

# COMPETITIVE FIXED-PRICE BID-TO-RESULT SOLICITATION FOR SITE CLOSURE ACTIVITIES

Pen Fern Service Station  
Route 309, Shavertown Village, Kingston Township, Luzerne County,  
Pennsylvania

PADEP FACILITY ID # 40-14479; USTIF CLAIM # 2001-0065(M)

December 21, 2010

ICF International (ICF), on behalf of the Pennsylvania Underground Storage Tank Indemnification Fund (USTIF) and the claimant for the above-referenced claim, is soliciting bidders for a fixed-price bid-to-result contract project. Specifically, this Request for Bid (RFB) is seeking qualified firms to prepare and submit a fixed-price proposal to complete the tasks necessary to obtain Relief from Liability (RfL) from the Pennsylvania Department of Environmental Protection (PaDEP) for the above-mentioned facility (the site).

Corrective action under Chapter 245 is being conducted at the site in response to confirmed petroleum releases in 2001 and 2005. A Site Characterization Report (SCR; dated February 12, 2003; **Attachment 1**) was submitted to the Pennsylvania Department of Environmental Protection (PaDEP) (it is assumed for the purpose of this bid solicitation that the SCR was deemed approved as submitted, since there does not appear to be a formal written approval provided by the PaDEP following the SCR submittal). A Remedial Action Plan (RAP) (original dated June 17, 2003; revised dated August 8, 2003; **Attachment 2**) was approved by the PaDEP on August 19, 2003. The general scope of work (SOW) for this RFB Solicitation is to prepare a revised RAP, perform a pilot test, implement the remediation, prepare a Remedial Action Completion Report (RACR), and obtain Relief from Liability (RfL) for the site using the Residential, Used Aquifer (RUA) Medium-Specific Concentrations (MSCS) (i.e., the Statewide Health Standard (SHS)) for soil and groundwater, and to address soil vapor.

The Solicitor (Pen Fern Oil Company) has an open claim (claim number referenced above) with the USTIF and the corrective action work will be completed under this claim. Reimbursement of Solicitor-approved, reasonable and necessary costs up to claim limits for the corrective action work described in this RFB will be provided by USTIF.

Should your company elect to respond to this RFB Solicitation, one (1) copy of the signed bid package must be provided directly to the ICF International (ICF) Claims Handler at the address indicated below. In addition to the one hard copy submittal, the bid package must also be submitted in electronic format (Adobe PDF format) on a CD to be included with the hard copy bid package to the ICF Claims Handler. **Please note that ICF and the USTIF will no longer be accepting the electronic version via email.**

**The signed response to this RFB (both hard copy and electronic copy on CD) must be provided as directed above no later than close of business (5 p.m. EST) on March 8, 2011. The outside of the bid package must be clearly labeled with "BID – CLAIM # 2001-0065(M)".**

On behalf of ICF and the USTIF, the Technical Contact will assist<sup>1</sup> the Solicitor in evaluating the competitive bids received; however, it is the Solicitor who will ultimately select the successful bidder with whom it will negotiate a mutually agreeable remediation contract. Bid evaluation will consider, among other factors, estimated total cost, unit costs, schedule, discussion of technical and regulatory approach, qualifications, and contract terms and conditions. The technical and regulatory approaches will be the most heavily weighted evaluation criteria. **Although cost will not be the most heavily weighted evaluation criterion, it will be an important consideration.** The Solicitor (via the Technical Contact) will inform the successful bidder by email. The unsuccessful bidders will be informed by email and by posting the name of the successful bidder on the USTIF website, following the full execution of the Remediation Agreement by the Solicitor and the successful bidder.

#### A. SOLICITOR, ICF CLAIMS HANDLER, AND TECHNICAL CONTACT INFORMATION

<u>Solicitor</u>	<u>ICF Claims Handler</u>	<u>Technical Contact</u> <sup>2</sup>
Mr. Jay May, Sr. Pen Fern Oil Company 1 Sterling Avenue Dallas, PA 18612	Linda Crabb ICF International, Inc. 4000 Vine Street Middletown, PA 17057 Phone: (800) 888-7843 Fax: (717) 944-8389 lcrabb@icfi.com Cc: dcassel@icfi.com	David L. Reusswig, P.G. Groundwater Sciences Corporation 2601 Market Place Street Suite 310 Harrisburg, PA 17110 Phone: (717) 901-8183 Fax: (717) 657-1611 dreusswig@groundwatersciences.com

**NOTE:** Submitted bid responses are subject to Pennsylvania’s Right-to-Know Law. All questions regarding this RFB Solicitation and the subject site conditions must be directed via e-mail to the Technical Contact identified above with the understanding that all questions and answers will be provided to all bidders. The email subject line must be “Pen Fern 2001-0065(M) – RFB QUESTION”. Bidders must neither contact nor discuss this RFB Solicitation with the Solicitor, USTIF, PADEP, or ICF unless approved by the Technical Contact. Bidders may discuss this RFB Solicitation with subcontractors and vendors to the extent required for preparing the bid response. **All questions must be received by close of business on March 1, 2011.**

#### B. ATTACHMENTS TO THIS RFB SOLICITATION

The following attachments have been included with this RFB to assist in bid preparation:

- Attachment 1: Site Characterization Report (GEA/TEEM; dated February 12, 2003)
- Attachment 2: Remedial Action Plan (GEA/TEEM; June 17, 2003) and Revised Remedial Action Plan (GEA/TEEM; August 8, 2003)
- Attachment 3: Site Maps

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<sup>1</sup> This assistance is being provided on behalf of ICF International (ICF) who is the USTIF claims administrator.

<sup>2</sup> Subcontractor to ICF.

- Attachment 4: Additional Site Data
- Attachment 5: Four Most Recent Remedial Action Progress Reports (GEA/TEEM; March 30, 2010)
- Attachment 6: Discharge Monitoring Reports
- Attachment 7: Preliminary Second Release Investigation Report (GEA/TEEM; January 16, 2006)
- Attachment 8: Remedial Alternatives Evaluation and SVE Feasibility Test Letter Report (GSC; April 13, 2009)
- Attachment 9: PaDEP Correspondence
- Attachment 10: Sample Remediation Agreement
- Attachment 11: Standard Bid Format

### **C. SITE SETTING AND BACKGROUND INFORMATION**

The following information summarizes, and is derived from, relevant information provided in previous environmental reports submitted to the PaDEP, including the reports attached to this RFB. If there is any conflict between the summary provided herein and the source documents, the bidder should defer to the source documents. The information associated with activities not conducted by GSC has not been independently verified by ICF or the Technical Contact.

