



**SAN ANTONIO WATER SYSTEM**  
**DSP LOOP 1604 GROUND STORAGE TANK NO. 2**  
**PAINTING AND REHABILITATION PROJECT**  
**SAWS Job No. 13-0704**  
**SAWS Solicitation No. B-14-035-RA**

**ADDENDUM NO. 3**  
**June 16, 2014**

**To Respondent of Record:**

This addendum, applicable to work referenced above, is an amendment to the bidding documents only to the extent explicitly provided for herein and except as may be specifically provided for herein to the contrary, will be a part of and included in the Contract Documents. Acknowledge receipt of this addendum by entering the addendum number and issue date in the space provided in submitted copies of the proposal.

**A. Questions and Answers**

Q1. Is pre qualification required to bid on this job?

*A1. Pre-qualification of prime contractors is not required for submitting a proposal. Refer to section SIR "Supplementary Instructions to Respondents" for required experience. Prime contractors are required to attend the mandatory pre-proposal meeting and site visit as indicated in the "Invitation for Competitive Sealed Proposals".*

Q2. Specification 01010 1.02C refers to the preliminary engineering report dated October 2013 prepared by Freese & Nichols. Would SAWS please post that report to the website as was agreed in the Prebid meeting?

*A2. A preliminary engineering report can be reviewed upon request. Refer to Section B. "Modifications to the Specifications" below for additional information. The report will not be posted to the SAWS website and is not part of the Contract Documents.*

Q3. Does the preliminary engineering report provide recommendation for how to handle lead abatement or at a minimum contain the test results regarding the levels of lead contained in the paint?

*A3. The preliminary engineering report includes documentation and recommendations to the Owner concerning heavy metals found in coating test samples at the site. These recommendations are for the Owner's use only. Respondent shall not rely on this report for purposes of preparing their bid and Owner will not accept any claim for additional costs based on a claim for differing conditions from the report.*

*Refer to section SPC-1 "Special Conditions" SC-1.1, "...Prior to presenting their Proposal, Respondents are encouraged to take their own representative samples of existing coating systems; e.g., exterior, interior and piping coating systems, test samples in a state certified laboratory for total lead, chromium and cadmium, and use their best judgment in determining their construction method, labor hazard protection, equipment*

*and materials to perform the scope of work in full compliance with EPA, TCEQ, and OSHA Regulations....”*

- Q4. Given that the work on this project must start immediately it is very likely that all materials submittals will not be approved prior to requesting payment for prescribed portions of mobilization. We request that SAWS delete the requirement of Specification 01025 1.02A.4.c.4).e).(2).e) to reduce payment for mobilization by half until all submittals are approved?

*A4. Refer to modifications to Section 01025 “Measurement and Payment” per Section B. “Modifications to the Specifications” below.*

- Q5. Based on the information provided during the Pre-Proposal Meeting it appears that Notice to Proceed will be mid to late October. Please note that this will not allow the project to be built per the Construction Sequence outlined in Specification 01030 1.01A, most notably because there is not enough time for procurement of isolation valves prior to taking either tank out of service on November 1st. Please confirm it is acceptable to perform the work in whatever sequence is necessary to meet the contract duration provided at no time both tanks will be out of service for rehabilitation.

*A5. Construction sequencing and other scheduling items have been specified in Section 01030 “Special Procedures.” Any deviations from those requirements shall be pre-approved by the Owner and the Engineer prior to construction.*

- Q6. Regarding Specification 01030 1.01B, it has come to our attention that the geodesic dome suppliers will not begin fabrication of the dome until after the existing steel roof has been removed and dimensions have been confirmed. Based on the estimated fabrication time and taking into account the holiday season it is not likely that the work on both tanks can be accomplished consecutively during the 4 month window of November 1st to March 1st. Would SAWS change the completion date to March 31st or allow both tanks to be out of service for no more than 30 days to allow the contractor sufficient time to complete the work?

*A6. The Contractor is responsible for coordination with subcontractors and suppliers as required to meet the project specifications. The completion date and the requirements for tank outage periods will not be changed. Refer to Section 01030 “Special Procedures” for completion dates and other requirements pertaining to tank outages.*

- Q7. Specification 01030 1.03A states that SAWS has “identified critical operations that must not be out of service longer than the designated maximum out of service time and/or must be performed only during the designated times”. Are there any other critical operations other than taking the tanks out of service? If so, please identify them and provide maximum out of time service and/or designated times work must be performed. Also, please provide the liquidated damages, if any, associated with having critical operations out of service as none were found in the Supplemental Conditions.

*A7. Refer to modifications to Section 01030 “Special Procedures” per Section B. “Modifications to the Specifications” below.*

Q8. Specification 01060 1.01K states that if the “initial and final total lead levels in the soil fall in a category which requires action by the Contractor, then the contractor shall perform required action”. Since the contractor does not know the initial total lead levels in the soil please confirm that any required action will be paid for by the owner. If not, please add a unit price to the bid form for soil abatement.

*A8. Results of preliminary soil tests are included in the preliminary engineering report and additional sampling is required prior to the start of work as indicated in Section 01060 “Regulatory Requirements.” The contractor is responsible for mitigating any contaminated soils or coatings as specified. Refer to Section B. “Modifications to the Specifications” below for additional information. Respondent is required to comply with the bid documents regarding determining site conditions. Respondent shall take all steps necessary to comply with these requirements prior to submitting its price proposal and Owner will not accept any claim for additional costs related to differing site conditions.*

Q9. Specification 01300 1.13A states the engineer will review the submittals and return them with “reasonable promptness”. At the prebid it was suggested that 7 days would allow adequate time for both SAWS and Freese & Nichols to complete their review. For scheduling purposes, please confirm how many days contractor should include for submittal response.

