COMPETITIVE BID-TO-RESULT SOLICITATION FOR SITE CLOSURE ACTIVITIES

Former Pump n Pantry Facility No. 009
566 N. Memorial Highway (State Route 415)
Borough of Dallas, Luzerne County, Pennsylvania

PADEP Facility ID No. 40-28238; USTIF Claim No. 2003-0183(F)

January 12, 2011

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) and to obtain RfL.

The tank owner/claimant, Pump n Pantry (Solicitor), ceased retail petroleum dispensing operations in early 2002 following removal of the registered UST systems at the site. Two abandoned USTs that were closed in place in 1985 remain at the site. Corrective action under Chapter 245 is being conducted in response to a confirmed petroleum release at the site in 2002. A Preliminary Site Characterization Summary Report (dated June 26, 2006) and a Site Characterization Report (dated February 1, 2008) was submitted to the Pennsylvania Department of Environmental Protection (PaDEP) by Geological and Environmental Associates, Inc. (GEA). A Supplemental Site Characterization Report (SSCR) was submitted to the PaDEP by Groundwater Sciences Corporation (GSC) (dated February 19, 2010). The PaDEP responded with comments to the SSCR in correspondence dated March 24, 2010 and GSC responded to those comments in correspondence dated April 28, 2010. The PaDEP sent subsequent correspondence dated May 11, 2010 that provided no additional comments to the SSCR but did not formally approve the SCR. However, the PaDEP verbally indicated via a telephone conversation with GSC on May 17, 2010 that the PaDEP has no further comments regarding the SSCR. Additionally, the PaDEP is aware that the RAP will not be submitted until the remaining corrective action activities, which include the preparation and submittal of a RAP, are put out to bid and awarded to a consultant selected by the tank owner, which likely will take longer than the standard 45-day timeframe from the time of SSCR submittal mentioned in the PaDEP's letter.

There is an interim remedial action (IRA) in the form of a groundwater recovery and treatment well at the A.J.'s Beverage property to provide hydraulic control at the downgradient edge of the plume. There is a public water supply well about 1,100 feet downgradient of the site. The tank owner and property owner have agreed to the Site-Specific Standard (SSS) for soil and groundwater through pathway elimination as the remedial goal for the site. However, the PaDEP requires that additional mass dissolved in groundwater be removed. The general remedial approach to meet the SSS for the site is groundwater recovery and treatment, with continued groundwater recovery and treatment at the downgradient edge of the MTBE plume to provide hydraulic control of the off-site MTBE plume, as well as additional groundwater recovery and treatment at or closer to the source area, as recommended by the PaDEP. When the mass

is sufficiently reduced, the pumping can be terminated and the plume will be stable and not migrate beyond the A.J.'s Beverage property. The owner of the Slocum Insurance property, Mr. Bruce Slocum, has allowed access to the potable well on his property but has not agreed to the placement of a treatment shed on his property. Mr. Slocum has additional requirements as discussed below.

The Solicitor (PnP) 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, necessary, and appropriate costs up to claim limits for the corrective action work described in this RFB will be provided by USTIF.

The corrective action work of this solicitation will generally include the following components (additional details provided later in this solicitation):

- Operate existing groundwater recovery/treatment system at A.J.'s Beverage property;
- Conduct a PaDEP file review;
- Complete two bedrock monitoring wells;
- Conduct additional site characterization activities;
- Conduct feasibility/pilot testing of remedial alternative;
- Prepare Remedial Action Plan (RAP);
- System design, installation and permitting;
- Implement remediation to reduce groundwater contaminant mass per the PADEP and conduct quarterly groundwater monitoring;
- Demonstrate attainment of the SSS for soil and groundwater;
- Address soil vapor/indoor air quality;
- Prepare Remedial Action Completion Report (RACR), environmental covenants and waiver request letters; and,
- Abandon monitoring wells and restore site.

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 USTIF will no longer be accepting the electronic version via email.**

The signed response to this RFB (both hard copies and electronic copy on CD) must be provided as directed above no later than close of business (5 p.m. EST) on March 15, 2011. The outside of the bid package must be clearly labeled with "BID – CLAIM # 2003-0183(F)".

On behalf of ICF and the USTIF, the Technical Contact will assist[1] 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, proposed total cost, proposed unit costs, proposed schedule, discussion of technical and regulatory approach, qualifications, and contract terms and conditions. The technical approach will be the most heavily weighted evaluation criteria,

[1] This assistance is being provided on behalf of ICF International (ICF) who is the USTIF claims administrator.

however, proposed cost will be an important consideration. The Solicitor 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's 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

Solicitor	**ICF Claims Handler**	**Technical Contact[1]**
Mr. Scott Quigg Pump n Pantry, Inc. 100 Grow Avenue Montrose, PA 18801	Ms. Linda Melvin ICF International 4000 Vine Street Middletown, PA 17057 Phone: (800) 888-7843 Fax: (717) 944-8389 Email: mcs@epix.net Cc: dcassel@icfi.com	David L. Reusswig, P.G. Groundwater Sciences Corporation 2601 Market Place Street Suite 310 Harrisburg, PA 17110 Phone: (717) 901-8193 Fax: (717) 657-1611 Email: 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 "Pump n Pantry 2003-0183(F) – 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 February 24, 2011**. All questions will be answered by the Technical Contact by no later than March 2, 2011.

B. ATTACHMENTS TO THIS RFB SOLICITATION

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

Attachment 1: **UST Closure Reports (Datum Products, Inc., April 1996; Pennsylvania Tectonics, Inc., October 2002)**
Attachment 2: **Storage Tank Release Investigation Report (Pennsylvania Tectonics, Inc.; January 31, 2005)**
Attachment 3: **Storage Tank Release Investigation Report (Pennsylvania Tectonics, Inc.; September 20, 2005)**
Attachment 4: **Preliminary Site Characterization Summary Report (GEA; dated June 28, 2006)**
Attachment 5: **Site Characterization Report (GEA; dated February 1, 2008)**
Attachment 6: **Supplemental Site Characterization Report (GSC; February 19, 2010)**
Attachment 7: **NPDES Permit and DMRs**
Attachment 8: **Site Plan (HSS Land Surveying Services, LLC; dated August 11, 2009)**

Attachment 9: Cross Sections Showing MTBE Plume on May 11-13, 2009 (dated February 15, 2010)
Attachment 10: Additional Site Data (Historical Groundwater Elevation and Chemistry Data Tables with April 19, 2010 Supplemental Groundwater Data; April 19, 2010 Plume Maps; Slocum Well Stress Test Data)
Attachment 11: PaDEP Correspondence
Attachment 12: Sample Remediation Agreement
Attachment 13: 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

Former Pump n Pantry Facility No. 009; 566 N. Memorial Highway (Route 415); Dallas Borough, Luzerne County, Pennsylvania (see Figures 1, Figure 2 and Figure 3 in **Attachment 6**).

USTIF Eligibility

Following the documented release from the unleaded gasoline UST systems in 2002, the Solicitor filed a claim with the Pennsylvania Underground Storage Tank Indemnification Fund (USTIF) and eligibility was granted under USTIF Claim No. 2003-0183(F). The Solicitor has selected the SSS as the remedial goal to be pursued to obtain a Relief from Liability (RfL) from the PaDEP and USTIF has agreed to 100% reimbursement of Solicitor-approved reasonable, necessary and appropriate costs up to claim limits for the corrective action work described in this RFB.

Site Use Description

The site is currently occupied by a Domino's Pizza and a catering business. Retail petroleum dispensing operations ceased in 2002.

USTs and ASTs on Site

Currently, there are two abandoned USTs that contained gasoline and were closed in place (filled with grout) in 1985 (see Figure 4 in **Attachment 6** for locations). No ASTs exist at the site. All other known registered, unregistered and abandoned UST systems have been removed from the site. Details of historical UST use and previous UST closure activities are provided in **Attachment 1** and **Attachment 6**.