#### **Site Name/Address**

Pen Fern Shell Service Station; 36 N. Memorial Highway (Route 309), Shavertown Village, Kingston Township, Luzerne County, PA.

#### **USTIF Eligibility**

Following the documented release from the unleaded gasoline AST/UST system in 2001, Pen Fern Oil Co., Inc. (Pen Fern) filed a claim with the USTIF and eligibility was granted under USTIF Claim No. 2003-0183(F). The Solicitor has selected the SHS as the remedial goal to be pursued to obtain RfL from the PaDEP, and the USTIF has agreed to 100% reimbursement of Solicitor-approved reasonable and necessary costs up to claim limits for the corrective action described in this RFB.

#### **Site Use Description**

The site is currently an active Shell-branded retail petroleum dispensing facility.

#### **USTs and ASTs on Site**

There are currently two registered 3,000-gallon unleaded gasoline underground storage tanks (USTs) at the site that were installed during UST upgrade activities in September of 2009. These USTs replaced the two registered 3,000-gallon USTs installed in August of 1988. One aboveground storage tank (AST) is located in the northern portion of the property. The AST is used for bulk storage of gasoline that is eventually transferred to the regular unleaded gasoline UST (see site plan included in **Attachment 3**).

## **Current and Historical Constituents of Concern**

The constituents of concern (COCs) at this site, for which a RfL will be necessary, are the substances on the Old and New PaDEP Shortlists for unleaded gasoline (i.e., benzene, toluene, ethylbenzene, total xylenes, cumene, methyl tert-butyl ether (MTBE), naphthalene, 1,2,4-trimethylbenzene, and 1,3,5-trimethylbenzene).

## **Site Description**

The location of the site is shown on the 7.5-minute USGS quadrangle map included in **Attachment 1**. The site is currently an active retail petroleum dispensing facility.

A map and aerial photograph of the site and the surrounding properties east of the site is provided in **Attachment 1**. The site and surrounding properties are supplied by public water and sewer. The site consists of a long, narrow, irregularly shaped rectangular plot of land measuring approximately 220 feet long by 50 feet wide. The subject property is located on the west side of Route 309. The majority of the site is covered with asphalt and concrete. There are two small buildings at the site: a kiosk located under the canopy where the gasoline is purchased and a small building (referred to as “Brick Kiosk” on the site map) located in the southern portion of the site that contains a bathroom and a storage area. There are currently two registered 3,000-gallon unleaded gasoline underground storage tanks (USTs) at the site that were installed in September of 2009. One aboveground storage tank (AST) is located in the northern portion of the property. The AST is used for bulk storage of gasoline that is eventually transferred to the regular unleaded gasoline UST. A former AST was located just north of the existing AST until a release occurred that prompted its removal. The site map in **Attachment 1** shows the location of the current 12,000-gallon AST and the location of the former AST.

The site is bounded to the west by residential properties (at a higher elevation), to the north by woodlands, to the east by Route 309 and then a commercial property formerly operated by Rave’s Garden Center and a recently constructed Kost Tire facility (followed by Toby Creek, which flows to the south), to the southeast by a lawyer’s office building (Melnick property) and several residential homes (i.e., Melnick property and Leftzi property), and to the south by an open lawn area owned by Kingston Township. Site topography is nearly level with a slight slope to the east towards Toby Creek.

## **Nature of Confirmed Releases and Subsequent Activities**

The following information is based on the documents provided in **Attachment 1**. This information has not been independently verified by ICF or the Technical Contact.

### AST Removal

In 2001, the former unleaded gasoline AST located in the northern portion of the site was removed following the April 2001 reportable release from that AST. (There was an interrelated AST/UST system.) Documentation was not available for this AST closure and so it is unknown whether there was any soil removal conducted as part of the AST removal activities, or how the release occurred.

### Site Characterization

Following the above-mentioned release of unleaded gasoline from the former AST system, TEEM Environmental Services, Inc. (TEEM) was contracted by Pen Fern to conduct site characterization activities at the site as required by the PaDEP. TEEM hired Geological and Environmental Associates, Inc. (GEA) as a subconsultant with a Professional Geologist on staff to assist in the investigation and report generation. GEA oversaw the installation of six soil borings to assess soil quality following the documented release (borings SB1 through SB6). Each soil boring was advanced to bedrock which was encountered within six feet of the ground surface. Strong petroleum odors were noted in several of the borings located in the area to the east and south of the retaining wall where the former AST was located. Following the collection of the soil samples, four of the six borings were converted into monitoring wells (MW-1S through MW-4S). Soil sample results indicated that soil from borings SB1, SB2, SB3 and SB5 contained concentrations greater than the RUA MSCs for benzene, methyl tert-butyl ether (MTBE) and/or naphthalene. Contaminated soils generally were encountered from 0-2 feet below grade (fbg) when samples at surface and at depth were collected. As a result, additional delineation was required, and in March of 2002, seven additional soil borings were installed to assess the soil relative to the unleaded gasoline release (SB6, SB7, MW5 through MW9). Soil borings designated MW5 through MW9 were subsequently converted into groundwater monitoring wells. During this drilling, there were seven soil samples collected and none of these samples were greater than the RUA MSCs and most were below laboratory detection limits for target unleaded gasoline constituents.

A total of 15 monitoring wells completed in soil (6 on-site and 9 off-site) and 15 monitoring wells completed in bedrock (7 on-site and 8 off-site) were installed as part of the site characterization activities. An SCR was submitted by TEEM to the PaDEP on February 12, 2003 and was reportedly approved, although no formal written approval of the SCR was provided by the PaDEP.

Based on data presented in the SCR and in subsequent quarterly groundwater monitoring reports, unleaded gasoline impacts have been identified in soil, and in both the soil and bedrock groundwater. Samples collected several years ago from the basement sump in the Farrell residence contained MTBE at concentrations greater than the RUA MSC, based on results of a sample collected by TEEM on May 2, 2002. Analytical results from 17 rounds of samples collected by TEEM from Toby Creek indicate that Toby Creek has not been impacted as a result of the release at the site.