*A9. The Owner and the Engineer will work with the Contractor to prioritize and expedite the review on submittals deemed to be critical to the Contractor’s schedule.*

Q10. Under Quality Control requirements it states that structures containing water and piping systems must be leak tested using various lengthy processes. Due to the very short duration for performing work on the tanks and the nature of modifying segments of a larger pipeline please clarify what procedures will be employed for leak testing.

*A10. Quality control requirements and procedures are specified in Section 01400 “Quality Requirements”. Refer to Section B. “Modifications to the Specifications” below for additional information.*

Q11. Spec 01500 2.06A states Contractor shall provide an armed security guard during all times that work is being performed on the site. Please confirm that the guard is still required and provide contact information for USSA or approved equal security contractors.

*A11. An armed security guard is required as specified. Contractors may contact U.S. Security Associates at 210-271-7405.*

Q12. If we were not able to attend the pre-bid meeting, are we still allowed to submit a proposal?

*A12. Refer to the “Invitation for Competitive Sealed Proposals”:*

*“...Please be advised that under no circumstances shall any late or non-attendee(s) to the Mandatory Pre-Proposal Meeting be allowed to submit a competitive sealed proposal for the project. Immediately following the pre-proposal meeting there will be a MANDATORY site visit at 685 North Loop 1604, San Antonio, TX, 78258.”*

Q13. I know this tank will be repaired, so if I am still able to quote, would you be the person to talk to about the scope or anything pertinent that would have been said in the meeting?

*A13. For questions regarding this solicitation, technical questions or additional information, please contact Rosalee Arcos, Contract Administrator, in writing via email to: Rosalee.Arcos@saws.org or by fax to (210) 233-5218. However, Respondents are reminded that the deadline for submitting questions has already passed.*

Q14. We manufacture and install Epoxy, Urethane & MMA flooring and would like to provide pricing to you for this project. This is usually found in division 9 of the specifications. Please let us know us know if we can have our Florock approved applicator contact you with pricing. We are very competitive and made in the USA. You can view our website @ www.florock.net.

*A14. Approved manufacturers have been indicated in the project specifications. Refer to section GC "General Conditions" - 5.11 EQUAL MATERIALS for additional information. Respondents must contact manufacturers and/or General Contractors for any price related questions.*

Q15. I went online and downloaded the Addendum #1 for the above mentioned project. It appears there are quite a few subcontractors listed in the approved bidders list. I am used to seeing the requirement for the General Contractors to have to attend the pre-bid meeting and walk, but seldom the subcontractors. Are the only approved subcontractors those who attended both meetings as well? Before I continue working at pricing this work for one of the GC's I would like to know if my price will be even be acceptable or not.

*A15. Attending the pre-proposal meeting and site visit is not required for subcontractors.*

Q16. Sheet E-4 shows a 1" conduit from the cathodic protection rectifier panel going to the tank roof but there are no drawings indicating cathodic protection on the roof. Please clarify where the conduit is to be routed on the tank roof and how it is to be attached?

*A16. Refer to modifications to sheet E-7 as indicated in Section C "Modifications to the Plans" below.*

Q17. Also on Sheet E-4, the level control panel has a 1" conduit shown to the tank roof presumably to the level electrode probe holder. Is there a box required near the probe holder to make terminations between the electrodes and the cable from the level control panel? How do these interface? Is the cable type called out in the specs?

*A17. Refer to modifications to sheet E-7 as indicated in Section C "Modifications to the Plans" below.*

Q18. Are any new lights to be installed on the tank or just the two on the control rack? If so, how many, where are these shown, controlled?

*A18. Lighting is only indicated to be installed on the control rack per the plans.*

Q19. Is there any type of lightning protection required?

*A19. Refer to Section 16451 "Grounding" and the plans for lightning protection requirements.*

Q20. Sheet E-7 has a reference to sheet S-2. I do not have a sheet S-2. Can this be supplied? Are there any other sheets I am missing-I have the sheets shown on the cover page only, C-1 through C-29, E-1 through E-10.

*A20. Refer to modifications to sheet E-7 as indicated in Section C "Modifications to the Plans" below.*

## **B. Modifications to the Specifications**

### **1. SPECIAL CONDITIONS**

Reference Page SPC-1. Add the following Special Condition:

“SC-1.4 Preliminary Engineering Report: A Preliminary Engineering Report has been developed for SAWS on this project and upon request will be made available for review by Contractors for information purposes only. The Preliminary Engineering Report is not part of the Contract Documents. Please contact Rosalee Arcos via email at Rosalee.arcos@saws.org. SAWS will require the execution of a SAWS disclaimer form by the Contractor as a condition of and prior to the review of the report.”

### **2. SECTION 01010 SUMMARY OF WORK**

Reference Page 01010-1, Paragraph 1.02.C. Delete paragraph in its entirety.

### **3. SECTION 01025 "MEASUREMENT AND PAYMENT"**

Reference Page 01025-3, Paragraph 1.02.A.4.c.4).e).(2).(e). Delete paragraph in its entirety and replace with the following:

“Payment for this line item will be reduced by half of the earned amount, until the following documents are submitted and approved by SAWS: Health and Safety Plan (per standard Spec 902), Progress Schedules (per Spec 01310), Pre-Construction Video (per Spec 1381), and Quality Control (per Spec 1400).”