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 PaDEP's Old and New Shortlists for unleaded gasoline (benzene, toluene, ethylbenzene, total xylenes, cumene, methyl tert-butyl ether (MTBE), naphthalene, 1,2,4-trimethylbenzene (1,2,4-TMB), and 1,3,5-trimethylbenzene (1,3,5-TMB)).

Based on soil characterization data, the constituents that exceed the Residential, Used Aquifer (RUA) Medium-Specific Concentrations (MSCs) in soil on-site are benzene, naphthalene, 1,2,4-trimethylbenzene (1,2,4-TMB) and 1,3,5-trimethylbenzene (1,3,5-TMB) (Figure 12 in **Attachment 6**). There is no soil off-site that exceeds the RUA MSCs.

Based on groundwater characterization data presented in the SSCR (**Attachment 6**), benzene, 1,2,4-TMB and 1,3,5-TMB exceed the RUA MSCs in soil groundwater on-site, and benzene, MTBE, naphthalene, 1,2,4-TMB, and 1,3,5-TMB exceed the RUA MSCs in soil groundwater off-site. Benzene, MTBE, naphthalene, 1,2,4-TMB and 1,3,5-TMB exceed the RUA MSCs in bedrock groundwater on- and off-site. MTBE is the only constituent that exceeds the RUA MSCs (in bedrock groundwater only) at the A.J.'s Beverage property.

Site Description

The site is located at 566 N. Memorial Highway in the Borough of Dallas, Luzerne County, Pennsylvania (Figure 1 in **Attachment 6**). The site is located on the south side of Memorial Highway, consists of approximately 1.3 acres of land, and contains a slab-on-grade building occupied by Domino's Pizza and a catering business. The site lies in a mixed residential/commercial area and is zoned by the Borough of Dallas as "Downtown Commercial".

The site is bound to the north by Memorial Highway (State Route 415) beyond which is a commercial property occupied by Slocum Insurance, to the south and west by residential properties, and to the east by a commercial strip mall. Toby Creek is located immediately north-northeast of the Slocum property, and the A.J.'s Beverage property, owned by Ms. Catherine Garinger, is located immediately beyond Toby Creek. An aerial photograph showing the site and surrounding properties is presented as Figure 3 in **Attachment 6**.

The site and surrounding properties are currently served by a public water supply and sewer system. The Slocum and A.J.'s Beverage properties (and other nearby properties) were served by private water supply wells prior to 2005 and 2007, respectively. There are no private water supply wells currently being used for drinking or agricultural use that are located in the immediate vicinity of, and particularly downgradient of, the site. The A.J.'s Beverage well is currently being pumped as part of an interim remedial measure to provide hydraulic control to the MTBE plume, as mentioned later in this RFB. Although not currently being used, the Slocum well remains accessible for future pumping as part of the planned long-term remedial approach for the site, also discussed later in this RFB.

The closest public water supply well is located approximately 1,100 feet northeast (and downgradient) of the site and is owned by the United Water Company (United) (Figure 3 in **Attachment 6**).

As shown on Figure 1 in **Attachment 6**, the site is relatively flat and lies at an elevation of approximately 1,200 feet above mean sea level. Across Memorial Highway, the ground

surface slopes downward toward Toby Creek and the A.J.'s Beverage property which are at lower elevations relative to the site.

Regional Geology and Hydrogeology

The site lies near the boundary between the Susquehanna Lowland Section of the Ridge and Valley Physiographic Province and the Glaciated Low Plateau Section of the Appalachian Plateaus Physiographic Province of Pennsylvania. According to *Water Resource Report 40, Summary Ground-Water Resources of Luzerne County, Pennsylvania* (Commonwealth of Pennsylvania, Department of Environmental Resources, Bureau of Topographic and Geologic Survey, 1977), the bedrock beneath the site consists of red shale, red and gray cross-bedded sandstone, gray-green and white sandstone, and gray shale and sandstone of the Catskill Formation (Devonian).

The site is situated on a broad northeasterly trending anticline in which bedding planes are gently dipping. Unpublished structural geology information provided by the Pennsylvania Topographic and Geological Survey indicates that bedding generally strikes northeast and dips 8° or less to the northwest. Two measurements were made of vertical joints striking north-northwest and one set of joints striking east and dipping 62° south.

The Catskill Formation supplies more wells than any other formation in the county, mainly due to its large areal extent, and is a reliable source of small to moderate supplies of water. Sufficient water for domestic purposes can be obtained at almost any location from wells that are drilled 40 to 50 feet below the water table, but yields large enough for industrial and municipal purposes are more difficult to obtain. Reportedly, wells drilled in the Catskill Formation have ranged in depth from 24 to 580 feet, with a median well depth of 160 feet, and well yields have ranged from two to 325 gallons per minute (gpm), with a median yield of twelve gpm.

Site Geology

Based on observations made during drilling, the site is immediately underlain by fill material ranging in thickness of up to six feet. The fill material consists of brown to black, fine-grained sand with gravel that, in some cases, includes traces of coal and brick. The fill material is underlain by native soil to a depth ranging from about five to 20 feet below grade (fbg). The soil is quite variable in composition and consists of clay, silt, sand and gravel. As previously mentioned, bedrock at the Site consists of grayish and red siltstone, shale and sandstone of the Catskill Formation. The site geology is illustrated on the cross section provided as **Attachment 9**.

Site Hydrogeology

Depth to water in on- and off-site soil wells has generally ranged from two to seventeen feet below top of casing (fbtoc), and depth to water within on- and off-site bedrock wells has generally ranged from four to 39 fbtoc.

Historically, natural groundwater flow direction in the soil and bedrock aquifers at the site has been to the northeast. Groundwater elevation (soil wells) and potentiometric surface (bedrock wells) contour maps for the most recent comprehensive gauging event conducted on May 11, 2009 are presented as Figures 6 and 7 in **Attachment 6**. The soil groundwater flows across the site to the northeast with a relatively steep gradient of approximately five

feet per 50 feet (0.1) as indicated by the contour line spacing. However, to the northeast of the site where the soil is thicker and perhaps more transmissive, the gradient flattens out to be three feet per 50 feet or less. Soil groundwater elevations on both sides of Toby Creek have indicated that it is a gaining stream in the vicinity of the site. The bedrock groundwater also flows to the northeast and flows beneath Toby Creek to the A.J.'s Beverage well when it is pumping. Therefore, Toby Creek is not a divide with respect to bedrock groundwater flow. The potentiometric surface contour map for May 11, 2009 shows that the influence of the A.J.'s Beverage wells extends far to the southeast toward well MW16D. Groundwater flow lines are shown on this map forming a flow net from the site to the A.J.'s Beverage pumping well. This flow net indicates that all of the bedrock groundwater that originates at the site, that is, all of the MTBE plume, is captured by the A.J.'s Beverage pumping well. At the time this contour map was constructed, the well was pumping at a rate of approximately 2.5 gpm.

It is important to note that the bedrock wells to the northeast of Toby Creek, including MW22D, MW17D and MW16D have potentiometric surfaces in the bedrock that are significantly below the water table with typical differences being greater than ten feet. These more distant wells have completions that are deeper than the wells closer to the site. The deepest well, MW19D, has a potentiometric surface which is lower than all of the other wells. This data indicates that there is a strong downward vertical gradient in the vicinity of the site and to the northeast of the site.

Based on slug test data collected at the site, soil hydraulic conductivity values in wells MW1S, MW8S and MW9S are two feet/day, four feet/day and 0.8 feet/day, respectively. The hydraulic conductivity for the shallow bedrock at the site in MW1D is 0.2 feet/day (Table 6 in **Attachment 6**). Based on a median soil hydraulic conductivity value of two feet/day calculated from the soil well slug test data, using an effective soil porosity of 25% and a gradient of approximately 0.1 at the downgradient property line, the estimated groundwater flow velocity in soil at the site is approximately 0.8 feet per day.

