

*September 12, 2017*

***US Embassy Tbilisi  
11 George Balanchine St.  
Tbilisi, Georgia***

Dear Prospective Quoter:

SUBJECT: Solicitation Number PR6645784

The Embassy of the United States of America invites you to submit a quotation for Cleaning of Underground Fuel Tanks of US Embassy Tbilisi.

Your quotation must be submitted via email to the [Tbilisibids@state.gov](mailto:Tbilisibids@state.gov) on or before 15:00 (local time GMT +4) on September 26, 2017. No quotation will be accepted after this time. Please note: individual email size shall not exceed 4MB. multiple emails are accepted. Include Solicitation number in the subject line

In order for a quotation to be considered, you must also complete and submit the following:

1. SF-1449
2. Section 1, Block 23
3. Section 5, Representations and Certifications;
4. Additional information as required in Section 4, Evaluation Factors.

Direct any questions regarding this solicitation to [tbilisigsoprocurement@state.gov](mailto:tbilisigsoprocurement@state.gov)

Sincerely,

Christopher Easley  
Contracting Officer

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<b>SOLICITATION/CONTRACT/ORDER FOR COMMERCIAL ITEMS</b>				1. REQUISITION NO.	PAGE 1 OF
2. CONTRACT NO.		3. AWARD/EFFECTIVE DATE	4. ORDER NO.	5. SOLICITATION NO. <b>PR6645784</b>	6. SOLICITATION ISSUE DATE <b>12 Sep 2017</b>
7. FOR SOLICITATION INFORMATION CALL		a. NAME <b>Tamar Jashi</b>		b. TELEPHONE NO. (No collect calls) <b>+99532 2277172</b>	8. OFFER DUE DATE/LOCAL TIME <b>15:00 on 26 Sep, 2017</b>
9. ISSUED BY <b>General Services Officer American Embassy Tbilisi</b>  <b>11 George Balanchine St. Digomi Tbilisi, Georgia</b>			CODE	10. THIS ACQUISITION <input type="checkbox"/> UNRESTRICTED <input type="checkbox"/> SET ASIDE: % FOR <input type="checkbox"/> SMALL <input type="checkbox"/> SMALL DISADV. BUSINESS <input type="checkbox"/> 8(A)  SIC: SIZE STD:	11. DELIVERY FOR FOB DESTINATION UNLESS BLOCK IS MARKED <input type="checkbox"/> SEE SCHEDULE  <input type="checkbox"/> 13a. THIS CONTRACT IS A RATED ORDER UNDER DPAS (15 CFR 700)  13b. RATING  14. METHOD OF SOLICITATION <input checked="" type="checkbox"/> RFQ <input type="checkbox"/> IFB <input checked="" type="checkbox"/> RFP
15. DELIVER TO <b>US Embassy Tbilisi</b>			CODE	16. ADMINISTERED BY <b>See block 9</b>	
17a. CONTRACTOR/OFFEROR			CODE	FACILITY CODE	18a. PAYMENT WILL BE MADE BY <b>Financial Management Officer US Embassy Tbilisi 11 George Balanchine St. Digomi Tel: 277-000</b>
<input type="checkbox"/> 17b. CHECK IF REMITTANCE IS DIFFERENT AND PUT SUCH ADDRESS IN OFFER			18b. SUBMIT INVOICES TO ADDRESS SHOWN IN BLOCK 18a UNLESS BLOCK BELOW IS CHECKED <input type="checkbox"/> SEE ADDENDUM		
19. ITEM NO.	20. SCHEDULE OF SUPPLIES/SERVICES		21. QUANTITY	22. UNI	23. UNIT PRICE
	<b>Cleaning of Underground Fuel Tanks</b>		<b>1</b>	<b>Set</b>	
	<b>DBA Insurance</b>		<b>1</b>	<b>ea</b>	
	<i>(See attached)</i>				
25. ACCOUNTING AND APPROPRIATION DATA				26. TOTAL AWARD AMOUNT (For Govt. Use Only)	
<input checked="" type="checkbox"/> 27a. SOLICITATION INCORPORATES BY REFERENCE FAR 52.212-1, 52.212-4. FAR 52.212-3 AND 52.212-5 ARE ATTACHED. ADDENDA <input type="checkbox"/> ARE <input type="checkbox"/> ARE NOT ATTACHED. <input type="checkbox"/> 27b. CONTRACT/PURCHASE ORDER INCORPORATES BY REFERENCE FAR 52.212-4. FAR 52.212-5 IS ATTACHED. ADDENDA <input type="checkbox"/> ARE <input type="checkbox"/> ARE NOT ATTACHED.					
28. CONTRACTOR IS REQUIRED TO SIGN THIS DOCUMENT AND RETURN <u>1</u> COPIES TO ISSUING OFFICE. CONTRACTOR AGREES TO FURNISH AND DELIVER ALL ITEMS SET FORTH OR OTHERWISE IDENTIFIED ABOVE AND ON ANY ADDITIONAL SHEETS SUBJECT TO THE TERMS AND CONDITIONS SPECIFIED HEREIN.			29. AWARD OF CONTRACT: REFERENCE <u>                    </u> OFFER DATED <u>                    </u> . YOUR OFFER ON SOLICITATION (BLOCK 5), INCLUDING ANY ADDITIONS OR CHANGES WHICH ARE SET FORTH HEREIN, IS ACCEPTED AS TO <u>                    </u>		
30a. SIGNATURE OF OFFEROR/CONTRACTOR			31a. UNITED STATES OF AMERICA (SIGNATURE OF CONTRACTING OFFICER)		
30b. NAME AND TITLE OF SIGNER (TYPE OR PRINT)		30c. DATE SIGNED	31b. NAME OF CONTRACTING OFFICER (TYPE OR PRINT) <b>Christopher Easley</b>		31c. DATE SIGNED
32a. QUANTITY IN COLUMN 21 HAS BEEN  <input type="checkbox"/> RECEIVED <input type="checkbox"/> INSPECTED <input type="checkbox"/> ACCEPTED, AND CONFORMS TO THE CONTRACT, EXCEPT AS NOTED			33. SHIP NUMBER  <input type="checkbox"/> PARTIAL	34. VOUCHER NUMBER	35. AMOUNT VERIFIED CORRECT FOR
32b. SIGNATURE OF AUTHORIZED GOVT REPRESENTATIVE		32c. DATE	36. PAYMENT <input type="checkbox"/> COMPLETE <input type="checkbox"/> PARTIAL		37. CHECK NUMBER
			38. S/R ACCOUNT NO.	39. S/R VOUCHER NO.	40. PAID BY
41a. I CERTIFY THIS ACCOUNT IS CORRECT AND PROPER FOR PAYMENT		42a. RECEIVED BY (Print)			
41b. SIGNATURE AND TITLE OF CERTIFYING OFFICER		41c. DATE	42b. RECEIVED AT (Location)		
			42c. DATE REC'D (YY/MM/DD)	42d. TOTAL CONTAINERS	

## SECTION 1-SCHEDULE

**1.01** Project Title: U.S. Embassy underground storage tank cleaning and contaminated fuel removal at the American Embassy located in Tbilisi, Republic of Georgia, 11 George Balanchine Street, Tbilisi Georgia 0131

### **1.02 Work Under These Specifications**

1. The contractor shall furnish all labor, administrative, supervision, logistics, liability insurance, skilled journeymen with certifications, transportation, hotels, engineering, project management, training, tools, and equipment necessary to do the work described below.
2. The work of this contract is listed below:

#### **Bid Schedule I – Tank Cleaning:**

I-1 This item includes all work associated with complete cleaning and disposal of fuel in the underground storage tanks.

**102.3** Award of contract shall be made on best value to the U.S. Government, Additive or Deductive Items. Bidders must bid on all items. Incomplete bids will be considered non-responsive. So that the Government may obtain the most desirable features of work within the limit of its funds available at the time of bid evaluation, award may be made to the bidder having the value to the U.S. Government. All bids shall be evaluated on the basis of the same additive and deductive bid items using the order of priority of the items listed in the schedule.

**1.02.4** The Embassy will continue their normal everyday business in the buildings throughout the work. The contractor shall coordinate the construction schedule with the facility manager and COR as to cause minimal disruption to the Embassy's ability to perform their work.

### **1.03 Location and Inspection of Site**

1. The work is located in the country Republic of Georgia. The site address is as follows:  
American Embassy Tbilisi, 11 George Balanchine St. Tbilisi Georgia 0131.
2. All prospective bidders, contractors, subcontractors, and related persons are **required** to visit the site of the proposed work to assess the location and extent of the work prior to submitting bids/quotes. The Facility Manager may be contacted at LibrukJR@state.gov to coordinate the date and time for a site visit.
3. Visiting the site will not alleviate the Contractor's responsibility to conform to the intent of the contract documents. Some information on the plans is from the original building

drawings; it is the Contractor's responsibility to verify location of all equipment, walls, openings, etc. in order to determine space limitations.

#### **1.04 Specifications and Drawings for Construction**

1. Exact location of all affected utilities, including underground utilities, will be the responsibility of the contractor. Drawings may not completely show all utilities nor do Government personnel know their location. Site verification, including digging by hand with a shovel, may be required in addition to contacting any local authorities and utility companies to determine exact locations of utilities. Any utilities damaged by the contractor shall be repaired or replaced by the contractor to pre-existing conditions and the contractor's expense.
2. In case of a difference between drawings and specifications, the most stringent standards shall govern and be decided by the U.S Government.

#### **1.05 Protection of Government Property**

1. The contractor shall be responsible for properly covering and preserving any existing finished building surfaces or property to prevent scratching or other damage that might be caused by construction tools or construction activity.
2. Any Government property damaged by the contractor during construction activities shall be repaired or replaced to pre-existing conditions.

#### **1.06 Temporary Facilities**

1. The contractor shall maintain and restore all government roads, service areas and utilities used to pre-construction condition and restore any damaged or removed building materials to preconstruction condition.
2. Toilet facilities for contractor use must be provided by the contractor.
3. The building electrical service may be utilized by the contractor during the construction. The contractor shall be careful to ensure the contractor's usage of the building electrical services does not interfere with the Embassy's ability to perform their work.

#### **1.07 Safety – In Addition To FAR 52.236-13 & OBO SHEM Accident Prevention and Confined Entry Requirements**

1. The contractor must follow the DoS's Confined space program document (see attachment 2 for details).
2. The contractor shall fill out and submit the Preconstruction Safety Checklist to the COR prior to beginning construction.
3. The contractor shall designate a safety officer to ensure a safe work site. The safety officer shall perform daily work site inspections to assure compliance with all safety regulations and standards.
4. The Contractor's Safety Plan shall be available on-site. The Contractor shall provide Safety Data Sheets (SDS) for all hazardous materials brought on-site. SDS shall be made available in a conspicuous location.
5. All equipment and work activities shall comply with OSHA Regulations and all accidents incidental to work performed under this contract shall be reported in accordance with OSHA reporting requirements. Additionally a copy of the accident report shall be provided to the Contracting Officer and POSHO.
6. The Contractor shall provide and install barricades, signs, or other warning devices to delineate the construction area and restrict public access to the construction site. Follow Manual of Uniform Traffic Control Devices (MUTCD).
7. Provide at least 5 non-freezing-type fire extinguisher in each workshop and shed used for storage of materials on the premises. Place in location readily accessible to workers.
8. Provide at least one non-freezing-type fire extinguisher of the appropriate class for each group of workers performing flammable procedures.
9. Provide and maintain a basic first aid kit for use of workers.
  1. Provide first aid supply commensurate with size of project with items necessary for first aid treatment of all injuries. Include first aid items identified on SDS for applicable items, in applicable locations.
  2. Advise all workers of the location of first aid supplies.

10. Post telephone numbers of nearest hospital or ambulance service and fire station in conspicuous location. Advise all workers of location of telephone numbers.
11. Provide necessary Personnel Protective Equipment (PPE) as identified by SDS. Provide documentation, workers have been trained in use of PPE prior to individual use.
12. All completed construction shall comply with OSHA, NFPA and ABA code and regulations.

#### **1.08 Clean Up Procedures**

1. The Contractor shall maintain a clean work site, free of accumulation of surplus materials and rubbish resulting from all operations and remove rubbish from premises.
2. After completion of project the Contractor shall provide a thorough cleanup of area removing dust and any grime from furniture, furnishing, walls and floors after project is complete.
3. All debris and demolition equipment must be removed from the site.

#### **1.09 Greening the Government through Waste Prevention, Recycling, and Installation of Energy Efficient Equipment.**

1. Contractor shall promote sound waste management practices such as demolition waste recycling to limit the amount of materials sent to landfills per OBO Green Policies and Executive Order 13101 and shall comply with all federal, and local Republic of Georgia regulations when removing and disposing construction debris off the Government's property.

#### **1.10 Hazardous Substances – Asbestos, Lead and Polychlorinated Biphenyls (PCB'S)**

1. No asbestos, lead or PCB's are known to exist in this facility. The following sections shall apply to all Contractors. If any hazardous substances or suspicious substances are encountered, cease all work until the matter has been cleared.
2. Airborne asbestos fibers, lead and PCB compounds, if encountered have been determined to be hazardous to one's health. All products installed as part of this project shall contain no asbestos, lead or PCB compounds.

3. Contractor's attention is directed to the Occupational Safety and Health Act (OSHA) in general and to Part 1926.1101 – ASBESTOS in particular. Compliance with all possible applicable provisions is the Contractor's responsibility. Contractor is responsible for the work meeting the definition of OSHA Class III asbestos work including fastening to or coring through asbestos. Existing regulations require removal of friable ACM and Category II non-friable ACM prior to demolition of a building. Category I non-friable ACM does not need to be removed from a building prior to demolition if the waste generated from the demolition is taken to an approved construction and demolition landfill, if the contractor chooses to recycle building materials from a demolished building or if the Contractor's demolition methods cause Category I non-friable ACM in accordance with state and federal regulations prior to demolition.
4. Conform to OSHA and EPA recommended worker safety requirements when removing lead based paint or material bearing lead based paint or material contaminated with lead by the demolition process. Contractor's attention is directed to the Occupational Safety and Health Act (OSHA) in general and particularly 29 CFR 1910.25 (LEAD STANDARD) and to CFR 1926.62 (LEAD EXPOSURE IN THE CONSTRUCTION INDUSTRY). For OSHA compliance and regulation interpretations, contractors may contact the area OSHA office for this project.

## **1.11 – Construction Administration Requirements**

### **1.12.1 Project Coordination**

- A. Project Coordinator: COR/Facility Manager
- B. Cooperate with the Project Coordinator in allocation of mobilization areas of site; for field offices and sheds, for site access, traffic, and parking facilities.
- C. During construction, coordinate use of site and facilities through the Project Coordinator.
- D. Comply with Project Coordinator's procedures for intra-project communications; submittals, reports and records, schedules, coordination drawings, and recommendations; and resolution of ambiguities and conflicts.
- E. Comply with instructions of the Project Coordinator for use of temporary utilities and construction facilities.
- F. Coordinate field engineering and layout work under instructions of the Project Coordinator.
- G. Make the following types of submittals to COR:
  1. Confined Entry Requirements
  2. Requests for interpretation.
  3. Shop drawings, product data, and samples.
  4. Test and inspection reports.
  5. Design data.



6. Manufacturer's instructions and field reports.
7. Applications for payment and change order requests.
8. Progress schedules.
9. Coordination drawings.

#### **1.12 Electronic Document Submittal**

1. All documents transmitted for purposes of administration of the contract are to be in electronic (PDF) format and transmitted via email an.
2. Besides submittals, this procedure applies to requests for information (RFIs), progress documentation, contract modification documents (e.g. supplementary instructions, change proposals, change orders), applications for payment, field reports and meeting minutes, and any other document any participant wishes to make part of the project record.
3. It is Contractor's responsibility to submit documents in PDF format.
4. All other specified submittal and document transmission procedures apply, except that electronic document requirements do not apply to samples or color selection charts.

#### **1.13 Preconstruction Meeting**

1. COR will schedule a meeting after Notice of Award.
2. Attendance Required:
  1. COR.
  2. Prime Contractor.
  3. Major Sub-Contractors.
  4. Center Staff.
3. Agenda:
  1. Execution of Contracts.
  2. Submission of executed bonds and insurance certificates.
  3. Distribution of Contract Documents.
  4. Submission of list of Subcontractors, schedule of values, and progress schedule.
  5. Designation of personnel representing the parties to Contractor and COR.
  6. Procedures and processing of field decisions, submittals, substitutions, applications for payments, proposal request, Change Orders, and Contract closeout procedures.
  7. Scheduling.
4. Record minutes and distribute copies within two days after meeting to participants, with two copies to COR, participants, and those affected by decisions made.

#### **1.14 Progress Schedule**

1. Within 10 days after Notice to Proceed is issued, submit the proposed project schedule.
2. If preliminary schedule requires revision after review, submit revised schedule within 10 days.

3. Include written certification that major contractors have reviewed and accepted proposed schedule.
4. Submit updated schedule with each Application for Payment.

#### **1.15 Submittals for Tank Cleaning**

- A. A. When the following are specified in individual sections, submit them for review 30 days from contract award:
  1. Product data.
  2. Shop drawings.
  3. Samples for selection.
  4. Samples for verification.
- B. Submit to COR for review for the limited purpose of checking for conformance with information given and the design concept expressed in the contract documents.
- C. After review, provide copies and distribute to subcontractors.
- D. When the following are specified in individual sections, submit them for information:
  1. Design data.
  2. Certificates.
  3. Test reports.
  4. Inspection reports.
  5. Manufacturer's instructions.
  6. Manufacturer's field reports.
  7. Other types indicated.
- E. When the following are specified in individual sections, submit them prior to final inspection:
  1. Project record documents.
  2. Operation and maintenance data.
  3. Warranties.
  4. Bonds.
  5. Other types as indicated.

#### **1.16 Electronic Submittal Procedures**

- A. Electrically submit submittals to COR with the transmittal form and ProjNet.
- B. Sequentially number the transmittal form. Revise submittals with original number and a sequential alphabetic suffix.
- C. Identify Project, Contractor, Subcontractor or supplier; pertinent drawing and detail number, and specification section number, as appropriate on each copy.
- D. Apply Contractor's stamp, signed or initialed certifying that review, approval, verification of Products required, field dimensions, adjacent construction Work, and coordination of information is in accordance with the requirements of the Work and Contract Documents.
- E. Electronically send submittals to COR at via address provided by project coordinator.

- F.** Schedule submittals to expedite the Project, and coordinate submission of related items.
- G.** For each submittal for review, allow 15 days excluding delivery from and to the Contractor.
- H.** Identify variations from Contract Documents and Product or system limitations that may be detrimental to successful performance of the completed Work.
- I.** Provide space for Contractor, Engineer/Architect and COR review stamps.
- J.** When revised for resubmission, identify all changes made since previous submission.
- K.** Distribute reviewed submittals as appropriate. Instruct parties to promptly report any inability to comply with requirements.

## **1.17 Cleaning Progress Schedule**

### **1.18.1 Submittals**

- A.** Within 10 days after the Notice to Proceed, submit the preliminary progress schedule.
- B.** If preliminary schedule requires revision after review, submit revised schedule within 10 days.
- C.** Include written certification that major Subcontractors have reviewed and accepted proposed schedule.
- D.** Submit updated schedule with each Application for Payment.

### **A. Schedule Format and Contract Time**

- A.** Listings: In chronological order according to the start date for each activity. Identify each activity with the applicable specification section number. Schedule shall be done in Microsoft Project.
- B.** Scale and Spacing: To allow for notations and revisions.
- C.** If the delivery time for any material and/or equipment called for on the drawings or specified herein, is anticipated by a bidder to be a problem in regard to meeting the Construction Progress Schedule, such bidder is asked to contact the COR immediately so a change, if required, can be made to maintain the Schedule.
- D.** The Contractor is required to submit any required Shop Drawings within 10 days after the Notice to Proceed in order to expedite the work as much as can be done.

### **B. Anticipated Project Schedule, Restrictions and Milestones**

- A.** The following schedule of Milestones assumes the contract is signed, the NTP has been issued. (Actual dates may differ based on the NTP date.) \*\*\* All days are additive and based on calendar days (not working days)

Day 1              Preconstruction Meeting

TBD	NTP issued and work begins within 10 calendar days, per contract
TBD	submittal review
TBD	Start-up activities underway, including: submittal posting, field mobilization, underground utility location
TBD	Project meetings
TBD	Project meeting and field measuring
TBD	Cleaning of Tanks
Day 25	Substantial Completion

### **C. Content**

- A. Show complete sequence of construction by activity, with dates for beginning and completion of each element of construction.
- B. Identify each item by specification section number.
- C. Identify work of separate stages and other logically grouped activities.
- D. Provide sub-schedules to define critical portions of the entire schedule.
- E. Show accumulated percentage of completion of each item, and total percentage of Work completed, as of the first day of each month.
- F. Provide legend for symbols and abbreviations used.

### **D. Updating the Schedule**

- A. Maintain schedules to record actual start and finish dates of completed activities
- B. Indicate progress of each activity to date of revision, with projected completion date of each activity.
- C. Update diagrams to graphically depict current status of Work.
- D. Identify activities modified since previous submittal, major changes in Work, and other identifiable changes.
- E. Indicate changes required to maintain Date of Substantial Completion.
- F. Submit reports required to support recommended changes.
- G. Provide narrative report to define problem areas, anticipated delays, and impact on the schedule. Report corrective action taken or proposed and its effect including the effects of changes on schedules of separate contractors.

## **1.19 Quality Requirements**

- A. Please reference the following standards for additional quality control:
  1. ASTM C1021- Standard Practice for Laboratories Engaged in Testing of Building Sealants;

2. ASTM C1077 - Standard Practice for Laboratories Testing Concrete and Concrete Aggregates for Use in Construction and Criteria for Laboratory Evaluation;
3. ASTM E329 - Standard Specification for Agencies Engaged Construction Inspection and/or Testing.

**B. Quality Assurance**

- A. For products or workmanship specified by reference to a document or documents not included in the Project Manual, also referred to as reference standards, comply with requirements of the standard, except when more rigid requirements are specified or are required by applicable codes. Such standards are made a part of the Contract Documents by reference.
- B. Conform to reference standard of date of issue current on date of Contract Documents, except where a specific date is established by applicable code.
- C. Obtain copies of standards when required by the Contract Documents.
- D. Should specified reference standards conflict with Contract Documents, request clarification from the COR before proceeding.
- E. Neither the contractual relationships, duties, or responsibilities of the parties in Contract nor those of the COR shall be altered by the Contract Documents by mention or inference otherwise in any reference document.

**1.19.2 Submittals**

- A. Test Reports: After each test/inspection, promptly submit an electronic copy of report to COR and to Contractor.
  1. Include:
    - a. Date issued.
    - b. Project title and number.
    - c. Name of inspector.
    - d. Date and time of sampling or inspection.
    - e. Identification of product and specifications section.
    - f. Location in the Project.
    - g. Type of test/inspection.
    - h. Date of test/inspection.
    - i. Results of test/inspection.
    - j. Conformance with Contract Documents.
    - k. When requested by COR, provide interpretation of results.
- B. Certificates: When specified in individual specification sections, submit certification by the manufacturer and Contractor or installation/application subcontractor to COR, in quantities specified for Product Data.

1. Indicate material or product conforms to or exceeds specified requirements. Submit supporting reference data, affidavits, and certifications as appropriate.
2. Certificates may be recent or previous test results on material or product, but must be acceptable to COR.

**C. Manufacturer's Instructions:** When specified in individual specification sections, submit printed instructions for delivery, storage, assembly, installation, start-up, adjusting, and finishing, for the DoS's information. Indicate special procedures, perimeter conditions requiring special attention, and special environmental criteria required for application or installation.

**D. Manufacturer's Field Reports:** Submit reports to COR.

1. Submit electronic report within 10 days of observation to COR for information.
2. Submit for information for the limited purpose of assessing conformance with information given and the design concept expressed in the contract documents.

### **1.23 Transportation and Handling**

- A. Coordinate schedule of product delivery to designated prepared areas in order to minimize site storage time and potential damage to stored materials.
- B. Transport and handle products in accordance with manufacturer's instructions.
- C. Transport materials in covered trucks and sealed shipping containers to prevent contamination of product and littering of surrounding areas.
- D. Promptly inspect shipments to ensure that products comply with requirements, quantities are correct, and products are undamaged.
- E. Provide equipment and personnel to handle products by methods to prevent soiling, disfigurement, or damage.
- F. Arrange for the return of packing materials, such as wood pallets, where economically feasible.

### **1.24 Storage and Protection**

- A. Designate receiving/storage areas for incoming products so that they are delivered according to installation schedule and placed convenient to work area in order to minimize waste due to excessive materials handling and misapplication.
- B. Store and protect products in accordance with manufacturers' instructions.
- C. Store with seals and labels intact and legible.
- D. Store sensitive products in weather tight, climate controlled, enclosures in an environment favorable to product.
- E. For exterior storage of fabricated products, place on sloped supports above ground.

- F.** Provide off-site storage and protection when site does not permit on-site storage or protection.
- G.** Cover products subject to deterioration with impervious sheet covering. Provide ventilation to prevent condensation and degradation of products.
- H.** Store loose granular materials on solid flat surfaces in a well-drained area. Prevent mixing with foreign matter.
- I.** Prevent contact with material that may cause corrosion, discoloration, or staining.
- J.** Provide equipment and personnel to store products by methods to prevent soiling, disfigurement, or damage.
- K.** Arrange storage of products to permit access for inspection. Periodically inspect to verify products are undamaged and are maintained in acceptable condition.

## **1.25 Execution and Closeout Requirements**

### **1.25.1 Coordinate**

- A.** Coordinate scheduling, submittals, and work of the various sections of the Project Manual to ensure efficient and orderly sequence of installation of interdependent construction elements, with provisions for accommodating items installed later.
- B.** Notify affected utility companies and comply with their requirements.
- C.** Verify that utility requirements and characteristics of new operating equipment are compatible with building utilities. Coordinate work of various sections having interdependent responsibilities for installing, connecting to, and placing in service, such equipment.
- D.** Coordinate space requirements, supports, and installation of mechanical and electrical work that are indicated diagrammatically on Drawings. Follow routing shown for pipes, ducts, and conduit, as closely as practicable; place runs parallel with lines of building. Utilize spaces efficiently to maximize accessibility for other installations, for maintenance, and for repairs.
- E.** In finished areas except as otherwise indicated, conceal pipes, ducts, and wiring within the construction. Coordinate locations of fixtures and outlets with finish elements.
- F.** Coordinate completion and clean-up of work of separate sections.
- G.** After occupancy of premises, coordinate access to site for correction of defective work and work not in accordance with Contract Documents, to minimize disruption of Embassy's activities.

### **1.25.2 Examination**

- A.** Verify that existing site conditions and substrate surfaces are acceptable for subsequent work. Start of work means acceptance of existing conditions.
- B.** Verify that existing substrate is capable of structural support or attachment of new work being applied or attached.

- C. Examine and verify specific conditions described in individual specification sections.
- D. Take field measurements before confirming product orders or beginning fabrication, to minimize waste due to over-ordering or miss-fabrication.
- E. Verify that utility services are available, of the correct characteristics, and in the correct locations.
- F. Prior to Cutting: Examine existing conditions prior to commencing work, including elements subject to damage or movement during cutting and patching. After uncovering existing work, assess conditions affecting performance of work. Beginning of cutting or patching means acceptance of existing conditions.

### **1.25.3 Preparation**

- A. Clean substrate surfaces prior to applying next material or substance.
- B. Seal cracks or openings of substrate prior to applying next material or substance.
- C. Apply manufacturer required or recommended substrate primer, sealer, or conditioner prior to applying any new material or substance in contact or bond.

### **1.25.4 General Requirements (if required for pipe fitting to the tank)**

- A. Install products as specified in individual sections, in accordance with manufacturer's instructions and recommendations, and so as to avoid waste due to necessity for replacement.
- B. Make vertical elements plumb and horizontal elements level, unless otherwise indicated.
- C. Install equipment and fittings plumb and level, neatly aligned with adjacent vertical and horizontal lines, unless otherwise indicated.
- D. Make consistent texture on surfaces, with seamless transitions, unless otherwise indicated.
- E. Make neat transitions between different surfaces, maintaining texture and appearance.

### **1.25.5 Progress Cleaning**

- A. Maintain areas free of waste materials, debris, and rubbish. Maintain site in a clean and orderly condition.
- B. Remove debris and rubbish from pipe chases, plenums, attics, crawl spaces, and other closed or remote spaces, prior to enclosing the space.
- C. Broom and vacuum clean interior areas prior to start of surface finishing, and continue cleaning to eliminate dust.
- D. Collect and remove waste materials, debris, and trash/rubbish from site periodically and dispose off-site; do not burn or bury.



#### **1.25.6 Protection of Installed Work**

- A.** Protect installed work from damage by construction operations.
- B.** Provide special protection where specified in individual specification sections.
- C.** Provide temporary and removable protection for installed products. Control activity in immediate work area to prevent damage.
- D.** Provide protective coverings at walls, projections, jambs, sills, and soffits of openings.
- E.** Protect finished floors, stairs, and other surfaces from traffic, dirt, wear, damage, or movement of heavy objects, by protecting with durable sheet materials.
- F.** Remove protective coverings when no longer needed; reuse or recycle plastic coverings if possible.

