

**COMPETITIVE BID SOLICITATION FOR
THE COMPLETION OF A SITE CHARACTERIZATION REPORT AND A
REMEDIAL ALTERNATIVES EVALUATION**

Knapp's Service Station
1196 Easton Road
Roslyn, PA 19001
PADEP FACILITY ID #46-41579
PAUSTIF CLAIM #1999-018(M)

ICF International (ICF), on behalf of the Pennsylvania Underground Storage Tank Indemnification Fund (PAUSTIF) and the claimant for the above referenced claim, is soliciting bidders for a fixed price contract project. Specifically, this Request for Bid (RFB) is seeking qualified firms to prepare and submit a fixed price proposal to complete a Site Characterization Report (SCR) and a remedial alternatives evaluation for the Knapp's Service station (Site). A petroleum release to both soil and groundwater has been confirmed at the Site and a SCR is still needed to meet the Pennsylvania Department of Environmental Protection (PADEP) characterization requirements. The Solicitor has an open claim (Claim #1999-018(M)) with the PAUSTIF and the work outlined in this RFB will be completed under this aforementioned claim. Reimbursement of Solicitor-approved reasonable, necessary and appropriate costs (within claim limits) for the work described in this RFB will be provided by PAUSTIF.

This RFB includes five (5) major components with subtasks presented in an outline format for cost analysis and implementation. The fixed costs proposed by the consultant bidder shall be based on the scope of work provided in the RFB. Expenses in excess of the quoted price for the contract shall be the consultant's responsibility. The scope and budget for any identified out of scope activities must be pre-approved to be eligible for payment. Any costs associated with deviations from the scope that did not receive prior approval from the solicitor and PAUSTIF, or its representatives, will not be reimbursed.

Specifically, this RFB seeks competitive bids from qualified consultants to complete additional characterization activities, prepare an appropriate SCR, evaluate potential remedial strategies, and facilitate progress towards site closure in a timely, efficient, and cost effective manner.

Should your company elect to respond to this RFB Solicitation, one (1) hard copy and one (1) electronic copy (on CD) of the signed bid package must be sent to the attention of the ICF Representative at the address provided in the RFB. **The signed response (electronic and hardcopy) to this RFB must be provided to the ICF Representative, at the address provided in the RFB, no later than close of business (5 p.m. EST) on January 27, 2011.** In addition, the outside of the package must be clearly labeled with "Bid – Claim 99-018(M)". Please note that ICF and PAUSTIF will no longer be accepting the electronic version via email and that the signed bids (electronic and hardcopy) for this RFB must be received at the ICF office no later than close of business (5 p.m. EST) on the provided deadline for the submitted bid to be considered. **To reiterate, no bid responses should be emailed to the ICF representative. The electronic version must be provided on CD and delivered with the hard copy to the ICF representative by the provided deadline.**

On behalf of ICF and PAUSTIF, the Technical Contact will assist the Solicitor in evaluating the bids but the Solicitor will ultimately choose with whom to negotiate the mutually agreeable contract. The bid evaluation will consider, among other factors, total bid cost, unit costs, schedule, qualifications, and contract terms and conditions (no priority or relative weighting is implied by the order of these factors). The Solicitor anticipates informing the selected consultant with an approval to proceed within twelve (12) weeks of the bid response deadline. Please note that when the contract is in place with the consultant selected by the Solicitor, all other firms submitting bid packages will be notified that the contract was awarded.

SOLICITOR AND TECHNICAL CONTACT INFORMATION

ICF Representative

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NOTE: All questions regarding this RFB solicitation and the subject site conditions must be directed to the Technical Contact and submitted in writing with the understanding that all questions and answers will be provided to all bidders. If questions are to be submitted via email, please note the following in the subject line of the email: Knapp's Service Station RFB Questions Claim No. 99-018(M). Bidders must neither contact nor discuss this RFB Solicitation with the Solicitor, PAUSTIF, or ICF International 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.

SITE LOCATION, OPERATION, AND BACKGROUND INFORMATION

Site Address

Knapp's Service Station
1196 Easton Road
Roslyn, PA 19001
Abington Township, Montgomery County

Site Location and Operation Information

The Site is an active retail gasoline and service station owned by Paul R. and Marcella A. Knapp and located on the south corner of Easton Road and Bradfield Road in Abington Township, Pennsylvania. As a retail fueling station, unleaded gasoline dispensing equipment and systems are located at the Site as well as a one (1) story building. The gasoline underground storage tank

(UST) field is located in the middle of the Site adjacent to the canopy and contains two (2) USTs. The surrounding properties are a mix of residential and commercial properties. The Site and surrounding properties are provided with water from Philadelphia Suburban Water Company. A Site Plan is provided as Figures 1.