Historical groundwater sampling data is included in **Attachment 4**. At the time of the 2001-2002 site characterization activities, groundwater analytical results indicated that unleaded gasoline constituents, primarily benzene and MTBE, were present at concentrations greater than the RUA MSCs in 17 of the 25 monitoring wells (i.e., MW-1S, MW-1D, MW-2S, MW-2D, MW-3S, MW-3D, MW-4S, MW-4D, MW-5S, MW-7S, MW-8S, MW-8D, MW-10S, MW-11S, MW-13D, MW-14S, and MW-14D) at the site. Dissolved-phase benzene and MTBE plume maps submitted by TEEM following the 2001-2002 site characterization activities are included in **Attachment 1**. Please note that each map incorporates both soil groundwater concentrations and bedrock groundwater concentrations.

During the quarterly groundwater monitoring event conducted on January 31, 2008, monitoring wells MW-1D, MW-2D, MW-3D, MW-4S, MW-8D, MW-15D, MW-16D, MW-17S and MW-18D contained dissolved-phase concentrations of benzene, MTBE, and/or

naphthalene greater than the RUA MSCs. Based on the quarterly groundwater samples collected by TEEM on January 31, 2008, GSC prepared dissolved-phase benzene and MTBE concentration contour maps for both the soil groundwater and the bedrock groundwater for the January 31, 2008 groundwater sampling event. These maps are included in **Attachment 3**.

### Remedial Action Plan

Based on the site characterization results, TEEM submitted a RAP to the PaDEP on June 17, 2003 (**Attachment 2**). The RAP specified groundwater recovery (i.e., “pump and treat”) and ORC application as the selected remedial approach to meet the RUA SHS for both soil and groundwater. In correspondence dated August 11, 2003, the PaDEP disapproved the RAP because 1) no baseline bioremediation parameter data was collected prior to the submittal of the RAP, and 2) proposed groundwater recovery in the area of ORC application in the immediate vicinity of the groundwater recovery wells, in proposed Grid Areas A, B, and C (source area near AST, UST and dispensers), would negate the effects of the ORC by removing the applied oxygen. TEEM submitted a Revised RAP (dated August 8, 2003; **Attachment 2**) to the PaDEP that included baseline bioremediation data. TEEM also specified in the revised RAP that ORC would not be injected into Grid Areas A, B, and C and the ORC injection plan was revised to include only the ORC injection barriers located along both sides of Route 309.

TEEM conducted one ORC injection event on July 6-9, 2004, approximately three months after the activation of the groundwater recovery system. According to information provided by TEEM in correspondence to ICF, during the July 2004 ORC injection event, injections were conducted along the barriers on both sides of Route 309. The on-site barrier covered a total north-south distance of approximately 202 feet, starting from well MW-1S, and borings were spaced a minimum of ten feet apart, one to five feet from the roadway edge. The off-site barrier covered a total north-south distance of 412 feet, starting between MW-10S and MW-5S, and borings were spaced a minimum of ten feet apart, ten to thirty feet from the roadway edge. According to TEEM, a total of approximately 6,000 pounds of ORC was injected into the on-site barrier (A) and the off-site barrier (B).

According to TEEM, the groundwater recovery remedial system was activated on March 31, 2004. The system was shut down for a short period (between March 31, 2005 and April 6, 2005) due to freezing of the condensate in the air stripper and carbon drums. Additionally, on December 28, 2007, the system was found not operating upon arrival to perform routine system maintenance. The system was not operational due to a failure of the five-horsepower electric motor that powers the shallow tray air stripper’s blower system. The blower unit was replaced and the system was reactivated.

According to TEEM, the remedial system consists of two (2) four-inch diameter groundwater recovery wells (RW1 and RW2 (since destroyed); **Attachment 3**) with a two-horsepower Grundfos pump in each well. Each recovery well is approximately twenty feet deep and screened up to approximately three fbg and is screened across both the soil and the bedrock groundwater bearing zones. Treatment of the recovered groundwater is performed with both a shallow tray air stripper (five-horsepower blower) and granular activated carbon (GAC). Influent and effluent sampling ports are installed with the piping system to monitor the effectiveness of the air stripping treatment system. Effluent vapors from the air stripper are then passed through a pair of 180-pound, vapor-phase GAC canisters, installed in series, to treat effluent vapors. Subsequent to air stripping, the recovered groundwater then

passes through two liquid-phase GAC canisters, installed in series, to provide a secondary treatment of the treated groundwater prior to PaDEP-approved discharge into the storm sewer system.

Discharge Monitoring Reports (DMRs) for the groundwater recovery system are included in **Attachment 6**. About 533,800 gallons of groundwater have been removed from the site since system activation in 2004. The remedial system has not been operating since the UST upgrade activities conducted in September of 2009 and the remedial system has not been reactivated. The PaDEP is aware that the current remedial system is currently deactivated and it is assumed that the PaDEP will not require the current remedial system to be reactivated and maintained prior to the installation of a new or modified remedial system by the selected bidder. Therefore, continued operation and maintenance of the current remedial system is not part of the scope of this RFB.

#### Second Reportable Release and Additional Site Characterization and Remedial Activities Conducted at the Site

While remedial activities were well underway for the initial release at the site, a second release was reported on August 7, 2005 following a documented surface spill as a result of a UST overflow. The release was due to human error while filling the USTs from the AST system. Based on reconciliation records, it was reported that approximately 170 gallons of petroleum were released to the surface/subsurface.

As a result of the second release, petroleum flowed across the Pen Fern property and a portion collected in a grassy area immediately south of monitoring wells MW-4D and MW-4S (**Attachment 3**). On August 8, 2005, TEEM excavated and removed approximately 0.75 tons of visually impacted soil from the southern portion of the property as an interim remedial action (IRA). Details of the soil excavation activities and associated soil sampling are provided in GEA's/TEEM's Preliminary Second Release Investigation Report, dated January 16, 2006 (**Attachment 7**). According to GEA/TEEM, much of the area was underlain by asphalt so only about six inches of soil was removed. On August 12, 2005, GEA/TEEM collected five samples (termed "attainment" samples) from outside of the excavation area and the analytical results are summarized on Table 1 in **Attachment 7**. Because GEA/TEEM reported that the bottom of the excavation was primarily asphalt, samples could not have been collected from the bottom of the excavation but could be collected from the sidewalls at five locations that represented the most visually contaminated areas. However, all five soil samples were collected from undisturbed soil beyond the limits of the excavation. Therefore, it is not clear that attainment samples were collected in accordance with applicable regulations and PaDEP's *Technical Guidance Manual* (TGM).