### **4. SECTION 01060 "REGULATORY REQUIREMENTS"**

Reference Page 01060-3, Paragraph 1.01.K. Modify the paragraph as follows:

“...and deliver the soil samples **to a laboratory approved by the Owner** to have atomic absorption of inductively coupled plasma testing (total lead) performed on the samples. The cost of testing the initial and final soil samples shall be borne by the **Contractor**...”

### **5. SECTION 01400 "QUALITY REQUIREMENTS"**

a. Reference Page 01400-8, Section 3.04 “Leakage Tests for Structures”. Delete Section 3.04 “Leakage Tests for Structures” in its entirety.

b. Reference Page 01400-9, Paragraph 3.05.B.1.d. Modify the paragraph as follows:

“d. Duration of pressure test shall be at least **2** hours.”

6. SECTION 01500 “TEMPORARY FACILITIES AND CONTROLS”  
Reference Page 01500-2, Paragraph 2.06.A.. Delete the paragraph in its entirety and replace with the following:

***“A. CONTRACTOR shall provide an armed security guard during all times that work is being performed on the site by CONTRACTOR or his subcontractors. The guard should be a commissioned guard from U.S. Security Associates (USA), SAWS approved security contractor. The guard shall have NIMS-certification, first aid/AED certification, and shall meet all SAWS requirements for psychological testing.”***

7. SECTION 05701 “STEEL WATER TANK REPAIR”

- a. Reference Page 05701-1, Paragraph 1.02 “Submittals”. Add the following paragraph:

“F. Submit welding procedures including weld testing frequencies and welding operator certifications.”

8. SECTION 09805 “COATINGS FOR WATER STORAGE TANKS”

- a. Reference 09805-2, Paragraph 1.02.G.6. Modify the paragraph as follows:

“6. One set of SSPC VIS 1, **3 and 4** - Visual Standards **as applicable.**”

- b. Reference 09805-11, Paragraph 1.05.A.7. Add the following:

SSPC-VIS 4	Guide and Reference Photographs for Steel Surfaces Prepared by Waterjetting
SSPC-SP13	Surface Preparation of Concrete
SSPC-SP WJ-1	Low-Pressure Water Cleaning (LP WC) water performed at pressures less than 34 MPa (5,000 psig)
SSPC-SP WJ-2	High-Pressure Water Cleaning (HP WC) performed at pressures from 34 to 70 MPa (5,000 to 10,000 psig)
SSPC-SP WJ-3	High-Pressure Waterjetting (HP WJ) performed at pressures from 70 to 210 MPa (10,000 to 30,000 psig)
SSPC-SP WJ-4	Ultra High-Pressure Waterjetting (UHP WJ) performed at pressures greater than 210 MPa (30,000 psig)

9. REPLACE THE FOLLOWING SECTION

Replace Section	With Section
01030 “Special Procedures”	01030 “Special Procedures”

10. ADD THE FOLLOWING SECTION

13283 “Removing, Handling and Disposing of Coatings Containing Heavy Metals”

**C. Modifications to the Plans**

1. SHEET C-15 "METER AND CONTROL VALVE ASSEMBLY PLAN AND SECTION"  
Reference Detail I "Meter and Control Valve Assembly". Modify callout at control rack concrete slab as follows:

"REF: 4/C-12 T.O.S. EL 949.50"

2. SHEET E-7 "TANK ROOF DETAILS"

- a. Reference Detail "A", Notes., Add the following notes:

- "2. All roof mounted conduit shall be installed as to prevent trip hazards. If necessary cover plates (painted yellow or striped) shall be installed over the conduit. The cathodic protection wiring shall be routed to one of the 4" blind flanges (the other shall be used for level electrodes.) Conduit shall be attached to the roof and tank shell in the same fashion as the vertical conduit as shown on sheet C-21 detail 5.
3. The cable from the level control panel should be spliced to the electrode suspension cable in a NEMA 4X 316 stainless steel box located adjacent to the probe holder. Use the electrode suspension cable as recommended by the manufacturer."


- b. Reference call out for level electrode probe, Modify the call out as indicated:

"Install level electrode probe holder. Refer to specification 16930. Refer to sheet C-22 for details on 4" blind flange."


**D. Clarifications**

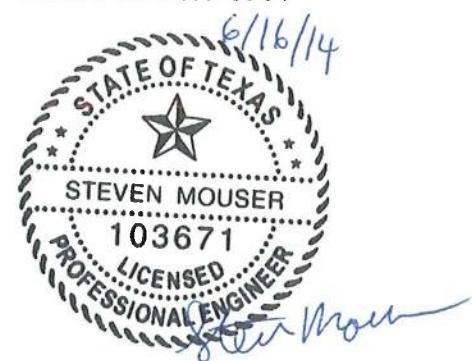
1. **Hazardous Materials Abatement: Tests have indicated that existing coating systems on the tank(s) contain lead, cadmium or chromium at levels that require abatement. Contractor shall assume existing coating systems to be removed require abatement for heavy metals unless based on the Contractor's experience and/or analytical testing conducted by the Contractor indicate otherwise. Any costs or effort required to remove and dispose of existing coatings in accordance with local, state and national regulations shall be included within the contractor's price proposal. Owner will not accept any claim for additional costs associated with abatement of heavy metals on the project by the Contractor.**

Each respondent is requested to acknowledge receipt of this Addendum No. 3 by his/her signature affixed hereto and to file same as an attachment to his/her proposal.