Site Ownership and Operations History

According to information presented in GEA's February 2008 SCR, the site is reported to have first operated as a gasoline service station in 1954 by the owner, Mr. John Parry. In October of 1985, the site property was sold to Francis and Linda McManus. From 1985 to 1995, Gas Shop 24, Inc. leased the property from Francis and Linda McManus. From 1996 to May of 2002, PnP leased the site from Francis and Linda McManus. McManus and PnP operated a convenience store and a retail petroleum dispensing facility at the property. PnP's retail petroleum operations ceased and the PnP facility was closed in 2002. The site is currently owned by Mr. Joseph Nardone, Sr. and Irene Nardone, who purchased the property in January 2003 from the McManus'. A Dominos Pizza and a catering business currently occupy the site and lease from the Nardones.

UST History and Closure Activities

Reportedly there have been a total of eight USTs at the site. A summary of the USTs at the site is provided in Table 1 and a site plan showing the locations of historical USTs at the site is provided as Figure 4. Six gasoline, kerosene and used motor oil USTs were removed at the site in 1985, 1996, and 2002. Two USTs remain on-site and are abandoned in place.

According to GEA's SCR (dated February 1, 2008), historical documents available from the Luzerne County Tax Assessor's Office indicate that three 4,000-gallon USTs were on-site in 1954. Sometime between 1954 and 1985, a 500-gallon used motor oil UST and a 6,000-gallon kerosene UST (originally used for gasoline) were installed at the site.
Upon possession of the property in 1985, Mr. McManus is reported to have had the 500-gallon used motor oil UST removed from the site and later that same year, he had two of the original 4,000-gallon USTs filled with grout. Information regarding the 1985 UST removal activities, including a closure report, is not available. In 1985, Mr. McManus also had two 6,000-gallon USTs and one 8,000-gallon UST containing gasoline and kerosene installed at the site.

On March 19, 1996, Datom Products, Inc. conducted the removal of the 6,000-gallon kerosene UST from the site (Appendix B in **Attachment 6**). Identified as UST #004, the UST was reportedly installed by Mr. Parry and was used to store kerosene. During the removal of UST #004, a second UST (approximately 4,000-gallon capacity) was discovered and removed. This UST reportedly contained sand, product and sludge. Based on confirmatory soil samples collected during the UST removal activities (Table 2A in **Attachment 6**), the PaDEP sent correspondence to Mr. Parry indicating that no further action was required at the time.

In August of 2002, PT and Ultracon (of Montrose, Pennsylvania) removed three USTs from the Site, including one 8,000-gallon unleaded gasoline UST (#001), one 6,000-gallon unleaded gasoline UST (#002) and one 6,000-gallon kerosene UST (#003) (Appendix B in **Attachment 6**). Localized soil impacts were reported at the time of the UST removals and approximately 97 tons of petroleum-impacted soil were removed and disposed off-site. Although water was encountered in the 2002 UST excavation, no water sample was collected, and the 2002 UST Closure Report states that groundwater was not encountered in the excavation. According to PT, the water in the excavation was a result of a broken sewer pipe located in the southern portion of the excavation and not groundwater that had infiltrated into the excavation. PnP submitted receipts showing that the sewer line was repaired, and the PaDEP accepted this as proof that groundwater was not involved. Closure soil sample results collected during the soil removal activities were reported to be below the Statewide Health Standards (SHS) and the case was subsequently closed by the PaDEP on November 20, 2002 (Table 2B in **Attachment 6**).

Nature of Confirmed Releases and Subsequent Site Characterization Activities

On April 2, 2003, the PaDEP was called to the Slocum Insurance Agency property, located immediately northeast of the Site on the opposite side of Memorial Highway, to investigate a complaint regarding an offensive taste and odor in their drinking water. The Slocum potable well is located approximately 100 feet northeast of the Site. At the time, the Slocum property was not connected to the public water supply system (as it currently is), but used an on-site potable well. A sample of the groundwater from the potable well was collected by the PaDEP on April 2, 2003 and analytical results showed that the sample contained a methyl-tert-butyl ether (MTBE) concentration of 3,040 micrograms per liter (ug/l) and a benzene concentration of 5.6 ug/l. Both values are in excess of the SHS for MTBE (20 ug/l) and benzene (5 ug/l).

As a result of the Slocum well contamination, the PaDEP sent correspondence (dated May 9, 2003) to PnP, Mr. Joseph Nardone, Sr. and Irene Nardone, and Mr. Francis McManus

requiring the completion of site characterization activities to determine the source of impact to the groundwater.

In January of 2004, GSC was retained by the USTIF to conduct a preliminary subsurface investigation at the site to assist the USTIF in determining eligibility for coverage under the USTIF. This preliminary investigation involved the installation of eleven soil borings, ten temporary piezometers, and four soil and bedrock groundwater well clusters to characterize soil and groundwater and attempt to determine the source of the contamination in the off-site well at the Slocum property. **Attachment 6** includes summary tables of the analytical results for the soil and groundwater samples collected as part of GSC's preliminary investigation. Analytical results for the groundwater samples collected on February 23, 2004 indicated that dissolved-phase benzene and toluene concentrations were greater than the applicable MSC in GP-C, and dissolved-phase benzene concentrations were also above the MSC in GP-D, GP-E and GP-F. The February 23, 2004 benzene plume was migrating off-site to the east-northeast. However, dissolved-phase MTBE concentrations were generally well below the MSC. The highest MTBE concentration was 12.2 ug/l in GP-C, compared to the MSC of 20 ug/l and compared to the off-site Slocum concentrations of greater than 1,000 ug/l (Table 3).

To confirm on-site soil and shallow groundwater concentrations, and to assess groundwater concentrations in bedrock, four pairs of soil (or "S" suffix) groundwater monitoring wells and bedrock (or "D" suffix) groundwater monitoring wells were installed by GSC at the site on April 13-17, 2004 (MW1S, MW1D, MW2S, MW2D, MW3S, MW3D, MW4S, and MW4D; Figure 2 in **Attachment 6**).

Groundwater analytical results from the preliminary subsurface investigation showed that three constituents (benzene, MTBE and naphthalene) were detected in groundwater at concentrations greater than the SHS. Based on this data, the shallow and deep benzene and MTBE plumes were presumed to extend to the downgradient property line and off-site, beneath Route 415 and toward the Slocum property.

In December of 2004, a geophysical survey was conducted at the site by Advanced Geological Services (AGS) of Malvern, Pennsylvania, under the supervision of Pennsylvania Tectonics (PT), to confirm the presence of any USTs remaining at the site. A geophysical survey, as detailed in the report included in **Attachment 6**, confirmed the presence of the two 4,000-gallon abandoned USTs located in front of the northeastern corner of the building.

In July of 2005, PT was retained by PnP to complete a subsurface investigation at the site to attempt to determine the source of contamination. PT installed ten soil borings and installed two temporary piezometers in the vicinity of the two abandoned USTs in order to determine soil groundwater quality in the vicinity of the two abandoned USTs at the Site. The soil analytical results indicated that two soil samples exceeded the SHS for naphthalene, 1,2,4-TMB and 1,3,5-TMB. Laboratory results for the groundwater samples collected from the two temporary piezometers showed that the two samples contained benzene, 1,2,4-TMB and 1,3,5-TMB concentrations greater than the SHS. Details of PT's site characterization activities and supporting documentation are provided in their Storage Tank Release Investigation Report submitted to the PaDEP on January 31, 2005 (**Attachment 3**).