Following the second release, additional site characterization activities were conducted to assess potential further impacts to soil and groundwater in the main source area near the tanks. In August of 2005, TEEM supervised the installation of seven additional soil borings (SB1 through SB7) at the site. Borings SB1, SB2 and SB3 were drilled to install additional monitoring wells MW-16D, MW-17S and MW-18D. Soil borings SB4 through SB7 were drilled to further assess soil quality in the area of the new release. Analytical results for the soil samples collected from boring SB4 through SB7, included as Table 2 in **Attachment 7**, show that soil benzene concentrations were greater than the SHS in borings SB4, SB5 and SB6 at 4,380 micrograms per kilogram (ug/kg), 589 ug/kg, and 602 ug/kg, respectively.

Quarterly groundwater samples following the second release were collected on November 10, 2005. Analytical results from the November 10, 2005 sampling event show that there was a significant spike in dissolved-phase concentrations during this event in well MW-3D, located in the immediate vicinity of the USTs (where the second release occurred), as well as an increase in well MW-2D, located generally cross-gradient of the USTs.

As a result of the second release at the site, a second claim was filed for this site (USTIF Claim No. 05-126(M)). Eligibility for the second release was granted at 100% proration. The second claim has since been closed and combined with the original claim.

In summary, remediation at the site has included soil excavation and removal, the addition of ORC in both on-site and off-site injection points, and groundwater recovery and treatment. Based on information provided to date by TEEM and GEA, approximately three quarters of a ton of petroleum-impacted soil following the second release.

#### 2009 UST System Upgrades

In September of 2009, the two single-walled 3,000-gallon steel UST systems installed in August of 1988 were replaced by two 3,000-gallon double walled steel USTs and piping. UST replacement activities were conducted by M.W. Farmer & Company. During the UST replacement activities, GSC collected soil characterization samples from the sidewalls of the UST excavation and from the sidewalls and bottom of the new product line trench immediately east of the dispenser island. Analytical results, included in **Attachment 4**, showed that soil concentrations in the vicinity of the USTs and the northern dispenser are greater than the MSCs for 1,2,4-Trimethylbenzene and 1,3,5-Trimethylbenzene.

During the September 2009 UST replacement activities, bedrock monitoring wells MW-3D and MW-16D, and groundwater recovery well RW-2, were destroyed. GSC installed a replacement well for MW-3D (designated MW-3DR; well log included in **Attachment 4**) in November of 2009. However, a replacement recovery well for RW-2 and a replacement monitoring well for MW-16D have not yet been installed (installation of a replacement monitoring well for MW-16D is included in the scope of work for Task C1 of Milestone C of this RFB, and installation of a replacement recovery well, if deemed necessary by the bidder, can be included in the scope of work for either Task C3 of Milestone C or Milestone E of this RFB).

#### Remedial Alternatives Evaluation and SVE Feasibility Test Conducted by GSC

GSC conducted a remedial alternatives evaluation and a preliminary SVE feasibility test in November of 2008. Details of the preliminary SVE feasibility test are presented with the Remedial Alternatives Evaluation findings in GSC's April 13, 2009 correspondence to the PaDEP (**Attachment 8**). The purpose of this document was to narrow the choice of remedial alternatives to facilitate this RFB. This preliminary feasibility testing was not intended to be a pilot test.

In their April 13, 2009 correspondence to the PaDEP, GSC concluded that some form of combined vapor extraction and groundwater depression/plume control is the recommendation for a revised remedial strategy for on-site soil and groundwater. SVE in conjunction with groundwater depression or a single pump dual-phase extraction (DPE) system, using a series of horizontal extraction wells (perhaps with vertical drop tubes for a single pump system), could be effective alternatives for remediation of impacted soil and

groundwater on-site. **Remediation systems based on this technology will generally be viewed more favorably than others in the bid evaluation process.** The existing on-site remedial equipment is available to the selected bidder if they choose to use it.

The remedial approaches recommended above may be the basis for preparing a SOW and request for competitive fixed-price bids. The selected bidder will need to perform pilot testing. In correspondence dated May 12, 2009 (included in **Attachment 9**), the PaDEP concurred that the approaches described in the Remedial Alternatives Evaluation is an acceptable remedial approach for the site and can be the basis for moving forward with requesting bids, however, alternative technologies that have been deemed feasible may also be proposed. This is discussed further below.

#### Most Recent Groundwater Data

The most recent quarterly RAPR prepared by GEA/TEEM and submitted to the PaDEP (dated March 30, 2010) is included in **Attachment 5** and includes the most recent groundwater data, groundwater elevation contour maps and dissolved-phase concentration contour maps for the January 7, 2010 quarterly groundwater sampling event. Please note that, according to the information provided in previous RAPRs, monitoring well MW7D is no longer accessible because the property is occupied by Back Mountain Pool and Spa and they placed gravel fill and a shed in the immediate area of the monitoring well.

A table summarizing supplemental groundwater elevation and chemistry data, collected for monitoring well MW-3DR by GSC November 18, 2009 and December 10, 2010, is included in **Attachment 4**. The groundwater elevation measurements and contour maps presented in quarterly Remedial Action Progress Reports (RAPRs) by GEA/TEEM and in this RFB indicate that soil and bedrock groundwater flow at the site is generally to the northeast-southeast, towards Toby Creek.

## **D. OBJECTIVE/SCOPE OF WORK**

This RFB Solicitation is different from most other USTIF RFB Solicitations to date. Most previous RFB solicitations have been of the defined SOW type where a specific SOW is presented to the bidders who prepare their bids on the basis of that scope. In the case of this RFB solicitation, there is no defined SOW, but rather the bid is to obtain RfL, that is, to “close” the site, by demonstrating attainment of the RUA SHS for soil and groundwater, and to address soil vapor.

The goal of remedial activities requested in this RFB Solicitation is to demonstrate attainment of the RUA SHS for soil and groundwater, and to address indoor air quality issues. Therefore, the selected bidder shall have a clear understanding of the location of impacted media and the point(s) of compliance to demonstrate attainment for each media. It follows that the plan to demonstrate attainment of the RUA SHS at the end of the remediation should be well developed prior to the implementation of the remediation. This level of detail should be reflected in the bidder’s response to this RFB Solicitation.