  
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Tarlton W. Smith II, P.E.  
Freese and Nichols, Inc.  
TBPE Firm No. F-2144



  
\_\_\_\_\_  
Steven Mouser, P.E.  
Electrical Engineer  
Grubb Engineering, Inc.  
TBPE Firm No. F-3904



The undersigned acknowledges receipt of this Addendum No. 3 and the proposal submitted herewith is in accordance with the information and stipulation set forth.

\_\_\_\_\_  
**Date**

\_\_\_\_\_  
**Signature of Bidder**

**END OF ADDENDUM**



**01030 SPECIAL PROCEDURES**

**1.00 GENERAL**

**1.01 CONSTRUCTION SEQUENCE**

- A. Perform the Work as required to complete the entire Project within the Contract Time and in the sequence stipulated below:
  - 1. Modifications to 12” interconnect line and extension to Tank No. 2.
  - 2. Installation of tank isolation valves and piping as required to isolate tanks during rehabilitation.
  - 3. Modifications to existing Tank No. 1 inlet piping or rehabilitation of Tank No. 2 may proceed per the Contractor’s schedule as approved by the Owner. **At no time shall both tanks be out of service for rehabilitation.**
  - 4. All other work.
- B. Work shall be completed within the specified time for these items:

Description	Time
Tanks out of service	Tanks may be out of service for a period of no more than four months, between November 1 <sup>st</sup> – March 1 <sup>st</sup> .

- C. Consider the sequences, duration limitations, and governing factors outlined in this Section to prepare the schedule for the Work.
- D. Perform the Work not specifically described in this Section as required to complete the entire Project within the Contract Time.
- E. **Any deviations from these requirements shall be pre-approved by the Owner and Engineer prior to construction.**

**1.02 SHUT DOWNS AND PLANS OF ACTION**

- A. Shut downs of operations or equipment must be planned and scheduled.
  - 1. Submit a written plan of action for approval for shutting down essential services. These include:
    - a. Electrical power.
    - b. Control power.
    - c. Process piping.
    - d. Communications equipment.
    - e. Other designated functions.
  - 2. Describe the following in the plan of action:
    - a. Construction necessary.
    - b. Utilities, piping, or services affected.
    - c. Length of time the service or utility will be disturbed.
    - d. Procedures to be used to carry out the Work.

- e. Plan of Action to handle emergencies.
  - f. Contingency plan that will be used if the original schedule cannot be met.
3. Submit plan 2 weeks prior to beginning the Work.

**1.03 CRITICAL OPERATIONS**

- A. The Owner has identified critical operations that must not be out of service longer than the designated maximum out of service time and/or must be performed only during the designated times.

<b>Critical Operation</b>	<b>Maximum Time Out of Operation</b>	<b>Hours Operation Can be Shut Down</b>
<b>Tie-ins requiring the shutdown of existing 48"/36" tank supply water line.</b>	<b>Line may be out of service for a maximum of 6 hours.</b>	<b>See Note</b>
<b>Tie-ins requiring the shutdown of existing pumps.</b>	<b>Pumps may be out of service for a maximum of 2 hours.</b>	<b>See Note</b>
<b>Note: Contractor shall coordinate the hours operations can be shut down with the Owner during construction. Hours shall be as approved by the Owner and indicated in the Contractor's Shut Down Plan.</b>		

- B. Submit a written plan of action for approval for critical operations.
- 1. Describe the following in the plan of action:
    - a. Construction necessary.
    - b. Utilities, piping, or services affected.
    - c. Length of time the service or utility will be disturbed.
    - d. Procedures to be used to carry out the Work.
    - e. Plan of action to handle emergencies.
    - f. Contingency plan that will be used if the original schedule cannot be met.
    - g. List of manpower, equipment, and ancillary supplies. Identify backups for key pieces of equipment such as excavators and pumps and key personnel such as welders.
  - 2. Plan must be received by the Owner 4 weeks prior to beginning the Work.
- C. Work affecting critical operations is to be performed on a 24-hour a day basis until Owner's normal operations have been restored.
- D. Provide additional manpower and equipment as required to complete the Work affecting critical operations within the allotted time.
- E. Include the cost for Work affecting critical operations in the Contract Price.

**2.00 PRODUCTS (NOT APPLICABLE)**

**3.00 EXECUTION (NOT APPLICABLE)**

**END OF SECTION**

**13283 REMOVING, HANDLING AND DISPOSING OF COATINGS CONTAINING HEAVY METALS**

**1.00 GENERAL**

**1.01 WORK INCLUDED**

Furnish labor, materials, storage equipment, transporting equipment, and incidentals necessary to remove, handle, and dispose of coatings containing heavy metals. All testing shall be at the expense of the Contractor by a laboratory approved by the Owner.