Site Background Information

In January 1999 during tank closure activities it was discovered that a gasoline release occurred in the vicinity of UST No. 001, No. 002, and No. 003. Over 1,200 tons of gasoline contaminated soil was excavated from the vicinity of the UST's. No groundwater was observed in the excavation. Post Excavation soil samples indicated contaminant levels exceeding the Pennsylvania Department of Environmental Protection (PADEP) cleanup standards.

In February 1999, a total of three (3) monitoring wells (MW-1, MW-2, and MW-3) were installed at the Site. Dissolved phase gasoline was observed in groundwater samples collected during drilling but no free product was present.

In July 1999, Carroll Engineering Corporation (CEC) submitted a Preliminary Site Characterization Report (SCR) that summarized the release and subsequent site characterization activities. The report also included recommendations for well sampling, a records search, and the preparation of a Remedial Action Plan (RAP).

On June 13, 2000, the PADEP sent a letter to the claimant stating that based upon the review of the RAPR dated February 28, 2000, additional actions were required at the Site. The letter indicated that a Site Characterization Report and a report identifying the vertical and horizontal extent of the hydrocarbon plume should be submitted to the PADEP. The letter also stated that a quarterly monitoring and sampling program should be implemented at the Site and a RAP should be developed to address impacted groundwater on and off the Site.

On July 11, 2000, CEC sent a letter to the PADEP stating that the claimant intends to complete all recommended activities by the PADEP.

On July 31, 2000, CEC submitted RAPR No. 2 to the PADEP. The report indicated that a large decrease in dissolved phase gasoline constituents had been noted in the recent data compared to the April 1999 groundwater sampling results. The data from the recent event indicates that eight (8) compounds analyzed in the groundwater still exceeded PADEP Standards/Actions Levels.

In November 2000, a total of five (5) additional monitoring wells (MW-4, MW-5, MW-6, MW-7, and MW-8) were installed both on and off site.

On May 12, 2005, CEC submitted RAPR No. 3 and a SCR to the PADEP. The proposed remediation standard for the Site was the PADEP's Site Specific Standard.

On December 14, 2005, CEC submitted a RAP to the PADEP for the Site. The report includes findings and conclusions from the RAPR No. 3 and the SCR submitted to the PADEP on May 12, 2005.

On March 10, 2006, the PADEP sent a letter to the client stating that the RAP dated December 14, 2005 has been approved with the described modifications. The PADEP stated that a quarterly monitoring program must be implemented at the Site instead of the semi-annual program that was proposed in the RAP. Also, the PADEP required that RAPRs be submitted to the PADEP on a quarterly basis and a Remedial Action Completion Report (RACR) be submitted to the PADEP upon attainment of the proposed remediation standard.

In November 2007, INTEX Environmental installed a total of six (6) soil vapor monitoring wells at the Site via Geoprobe. The vapor points were sampled in December 2007. Available data indicates that the analytical did not note any exceedances; however the method detection limits were elevated to levels higher than the applicable PADEP standards.

In May 2008, CEC prepared and submitted RAPR #7 for the Site. The RAPR discussed activities completed during the fourth quarter of 2007 and the first quarter of 2008. Based on information available, RAPR #7 was the most recent report submitted to the PADEP for this Site.

On June 30, 2008, soil vapor samples were subsequently collected from each of the six (6) aforementioned vapor points installed in November 2007. The analytical did not note any exceedances; however the method detection limits were elevated to levels higher than the applicable PADEP standards.

In December 2008, CEC installed a sub slab depressurization (SSD) system as an engineering control at the Site. The SSD system was installed in an effort reduce trapped vapors beneath the building. Based on the available information, the SSD system consists of a one horse power SVE type Rotron blower and dual activated carbon 55-gallon filters installed in-series. Vent piping was installed in up to two (2) locations beneath the slab flooring and connected to the Rotron blower with exhaust riser extending above the roofline.

In September 2009, CEC conducted a groundwater monitoring and sampling event at the Site.

Bidders are directed to the pertinent available documentation (including reports, figures, correspondence and analytical data) that has been provided in Attachment 1 for additional site background details.