For this RFB Solicitation, bidders are asked to define the technical and regulatory approach that constitutes the SOW within the structure outlined below. In reviewing responses to this RFB Solicitation, the bid review committee will evaluate whether the bid is “technically sound” defined as both; 1) responsive to the RFB Solicitation in such a way that it is clear

that the bidder understands the site conditions and the nature of the problem to be resolved (in this case, closure under the SHS), and 2) has proposed a technical solution that is reasonably capable of achieving site closure in conformance with PaDEP guidance and Chapter 245. Attributes of a bid response that is considered to be technically sound are: 1) the approach is well reasoned, organized and detailed; 2) the response demonstrates the bidder (without undue reliance on any documents provided by proposed subcontracted vendors) has read and understands the RFB including the technical and regulatory issues; 3) the bidders decision-making process and criteria are based on a complete conceptual site model, are site-specific to a high degree and are well and clearly documented independent of any vendor attachments; and 4) the bidder has indicated that they will use quantitative physical data and laboratory data as the foundation for monitoring and documenting of successful progress toward cleanup of the site.

As discussed below, the general sequence of events and Milestones for site closure are:

- Conduct quarterly groundwater gauging/sampling and reporting (none is occurring now);
- Review existing information, including a PaDEP file review;
- Conduct supplemental site characterization (as deemed necessary by the bidder) and a pilot test;
- Submission and PaDEP acceptance of a Revised RAP;
- System design, installation and permitting;
- System operation and maintenance;
- Activities associated with demonstration of attainment of the SHS and addressing soil vapor;
- Submission and PaDEP acceptance of a RACR; and,
- Site restoration.

**Conduct Quarterly Groundwater Gauging/Sampling and Preparation/Submittal of Quarterly Remedial Action Progress Reports (RAPRs) up to Remedial System Activation (Milestones A1-A7)**

Prior to remedial system activation and immediately following execution of the Remediation Agreement (contract), the selected bidder shall conduct quarterly groundwater gauging and sampling at the site. Bidders shall provide a quarterly fixed-price cost for gauging/sampling all groundwater monitoring wells at the site and preparation/submittal of a RAPR for each quarter until remedial system activation/operation. Bidders shall specify in the bid the expected number of quarterly groundwater gauging/sampling events to be conducted under this milestone prior to remedial system activation (i.e., the initiation of Milestone G).

**Review Existing Project Information, Including a PaDEP File Review (Milestone B)**

In order to assist in gaining an adequate understanding of the site history and environmental investigation and remediation conducted to date, the selected bidder shall coordinate and conduct a review of all project-related documents (reports, correspondence, etc.) located at the PaDEP's Northeast Regional Office.

## **Replacement of Well MW-16D, Supplemental Site Characterization Activities, and Pilot Test (Milestone C)**

### **Task C1: Replacement of Monitoring Well MW-16D**

As previously mentioned, recovery well RW-2 and monitoring well MW-16D were destroyed during UST system upgrade activities in September of 2009. [The cost to install a replacement well for RW-2 shall be included in the proposed fixed-price cost for Milestone E. For this task, bidders shall provide a fixed-price cost to install and develop a replacement well for MW-16D. The replacement well shall be drilled and constructed in a similar fashion as well MW-16D. The construction log for well MW-16D is included in **Attachment 4**. The detailed plan describing the proposed completion of the replacement bedrock well for MW-16D along with the fixed-price cost to complete the well must be provided in the bid response. A detailed work plan for the completion of this work must be submitted to and approved by the PaDEP prior to the completion of this task. The final work plan must be submitted to the Solicitor, ICF Claims Handler and the Technical Contact for review and comment prior to submitting the work plan to the PaDEP.

### **Task C2: Supplemental Site Characterization**

Additional site characterization activities may be conducted to verify previously collected data or to address any perceived gaps in the existing characterization data, or to assist in the design of the remedial system for the site. This task shall include the collection of data to confirm any elements of the site characterization or evaluate any site conditions that the bidder chooses. Up to \$10,000.00 will be paid to the selected bidder to cover potential costs to conduct any additional site characterization activities deemed necessary by the selected bidder to obtain additional site characterization data that can be used to assist in the evaluation and determination of remedial technologies, to assist in the determination of contamination sources at the site, or to assist in a better estimation of cleanup timeframes. Proposed additional site characterization activities shall be described in detail in the bid response document.

### **Task C3: Pilot Test**

The successful bidder will conduct a pilot test to:

- Confirm that the proposed technology is technically feasible;
- Confirm that the proposed technology is cost-effective;
- Confirm that the proposed technology will provide a timely closure; and,
- Determine design criteria.

The pilot test plan in the bid must be described in detail including rationale, methods, data gathered and data interpretation methods.

Exhibit A of the remediation agreement will contain a bidder-specific provision for cancellation of the contract if the pilot test does not meet certain bidder-defined criteria.

The bidder shall specify in the response to the RFB Solicitation the key criteria and quantified ranges of values that will make the proposed technology technically feasible,

cost-effective and timely. For example, the bidder may include language in the RFB solicitation as follows:

“For the system to operate as planned and meet the clean-up schedule, the pilot test must demonstrate the following:

- The groundwater recovery rate for the recovery test wells will average greater than 0.5 gpm for each well over a 24-hour period;
- The SVE radius of influence as defined by a vacuum of 0.1 inches of water at the end of a one-hour step with 30” of water vacuum for SVE points will be at least 10 feet for 50% of the test points;
- The flow for each SVE point will be greater than 20 standard cubic feet per minute at a vacuum of 30” of water; and,
- The hydrocarbon recovery rate (C<sub>5</sub>-C<sub>12</sub>) will be greater than 0.5 pounds per day as measured during the 2- to 4-hour interval of the test.”

**This is only an example. Actual criteria will vary from bid to bid.**

The selected bidder will prepare a pilot test report and submit it to the Solicitor. If the successful bidder conducts the pilot test and there are results outside the range specified in the RFB Solicitation response, the bidder or Solicitor may elect to cancel the Remediation Agreement (contract). The Pilot Test Report shall show that the pilot test was conducted according to the bid and shall constitute documentation for payment on Task C3 of Milestone C, regardless of the result.