**1.02 REFERENCES**

A. ASTM (American Society for Testing and Materials)

ASTM E1728	Standard Practice for Collection of Settled Dust Samples Using Wipe Sampling Methods for Subsequent Lead Determination
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B. Bureau of Reclamation (USBR)

USBR RSHS	Reclamation Safety and Health Standards, 2001.
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C. Code of Federal Regulations (CFR)

40 CFR 107	Hazardous Materials Program Procedures
40 CFR 117	Determination of Reportable Quantities for Hazardous Substances
40 CFR 178	Specifications for Packagings
40 CFR 260	Hazardous Waste Management System: General
40 CFR 261	Identification and Listing of Hazardous Waste
40 CFR 262	Standards Applicable to Generators of Hazardous Waste
40 CFR 263	Standards Applicable to Transporters of Hazardous Waste
40 CFR 264	Standards for Owners and Operators of Hazardous Waste Treatment, Storage, Disposal Facilities
40 CFR 265	Interim Status Standards for Owners and Operators of Hazardous Waste Treatment, Storage and Disposal Facilities
40 CFR 268	Land Disposal Restrictions
40 CFR 300	National Oil and Hazardous Substances Pollution Contingency Plan
40 CFR 302	Designation, Reportable Quantities, and Notification
49 CFR 107	Hazardous Materials Program Procedures
49 CFR 178	Specifications for Packagings

49 CFR Chapter I	Research and Special Programs Administration, Department of Transportation, Hazardous Materials Regulations
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D. Texas Administrative Code (TAC)

30 TAC 101	General Authorizations
30 TAC 106	Air Permits by Rule
30 TAC 116	New Source Review Permits
30 TAC Chapter 111, Subchapter A, Division 3	Abrasive Blasting of Water Storage Tanks Performed by Portable Operations
30 TAC 335	Texas Risk Reduction Program

E. Society For Protective Coatings (SSPC)

SSPC Guide 6	Containing Debris Generated During Paint Removal Operations
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F. OSHA (Occupational Safety & Health Administration)

29 CFR 1915.35	Painting
29 CFR 1926.62	Lead

1.03 DEFINITIONS

- A. Handling: Includes containment, collection, storage, and transportation.
- B. Regulated area: Areas on project site where Action Level is exceeded for heavy metals listed below.
- C. Coatings Containing Heavy Metals: Coating containing lead, heavy metals (cadmium, chromium, etc.), and other contaminants which may be present in such quantities that solid waste generated from coating removal operations will exhibit the toxicity characteristic when tested in accordance with 40 CFR 261.24 or exceed applicable Tier 1 Residential protective concentration levels identified in 30 TAC 335.

1.04 SUBMITTALS

- A. Submit the following in accordance with Section 01300 “Submittal Procedures”.
- B. Job Specific Coating Removal and Containment Plan
  - 1. Contractor shall provide a job specific plan of the work procedures to be used in the removal and containment of coatings containing heavy metals.
  - 2. The plan shall be prepared and submitted prior to beginning the work and shall be approved by the Owner.
  - 3. Coordinate containment requirements indicated within this specification and Section 09805 “Coatings for Water Storage Tanks.”
  - 4. Plan shall include the following:

- a. Detailed work schedule
  - b. Quality control program
  - c. Worker health and safety program
  - d. Plan for testing existing coatings
  - e. Plan for testing soil samples
  - f. Methodology for coating removal methods proposed to be used on the project, describing the materials and methods of removal.
  - g. Methodology for collecting, containing and disposing of hazardous materials
  - h. Technical data sheets for all products to be used in the removal of heavy metals.
- C. Emissions Monitoring Plan:
- 1. Contractor must submit plan including the following components for approval:
    - a. Plan for monitoring total suspended particulate (TSP) air quality for heavy metal contamination by employee exposure personal monitors.
    - b. Plan for monitoring site soils for heavy metal contamination.
    - c. Plan for monitoring site surface water contamination.
    - d. Plan for monitoring and reporting reportable releases in accordance with 40 CFR 117, 40 CFR 300, 40 CFR 302.
    - e. Plan for decontamination of contaminated areas and surfaces.
  - 2. Plan must be signed and sealed by qualified professional.
- D. Waste Characterization, Handling, and Disposal Plan:
- 1. Contractor must submit plan including the following components for approval:
    - a. Plan for sampling, testing, characterization of waste:
      - 1) Include required method detection limits
      - 2) Describe analytical data delivery package including quality control and quality assurance
    - b. Plan for handling, storage, transporting, and disposal of project-generated waste and cleaning of reusable items.
    - c. Plan for disposal of wastewater: Include name, location, and address of proposed treatment facility and contact person at proposed treatment facility.
    - d. Name, address and qualifications of testing laboratory
    - e. Name, address and qualifications of transporter
    - f. Name, address and qualifications of disposal facility
    - g. Written notice from owner or operator of disposal facility documenting permits and agreement to accept waste generated under this contract.
- E. Pre-construction Test Results:
- 1. Submit following background results to establish baseline conditions:
    - a. Site soil, air and surface water analysis for heavy metals

- b. Existing coating sample analysis for heavy metals
  - 2. Include map indicating location of each sample. For soils analysis, include depth of each sample.
  - 3. Provide appropriate quality control information to supplement analytical data.
- F. Post-Construction Test Results:
  - 1. Submit following post-construction content data:
    - a. Site soil, air and surface water analysis for heavy metals
  - 2. Provide summary comparison with pre-construction test results for increased contaminant levels.
  - 3. Include map indicating location of each sample. For soils analysis, include depth of each sample. Collect samples from same locations as pre-construction test results.
  - 4. Provide appropriate quality control information to supplement analytical data.
- G. Air monitoring samples shall be submitted to the Owner within 3 days after the air samples are taken. Notify the Owner immediately of exposure to lead or heavy-metals at or in excess of the action level.
- H. Certificate of disposal:
  - Submit certification hazardous materials have been treated.

