

7.4. Government furnished information provided to the contractor and/or contractor employee, work products, and deliverables are designated Controlled Unclassified Information (CUI), except when contractor-produced and Government-furnished information related to this contract is designated Public Information (non-CUI).

7.5. Reclamation will not issue any Government property to the contractor. The contractor is responsible for providing all labor, equipment, materials, and supplies necessary to meet the requirements of this contract.

8. REGULATIONS/POLICIES

8.1. Federal regulations, policies, and standards of performance and conduct apply.

8.2. When selecting SMEs, the Contractor shall comply with the National Academy of Science's "Policy and Procedures on Committee Composition and Balance and Conflicts of Interest for Committees Used in the Development of Reports" (2003), and OMB's "Final Information Quality Bulletin for Peer Review" (2005).

9. TRAVEL

Travel is not required for this contract.

10. SECURITY

Reclamation has identified specific security sensitivity designations for information related to Reclamation facilities. The contractor and/or its employees performing services under this will be required to complete a Federal Non-Disclosure Agreement.

11. TRAINING

The contractor is responsible for any necessary training for its employees.

12. PERFORMANCE CRITERIA

12.1. The contractor shall be responsible for the SMEs and key personnel in the performance and completion of all required tasks of this Performance Work Statement.

12.2. The Contracting Officer's Representative (COR) will report any unsatisfactory contractor performance issues to the Contracting Officer (CO). The CO may require the contractor to explain, in writing, the cause of the poor performance, any corrective actions the contractor has already taken to obtain an acceptable level of performance, and any future corrective actions the contractor will utilize to prevent unacceptable performance. Unacceptable performance may result in cancellation.

12.3. PERFORMANCE REQUIREMENTS SUMMARY TABLE (PRST). The following table summarizes the tasks, the performance standard, and monitoring methods.

Paragraph	Task Description	Performance Standard	Method of Monitoring
3.1	Provide contractor's key personnel qualifications.	All key personnel meet the qualifications listed in 3.1.	Assessment of qualifications by Reclamation Review Lead
3.2	The contractor will provide the qualifications of each SME prior to the review, without disclosing their identity.	All SMEs meet the qualifications listed in 3.2.	Assessment of qualifications by Reclamation Review Lead
2.1 Task D	The contractor will provide a consolidated comment matrix and report of findings.	Includes at a minimum, responses to the questions listed in 2.1 Task B and requirements according to 2.1 Task D.	Assessment of documentation by Reclamation Review Lead

12.4. The designated government Project Manager, Technical Representative, and COR will closely monitor performance quality and progress, timely submission of deliverables, compliance with performance standards, and ensure invoices are accurate and appropriate.

12.5. Quality shall be measured based on the following Performance Objectives:

Paragraph	Performance Objective	Performance Goal
6	Meets delivery schedule for each deliverable.	100% of the time
6	Notifies government of any necessary delays withing 48 hours.	100% of the time

13. ATTACHMENTS

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