#### **1.25.8 Final Cleaning By General Work and Labor Contractor**

- A.** Execute final cleaning after Substantial Completion but before making final application for payment.
- B.** Clean areas to be occupied by Embassy prior to final completion before DoS occupancy.
- C.** Use cleaning materials that are nonhazardous.

#### **1.25.8 Closeout Procedures**

- A.** Make submittals that are required by governing or other authorities.
  - a.** Provide copies to COR.
- B.** Accompany Project Coordinator on preliminary inspection to determine items to be listed for completion or correction in Contractor's Notice of Substantial Completion.
- C.** Notify COR when work is considered ready for Substantial Completion.
- D.** Submit written certification that Contract Documents have been reviewed, work has been inspected, and that work is complete in accordance with Contract Documents and ready for COR's review.
- E.** Correct items of work listed in executed Certificates of Substantial Completion and comply with requirements for access to Embassy-occupied areas.
- F.** Notify COR when work is considered finally complete.
- A.** Include systematic examination, adjustment, and lubrication of components. Repair or replace parts whenever required. Use parts produced by the manufacturer of the original component and must be new.
- B.** Maintenance service shall not be assigned or transferred to any agent or subcontractor without prior written consent of the Embassy.

#### **1.26.1 Submittals**

- A.** Project Record Documents: Submit documents to COR with claim for final Application for Payment.

- B.** Operation and Maintenance Data:
  - a. Submit three copies of preliminary draft or proposed formats and outlines of contents before start of Work. COR will review draft and return one copy with comments.
  - b. For equipment, or component parts of equipment put into service during construction and operated by the Embassy, submit completed documents within ten days after acceptance.
  - c. Submit one copy of completed documents 15 days prior to final inspection. This copy will be reviewed and returned after final inspection, with COR comments. Revise content of all document sets as required prior to final submission.
  - d. Submit two sets of revised final documents in final form within 10 days after final inspection.

### **1.27 Project Record Documents**

- A.** Maintain on site one set of the following record documents; record actual revisions to the Work:
  - a. Drawings.
  - b. Specifications.
  - c. Addenda.
  - d. Change Orders and other modifications to the Contract.
  - e. Reviewed shop drawings, product data, and samples.
  - f. Manufacturer's instruction for assembly, installation, and adjusting.
- B.** Ensure entries are complete and accurate, enabling future reference by the Embassy.
- C.** Store record documents separate from documents used for construction.
- D.** Record information concurrent with construction progress.
- E.** Specifications: Legibly mark and record at each product section description of actual products installed, including the following:
  - a. Manufacturer's name and product model and number.
  - b. Product substitutions or alternates utilized.
  - c. Changes made by Addenda and modifications.
- F.** Record Drawings and Shop Drawings: Legibly mark each item to record actual construction including:
  - a. Field changes of dimension and detail.
  - b. Details not on original Contract drawings.

### **1.30.1 Utility Services**

- A.** Maintain existing utilities indicated to remain in service and protect against damage during demolition operations.

- B.** Extent of electrical and mechanical utilities to be removed is shown on Contract Drawings.
- C.** Schedule utility outages through USFWS (COR). Provide a minimum one week notice prior to performing work.

#### **1.30.2 Preparation**

- A.** Conduct demolition operations and remove debris in manner to ensure minimum interference with roads, streets, walks, and other adjacent occupied or used facilities.
- B.** Conduct demolition operations to prevent injury to people and damage to adjacent buildings and facilities designated to remain.
- C.** Provide protective measures as required to provide free and safe passage to and from occupied portions of buildings.
- D.** Provide temporary barricades and other forms of protection as required for safety and security.

#### **1.30.3 Demolition**

- A.** Perform work in safe and systematic manner.
- B.** Use such methods as required to complete work indicated on Contract Drawings and minimize disturbance of Embassy normal operations.
- C.** Demolish and remove existing construction only to extent required, and as indicated in Contract documents.
- D.** Wear proper personal protective equipment at all times.
- E.** Use water as necessary to lay dust when chipping, coring, or sawing concrete, masonry or similar materials. Water must be controlled inside buildings by damming, mopping or vacuuming.
- F.** Completely backfill below-grade areas and voids resulting from utility removal and other demolition work.
- G.** Lock out / Tag Out Program shall be used to secure all energy sources during demolition.

#### **1.30.4 Repairs**

- A.** Repair demolition performed in excess of that required.
- B.** Return structures and surfaces not part of demolition, to conditions existing prior to commencement of demolition work.
- C.** Promptly repair adjacent construction or surfaces soiled or damaged by demolition work at no cost to the Embassy.
- D.** Lock-out/Tag-out program shall be used to secure all energy sources during demolition.

#### **1.30.5 Disposal of Demolished Materials**

- A.** General: Promptly dispose of debris, rubbish, and other materials resulting from building site demolition operations.

- B.** If Contractor encounters material during removal that is suspected to be potential hazard, stop work immediately and notify (COR). (COR) shall determine salvageable items, if not indicated in Contract documents.

#### **1.30.6 Cleaning**

- A.** Remove tools, equipment and demolished materials from site upon completion of demolition work. Remove protections as approved by (COR) and leave interior areas broom clean.

### **END OF PART 1 SECTION**

## **PART 2 TANK CLEANING REQUIREMENTS**

### **GENERAL REQUIREMENTS**

In addition to the requirements contained in ANSI/API Standard 2015, persons engaged in tank cleaning activities shall refer to applicable federal, state and local government regulations pertinent to specific circumstances, including regulations of governments other than those of the United States, where appropriate. ANSI/API Recommended Practice 2016 is intended to be consistent with Title 29 of the U.S. Code of Federal Regulations, Occupational Safety and Health Administration, and applicable NFPA Codes and Standards as they apply to entering and cleaning petroleum storage tanks. If any provision of these regulations conflicts with local city or host country statutory or regulatory requirements, said statutes and regulations shall govern if more restrictive.

The contractor shall responsible to determine and apply safe work practices and guidelines which must be reviewed in their entirety to determine their applicability to the facility, its location, the tanks involved and the proposed work.

The contractor shall develop and implement appropriate administrative controls, procedures, and written plans for tank preparation, entry, and cleaning operations from decommissioning through recommissioning, including, but not limited to, the following:

- Tank pre-cleaning planning and meeting.
- Storage tank, area, atmospheric, physical and product hazard assessments.
- Entry permit requirements, limitations, issuance and cancellation.
- Identification, designation and classification by the employer of permit required confined spaces, non-permit required confined spaces and non-confined spaces.

- Entry requirements for each designated confined space.
- Safe (cold) work and hot work permit requirements.
- Vapor and gas freeing, degassing, testing, and ventilation requirements.
- Training and personal protective equipment requirements for workers and supervisors.
- Emergency response requirements, rescue operations and rescue capability.
- Tank draining, cleaning procedures, equipment and fluid/sludge/residue disposal.
- Regulatory and facility requirements applicable to tank cleaning operations.

## **CONTRACTOR RESPONSIBILITIES**

The contractor shall furnish and utilize an attendant: A qualified employee stationed outside one or more permit required confined spaces who monitors the entrants and who performs all attendants' duties in accordance with the employer's (owner/operator and contractor) permit required confined space program. Attendants may also perform the duties of standby personnel when entrants use respiratory protective equipment.

The contractor shall furnish all necessary services and equipment to establish protections for flammable and combustible liquid vapor or flammable gas (from crude oil, gasoline and liquefied petroleum gas, for example) that may burn or explode when mixed with air and exposed to a specific ignition source.

The contractor shall within five (5) business days prior to commencing work shall submit to the COR a complete work plan as required by this scope of work and a personnel entry permit: The entry shall be the written or printed document provided by the contractor and issued by the entry supervisor that contains the site, potential hazard and work specific information necessary to control and authorize entry into a confined space including conditions canceling the permit and requirements for safeguarding or returning the space to service following termination of entry.

The contractor shall assign an entry supervisor: The qualified person (employee, foreman, supervisor, crew chief, etc.) designated by the contractor to be responsible for determining the requirements, and whether or not acceptable entry conditions exist at confined spaces, where entry is contemplated. Entry supervisors shall authorize entry, oversee entry operations and terminate entry as required by the permit or conditions. An entry supervisor, who is properly qualified, trained and equipped, may serve as an attendant or as an entrant. The duties of entry supervisor may be passed from one employee to another designated qualified employee, during the course of an entry operation.

The contractor shall furnish and utilize all air testing and monitoring instruments: The oxygen monitors, flammable (combustible) vapor indicators and toxic substance analyzers (measuring equipment) used to test (or sample) atmospheric conditions and determine, indicate, measure and monitor the amount of oxygen in the atmosphere and presence of hazardous substances, including percentage of flammable vapor-in air (gas-in-air) and concentrations of toxic substances.

The contractor shall utilize and put into place all required lockout/tagout for fluid and electrical controls to isolate all energy sources and fluid sources: The condition when electrical and mechanical switches are open in the de-energized position and locked out and/or mechanical linkages are set, tagged and sealed or locked out to preclude the input of product or energy into the permit required confined space or non-permit confined space. Where required by regulation or contractor procedures, the system shall be tested to assure isolation.

The contractor as required shall furnish and utilize all equipment necessary to provide for positive tank ventilation: Providing fresh air inside a tank to maintain an atmosphere within acceptable permit limits and provide a required number of air changes per hour. Ventilation occurs after flammable vapors, toxic vapors and gases, dusts, fumes or mists have been displaced or diluted by vapor and gas freeing (degassing).

The contractor shall establish a safe working zone about the work area. The minimum clearances for unauthorized personnel access shall be maintained at a minimum of 10 linear feet measured in all directions. The contractor shall furnish all barriers and caution tapes and signage, assemble/erect and place them in service and after completion of work remove and dispose of all temporary barriers and tapes/signage.

The contractor shall furnish all necessary tools and equipment to perform work including fluid removal/recovery and draining, clean out and disposal of sludge and debris. The contractor shall furnish all fluid pumps/vacuums, mobile collection tanks, personnel safety equipment, lighting (as needed for use inside the tank), hand tools and cleaning rigs. The US Government will not furnish tools for this contract or for the contractors use.

The contractor shall visit the site as required to document existing conditions and to allow for detailed planning to develop processes and safety plans to perform all work and for the purposes of developing a proposal/offer to perform work. The contractor shall coordinate all site access with the Post CO and COR.

The contractor shall provide for all recovery and removal and disposal services including recovery of fluid, sludge and debris from the tank and removal of fluid, sludge and debris from the US Embassy site. The contractor shall also be responsible to dispose of all non-hazardous and hazardous material and fluids in accordance with local city and host country laws and regulations.

Upon completion of the tank fluid, sludge and debris removal and tank cleaning, the contractor shall inspect the tank for evidence of structural failures, interior corrosion, deflection, tank wall

compromise, damaged gaskets, faulty pipe joints, etc. All defects found shall be reported to the Post CO and COR within one (1) business day.

If the tank inspection results in no problems found, the contractor shall recommission the tank following manufacturer requirements, refill the tank with new #2 diesel fuel, remove all lock out tag out devices and re-establish fuel delivery system. The contractor shall also furnish and install all new foot valve screens, fuel pump filters, water separators, clean all strainers, exercise all shutoff/control valves and monitor system operations once equipment is restored to service. Contractor shall monitor and repair any problems for one (1) complete business day.

The contractor will not be responsible to service or repair any apparatus that is served via the tank, for example, fuel dispensing station or back up diesel generator or it's associated day tank and pump package.

The contractor shall, during the course of all site operations, be responsible for the conduct, safety and security of their personnel, including all subcontractor personnel. The contractor is advised that the US Government retains the right to remove contractor personnel if Post policy and requirements are not followed or for cause. If contractor personnel are removed from site, the contractor shall within one (1) business day replace personnel at no additional cost to the US Government. Additionally, no time extension for the period of performance will be granted if contractor personnel are removed from site.

Upon completion of all work, the contractor shall restore the site and grounds to it's as found condition. The contractor shall at the completion of work remove all their property, tools and equipment from the US Embassy site/grounds. The contractor shall execute any repairs to the site that are caused by the contractor as a result of the work performed. These repairs and restorations shall be executed at no additional cost to the US Government.

## **2.2 CODES AND STANDARDS**

**2.2.1** Work shall meet the requirements of the plans and specifications and shall not be less than the minimum requirements of applicable sections of the latest Codes and Standards of the following Organizations:

1. American Gas Association (AGA)
2. American Society of Heating, Refrigeration and Air Conditioning Engineers (ASHRAE)
3. American Society of Mechanical Engineers (ASME)
4. American Water Works Association (AWWA)
5. National Electrical Code (NEC)
6. National Electrical Manufacturers Association (NEMA)
7. National Fire Protection Association (NFPA)
8. Uniform Plumbing Code (UPC)
9. Occupational Safety & Health Act (OSHA)
10. Plastic Pipe Institute (PPI)
11. Sheet Metal and Air Conditioning Contractors National Association (SMACNA)

12. International Mechanical Code (IMC)
13. International Building Code (IBC)
14. Requirements of the Serving Utility Company

## **2.4 INTENT OF DRAWINGS**

- 2.4.1** The drawings are partly diagrammatic and do not necessarily show exact location of piping and ductwork unless specifically dimensioned. Riser and other diagrams are schematic and do not necessarily show the physical arrangement of the equipment. They shall not be used for obtaining lineal runs of piping or ductwork, nor shall they be used for shop drawings for piping and ductwork fabrication or ordering. Discrepancies shown on different plans, or between plans and actual field conditions shall be brought to the attention of the Engineer for resolution.

## **END OF PART 2 SECTION**

### **Part 3 - Section B – Services and Costs**

#### **B.1 Supplies / Services**

B.1.1 The Contractor shall provide personnel, labor, administrative, supervision, project management, logistics, insurance, skilled journeymen with American training, transportation, hotels, engineering, commissioning, tools, safety equipment, supplies and equipment, as identified in this solicitation for cleaning services at Embassy Tbilisi as described in this contract, plans, and specifications.

B.1.1.1 The request for proposal is broken down into three parts:

I-1 This item includes all work associated with complete cleaning and disposal of fuel in the underground storage tanks.

All work will be conducted in the American Embassy located in Tbilisi Georgia as identified in this contract, manufacture's guidelines, specifications, and drawings. A contract shall be **awarded for work at a Firm Fixed Price based on the requirements identified in this contract.**

B.1.2 This contract includes the requirement for the contractor to purchase and ship new equipment, spare parts, tools, filters, gages, gaskets etc., new utility plant controls, new pumps, etc.

#### **B.2 Schedule of Prices**

B.2.1 The contractor shall complete all work, including providing all managerial, logistics, labor, tools, diagnostic equipment and services, as called for and defined in the contract documents, manufacture's guidelines, plans, and specifications. The price shall include all labor, tools, overhead (including insurance required by FAR 52.228-4, Workers' Compensation), and profit.

B.2.2 The Contractor shall provide repair services, logistics, balancing, labor and materials on **a firm fixed-price basis**. In establishing the fixed price for the effort under this contract, the hourly rates for the required services shall be in accordance with fixed **fully burdened** hourly labor rates. The fixed hourly rates shall include wages, overhead, G&A, profit and all employee fringe benefits, such as retirement, withholding for FICA and taxes, unemployment, workman's compensation and union dues (as applicable).



B.2.3 The Contractor shall provide personnel, labor, administrative, supervision, project management, logistics, insurance, skilled journeymen, transportation, hotels, engineering, factory start up, commissioning, test and balance for water and air systems, tools, prefabrications, supplies and equipment, to provide services necessary to comply with all U.S. OSHA standards, laws, and regulations as specified in the Contract Documents and Manufacture's Guidelines.

B.2.4 The Contractor shall provide the repair services shown below for the contract:

CLIN	Description	Type of Services	Completion time	Unit Price / Service (\$)	Total price (\$)
1	Bid Schedule I: I-1- removal of fuel in tanks	Repair	<i>must be completed within 35 days from NTP</i>		
2	Bid Schedule II: II-2- Cleaning of tanks	Repair	<i>must be completed within 70 days from NTP</i>		
3	DBA Insurance		<i>Within 5 days after award</i>		

B.2.5 Pricing Detail: The unit pricing provided for each CLIN shall be supported with cost details, as follows:

- (a) Labor hours
- (b) Labor category
- (c) Burdened labor rates (see B.2.6)
- (d) Estimated travel costs including airfare, hotel, per diem, and other allowed reimbursable expenses in CLIN 002 only. Do not include travel costs in other descriptions.

B.2.6 Labor Rates: In addition to the Fixed Price contract items identified above, the cost proposal shall include a schedule of proposed fully burdened labor rates (as described in B.2.2) for the contract. These labor rates will be used, at the discretion of the Contracting Officer's Representative (COR), for potential pricing negotiations of related work that may be outside the scope of this contract effort but deemed advantageous to the Government in terms of expedient execution.

### B.3 Ordering Office

B.3.1 The contract work is located in Tbilisi Georgia at the following address:

American Embassy Tbilisi  
Facility Management - Overseas Buildings Operations

11 George Balanchine St.  
Tbilisi Georgia 0131

#### **B.4 Travel**

B.4.1 In determining the cost of travel, the terms and conditions of the Federal Travel Regulations (FTR) and Joint Travel Regulation (JTR) shall apply to all travel and travel-related matters authorized under this contract; travel and travel-related expenses shall not exceed the maximum allowable under the FTR and JTR. Travel, lodging and Per Diem rates shall be in accordance with Federal Travel Regulations / Joint Travel Regulation. The current rates are as follows for Tbilisi:

- Maximum Lodging Rate is \$236 USD per night.
- Meal and Incidental Expenses is \$105 USD per day.

B.4.2 Travel will be included as part of the contract line items identified in Section B.2.

B.4.3 In connection with authorized travel, the following items are to be on a fixed price basis which will require a receipt for reimbursement:

- (a) The cost of domestic and overseas economy-class (coach) airfare.
- (b) The cost of hotel or housing accommodations and other incidentals when travel is undertaken.
- (c) Miscellaneous expenses incurred in connection with the travel.
- (d) DBA Insurance

B.4.4 Miscellaneous travel items such as taxi fares and other ground transportation expenses incurred in connection with the travel, and airport taxes are also to be on a fixed price basis (receipts required).

#### **B.5 Cost of Supplies**

B.5.1 The cost of any supplies required in conjunction with the services rendered herein shall be included in the proposed firm fixed-price unless otherwise noted.

#### **B.6 Government-Furnished Property**

B.6.1 The Government will not provide any materials or property.

#### **B.7 Prices**

B.7.1 The burdened hourly labor rates requested in Section B.2 will be established for this contract. These rates are the maximum rates allowable under the contract for United States based personnel performing services in the listed disciplines. These rates will be used for any

professional services that are included in “Section C - STATEMENT OF WORK” and may apply to work outside the scope of this contract, except where local labor is acceptable and available at reduced rates. Rates for local labor shall be established in the cost proposal.

B.7.2 If any subcontractors are utilized, they shall provide the required disciplines necessary to properly execute the defined work in the contract, manufacture’s guidelines, plans and specifications.

B.7.3 Subcontracted providers of services, if utilized, must be identified. If no Subcontract Provider is identified, the Contractor will provide these services with the in-house resources of the Contractor.

## SECTION 2 - CONTRACT CLAUSES

FAR 52.212-4 CONTRACT TERMS AND CONDITIONS – COMMERCIAL ITEMS (JAN 2017), is incorporated by reference. (See SF-1449, Block 27A).

### **II. 52.212-5 CONTRACT TERMS AND CONDITIONS REQUIRED TO IMPLEMENT STATUTES OR EXECUTIVE ORDERS—COMMERCIAL ITEMS (AUG 2017)**

(a) The Contractor shall comply with the following Federal Acquisition Regulation (FAR) clauses, which are incorporated in this contract by reference, to implement provisions of law or Executive orders applicable to acquisitions of commercial items:

- (1) [52.203-19](#), Prohibition on Requiring Certain Internal Confidentiality Agreements or Statements (JAN 2017) (section 743 of Division E, Title VII, of the Consolidated and Further Continuing Appropriations Act, 2015 (Pub. L. 113-235) and its successor provisions in subsequent appropriations acts (and as extended in continuing resolutions)).
- (2) [52.209-10](#), Prohibition on Contracting with Inverted Domestic Corporations (Nov 2015).
- (3) [52.233-3](#), Protest After Award (AUG 1996) ([31 U.S.C. 3553](#)).
- (4) [52.233-4](#), Applicable Law for Breach of Contract Claim (OCT 2004)(Public Laws 108-77 and 108-78 ([19 U.S.C. 3805 note](#))).

(b) The Contractor shall comply with the FAR clauses in this paragraph (b) that the Contracting Officer has indicated as being incorporated in this contract by reference to implement provisions of law or Executive orders applicable to acquisitions of commercial items:

- \_\_\_ (1) [52.203-6](#), Restrictions on Subcontractor Sales to the Government (Sept 2006), with Alternate I (Oct 1995) ([41 U.S.C. 4704](#) and [10 U.S.C. 2402](#)).
- \_\_\_ (2) [52.203-13](#), Contractor Code of Business Ethics and Conduct (Oct 2015) ([41 U.S.C. 3509](#))).
- \_\_\_ (3) [52.203-15](#), Whistleblower Protections under the American Recovery and Reinvestment Act of 2009 (June 2010) (Section 1553 of Pub. L. 111-5). (Applies to contracts funded by the American Recovery and Reinvestment Act of 2009.)
- \_X\_ (4) [52.204-10](#), Reporting Executive Compensation and First-Tier Subcontract Awards (Oct 2016) (Pub. L. 109-282) ([31 U.S.C. 6101 note](#)).
- \_\_\_ (5) [Reserved].
- \_\_\_ (6) [52.204-14](#), Service Contract Reporting Requirements (Oct 2016) (Pub. L. 111-117, section 743 of Div. C).
- \_\_\_ (7) [52.204-15](#), Service Contract Reporting Requirements for Indefinite-Delivery Contracts (Oct 2016) (Pub. L. 111-117, section 743 of Div. C).
- \_X\_ (8) [52.209-6](#), Protecting the Government's Interest When Subcontracting with Contractors Debarred, Suspended, or Proposed for Debarment. (Oct 2015) ([31 U.S.C. 6101 note](#)).
- \_\_\_ (9) [52.209-9](#), Updates of Publicly Available Information Regarding Responsibility Matters (Jul 2013) ([41 U.S.C. 2313](#)).
- \_\_\_ (10) [Reserved].
- \_\_\_ (11)(i) [52.219-3](#), Notice of HUBZone Set-Aside or Sole-Source Award (Nov 2011) ([15 U.S.C. 657a](#)).
- \_\_\_ (ii) Alternate I (Nov 2011) of [52.219-3](#).

- \_\_\_ (12)(i) [52.219-4](#), Notice of Price Evaluation Preference for HUBZone Small Business Concerns (OCT 2014) (if the offeror elects to waive the preference, it shall so indicate in its offer) ([15 U.S.C. 657a](#)).
- \_\_\_ (ii) Alternate I (JAN 2011) of [52.219-4](#).
- \_\_\_ (13) [Reserved]
- \_\_\_ (14)(i) [52.219-6](#), Notice of Total Small Business Set-Aside (Nov 2011) ([15 U.S.C. 644](#)).
- \_\_\_ (ii) Alternate I (Nov 2011).
- \_\_\_ (iii) Alternate II (Nov 2011).
- \_\_\_ (15)(i) [52.219-7](#), Notice of Partial Small Business Set-Aside (June 2003) ([15 U.S.C. 644](#)).
- \_\_\_ (ii) Alternate I (Oct 1995) of [52.219-7](#).
- \_\_\_ (iii) Alternate II (Mar 2004) of [52.219-7](#).
- \_\_\_ (16) [52.219-8](#), Utilization of Small Business Concerns (Nov 2016) ([15 U.S.C. 637\(d\)\(2\)](#) and (3)).
- \_\_\_ (17)(i) [52.219-9](#), Small Business Subcontracting Plan (Jan 2017) ([15 U.S.C. 637\(d\)\(4\)](#)).
- \_\_\_ (ii) Alternate I (Nov 2016) of [52.219-9](#).
- \_\_\_ (iii) Alternate II (Nov 2016) of [52.219-9](#).
- \_\_\_ (iv) Alternate III (Nov 2016) of [52.219-9](#).
- \_\_\_ (v) Alternate IV (Nov 2016) of [52.219-9](#).
- \_\_\_ (18) [52.219-13](#), Notice of Set-Aside of Orders (Nov 2011) ([15 U.S.C. 644\(r\)](#)).
- \_\_\_ (19) [52.219-14](#), Limitations on Subcontracting (Jan 2017) ([15 U.S.C. 637\(a\)\(14\)](#)).
- \_\_\_ (20) [52.219-16](#), Liquidated Damages—Subcontracting Plan (Jan 1999) ([15 U.S.C. 637\(d\)\(4\)\(F\)\(i\)](#)).
- \_\_\_ (21) [52.219-27](#), Notice of Service-Disabled Veteran-Owned Small Business Set-Aside (Nov 2011) ([15 U.S.C. 657 f](#)).
- \_\_\_ (22) [52.219-28](#), Post Award Small Business Program Rerepresentation (Jul 2013) ([15 U.S.C. 632\(a\)\(2\)](#)).
- \_\_\_ (23) [52.219-29](#), Notice of Set-Aside for, or Sole Source Award to, Economically Disadvantaged Women-Owned Small Business Concerns (Dec 2015) ([15 U.S.C. 637\(m\)](#)).
- \_\_\_ (24) [52.219-30](#), Notice of Set-Aside for, or Sole Source Award to, Women-Owned Small Business Concerns Eligible Under the Women-Owned Small Business Program (Dec 2015) ([15 U.S.C. 637\(m\)](#)).
- \_\_\_ (25) [52.222-3](#), Convict Labor (June 2003) (E.O. 11755).
- \_X\_ (26) [52.222-19](#), Child Labor—Cooperation with Authorities and Remedies (Oct 2016) (E.O. 13126).
- \_X\_ (27) [52.222-21](#), Prohibition of Segregated Facilities (Apr 2015).
- \_X\_ (28) [52.222-26](#), Equal Opportunity (Sept 2016) (E.O. 11246).
- \_\_\_ (29) [52.222-35](#), Equal Opportunity for Veterans (Oct 2015)([38 U.S.C. 4212](#)).
- \_\_\_ (30) [52.222-36](#), Equal Opportunity for Workers with Disabilities (Jul 2014) ([29 U.S.C. 793](#)).
- \_\_\_ (31) [52.222-37](#), Employment Reports on Veterans (FEB 2016) (38 U.S.C. 4212).
- \_\_\_ (32) [52.222-40](#), Notification of Employee Rights Under the National Labor Relations Act (Dec 2010) (E.O. 13496).
- \_X\_ (33)(i) [52.222-50](#), Combating Trafficking in Persons (Mar 2015) ([22 U.S.C. chapter 78](#) and E.O. 13627).
- \_\_\_ (ii) Alternate I (Mar 2015) of [52.222-50](#) ([22 U.S.C. chapter 78](#) and E.O. 13627).

\_\_\_ (34) [52.222-54](#), Employment Eligibility Verification (OCT 2015). (Executive Order 12989). (Not applicable to the acquisition of commercially available off-the-shelf items or certain other types of commercial items as prescribed in [22.1803](#).)

\_\_\_ (35) [52.222-59](#), Compliance with Labor Laws (Executive Order 13673) (OCT 2016). (Applies at \$50 million for solicitations and resultant contracts issued from October 25, 2016 through April 24, 2017; applies at \$500,000 for solicitations and resultant contracts issued after April 24, 2017).

**Note to paragraph (b)(35):** By a court order issued on October 24, 2016, 52.222-59 is enjoined indefinitely as of the date of the order. The enjoined paragraph will become effective immediately if the court terminates the injunction. At that time, GSA, DoD and NASA will publish a document in the *Federal Register* advising the public of the termination of the injunction.

\_\_\_ (36) [52.222-60](#), Paycheck Transparency (Executive Order 13673) (OCT 2016).

\_\_\_ (37)(i) [52.223-9](#), Estimate of Percentage of Recovered Material Content for EPA–Designated Items (May 2008) ([42 U.S.C. 6962\(c\)\(3\)\(A\)\(ii\)](#)). (Not applicable to the acquisition of commercially available off-the-shelf items.)

\_\_\_ (ii) Alternate I (May 2008) of [52.223-9](#) ([42 U.S.C. 6962\(i\)\(2\)\(C\)](#)). (Not applicable to the acquisition of commercially available off-the-shelf items.)

\_\_\_ (38) [52.223-11](#), Ozone-Depleting Substances and High Global Warming Potential Hydrofluorocarbons (JUN 2016) (E.O. 13693).

\_\_\_ (39) [52.223-12](#), Maintenance, Service, Repair, or Disposal of Refrigeration Equipment and Air Conditioners (JUN 2016) (E.O. 13693).

\_\_\_ (40)(i) [52.223-13](#), Acquisition of EPEAT®-Registered Imaging Equipment (JUN 2014) (E.O.s 13423 and 13514).

\_\_\_ (ii) Alternate I (Oct 2015) of [52.223-13](#).

\_\_\_ (41)(i) [52.223-14](#), Acquisition of EPEAT®-Registered Televisions (JUN 2014) (E.O.s 13423 and 13514).

\_\_\_ (ii) Alternate I (Jun 2014) of [52.223-14](#).

\_\_\_ (42) [52.223-15](#), Energy Efficiency in Energy-Consuming Products (DEC 2007) ([42 U.S.C. 8259b](#)).