#### 1.05 QUALIFICATIONS

- A. Onsite Supervisor Qualifications: Competent person, as defined in 40 CFR 1926.62, experienced working under OSHA and EPA regulations.
- B. Laboratory Qualifications: Certified analytical laboratory meeting requirements of EPA National Lead Laboratory Accreditation Program
- C. Containment System Designer Qualifications: Registered professional engineer licensed in the State of Texas.
- D. Disposal Facility Qualifications for Hazardous Waste: RCRA permitted facility.
- E. Disposal Facility Qualifications for Non-Hazardous Waste: TCEQ permitted facility.
- F. Contractor shall have a minimum of 2 years' experience in the lead control, removal and abatement industry. Submit a list of recent projects and names of references for projects with including abatement of lead coatings. All personnel involved in the removal of lead based paint shall have at least six months experience with the abatement of lead coatings. Provide documentation for all personnel involved on the project that may be exposed to lead based coatings or debris.

#### 1.06 REGULATORY REQUIREMENTS

Solid waste debris is subject to State and local requirements. The most stringent regulation shall apply.

#### 1.07 SAFETY AND HEALTH REGULATIONS

Contractor is responsible for complying with all applicable safety and health regulations.

## 1.08 PROJECT CONDITIONS

- A. Hazardous Materials Abatement: Tests have indicated that existing coating systems on the tank(s) contain lead, cadmium or chromium at levels that require abatement.

Contractor shall assume existing coating systems to be removed require abatement for heavy metals unless based on the Contractor's experience and/or analytical testing conducted by the Contractor indicate otherwise.

- B. Preparation, cleaning, removal and disposal of any exterior coatings shall be performed in accordance with all local, state and federal regulations relative to the removal and disposal of coatings. This includes but is not limited to OSHA, the TCEQ, and the Texas Department of State Health Services. Any costs or effort required to remove and dispose of existing coatings in accordance with local, state and national regulations shall be included within the contractor's price proposal.
- C. Contractor shall submit a coating removal containment and abatement plan or notification that the project does not require abatement to the Engineer as Record Data. No work shall be performed on the tank(s) until the lead abatement/containment plan(s) or notification has been submitted to the Engineer.
- D. The Engineer, Owner, and/or their Representatives assume no responsibility for the effectiveness or ineffectiveness of the Contractor's abatement/containment plan, work in general, or restitutions that may result from damage caused by lead contamination, the improper disposal of contaminated material, or improper procedures used by the Contractor or anyone working in his behalf.

Approval of an abatement plan by the Engineer shall not relieve the Contractor of his liability and responsibility for the complete cleaning, repair, replacement or other restitutions as a result of lead contamination or other misapplication or improper procedures by the Contractor, or any persons working for his behalf directly or indirectly.

- E. Contractor is responsible for testing the existing coatings for lead, cadmium and chromium content prior to beginning work. Contractor shall submit the results of the tests to the Owner as Record Data.
- F. The Contractor will be considered the co-generator of any hazardous waste, in accordance with 40 CFR 260.10.
- G. Facility owner EPA Identification number will be provided by the Owner.

## 1.09 CONTRACTOR'S RESPONSIBILITIES

- A. Obtain EPA Identification number, in accordance with 40 CFR 262.12 before treating, storing, or transporting hazardous waste.
- B. Prepare manifest, in accordance with 40 CFR 262 Subpart B, before transporting hazardous waste for offsite treatment, storage, or disposal.
- C. Before transporting hazardous waste, obtain written notice from owner or operator of hazardous waste facility, including documentation that facility has required permits and that facility will accept waste to be shipped under this contract, in accordance with 40 CFR 264.12.
- D. Obtain certificate of disposal from disposal facility when hazardous waste has been treated.
- E. Obtain required transportation permits.

## **2.00 PRODUCTS**

### **2.01 CONTAINMENT SYSTEM**

- A. Contractor shall coordinate containment system requirements with Section 09805 “Coatings for Water Storage Tanks”.
- B. Provide a minimum SSPC Guide 6 (CON) Class 1A containment system when dry abrasive blasting at the tank site.

### **2.02 WARNING SIGNS AND LABELS**

Warning signs and labels shall comply with OSHA 29 CFR 1926.62.

### **2.03 STABILIZATION ADDITIVES**

- A. Stabilization additives may be used to stabilize existing coatings containing heavy metals prior to removal.
- B. Approved manufacturers:
  - 1. Pretox
  - 2. Blastox

## **3.00 EXECUTION**

### **3.01 PROTECTION**

- A. Notification
  - 1. Notify the Owner in writing 30 days prior to the start of any heavy-metal based coating removal.
  - 2. The Contractor is responsible for notifying all required government agencies within their required time frame. Provide Owner with record of notifications.
- B. Protection of Existing Work and Adjacent Areas
  - 1. Perform coating removal work without damaging or contaminating adjacent areas.
  - 2. Where existing areas are damaged or contaminated, restore to its original condition or better.
- C. Boundary Requirements
  - 1. Provide physical boundaries around the heavy-metal control area by roping off area to limit entry of unauthorized personal.
  - 2. Physical boundary area shall be sufficient to ensure unprotected personnel are not exposed to action level amounts of heavy-metals.
  - 3. Provide warning signs at approaches to heavy-metal control areas and at each control area. Locate signs at such distances that personnel and/or the public may read the sign before entering the control area and are able to take the necessary protective action.
  - 4. No one will be permitted in the lead control area unless they have been provided the appropriate training and protective equipment.



5. Protect surrounding surfaces, ground cover and plant life within the lead control area marked by the physical boundary from contamination.