If either party elects to cancel the Remediation Agreement, USTIF will have complete discretion with regard to the use of the information in the Pilot Test Report. USTIF may use it as the basis for rebidding the project or may provide it to one or more of the previously unsuccessful competitive bidders and request revised RFB solicitations. However, it will be specified that any use that a third party makes of the Pilot Test Report will be at the sole risk of the Third Party. The selected bidder is under no obligation to cancel the Remediation Agreement if the pilot test results are outside the range specified in the RFB Solicitation response, and may proceed with a system designed to remediate the site using the criteria defined in the pilot test even if that system varies from that which was proposed in the RFB Solicitation provided that the Solicitor agrees and elects not to cancel the Remediation Agreement.

Unrealistic criteria or criteria that are unreasonably narrow will reduce the favorability of the bid response as viewed by the bid review committee.

For consistency, bidders shall budget 10% of the total bid cost for this task, with a maximum of \$50,000. For example, if the total proposed cost for Milestones A through L (excluding Task C3) is determined to be \$300,000, the cost of Task C3 specified in the bid shall be up to \$30,000. However, if the total proposed cost for Milestones A through L (excluding Task C3) is determined to be \$550,000, the cost of Task C3 specified in the bid response shall be up to but no more than \$50,000.

### **Preparation, Submittal and PaDEP Approval of a Revised RAP (Milestone D)**

Upon completion of Milestones A, B and C described above, the selected consultant shall prepare a Revised RAP in draft form for review and comment by the Solicitor and USTIF. This Revised RAP shall contain the information required under 25 PA Code 245.311 and other applicable statutes, regulations, and guidance, including being signed and sealed by a Professional Geologist and/or a Professional Engineer registered in the Commonwealth of Pennsylvania as required by applicable PaDEP regulations. Each bidder's project schedule shall provide two weeks for Solicitor and USTIF review of the draft document. The final Revised RAP shall address comments received from the Solicitor and USTIF on the draft before it is submitted to the PaDEP. The Revised RAP shall be consistent (with regard to approach and level of effort) with the conceptual remedial action plan provided in the selected consultant's bid response.

Upon approval of the Revised RAP by the PaDEP, the selected bidder shall install the remedial system.

### **Remedial System Design, Permitting, Installation and Startup (Milestone E)**

This Milestone shall include all costs associated with the final design, permitting, purchase or lease, and installation of the remedial system up to the point in time that it has been installed and daily operation is implemented as described in the selected consultant's PADEP-approved Revised RAP. [Please note the cost to replace recovery well RW-2 that was destroyed during the 2009 UST upgrade activities shall be included in the proposed fixed-price cost for this Milestone if a replacement well for RW-2 is included in the bidder's proposed remedial system design. The construction log for well RW-2 is not available.] The Solicitor and USTIF shall have the opportunity to inspect and confirm that the system has been installed as described in the Remediation Agreement and the Revised RAP and is in daily operation as described in the Revised RAP. Bidder shall describe specific operation, monitoring, and maintenance procedures proposed to monitor and evaluate the performance of the proposed remediation system and how the system may be adjusted during the implementation of the remediation.

The proposed remedial system design, including but not limited to, mechanical equipment in trailers or other enclosures, conveyance systems, extraction wells and points, instrumentation, and on-site and remote controls should be described and shown on diagrams provided in as much detail as practical in the bid response. Certain elements will be conceptual until the pilot test is conducted, but other elements should be known in detail and presented in the bid response prior to conducting the pilot test. Bidders shall:

- Describe the principal source/vendors of the remedial system equipment and installation;
- Provide Process and Instrumentation Diagrams and cut sheets, if possible;
- Describe the routine maintenance activities and schedule;
- Describe how progress will be monitored and how the system may be adjusted (be specific with regard to parameters to be monitored and how these data will be used);

- Describe what permits are anticipated;
- Present the estimated run duration for the system calculations based on an estimate of mass in place and mass removal rates; and,
- Present other relevant information.

#### Critical Remedial System Design Elements

There is likely limited hydraulic control of groundwater occurring through the operation of the current remedial system. The successful bidder will show that their remedial system will provide significant, if not complete, hydraulic control of groundwater flow from the site, particularly in the vicinity of monitoring wells MW-1D, MW-2D, and MW-16DR.

The proposed conceptual remedial system as presented by GSC to (and accepted by) the PaDEP relies on groundwater depression and SVE to eliminate the possibility of exacerbating subsurface contamination or facilitating migration that would otherwise not occur under static conditions.

A letter discussing remedial alternatives and presenting the results of feasibility testing was submitted to and accepted by the PaDEP (**Attachment 1**). Alternatives to the PaDEP-accepted remedial alternatives may be presented in the bid response, but it is critical that the bidder show that this technology is feasible on a conceptual level before pilot testing and perform a thorough demonstration of the feasibility and practicality during pilot testing. It is also critical that any proposed alternatives do not exacerbate site impacts. For example, if air sparging and SVE are proposed in lieu of a technology already deemed feasible and accepted by the PaDEP (**Attachment 1**), positive steps would need to be taken to control the migration of groundwater beyond the simple manipulation of the sparge point geometry and operation. Therefore, in this example, if air sparging with SVE were proposed in a bid response, it would also be necessary to provide for hydraulic control of groundwater in addition to sparging and venting.

#### Assume Off-Site Natural Attenuation

Significant natural attenuation has occurred as shown by concentrations in off-site monitoring wells. It is assumed that monitored natural attenuation will continue and that on-site remedial activities implemented by the successful bidder that reduce on-site groundwater concentrations and reduce source concentrations in unconsolidated materials, coupled with hydraulic control as described above, will increase the attenuation rate in the off-site monitoring wells by largely cutting off the on-site source. Bidders should assume that no off-site active remediation is required and should assume that natural attenuation in off-site wells will be adequate to meet the SHS within the period during which the active on-site remedial system is operated. Bidders should assume that off-site well access for monitoring activity will be granted without undue negotiation.

**Remedial System Operation and Maintenance (O & M), NPDES Sampling/Reporting, Quarterly Groundwater Monitoring/Sampling, and Preparation/Submittal of Quarterly Remedial Action Progress Reports (RAPRs) (Milestones F1-Fn)**

Following system activation and Solicitor and ICF confirmation that the system has been installed as described in the Remediation Agreement and is in daily operation as described in the Revised RAP, the selected bidder shall operate and maintain the system until Milestone *Fn* is demonstrated. These are quarterly Milestones, and the bidder's proposed fixed-price cost for each quarterly milestone should include all costs associated with the operation and maintenance of the proposed remedial system, NPDES sampling/reporting, quarterly groundwater gauging/sampling and preparation/submission of a RAPR that presents all data collected during the respective quarter, in accordance with 25 PA Code 245.312, until Milestone I is initiated, as described in detail in Exhibit D of the Draft Remediation Agreement (**Attachment 10**).