\_\_\_ (43)(i) [52.223-16](#), Acquisition of EPEAT®-Registered Personal Computer Products (OCT 2015) (E.O.s 13423 and 13514).

\_\_\_ (ii) Alternate I (Jun 2014) of [52.223-16](#).

\_X\_ (44) [52.223-18](#), Encouraging Contractor Policies to Ban Text Messaging While Driving (AUG 2011) (E.O. 13513).

\_\_\_ (45) [52.223-20](#), Aerosols (JUN 2016) (E.O. 13693).

\_\_\_ (46) [52.223-21](#), Foams (JUN 2016) (E.O. 13693).

\_\_\_ (47)(i) [52.224-3](#), Privacy Training (JAN 2017) (5 U.S.C. 552a).

\_\_\_ (ii) Alternate I (JAN 2017) of 52.224-3.

\_\_\_ (48) [52.225-1](#), Buy American—Supplies (May 2014) ([41 U.S.C. chapter 83](#)).

\_\_\_ (49)(i) [52.225-3](#), Buy American—Free Trade Agreements—Israeli Trade Act (May 2014) ([41 U.S.C. chapter 83](#), [19 U.S.C. 3301](#) note, [19 U.S.C. 2112](#) note, [19 U.S.C. 3805](#) note, [19 U.S.C. 4001](#) note, Pub. L. 103-182, 108-77, 108-78, 108-286, 108-302, 109-53, 109-169, 109-283, 110-138, 112-41, 112-42, and 112-43).

\_\_\_ (ii) Alternate I (May 2014) of [52.225-3](#).

- \_\_\_ (iii) Alternate II (May 2014) of [52.225-3](#).
  - \_\_\_ (iv) Alternate III (May 2014) of [52.225-3](#).
  - \_\_\_ (50) [52.225-5](#), Trade Agreements (OCT 2016) ([19 U.S.C. 2501](#), *et seq.*, [19 U.S.C. 3301](#)note).
  - \_X\_ (51) [52.225-13](#), Restrictions on Certain Foreign Purchases (June 2008) (E.O.'s, proclamations, and statutes administered by the Office of Foreign Assets Control of the Department of the Treasury).
  - \_\_\_ (52) [52.225-26](#), Contractors Performing Private Security Functions Outside the United States (Oct 2016) (Section 862, as amended, of the National Defense Authorization Act for Fiscal Year 2008; [10 U.S.C. 2302 Note](#)).
  - \_\_\_ (53) [52.226-4](#), Notice of Disaster or Emergency Area Set-Aside (Nov 2007) ([42 U.S.C. 5150](#)).
  - \_\_\_ (54) [52.226-5](#), Restrictions on Subcontracting Outside Disaster or Emergency Area (Nov 2007) ([42 U.S.C. 5150](#)).
  - \_X\_ (55) [52.232-29](#), Terms for Financing of Purchases of Commercial Items (Feb 2002) ([41 U.S.C. 4505](#), [10 U.S.C. 2307\(f\)](#)).
  - \_\_\_ (56) [52.232-30](#), Installment Payments for Commercial Items (Jan 2017) ([41 U.S.C. 4505](#), [10 U.S.C. 2307\(f\)](#)).
  - \_X\_ (57) [52.232-33](#), Payment by Electronic Funds Transfer—System for Award Management (Jul 2013) ([31 U.S.C. 3332](#)).
  - \_\_\_ (58) [52.232-34](#), Payment by Electronic Funds Transfer—Other than System for Award Management (Jul 2013) ([31 U.S.C. 3332](#)).
  - \_\_\_ (59) [52.232-36](#), Payment by Third Party (May 2014) ([31 U.S.C. 3332](#)).
  - \_\_\_ (60) [52.239-1](#), Privacy or Security Safeguards (Aug 1996) ([5 U.S.C. 552a](#)).
  - \_\_\_ (61) [52.242-5](#), Payments to Small Business Subcontractors (JAN 2017)([15 U.S.C. 637\(d\)\(12\)](#)).
  - \_\_\_ (62)(i) [52.247-64](#), Preference for Privately Owned U.S.-Flag Commercial Vessels (Feb 2006) ([46 U.S.C. Appx. 1241\(b\)](#) and [10 U.S.C. 2631](#)).
  - \_\_\_ (ii) Alternate I (Apr 2003) of [52.247-64](#).
- (c) The Contractor shall comply with the FAR clauses in this paragraph (c), applicable to commercial services, that the Contracting Officer has indicated as being incorporated in this contract by reference to implement provisions of law or Executive orders applicable to acquisitions of commercial items:
- [Contracting Officer check as appropriate.]
- \_\_\_ (1) [52.222-17](#), Nondisplacement of Qualified Workers (May 2014)(E.O. 13495).
  - \_\_\_ (2) [52.222-41](#), Service Contract Labor Standards (May 2014) ([41 U.S.C. chapter 67](#)).
  - \_\_\_ (3) [52.222-42](#), Statement of Equivalent Rates for Federal Hires (May 2014) ([29 U.S.C. 206](#)and [41 U.S.C. chapter 67](#)).
  - \_\_\_ (4) [52.222-43](#), Fair Labor Standards Act and Service Contract Labor Standards-Price Adjustment (Multiple Year and Option Contracts) (May 2014) ([29 U.S.C. 206](#) and [41 U.S.C. chapter 67](#)).
  - \_\_\_ (5) [52.222-44](#), Fair Labor Standards Act and Service Contract Labor Standards—Price Adjustment (May 2014) ([29 U.S.C. 206](#) and [41 U.S.C. chapter 67](#)).
  - \_\_\_ (6) [52.222-51](#), Exemption from Application of the Service Contract Labor Standards to Contracts for Maintenance, Calibration, or Repair of Certain Equipment—Requirements (May 2014) ([41 U.S.C. chapter 67](#)).
  - \_\_\_ (7) [52.222-53](#), Exemption from Application of the Service Contract Labor Standards to Contracts for Certain Services—Requirements (May 2014) ([41 U.S.C. chapter 67](#)).



— (8) [52.222-55](#), Minimum Wages Under Executive Order 13658 (Dec 2015).  
— (9) [52.222-62](#), Paid Sick Leave Under Executive Order 13706 (JAN 2017) (E.O. 13706).  
— (10) [52.226-6](#), Promoting Excess Food Donation to Nonprofit Organizations (May 2014) ([42 U.S.C. 1792](#)).

— (11) [52.237-11](#), Accepting and Dispensing of \$1 Coin (Sept 2008) ([31 U.S.C. 5112\(p\)\(1\)](#)).

(d) *Comptroller General Examination of Record*. The Contractor shall comply with the provisions of this paragraph (d) if this contract was awarded using other than sealed bid, is in excess of the simplified acquisition threshold, and does not contain the clause at [52.215-2](#), Audit and Records—Negotiation.

(1) The Comptroller General of the United States, or an authorized representative of the Comptroller General, shall have access to and right to examine any of the Contractor's directly pertinent records involving transactions related to this contract.

(2) The Contractor shall make available at its offices at all reasonable times the records, materials, and other evidence for examination, audit, or reproduction, until 3 years after final payment under this contract or for any shorter period specified in FAR [subpart 4.7](#), Contractor Records Retention, of the other clauses of this contract. If this contract is completely or partially terminated, the records relating to the work terminated shall be made available for 3 years after any resulting final termination settlement. Records relating to appeals under the disputes clause or to litigation or the settlement of claims arising under or relating to this contract shall be made available until such appeals, litigation, or claims are finally resolved.

(3) As used in this clause, records include books, documents, accounting procedures and practices, and other data, regardless of type and regardless of form. This does not require the Contractor to create or maintain any record that the Contractor does not maintain in the ordinary course of business or pursuant to a provision of law.

(e)(1) Notwithstanding the requirements of the clauses in paragraphs (a), (b), (c), and (d) of this clause, the Contractor is not required to flow down any FAR clause, other than those in this paragraph (e)(1) in a subcontract for commercial items. Unless otherwise indicated below, the extent of the flow down shall be as required by the clause—

(i) [52.203-13](#), Contractor Code of Business Ethics and Conduct (Oct 2015) ([41 U.S.C. 3509](#)).

(ii) [52.203-19](#), Prohibition on Requiring Certain Internal Confidentiality Agreements or Statements (Jan 2017) (section 743 of Division E, Title VII, of the Consolidated and Further Continuing Appropriations Act, 2015 (Pub. L. 113-235) and its successor provisions in subsequent appropriations acts (and as extended in continuing resolutions)).

(iii) [52.219-8](#), Utilization of Small Business Concerns (Nov 2016) ([15 U.S.C. 637\(d\)\(2\)](#) and (3)), in all subcontracts that offer further subcontracting opportunities. If the subcontract (except subcontracts to small business concerns) exceeds \$700,000 (\$1.5 million for construction of any public facility), the subcontractor must include [52.219-8](#) in lower tier subcontracts that offer subcontracting opportunities.

(iv) [52.222-17](#), Nondisplacement of Qualified Workers (May 2014) (E.O. 13495). Flow down required in accordance with paragraph (l) of FAR clause [52.222-17](#).

(v) [52.222-21](#), Prohibition of Segregated Facilities (Apr 2015)

(vi) [52.222-26](#), Equal Opportunity (Sept 2016) (E.O. 11246).

(vii) [52.222-35](#), Equal Opportunity for Veterans (Oct 2015) ([38 U.S.C. 4212](#)).

(viii) [52.222-36](#), Equal Opportunity for Workers with Disabilities (Jul 2014) ([29 U.S.C. 793](#)).

(ix) [52.222-37](#), Employment Reports on Veterans (Feb 2016) ([38 U.S.C. 4212](#))



- (x) [52.222-40](#), Notification of Employee Rights Under the National Labor Relations Act (Dec 2010) (E.O. 13496). Flow down required in accordance with paragraph (f) of FAR clause [52.222-40](#).
- (xi) [52.222-41](#), Service Contract Labor Standards (May 2014) ([41 U.S.C. chapter 67](#)).
- (xii) [52.222-50](#), Combating Trafficking in Persons (Mar 2015) ([22 U.S.C. chapter 78](#) and E.O. 13627). Alternate I (Mar 2015) of [52.222-50](#) ([22 U.S.C. chapter 78](#) and E.O. 13627).
- (xiii) [52.222-51](#), Exemption from Application of the Service Contract Labor Standards to Contracts for Maintenance, Calibration, or Repair of Certain Equipment-Requirements (May 2014) ([41 U.S.C. chapter 67](#)).
- (xiv) [52.222-53](#), Exemption from Application of the Service Contract Labor Standards to Contracts for Certain Services-Requirements (May 2014) ([41 U.S.C. chapter 67](#)).
- (xv) [52.222-54](#), Employment Eligibility Verification (OCT 2015) (E.O. 12989).
- (xvi) [52.222-55](#), Minimum Wages Under Executive Order 13658 (Dec 2015).
- (xvii) [52.222-59](#), Compliance with Labor Laws (Executive Order 13673) (OCT 2016) (Applies at \$50 million for solicitations and resultant contracts issued from October 25, 2016 through April 24, 2017; applies at \$500,000 for solicitations and resultant contracts issued after April 24, 2017).

**Note to paragraph (e)(1)(xvii):** By a court order issued on October 24, 2016, 52.222-59 is enjoined indefinitely as of the date of the order. The enjoined paragraph will become effective immediately if the court terminates the injunction. At that time, GSA, DoD and NASA will publish a document in the *Federal Register* advising the public of the termination of the injunction.

- (xviii) [52.222-60](#), Paycheck Transparency (Executive Order 13673) (OCT 2016)).
  - (xix) [52.222-62](#), Paid Sick Leave Under Executive Order 13706 (JAN 2017) (E.O. 13706).
  - (xx)(A) 52.224-3, Privacy Training (JAN 2017) (5 U.S.C. 552a).
  - (B) Alternate I (JAN 2017) of 52.224-3.
  - (xxi) [52.225-26](#), Contractors Performing Private Security Functions Outside the United States (Oct 2016) (Section 862, as amended, of the National Defense Authorization Act for Fiscal Year 2008; [10 U.S.C. 2302 Note](#)).
  - (xxii) [52.226-6](#), Promoting Excess Food Donation to Nonprofit Organizations (May 2014) ([42 U.S.C. 1792](#)). Flow down required in accordance with paragraph (e) of FAR clause [52.226-6](#).
  - (xxiii) [52.247-64](#), Preference for Privately Owned U.S.-Flag Commercial Vessels (Feb 2006) ([46 U.S.C. Appx. 1241\(b\)](#) and [10 U.S.C. 2631](#)). Flow down required in accordance with paragraph (d) of FAR clause [52.247-64](#).
- (2) While not required, the Contractor may include in its subcontracts for commercial items a minimal number of additional clauses necessary to satisfy its contractual obligations.

(End of clause)

## ADDENDUM TO CONTRACT CLAUSES FAR AND DOSAR CLAUSES NOT PRESCRIBED IN PART 12

52.252-2 CLAUSES INCORPORATED BY REFERENCE (FEB 1998)

This contract incorporates one or more clauses by reference, with the same force and effect as if they were given in full text. Upon request, the Contracting Officer will make their full text available. Also, the full text of a clause may be accessed electronically at this/these address(es):

This contract incorporates one or more clauses by reference, with the same force and effect as if they were given in full text. Upon request, the Contracting Officer will make their full text available. Also, the full text of a clause may be accessed electronically at this/these address(es):

<http://www.acquisition.gov/far/> or, <http://farsite.hill.af.mil/vffara.htm>

These addresses are subject to change. If the Federal Acquisition Regulation (FAR) is not available at the locations indicated above, use the Department of State Acquisition Website at <http://www.statebuy.state.gov/> to see the links to the FAR. You may also use an internet “search engine” (for example Google, Yahoo, Excite) to obtain the latest location of the most current FAR.

The following Federal Acquisition Regulation clauses are incorporated by reference:

<u>CLAUSE</u>	<u>TITLE AND DATE</u>
52.203-17	CONTRACTOR EMPLOYEE WHISTLEBLOWER RIGHTS AND REQUIREMENT TO INFORM EMPLOYEES OF WHISTLEBLOWER RIGHTS (APR 2014)
52.204-9	PERSONAL IDENTITY VERIFICATION OF CONTRACTOR PERSONNEL (JAN 2011)
52.204-12	DATA UNIVERSAL NUMBERING SYSTEM NUMBER MAINTENANCE (DEC 2012)
52.204-13	SYSTEM FOR AWARD MANAGEMENT MAINTENANCE (JULY 2013)
52.225-14	INCONSISTENCY BETWEEN ENGLISH VERSION AND TRANSLATION OF CONTRACT (FEB 2000)
52.228-5	INSURANCE - WORK ON A GOVERNMENT INSTALLATION (JAN 1997)
52.229-6	FOREIGN FIXED PRICE CONTRACTS (FEB 2013)
52.232-39	UNENFORCEABILITY OF UNAUTHORIZED OBLIGATIONS (JUNE 2013)

The following FAR clause(s) is/are provided in full text:

The following DOSAR clause(s) is/are provided in full text:

CONTRACTOR IDENTIFICATION (JULY 2008)

Contract performance may require contractor personnel to attend meetings with government personnel and the public, work within government offices, and/or utilize government email.

Contractor personnel must take the following actions to identify themselves as non-federal employees:

- 1) Use an email signature block that shows name, the office being supported and company affiliation (e.g. "John Smith, Office of Human Resources, ACME Corporation Support Contractor");
- 2) Clearly identify themselves and their contractor affiliation in meetings;
- 3) Identify their contractor affiliation in Departmental e-mail and phone listings whenever contractor personnel are included in those listings; and
- 4) Contractor personnel may not utilize Department of State logos or indicia on business cards.

652.232-70 PAYMENT SCHEDULE AND INVOICE SUBMISSION (FIXED-PRICE) (AUG 1999)

(a) General. The Government shall pay the contractor as full compensation for all work required, performed, and accepted under this contract the firm fixed-price stated in this contract.

(b) Invoice Submission. The Contractor shall submit invoices in an original and 1 copy to the office identified in Block 18b of the SF-1449. To constitute a proper invoice, the invoice shall include all the items required by FAR 32.905(e).

Financial Management Office  
11 George Balanchine St.  
Tbilisi, Georgia

(c) Contractor Remittance Address. The Government will make payment to the contractor's address stated on the cover page of this contract, unless a separate remittance address is shown below:


652.242-70 CONTRACTING OFFICER'S REPRESENTATIVE (COR) (AUG 1999)

(a) The Contracting Officer may designate in writing one or more Government employees, by name or position title, to take action for the Contracting Officer under this contract. Each designee shall be identified as a Contracting Officer's Representative (COR). Such designation(s) shall specify the scope and limitations of the authority so delegated; provided, that the designee shall not change the terms or conditions of the contract, unless the COR is a warranted Contracting Officer and this authority is delegated in the designation.

(b) The COR for this contract is Facilities Manager

652.225-71 SECTION 8(A) OF THE EXPORT ADMINISTRATION ACT OF 1979, AS AMENDED (AUG 1999)

(a) Section 8(a) of the U.S. Export Administration Act of 1979, as amended (50 U.S.C. 2407(a)), prohibits compliance by U.S. persons with any boycott fostered by a foreign country against a country which is friendly to the United States and which is not itself the object of any form of boycott pursuant to United States law or regulation. The Boycott of Israel by Arab League countries is such a boycott, and therefore, the following actions, if taken with intent to comply with, further, or support the Arab League Boycott of Israel, are prohibited activities under the Export Administration Act:

(1) Refusing, or requiring any U.S. person to refuse to do business with or in Israel, with any Israeli business concern, or with any national or resident of Israel, or with any other person, pursuant to an agreement of, or a request from or on behalf of a boycotting country;

(2) Refusing, or requiring any U.S. person to refuse to employ or otherwise discriminating against any person on the basis of race, religion, sex, or national origin of that person or of any owner, officer, director, or employee of such person;

(3) Furnishing information with respect to the race, religion, or national origin of any U.S. person or of any owner, officer, director, or employee of such U.S. person;

(4) Furnishing information about whether any person has, has had, or proposes to have any business relationship (including a relationship by way of sale, purchase, legal or commercial representation, shipping or other transport, insurance, investment, or supply) with or in the State of Israel, with any business concern organized under the laws of the State of Israel, with any Israeli national or resident, or with any person which is known or believed to be restricted from having any business relationship with or in Israel;

(5) Furnishing information about whether any person is a member of, has made contributions to, or is otherwise associated with or involved in the activities of any charitable or fraternal organization which supports the State of Israel; and,

(6) Paying, honoring, confirming, or otherwise implementing a letter of credit which contains any condition or requirement against doing business with the State of Israel.

(b) Under Section 8(a), the following types of activities are not forbidden "compliance with the boycott," and are therefore exempted from Section 8(a)'s prohibitions listed in paragraphs (a)(1)-(6) above:

(1) Complying or agreeing to comply with requirements:

(i) Prohibiting the import of goods or services from Israel or goods produced or services provided by any business concern organized under the laws of Israel or by nationals or residents of Israel; or,

(ii) Prohibiting the shipment of goods to Israel on a carrier of Israel, or by a route other than that prescribed by the boycotting country or the recipient of the shipment;

(2) Complying or agreeing to comply with import and shipping document requirements with respect to the country of origin, the name of the carrier and route of shipment, the name of the supplier of the shipment or the name of the provider of other services, except that no information knowingly furnished or conveyed in response to such requirements may be stated in negative, blacklisting, or similar exclusionary terms, other than with respect to carriers or route of shipments as may be permitted by such regulations in order to comply with precautionary requirements protecting against war risks and confiscation;

(3) Complying or agreeing to comply in the normal course of business with the unilateral and specific selection by a boycotting country, or national or resident thereof, of carriers, insurance, suppliers of services to be performed within the boycotting country or specific goods which, in the normal course of business, are identifiable by source when imported into the boycotting country;

(4) Complying or agreeing to comply with the export requirements of the boycotting country relating to shipments or transshipments of exports to Israel, to any business concern of or organized under the laws of Israel, or to any national or resident of Israel;

(5) Compliance by an individual or agreement by an individual to comply with the immigration or passport requirements of any country with respect to such individual or any member of such individual's family or with requests for information regarding requirements of employment of such individual within the boycotting country; and,

(6) Compliance by a U.S. person resident in a foreign country or agreement by such person to comply with the laws of that country with respect to his or her activities exclusively therein, and such regulations may contain exceptions for such resident complying with the laws or regulations of that foreign country governing imports into such country of trademarked, trade named, or similarly specifically identifiable products, or components of products for his or her own use, including the performance of contractual services within that country, as may be defined by such regulations.

652.242-73 AUTHORIZATION AND PERFORMANCE (AUG 1999)

(a) The Contractor warrants the following:

- (1) That it has obtained authorization to operate and do business in the country or countries in which this contract will be performed;
- (2) That it has obtained all necessary licenses and permits required to perform this contract; and,
- (3) That it shall comply fully with all laws, decrees, labor standards, and regulations of said country or countries during the performance of this contract.

(b) If the party actually performing the work will be a subcontractor or joint venture partner, then such subcontractor or joint venture partner agrees to the requirements of paragraph (a) of this clause.

652.229-70 EXCISE TAX EXEMPTION STATEMENT FOR CONTRACTORS WITHIN  
THE UNITED STATES (JUL 1988)

This is to certify that the item(s) covered by this contract is/are for export solely for the use of the U.S. Foreign Service Post identified in the contract schedule.

The Contractor shall use a photocopy of this contract as evidence of intent to export. Final proof of exportation may be obtained from the agent handling the shipment. Such proof shall be accepted in lieu of payment of excise tax.

### SECTION 3 - SOLICITATION PROVISIONS

FAR 52.212-1, INSTRUCTIONS TO OFFERORS -- COMMERCIAL ITEMS (JAN 2017), is incorporated by reference (see SF-1449, Block 27A).

ADDENDUM TO 52.212-1  
NONE

ADDENDUM TO SOLICITATION PROVISIONS  
FAR AND DOSAR PROVISIONS NOT PRESCRIBED IN PART 12

52.252-1 SOLICITATION PROVISIONS INCORPORATED BY REFERENCE (FEB 1998)

This solicitation incorporates one or more solicitation provisions by reference, with the same force and effect as if they were given in full text. Upon request, the Contracting Officer will make their full text available. Also, the full text of a clause may be accessed electronically at this/these address(es): <http://www.acquisition.gov/far/> or <http://farsite.hill.af.mil/vffara.htm>

These addresses are subject to change. If the FAR is not available at the locations indicated above, use of an internet “search engine” (for example, Google, Yahoo, Excite) is suggested to obtain the latest location of the most current FAR provisions.

The following Federal Acquisition Regulation solicitation provisions are incorporated by reference:

<u>PROVISION</u>	<u>TITLE AND DATE</u>
52.204-7	SYSTEM FOR AWARD MANAGEMENT ALT 1(JULY 2013)
52.204-16	COMMERCIAL AND GOVERNMENT ENTITY CODE REPORTING (JUL 2016)
52.214-34	SUBMISSION OF OFFERS IN THE ENGLISH LANGUAGE (APR 1991)
52.225-25	PROHIBITION ON CONTRACTING WITH ENTITIES ENGAGING IN CERTAIN ACTIVITIES OR TRANSACTIONS RELATING TO IRAN— REPRESENTATION AND CERTIFICATIONS (DEC 2012)



The following DOSAR provisions are provided in full text:

652.206-70 ADVOCATE FOR COMPETITION/OMBUDSMAN (FEB 2015)

(a) The Department of State's Advocate for Competition is responsible for assisting industry in removing restrictive requirements from Department of State solicitations and removing barriers to full and open competition and use of commercial items. If such a solicitation is considered competitively restrictive or does not appear properly conducive to competition and commercial practices, potential offerors are encouraged first to contact the contracting office for the solicitation. If concerns remain unresolved, contact:

(1) For solicitations issued by the Office of Acquisition Management (A/LM/AQM) or a Regional Procurement Support Office, the A/LM/AQM Advocate for Competition, at [AQMCompetitionAdvocate@state.gov](mailto:AQMCompetitionAdvocate@state.gov).

(2) For all others, the Department of State Advocate for Competition at [cat@state.gov](mailto:cat@state.gov).

(b) The Department of State's Acquisition Ombudsman has been appointed to hear concerns from potential offerors and contractors during the pre-award and post-award phases of this acquisition. The role of the ombudsman is not to diminish the authority of the contracting officer, the Technical Evaluation Panel or Source Evaluation Board, or the selection official. The purpose of the ombudsman is to facilitate the communication of concerns, issues, disagreements, and recommendations of interested parties to the appropriate Government personnel, and work to resolve them. When requested and appropriate, the ombudsman will maintain strict confidentiality as to the source of the concern. The ombudsman does not participate in the evaluation of proposals, the source selection process, or the adjudication of formal contract disputes. Interested parties are invited to contact the contracting activity ombudsman, [insert name], at [insert telephone and fax numbers]. For an American Embassy or overseas post, refer to the numbers below for the Department Acquisition Ombudsman. Concerns, issues, disagreements, and recommendations which cannot be resolved at a contracting activity level may be referred to the Department of State Acquisition Ombudsman at (703) 516-1696 or write to: Department of State, Acquisition Ombudsman, Office of the Procurement Executive (A/OPE), Suite 1060, SA-15, Washington, DC 20520.

(End of provision)

## SECTION 4 - EVALUATION FACTORS

Award will be made to the lowest priced, acceptable, responsible offeror. Proposals shall include a completed solicitation. The Government reserves the right to reject proposals that are unreasonably low or high in price.

The lowest price will be determined by multiplying the offered prices times the estimated quantities in "Prices - Continuation of SF-1449, block 23", and arriving at a grand total, including all options. Acceptability will be determined by assessing the offeror's compliance with the terms of the RFP. Responsibility will be determined by analyzing whether the apparent successful offeror complies with the requirements of FAR 9.1, including:

- Adequate financial resources or the ability to obtain them;
- Ability to comply with the required performance period, taking into consideration all existing commercial and governmental business commitments;
- Satisfactory record of integrity and business ethics;
- Necessary organization, experience, and skills or the ability to obtain them;
- Necessary equipment and facilities or the ability to obtain them; and
- Be otherwise qualified and eligible to receive an award under applicable laws and regulations.
- Completed registration on [www.sam.gov](http://www.sam.gov) or evidence that the registration is in progress.
- DBA Insurance rates

ADDENDUM TO EVALUATION FACTORS  
FAR AND DOSAR PROVISION(S) NOT PRESCRIBED IN PART 12

The following FAR provision(s) is/are provided in full text:

52.217-5 EVALUATION OF OPTIONS (JUL 1990)

The Government will evaluate offers for award purposes by adding the total price for all options to the total price for the basic requirement. Evaluation of options will not obligate the Government to exercise the option(s).

52.225-17 EVALUATION OF FOREIGN CURRENCY OFFERS (FEB 2000):

If the Government receives offers in more than one currency, the Government will evaluate offers by converting the foreign currency to United States currency using the exchange rate used by the Embassy in effect as follows:

- (a) For acquisitions conducted using sealed bidding procedures, on the date of bid opening.
- (b) For acquisitions conducted using negotiation procedures—
  - (1) On the date specified for receipt of offers, if award is based on initial offers; otherwise
  - (2) On the date specified for receipt of proposal revisions.

## SECTION 5 - REPRESENTATIONS AND CERTIFICATIONS

### 52.212-3 OFFEROR REPRESENTATIONS AND CERTIFICATIONS—COMMERCIAL ITEMS (JAN 2017) (DEVIATION 2017-08)

The Offeror shall complete only paragraph (b) of this provision if the Offeror has completed the annual representations and certification electronically via the System for Award Management (SAM) Web site located at <https://www.sam.gov/portal>. If the Offeror has not completed the annual representations and certifications electronically, the Offeror shall complete only paragraphs (c) through (u) of this provision.

(a) *Definitions.* As used in this provision—

*Economically disadvantaged women-owned small business (EDWOSB) concern* means a small business concern that is at least 51 percent directly and unconditionally owned by, and the management and daily business operations of which are controlled by, one or more women who are citizens of the United States and who are economically disadvantaged in accordance with 13 CFR part 127. It automatically qualifies as a women-owned small business eligible under the WOSB Program.

*Forced or indentured child labor* means all work or service—

(1) Exacted from any person under the age of 18 under the menace of any penalty for its nonperformance and for which the worker does not offer himself voluntarily; or

(2) Performed by any person under the age of 18 pursuant to a contract the enforcement of which can be accomplished by process or penalties.

*Highest-level owner* means the entity that owns or controls an immediate owner of the offeror, or that owns or controls one or more entities that control an immediate owner of the offeror. No entity owns or exercises control of the highest level owner.

*Immediate owner* means an entity, other than the offeror, that has direct control of the offeror. Indicators of control include, but are not limited to, one or more of the following: Ownership or interlocking management, identity of interests among family members, shared facilities and equipment, and the common use of employees.

*Inverted domestic corporation* means a foreign incorporated entity that meets the definition of an inverted domestic corporation under 6 U.S.C. 395(b), applied in accordance with the rules and definitions of 6 U.S.C. 395(c).

*Manufactured end product* means any end product in product and service codes (PSCs) 1000-9999, except—

- (1) PSC 5510, Lumber and Related Basic Wood Materials;
- (2) Product or Service Group (PSG) 87, Agricultural Supplies;
- (3) PSG 88, Live Animals;

- (4) PSG 89, Subsistence;
- (5) PSC 9410, Crude Grades of Plant Materials;
- (6) PSC 9430, Miscellaneous Crude Animal Products, Inedible;
- (7) PSC 9440, Miscellaneous Crude Agricultural and Forestry Products;
- (8) PSC 9610, Ores;
- (9) PSC 9620, Minerals, Natural and Synthetic; and
- (10) PSC 9630, Additive Metal Materials.