D. Personnel Protection

1. Personnel shall wear and use protective clothing and equipment as required by the Contractor's health and safety plan and as specified herein.
2. Provide eye protection for personnel engaged in heavy-metal based coating removal.
3. Eating, smoking, or drinking is not permitted in the lead control area.
4. Sanitary conditions shall be maintained at all times by the Contractor.
5. No one will be permitted in the lead control area unless they have been given appropriate training and protective equipment.
6. Personnel engaged in the removal of lead-based coatings, the general public or other personnel working at the site shall not be exposed to airborne concentrations of lead-based coatings in excess of 30 micrograms per cubic meter.
7. Change Rooms and Showers
  - a. Provide clean change rooms within the physical boundary around the designated lead control area.
  - b. Upon completion of the initial employee exposure assessment, adjust requirements in accordance with OSHA 29 CFR 1926.62.

3.02 COATING REMOVAL METHODS

The following methods are approved for removing heavy-metal based coatings:

- A. Vacuum Blasting
- B. Shrouded Hydroblasting
- C. Shrouded Wet Abrasive Blasting
- D. Shrouded Dry Blasting
- E. Alternate Methods: Alternate removal methods shall have prior written approval by the TCEQ Air Program prior to submittal to the Owner for consideration.

3.03 COATING REMOVAL PROCEDURES

- A. Contractor shall test coatings on the interior of the tank, exterior of the tank, piping and other coatings to be removed or disturbed during the project prior to the start of work. Locations of the existing coating samples shall be determined by the Owner's representative.
- B. Perform heavy-metal and lead based coating removal in accordance with OSHA 29 CFR 1926.62 and as specified herein.
- C. Removal of hazardous paint from the control area shall be the responsibility of the Contractor.
- D. Heavy-metal based coating debris shall be captured and stored for disposal on a daily basis in accordance with applicable regulations.
- E. Personnel Exiting Procedures

Whenever personnel exit the lead or heavy-metal controlled area, they shall perform the following procedures and shall not leave the work area wearing any clothing or equipment worn during coating removal:

1. Personnel shall be vacuumed off.
2. Protective clothing shall be removed and placed in approved waste containers.
3. Wash hands and shower as required.
4. Change into clean clothes prior to leaving the physical boundary designed around the contaminated job site.

### 3.04 CONTAINMENT SYSTEM

- A. Contractor shall coordinate containment system requirements with Section 09805 “Coatings for Water Storage Tanks”. Design and construct containment system to control emissions to the environment in conformance with Federal, State, and local regulations and the following criteria:
  1. Do not exceed ambient air quality standards.
  2. Prevent contamination of any reservoir, watercourse, or water system.
  3. Prevent contamination of sediment in any reservoir or watercourse.
  4. Prevent contamination of soil.
- B. Perform the following activities within containment system:
  1. Coating removal.
  2. Surface preparation,
  3. Waste and debris containerization,
  4. Activities which may spread contamination outside contained area.
- C. Provide signs and barriers at each point of entry to containment area to prevent unauthorized personnel access.
- D. No visible paint chips shall escape the lead control area.

### 3.05 WASTE CHARACTERIZATION, HANDLING, AND DISPOSAL

- A. Waste disposal shall be the responsibility of the Contractor. The Contractor shall collect, store and remove heavy-metal contaminated waste, heavy-metal containing paint and heavy-metal containing soils as follows:
  1. Collect contaminated waste, scrap, debris, bags, containers, equipment and clothing.
  2. Store heavy-metal based coatings, lead contaminated clothing and equipment, dust and debris in Department of Transportation approved container systems. Label each container to identify the waste and the date wastes were first put into the containers.
  3. Disposal must be at a site approved by the Environmental Protection Agency and the TCEQ to accept lead and heavy-metal based paint and soil waste. Notify the Owner at least 14 days prior to removal of the containers to inspect the containers and the hazardous waste manifest. As necessary, make multiple deliveries of lead and heavy-metal based coatings and soils to ensure containers do not remain on the job site longer than 90 calendar days from the initial loading date affixed to the container.

4. Handle, store, transport and dispose of hazardous waste materials in accordance with 40 CFR 260, 40 CFR 261, 40 CFR 262, 40 CFR 263, 40 CFR 264, 40 CFR 265, 49 CFR 107, and applicable regulations contained in 49 CFR Chapter I. Comply with land disposal restriction notification requirements as required by 40 CFR 268.
- B. Characterize solid waste debris generated from removal operations, in accordance with 40 CFR 261, TCLP Method 1311. Presume waste is hazardous until characterized.
- C. Comply with approved written Waste Characterization, Handling, and Disposal Plan.
- D. RCRA-defined Hazardous Waste:
  1. Comply with 40 CFR 262 and 40 CFR 268.
  2. Do not co-mix different types of hazardous and non-hazardous waste materials.
  3. Store coating debris in EPA approved weatherproof, watertight steel containers.
  4. Seal, label, and store in accordance with 49 CFR 178.
  5. Dispose of waste at EPA permitted RCRA Subtitle C disposal facility.
  6. Non-hazardous Waste:
    - a. Store in closed containers separate from hazardous waste storage areas.
    - b. Dispose waste in accordance with local, county, state, and federal regulations.
- E. Wastewater from Coating Removal Operations:
  1. Filter water contaminated with lead-containing coating debris.
  2. Dispose of wastewater in accordance with Federal, State, and local regulations.
- F. Documentation
 

Submit documentation that heavy-metal based coatings, contaminated soils and contaminated wastewater treatment, storage or disposal (TSD) is approved for lead and heavy-metal disposal by the EPA, state and local regulatory agencies. Submit one copy of the completed manifest, signed and dated by the initial transporter in accordance with 40 CFR 262.