**Vapor Intrusion Assessment (Milestone G)**

It is presumed that the vapor intrusion assessment will include soil vapor sampling to show that soil vapor concentrations are below the Residential Soil Vapor MSCs. The bid should describe how this will be accomplished. A responsive bid will provide detail with regard to approximate number and location of soil vapor sampling points. If an alternative method to assess vapor intrusion is proposed, it should be discussed in detail, particularly the regulatory rationale. Engineering controls are not desirable for this purpose.

**Soil Attainment Sampling (Milestone H)**

Soil attainment sampling/demonstration to address the first release (in the area of the UST systems) is still required. The bidder's proposed soil attainment demonstration for this area shall include the estimated volume of soil for which the RUA SHS is to be demonstrated, along with a description of the general approach to selecting soil sampling locations. For the purpose of this bid, bidders should assume that a total of twelve soil attainment samples will be collected to demonstrate soil attainment in this area.

Additionally, soil attainment sampling/demonstration to address the second release is still required. Additional soil data shall be collected in the vicinity of MW-4S and MW-4D consisting of eight (8) samples that conform to the guidance for attainment samples with regard to the second release and the 24-hour ponding of product over a small area. Assume for this bid that the eight samples will be collected in a 21-foot by 21-foot by 6-foot deep volume and that the results will re-demonstrate attainment of the soil RUA SHS.

All soil attainment samples shall be analyzed for the Old and New PaDEP Shortlists of unleaded gasoline parameters.

**Quarterly Groundwater Attainment Sampling and Reporting (Milestones I1-I8)**

To demonstrate attainment of the groundwater SHS, the list of existing and/or proposed wells (on-site and off-site) to be sampled on a quarterly basis to demonstrate attainment at the point of compliance shall be provided. A discussion of the approach that will be used for fate and transport analysis should also be provided. Bidders shall provide a fixed price for each quarterly milestone that will include the cost for gauging and sampling the proposed wells and quarterly preparation and submittal of a RAPR.

### **Preparation, Submittal and PaDEP Acceptance of a Remedial Action Completion Report (Milestone J)**

When the successful bidder is convinced that a demonstration of attainment of the RUA SHS can be made for both soil and groundwater, and vapor intrusion at the site is not an issue, a RACR shall be prepared and submitted to the PaDEP. The objective of the RACR is to “close” the site without post-closure care obligations and without an environmental covenant under UECA. The RACR shall contain the information required under 25 PA Code 245.313 and other applicable statutes, regulations, and guidance, including being signed and sealed by a Professional Geologist and/or a Professional Engineer registered in the Commonwealth of Pennsylvania as required by applicable PaDEP regulations. Each bidder’s project schedule shall provide two weeks for Solicitor and USTIF review of the draft document. The final RACR shall address comments received from the Solicitor and USTIF on the draft before it is submitted to the PaDEP.

### **Remedial System Removal, Well Abandonment and Site Restoration (Milestone K)**

After acceptance of the RACR by the PaDEP, the site would be restored such that all monitoring wells, extraction points, and extraction wells would be properly abandoned and the surface restored. All above-grade remediation equipment would be removed from the site, along with any wastes, including but not limited to, stockpiled soil, purged groundwater, and granular activated carbon.

### **Additional Considerations**

In addition to the specific tasks specified above, the selected consultant shall also:

- Complete necessary, reasonable, and appropriate project planning and management activities until the SOW specified in the executed remediation agreement has been completed. Such activities would be expected to include client communications/updates, meetings, record keeping, subcontracting, personnel and subcontractor management, quality assurance/quality control, scheduling, and other activities. Project planning and management activities will also include preparing and implementing any plans required by regulations or that may be necessary and appropriate to complete the SOW. This may include health and safety plans, waste management plans, field sampling and analysis plans, and/or access agreements. Project management costs shall be included in the fixed prices proposed for Milestones A through I, as appropriate.
- Be responsible for coordinating, managing and completing the proper management, characterization, handling, treatment, and/or disposal of all investigation derived wastes in accordance with standard industry practices and applicable laws, regulations, guidance and PaDEP directives. Waste characterization and disposal documentation shall be maintained and provided to the Solicitor upon request and shall be included as appendices to either the RAP or the RACR. Waste disposal costs shall be included in the fixed prices proposed for Milestones A through I, as appropriate.
- Be responsible for providing the Solicitor and property tenants with adequate advance notice prior to each visit to the property. The purpose of this notification is to coordinate with the Solicitor and tenants to facilitate appropriate access to the

areas of the site necessary to complete the SOW. Return visits to the site prompted by a failure to make the necessary logistical arrangements in advance will not constitute a change in the selected consultant's SOW or total fixed-price cost for Tasks 1 through 12.

All work shall be conducted in accordance with industry standards/practices, and be consistent with the applicable laws, regulations, and guidance (e.g., PADEP Groundwater Monitoring Guidance Manual, Document No. 383-3000-001 dated December 1, 2001).

Each bidder should carefully review the existing site information provided in the attachments to this RFB and seek out other appropriate sources of information to develop a fixed-price cost and schedule to "close" the site. There is no prequalification process for bidding. Therefore, bids that demonstrate an understanding of existing site information and standard industry practices will be regarded as responsive to this solicitation.

## E. TYPE OF CONTRACT/PRICING

The Solicitor wishes to execute a mutually agreeable Fixed-Price Bid-to-Result contract (Remediation Agreement). A copy of the Standard Remediation Agreement is included as **Attachment 10** to this RFB Solicitation. This standard agreement has been previously employed by other Solicitors on other USTIF-funded claims. The bidder must identify in the bid response and document any modifications that they wish to propose to the Standard Remediation Agreement language in **Attachment 10** other than obvious modifications to fit this RFB (e.g., names and dates). The number and scope of any modifications to the Standard Remediation Agreement will be one of the criteria used to evaluate the bid. **Any bid response that does not clearly and unambiguously state whether the bidder accepts the Remediation Agreement included in Attachment 10 "as is," or that does not provide a cross-referenced list of requested changes to this agreement will be considered non-responsive to this RFB Solicitation.** This statement should be made in a Section entitled "Remediation Agreement". Any proposed changes to the agreement should be specified in the bid response, however, these changes will need to be reviewed and agreed upon by both the Solicitor and the USTIF.