In March of 2006, GEA conducted additional site characterization activities on behalf of PnP to attempt to complete site characterization, details of which are provided in GEA's SCR dated February 1, 2008 (**Attachment 4**). GEA supervised the installation of three additional

soil groundwater monitoring wells behind the on-site building to establish "background" groundwater quality upgradient of the presumed source. On May 10, 2006, GEA collected groundwater samples from the eight monitoring wells that GSC installed, the three "background" soil groundwater monitoring wells installed by GEA, and two stream samples from Toby Creek. Groundwater analytical results, summarized on Table 4 in **Attachment 6**, showed that benzene (MW2S; MW3S; MW3D; MW4S; MW4D), 1,2,4-TMB (MW2S; MW3S; MW3D; MW4S; MW4D), 1,3,5-TMB (MW3D; MW4D), ethylbenzene (MW4D) and MTBE (MW3D; MW4D) exceeded the applicable SHS. The results for the sample collected from the Slocum well indicated that benzene (at 69.2 ug/l) and MTBE (at 12,600 ug/l) exceeded the applicable SHS for these two constituents. The results for the samples collected from Toby Creek indicated that all target analyte concentrations were below laboratory detection limits.

On June 18-20, 2007, under GEA's supervision, sixteen soil borings were drilled on the site property, the Slocum property and the Gordon property in an attempt to complete soil characterization (see Figure 5a in **Attachment 6**). Table 2E in **Attachment 6** summarizes the soil analytical results for the sixteen soil samples collected and shows that only one soil sample contained target analyte concentrations above the Residential, Used Aquifer MSC (1,3,5-TMB and 1,2,4-TMB in soil sample SB11), however, this sample was collected in permanently saturated soil.

Details of GEA's site characterization activities and all supporting documentation are provided in their Preliminary Site Characterization Summary Report (submitted to the PaDEP and dated June 28, 2006) and their SCR (submitted to the PaDEP and dated February 1, 2008) (Appendix E in **Attachment 6**). The PaDEP, in correspondence dated February 29, 2008, disapproved GEA's SCR, stating that additional soil groundwater data, surveying that included Toby Creek, and additional monitoring wells to the north-northeast of the Site were required to complete site characterization.

The USTIF granted 100% proration for corrective action costs and the property owner agreed to choose the SSS for the site. GSC was retained by PnP to complete short term activities including completing site characterization activities, and interim remedial action (IRA) activities to establish hydraulic control of the downgradient edge of the groundwater plume before it reached a public water supply well. The details of the supplemental site characterization and IRA activities conducted by GSC are provided in **Attachment 6**. A summary of the IRA activities conducted by GSC is provided below.

IRA Activities

In order to establish hydraulic control at the downgradient edge of the bedrock aquifer contaminant plume so that the plume would not migrate to the public water supply well, a groundwater recovery and treatment system was installed on the A.J.'s Beverage private well as an IRA. The system was designed by GSC and installed by Fitch, under the supervision of GSC, and activated on November 6, 2008. The system operates under an approved PAG-05 - National Pollutant Discharge Elimination System (NPDES) General Permit for Discharges from Petroleum Product Contaminated Groundwater Remediation Systems Permit (Permit No. PAG052224; API ID No. 688698; Authorization ID No. 785481; see Appendix F in **Attachment 6**). The treated groundwater is discharged to Toby Creek. Design specifications and a Carbon System Process Flow Diagram for the groundwater treatment system are provided in **Attachment 6**. Remedial system operations and maintenance (O & M) has been conducted on a weekly or biweekly basis. A summary of the

remedial system O & M data and a summary of the analytical data for the system samples collected to date is included in Appendix F in **Attachment 6**.

Pursuant to the requirements of the PAG-05 Permit, sampling of the system effluent is conducted twice per month, with at least ten days between sampling events, and Discharge Monitoring Reports (DMRs) are submitted by GSC, on behalf of PnP, to the PaDEP each month. Each system effluent sample is analyzed for benzene, toluene, ethylbenzene, total xylenes, MTBE, pH, oil and grease, total suspended solids, dissolved iron, total iron, dissolved manganese, and total manganese. In addition to analytical results for the system effluent, average monthly flow rate and instantaneous maximum flow rate during the monitoring period is reported. To date, there have been no exceedances of effluent limitations since the activation of the system.

Additional Site Data from Activities Conducted Since the SSCR Submittal

Recent Groundwater Data

Since the submittal of the SSCR, GSC has conducted two groundwater sampling rounds. Groundwater sampling of select on- and off-site wells, the Slocum private well, and the A.J.'s Beverage private well in April 2010 and August 2010. Updated historical groundwater elevation and chemistry tables and plumes maps for the August 2010 sampling event are included in **Attachment 10**.

Slocum Well Stress Test Data

On April 28, 2010, GSC conducted a stress test on the Slocum well to determine the performance characteristics of this well for future remediation at the site. Data and graphs from the stress test are included in **Attachment 10**. The test results showed that it is feasible to sustain a continuous pumping rate of at least four gpm with a drawdown of about ten feet under short-term steady-state conditions in the Slocum well.

No information regarding the construction or total depth of this well was available from the property owner. However, the well was sounded prior to conducting the stress test and the total depth of the well was measured at approximately 142 fbg.

Additional PaDEP-Approved Activities

As recommended in the SSCR and approved by the PaDEP, bids shall include a detailed plan and fixed-price cost for the completion of monitoring wells MW15D and MW23D in such a way that they are no longer open-hole interval bedrock wells. The recommended approach to this recompletion is to plug back the wells to a depth similar to the bottom of the screened interval for wells MW1D through MW4D on the site. After the wells are plugged back with bentonite chips or an appropriate grout, the remaining open-hole six-inch well would be completed as a two-inch diameter PVC monitoring well with a screened interval similar to MW1D through MW4D.

The selected bidder shall submit a work plan to the PaDEP and obtain PaDEP approval of the work plan to complete the wells prior to doing the work. The selected bidder shall submit a draft of the work plan to the Solicitor, the ICF Claims Handler and the Technical Contact for review and approval prior to submitting the work plan to the PaDEP.

Conceptual Site Model

Impacts to the subsurface at the site and on downgradient properties are the result of releases from the closed petroleum fuel UST systems. Soil sampling data and shallow groundwater data indicate that the primary areas of release were the former USTs and the fuel dispenser islands in front of (to the northeast of) the site building. Releases would have migrated downward through site soils to the water table which is located within the soil. However, no separate-phase liquid has been detected in any monitoring well. Shallow groundwater in soil flows laterally to the northeast and vertically downward into the bedrock due to the downward vertical gradient observed in site well pairs. Petroleum constituents dissolved in soil groundwater migrated northeast beneath the highway and a short distance onto the Slocum property beyond the highway. Soil groundwater plume maps and surface water sampling in Toby Creek indicate that soil groundwater impacts have not reached Toby Creek. Dissolved petroleum constituents in bedrock groundwater migrate northeastward toward and beneath Toby Creek and are now captured by the A.J.'s Beverage well, which is currently being pumped as an IRA. A public water supply well is located approximately 1,000 feet to the east-northeast of the site. This well is more than 300 feet deep and pumps at a constant rate of approximately 60 gpm. This represents a significant hydraulic stress on the fractured bedrock aquifer and the pumping in this well may result in (1) Toby Creek not being a hydraulic divide for the bedrock and (2) the strong downward vertical gradient noted in the vicinity of the site. All of the UST systems were closed at least seven years ago. This fact and an inspection of the time series groundwater quality data and graphs provided as Table 3 and Appendix N in **Attachment 6** indicates that the groundwater plumes are generally shrinking or stable.

Conceptual RAP

There is a long bedrock groundwater MTBE plume with concentrations near the site that have ranged into the hundreds or thousands of micrograms per liter (ug/l). The geometry of this plume, as shown on several figures in the SSCR, indicates that the source of the plume is the site with the former fuel dispensers in front of the building being the most likely principal source. Soil sampling results for constituents other than MTBE and soil groundwater plumes for MTBE and other constituents also suggest that the area in front of the building is the likely source for site impacts. However, MTBE was not detected in any of the 56 soil borings drilled on-site and off-site. Because of MTBE's physical properties (its strong affinity to water compared to soil and soil vapor) it is not unusual to have relatively low MTBE concentrations in soil. However, it is unusual to have no MTBE detected in soil in dozens of samples in the presence of such a large plume. The conclusion drawn from these conditions is that the releases occurred long enough ago that biological and/or physical attenuation of MTBE in soil has occurred. The physical attenuation of MTBE could be in the form of "soil washing" resulting from infiltrating precipitation. In any event, there does not appear to be a significant source in the form of MTBE sorbed to soil on-site or off-site to remediate in order to mitigate a potential continuing source of the MTBE plume in groundwater.