### 3.06 AIR QUALITY/EMISSIONS MONITORING

- A. Air monitoring, testing, and reporting shall be performed by a CIH (Certified Industrial Hygienist) or an Industrial Hygiene (IH) Technician.
- B. The CIH or the IH Technician shall be on the job site to perform the monitoring.
- C. Obtain personnel air monitoring samples from employees who are anticipated to have the greatest risk of exposure as determined by the CIH or IH technician. In addition, obtain a minimum of two air monitoring samples outside of the lead control area on a daily basis.
 

If an employee exposure level exceeds 30 micrograms per cubic meter of air, lead abatement work shall be stopped. The Contractor shall take immediate corrective action to reduce exposure levels below 30 micrograms per cubic meter of air. Notify the Owner immediately if exposure is at or exceeds the action level.
- D. Monitoring Physical Boundary
  1. Prior to heavy-metal abatement operations, obtain background levels for air, water and soil, as specified herein.
  2. Perform personnel and area monitoring during the entire paint removal operation.

3. If inside or outside heavy-metal levels meet or exceed the action levels, abatement work shall be stopped and the Contractor shall take immediate action to reduce exposure levels to be below the action level.
  4. At a minimum, conduct area monitoring on each shift in which heavy-metals coating removal operations are being performed in areas immediately adjacent to the control area.
  5. For outdoor operations, at least one sample on each shift shall be taken on the downwind side of the control area. If adjacent areas should become inadvertently contaminated, clean and visually inspect the contaminated areas.
- E. Sampling protocol shall be in accordance with EPA, NIOSH, or OSHA sampling criteria.
  - F. Perform employee exposure monitoring using personal exposure monitors to determine exposure to lead and other heavy metals in accordance with NIOSH or OSHA analytical sampling methods.
  - G. Not to exceed emissions limit standards in 29 CFR 1910.1025, 29 CFR 1926.1118, 29 CFR 1926.1127, 29 CFR 1926.55, and 29 CFR 1926.62.
  - H. At the same time that employee exposure monitoring is done, monitor airborne contaminants at boundary of regulated area.
  - I. If emissions exceed specified maximum allowable concentrations, stop work until the containment system is corrected to meet required standards.
  - J. Upon completion of work and prior to removal of heavy-metal control area, the Contractor shall notify the Owner of final heavy-metal inspection. As a minimum, the final inspection shall include air samples for verification of contamination which may have occurred during the course of the project.

### 3.07 SOIL ANALYSIS FOR HEAVY METALS

- A. A minimum of eight soil samples shall be taken and tested prior to beginning work to determine background lead, chromium and cadmium levels. After substantial completion of the project and prior to final acceptance eight additional samples shall be taken and tested. Locations of the soil samples shall be determined by the Owner's representative.
- B. Before beginning work, take soil samples around and beneath (as applicable) the structure and downwind of the structure at a distance equal to the height of the structure. Sampling shall be completed as specified in Section 01060 "Regulatory Requirements" and as specified herein.
- C. After completion of removal work, take soil samples at same locations as previous samples. Sampling shall be completed as specified in Section 01060 "Regulatory Requirements" and as specified herein.
- D. Compare with pre-construction test results for increased contaminant levels.
- E. Contractor is responsible for any soil contamination resulting from the removal, storage, handling and disposal of hazardous materials from the site. As a requirement for final acceptance the Contractor shall provide written certification that no soil contamination has occurred as a result of the Contractor's operations. In the event of such contamination the Contractor shall submit to the Owner a plan for site remediation in accordance with all Federal, State and Local regulations to be enacted immediately upon approval by the Owner at the Contractor's expense.

### 3.08 SURFACE WATER SAMPLE ANALYSIS FOR HEAVY METALS

- A. Before beginning work, take water samples from any surface water features on the property. Test samples to determine heavy metal content in accordance with certified laboratory's approved procedures.
- B. After completion of removal work, take water samples at same locations as previous samples. Test samples to determine heavy metal content in accordance with certified laboratory's approved procedures.
- C. Compare with pre-construction test results for increased contaminant levels.

### 3.09 REPORTABLE RELEASES

Notify applicable agencies and Contracting Officer of any reportable releases of contaminants into the environment.

### 3.10 CLEARANCE TESTING

- A. Test for lead-containing paint residue in accordance with 40 CFR 261 for hazardous waste.
- B. Non-porous surfaces:
  - 1. Wipe samples: Take wipe samples to collect surface dust at five (5) locations indicated in accordance with approved Emissions Monitoring Plan. Follow ASTM E 1728 wipe sample collection and analysis criteria.
  - 2. Analyze samples for total lead and other heavy metal content.
  - 3. Acceptance criteria: Not to exceed 500 micrograms per square foot.
- C. Porous surfaces, visual methods:
  - 1. Visible coating chips and dust.
  - 2. Visible abrasives.

### 3.11 DECONTAMINATION OF CONTAMINATED AREAS

Decontaminate areas and surfaces contaminated with lead and other heavy metals in accordance with approved Emissions Monitoring Plan and Waste Characterization, Handling, and Disposal Plan.

### 3.12 CLEANUP AND DISPOSAL

- A. Maintain surfaces in the heavy-metal control area free of accumulations of paint chips and dust. Restrict the spread of dust and debris and keep waste from being distributed over the project site.
- B. Do not dry sweep or use compressed air to clean up the area.
- C. Perform housekeeping at the end of each shift and when the paint removal operation has been completed by cleaning the heavy-metal control area of visible paint chips using a HEPA-filtered vacuum.

**END OF SECTION**