*Place of manufacture* means the place where an end product is assembled out of components, or otherwise made or processed from raw materials into the finished product that is to be provided to the Government. If a product is disassembled and reassembled, the place of reassembly is not the place of manufacture.

*Predecessor* means an entity that is replaced by a successor and includes any predecessors of the predecessor.

*Restricted business operations* means business operations in Sudan that include power production activities, mineral extraction activities, oil-related activities, or the production of military equipment, as those terms are defined in the Sudan Accountability and Divestment Act of 2007 (Pub. L. 110-174). Restricted business operations do not include business operations that the person (as that term is defined in Section 2 of the Sudan Accountability and Divestment Act of 2007) conducting the business can demonstrate—

- (1) Are conducted under contract directly and exclusively with the regional government of southern Sudan;
  - (2) Are conducted pursuant to specific authorization from the Office of Foreign Assets Control in the Department of the Treasury, or are expressly exempted under Federal law from the requirement to be conducted under such authorization;
  - (3) Consist of providing goods or services to marginalized populations of Sudan;
  - (4) Consist of providing goods or services to an internationally recognized peacekeeping force or humanitarian organization;
  - (5) Consist of providing goods or services that are used only to promote health or education;
- or
- (6) Have been voluntarily suspended.

*Sensitive technology*—

- (1) Means hardware, software, telecommunications equipment, or any other technology that is to be used specifically—

- (i) To restrict the free flow of unbiased information in Iran; or
- (ii) To disrupt, monitor, or otherwise restrict speech of the people of Iran; and

(2) Does not include information or informational materials the export of which the President does not have the authority to regulate or prohibit pursuant to section 203(b)(3) of the International Emergency Economic Powers Act (50 U.S.C. 1702(b)(3)).

*Service-disabled veteran-owned small business concern—*

(1) Means a small business concern—

(i) Not less than 51 percent of which is owned by one or more service—disabled veterans or, in the case of any publicly owned business, not less than 51 percent of the stock of which is owned by one or more service-disabled veterans; and

(ii) The management and daily business operations of which are controlled by one or more service-disabled veterans or, in the case of a service-disabled veteran with permanent and severe disability, the spouse or permanent caregiver of such veteran.

(2) *Service-disabled veteran* means a veteran, as defined in 38 U.S.C. 101(2), with a disability that is service-connected, as defined in 38 U.S.C. 101(16).

*Small business concern* means a concern, including its affiliates, that is independently owned and operated, not dominant in the field of operation in which it is bidding on Government contracts, and qualified as a small business under the criteria in 13 CFR Part 121 and size standards in this solicitation.

*Small disadvantaged business concern*, consistent with 13 CFR 124.1002, means a small business concern under the size standard applicable to the acquisition, that—

(1) Is at least 51 percent unconditionally and directly owned (as defined at 13 CFR 124.105) by—

(i) One or more socially disadvantaged (as defined at 13 CFR 124.103) and economically disadvantaged (as defined at 13 CFR 124.104) individuals who are citizens of the United States; and

(ii) Each individual claiming economic disadvantage has a net worth not exceeding \$750,000 after taking into account the applicable exclusions set forth at 13 CFR 124.104(c)(2); and

(2) The management and daily business operations of which are controlled (as defined at 13.CFR 124.106) by individuals, who meet the criteria in paragraphs (1)(i) and (ii) of this definition.

*Subsidiary* means an entity in which more than 50 percent of the entity is owned—

(1) Directly by a parent corporation; or

(2) Through another subsidiary of a parent corporation.

*Successor* means an entity that has replaced a predecessor by acquiring the assets and carrying out the affairs of the predecessor under a new name (often through acquisition or merger). The term “successor” does not include new offices/divisions of the same company or a company that only changes its name. The extent of the responsibility of the successor for the liabilities of the predecessor may vary, depending on State law and specific circumstances.

*Veteran-owned small business concern* means a small business concern—

(1) Not less than 51 percent of which is owned by one or more veterans (as defined at 38 U.S.C. 101(2)) or, in the case of any publicly owned business, not less than 51 percent of the stock of which is owned by one or more veterans; and

(2) The management and daily business operations of which are controlled by one or more veterans.

*Women-owned business concern* means a concern which is at least 51 percent owned by one or more women; or in the case of any publicly owned business, at least 51 percent of its stock is owned by one or more women; and whose management and daily business operations are controlled by one or more women.

*Women-owned small business concern* means a small business concern—

(1) That is at least 51 percent owned by one or more women; or, in the case of any publicly owned business, at least 51 percent of the stock of which is owned by one or more women; and

(2) Whose management and daily business operations are controlled by one or more women.

*Women-owned small business (WOSB) concern eligible under the WOSB Program* (in accordance with 13 CFR part 127), means a small business concern that is at least 51 percent directly and unconditionally owned by, and the management and daily business operations of which are controlled by, one or more women who are citizens of the United States.

(b)(1) *Annual Representations and Certifications*. Any changes provided by the offeror in paragraph (b)(2) of this provision do not automatically change the representations and certifications posted on the SAM website.

(2) The offeror has completed the annual representations and certifications electronically via the SAM website accessed through <http://www.acquisition.gov>. After reviewing the SAM database information, the offeror verifies by submission of this offer that the representations and certifications currently posted electronically at FAR 52.212-3, Offeror Representations and Certifications—Commercial Items, have been entered or updated in the last 12 months, are current, accurate, complete, and applicable to this solicitation (including the business size standard applicable to the NAICS code referenced for this solicitation), as of the date of this offer and are incorporated in this offer by reference (see FAR 4.1201), except for paragraphs \_\_\_\_.

[Offeror to identify the applicable paragraphs at (c) through (u) of this provision that the offeror has completed for the purposes of this solicitation only, if any.]

*These amended representation(s) and/or certification(s) are also incorporated in this offer and are current, accurate, and complete as of the date of this offer.*

*Any changes provided by the offeror are applicable to this solicitation only, and do not result in an update to the representations and certifications posted electronically on SAM.]*

(c) Offerors must complete the following representations when the resulting contract will be performed in the United States or its outlying areas. Check all that apply.

(1) *Small business concern.* The offeror represents as part of its offer that it ☐ is, ☐ is not a small business concern.

(2) *Veteran-owned small business concern.* [Complete only if the offeror represented itself as a small business concern in paragraph (c)(1) of this provision.] The offeror represents as part of its offer that it ☐ is, ☐ is not a veteran-owned small business concern.

(3) *Service-disabled veteran-owned small business concern.* [Complete only if the offeror represented itself as a veteran-owned small business concern in paragraph (c)(2) of this provision.] The offeror represents as part of its offer that it ☐ is, ☐ is not a service-disabled veteran-owned small business concern.

(4) *Small disadvantaged business concern.* [Complete only if the offeror represented itself as a small business concern in paragraph (c)(1) of this provision.] The offeror represents that it ☐ is, ☐ is not a small disadvantaged business concern as defined in 13 CFR 124.1002.

(5) *Women-owned small business concern.* [Complete only if the offeror represented itself as a small business concern in paragraph (c)(1) of this provision.] The offeror represents that it ☐ is, ☐ is not a women-owned small business concern.

(6) *WOSB concern eligible under the WOSB Program.* [Complete only if the offeror represented itself as a women-owned small business concern in paragraph (c)(5) of this provision.] The offeror represents that—

(i) It ☐ is, ☐ is not a WOSB concern eligible under the WOSB Program, has provided all the required documents to the WOSB Repository, and no change in circumstances or adverse decisions have been issued that affects its eligibility; and

(ii) It ☐ is, ☐ is not a joint venture that complies with the requirements of 13 CFR part 127, and the representation in paragraph (c)(6)(i) of this provision is accurate for each WOSB concern eligible under the WOSB Program participating in the joint venture. [The offeror shall enter the name or names of the WOSB concern eligible under the WOSB Program and other small businesses that are participating in the joint venture: \_\_\_\_\_.] Each WOSB concern eligible under the WOSB Program participating in the joint venture shall submit a separate signed copy of the WOSB representation.

(7) *Economically disadvantaged women-owned small business (EDWOSB) concern.* [Complete only if the offeror represented itself as a WOSB concern eligible under the WOSB Program in (c)(6) of this provision.] The offeror represents that—



(i) It ☐ is, ☐ is not an EDWOSB concern, has provided all the required documents to the WOSB Repository, and no change in circumstances or adverse decisions have been issued that affects its eligibility; and

(ii) It ☐ is, ☐ is not a joint venture that complies with the requirements of 13 CFR part 127, and the representation in paragraph (c)(7)(i) of this provision is accurate for each EDWOSB concern participating in the joint venture. [*The offeror shall enter the name or names of the EDWOSB concern and other small businesses that are participating in the joint venture: \_\_\_\_\_.*] Each EDWOSB concern participating in the joint venture shall submit a separate signed copy of the EDWOSB representation.

NOTE TO PARAGRAPHS (C)(8) AND (9): Complete paragraphs (c)(8) and (9) only if this solicitation is expected to exceed the simplified acquisition threshold.

(8) *Women-owned business concern (other than small business concern).* [*Complete only if the offeror is a women-owned business concern and did not represent itself as a small business concern in paragraph (c)(1) of this provision.*] The offeror represents that it ☐ is, a women-owned business concern.

(9) *Tie bid priority for labor surplus area concerns.* If this is an invitation for bid, small business offerors may identify the labor surplus areas in which costs to be incurred on account of manufacturing or production (by offeror or first-tier subcontractors) amount to more than 50 percent of the contract price:

(10) *HUBZone small business concern.* [Complete only if the offeror represented itself as a small business concern in paragraph (c)(1) of this provision.] The offeror represents, as part of its offer, that—

(i) It ☐ is, ☐ is not a HUBZone small business concern listed, on the date of this representation, on the List of Qualified HUBZone Small Business Concerns maintained by the Small Business Administration, and no material changes in ownership and control, principal office, or HUBZone employee percentage have occurred since it was certified in accordance with 13 CFR Part 126; and

(ii) It ☐ is, ☐ is not a HUBZone joint venture that complies with the requirements of 13 CFR Part 126, and the representation in paragraph (c)(10)(i) of this provision is accurate for each HUBZone small business concern participating in the HUBZone joint venture. [*The offeror shall enter the names of each of the HUBZone small business concerns participating in the HUBZone joint venture: \_\_\_\_.*] Each HUBZone small business concern participating in the HUBZone joint venture shall submit a separate signed copy of the HUBZone representation.

(d) Representations required to implement provisions of Executive Order 11246—

(1) Previous contracts and compliance. The offeror represents that—

(i) It ☐ has, ☐ has not participated in a previous contract or subcontract subject to the Equal Opportunity clause of this solicitation; and

(ii) It ☐ has, ☐ has not filed all required compliance reports.

(2) Affirmative Action Compliance. The offeror represents that—

(i) It ☐ has developed and has on file, ☐ has not developed and does not have on file, at each establishment, affirmative action programs required by rules and regulations of the Secretary of Labor (41 CFR parts 60-1 and 60-2), or

(ii) It ☐ has not previously had contracts subject to the written affirmative action programs requirement of the rules and regulations of the Secretary of Labor.

(e) *Certification Regarding Payments to Influence Federal Transactions (31 U.S.C. 1352)*. (Applies only if the contract is expected to exceed \$150,000.) By submission of its offer, the offeror certifies to the best of its knowledge and belief that no Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress or an employee of a Member of Congress on his or her behalf in connection with the award of any resultant contract. If any registrants under the Lobbying Disclosure Act of 1995 have made a lobbying contact on behalf of the offeror with respect to this contract, the offeror shall complete and submit, with its offer, OMB Standard Form LLL, Disclosure of Lobbying Activities, to provide the name of the registrants. The offeror need not report regularly employed officers or employees of the offeror to whom payments of reasonable compensation were made.

(f) *Buy American Certificate*. (Applies only if the clause at Federal Acquisition Regulation (FAR) 52.225-1, Buy American—Supplies, is included in this solicitation.)

(1) The offeror certifies that each end product, except those listed in paragraph (f)(2) of this provision, is a domestic end product and that for other than COTS items, the offeror has considered components of unknown origin to have been mined, produced, or manufactured outside the United States. The offeror shall list as foreign end products those end products manufactured in the United States that do not qualify as domestic end products, *i.e.*, an end product that is not a COTS item and does not meet the component test in paragraph (2) of the definition of “domestic end product.” The terms “commercially available off-the-shelf (COTS) item,” “component,” “domestic end product,” “end product,” “foreign end product,” and “United States” are defined in the clause of this solicitation entitled “Buy American—Supplies.”

(2) Foreign End Products:

Line Item No.:

Country of Origin:

(List as necessary)

(3) The Government will evaluate offers in accordance with the policies and procedures of FAR Part 25.

(g)(1) *Buy American—Free Trade Agreements—Israeli Trade Act Certificate*. (Applies only if the clause at FAR 52.225-3, Buy American—Free Trade Agreements—Israeli Trade Act, is included in this solicitation.)

(i) The offeror certifies that each end product, except those listed in paragraph (g)(1)(ii) or (g)(1)(iii) of this provision, is a domestic end product and that for other than COTS items, the offeror has considered components of unknown origin to have been mined, produced, or manufactured outside the United States. The terms “Bahrainian, Moroccan, Omani, Panamanian, or Peruvian end product,” “commercially available off-the-shelf (COTS) item,” “component,” “domestic end product,” “end product,” “foreign end product,” “Free Trade Agreement country,” “Free Trade Agreement country end product,” “Israeli end product,” and “United States” are defined in the clause of this solicitation entitled “Buy American—Free Trade Agreements—Israeli Trade Act.”

(ii) The offeror certifies that the following supplies are Free Trade Agreement country end products (other than Bahrainian, Moroccan, Omani, Panamanian, or Peruvian end products) or Israeli end products as defined in the clause of this solicitation entitled “Buy American—Free Trade Agreements—Israeli Trade Act”

Free Trade Agreement Country End Products (Other than Bahrainian, Moroccan, Omani, Panamanian, or Peruvian End Products) or Israeli End Products:

Line Item No.		Country of Origin
[List as necessary]		

(iii) The offeror shall list those supplies that are foreign end products (other than those listed in paragraph (g)(1)(ii) of this provision) as defined in the clause of this solicitation entitled “Buy American—Free Trade Agreements—Israeli Trade Act.” The offeror shall list as other foreign end products those end products manufactured in the United States that do not qualify as domestic end products, *i.e.*, an end product that is not a COTS item and does not meet the component test in paragraph (2) of the definition of “domestic end product.”

*Other Foreign End Products*

Line Item No.:

Country of Origin:

(List as necessary)

(iv) The Government will evaluate offers in accordance with the policies and procedures of FAR Part 25.

(2) *Buy American—Free Trade Agreements—Israeli Trade Act Certificate, Alternate I.* If *Alternate I* to the clause at FAR 52.225-3 is included in this solicitation, substitute the following paragraph (g)(1)(ii) for paragraph (g)(1)(ii) of the basic provision:

(g)(1)(ii) The offeror certifies that the following supplies are Canadian end products as defined in the clause of this solicitation entitled “Buy American—Free Trade Agreements—Israeli Trade Act”:

Canadian End Products:

Line Item No.

\$(List as necessary)

(3) *Buy American—Free Trade Agreements—Israeli Trade Act Certificate, Alternate II.* If Alternate II to the clause at FAR 52.225-3 is included in this solicitation, substitute the following paragraph (g)(1)(ii) for paragraph (g)(1)(ii) of the basic provision:

(g)(1)(ii) The offeror certifies that the following supplies are Canadian end products or Israeli end products as defined in the clause of this solicitation entitled “Buy American—Free Trade Agreements—Israeli Trade Act”:

Canadian or Israeli End Products:

Line Item No.

Country of Origin

\$(List as necessary)

(g)(4) *Buy American—Free Trade Agreements—Israeli Trade Act Certificate, Alternate III.* If Alternate III to the clause at FAR 52.225-3 is included in this solicitation, substitute the following paragraph (g)(1)(ii) for paragraph (g)(1)(ii) of the basic provision:

(g)(1)(ii) The offeror certifies that the following supplies are Free Trade Agreement country end products (other than Bahrainian, Korean, Moroccan, Omani, Panamanian, or Peruvian end products) or Israeli end products as defined in the clause of this solicitation entitled “Buy American—Free Trade Agreements—Israeli Trade Act”:

Free Trade Agreement Country End Products (Other than Bahrainian, Korean, Moroccan, Omani, Panamanian, or Peruvian End Products) or Israeli End Products:

Line Item No.		Country of Origin
[List as necessary]		

(5) *Trade Agreements Certificate*. (Applies only if the clause at FAR 52.225-5, Trade Agreements, is included in this solicitation.)

(i) The offeror certifies that each end product, except those listed in paragraph (g)(5)(ii) of this provision, is a U.S.-made or designated country end product, as defined in the clause of this solicitation entitled “Trade Agreements”.

(ii) The offeror shall list as other end products those end products that are not U.S.-made or designated country end products.

Other End Products:

Line item No.		Country of origin
[List as necessary]		

(iii) The Government will evaluate offers in accordance with the policies and procedures of FAR Part 25. For line items covered by the WTO GPA, the Government will evaluate offers of U.S.-made or designated country end products without regard to the restrictions of the Buy American statute. The Government will consider for award only offers of U.S.-made or designated country end products unless the Contracting Officer determines that there are no offers for such products or that the offers for such products are insufficient to fulfill the requirements of the solicitation.

(h) *Certification Regarding Responsibility Matters (Executive Order 12689)*. (Applies only if the contract value is expected to exceed the simplified acquisition threshold.) The offeror certifies, to the best of its knowledge and belief, that the offeror and/or any of its principals—

(1) ☐ Are, ☐ are not presently debarred, suspended, proposed for debarment, or declared ineligible for the award of contracts by any Federal agency;

(2) ☐ Have, ☐ have not, within a three-year period preceding this offer, been convicted of or had a civil judgment rendered against them for: Commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a Federal, state or local government contract or subcontract; violation of Federal or state antitrust statutes relating to the

submission of offers; or Commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, tax evasion, violating Federal criminal tax laws, or receiving stolen property,

(3) ☐ Are, ☐ are not presently indicted for, or otherwise criminally or civilly charged by a Government entity with, commission of any of these offenses enumerated in paragraph (h)(2) of this clause; and

(4) Have, ☐ have not, within a three-year period preceding this offer, been notified of any delinquent Federal taxes in an amount that exceeds \$3,500 for which the liability remains unsatisfied.

(i) Taxes are considered delinquent if both of the following criteria apply:

(A) *The tax liability is finally determined.* The liability is finally determined if it has been assessed. A liability is not finally determined if there is a pending administrative or judicial challenge. In the case of a judicial challenge to the liability, the liability is not finally determined until all judicial appeal rights have been exhausted.

(B) *The taxpayer is delinquent in making payment.* A taxpayer is delinquent if the taxpayer has failed to pay the tax liability when full payment was due and required. A taxpayer is not delinquent in cases where enforced collection action is precluded.

(ii) *Examples.* (A) The taxpayer has received a statutory notice of deficiency, under I.R.C. §6212, which entitles the taxpayer to seek Tax Court review of a proposed tax deficiency. This is not a delinquent tax because it is not a final tax liability. Should the taxpayer seek Tax Court review, this will not be a final tax liability until the taxpayer has exercised all judicial appeal rights.

(B) The IRS has filed a notice of Federal tax lien with respect to an assessed tax liability, and the taxpayer has been issued a notice under I.R.C. §6320 entitling the taxpayer to request a hearing with the IRS Office of Appeals contesting the lien filing, and to further appeal to the Tax Court if the IRS determines to sustain the lien filing. In the course of the hearing, the taxpayer is entitled to contest the underlying tax liability because the taxpayer has had no prior opportunity to contest the liability. This is not a delinquent tax because it is not a final tax liability. Should the taxpayer seek tax court review, this will not be a final tax liability until the taxpayer has exercised all judicial appeal rights.

(C) The taxpayer has entered into an installment agreement pursuant to I.R.C. §6159. The taxpayer is making timely payments and is in full compliance with the agreement terms. The taxpayer is not delinquent because the taxpayer is not currently required to make full payment.

(D) The taxpayer has filed for bankruptcy protection. The taxpayer is not delinquent because enforced collection action is stayed under 11 U.S.C. 362 (the Bankruptcy Code).

(i) *Certification Regarding Knowledge of Child Labor for Listed End Products (Executive Order 13126).* [The Contracting Officer must list in paragraph (i)(1) any end products being

*acquired under this solicitation that are included in the List of Products Requiring Contractor Certification as to Forced or Indentured Child Labor, unless excluded at 22.1503(b).]*

(1) *Listed end products.*

Listed End Product

Listed Countries of Origin

(2) *Certification. [If the Contracting Officer has identified end products and countries of origin in paragraph (i)(1) of this provision, then the offeror must certify to either (i)(2)(i) or (i)(2)(ii) by checking the appropriate block.]*

☐ (i) The offeror will not supply any end product listed in paragraph (i)(1) of this provision that was mined, produced, or manufactured in the corresponding country as listed for that product.

☐ (ii) The offeror may supply an end product listed in paragraph (i)(1) of this provision that was mined, produced, or manufactured in the corresponding country as listed for that product. The offeror certifies that it has made a good faith effort to determine whether forced or indentured child labor was used to mine, produce, or manufacture any such end product furnished under this contract. On the basis of those efforts, the offeror certifies that it is not aware of any such use of child labor.

(j) *Place of manufacture.* (Does not apply unless the solicitation is predominantly for the acquisition of manufactured end products.) For statistical purposes only, the offeror shall indicate whether the place of manufacture of the end products it expects to provide in response to this solicitation is predominantly—

(1) ☐ In the United States (Check this box if the total anticipated price of offered end products manufactured in the United States exceeds the total anticipated price of offered end products manufactured outside the United States); or

(2) ☐ Outside the United States.

(k) *Certificates regarding exemptions from the application of the Service Contract Labor Standards.* (Certification by the offeror as to its compliance with respect to the contract also constitutes its certification as to compliance by its subcontractor if it subcontracts out the exempt services.) *[The contracting officer is to check a box to indicate if paragraph (k)(1) or (k)(2) applies.]*

(1) ☐ Maintenance, calibration, or repair of certain equipment as described in FAR 22.1003-4(c)(1). The offeror ☐ does ☐ does not certify that—

(i) The items of equipment to be serviced under this contract are used regularly for other than Governmental purposes and are sold or traded by the offeror (or subcontractor in the case of an exempt subcontract) in substantial quantities to the general public in the course of normal business operations;

(ii) The services will be furnished at prices which are, or are based on, established catalog or market prices (see FAR 22.1003-4(c)(2)(ii)) for the maintenance, calibration, or repair of such equipment; and

(iii) The compensation (wage and fringe benefits) plan for all service employees performing work under the contract will be the same as that used for these employees and equivalent employees servicing the same equipment of commercial customers.

(2) ☐ Certain services as described in FAR 22.1003-4(d)(1). The offeror ☐ does ☐ does not certify that—

(i) The services under the contract are offered and sold regularly to non-Governmental customers, and are provided by the offeror (or subcontractor in the case of an exempt subcontract) to the general public in substantial quantities in the course of normal business operations;

(ii) The contract services will be furnished at prices that are, or are based on, established catalog or market prices (see FAR 22.1003-4(d)(2)(iii));

(iii) Each service employee who will perform the services under the contract will spend only a small portion of his or her time (a monthly average of less than 20 percent of the available hours on an annualized basis, or less than 20 percent of available hours during the contract period if the contract period is less than a month) servicing the Government contract; and

(iv) The compensation (wage and fringe benefits) plan for all service employees performing work under the contract is the same as that used for these employees and equivalent employees servicing commercial customers.

(3) If paragraph (k)(1) or (k)(2) of this clause applies—

(i) If the offeror does not certify to the conditions in paragraph (k)(1) or (k)(2) and the Contracting Officer did not attach a Service Contract Labor Standards wage determination to the solicitation, the offeror shall notify the Contracting Officer as soon as possible; and

(ii) The Contracting Officer may not make an award to the offeror if the offeror fails to execute the certification in paragraph (k)(1) or (k)(2) of this clause or to contact the Contracting Officer as required in paragraph (k)(3)(i) of this clause.

(1) *Taxpayer Identification Number (TIN)* (26 U.S.C. 6109, 31 U.S.C. 7701). (Not applicable if the offeror is required to provide this information to the SAM database to be eligible for award.)

(1) All offerors must submit the information required in paragraphs (l)(3) through (l)(5) of this provision to comply with debt collection requirements of 31 U.S.C. 7701(c) and 3325(d),



reporting requirements of 26 U.S.C. 6041, 6041A, and 6050M, and implementing regulations issued by the Internal Revenue Service (IRS).

(2) The TIN may be used by the Government to collect and report on any delinquent amounts arising out of the offeror's relationship with the Government (31 U.S.C. 7701(c)(3)). If the resulting contract is subject to the payment reporting requirements described in FAR 4.904, the TIN provided hereunder may be matched with IRS records to verify the accuracy of the offeror's TIN.

(3) *Taxpayer Identification Number (TIN).*

☐ TIN: \_\_\_\_\_.

☐ TIN has been applied for.

☐ TIN is not required because:

☐ Offeror is a nonresident alien, foreign corporation, or foreign partnership that does not have income effectively connected with the conduct of a trade or business in the United States and does not have an office or place of business or a fiscal paying agent in the United States;

☐ Offeror is an agency or instrumentality of a foreign government;

☐ Offeror is an agency or instrumentality of the Federal Government.

(4) *Type of organization.*

☐ Sole proprietorship;

☐ Partnership;

☐ Corporate entity (not tax-exempt);

☐ Corporate entity (tax-exempt);

☐ Government entity (Federal, State, or local);

☐ Foreign government;

☐ International organization per 26 CFR 1.6049-4;

☐ Other \_\_\_\_\_.

(5) *Common parent.*

☐ Offeror is not owned or controlled by a common parent;

☐ Name and TIN of common parent:

Name \_\_\_\_\_.

TIN \_\_\_\_\_.

(m) *Restricted business operations in Sudan.* By submission of its offer, the offeror certifies that the offeror does not conduct any restricted business operations in Sudan.

(n) *Prohibition on Contracting with Inverted Domestic Corporations.* (1) Government agencies are not permitted to use appropriated (or otherwise made available) funds for contracts with either an inverted domestic corporation, or a subsidiary of an inverted domestic corporation, unless the exception at 9.108-2(b) applies or the requirement is waived in accordance with the procedures at 9.108-4.

(2) *Representation.* The Offeror represents that—

(i) It ☐ is, ☐ is not an inverted domestic corporation; and

(ii) It ☐ is, ☐ is not a subsidiary of an inverted domestic corporation.

(o) *Prohibition on contracting with entities engaging in certain activities or transactions relating to Iran.* (1) The offeror shall email questions concerning sensitive technology to the Department of State at CISADA106@state.gov.

(2) *Representation and certifications.* Unless a waiver is granted or an exception applies as provided in paragraph (o)(3) of this provision, by submission of its offer, the offeror—

(i) Represents, to the best of its knowledge and belief, that the offeror does not export any sensitive technology to the government of Iran or any entities or individuals owned or controlled by, or acting on behalf or at the direction of, the government of Iran;

(ii) Certifies that the offeror, or any person owned or controlled by the offeror, does not engage in any activities for which sanctions may be imposed under section 5 of the Iran Sanctions Act; and

(iii) Certifies that the offeror, and any person owned or controlled by the offeror, does not knowingly engage in any transaction that exceeds \$3,500 with Iran's Revolutionary Guard Corps or any of its officials, agents, or affiliates, the property and interests in property of which are blocked pursuant to the International Emergency Economic Powers Act (50 U.S.C. 1701 *et seq.*) (see OFAC's Specially Designated Nationals and Blocked Persons List at <http://www.treasury.gov/ofac/downloads/t11sdn.pdf>).

(3) The representation and certification requirements of paragraph (o)(2) of this provision do not apply if—

(i) This solicitation includes a trade agreements certification (*e.g.*, 52.212-3(g) or a comparable agency provision); and

(ii) The offeror has certified that all the offered products to be supplied are designated country end products.

(p) *Ownership or Control of Offeror.* (Applies in all solicitations when there is a requirement to be registered in SAM or a requirement to have a unique entity identifier in the solicitation).

(1) The Offeror represents that it ☐ has or ☐ does not have an immediate owner. If the Offeror has more than one immediate owner (such as a joint venture), then the Offeror shall respond to paragraph (2) and if applicable, paragraph (3) of this provision for each participant in the joint venture.

(2) If the Offeror indicates “has” in paragraph (p)(1) of this provision, enter the following information:

Immediate owner CAGE code: \_\_\_\_\_.

Immediate owner legal name: \_\_\_\_\_.

*(Do not use a “doing business as” name)*

Is the immediate owner owned or controlled by another entity: ☐ Yes or ☐ No.

(3) If the Offeror indicates “yes” in paragraph (p)(2) of this provision, indicating that the immediate owner is owned or controlled by another entity, then enter the following information:

Highest-level owner CAGE code:\_\_\_\_\_.

Highest-level owner legal name: \_\_\_\_\_.