Although recent pumping has dramatically reduced concentrations in the former A.J.'s Beverage water supply well and nearby monitoring wells, it is common for significant rebound to occur in "pump-and-treat" systems when pumping wells are turned off. Considering the relatively high concentrations upgradient from the pumping well, particularly on the Slocum property, it seems likely that there would be significant rebound in the A.J.'s Beverage well and the nearby monitoring wells if pumping from the A.J.'s Beverage well

were discontinued. Therefore, the selected remedy for this site is to reduce concentrations everywhere within the bedrock MTBE plume (which does not seem to have a significant continuing source) in order to minimize rebound when the pumping is discontinued. This can be accomplished by pumping at multiple locations within the bedrock plume in order to remove groundwater impacted by MTBE.
It also seems likely, due to the relatively high concentrations of MTBE in some bedrock samples, that there has been diffusion from transmissive fractures with high concentrations of MTBE into less transmissive fractures and bedrock matrix porosity. Pumping from multiple wells within the plume will replace groundwater having high MTBE concentrations in transmissive fractures with cleaner water from the bedrock groundwater surrounding the plume. This will have the effect of filling the transmissive fractures with groundwater having much lower concentrations of MTBE, creating a relatively strong concentration gradient from the less transmissive fractures and the bedrock matrix porosity into the transmissive fractures. This so-called "reverse diffusion" will also help to minimize the rebound that generally affects groundwater concentrations when "pump-and-treat" systems are terminated.

An estimate can be made of the time necessary for pumping in the plume to significantly reduce concentrations. The bedrock plume is found in a volume of bedrock approximately 450 feet long by 75 feet wide by 75 feet deep which is approximately 2,500,000 cubic feet. The transmissive fracture porosity is estimated to be 3%. Therefore, the volume of groundwater in the plume is estimated to be 75,000 cubic feet or 600,000 gallons. On a conceptual basis, if three pumping wells are located within the plume (one on-site, a second on the Slocum property (perhaps the Slocum water supply well) and the third being the A.J.'s Beverage well), and if each of these wells pumps at a rate of three gpm, then approximately 13,000 gallons of water per day would be produced from within the vicinity of the plume (an intentionally low rate so as not to convert the confined aquifer to an unconfined aquifer). Using these conceptual calculations, the water within the plume would be replaced every 50 days or so. It is, therefore, possible to have multiple exchanges of the groundwater within the plume over the period of one year. The rapid decline in concentrations in MW16D after pumping started supports the conclusion that concentrations can be reduced rapidly. This pumping period of one year may be sufficient to reduce the concentrations in the plume such that when the pumps are turned off and concentrations rebound, the rebound will not generate concentrations in the downgradient wells (MW16D, MW17D and MW18D) greater than the MTBE MSC.

For the purposes of this conceptual discussion, it is assumed that three wells will pump continuously for about one year at three gpm each. However, bidders must provide in their bid a timeframe for which they expect that the system would need to operate (at a flow rate specified by the bidder) until concentrations within wells MW16D, MW17D and MW18D remain below the MSC. [The MSC is used as a criterion to show that the remedy has been effective, not to demonstrate the SHS at this off-site location.] To determine both short-term and long-term rebound effects, following the shutdown of the remedial system, bedrock monitoring wells MW16D, MW17D and MW18D would then be sampled monthly for one quarter and then quarterly for three additional quarters to determine whether MTBE concentrations in these wells have rebounded to above the MTBE MSC. If at the end of this period concentrations have remained below 20 ug/l for MTBE in wells MW16D, MW17D and MW18D during all four quarters, then remediation would be considered complete. Please note it is very important that bidders provide as accurate a timeframe as possible based on their proposed system specifications for which they are confident that there will be no rebound that would generate MTBE concentrations in downgradient wells MW16D, MW17D

and MW18D greater than the MTBE MSC after system shutdown. Since this work will be conducted under a result-based bid, the selected bidder would be required to operate the system beyond the timeframe specified by the selected bidder at no cost to the Solicitor or the USTIF for a six-month period or until they can demonstrate that concentrations in wells MW16D, MW17D and MW18D will not rebound to greater than the MTBE MSC, whichever is sooner.

Full soil delineation and subsequent demonstration of attainment of the SHS for soil may be impractical and so the SSS for soil will be sought. Although soil concentrations are greater than the Soil-to-Groundwater MSCs at some locations on- and off-site, all soil on- and off-site is below the Direct Contact values. Therefore, direct contact is not an issue and no engineering controls will need to be included in the environmental covenant(s).

A RACR would be submitted upon achieving a stable or shrinking plume with lower concentrations in the source area and concentrations in downgradient wells MW16D, MW17D and MW18D consistently below the MSC. Although an engineering control would no longer be necessary to maintain the SSS, an institutional control in the form of an activity and use limitation would be necessary and an environmental covenant would be placed on the site (the Nardone property). A waiver would be sought for the adjacent PennDOT highway. The owners of the Slocum property and the A.J.'s Beverage property would be approached and an environmental covenant for these properties would be requested prohibiting the use of groundwater as a drinking or agricultural water supply. If environmental covenants for these off-site properties are not granted by the property owners, then waivers would be sought and periodic assessment would be included in the site's environmental covenant for these properties if the stable concentration of MTBE in soil or bedrock groundwater anywhere on these properties remains above 20 ug/l. [Periodic assessment and other post-remedial care activities are beyond the scope of this RfB.]

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 scope of work (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 selected standard for soil and groundwater (i.e., bid to a result rather than a fixed SOW). There are general milestones outlined in this RFB designed to assist the bidder in preparing their bid, however, it is the responsibility of the bidder to present a detailed SOW that would result in obtaining RfL for the site.

For this RFB Solicitation, bidders are asked to define and present the specific technical and regulatory approach that constitutes the SOW within the structure outlined below. This RFB seeks competitive bids from qualified contractors to perform the activities necessary to secure RfL using the SSS for soil and groundwater with the use of an institutional control only. All activities shall be conducted in accordance with the Storage Tank Spill and Prevention Act and associated statutes and regulations for the Solicitor for the identified petroleum release at the site. Milestones are provided below to facilitate the preparation of a bid response and to maintain consistency among the bid responses for bid evaluation. Failure to bid the SOW (that is, SSS for soil and groundwater without engineering controls

and with significant mass removal in groundwater) "as is" may result in the bid not being considered.

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 SSS), 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 successful progress toward cleanup of the site.

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

- Continue operating groundwater recovery/treatment system at A.J.'s Beverage property;
- Conduct a PaDEP file review;
- Complete bedrock groundwater monitoring wells MW15D and MW23D;
- Conduct additional site characterization;
- Conduct pilot testing for remedial system design as deemed necessary by the bidder;
- Preparation, submission and PaDEP approval of a RAP;
- System design, installation and permitting;
- System operation and maintenance, NPDES sampling/reporting, and quarterly groundwater monitoring and reporting;
- Activities associated with demonstration of attainment of the SSS;
- Address soil vapor/indoor air quality;
- Preparation of environmental covenant(s) and waiver request letters, and submission and PaDEP approval of a RACR; and,
- Well abandonment and site restoration.

Continued Bi-Weekly Operation and Maintenance (O & M) of A.J.'s Beverage Remedial System, Bi-Weekly NPDES Sampling and Submittal of Monthly NPDES Discharge Monitoring Reports (DMRs) (Milestone A1, A2, Etc. – Quarterly)

GSC will continue to operate and maintain the groundwater recovery and treatment system currently operating at the A.J.'s Beverage facility until the selected bidder receives the fully executed Remediation Agreement from the Solicitor. The selected bidder shall continue to operate and conduct O & M on the A.J.'s Beverage system during Milestones A through G while the full-scale remedial system, that will include the additional groundwater recovery wells on the site property and the Slocum property, is being designed and installed.