The Remediation Agreement fixed costs shall be based on unit prices for labor, equipment, materials, subcontractors/vendors and other direct costs. The total cost quoted by the selected bidder will be the maximum amount to be paid by the Solicitor unless a change in scope is authorized and determined to be reasonable and necessary. There may be deviations from and modifications to this SOW during the project. The Remediation Agreement states that any significant changes to the SOW will require approval by the Solicitor, the USTIF, and the PaDEP.

The bidder shall provide its bid using the Standard Bid Format identified in **Attachment 11** with descriptions for each task provided in the body of the bid document. The contract payments will be made as milestones are achieved. The milestones will mirror **Attachment 11**. In addition to **Attachment 11**, the bidder shall provide a unit rate schedule that will be used for any out-of-scope work on this project.

The selected bidder's work to close the site under the USTIF claim will be subject to ongoing review by the Solicitor and the USTIF or its representatives to assess whether the work has been completed and the associated incurred costs are reasonable and necessary.

In order to facilitate the USTIF's review and reimbursement of invoices submitted under this claim, the Solicitor requires that project costs be invoiced by the tasks identified in the bid. The standard practice of tracking total cumulative costs by bid task will also be required to facilitate invoice review.

Each bid package received will be assumed to be valid for a period of up to 120 days after receipt unless otherwise noted. The fixed-price costs proposed in the bid and the unit rate schedule will be assumed to be valid for the contract.

## F. BID RESPONSE DOCUMENT

Each bid response document must include at least the following:

1. Present a site-specific SOW that conforms to the subsections in Section D of this document, that is:
  - a. Review existing information, including a PaDEP file review;
  - b. Conduct a pilot test and supplemental site characterization (as deemed necessary by the bidder);
  - c. Submission and PaDEP approval of a Revised RAP;
  - d. System design, permitting, installation and startup;
  - e. System operation and maintenance;
  - f. Activities associated with demonstration of attainment of the SHS for soil and groundwater, and addressing soil vapor;
  - g. Submission and PaDEP acceptance of a RACR; and,
  - h. Site restoration.
2. Provide Fixed-Price bid pricing using the standardized format in **Attachment 11** including a unit rate schedule in the event there is any out-of-scope work. The following information relating to the bid pricing should be included as additional sheets to **Attachment 11** or discussed in the body of the bid document:
  - a. The bidder's proposed unit cost rates for each expected labor category, subcontractors, other direct costs, and equipment;
  - b. The bidder's proposed markup on other direct costs and subcontractors (if any);
  - c. The bidder's estimated total cost by task consistent with the proposed SOW identifying all level-of-effort and costing assumptions.

3. Include documentation of the bidder's level of insurance consistent with the levels listed in Attachment 3<sup>3</sup>;
4. Identify the names of the proposed project team for the key project staff, including the proposed Professional Geologist and Professional Engineer of Record who will be responsible for overseeing the work and applying a professional seal to the project deliverables. The inclusion of brief resumes of key project team members is required.
5. Address the following specific questions:
  - a. How many Chapter 245 Corrective Action projects involving an approved SCR, RAP and RACR in the State has your company and/or the Pennsylvania licensed P.G. closed (i.e., obtained relief from liability from the PaDEP) using the Statewide Health Standards? Please list up to five.
  - b. How many Chapter 245 Corrective Action projects in the State has your company and/or the Pennsylvania licensed P.G. closed (i.e., obtained relief from liability from the PaDEP) using **the specific remedial technology proposed in the RFB solicitation response**? Please list up to five. Please include concise case histories of up to two sites.
  - c. Has your firm ever been a party to a terminated USTIF-funded Fixed-Price (FP) or Pay-for-Performance (PFP) contract without attaining all of the Milestones? If so, please explain, including whether the conditions of the FP or PFP contract were met.
6. Provide one or two case histories in which groundwater depression and SVE as a general remedial description (for example, DPE) was successfully implemented at the site to provide both hydraulic control of a plume and mass removal.
7. Identify and sufficiently describe subcontractor involvement by task.
8. Provide a detailed schedule of activities for completing the proposed SOW inclusive of reasonable assumptions regarding the timing and duration of client and PaDEP reviews (if any) needed to complete the SOW. Details on such items as proposed meetings and work product submittals shall also be reflected in the schedule.
9. Describe your approach to working with the PaDEP from project inception to submittal of the RACR.
10. Describe how the Solicitor, ICF, and the USTIF will be kept informed as to project progress and developments and how the Solicitor (or designee) will be informed of, and participate in evaluating technical issues that may arise during this project.
11. Identify key assumptions made in formulating the proposed fixed-price cost. The use of overly narrow assumptions will negatively impact the bid.
12. Identify any exceptions or special conditions applicable to the proposed SOW.

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<sup>3</sup> The successful bidder agrees and shall submit evidence to the Solicitor before beginning work that bidder has procured and will maintain Workers Compensation; commercial general and contractual liability; commercial automobile liability; and professional liability insurance commensurate with the level stated in the Remediation Agreement and commensurate with industry standards for the work to be performed.

13. Include quotations from major subcontractors.
14. Identify all level-of-effort and costing assumptions.

**G. MANDATORY SITE VISIT**

**THERE WILL BE A MANDATORY SITE MEETING ON JANUARY 26, 2011, STARTING AT 11:00 AM.** The Solicitor, the Technical Contact, or their designee will be at the site between 11:00 AM and 12:00 PM to answer questions and conduct a site tour for one participant per firm. This meeting is mandatory for all bidders – no exceptions. This meeting will allow each bidding firm to inspect the site and evaluate site conditions. **A CONFIRMATION OF YOUR INTENT TO ATTEND THIS MEETING IS REQUESTED TO BE PROVIDED TO THE ICF TECHNICAL CONTACT VIA E-MAIL BY JANUARY 24, 2011 WITH THE SUBJECT “PEN FERN 2001-065(M) – SITE MEETING ATTENDANCE CONFIRMATION”.** The name and contact information of the company participant should be included in the body of the e-mail.