*(Do not use a “doing business as” name)*

*(q) Representation by Corporations Regarding Delinquent Tax Liability or a Felony Conviction under any Federal Law.* (1) As required by sections 744 and 745 of Division E of the Consolidated and Further Continuing Appropriations Act, 2015 (Pub. L. 113-235), and similar provisions, if contained in subsequent appropriations acts, The Government will not enter into a contract with any corporation that—

(i) Has any unpaid Federal tax liability that has been assessed, for which all judicial and administrative remedies have been exhausted or have lapsed, and that is not being paid in a timely manner pursuant to an agreement with the authority responsible for collecting the tax liability, where the awarding agency is aware of the unpaid tax liability, unless an agency has considered suspension or debarment of the corporation and made a determination that suspension or debarment is not necessary to protect the interests of the Government; or

(ii) Was convicted of a felony criminal violation under any Federal law within the preceding 24 months, where the awarding agency is aware of the conviction, unless an agency has considered suspension or debarment of the corporation and made a determination that this action is not necessary to protect the interests of the Government.

(2) The Offeror represents that—

(i) It is [ ] is not [ ] a corporation that has any unpaid Federal tax liability that has been assessed, for which all judicial and administrative remedies have been exhausted or have lapsed, and that is not being paid in a timely manner pursuant to an agreement with the authority responsible for collecting the tax liability; and

(ii) It is ☐ is not ☐ a corporation that was convicted of a felony criminal violation under a Federal law within the preceding 24 months.

(r) *Predecessor of Offeror.* (Applies in all solicitations that include the provision at 52.204-16, Commercial and Government Entity Code Reporting.)

(1) The Offeror represents that it ☐ is or ☐ is not a successor to a predecessor that held a Federal contract or grant within the last three years.

(2) If the Offeror has indicated “is” in paragraph (r)(1) of this provision, enter the following information for all predecessors that held a Federal contract or grant within the last three years (if more than one predecessor, list in reverse chronological order):

Predecessor CAGE code: \_\_\_\_ (or mark “Unknown”).

Predecessor legal name: \_\_\_\_.

(Do not use a “doing business as” name).

(s) RESERVED

(t) *Public Disclosure of Greenhouse Gas Emissions and Reduction Goals.* Applies in all solicitations that require offerors to register in SAM (52.212-1(k)).

(1) This representation shall be completed if the Offeror received \$7.5 million or more in contract awards in the prior Federal fiscal year. The representation is optional if the Offeror received less than \$7.5 million in Federal contract awards in the prior Federal fiscal year.

(2) *Representation.* [Offeror to check applicable block(s) in paragraph (t)(2)(i) and (ii)]. (i) The Offeror (itself or through its immediate owner or highest-level owner) ☐ does, ☐ does not publicly disclose greenhouse gas emissions, *i.e.*, makes available on a publicly accessible Web site the results of a greenhouse gas inventory, performed in accordance with an accounting standard with publicly available and consistently applied criteria, such as the Greenhouse Gas Protocol Corporate Standard.

(ii) The Offeror (itself or through its immediate owner or highest-level owner) ☐ does, ☐ does not publicly disclose a quantitative greenhouse gas emissions reduction goal, *i.e.*, make available on a publicly accessible Web site a target to reduce absolute emissions or emissions intensity by a specific quantity or percentage.

(iii) A publicly accessible Web site includes the Offeror's own Web site or a recognized, third-party greenhouse gas emissions reporting program.

(3) If the Offeror checked “does” in paragraphs (t)(2)(i) or (t)(2)(ii) of this provision, respectively, the Offeror shall provide the publicly accessible Web site(s) where greenhouse gas emissions and/or reduction goals are reported.

(u)(1) In accordance with section 743 of Division E, Title VII, of the Consolidated and Further Continuing Appropriations Act, 2015 (Pub. L. 113-235) and its successor provisions in

subsequent appropriations acts (and as extended in continuing resolutions), Government agencies are not permitted to use appropriated (or otherwise made available) funds for contracts with an entity that requires employees or subcontractors of such entity seeking to report waste, fraud, or abuse to sign internal confidentiality agreements or statements prohibiting or otherwise restricting such employees or subcontractors from lawfully reporting such waste, fraud, or abuse to a designated investigative or law enforcement representative of a Federal department or agency authorized to receive such information.

(2) The prohibition in paragraph (u)(1) of this provision does not contravene requirements applicable to Standard Form 312 (Classified Information Nondisclosure Agreement), Form 4414 (Sensitive Compartmented Information Nondisclosure Agreement), or any other form issued by a Federal department or agency governing the nondisclosure of classified information.

(3) *Representation.* By submission of its offer, the Offeror represents that it will not require its employees or subcontractors to sign or comply with internal confidentiality agreements or statements prohibiting or otherwise restricting such employees or subcontractors from lawfully reporting waste, fraud, or abuse related to the performance of a Government contract to a designated investigative or law enforcement representative of a Federal department or agency authorized to receive such information (*e.g.*, agency Office of the Inspector General).

(End of provision)

#### 652.225-70 ARAB LEAGUE BOYCOTT OF ISRAEL (AUG 1999)

(a) Definitions. As used in this provision:

Foreign person means any person other than a United States person as defined below.

United States person means any United States resident or national (other than an individual resident outside the United States and employed by other than a United States person), any domestic concern (including any permanent domestic establishment of any foreign concern), and any foreign subsidiary or affiliate (including any permanent foreign establishment) of any domestic concern which is controlled in fact by such domestic concern, as provided under the Export Administration Act of 1979, as amended.

(b) Certification. By submitting this offer, the offeror certifies that it is not:

- (1) Taking or knowingly agreeing to take any action, with respect to the boycott of Israel by Arab League countries, which Section 8(a) of the Export Administration Act of 1979, as amended (50 U.S.C. 2407(a)) prohibits a United States person from taking; or,
- (2) Discriminating in the award of subcontracts on the basis of religion.

## Attachment 1

### Statement of Work

#### 1. Preparation

The tanks №6 and №7 are compound Fuel supply system main unites and only one tank has to be offline during the cleaning and maintenance. For uninterrupted supply of diesel to the compound generators (for emergency power cutouts) cleaning process will start from tank №6 (75.600 liters) and Tank №7 will be online to provide fuel oil.

Competent and experienced contractor have to be involved in process to accomplish the steps of compound fuel tanks cleaning process (several contractors may involve in process steps):

- ❖ Pump out the existing fuel from tanks (one by one) and sell the fuel;
- ❖ Enter the Tank (s) and clean (confined space procedure, risk assessment, correct PPE);
- ❖ Remove, handle and Dispose all sludge and oily waters;
- ❖ Fill the cleaned Tank with Fuel oil and decommission the Tank back to operation (Compound will handle the new fuel oil quality and supply process);

#### 2. Tank №6 decommissioning\commissioning

##### a. Tank Preparation for decommissioning

- i. Ensure that Tank № 7 (56.781 liters) is fill enough to provide at last one month fuel supply to the compound Utilities (Generators, Boilers); [\\*note](#)
- ii. Isolate Signals on Compound Fuel Management control Panel (according to manual) by transferring the switches (Tank №6 according to **drawing 1** point **L-3**) to the manual control and label ("**Do not Operate**");
- iii. Isolate the power supply to the Tank №6 submersible pumps (two Pumps), isolate, lock and label **E-1** and **E-2** According to **drawing 2** and label ("**Do not Operate**");
- iv. Isolate both pump outlets valves in underground tank man access pit. Close **V-1** and **V-2** According to drawing 2 and label ("**Do not Operate**");
- v. Apply positive isolation (blind in flange connection on the backflow\drain pipework) at the **P-1** point According to **drawing 2** label ("**Positive isolation**");
- vi. Pump out the tank with portable Ex pump to the wheel based truck and dispose (sell or dispose, depends on management decision and contract);
- vii. Remove bottom sludge and dispose according to environmental protection procedure, should be handled by approved and licensed contractor (removal from compound and disposal);
- viii. Prepare the crews for tank entry (should be done by contractor) according to Confined space entry procedure. All personnel involved in Tank Entry activities have to be trained, briefed and obey with risk assessment and follow the rolls, control measures and regulation described in Risk assessment document and rescue plan; [\\*\\*note](#)
- ix. Contractor(s) is fully responsible for Safety and control measures within all process of fuel move and tank cleaning activities; [\\*\\*\\*note](#)
- x. Remove the man hole flange form tank and entry tank for inspection; [\\*\\*\\*\\*note](#)
- xi. Remove all sludge and clean the conduct the wall wash with approved chemicals;
- xii. Contain and remove from compound sludge and oily water, according to Environmental protection procedure (contractor have to follow the company procedure or Georgian hazardous waste management and pollution protection plan);
- xiii. Upon completion of tank cleaning activities the pits and tank cover concrete area have to be cleaned from hydrocarbons and handover to the compound technicians;

- xiv. When cleaning done and clean tank handover, new and fresh fuel have to be delivered and fill the Tank №6 form Remote fill box quick connection (**L-1**); [\\*\\*\\*\\*note](#)

**b. Tank Preparation for commissioning**

- i. Check all connection and labelled points for returning the system to the initial position;
- ii. Reinstall the man hole flange to initial position and change gasket;
- iii. Deisolate the points at Tank submersible pumps (two Pumps), remove locks and labels at **E-1** and **E-2** According to drawing 2; [\\*\\*\\*\\*\\*note](#)
- iv. Prime the system in manual mode with new and fresh diesel, remove all air plugs wherever it is possible up to Generator day tanks;
- v. Change all Filter elements on the Generators day tanks inlet points;
- vi. Drain and flush the Main Generators and High side Generator day tank to the standby tank № 7 one by one and fill with new fresh fuel;
- vii. Test all Main Generators after day tanks clean to ensure the idle and load run;
- viii. Remove the positive isolation (blind and label) from point **P-1 drawing -2**, change the gasket with new one and test connection;

### **3. Tank №7 decommissioning\commissioning**

**a. Tank Preparation for decommissioning**

- i. Ensure that Tank № 6 (75.600 liters) is fill enough to provide at last one month fuel supply to the compound Utilities (Generators, Boilers); [\\*note](#)
- ii. Isolate Signals on Compound Fuel Management control Panel (according to manual) by transferring the switches (Tank №7 according to **drawing 1** point **L-3**) to the manual control and label ("**Do not Operate**");
- iii. Isolate the power supply to the Tank №7 submersible pumps (two Pumps), isolate, lock and label **E-3** and **E-4** According to **drawing 3** and label ("**Do not Operate**");
- iv. Isolate both pump outlets valves in underground tank man access pit. Close **V-3** and **V-4** According to **drawing 3** and label ("**Do not Operate**");
- v. Apply positive isolation (blind in flange connection on the backflow\drain pipework) at the **P-2** point According to **drawing-3** label ("**Positive isolation**");
- vi. Pump out the tank with portable Ex pump to the wheel based truck and dispose (sell or dispose, depends on management decision and contract);
- vii. Remove bottom sludge and dispose according to environmental protection procedure, should be handled by approved and licensed contractor (removal from compound and disposal);
- viii. Prepare the crews for tank entry (should be done by contractor) according to Confined space entry procedure. All personnel involved in Tank Entry activities have to be trained, briefed and obey with risk assessment and follow the rolls, control measures and regulation described in Risk assessment document and rescue plan ; [\\*\\*note](#)
- ix. Contractor(s) is fully responsible for Safety and control measures within all process of fuel move and tank cleaning activities; [\\*\\*\\*note](#)
- x. Remove the man hole flange form tank and entry tank for inspection; [\\*\\*\\*\\*note](#)
- xi. Remove all sludge and clean the conduct the wall wash with approved chemicals;
- xii. Contain and remove from compound sludge and oily water, according to Environmental protection procedure (contractor have to follow the company procedure or Georgian hazardous waste management and pollution protection plan);

- xiii. Upon completion of tank cleaning activities the pits and tank cover concrete area have to be cleaned from hydrocarbons and handover to the compound technicians;
- xiv. When cleaning done and clean tank handover, new and fresh fuel have to be delivered and fill the Tank №7 form Remote fill box quick connection (**L-2**); [\\*\\*\\*\\*\\*note](#)

**b. Tank Preparation for commissioning**

- i. Check all connection and labelled points for returning the system to the initial position;
- ii. Reinstall the man hole flange to initial position and change gasket;
- iii. Deisolate the points at Tank submersible pumps (two Pumps), remove locks and labels at **E-3** and **E-4** According to **drawing-3**; [\\*\\*\\*\\*\\*note](#)
- iv. Prime the system in manual mode with new and fresh diesel, remove all air plugs wherever it is possible up to Generator day tanks;
- v. Test all Main Generators after day tanks clean to ensure the idle and load run;
- vi. Remove the positive isolation (blind and label) from point **P-2 drawing-3**, change the gasket with new one and test connection;
- vii. Deisolate Signals on Compound Fuel Management control Panel (according to manual) and return to the normal operational conditions;

**4. Rescue Plan**

- i.
- ii. According Permit and RA requirement preparation must be done, chosen two person for entry with good health conditions (without any phobias of confined space and any discomfort for using breathing apparatus, shaved);
- iii. Doctors are mobilized\hot standby ready for any emergency activities with appropriate tools and medicines;
- iv. Rescue team is mobilized at Tank with appropriate BA sets (BA with big balloons 9L, up to 20-30 minutes of breathing time);
- v. One Entry controller person for time and entry management;
- vi. Both persons entering in Tank must be roped on harness and one person is controlling at Tank entrance rope movement;
- vii. Same time ropes are used as a communication measure (see below primary agreed signals in section communication);
- viii. Before Entrance Four persons (two entering and two auxiliary/rescue team members) and rope controller must conduct training for rope signaling methods with all PPE and BA sets on;
- ix. Team members entering in Tank must strongly follow controlling person orders (Entry controller and Rope controller-Safety Team);
- x. Team members entering in Tank must move slowly, avoiding slips and trip hazard, Persons entering in CS must be familiarized with Tank flooring structure by existing engineering drawings;
- xi. If any Emergency Situation:
- xii. Rope controlling Man and Confined space Entry (CSE) controller are continuously observing activities inside the tank;
- xiii. Entered team members must not pull each other if they fill that second team member could not holding him any more during the stumbling, avoiding both persons falling down;
- xiv. If any emergency (emergency signal from working person inside or conformed disability by controlling person), auxiliary rescue team members are ready to enter or pulling person by rope outside;



- xv. **Doctors are ready to help injured person by first aid or dislocating him to nearest Medical Emergency Hospital;**
- xvi. **Stop all Activities if water conditions become hazardous to the CSE activities;**

**\*note** Tank № 7 will be on line and operational during the cleaning process of Tank № 6;

**\*\*note** Confined space entry procedure includes all necessary approved and tested lifeguard equipment and rescue equipment, should be provided by contractor, Tank inner space is considered as an Zone 0 (permanent presence of explosive atmosphere and highly hazardous to the human health. Compound Medical department have to be informed and involved if necessary according to rescue plan below;

**\*\*\*note** Contractor have to proof and provide the written safety procedures for confined space entry and rescue plan, or obey to state safety standards;

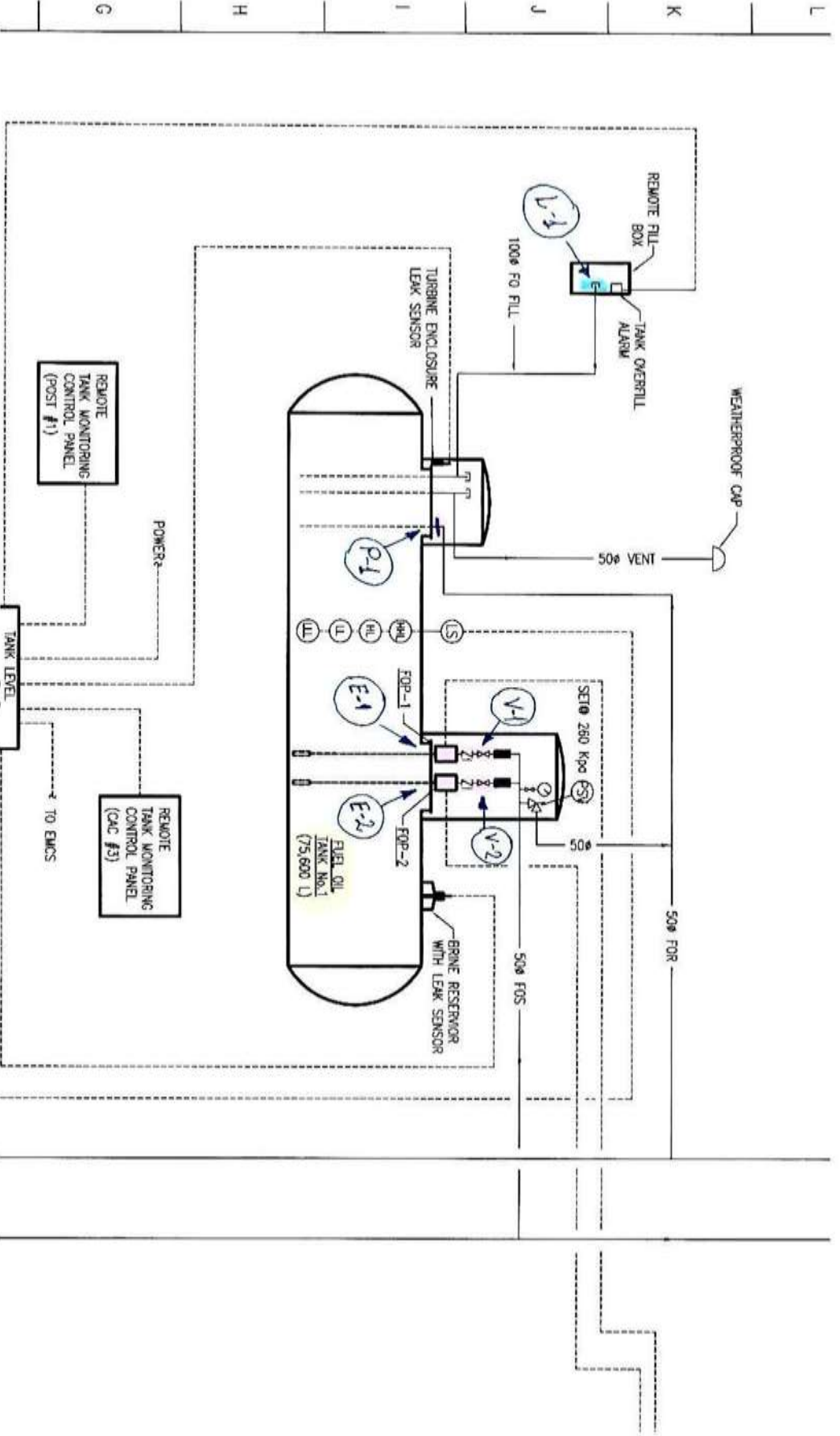
**\*\*\*\*note** workers PPE (coverall, boots, goggles, breathing apparatus, pumps) and flash lights have to be designed as an nonslip, any spark and Ex (explosive proof) certified), No life electrical cables and wired lights and electrically powered tools and pumps is allowed in Hydrocarbon area Zone 0;

**\*\*\*\*\*note** Tank overfill alarm have to be operational for overfilling monitoring and Fuel level have to be monitored on Compound Fuel Management control Panel;

**\*\*\*\*\*note** Do not Deisolate the overflow pipework flange (positive isolation), till all day tanks will be cleaned; and do not Deisolate the Compound Fuel Management control Panel (Tanks N6 is in manual mode)

# Tank 6

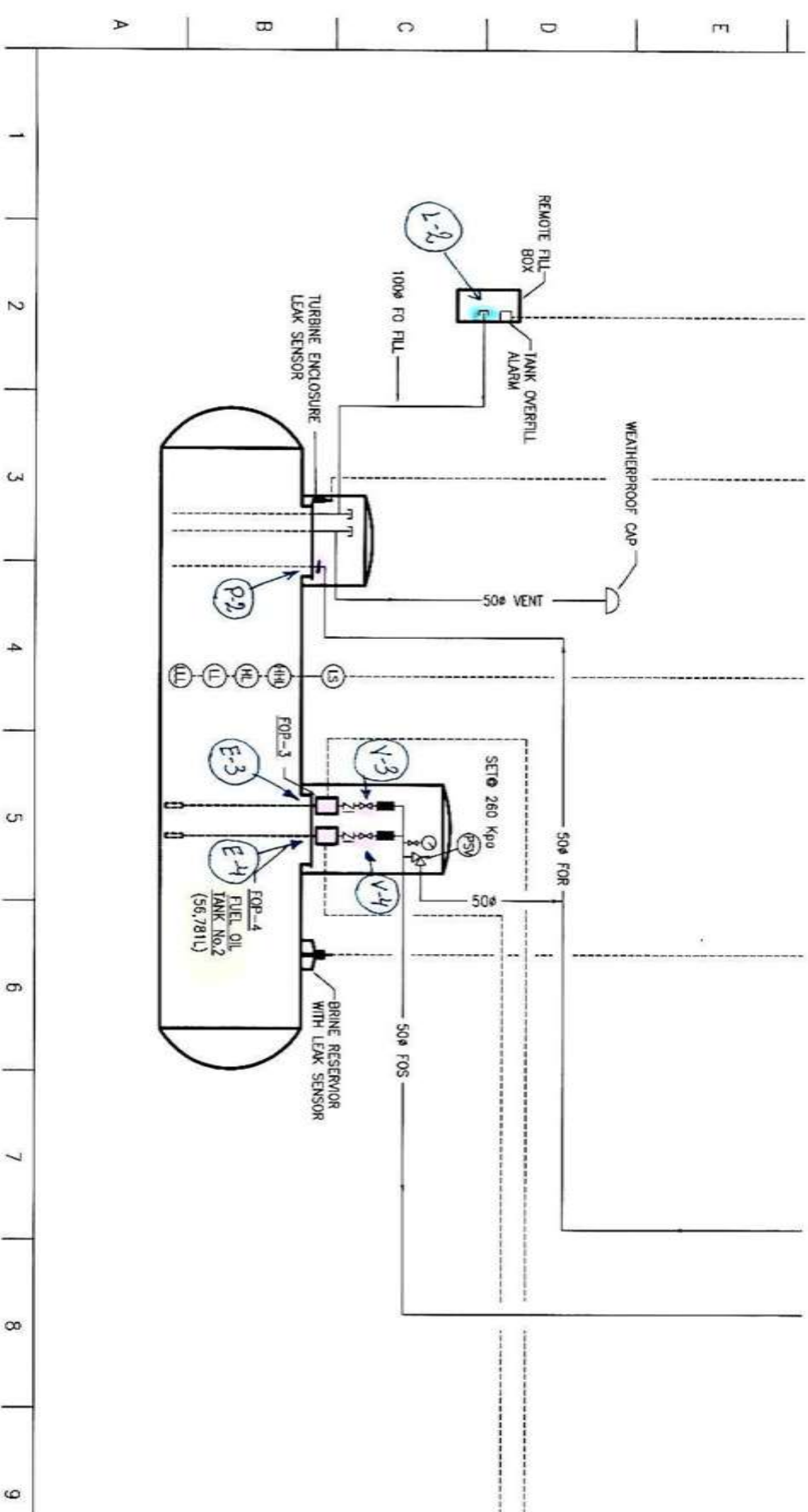
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UTL M5.23

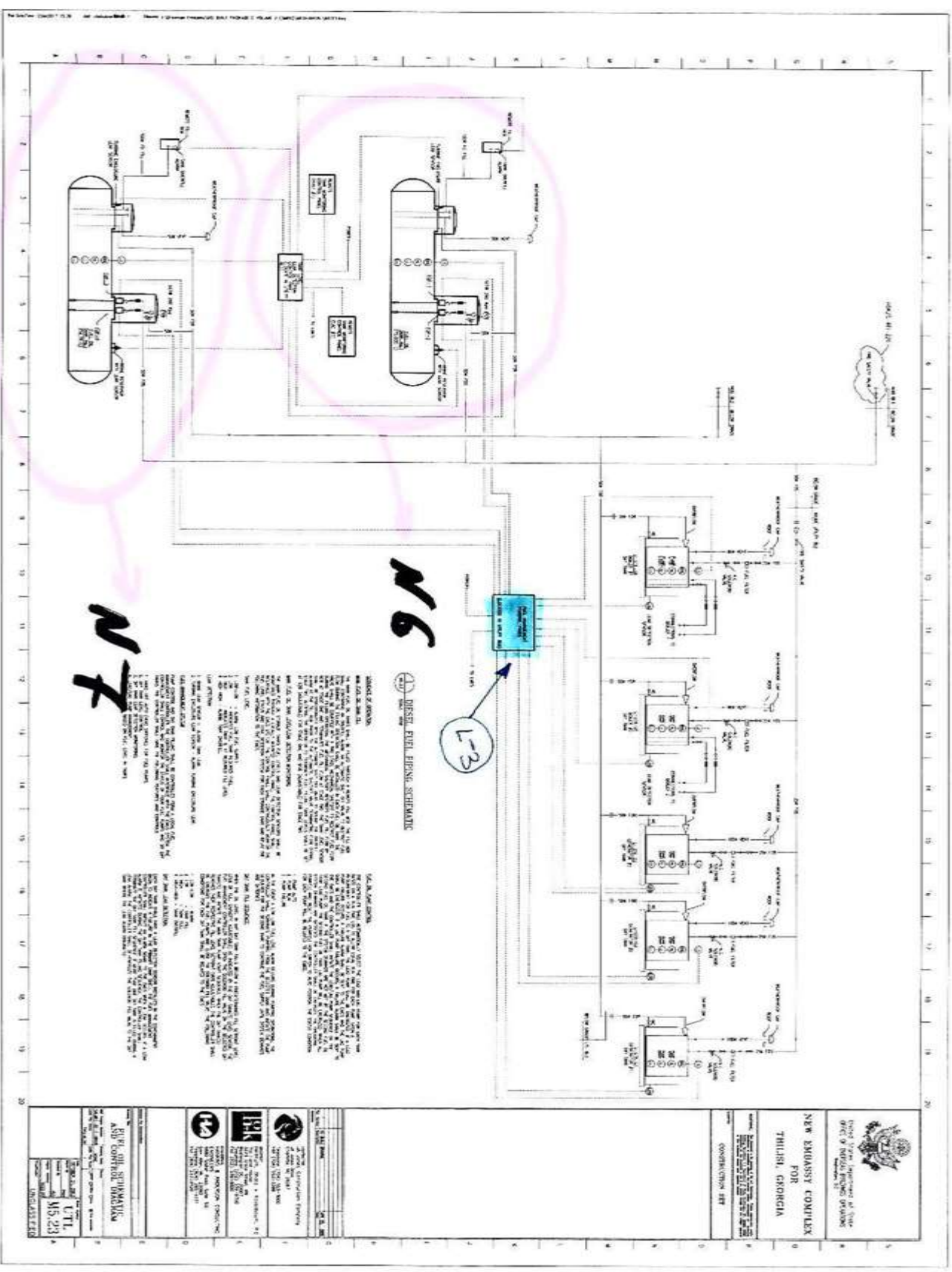
# Tank 7

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**U.S. DEPARTMENT OF STATE**

**CONFINED SPACE PROGRAM  
PROCEDURES**

**Office of Safety/Health and Environmental Management  
(SHEM)**

**OBO/OM/SHEM**

**December 2002**

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<b>Immediately contact SHEM in the event of an incident or mishap involving a confined space which results in injury, illness, inadvertent shutdown of a building system or release of hazardous material.</b>
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## **1.0 INTRODUCTION AND OVERVIEW**

A confined space is a work location that is large enough and configured so that an employee can bodily enter and perform assigned work, has limited and/or restricted openings for entry and that is not designed for continuous occupancy. Confined spaces pose unique health and safety hazards due to their contents, configurations and materials that are introduced during work tasks. The two major factors that lead to mishaps and fatal injuries in confined spaces are failure to recognize and control hazards prior to and during entry and inadequate or incorrect emergency response. A confined space management program is important to prevent unnecessary entry into such spaces and to assure that when entry is required that all protective measures are implemented to protect employees and contractors from hazardous conditions that may exist or be introduced during the particular work task.

Water storage vessels (tanks, cisterns, conduits), sewer systems, cooling towers, underground utility vaults, pits, trenches and fuel tanks are the typical types of confined spaces that can be found at most posts. Preventive maintenance, construction and repair activities at many posts result in personnel entering confined spaces on a regular or emergency basis. Preventive measures to eliminate confined space hazards such as, engulfment, entrapment, confinement, electrical and mechanical hazards may be necessary as well as engineering controls or personal protective equipment to protect entrants from toxic gases, oxygen deficient atmospheres and chemical exposures. If personnel never enter these locations then the confined space hazard does not exist at post.

This document is intended to provide posts with the necessary technical information (as well as sources of technical support) to implement and practice an effective confined space management program whose primary focus is to eliminate the need to enter such locations, or if not feasible, to assess and control hazards that may be present prior to and during entry.

## **2.0 SCOPE**

All posts have been required to implement a confined space program for all government owned (GO), long-term leased (LTL) and short-term leased (STL) properties in accordance with 6 FAM 610 and Chapter 10.1 of the Safety/Occupational Health and Environmental Management Resource Guide (hereinafter referred to as Resource Guide). All contractors (post, OBO, DS, etc.) who may enter confined spaces on post properties are also required to comply with these directives. This document contains procedures and information necessary to implement the confined space standard contained in the Resource Guide and 6 FAM requirements.