The selected bidder shall provide a quarterly fixed-price cost to conduct bi-weekly O & M and NPDES sampling of the A.J.'s Beverage remedial system, and prepare and submit monthly DMRs to the PaDEP until the long-term remedial system is installed and operating. All data collected from these activities shall be presented in the RAP (Milestone D).

Bidders shall propose the total number of quarters that the A.J.'s Beverage quarterly O & M activities would continue under this Milestone until the complete system (that will include recovery wells on-site and on the Slocum property) is operating. The system must maintain a continuous flow rate of at least three gpm to ensure hydraulic control of the plume. Bidders should assume that fresh carbon units will be in place at the time the Remediation Agreement is fully executed. The treatment room currently housing the remedial equipment at the A.J.'s Beverage facility, as well as all remedial system components, will be available throughout the corrective action process. The selected bidder must enter into a lease agreement with the A.J.'s Beverage property owner, Ms. Catherine Garinger, upon execution of the Remediation Agreement. The Solicitor is currently leasing the A.J.'s Beverage treatment system room from Ms. Garinger for $309.00 per month with a 3% increase every year as specified in the current lease agreement. These costs shall be included in the bidders' proposed fixed-price cost for system operation and maintenance.

PaDEP File Review, Completion of Monitoring Wells MW15D and MW23D, and Additional Site Characterization Activities (Milestone B)

PaDEP File Review (Task B1):

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.

Completion of Monitoring Wells MW15D and MW23D (Task B2):

The successful bidder shall complete monitoring wells MW15D and MW23D based on the recommendations provided in the GSC's SSCR. The detailed plan describing the proposed completion of the two bedrock wells along with the fixed-price cost to complete the wells 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.

Additional Site Characterization Activities (Task B3):

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.

Additional Pumping Well Installation and Feasibility/Pilot Testing (Milestone C)

Bidders shall prepare a conceptual remedial action plan including the conceptual design of a remedial system in their response to this RFB. It is industry practice to perform a pilot test or remedial feasibility test and provide the results of this testing in the RAP. The purpose of the pilot test is 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
- Determine design criteria

The bidder shall provide a detailed description of the proposed pilot testing including rationale, the use of existing or installation of new data monitoring/collection points, proposed equipment to be used, and the data that is proposed to be collected. Additionally, the bidder shall specify up to five basic, objective criteria that would be evaluated to determine whether the remedial action proposed in the bid response document is feasible. The criteria shall be listed with an upper and lower limit that will define the range of acceptable results. These criteria must be tightly- controlled measurements or calculations that could be independently measured or verified by others during the pilot test.

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. Each bidder should specify the critical criteria and ranges for key design elements on which their proposed remedy depends. The bidder shall specify in the bid response 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 3 gpm for each well over a 24-hour period.
- The recovery wells will not evacuate at a rate of 3 gpm when pumped continuously.
- The dissolved iron concentration will not be greater than 7.0 milligrams per liter (mg/L).
- Etc."

This is only an example. Actual criteria will vary from bid to bid. The criteria selected and the range for each specified in the bid response document will be evaluated by the bid evaluation committee as part of the technical review. Unrealistic criteria or criteria that are unreasonably narrow will reduce the favorability of the bid response as viewed by the bid review committee.

The selected bidder will prepare a Pilot Test Report and submit it to the Solicitor with a copy to the Technical Contact. The Pilot Test Report shall show that the pilot test was conducted according to their bid and shall constitute documentation for payment on Milestone E regardless of the result. If the results of the pilot testing show that the proposed remedial action is feasible based on the specified criteria and ranges, the selected consultant shall move forward on the project. However, if the results of the pilot testing show that the

proposed remedial action is not feasible based on the specified criteria, either the selected consultant or the Solicitor may elect to cancel the Remediation Agreement (See Term13 in the Remediation Agreement provided as **Attachment 12**). This stage of the project is referred to as the "Pilot Test Off-Ramp" and is intended to protect the selected consultant and the Solicitor from being obligated to move forward with a remedial action that is expected to be far from optimal or expected to fail. The selected bidder is under no obligation to cancel the contract if the pilot test results are outside the criteria or 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 if the Solicitor agrees and elects not to cancel the contract.

If either party elects to cancel the contract, the USTIF will have complete discretion with regard to the use of the information in the Pilot Test Report. The USTIF may use it as the basis for rebidding the project or may provide it to one or more of the previously unsuccessful 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.

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

Preparation, Submittal and PaDEP Acceptance of a RAP (Milestone D)

Upon completion of Milestones A through C, the selected bidder shall prepare a RAP in draft form for review and comment by the Solicitor and the USTIF. This RAP shall contain information required under 25 PA Code 245.311 and other applicable statutes, regulations and guidance, and shall be signed and sealed by a Professional Geologist and a Professional Engineer registered in the Commonwealth of Pennsylvania. Each bidder's project schedule shall provide three weeks for the Solicitor and USTIF review of the draft document. The final RAP shall address comments received from the Solicitor and the USTIF on the draft report before it is submitted to the PaDEP for review and approval. The RAP shall be consistent (with regard to approach and level of effort) with the conceptual RAP provided in the selected consultant's bid response. Upon approval of the RAP by the PaDEP, the selected bidder will be paid the fixed-price amount specified for this Milestone in the Remediation Agreement and can then proceed with installation of the remedial system.

Remedial System Design, Installation and Permitting (Milestone E)

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 be shown on conceptual diagrams provided in as much detail as practical. 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.

The bidder shall describe the principal source/vendors of the remedial equipment system and installation. Provide Process and Instrumentation Diagrams and cut sheets if practical.

The bidder shall describe the routine maintenance activities and schedule.

The bidder shall describe how progress will be monitored and how the system may be adjusted. The bidder must be specific with regard to parameters to be monitored and how these data will be used.

The bidder shall describe what additional permits or modifications to the existing PAG-05 Permit are anticipated and include any costs for additional permitting or modifications to the existing permit in the fixed-price cost for this Milestone, as well as present estimated operation duration for the system calculations based on an estimate of mass in place and mass removal rates.

The bidder shall present other relevant information that would assist in the evaluation of the bid.

Critical Remedial System Design Elements

With the IRA taking place on the A.J.'s Beverage well, there is currently hydraulic control of groundwater at the downgradient portion of the MTBE plume occurring through the operation of the current remedial system at the A.J.'s Beverage facility. The successful bidder shall show that their remedial system would continue to provide hydraulic control at the downgradient edge of the MTBE plume in the vicinity of the A.J.'s Beverage property, as well as reduce concentrations and provide additional hydraulic control on-site in the presumed source area and off-site on the Slocum property.

The conceptual RAP presented by GSC in the SSCR and in this RFB has been accepted in principle by the PaDEP. Alternatives to the PaDEP-accepted remedial approach may be presented in the bid response, but it is critical that the bidder show that this alternative 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.