PROPOSED SCOPE OF WORK

The scope of work has been prepared using the guidelines of Pennsylvania Code Title 25, Chapter 245 (The Storage Tank and Spill Prevention Program) and Chapter 250 (The Land Recycling Program). There are several key elements that must be completed in order for the approach outlined in this RFB to be successful. The critical elements include the following:

- Prepare the appropriate project guidance documents;
- Complete a full Sensitive Receptor Survey;

- Complete a site survey, map the important features of the Site and evaluate groundwater flow (Please note that a digital version of the map is not available and as such will not be provided to the winning consultant);
- Conduct a soil boring investigation;
- Complete aquifer testing on the monitoring well network;
- Conduct groundwater monitoring and sampling events;
- Conduct soil gas sampling;
- Evaluate and sample the SSD system;
- Complete fate and transport modeling to assess soil, groundwater, and vapor intrusion media pathways to determine if and the extent to which dissolved phase hydrocarbons have or may be expected to migrate beyond the property boundary now or in the future;
- Prepare and submit a Site Characterization Report;
- Complete a risk assessment evaluation using the applicable guidance documents in an effort to appropriately evaluate exposure pathways;
- Remedial Alternatives Analysis should be completed for the Site to compare cleanup alternatives and evaluate which remedial action is most appropriate for the Site; and
- Prepare a Risk Assessment and Feasible Remedial Alternatives Analysis Report for the Site.

In addition to the above base Scope of Work, the following ***Optional Cost Adders*** need to be addressed in your bid response. These costs adders will not be part of your initially approved contract. However, if it becomes necessary to complete any of these activities, they will be completed under the Remediation Agreement signed as part of this project. More details regarding the work scope for each of these ***Optional Cost Adders*** is provided at the end of the RFB Scope of Work.

- ***Optional Cost Adder #1*** – Provide a Unit Cost to complete an additional groundwater monitoring and sampling event. The scope of work for this cost adder should follow Task 3.0. The cost provided should be to complete only one (1) event with all wells in the network being sampled.
- ***Optional Cost Adder #2*** – Provide a Unit Cost to Prepare a Summary Progress Report for submittal to the PADEP. The Progress Report should detail the observations documented during the event, summarize the analytical results, map the groundwater flow direction for the Site, provide iso-concentration maps for compounds exceeding the SWHS,

provide hydro-graphs, discuss the interim remediation efforts (if any), and provide additional scheduling details for upcoming events. Once the report is approved by the Solicitor, the report can be finalized and submitted to the PADEP. The progress reports discussed are being proposed to meet the PADEP obligation on progress reporting before RAP approval.

- ***Optional Cost Adder #3*** – Provide a Unit Cost to extend the Pump test for four (4) additional hours at the Site. The pump test would be extended if stabilization does not occur by the end of the eight (8) hour pump test.
- ***Optional Cost Adder #4*** – Provide a Unit Cost to install one (1) groundwater monitoring well. The scope of work for this cost adder is to install the well to a total estimated depth of 65 feet below grade (ftbg) with approximately 45 feet of four-inch diameter, schedule 40 PVC flush threaded casing and approximately 20 feet of four-inch diameter, schedule 40 PVC flush threaded 0.010 slot size screening. The wells should be drilled and constructed in accordance with generally accepted practices as outlined in the PADEP Groundwater Monitoring Guidance Manual, dated January 1, 1999 (Document # 383-3000-001). Based on anticipated drilling conditions, a Pennsylvania-licensed driller should install the wells using air-rotary methods.
- ***Optional Cost Adder #5*** – Provide a Unit Cost to secure offsite access on one (1) adjacent residential/commercial property in an effort to install a groundwater monitoring well. The cost should cover the necessary time and materials needed to contact the off-site property owner, draft an access agreement, and obtain approval with one (1) draft revision to the access agreement. The cost does not include any legal fees, payments or permitting costs. Providing this Unit Cost does not commit the consultant to obtain the access agreement. If necessary, the cost should also cover the necessary time and material needed to provide the PADEP with the information they will require to facilitate access to the property.
- ***Optional Cost Adder #6*** – Provide a Unit Cost to update the Site's survey to include the necessary off-site well location(s). The scope of work for this cost adder should follow Task 2.4.
- ***Optional Cost Adder #7*** – Provide a Unit Cost to prepare a combined SCR/RAP for submittal to the PADEP instead of a SCR. The RAP portion of the report would propose eight (8) quarters of groundwater attainment monitoring. The costs included in this optional cost adder would just be the additional costs needed to write the SCR/RAP above and beyond the costs included in the bid response to write the SCR.
- ***Optional Cost Adder #8*** – Provide a Unit Cost to change-out the two (2) 55-gallon vapor phase carbon vessels.