### **3.0 POLICY**

The goals and objectives of the Department's confined space program are to:

- Avoid confined space entry by exhausting exterior methods to perform the necessary work, retrofitting the confined space or reengineering the task;
- Ensure safe confined space entry when no other non-entry alternatives are feasible; and,
- Ensure regulatory compliance.

### **4.0 PROGRAM ADMINISTRATION - POST**

- **Deputy Chief of Mission (DCM) or Deputy Principal Officer (DPO):** In accordance with 6 FAM 616, the DCM/DPO has direct responsibility for safety, health and environmental management at post. The DCM/DPO must ensure that post has the appropriate equipment and personnel to enter confined spaces and that post has requested and budgeted sufficient 7902 and other funds to retrofit confined spaces to avoid entry when appropriate. Depending on the extent of post's program, funds may be required for: hiring qualified contractors; industrial ventilators (positive and negative pressure); air monitoring equipment; rescue equipment; and, personal protective equipment (air supplied and/or filtering respirators, chemical protective gloves and disposable garments, etc.).
- **POSHO:** The day-to-day safety, health and environmental management (SHEM) program is managed and implemented by the designated Post Occupational Safety and Health Officer (POSHO). POSHO responsibilities include ensuring that the confined space program is operating in accordance with Department policies and procedures contained herein where confined spaces are entered as a last resort. The POSHO working with other post personnel (ex., SHEM committee, GSO and FM) will facilitate the procurement of equipment and performance of projects that will make entries into confined spaces unnecessary whenever feasible. If entries are necessary, the POSHO shall coordinate with OBO/OM/SHEM all approvals and required oversight of any confined space entry performed by post or contractor personnel to determine that all safety, health and environmental hazards have been eliminated or controlled prior to and during entry.

### **5.0 HOW TO USE THE CONFINED SPACE PROGRAM DOCUMENT**

This document will assist post in implementing a confined space program at all government owned and leased (both long term and short term) properties as required in 6 FAM 610 and the Resource Guide. Emphasis is on devising methods to avoid entering confined spaces and



only entering a confined space if it is absolutely necessary providing that all safeguards are in place to protect entrants prior to and during the entry.

The following outlines a systematic approach for implementing a confined space program with references to applicable sections in this document:

1. Appoint the POSHO as the post official with overall responsibility for confined space matters (Section 4.0);
2. Identify all confined spaces and work tasks that may involve entry into these spaces (Sections 6.1 and 6.2);
3. Determine if exterior methods, engineering controls or retrofits can be implemented to eliminate the need for personnel to enter the confined space to accomplish a task (Sections 6.2 and 6.3);
4. Classify the confined spaces requiring entries into Post Approved Confined Spaces (PACS) or Prior to Entry Review Mandatory in SHEM (PERMISHEMs) using the definitions in this program (Section 6.4)
  - A. For all PACS:
    1. Use ventilation equipment according to Appendix 1; and,
    2. Ensure that the POSHO approves and oversees all entries;
  - B. For all PERMISHEMs:
    1. Submit a safety plan to OBO/OM/SHEM for SHEM review and comment that contains all the information defined in Appendix 3. This is required even if post is using a contractor or third party to do the work.
    2. Await SHEM approval before proceeding with PERMISHEM entries.

**In all cases where confined spaces contain/contained hazardous material or where hazardous materials will be used/generated, SHEM will provide an onsite Certified Industrial Hygienist (CIH) to monitor safety and health during the entry.**

3. Assign entry responsibilities in accordance with those listed in Appendix 2 for entrants, attendants, entry supervisors and rescuers.
4. Ensure that the POSHO approves and oversees all entries.

**Safe entry into PERMISHEM confined spaces presents many technically complex issues and may exceed the capabilities of some posts. It is suggested that posts implement the following prioritized strategy as a first step in addressing these requirements:**

- 1. Determine whether entry can be avoided entirely or the frequency of entry reduced;**
  - 2. Reengineer the maintenance/repair procedure to eliminate the need to enter the confined space;**
  - 3. Eliminate the confined space through reengineering; and/or,**
  - 4. Identify a local qualified contractor who is fully qualified and experienced to do confined space entry safely.**
- 
5. Conduct hazard assessments (Section 7.0 and Appendix 4) of all confined spaces that are not listed in this program as PACS or PERMISHEMs to determine their classification;
  6. Demarcate all PACS and PERMISHEMs in a way that describes their hazards and requires those planning entries to notify the POSHO to obtain approval prior to entry and arrange for oversight during an entry (Section 8.0);
  7. Review the confined space inventory list on an annual basis or update as new properties with confined spaces are added to post's real estate holdings (Sections 9.0 and 10 and Appendices 4 and 5).
  8. Incorporate the A/OPE Accident Prevention Clause (Department of State Acquisitions Regulations (DOSAR), Part 652 – Solicitation Provisions and Contract Clauses) into all contracts for work that may involve PACS and PERMISHEM entries (Section 4.0). The DOSAR Part 652 is available on the A/OPE Intranet site at <http://aope.a.state.gov/dosar52.htm> section 652.236-70.

## **6.0 IDENTIFYING CONFINED SPACES AT POST AND ASSOCIATED WORK TASKS**

### **6.1 What is a Confined Space?**

To determine if a location is a confined space all the following questions about the space must be answered in the affirmative (i.e., yes):

- Is the space configured so that it can be bodily entered and is large enough for work to be performed inside of it?
- Does the space have limited or restricted means for entry or exit? and,
- Is the space designed in way that continuous human occupancy is not possible.

Note that the definition does not consider the potential hazards that are posed in the space nor the tasks that will be performed. These aspects become important in determining if an entry can be avoided and whether the confined space is classified as a PACS or a PERMISHEM.

## **6.2 Work Tasks Performed in Confined Spaces**

Many tasks that are performed in confined spaces are necessary for the proper operation and maintenance of post properties. The most effective means for controlling confined space hazards is to completely eliminate the need to enter the space through the use of alternative technologies, space retrofits or task reengineering. In order to determine if a confined space entry can be eliminated it is necessary to identify all possible tasks that may be performed. Examples of tasks that may require a confined space entry at post are:

- Applying waterproofing coatings or painting surfaces
- Checking and reading meters, gauges, dials and other indicators
- Cleaning and disinfecting water storage systems
- Connecting to existing sewer, water and fuel systems
- Grease removal from grease traps
- Installing, inspecting, repairing and replacing valves, piping, pumps, motors, floats, etc.
- Installing, splicing, repairing and inspecting electrical, communication and security equipment (ex., Closed circuit TV (CCTVs))
- Maintaining and servicing sump pumps
- Removing sludge and other waste materials
- Repairing water, sewage, fuel or other systems
- Rescuing victims of confined space mishaps
- Retrieving objects
- Turning valves
- Unclogging drains and sewers
- Welding, cutting, brazing or abrasive blasting

### 6.3 Non-Entry Work Task Methods

Methods to avoid entry into confined spaces include:

- Attaching portable extension rods to tools in order to reach valves that are located in a confined space.
- Developing decision algorithms to assess why and when tasks are being performed. Some questions that can be asked for water storage vessel cleaning tasks are:
  - If post uses distillers for drinking water is it necessary to clean water storage devices as often as is currently being done?
  - What are the parameters that determine when water storage devices need to be cleaned and has post measured or assessed these factors before implementing a cleaning schedule?
- Disinfecting water storage systems through rinsing and flushing (see Appendix 7).
- Dislodging blockages in water and sewer systems and pipes with high pressure or power washer water equipment.
- Eliminating tree root impingement on underground systems through gardening, vegetation and root management strategies.
- Employing CCTV or remote videotaping technologies for inspection tasks.
- Installing prefilters on water and fuel systems to remove silt and other particulates before they enter the storage vessel (testing the incoming water or fuel may be necessary to determine the required filter pore sizes).
- Posting signage and issuing periodic admin notices to inform occupants (both office and residential) of items prohibited from being placed in wastewater (ex., grease, food scraps, garden waste) and sewage systems (ex., paper towels, feminine hygiene products, cotton) to minimize the frequency of blockages.
- Removing silt, sludge and other debris using industrial vacuum systems.
- Replacing metal parts with non-metallic or corrosion protected parts to minimize conditions susceptible to early parts failure in facility systems.
- Retrofitting the confined space with more and/or larger access covers (see Appendix 8 for an example of a water storage vessel that was modified at a post resulting in the declassification of the cistern as a confined space).
- Retrofitting sump pumps or other submerged equipment so that they can be brought to the surface for maintenance (ex., rail systems, outflow pipes with disconnects (see Appendix 9)).
- Using pigs, snakes and other remote plumbing devices to unclog drains and sewers.

## **6.4 Determining if the Confined Space is a PACS or PERMISHEM**

For each space identified as a confined space post must determine if the space is a PACS or PERMISHEM. This determination is based on several factors that consider the purpose of the confined space, the type of hazards posed by the space, the level of safety precautions that must be taken to enter the space and the work task performed. OBO/OM/SHEM has created a list of PACS and PERMISHEMs based on hazard assessments done at posts. These are described in the following text. If the space is not listed below then post must perform a hazard assessment (see Appendix 4) or contact OBO/OM/SHEM for assistance.

### **6.4.1 PACS**

A PACS is a space where prior SHEM approval for entry is not necessary as long as all of the following criteria are met:

- Positive pressure forced air dilution ventilation will be provided in the space at pre-entry and during entry according to Appendix 1.
- Oxygen deficiency is the only potential atmospheric hazard. It will be controlled by pre- and during entry positive pressure forced air dilution ventilation in accordance with Appendix 1. Following the ventilation procedure will eliminate the need to conduct air monitoring for oxygen levels.
- The contents of the space are non-hazardous and once removed from the space there is no health or safety hazard from any residual.
- The tasks that will be performed inside the space will not involve the use of or generation of hazardous exposures or conditions.
- Air monitoring for oxygen or other toxic and flammable gases is not needed prior to and during entry.
- No respiratory protection is needed to control for exposure. Respiratory protection may be worn for nuisance or comfort reasons only.
- Safety hazards may be present but are controllable through lockout/tagout or other means, such as, blanking, blocking, chocking, or disconnecting. For example, in water storage tanks this would include lockout/tagout of pumps and valving off, blanking off or disconnecting supply pipes.

Examples of possible PACS at post are:

- Bollard, Delta barrier or other security related equipment pits
- Cooling towers
- Crawl spaces

- Drainage pits
- Electrical and communication vaults, manholes and pits
- Elevator pits
- Fuel tank valve manholes or vaults where no fuel spills or leaks are present
- Storm sewers where the only flow through the system is water and there is no possibility of chemical dumping by others who are connected to the system. The atmosphere in storm sewers may suddenly and unpredictably become lethally hazardous (toxic, flammable or explosive) from causes beyond the control of the post because complete isolation in a sewer system is not possible.
- Water storage vessels (stationary) – Cleaning water storage vessels under the PACS category requires that accumulated sediment/sludge is removed from the bottom of the vessel by manual means and that walls are scrubbed with a wire brush and fresh water to remove all resulting residue. The use of cleaning materials containing chlorine such as bleach solution or any other hazardous material is prohibited due to the significant exposure risks posed to workers.
- Water tank trucks – See cleaning requirement under water storage vessels (stationary)

**NOTE: A PACS will become a PERMISHEM when activities are performed in the PACS that create hazardous atmospheres.**

#### **6.4.2 PERMISHEM**

A PERMISHEM is a space where any one or more of the following criteria apply:

- Potential health hazards are posed from existing or potential internal contaminants or chemicals/gases introduced during tasks performed in the space, or,
- Air monitoring is required prior to and during entry to assure that entrants will not be overexposed to hazardous concentrations of chemicals/gases/particulates, or,
- Respiratory protection is needed for potential exposures that may be present or introduced into the space.

Prior to entry into a PERMISHEM post must obtain OBO/OM/SHEM approval for entry. Post shall submit a safety plan according to the requirements of Appendix 3 of this program. SHEM will evaluate the safety plan to provide an approval to proceed, require modifications to the plan before the entry is conducted or override the plan and require that the entry be performed by a qualified SHEM contractor. SHEM will also determine if oversight by a SHEM-selected CIH is required during the entry. The safety plan will then serve as the entry permit. If the same PERMISHEM needs to be entered at a later

date, post must re-submit the PERMISHEM (which can be a copy of the original PERMISHEM).

The rationale supporting the establishment of the PERMISHEM system is:

- Most posts are not able to obtain and/or maintain specialized safety and health equipment to perform confined space entries in a safe manner.
- Most posts do not have the experience, practice or skill to perform confined space entry safely.
- Most posts are unable for innumerable reasons to manage or implement a confined space program that marginally meets the requirements of 6 FAM 610 and Chapter 10.1 of the Safety/Occupational Health and Environmental Management Resource Guide.

Typical PERMISHEMs at posts are:

- All confined spaces that are not PACS
- Fuel tanks
- Sanitary sewer systems (including ejector stations)
- Sewer manholes
- Storm sewers where there is a possibility that other upstream users may dump chemicals or sewage into the system. The atmosphere in storm sewers may suddenly and unpredictably become lethally hazardous (toxic, flammable or explosive) from causes beyond the control of post because complete isolation in a sewer system is not always possible.

Typical tasks that create a PERMISHEM or that transform a PACS into a PERMISHEM are:

- Applying coatings (water or solvent based)
- Cleaning surfaces with products other than water
- Connecting to existing sewer or fuel systems
- Installing, inspecting, repairing and replacing valves, piping, pumps, motors, etc. in sewage systems
- Removing sludge and other waste materials from waste systems or fuel tanks
- Use of chemicals and gases
- Use of other combustion equipment such as fossil fuel fired motors, engines, heaters and generators
- Welding, cutting, brazing or abrasive blasting

The hazard control actions that need to be implemented for a PERMISHEM entry are:

- Preventing unauthorized entry into the space
- Identifying and evaluating the hazards before entry
- Developing and implementing the means, procedures and practices necessary for a safe entry
- Providing, maintaining and ensuring that the following equipment is used:
  - Air testing and monitoring equipment
  - Ventilation systems
  - Communications devices
  - Personal protective equipment
  - Lighting units
  - Access equipment for ingress and egress from the space
  - Barriers and shields to protect the work area from on-lookers
  - Rescue and emergency equipment

In addition to the hazard control actions described above, a PERMISHEM entry requires numerous personnel to be available. These include: authorized entrants; attendants; an entry supervisor which may be the POSHO; the POSHO and, a means to rescue entrants. The duties of each group are described in Appendix 2.

## **7.0 HAZARD ASSESSMENTS**

If post encounters a confined space or an activity that has not been previously listed in its inventory or defined under the PACS and PERMISHEM categories in this document then a hazard assessment must be performed to determine how the confined space should be classified and what controls are needed to minimize hazards. The hazard assessment is also a useful tool for posts to follow when formulating safety plans for entry into PERMISHEMs. Appendix 4 provides extensive guidance on how to perform a hazard assessment.

## **8.0 DEMARCATING CONFINED SPACES**

The purpose of demarcating confined spaces is to prevent unintentional and unprotected entry into confined spaces. Entry into both categories of confined spaces (PACS and PERMISHEMs) requires that the POSHO approve and oversee entry and that certain controls be instituted prior to and during entry. Posts must inform employees who may possibly enter confined spaces through either the posting of signs on access ways, in English and the local language, as in Figure 1 or any other equally effective means of



notifying personnel of the location and danger posed by these spaces. If posting signs is not feasible, work orders that involve PACS or PERMISHEMs can be revised to include warning statements, in both English and the local language, alerting personnel to contact the POSHO before entry. Alternatively the inventory of all PACS, PERMISHEMS and work activities that may involve entry into confined spaces can be maintained as long as employees are notified of this list, its contents and its location on a regular basis.

**FIGURE 1: SAMPLE NOTIFICATION SIGN**



## **9.0 MAINTAINING A CONFINED SPACE AND WORK TASK INVENTORY LIST**

Once all confined spaces and work requiring confined space entry have been identified post should prepare an inventory list that can be reviewed annually and updated as properties change. The list should indicate whether the space/task is a PACS or PERMISHEM and other program requirements. Appendix 5 contains a sample inventory sheet.

In July 2002, OBO/OM/SHEM requested that posts submit an inventory of their confined spaces (02 ALDAC 132256) or indicate that there are no confined spaces at post. Over 50% of posts responded. Copies of these inventories (without the PACS or PERMISHEM column) are available from SHEM and are also posted on the SHEM website at <http://obo.state.gov/opssaf-shem>. Appendix 6 contains a list of posts that responded to the ALDAC as of January 2003. Updates to the list will be available on the Intranet.

## **10.0 ANNUAL REVIEW OF CONFINED SPACE INVENTORY**

To ensure continuity of the confined space program the confined space and work task inventory must be reviewed annually. This review will assist post in maintaining its program through property and personnel changes.

## **11.0 RECORDKEEPING**

Post must keep the following documents for the duration listed below.

Confined Space and Work Task Inventory	Duration of post's operation
SHEM approved Safety Plans for PERMISHEMs	At least one year, however preferable to keep as long as the PERMISHEM may be entered during post's operation

## **APPENDIX 1: REQUIRED VENTILATION PRACTICES FOR ENTRIES INTO PACS**

This section focuses on ventilation practices for entries into PACS (defined in Section 6.4.1 of this document) where there is no possibility for toxic or flammable atmospheres in the confined space from chemicals or work tasks, such as welding, painting, chemical use, etc. These types of work situations will require the use of other control measures. Such confined spaces and tasks are PERMISHEMs. For PERMISHEMs, post must submit a safety plan to OBO/OM/SHEM detailing ventilation and other controls prior to entry. The ventilation practices described below may apply in the PERMISHEM but these practices will be supplemented by other controls.

The primary safety and health concerns in entering PACS are lack of oxygen and physical hazards. Oxygen deficiency can result from displacement by other gases but more likely in PACS by biological or chemical reactions (i.e., rusting in steel tanks, decay of accumulated organic matter). Oxygen deficiency can be eliminated through the use of continuous ventilation both before and during the entry. Because each confined space is uniquely designed there is no single ventilation methodology that applies to every situation. There are however generic guidelines that can be followed that will define the ventilation plan.

### **Hazard Assessment and Pre-planning Information for Ventilation of PACS**

Preplanning for proper ventilation before and during the entry requires the gathering and review of various pieces of critical information:

#### **PACS design and configuration**

- *How many portals can be opened to promote air mixing in the PACS and overcome short-circuiting?* The more that can be opened at opposite ends and sides of the PACS the higher the likelihood that short-circuiting will not occur. (See short-circuiting section below).
- *What are the dimensions of the PACS?* This will determine both the duration of pre-entry ventilation, the size of the fan and the lengths of hose that are needed to ensure air dispersal throughout the vessel.
- *Are there any internal obstructions that will adversely affect airflow through the PACS?* If so, additional flexible ducting may be needed to deliver air to dead spaces and pockets by going around the obstruction.

#### **Work task location in the PACS**

- *Where will the work be performed within the space?* Knowing this is critical to ensuring that properly sized ventilation equipment is used with sufficient hose length to distribute air into the space.

Ventilation Fan Specifications – Industrial fans designed for confined space entry must be used and not fans used in the office environment (see Figure 2 for examples of appropriate fans).

- *What is the power source for the ventilator?* If combustion type then the exhaust from the engine must be diverted far away from the intake for the fan and occupied spaces so combustion byproducts (CO, hydrocarbons, etc.) don't get introduced into the confined or occupied spaces. If electric, the power cord must be able to reach an outlet without compromising the position of the fan at the confined space entry portal or the ductwork's extension into the space.
- *How many cubic feet per minute (CFM) of air can be delivered by the blower without any attachments and with attached flexible ductwork?* The CFM ratings of the fan are critical to calculating the duration of pre-entry ventilation. It will also impact the amount of air that will pass through a long length of ductwork. If the static pressure drop is high through the ductwork then the CFM will have to increase to provide sufficient air to the work area. This information should be obtained from the fan manufacturer if not already on hand.
- *What are the fan dimension?* If the space around the PACS is small and the fan is large then this will impact the ease with which the fan is used, where it can be set up and how employees will maneuver around to do their work in a safe manner.

### **Pre-Entry Ventilation**

The duration of pre-entry ventilation varies depending on the type of PACS. The ventilation period can be as short as 10 minutes or as long as 24 hours depending on the PACS to be entered.

#### 24 hour Pre-Entry Ventilation

A pre-entry ventilation period of 24 hours is required for PACS that normally operate under sealed conditions or that are not normally exposed to the ambient atmosphere. These include:

- Cooling towers
- Drainage pits
- Fuel tank valve manholes or vaults where no fuel spills or leaks are present
- Storm sewers where the only flow through the system is water and there is no possibility of chemical dumping by others who are connected to the system.
- Water storage vessels (stationary)
- Water tank trucks

#### Variable Pre-Entry Ventilation

The pre-entry ventilation period for PACS where the space is operated with exposure to ambient air varies depending on the fan being used for ventilation and the volume of the space. PACS subject to variable pre-entry ventilation are:

- Bollard, Delta barrier or other security related equipment pits
- Crawl spaces
- Electrical and communication vaults, manholes and pits
- Elevator pits

The following equation (developed by a major communications company in the U.S. for entry into utility manholes) can be used to determine the pre-entry ventilation time for the particular PACS to be entered:

$$T = \frac{7.5 V}{C}$$

where,

T = ventilation time in minutes

V = estimated volume of the space in cubic feet (ft<sup>3</sup>) – do not enter the space to calculate, and

C = effective blower capacity in cubic feet per minute (CFM) – effective blower capacity is the actual quantity of air (CFM) delivered at the end of the flexible duct connected to the blower. If no ductwork is connected then this is the quantity of air delivered at the outlet of the blower.

### **During Entry Ventilation**

The ventilator must be left operating and ventilating the PACS during the entire time that someone is inside the space.

### **Ventilation Challenges**

Unfortunately, just placing a fan next to a PACS opening or dropping flexible ducting into the PACS for a specified period of time is not sufficient to assure adequate ventilation. There are some typical problems that frequently arise in ventilation that need to be overcome during the time that forced air ventilation is provided.

#### **Contaminant Re-entrainment**

As discussed above, if an internal combustion engine powers the blower, it is absolutely necessary to ensure that exhaust gases are not drawn into the blower's fresh air intake. Exhaust gases need to be vented through ductwork or tubing at least 25 feet downwind from the fan intake. The fan intake must also be placed away from other sources of contamination, such as, vehicle exhaust pipes and/or other activities that generate contaminants (painting, welding, operating generators, etc.). If it is not possible to provide a safe distance from these activities then the confined space entry should be planned when these activities will not impact on the pre-entry and during entry ventilation.

### Short-Circuiting

Short-circuiting occurs when air that is being introduced into a vessel exits before circulating throughout the vessel. Examples of short-circuiting and ways to overcome it are shown in Figure 3 below.

### Portal Obstructions

Many confined spaces have only one opening for entry. The ductwork used to ventilate a vessel may have to be placed through the same opening that is used for entry and exit from the space. If the portal is small, the space occupied by the duct will restrict entry and egress even more. A product called a Saddle Vent (see picture below) can be used to change the profile of the ductwork and provide more room to the opening without compromising the airflow.



# FIGURE 2: VENTILATION EQUIPMENT FOR CONFINED SPACES

VENTILATION | CONFINED SPACE

## ALLEGRO Portable Axial Blowers

Complete, lightweight ventilation systems. Self-contained for easy transport between work sites; these units set up in seconds.

**Specifications:** All-in-one units feature one-piece construction with carrying handles, fan guards and built-in metal canisters for duct storage. **AC Blower's** efficient 1/4-hp motor generates surprising air moving power. Uses 115V AC electrical current at 3.6A. Comes with 15' or 25' of ducting. **DC Blower** uses 12V power and is equipped with alligator clips for connecting to a car or truck battery. Quiet, 1/4-hp, DC motor draws just 13A, yet can push large volumes of air through the lines. Also available with your choice of 15'L or 25'L duct. Optional **Axial Adaptor** turns any Allegro blower into a fume or dust extractor. **Nos. 84129 and 84130** feature explosion-proof UL/CSA listed, single phase motors and NEMA rated 115V plugs and sockets for use in extreme or hazardous atmospheres. **Conductive Duct** made of a statically conductive material is available in 15' or 25' lengths.



Axial Adaptor



•Free freight! 2nd-day delivery!  
Call for details

No.	Description	Shipping Wt. (lbs.)	Each
1A-25251	AC Blower with 15'L Duct	36	713.70
1A-29445	AC Blower with 25'L Duct	46	791.30
1A-37263	DC Blower with 15'L Duct	36	768.85
1A-37264	DC Blower with 25'L Duct	46	877.85
1A-47324	Axial Adaptor	6	81.70
1A-84129	AC Explosion Proof Blower w/15' Duct		1809.00
1A-84130	16" AC Explosion Proof Blower		1627.00
1A-84133	Conductive Duct 16" x 15'		710.00
1A-84134	Conductive Duct 16" x 25'		1110.00

ALLEGRO VENTILATION BLOWERS				ALLEGRO AIRFLOW (cfm)		
No.	Description	Wt. (lbs.)	hp	Free Air	1 90° Duct Bend	2 90° Duct Bends
OF-14811	Standard Electric Blower	35	1/4	1277	738	579
OF-25248	Deluxe Electric Blower	86	1 1/2	1700	1200	960
OF-25249	Gasoline Blower	44	3 1/2	2000	1500	1350
OF-25251	AC Axial Blower	36	1/4	1390	736	642
OF-29445	AC Axial Blower	46	1/4	1390	736	642
OF-37263	DC Axial Blower	36	1/4	1150	800	650
OF-37264	DC Axial Blower	46	1/4	1150	800	650
OF-30284	Standard High Volume Blower	47	1/2	3400	2800	2300
OF-30285	High-Output Blower	60	2	5500	4950	4400

## ALLEGRO Portable Ventilation Blowers

Ventilate qualifying spaces quickly with these efficient, portable blowers. Choose from three high-output styles to meet current requirements.

**Specifications:** All units feature integral carrying handles, high-impact ABS housing and standard 8" intake and exhaust ports. **Standard Electric Blower** with steel fan is lightweight, compact and efficient. **Deluxe Electric Blower** offers 15% more air moving power. Comes mounted on its own 24" x 24" steel base with locking casters for stability and maneuverability. **Gasoline Blower** has a rugged 3 1/2-hp Briggs & Stratton motor for maximum output with minimum weight. **High Output Electric Blower** offers the same features as the Standard Blower with a cage-enclosed 3/4-hp motor for higher cfm —ideal for hazardous atmospheres. **8" Explosion Proof Blower** features a single-phase motor and includes a NEMA rated 115V plug and explosion-proof socket. Order 8" **Ducting** separately in 15' lengths. Reinforced with wear strips and belted attachment cuffs. Statically **Conductive Duct** available in 8" x 15' and 16" x 25' sections. Optional **Storage Rack** compresses up to 25' of ducting to a 3' length for convenient storage and transport. Order separately.

No.	Description	cfm (Free Air)	hp	Wt. (lbs.)	Each
1A-14811	Standard Electric Blower	1277	1/4	35	613.95
1A-25248	Deluxe Electric Blower	1700	1 1/2	114	1132.25
1A-25249	Gasoline Blower	2000	3 1/2	35	736.75
1A-84127	High Output Electric Blower	1570	3/4	44	915.00
1A-84128	8" Explosion Proof Blower	1570	3/4	78	1627.00
1A-14813	Ducting	—	—	—	150.30
1A-84131	Conductive Duct 8" x 15'	—	—	—	370.00
1A-84132	Conductive Duct 16" x 25'	—	—	—	570.00
1A-25250	Ducting Storage Rack	—	—	—	70.90



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Order Online [www.labsafety.com](http://www.labsafety.com)

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CONFINED SPACE VENTILATION

FIGURE 2, Continued

### Coppus® Cadet® Hazardous Location Blowers

For use where intrinsically safe equipment is a requirement.

**Specifications:** Maximum airflow performance in a lightweight, compact unit. Extremely rugged blowers are easy to mount and transport on utility vehicles. Intrinsically safe design; all housings and main components are molded of special conductive polymers for safe dissipation of static charges. Powerful 1/2-hp motor, 115V AC. Both styles come with a pre-mounted junction box for connection to power cord (not included). *Static Dissipative Ducting* and *Standard Ducting* sold separately below. All ducting comes in 20' lengths.

**Note:** Static dissipative ducting should be used for hazardous locations.

**Compliance:** Hazardous location motors are rated Class I, Group D; Class II, Groups E, F, G.



•Both models weigh less than 50 lbs.—  
ideal for remote operations

No.	Description	Free Air (cfm)	Shipping Wt. (lbs.)	Each
1A-37515	Vaneaxial Blower	867	40	1142.30
1A-37516	Centrifugal Blower	1014	49	1136.65
1A-37517	Static Dissipative Ducting, 20'L	—	—	529.20
1A-25255-8	Standard Ducting, 8" dia.	—	—	323.15
1A-25255-12	Standard Ducting, 12" dia.	—	—	435.05

COPPUS VENTILATION BLOWERS				AIRFLOW (cfm)		
No.	Description	Wt. (lbs.)	hp	Free Air	1 90° Duct Bend	2 90° Duct Bends
1A-25252	Model 175 Vano	73	3/4	1500	1260	1210
1A-25253	Model 250 Vano	90	1	3000	2640	2540
1A-37515	Cadet Vaneaxial (Hazardous Location)	40	1/2	867	776	766
1A-37516	Cadet Centrifugal (Hazardous Location)	49	1/2	1014	860	845

### Coppus® Vano® Portable Electric Blowers/Exhausters

*Rugged Construction Stands Up to Heavy Use*

Efficient, compact 115V motors are ideal for confined space ventilation, welding fumes and toxic vapor removal.