Significant reduction in MTBE concentrations in the A.J.'s Beverage well and at the downgradient edge of the MTBE plume has already occurred as a result of the IRA activities. Furthermore, additional reduction in both soil and groundwater concentrations has occurred through natural attenuation. It is assumed that monitored natural attenuation will continue and that on-site remedial activities implemented by the selected 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 off-site access for monitoring and remedial activities will be granted without undue negotiation. As previously mentioned, Ms. Garinger has allowed access to her property to conduct the activities necessary to operate and maintain the A.J.'s Beverage remedial system and is currently leasing the remedial system room to the Solicitor for $309.00 per month with a 3% increase annually as specified in the lease agreement. Based on discussions between GSC and Mr. Bruce Slocum, Mr. Slocum has agreed to provide access to his private well but Mr. Slocum will not allow the construction of a

remediation shed on his property and so the pumping well on the Slocum property must be connected to either the A.J.'s Beverage remediation system or a shed on the Nardone property. Additionally, an access agreement shall be executed between the selected bidder and Mr. Slocum that include the following elements:

- A separate electrical meter must be installed to monitor electrical usage separately for the Slocum pumping well. The utility pole for the electrical service shall be installed near Toby Creek and directly north of well MW-14, and the electrical line and discharge piping must be installed in the same underground trench towards the A.J. Beverage treatment system. The locations of the utility pole and trench layout must be approved by Mr. Slocum prior to installation.
- Payment of $250/month, with a 3% increase annually, shall be paid to Mr. Slocum for access to his property for installation and operation of the pump and related system components, well sampling, and any other activities conducted on the Slocum property during the corrective action process. All checks shall be payable to Mr. Bruce Slocum and mailed to: Mr. Bruce Slocum, 290 Machell Avenue, Dallas, PA 18612. All checks shall be received by Mr. Slocum no later than the first day of each month, beginning with the month in which the tasks specified in the Remediation Agreement begin and ending with the month in which the tasks specified in the Remediation Agreement cease, up to and including the month in which the property is fully restored to Mr. Slocum's satisfaction.
- Mr. Slocum shall be named as additional insured.
- Consultant shall restore the property, including any site damage as a result of the selected consultant's activities, including but not limited to reseeding of grass, replacement of asphalt, removal of system and electrical components, etc.
- Consultant shall perform activities on the Slocum property in as expeditious a manner as possible so that there is minimal disturbance of or inconvenience to the Slocum Insurance business operations. Specifically, the selected consultant and its contractors shall not use the Slocum Insurance parking lot Monday through Friday from 7:30 AM to 6:00 PM and Saturdays from 7:30 AM to 2:00 PM unless the selected consultant has notified Mr. Slocum via telephone at least 48 hours prior to the start of the selected consultant's planned activities, has specified the location and amount of space needed on the Slocum property, and has obtained approval from Mr. Slocum for access during the above-mentioned times. Additionally, upon access authorization, the selected consultant and/or its contractors shall occupy only a small portion of the Slocum parking lot so that the Slocum Insurance Agency can continue to accommodate visitors. Access to the Slocum property is prohibited during any work specified in this RFB and/or the Remediation Agreement that is not being conducted on the Slocum property (for example, staging of equipment, parking of vehicles, or any other use of the Slocum property will not be allowed by Mr. Slocum if work is being conducted on the Nardone (site) property).
- The selected consultant shall relocate the Slocum remediation system, pumping well and associated system components within 60 days following notification from Mr. Slocum of property development in the event Mr. Slocum decides at any time during the corrective action process to development his property in such a way that would result in the destruction or inaccessibility of the current pumping well. Should this be necessary, it would be a change order to the Remediation Agreement.

The precise language of the access agreement and Remediation Agreement that will include the requirements specified above will have to be negotiated between the selected consultant and Mr. Slocum and shall include at least the elements listed above.

Remedial System O & M, Bi-Weekly NPDES Sampling, Monthly NPDES Reporting, and Quarterly Groundwater Monitoring and Reporting (Milestone F1, F2, Etc. - Quarterly)

Following the activation of the full-scale remedial system, the selected bidder shall operate and maintain the system for the duration proposed in their bid and specified in the Remediation Agreement (**Attachment 12**). The successful bidder shall conduct bi-weekly NPDES sampling in accordance with the approved PAG-05 Permit for the site and provide monthly NPDES Discharge Monitoring Reports (DMRs) to the PaDEP either electronically via the PaDEP's eDMR system or by sending a hard copy of the DMR to the PaDEP via U.S. Mail.

If there is an unscheduled shutdown of the system, the selected bidder must notify the Solicitor and Technical Contact within 48 hours after knowledge of the shutdown. If there is a scheduled shutdown of the system that will last greater than seven days, the selected bidder must notify the Solicitor and Technical Contact at least 30 days prior to the planned system shutdown.

Quarterly groundwater monitoring shall be conducted at the site during full-scale system operation, including gauging and sampling of key wells specified by the bidder in the bid response. The proposed list of wells to be monitored on a quarterly basis during operation of the full-scale system must include wells MW2S, MW2D, MW3S, MW3D, MW4S, MW4D, MW8D, MW10S, MW10D, MW12S, MW12D, MW13S, MW13D, MW14S, MW14D, MW15D, MW16D, MW17D, MW-18D, MW19D, MW22D, MW23D, the Nardone property recovery well, the Slocum property recovery well and the A.J.'s Beverage recovery well. However, the bidder can propose to monitor additional wells if they so choose. The first sampling event shall be conducted prior to system startup.

In the event that the selected bidder believes that the groundwater attainment demonstration for the SSS (as described in Milestone G below) can be initiated, and the selected bidder chooses to shut down the remedial system and initiate the groundwater attainment demonstration for the SSS, prior to completing the final performance milestone specified in Milestone F (i.e., Milestone F*n* described in Exhibit A of the Remediation Agreement (**Attachment 12**)), then the selected bidder will be paid for all quarters proposed by the selected bidder and specified under Milestone F (i.e., F1 through *Fn*). However, in the event that attainment of the SSS for groundwater cannot be demonstrated (as described below in Milestone G) following a premature shutdown of the remedial system, the selected bidder shall restart the system within seven days following the receipt of the analytical results indicating that attainment was not met and operate the system for the remaining number of quarters specified in Milestone F during which the system was not operating but for which the selected bidder was already paid, at no additional cost to the Solicitor.

In the event that after full, diligent and appropriate application of the remedial system for the entire time specified in the bid response, the selected bidder believes that groundwater has not been remediated to the extent at which the groundwater attainment demonstration for the SSS as described in Milestone G can be initiated, then the selected bidder must continue to operate the system at no cost to the Solicitor for an additional two quarters (i.e., six months) or until the groundwater attainment demonstration is initiated, whichever is

sooner. Following the additional two quarters of system operation, the selected bidder or the Solicitor would have the option to terminate or modify the Remediation Agreement (**Attachment 12**).

Demonstrating "Attainment" of the Site-Specific Standard for Soil and Groundwater (Milestone G1, G2, Etc. – Quarterly)

The goal of remedial activities requested in this RFB Solicitation is to demonstrate attainment of the SSS for soil and groundwater with only an institutional control for groundwater in the form of an environmental covenant with waivers as necessary. Therefore, the selected bidder shall have a clear concept of the location and extent of impacted media and shall have a well-developed plan prior to the implementation of the remediation so that the selected bidder is confident that attainment of the SSS for soil and groundwater would be demonstrated at the end of the proposed timeframe for which the remedial system would operate.

The detailed plan to demonstrate attainment of the SSS for groundwater shall use **ad hoc criteria approved by the PaDEP** relating to mass removal and showing that groundwater flowing off the A.J.'s Beverage property is consistently below the MSC. This will include a demonstration that concentrations of MTBE in wells MW16D, MW17D and MW18D are below the applicable Groundwater MSC for four consecutive quarters following system shutdown (to ensure there is no rebound in these wells above the Groundwater MSC after the system is shutdown), and to demonstrate, through statistical analysis or another PaDEP-approved method, that the dissolved-phase plumes are shrinking or stable. This level of detail should be reflected in this section of the response to the RFB solicitation.

In the event that the remedial system operated for the entire time specified in the bid response and the MTBE MSC is exceeded in MW16D, MW17D or MW18D during any of the four quarters of groundwater attainment demonstration following system shutdown, then the system must be restarted within seven days following the receipt of the analytical results and operated for an additional two quarters (i.e., six months) at no cost to the Solicitor. Following the additional two quarters of system operation, the selected bidder or the Solicitor will each have sole discretion to terminate the Remediation Agreement or may agree mutually to modify the Remediation Agreement (**Attachment 12**).

Address Soil Vapor/Indoor Air Quality (Milestone H)

To address soil vapor and indoor air quality in occupied buildings to the PaDEP's satisfaction, soil vapor sampling may be conducted to show that soil vapor concentrations are below the Residential Soil Vapor MSCs, or an alternative method not involving institutional or engineering controls may be used. The bid shall describe in detail how indoor air quality will assessed. A responsive bid will provide detail with regard to the number, location and depths of proposed soil vapor sampling points. If an alternative method to "demonstrate attainment" for soil vapor/indoor air quality is proposed, it should be discussed in detail, particularly the regulatory rationale.

Preparation and Filing of Environmental Covenant(s), and Submittal and PaDEP Approval of a Remedial Action Completion Report (Milestone I)

When the selected bidder is convinced that attainment of the selected standard for this site has been met, a RACR shall be prepared and submitted to the PaDEP in accordance with

25 Pa Code 245.313. The RACR must include all drafts of the environmental covenants necessary in order to obtain RfL for the site. Details of the environmental covenant(s) to be submitted with the RACR should be discussed and agreed upon with the PaDEP prior to submitting the draft covenant(s) with the RACR to increase the likelihood of RACR approval. As this solicitation is, in part, for a RACR, it is imperative that the RACR is sufficiently comprehensive to permit the PaDEP to review and approve the RACR and grant RfL to the Solicitor and the property owner. There may be post-remedial care items in the RACR that are not possible to anticipate at this time. Any post-remedial care activities are beyond the scope of this RFB.

Groundwater on- and off-site currently exceeds the Residential, Used Aquifer Medium-Specific Concentrations (MSCs). Preparation and filing of environmental covenants may be necessary for the properties or portion of the properties where concentrations exceed the Residential, Used Aquifer MSCs and institutional controls are implemented to attain the SSS. All environmental covenants must be prepared and filed in accordance with the Uniform Environmental Covenants Act (UECA). The bidder would be responsible for determining which affected properties would require an environmental covenant based on contaminant distribution and for which affected properties an environmental covenant can be waived by the PaDEP (e.g., the highway). Depending on on- and off-site conditions at the time of the RACR submittal, and on the method by which RfL is ultimately achieved, environmental covenants may have to be filed for the site property, the Slocum property and the A.J.'s Beverage property. The selected bidder would also be responsible for assisting the property owners with filing of the appropriate environmental covenants within 30 days of the RACR approval date.

The Nardones (site property owners) and Mr. Bruce Slocum (owner of Slocum Insurance property) have agreed to file an environmental covenant for their property, however, it is uncertain whether Ms. Catherine Garinger, owner of the A.J.'s Beverage property, will agree to file an environmental covenant for her property if one is needed to attain the standard. However, bidders shall assume, for the purposes of this bid, that the only properties that would be required to have an environmental covenant placed on it would be the Nardone (site) property and the Slocum property, and that a waiver would have to be requested and granted by the PaDEP for the PennDOT Route 415 Right-of-Way (ROW). If a waiver or an environmental covenant is necessary for the A.J.'s Beverage property (Ms. Garinger), then all tasks associated with the waiver or environmental covenant are beyond the scope of this RFB.

According to the Dallas Borough Manager, there is not a municipal "Must Connect" Ordinance in effect for the site and surrounding area and the installation of private wells for drinking or agricultural purposes is not prohibited. Therefore, environmental covenants would need to address any future use scenarios that could create a complete exposure pathway from impacted groundwater in the future. Environmental covenants for the Nardone (site) property and any off-site properties (including the Slocum and Garinger properties, if still necessary at the time of the RACR submittal) would include an activity and use limitation for groundwater that would prohibit the use of groundwater beneath the property for potable or agricultural purposes.

System Removal, Well Abandonment and Site Restoration (Milestone J)

After acceptance of the RACR by the PaDEP, the site property and affected off-site properties shall be restored such that all existing groundwater recovery wells are returned to

their original conditions (i.e., no pumps), as well as any groundwater monitoring wells or recovery wells that have been determined to be no longer necessary for any future post-remedial care sampling, shall be properly abandoned and the surface restored to its original condition. All above-grade remediation equipment shall be removed from the site, along with any wastes, including but not limited to, stockpiled soil, purged groundwater, and granular activated carbon.

Other Items (Optional) (Milestone K)

Due to the nature of this RFB, that is the SSS, there may be other items not otherwise specified in the previous Milestones A through J that the bidder wishes to propose. Bidders shall propose these items for payment under this milestone. If there are multiple items, please label them K1, K2, K3, etc. An example of such an item is a Baseline Risk Assessment. This milestone is not intended for optional items, but rather for necessary items to "close" the site not otherwise included in the previous Milestones.

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 quoted 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 an appendices to either the RAP or the RACR. Waste disposal costs shall be included in the fixed prices quoted for each Milestone, 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 chance in the selected consultant's SOW or total quoted cost for any specified Milestone.

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 cost estimate 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 contract (Remediation Agreement). A copy of the standard Remediation Agreement is included as **Attachment 12** to this RFB Solicitation. This sample 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 Remediation Agreement language in **Attachment 12** other than obvious modifications to fit this RFB (e.g., names and dates). The number and scope of any modifications to the standard 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 12 "as is," or that does not provide a cross-referenced list of requested changes to this agreement will be considered non-responsive.** 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, necessary, and appropriate. 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 included as **Attachment 13** 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 13**. **Attachment 13** is provided in Microsoft Excel format for bidders' convenience. In addition to **Attachment 13**, 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 costs quoted in the bid and the rate schedule will be assumed to be valid for the contract.

It is the bidder's responsibility to ensure that all work is performed in accordance with applicable laws, regulations and guidance.

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. Continue operating A.J.'s Beverage groundwater recovery/treatment system;
    b. Conduct a PaDEP file review;
    c. Complete bedrock groundwater monitoring wells MW15D and MW23D;
    d. Conduct additional site characterization activities;
    e. Conduct additional pilot testing for remedial system design as deemed necessary by the bidder;
    f. Submission and PaDEP acceptance of a RAP;
    g. Quarterly groundwater monitoring and reporting;
    h. System design, installation and permitting;
    i. System operation and maintenance;
    j. Activities associated with demonstration of attainment of the SSS;
    k. Address soil vapor/indoor air quality;
    l. Preparation of environmental covenant(s) and submission and PaDEP approval of a RACR; and,
    m. Well abandonment and site restoration.

2. Provide Fixed-Price bid pricing using the standardized format in **Attachment 13** including a rate schedule for any out-of-scope work. The following information relating to the bid pricing should be included as additional sheets to **Attachment 13** 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 12**[2];

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

[2] 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.

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 necessary.

5. Address the following specific questions:

    a. How many sites in Pennsylvania have you closed (i.e., obtained RfL) using the SSS and having submitted an SCR, RAP and RACR under Chapter 245? Please list up to ten (10) sites including PaDEP Facility ID Number and USTIF Claim Number (if a USTIF claim).

    b. How many sites in the PaDEP Northeast Region have you closed (i.e., obtained RfL) under Chapter 245? Please list up to ten (10) sites including PaDEP Facility ID Number and USTIF Claim Number (if a USTIF claim).

    c. How many sites have you closed (i.e., obtained a RfL) that involved the use of environmental covenants? Please list up to ten (10) sites including PaDEP Facility ID Number and USTIF Claim Number (if a USTIF claim).

6. Provide one or two case histories in which groundwater "pump and treat" 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 and ICF/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 cost estimate. The use of overly narrow assumptions will negatively impact the bid.

12. Identify any exceptions or special conditions applicable to the proposed SOW.

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 FEBRUARY 10, 2011, STARTING AT 1:00 PM. The Solicitor, the Technical Contact, or their designee will be at the site between 1:00 PM and 3:00 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 TECHNICAL CONTACT VIA E-MAIL BY FEBRUARY 7, 2011 WITH THE SUBJECT "PUMP N PANTRY CLAIM # 2003-0183(F) – SITE MEETING ATTENDANCE CONFIRMATION".** The name and contact information of the company participant should be included in the body of the e-mail.