**Specifications:** Superbly constructed of rugged cast-aluminum and heavy-gauge steel for maximum protection of vanes and motors. Spark-resistant fans offer smooth, secure air transfer. *Model 175* features tough, glass-filled polyester fan blades; uses 8" ducting, sold separately. *Model 250* has cast-aluminum blades for maximum efficiency and requires 12" ducting. Optional *Tripod* elevates either unit and can be positioned to 45° off horizontal. Collapsible, tear-resistant *Ducting* comes in 20' lengths. The *Ducting Canister* offers safe, compact storage for ducting when not in use.



•230V and Hazardous Location models  
available—call 1-800-356-2501 for details

#### Blowers and Tripod

No.	Description	cfm (Free Air)	hp	Wt. (lbs.)	Each
1A-25252	Model 175	1500	3/4	73	1521.10
1A-25253	Model 250	3000	1	90	2220.40
1A-25254	Tripod	—	—	19	298.25

#### Ducting

No.	Description	Each
1A-25255-8	Ducting, 8" dia.	323.15
1A-25255-12	Ducting, 12" dia.	435.05
1A-25256-8	Ducting Canister, 8" dia.	167.40
1A-25256-12	Ducting Canister, 12" dia.	197.15

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Technical Support 1-800-356-2501



CONFINED SPACE VENTILATION

FIGURE 2, Continued

### Air Systems® Ventilation Kits

*Save Money When You Buy All Your Confined Space Ventilation Equipment in One Kit!*

We've taken the time and effort out of buying confined space ventilation equipment—now you can get everything you need in one easy-to-buy kit! Choose from three kits to fit almost any application.

**Kit Contents:** Each ventilation kit includes blower, Saddle Vent®, one 6' L duct, one 15' L duct, duct canister (holds both ducts), universal mount and 90° elbow for Saddle Vent.

**Specifications:** Both the *Standard Blower Kit* and *Economy Blower Kit* include a 115V AC, pre-wired blower with all-steel construction and steel-welded safety guards on intake and exhaust. *No. 47116* features a 12A, TEFC motor with aluminum non-sparking blower wheels and installed GFI cord. *No. 47121* features a 7.9A/60Hz motor with GFI on/off power cord. Don't have access to electricity? Our *Gas Blower Kit* includes a Briggs & Stratton gasoline engine with aluminum non-sparking blower wheels, 5' L remote flexible steel exhaust hose and custom, gas-tight muffler.

No.	Description	hp	cfm Free Air	w/8' Duct (25' 1-90° Bend)	Shipping Wt. (lbs.)	Each
1A-47116	Standard Blower Kit	3/4	1570	1047	101	1150.00
1A-47118	Gas Blower Kit	3 1/2	2095	1329-1900	101	1095.00
1A-47121	Economy Blower Kit	1/2	1390	973	81	1534.15



• Economy Blower Kit

### INSIDER'S TIP

Need an Air Monitor for sampling the atmosphere in your confined spaces?

• See pages 357-392.

### RAMFAN Portable Blowers

*Powerful Motor Yet Compact and Lightweight*

Tough, double-wall, polyethylene casing resists weather, chemicals and dents. Combine this with a high performance, polypropylene fan blade and you've got a durable, highly efficient blower that will outlast the competition! Versatile units give you a blower and exhauster in one.

**Specifications:** 1/3-hp *Portable Blowers* feature a quiet, 74dB motor, compact design (14"H x 12"W x 13"L) and lightweight body (16 lbs.). Blowers come with a detachable, reversible Kwik-couple™ canister to protect your ducting and a 15' L or 25' L duct (see descriptions below). Your choice of 115V AC or 12V DC.

**Suggested For:** Utility and confined space applications.

No.	Description	Shipping Wt. (lbs.)	Each
1A-47287	AC Blower w/Canister & 15' L Duct	34	700.00
1A-47288	AC Blower w/Canister & 25' L Duct	40	780.35
1A-47290	DC Blower w/Canister & 15' L Duct	34	757.60
1A-47291	DC Blower w/Canister & 25' L Duct	40	842.45

AIRFLOW (cfm)				
No.	Power/Duct	Free Air	1-90°	2-90°
1A-47287	115V AC-8" x 15'	990	789	666
1A-47288	115V AC-8" x 25'	980	722	614
1A-47290	12V DC-8" x 15'	862	695	586
1A-47291	12V DC-8" x 25'	862	665	565



400

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FIGURE 2, Continued

VENTILATION | **CONFINED SPACE**



1A-53917

### RAMFAN Portable Electric Blowers/Exhausters

Rugged, high-output blowers for general, confined space and hazardous ventilation. Choose from a 12" or 16" blower.

**Specifications:** Lightweight, corrosion-resistant, glass-reinforced ABS housing handles the bumps and falls of your job site. Turbine blade design increases air pressure to deliver the power you need. All models are supplied with a 15' L cord and plug. Motors are dual voltage (115V/230V). **12" Blower** includes switch and a 12" adaptor on each end. Measures 16"H x 15"W x 15"D. **16" Blower** includes switch and one 16" reversible adaptor. Measures 19"H x 18"W x 12"D. **15' L or 25' L Ducting** sold separately.

**Compliance:** Motors are UL listed.



1A-53918

No.	Description	cfm		Wt. (lbs.)	Each
		Free Air	1-90° Bend		
1A-53917	12" Blower w/12" Adaptor	2500	1664	38	941.00
1A-54289	15' L Ducting for 12" Blower	-	-	-	234.50
1A-54290	25' L Ducting for 12" Blower	-	-	-	340.35
1A-53918	16" Blower w/16" Adaptor	3400	1934	46	947.25
1A-54291	15' L Ducting for 16" Blower	-	-	-	327.90
1A-54292	25' L Ducting for 16" Blower	-	-	-	491.85



• Free freight!  
2nd-day delivery!  
Call for details

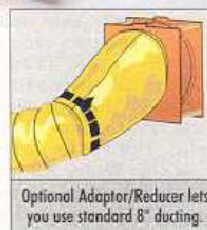
1A-30284

### ALLEGRO High-Volume Portable Axial Blowers

Helps you purge virtually any confined space quickly.

**Specifications:** 16"-dia. portables deliver rapid air displacement to any confined space. Each has a rectangular Lexan® casing to guard against rough handling. Stack two or more piggyback style for even greater air-moving power. **Standard Blower's** 21-blade impeller can push 3400 cfm of free air; **High-Output** style (17-blade, high-efficiency impeller) moves up to 5500 cfm. Order **Ducting** separately. **Storage Rack** compresses 25' of ducting to 3' to save space. **Adaptor/Reducer** joins 16"-dia. blowers to 8"-dia. ducting; includes duct-to-duct connector.

**Note:** Reducer may lower cfm by up to 15%. Do not use with high-output blowers.



Optional Adaptor/Reducer lets you use standard 8" ducting.

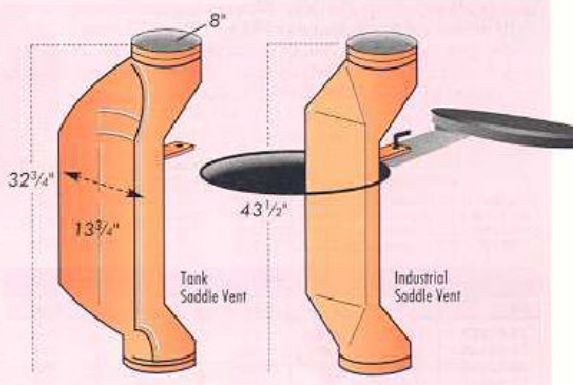
No.	Description	cfm (Free Air)	hp	Shipping Wt. (lbs.)	Each
1A-30284	Standard Blower	3400	1/2	47	871.20
1A-30285	High-Output Blower	5500	2	60	1198.85
1A-30286	Ducting, 16" x 15'				350.15
1A-30287	Ducting, 16" x 25'				509.95
1A-30288	Storage Rack				72.00
1A-30289	Ducting Adaptor/Reducer for No. 30284				158.30

### Air Systems® Saddle Vent® Ventilation System

Bulky ventilation ducts have always compromised safety by blocking sunlight and restricting worker access to confined spaces. Now you can save time while increasing safety and productivity with this attachment that stays in place during entry. Innovative design delivers ample airflow, yet takes up only 3" of manhole clearance, allowing easy entries and exits.

**Specifications:** **Industrial Saddle Vent** is ideal for sewer work. **Tank Saddle Vent** is specially designed for tank entry. Both are made of durable molded polyethylene to withstand heavy use and temperature extremes (-20° to 300°F). **Universal Mount** adapts saddle vents to most openings.

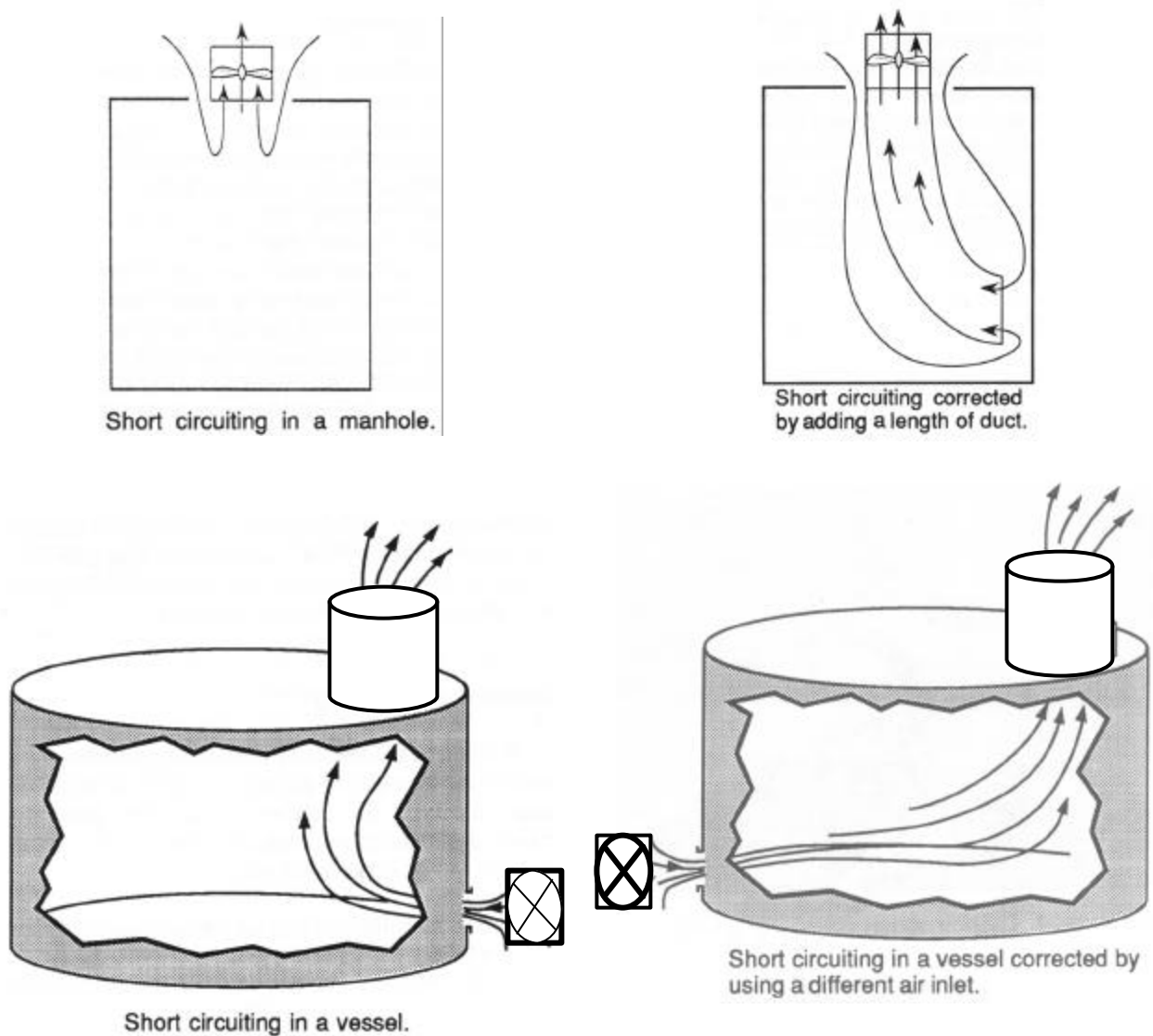
No.	Description	Each
1A-16060	Industrial Saddle Vent	199.00
1A-16061	Tank Saddle Vent	249.55
1A-16062	Universal Mount	49.50



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**FIGURE 3**  
**OVERCOMING SHORT-CIRCUITING DURING CONFINED SPACE VENTILATION**



## **APPENDIX 2: PERSONNEL RESPONSIBILITIES DURING PERMISHEM ENTRIES**

A substantial number of personnel are required to conduct a PERMISHEM confined space entry. At a minimum each PERMISHEM entry shall involve the services of at least one:

- Authorized entrant
- Authorized Attendant
- Entry supervisor which may be the POSHO
- The POSHO
- Rescue Service which may be the local fire services

The specific responsibilities of these individuals during a confined space entry are:

### Authorized Entrants

- Know the hazards of the confined space and signs of symptoms of exposure to atmospheric hazards
- Use appropriate personal protective equipment properly
- Maintain communication with attendants to enable the attendant to monitor the entrant's status as well as to alert the entrant to evacuate the confined space
- Exit from the confined space as soon as possible when ordered by an attendant or entry supervisor, when a prohibited condition exists, when the entrant recognizes the warning signs or symptoms of exposure or when an alarm is activated

### Authorized Attendants:

- Know the hazards of the confined space and signs of symptoms of exposure to atmospheric hazards
- Continuously maintain an accurate count of authorized entrants in the PERMISHEM and ensure that only authorized entrants access the space
- Remain outside the PERMISHEM during entry operations until relieved by another authorized attendant
- Communicate with authorized entrants as necessary to monitor their status and to alert them to situations that may require them to evacuate the PERMISHEM
- Monitor activities inside and outside the space to determine if it is safe for authorized entrants to remain in the space
- Initiate an evacuation under the following conditions:
  - If a prohibited condition is detected
  - If the authorized entrants display signs and symptoms of exposure to atmospheric hazards
  - If a situation outside the PERMISHEM occurs that could endanger the authorized entrants
  - If the authorized attendant cannot effectively and safely perform all the requisite duties
- Summon rescue and other emergency services when needed

Entry Supervisor (may be the POSHO)

- Knows the hazards that may be faced during the PERMISHEM entry
- Verifies, by checking that the appropriate items on the safety plan have been completed, that all tests specified by the safety plan have been conducted and that all procedures and equipment on the safety plan are in place before endorsing the safety plan and allowing entry into the PERMISHEM
- Terminates the entry and cancels the safety plan by signing and recording the time in the END of ENTRY field on the safety plan
- Ensures that a means for rescue is available should a mishap occur in the PERMISHEM and that rescue services are informed of the hazards in the PERMISHEM prior to entry
- Removes individuals who attempt to enter the PERMISHEM who are not authorized entrants
- Ensures that the POSHO has signed off on the safety plan and is available to oversee the entry

POSHO

- Knows the hazards that may be faced during the PERMISHEM entry
- Verifies, by checking that the appropriate items on the safety plan have been completed, that all tests specified by the safety plan have been conducted and that all procedures and equipment on the safety plan are in place before endorsing the safety plan and allowing entry into the PERMISHEM
- Terminates the entry and cancels the safety plan by signing and recording the time in the END of ENTRY field on the safety plan
- Ensures that a means for rescue is available should a mishap occur in the PERMISHEM
- Removes individuals who attempt to enter the PERMISHEM who are not authorized entrants

## **APPENDIX 3**

### **PERMISHEM SAFETY PLAN**

Posts that enter PERMISHEMs must submit a safety plan to OBO/OM/SHEM prior to the entry for SHEM review and approval. In some cases the level of hazard posed by the entry may be great enough for SHEM to provide on-site oversight during the entry. The safety plan provides the needed information for SHEM to make that determination. Once approved by SHEM it also serves as the confined space entry permit when the POSHO approves and oversees the entry.

When formulating a safety plan for a PERMISHEM post is advised to review Appendices 1 and 4. Information in these sections may be useful for development of the safety plan. The Safety/Occupational Health and Environmental Management Resource Guide (SHEM Resource Guide) should also be consulted during safety plan development. The chapters entitled Hazard Control Ventilation, Respiratory Protection, Personal Protective Equipment, Machinery and Machine Guarding and Electrical may be useful.

The minimum elements of a PERMISHEM safety plan are:

- A description of the space and its contents
- The purpose of the entry
- The work tasks to be performed in the space
- Whether or not non-entry techniques were investigated. If not, why?
- A list of all chemicals and/or gases to be introduced in the space
- The date and authorized duration of the entry
- A description of all the hazards of the space
- Measures that will be taken to isolate the space and manage the hazards
- The acceptable atmospheric entry conditions
- How will air sampling be conducted and how often
- Who will perform air sampling and their qualifications
- What air sampling instrumentation will be used
- What contaminants will be sampled for
- Communications procedures
- Special equipment provided
- The identity of the authorized entrants and attendant
- Identification of other permits that may be needed (ex., hot work)

- Rescue and emergency equipment/services that can be summoned or provided
- The POSHO and Supervisor's name

In addition, post must submit a drawing or photos of the confined space with the safety plan to assist with its evaluation. The following form may be used for the safety plan.

# PERMISHEM SAFETY PLAN

(Please attach a drawing and/or photos depicting the confined space.)

<b>Post Name</b> _____	<b>Date:</b> _____	<b>POSHO:</b> _____
Confined Space: _____	Expected Date of Entry: _____	Expected Duration of Entry: _____ hours
Address: _____	Purpose for Entry: _____	What non-entry methods were considered? _____
Chemicals and gases that will be brought into the space. _____	Tools & equipment that will be brought into the space: _____	Work tasks to be performed: _____
Identify hazards associated with entry:  <i>Atmospheric Hazards:</i> 1. _____ 2. _____ 3. _____ 4. _____ 5. <i>Physical Hazards:</i> 1. _____ 2. _____ 3. _____ <i>Other Hazards:</i> 1. _____ 2. _____	Describe how each hazard listed will be controlled and note required permits, if any. <i>Atmospheric Hazard Controls:</i> 1. _____ 2. _____ 3. _____ 4. _____ 5. <i>Physical Hazard Controls:</i> 1. _____ 2. _____ 3. _____ <i>Other Hazard Controls:</i> 1. _____ 2. _____	Describe how atmospheric hazards will be monitored prior to and during entry.  Instrument Name: _____  Gases instrument capable of detecting: _____  Alarm set points for each gas: _____  Date of last calibration: _____  Air sampler's name and job title: _____
Describe ventilation procedures • Pre-entry _____  • During entry _____	Personal protective equipment required for entry ___ Respirators (type) _____  ___ Head protection    ___ Ear protection ___ Eye protection     ___ Chemical ___ Hand protection     protective clothing	Means for accessing the interior of the space _____
Communication Methods ___ Voice            ___ Rope Signals ___ Radio            ___ Other _____	Name of all entrants _____	Name of attendants _____
Emergency response procedures _____	Entry Supervisor's Name _____	OBO/OM/SHEM approval: _____

<b>ON DAY OF ENTRY DATE</b> _____	POSHO APPROVES ENTRY (time, sign) _____	ENTRY SUPERVISOR APPROVES ENTRY (time sign) _____	SHEM CIH (if applicable) (sign, time) _____
<b>END OF ENTRY</b>	POSHO TERMINATES ENTRY (time, sign) _____	ENTRY SUPERVISOR TERMINATES ENTRY (time, sign) _____	SHEM CIH (if applicable) (sign, time) _____

Use additional sheets of paper if necessary.



## APPENDIX 4: HAZARD ASSESSMENT

Confined space hazards can be divided into two categories: atmospheric hazards and physical hazards. Oxygen deficiency, oxygen enrichment, flammable and toxic gases and vapors represent the majority of atmospheric hazards. Atmospheric hazards account for the majority of fatalities in confined spaces in the United States. Hazards in confined spaces can be present as a result of the intended purpose of the space and by what may be introduced into it by the entrants through their tools and equipment or types of tasks they will perform.

A confined space hazard assessment must evaluate the potential for atmospheric hazards and physical hazards inside the space and those that are introduced during work tasks. Table 1 lists a series of questions that should be evaluated during the hazard assessment. The following discussion will assist post in conducting a hazard assessment of confined spaces at post that are not already classified as PACS or PERMISHEMs (see Sections 6.4.1 and 6.4.2 of this document). If the results of hazard assessment identify any potential atmospheric hazards that result in the confined space being classified as a PERMISHEM, then a safety plan must be submitted to OBO/OM/SHEM prior to entry.

**TABLE 1: HAZARD ASSESSMENT QUESTIONS**

<b>Atmospheric Hazards</b>	<b>Physical Hazards</b>	<b>Other Hazards</b>
<ul style="list-style-type: none"> <li>• Could the atmosphere be oxygen deficient or oxygen enriched?</li> <li>• What air contaminants may be present in the space?</li> <li>• What did the space last contain?</li> <li>• Could the atmosphere be flammable?</li> <li>• Does the atmosphere have the potential for becoming flammable?</li> <li>• Do residues pose any hazards?</li> <li>• Do adjacent processes or operations present any potential hazards?</li> <li>• Will air contaminants be introduced into the space by processes such as welding, coating application or cleaning?</li> </ul>	<ul style="list-style-type: none"> <li>• Are there any energized electrical lines?</li> <li>• Does the space contain any mechanical equipment?</li> <li>• Will any hazards be posed by portable equipment taken into the space?</li> <li>• Are interior surfaces potentially slippery?</li> <li>• Are there any projections or objects that could cause cuts, bumps or abrasions?</li> <li>• How large is the entry portal and where is it located?</li> <li>• Do adjacent processes or operations pose any potential hazards?</li> <li>• Are any fluid lines attached?</li> <li>• Does the configuration pose any unusual problems?</li> <li>• Are there any external hazards such as pedestrian and vehicular traffic?</li> <li>• Will excessive noise be present to impair communications?</li> <li>• Is there a possibility for being submerged in fluid or other materials?</li> </ul>	<ul style="list-style-type: none"> <li>• Is there any potential for vermin, poisonous animals or pests like wasps, bees, spiders and snakes to be present?</li> <li>• Is there a potential for exposure to biological hazards, such as, bloodborne pathogens human waste products (ex., fecal matter) that would require implementation of a disinfection or decontamination procedure prior to entry?</li> </ul>

## A. ATMOSPHERIC HAZARDS

The only way to assess potential atmospheric hazards is to collect air samples prior to and during entry at the entrance to the confined space and in the work area with a calibrated air sampling instrument. The instrument must be carried throughout the space since levels can stratify by depth or by work location due to air flow patterns unique to the confined space and work tasks taking place. The instrument must be capable of detecting the type of atmospheric hazard that is potentially present. An oxygen meter cannot indicate whether or not a flammable atmosphere exists. Likewise, a carbon monoxide meter cannot assess levels of hydrogen sulfide. Atmospheric hazards commonly associated with typical confined spaces and tasks found at posts are listed in Table 2 below.

**TABLE 2: POTENTIAL ATMOSPHERIC HAZARDS ASSOCIATED WITH COMMON CONFINED SPACES AND TASKS**

<b>Confined Space Type or Task</b>	<b>Potential Atmospheric Hazards*</b>
Water Storage Vessels and Trucks	Oxygen deficiency
Bollard, Delta barrier or other security related equipment pits	Oxygen deficiency
Crawl spaces	Oxygen deficiency
Electrical and communication vaults, manholes and pits	Oxygen deficiency
Elevator pits	Oxygen deficiency
Cooling Towers	Oxygen deficiency
Storm sewers without flow from other facilities	Oxygen deficiency
Sewer Systems	Oxygen deficiency Methane (flammable atmosphere) Hydrogen Sulfide (toxic atmosphere)
Fuel Tanks	Oxygen deficiency Gasoline/fuel vapors (flammable atmosphere) Benzene and other organic compounds (toxic atmospheres)
Applying Coatings	Toxic atmospheres (depending on coating being applied) Flammable atmospheres (depending on coating being applied)
Welding	Metal fume (depending on metal being welded) Welding gases – flammable atmosphere <ul style="list-style-type: none"> <li>• Acetylene</li> <li>• Oxygen Enrichment</li> <li>• Hydrogen</li> </ul> Welding gases – oxygen deficient atmosphere <ul style="list-style-type: none"> <li>• Nitrogen</li> <li>• Argon</li> </ul>
*These are typical atmospheric hazards associated with these types of confined spaces/activities. Other atmospheric hazards may be present that need to be identified prior to entry due to nearby operations, leaks from natural gas lines, underground systems, etc.	

An air sampling strategy must not only identify and predict the material that needs to be sampled but involve the evaluation of the entire confined space and specific work areas. Skilled professionals knowledgeable in the operation and maintenance of air sampling instrumentation and the interpretation of results must be available to perform air sampling if it is required for a confined space entry. ***If air sampling is necessary to assess the level of atmospheric hazard then the confined space is classified as a PERMISHEM per Section 6.4.2 of this document. Posts must submit a safety plan to OBO/OM/SHEM in such cases prior to the entry to ensure that air sampling will be done properly.***

### **A.1 Oxygen Deficiency (< 19.5%)**

**Definition:** Ambient air contains 21% oxygen. An oxygen deficient atmosphere occurs when the measured oxygen level is below 19.5%. As the oxygen level falls below 19.5% the body will begin to display various physiological and behavioral changes until the level is low enough to result in death from asphyxiation. In confined spaces where oxygen deficiency is the only possible atmospheric hazard, positive pressure ventilation with clean air over a sufficient period of time can effectively change an oxygen deficient atmosphere into a safe environment (see Appendix 1).

Oxygen deficiency results from chemical or biological reactions which adsorb, displace, or consume oxygen, such as:

- Combustion of flammable substances, as in welding, cutting, brazing or the use of fossil fuel fired space heaters used for comfort or process heating;
- Bacterial action, as in the fermentation of organic debris such as soil, grass and leaves that may accumulate at the bottom of a manhole or water cistern. This process also has the potential to emit toxic gases such as hydrogen sulfide or oxygen displacing and flammable gases such as methane;
- Slow chemical reactions, as in the formation of rust on exposed surfaces of metal tanks, rebar access ladders in manholes and cast iron valves;
- Adsorption of oxygen onto porous surfaces such as activated carbon which may be found in HVAC systems and waste water treatment facilities;
- Oxygen displacement by biologically inert gases such as argon, carbon dioxide, helium, methane and nitrogen when present in an overabundant amount as to diminish the amount of oxygen in the space. Purging vessels with inert gases, the introduction of inert gases during welding or other work tasks, or leaking nearby gas lines can cause oxygen deficient atmospheres from displacement.

**Health Effects:** Oxygen deprivation is a form of asphyxiation. When atmospheric oxygen level drops below 17%, the first sign of hypoxia (low blood oxygen level) is a deterioration of night vision, which is usually not noticeable to the potential victim. Other physiological effects include breathing disturbances and accelerated heartbeat. Between 14% and 16% additional physiological effects are poor muscular coordination, rapid fatigue, and

intermittent respiration. Between 6% and 10%, the effects are nausea, vomiting, inability to perform and unconsciousness. At concentrations less than 6% there is a rapid loss of consciousness and death in minutes. It is important to realize that oxygen levels can drop dramatically in a confined space as an individual progresses through the confined space. The health effects occur instantaneously and without delay. The affected person is not able to understand what is happening and will not be able to assist in his own rescue.

Behavioral changes may also take place when a person is exposed to an oxygen deficient atmosphere. The following statements and out of character behaviors have been exhibited or observed during oxygen deficient mishaps in confined spaces:

- Giddiness.
- Came up for air, gasping.
- Had a funny look on his face.
- He became incoherent.
- Felt like someone put a piece of cellophane over my face.
- Raucousness.
- Climbing wrong.
- Staggering, gagging and vomiting
- Within a few minutes, he became euphoric – singing, praying and stating, “this stuff is really bad.”

Table 3 describes mishaps in confined spaces where oxygen deficiency caused fatalities or serious injuries in the United States. These mishaps highlight the interplay between work task, confined space and lack of hazard control prior to entry. They are presented here because they demonstrate mishaps in confined spaces that are typical of those encountered at post. During a hazard assessment of a similar space these mishaps can be instrumental in illuminating potential hazards that require mitigation prior to entry.

**TABLE 3: OXYGEN DEFICIENT MISHAPS IN CONFINED SPACES IN THE UNITED STATES**

**NOTE: These confined spaces are typical of those found at posts.**

<b>Confined Space/ # of victims</b>	<b>Work Task</b>	<b>Confined Space Features and other Fatal Facts</b>	<b>Hazards</b>	<b>Hazard Control and Abatement</b>
<b><i>Drainage Pit</i></b> <ul style="list-style-type: none"> <li>◆ 3 sewer service workers entered</li> <li>◆ 1 day laborer died attempting rescue without respiratory protection</li> </ul>	Clean out water run-off drainage pit  Unclog and clean out drain line to the street	<ul style="list-style-type: none"> <li>◆ 12' deep, 24" diameter</li> <li>◆ Access through manhole</li> <li>◆ Electrically powered routing machine for clean out</li> </ul>	Oxygen deficiency (<5%)	<ul style="list-style-type: none"> <li>◆ Dilution ventilation</li> </ul>
<b><i>Sewer Manhole</i></b> <ul style="list-style-type: none"> <li>◆ 1 plumbing contractor</li> </ul>	Lay out a new sewer line for new construction	<ul style="list-style-type: none"> <li>◆ Entry through manhole</li> <li>◆ 15' deep sewer</li> <li>◆ 2 employees attempted rescue, became dizzy</li> </ul>	Oxygen deficiency (6%) by displacement from methane gas (20%)	<ul style="list-style-type: none"> <li>◆ Air testing for flammable and toxic gases and oxygen level</li> <li>◆ Dilution ventilation</li> </ul>
<b><i>Sewer Manhole</i></b> <ul style="list-style-type: none"> <li>◆ 1 contractor died</li> <li>◆ 1 firefighter entered without SCBA, felt like suffocating, pulled out by others</li> </ul>	Connecting new sewer pipe to existing sewer system (had done many entries in other manholes in same system)	<ul style="list-style-type: none"> <li>◆ 18" sewer lines</li> <li>◆ 4' diameter concrete manhole</li> <li>◆ Ground water seepage present in sewer lines and manholes</li> <li>◆ To prevent water infiltration, a plug was being installed</li> <li>◆ Manhole had not been opened for 6 months after installation</li> </ul>	Oxygen deficiency (14 - 4% at 9 feet to 13 feet)	<ul style="list-style-type: none"> <li>◆ Dilution ventilation</li> </ul>
<b><i>Sewer Manhole</i></b> <ul style="list-style-type: none"> <li>◆ 1 dead</li> <li>◆ 1 overcome but revived</li> </ul>	Unclog sewer with sewer cleaning machine (tank truck with vacuum system and water jet)	<ul style="list-style-type: none"> <li>◆ 22" diameter manhole cover</li> <li>◆ 15' deep sewer manhole</li> <li>◆ Sludge level at 3' from bottom</li> <li>◆ Victim noticed a some wood causing the blockage</li> <li>◆ Entered sewer and was overcome</li> <li>◆ 2<sup>nd</sup> victim entered to rescue despite</li> </ul>	Oxygen deficiency (7%)	<ul style="list-style-type: none"> <li>◆ Supervision</li> <li>◆ Use equipment to negate need to enter space</li> <li>◆ Dilution ventilation</li> <li>◆ Air quality testing</li> </ul>

Confined Space/ # of victims	Work Task	Confined Space Features and other Fatal Facts	Hazards	Hazard Control and Abatement
		instruction from supervisor to wait for emergency squad		
<b><i>Swimming Pool Sump Pump Manhole</i></b> <ul style="list-style-type: none"> <li>◆ 1 Parks and Recreation Director died</li> <li>◆ 1 employee attempted rescue without respiratory protection became dizzy</li> <li>◆ 2 fire rescue squad entered without SCBA</li> </ul>	Instructing lifeguard how to switch sump pumps	<ul style="list-style-type: none"> <li>◆ Newly constructed community use pool</li> <li>◆ Pumps remove subsurface drainage water from pool area</li> <li>◆ Manhole opening, 24"</li> <li>◆ 18 feet deep, 4' diameter</li> <li>◆ Switch sump pumps – descend 9' into manhole</li> <li>◆ Water in manhole 7' deep</li> <li>◆ Last opened 2 months earlier</li> </ul>	Oxygen deficiency (<10%)  Electrical power	<ul style="list-style-type: none"> <li>◆ Dilution ventilation</li> <li>◆ LO/TO electrical power</li> </ul>
<b><i>Water meter vault</i></b> <ul style="list-style-type: none"> <li>◆ 1 water company employee</li> </ul>	Meter reading	<ul style="list-style-type: none"> <li>◆ Two piece precast concrete structure</li> <li>◆ 15' x 9' x 8'</li> <li>◆ Faint odor of natural gas from slowly leaking nearby gas line (not recognized)</li> </ul>	Oxygen deficiency by displacement from methane	<ul style="list-style-type: none"> <li>◆ If smell gas, exit and call gas company</li> <li>◆ Air testing because of gas odor</li> <li>◆ Dilution ventilation</li> </ul>
<b><i>Water valve manhole</i></b> <ul style="list-style-type: none"> <li>◆ 3 employees died (2 attempted rescue without SCBA)</li> </ul>	Constructing an office complex with a pond  Employee told to close the gate valve in preparation for filling pond	<ul style="list-style-type: none"> <li>◆ Gate valve in 12" drain pipe controlled water level in pond</li> <li>◆ Gate valve located on concrete pad at bottom of manhole near edge of pond</li> <li>◆ Manhole measured 24' deep, interior diameter 4' and 24" opening</li> </ul>	Oxygen deficiency (< 18.4%)	<ul style="list-style-type: none"> <li>◆ Dilution ventilation</li> </ul>
<b><i>Water valve pit</i></b> <ul style="list-style-type: none"> <li>◆ 2 water company employees</li> </ul>	Response to water main break	<ul style="list-style-type: none"> <li>◆ 10 ft. deep valve pit</li> <li>◆ 22" manhole opening</li> <li>◆ 24 inch water main</li> <li>◆ Steel ladder secured to concrete wall</li> </ul>	Oxygen deficiency	<ul style="list-style-type: none"> <li>◆ Dilution ventilation</li> </ul>
<b><i>Water valve vault</i></b>	Inspect backflow	◆ City water line in a vault	Oxygen	◆ Dilution ventilation

Confined Space/ # of victims	Work Task	Confined Space Features and other Fatal Facts	Hazards	Hazard Control and Abatement
<ul style="list-style-type: none"> <li>◆ 1 contractor died</li> <li>◆ 2 employees passed out attempting rescue without respiratory protection; 1 died</li> <li>◆ 2 policemen, 1 paramedic became dizzy attempting rescue without respiratory protection</li> </ul>	valve	<ul style="list-style-type: none"> <li>◆ 8' deep</li> <li>◆ 12' long x 6' wide</li> <li>◆ 30": manhole access</li> <li>◆ Facility fire protection system connected to water supply</li> <li>◆ Annual inspection of backflow valve</li> <li>◆ 14" of water in the vault</li> </ul>	deficiency (7%)	
<b>Water valve vault</b> <ul style="list-style-type: none"> <li>◆ 1 water system operator</li> <li>◆ 3 hours after rescue policeman entered manhole 3 times without SCBA or ventilation and came up gasping each time for air</li> </ul>	Open a water line valve	<ul style="list-style-type: none"> <li>◆ Entry to vault through 24" ground level manhole</li> <li>◆ Underground vault "always had normal air"</li> <li>◆ Vault – 7' deep, 6' diameter</li> <li>◆ Valves approximately 6" from vault bottom</li> <li>◆ Rescue conducted after ventilating vault</li> </ul>	Oxygen deficiency (2%)	<ul style="list-style-type: none"> <li>◆ 8' long valve key or portable extension rod attached to tool would have eliminated need to enter vault</li> <li>◆ Dilution ventilation</li> </ul>
<b>Water well</b> <ul style="list-style-type: none"> <li>◆ 1 well contractor died</li> <li>◆ 1 fireman entered without SCBA, became incoherent</li> </ul>	No water in the house	<ul style="list-style-type: none"> <li>◆ Contractor going into the well, slipped, fell to bottom</li> <li>◆ 50' deep x 2' diameter well</li> <li>◆ Recovery of victim took 4 hours requiring the local manufacture of a retrieval hook</li> </ul>	Oxygen deficiency  Wet ladder rungs	<ul style="list-style-type: none"> <li>◆ Dilution ventilation</li> <li>◆ Harness and lifeline</li> </ul>

## **A.2 Oxygen Enrichment (> 23.5%)**

An oxygen enriched atmosphere contains greater than 23.5% oxygen. While oxygen is not flammable, it enhances the burning characteristics of many materials, making them both easier to ignite and faster burning once ignited. Oxygen enriched atmospheres also widen the flammability range of flammable gases and vapors. Oxygen enriched atmospheres generally result from the improper use of welding oxygen in confined spaces.

Physiological effects of breathing excess oxygen are not as serious as oxygen deficient atmospheres. Feelings of euphoria or lightheadedness are the typical health reactions (see Figure 4). The main concern with oxygen enrichment is increased risk of fire.

## **A.3 Flammable Atmospheres (> 10% Lower Explosive/Flammable Limit (LEL or LFL) for the flammable material of concern)**

A flammable atmosphere results from the vaporization or volatilization of flammable liquids, chemical reaction by-products, enriched oxygen atmospheres or large concentrations of combustible dusts. Confined spaces are susceptible to flammable atmospheres from:

- residual flammable liquid or gases left in the space (ex., gasoline; fuel oils; paint thinners);
- the deliberate introduction of flammable materials associated with performing a specific work task in the confined space (welding gases – hydrogen, acetylene; solvent-based coatings and thinners);
- the decay of organic matter that generates methane and/or hydrogen sulfide; or,
- leaking pipes carrying flammable materials near the space, such as, a natural gas or gasoline pipeline or tank that leaked into the ground causing gases or vapors to find their way into a nearby manhole.

Possible conditions conducive to ignition of a flammable material in confined spaces result from the use of open flames, arcs from electrical equipment, hot surfaces, static electricity and frictional sparks. Table 4 lists sources of these ignition sources that have been implicated in mishaps in the United States.



**TABLE 4: IGNITION SOURCES**

<b>IGNITION SOURCE</b>	<b>ACTIVITIES</b>
Open Flames	Welding torches Space heaters Smoking materials
Electrical Arcing	Non-explosion proof electrical equipment used for: <ul style="list-style-type: none"> <li>• Ventilation</li> <li>• Lighting</li> <li>• Extension cords</li> <li>• Work tools</li> </ul>
Frictional Sparks	Steel tools hitting or scraping other steel objects or concrete
Hot Surfaces	Steam lines Resistance heaters Exposed light bulbs
Static Electricity (prevented by grounding and bonding components that are likely to accumulate charge)	Fluid flow through pipes Contact and separation between belts and pulleys Pneumatic transfer of finely divided materials

Table 5 describes a fatal mishap that occurred in the United States from the ignition of a solvent-based preservative coating that was being applied to the interior of a water tank. Controlling flammable vapor release and vapor accumulation in confined spaces is extremely difficult and requires sophisticated equipment. To avoid this hazard water based materials must be substituted for solvent based products. When using water based materials in a confined space it is necessary to evaluate whether their use will create toxic atmospheres even though the flammability concern is eliminated.

**TABLE 5: FLAMMABLE ATMOSPHERE CONFINED SPACE MISHAP  
(United States)**

<b>Confined Space/ victims</b>	<b>Confined Space Features and other Fatal Facts</b>	<b>Hazards</b>	<b>Hazard Control and Abatement</b>
<b>Water tank</b> ♦ 3 dead	<ul style="list-style-type: none"> <li>♦ Curing of the flammable coating required the temperature in the tank to be higher than ambient</li> <li>♦ Warm air needed to be introduced into space</li> <li>♦ Typically air was blown through ductwork after being heated by an electric heater</li> <li>♦ Supervisor lowered the electric heater into the tank instead</li> <li>♦ Upon switching on the heater the vapors ignited in the tank</li> </ul>	Flammable coating being used  Procedural change  Non-explosion proof electrical equipment	Air testing for flammable and toxic gas and oxygen deficiency  Dilution and exhaust ventilation  Do not change protocols  Explosion proof equipment

## A.4 Toxic Atmospheres

The variety of chemicals that can be encountered in confined spaces is practically endless. Those most likely to be present in a specific space can be assessed by asking five fundamental questions:

1. *What did the space contain previously?* Emptying the confined space of hazardous contents reduces the exposure potential to entrants however it is next to impossible to remove all contents without leaving residual amounts of the contents or sludges on interior surfaces. In confined spaces, residuals can off-gas for long periods of time and accumulate in the space resulting in hazardous atmospheres. Sludge can also off-gas when disturbed.

Water storage vessels at posts are unlikely to pose a hazardous chemical risk from the contents. Confined spaces at posts where this hazard may be present are sewers, manholes, fuel tanks, pits or trenches. Sewers that are connected to non-post facilities may be carrying hazardous chemical discharges from those facilities. Manholes and sewers that are not under post control may also be subject to pest control application chemicals. While the contents input by post may be known it is also necessary to evaluate what can be introduced by others through interconnections to the system.

2. *What reactions could have occurred in the space?* Confined spaces provide environments for various biological and chemical reactions. Fermentation and decomposition of organic matter are biological processes that typically occur in sanitary sewers, wastewater conduits, manholes, sumps or pits where organic matter can accumulate. These processes release many by-products that can create hazardous atmospheres in a confined space. The most common releases are: hydrogen sulfide, a toxic gas that interferes with the body's ability to transfer oxygen on a cellular level; carbon dioxide which displaces ambient oxygen and can lead to an oxygen deficient atmosphere; and, methane which is a non-odorous, flammable gas that can produce a flammable atmosphere and displace oxygen. Tools and equipment that are taken into a confined space can also react with residue and sludge to form toxic air contaminants.
3. *What tasks and operations will be conducted in the space?* Tasks such as painting, acid etching, drain cleaning, applying waterproof coatings, welding, brazing, cutting and abrasive blasting may create toxic atmospheres. Disturbing decaying organic matter may also generate toxic and flammable atmospheres.
4. *What materials and tools will be brought into the confined space, which require the use of chemicals and/or gases?* A hazard evaluation for toxic atmospheres must include an assessment of Material Safety Data Sheets (MSDS) for chemicals and/or gases that will be brought into the space. MSDS do not consider the conditions or locations of use of the product. A product that may be considered non-toxic when used in a well-ventilated maintenance shop can prove extremely toxic when used in a confined space.

5. *What chemicals or gases may have inadvertently entered the space?* A thorough physical survey of the area surrounding the confined space must be performed to identify any chemicals or gases that may have leaked into the space from nearby facilities, such as, storage tanks and pipelines. In addition, a confined space that is located near a busy street may be susceptible to the infiltration of vehicle exhaust containing high levels of carbon monoxide.

Toxic atmospheres must be controlled to the lowest 8-hour or other more restrictive exposure standard issued by the following organizations/agencies:

American Conference of Governmental Industrial Hygienists (ACGIH)

- Threshold Limit Values (TLVs)

National Institute for Occupational Safety and Health (NIOSH)

- Recommended Exposure Limits (RELs)

Occupational safety and Health Administration (OSHA)

- Permissible Exposure Limits (PELs)

## **B. PHYSICAL HAZARDS**

Physical hazard assessment is a critical element in a complete hazard assessment of a confined space. Physical hazards are posed by moving mechanical equipment, energized electrical circuits, flowing fluids, temperature conditions, engulfment, communication difficulties, noise, small openings into the space and pedestrian and vehicular traffic. Measures to reduce physical hazards include lock out/tag out, blanking, baffling, placing barriers around the exterior of the space, use of proper equipment and providing entrants with proper protective gear such as safety harnesses, lifelines and clothing suitable for the environment. Table 6 lists potential hazards associated with typical confined spaces and work tasks requiring mitigation prior to entry.

**TABLE 6: SUMMARY OF PHYSICAL HAZARDS PRESENT IN CONFINED SPACES AND PREVENTIVE MEASURES**

<b>PHYSICAL HAZARD</b>	<b>HAZARD MITIGATION MEASURES</b>
<i>Communication Impediments</i>	<ul style="list-style-type: none"> <li>• Use radios</li> <li>• Provide illumination</li> </ul>
<i>Energized equipment and tools</i> <ul style="list-style-type: none"> <li>• Pumps</li> <li>• Circulators</li> <li>• Fans</li> </ul>	<ul style="list-style-type: none"> <li>• Deenergize and lock out/tag out all electrical circuits</li> <li>• Use pneumatic or battery operated equipment</li> <li>• Use double insulated tools</li> <li>• Use properly grounded equipment or ground fault circuit interrupters</li> </ul>
<i>Engulfment (from the collapse of finely divided solid materials)</i> <ul style="list-style-type: none"> <li>• Storage bins</li> <li>• Hoppers</li> <li>• Sawdust collectors</li> </ul>	<ul style="list-style-type: none"> <li>• Remove material prior to entry</li> </ul>
<i>Entry and Exit Limitations</i> <ul style="list-style-type: none"> <li>• Portal sizes may be as small as 18" in diameter</li> </ul>	<ul style="list-style-type: none"> <li>• Lower entrant via a tripods</li> <li>• Wear Class 3 Full Body Harnesses</li> <li>• Use lifelines</li> </ul>
<i>Falling Objects</i> <ul style="list-style-type: none"> <li>• Tools</li> <li>• Parts</li> <li>• Work materials</li> </ul>	<ul style="list-style-type: none"> <li>• Barricade areas around vertical portals</li> <li>• Secure tools and parts with rope before lowering into space or use a bucket</li> </ul>
<i>Material release</i> <ul style="list-style-type: none"> <li>• Water flow</li> <li>• Sewage flow</li> <li>• Fuel</li> </ul>	<ul style="list-style-type: none"> <li>• Physically disconnect all lines</li> <li>• Blank off lines</li> <li>• Double block and bleed lines</li> </ul>
<i>Mechanical Energy</i> <ul style="list-style-type: none"> <li>• Conveying systems</li> <li>• Mixers</li> <li>• Dampers</li> </ul>	<ul style="list-style-type: none"> <li>• Deenergize and lock out/tag out all mechanical equipment</li> </ul>
<i>Noise</i>	<ul style="list-style-type: none"> <li>• Turn off noise generating equipment</li> <li>• Provide hearing protection</li> <li>• Use radios for communication</li> </ul>
<i>Pedestrians and Vehicle Traffic</i>	<ul style="list-style-type: none"> <li>• Restrict access by surrounding spaces with protective railings, fences, high visibility tape or other forms of barricading</li> <li>• Post signage in English and local language to direct traffic away from work area</li> </ul>
<i>Structure Related</i> <ul style="list-style-type: none"> <li>• Internal configuration (baffles, trays, bends, overhead members)</li> <li>• Scaffolding</li> <li>• Ladders</li> </ul>	<ul style="list-style-type: none"> <li>• Review as-built drawings prior to entry</li> <li>• Familiarize entrants with space</li> <li>• Wear hard-hats</li> </ul>
<i>Thermal Conditions</i> <ul style="list-style-type: none"> <li>• Heat (ambient, radiant)</li> <li>• Cold</li> </ul>	<ul style="list-style-type: none"> <li>• Provide insulated clothing</li> </ul>
<i>Wet or slick surfaces</i>	<ul style="list-style-type: none"> <li>• Pump out all liquids prior to entry</li> <li>• Allow space to dry out</li> </ul>

## APPENDIX 5

### SAMPLE CONFINED SPACE AND WORK TASK INVENTORY FORMAT

Confined Space/ Date entered in inventory	Address	Frequency of Entry (times/yr)	Reason for Entry (describe)	Work tasks to be Performed in Confined Space	Demarcation Method (signage, list, work order system, etc.)	PACS	PERMISHEM	PERMISHEM Safety Plan Approved by OBO/OM/SHE M available? (Yes / No / Not applicable)
Water tank 5/98	XYZ Street	5 times /yr	Clean out debris	Manual removal of debris	Sign posted on hatch	X		Not applicable
Water tank 2/2002	ABC Street	As needed 1 time this year	Weld patch because tank was leaking	Welding	Work order		X	Yes

## APPENDIX 6

### POSTS RESPONDING TO 02 ALDAC 132556 AS OF JANUARY 2003

*Future Updates will be posted on the SHEM Intranet website at*

[HTTP://OBO.STATE.GOV/OPSSAF-SHEM/](http://OBO.STATE.GOV/OPSSAF-SHEM/)

Posts Entering Confined Spaces or Performing Tasks Requiring Entry		Posts without Confined Spaces or Tasks Requiring Entry
Abidjan	Lahore	Auckland
Abu Dhabi	Lilongwe	Banjul
Addis Ababa	Ljubiana	Beirut
Almaty	London	Bern
Amman	Managua	Bratislava
Antananarivo	Mexico City	Canberra
Asuncion	Milan	Curacao
Bangui	Minsk	Dakar
Belgrade	Moscow	Djibouti
Berlin	Mumbai	Hamilton
Bogota	Munich	Jerusalem
Brussels	New Delhi	Kiev
Budapest	Nicosia	Kinshasa
Cairo	Ottawa	Krakow
Caracas	Praia	Libreville
Chengdu	Pretoria	Lome
Chisinau	Rangoon	Maseru
Dhaka	Riga	Mbabane
Gaborone	Rio de Janeiro	Melbourne
Georgetown	Rome	Merida
Guatemala	San Salvador	Milan
Guayaquil	Shenyang	Montreal
Harare	Skopje	Oslo
Havana	Stockholm	Perth
Hong Kong	Tashkent	Port Louis
Istanbul	Taipei	Prague
Jeddah	Tbilisi	Rabat
Kathmandu	Tegucigalpa	Sofia
Kolonia	Tokyo	Thessaloniki
Kuala Lumpur		Tunis (not NEC)
Kuwait		Vienna
		Vladivostok
		Warsaw
		Wellington
		Yaounde
		Zagreb (not NEC)

## **APPENDIX 7**

### **DISINFECTING WATER STORAGE VESSELS THROUGH CHEMICAL TREATMENT, RINSING AND FLUSHING**

Disinfecting water storage vessels can be successfully accomplished from outside the vessel thereby eliminating entry into a confined space. If the vessel needs to be cleaned of sludge or other buildup then entry may be necessary. If this is not necessary and only disinfection is required then the following procedures should be followed depending on the size and location of the water storage vessel.

#### **DRINKING WATER STORAGE TANKS**

In order to accomplish disinfection post will need to procure calcium hypochlorite and sodium metabisulfite. Calcium hypochlorite should be technical grade (65 percent (minimum) available chlorine) in granular form. Sodium metabisulfite (technical grade containing 98 percent (minimum) sodium metabisulfite) is available as fine granular crystals. These products are available from the Defense Supply Center Richmond under the following NSN numbers:

NSN 6810-01-358-4336, 16oz bag – calcium hypochlorite, approx. \$4.20.

NSN 6810-01-065-2410, 100 pound drum – calcium hypochlorite, approx. \$183.96.

NSN 6810-00-281-4255, 25 pounds drum – sodium metabisulfite, approx. \$116.69.

There are hazards associated with these products. MSDS should be obtained and reviewed for data and guidance on toxic properties, safe handling, use, storage and disposal.

#### ***DISINFECTION PROCEDURE***

- Drain the tank of water
- Allow the interior of the tank to dry
- Add 0.13 pounds (59 grams) of dry calcium hypochlorite (granules, pellets, or tablets broken or crushed to sizes not larger than 6 mm or 1/4 inch) per 1,000 gallons (3785 liters) of volume in the tank prior to filling the tank with water to produce 10 mg/l (ppm) chlorine concentration. The material should be located so that inflowing water will ensure a current of water circulating through the calcium hypochlorite to obtain good mixing. It should only be placed on dry surfaces unless adequate precautions are taken to avoid exposure to toxic chlorine gas liberated upon contact with water. Of course there should not be anyone inside the tank during this operation.
- Fill the tank with fresh water and allow to stand for 24 hours.
- If local environmental regulations allow discharge of chlorinated water:
  - Drain the chlorinated water from tank to a storm sewer or sanitary sewer.

- Contact with grass or other vegetation may cause an adverse effect due to the presence of chlorine.
- Fill with fresh water
- Put back in operation.
- If local environmental regulations do not allow discharge of chlorinated water:
  - Add 0.11 pounds (50 grams) of sodium metabisulfite per 1000 gallons to dechlorinate the water.
  - Let stand for 2 hours.
  - Drain the tank
  - Fill with fresh water
  - Put back in operation.

### **SMALL ABOVE GROUND WATER STORAGE TANKS**

Some posts and residences use small tanks (e.g. 50-500 gal) (189-1,893 liters) including roof-top tanks for water or drinking water storage. To disinfect small tanks:

- Drain the tank
- Fill with fresh water
- Add 2½ tablespoons of clorox/household bleach (5.25% available chlorine) per 50 gallons (189 liters) of water (13 ounces or 377 ml for 500 gallons) to obtain a chlorine concentration of 10mg/l (ppm)..
- Let stand for 24 hours.
- If local environmental regulations allow discharge of chlorinated water:
  - Drain the chlorinated water from tank to a storm sewer or sanitary sewer.
    - Contact with grass or other vegetation may cause an adverse effect due to the presence of chlorine.
  - Fill with fresh water
  - Put back in operation.
- If local environmental regulations do not allow discharge of chlorinated water:
  - Add 0.11 pounds (50 grams) of sodium metabisulfite per 1000 gallons to dechlorinate the water.
  - Let stand for 2 hours.
  - Drain the tank
  - Fill with fresh water
  - Put back in operation.



## APPENDIX 8: WATER STORAGE VESSEL REENGINEERING



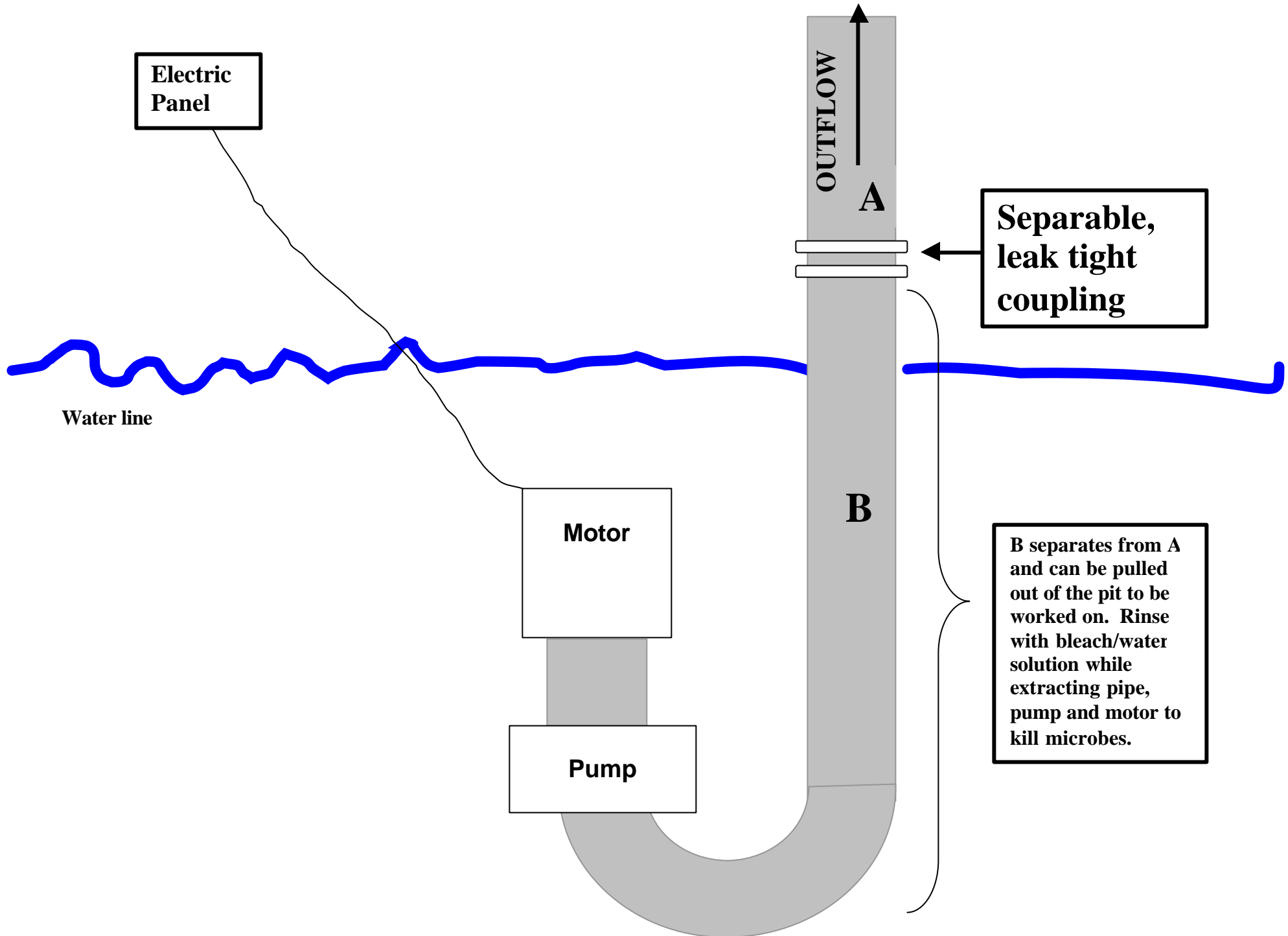
This was a confined space problem. A small access hole made it difficult to look into, much less climb through to work inside. To eliminate the confined space, the top edge of the tank was cut and a piece of angle iron was welded around the top to give it an edge. It is not too heavy and can be easily moved for inspection or for cleaning and repair yet heavy enough to keep the critters out.

Thanks to Ray Meininger, Yaounde, for sharing his confined space solution.

January 2001



## APPENDIX 9: SUMP PUMP OUTFLOW DISCONNECT



## **APPENDIX 10: REFERENCES**

Rekus, John. Confined Spaces Handbook. National Safety Council, Lewis Publishers, 1994.

WRc. Work in Manholes and Other Confined Spaces, Guidance to Sewer System Operators. April 2000.