The bid package should follow the task format outlined below. A cost summary sheet to be attached to your proposal is included as Attachment 2. Proposals should also include a detailed description of the anticipated costs for each task including labor rates, time requirements, and

equipment costs as broken out in the detailed cost sheet included as Attachment 3. The scope of work that we are requesting is provided below:

Task 1.0 Project Planning / Management:

Task 1.1 Preparation of Project Guidance Documents – Proposed documents to be prepared include a site specific health and safety plan, a field sampling and analysis plan, and a quality assurance/quality control plan. Where applicable, the pertinent project guidance documents should be prepared in accordance with Chapter 245.

Task 1.2 Project Management – The successful bidder shall complete necessary, reasonable, and appropriate project management activities for the duration of the contract period consistent with release investigation projects. Such activities would be expected to include client communications / updates, meetings, permitting, record keeping, subcontracting, personnel and subcontractor management, quality assurance / quality control, scheduling and other activities.

Task 1.3 Sensitive Receptor Survey – A Sensitive Receptor Survey (SRS) should be conducted for this Site. Sensitive receptors evaluated for this Site should include area water usage, surface water bodies, and subsurface underground utilities and basements. Submitted bids should specify what activities will be included in the SRS activities (i.e. review of tax maps and property assessment records; area canvass; PNDI search, etc.). A 1,000-foot radius water usage survey should be completed as part of the SRS in an effort to document the area water use. As part of the water usage survey, the selected consultant should complete the following:

1. Conduct a private and public well search by obtaining an area specific report;
2. Obtain and review tax maps for the area;
3. Contact the local municipality and water authority to confirm water usage in the area of the Site and any local restrictions on water usage;
4. Review of previously completed sensitive receptor surveys;
5. Review of county property assessment records;
6. Canvass of the area; and
7. Field verification of water supply to surrounding properties.

Results of the SRS are to be taken into consideration during the execution of the project and are to be summarized and included in the SCR to be submitted to PADEP.

Task 2.0 Additional Site Characterization and Interim Remedial Activities:

Task 2.1 Soil Boring Investigation – In an effort to fully investigate (vertically and horizontally) the impact to the soil media from the confirmed UST release, a series of soil borings is being proposed. Specifically, the activities include the completion of 10 additional soil borings around the active and former UST systems. Please note that consultants need to utilize appropriate equipment that is capable of reaching depths of approximately 45 feet below grade (ftbg). Boring investigations noting shallow refusal will not be reimbursed. Consultant should

review the available monitoring well logs included in Attachment A in order to determine the appropriate equipment needed to complete the investigation. Specifics on the proposed investigation are provided below:

- All soil boring locations will be advanced in the locations proposed in the RFB, unless the presence of utilities, obstructions, or safety concerns requires a change in the location. The proposed locations of the soil borings are provided on the Site Plan (Figure 1) included in Attachment 1.
- Soil borings shall be advanced to groundwater, bedrock, or refusal, whichever is encountered first (total boring depth is anticipated to be 45 feet or less);
- Soil samples shall be collected continuously in four (4) foot intervals and will be logged by an on-site geologist (or under direct supervision of a geologist) for soil classification and structure, odor, soil moisture, soil texture, color, and screened with a PID. Soils should be described using the Unified Soil Classification System.
- A total of three (3) soil samples from each of the 10 soil borings will be collected and submitted to an accredited laboratory. One (1) sample from each boring should be collected from the 9.5 ftbg to 10 ftbg interval. The second sample should be collected for submittal to a laboratory for analysis from the soil interval exhibiting the highest PID reading in each borehole. If the highest PID readings are collected from the 9.5 ftbg to 10 ftbg interval then the second sample should be collected approximately four (4) feet below that 9.5 ftbg to 10 ftbg interval. The third soil sample will be collected at the bedrock interface or just above groundwater (if encountered) in an effort to delineate the soil sample with the highest PID reading.
- A total of 30 soil samples (three (3) soil samples per boring) shall be collected as part of this investigation. Soil samples shall be collected using Encore Samplers (or equivalent) and field-preserved in laboratory-provided glassware with the appropriate preservatives (e.g., methanol or sodium bisulfate) provided by the laboratory in general accordance with USEPA Method 5035 and the PADEP guidance;
- In addition, one (1) duplicate sample and one (1) equipment blank sample will be collected and submitted per day of sampling;
- Samples should be properly handled under chain of custody documentation protocol and kept cold from sample collection until the samples are relinquished to the accredited laboratory;
- Soil samples shall be collected and analyzed for benzene, toluene, ethylbenzene, total xylenes, MTBE, naphthalene, cumene, 1,3,5-trimethylbenzene, 1,2,4-

trimethylbenzene using laboratory EPA method 8260B in accordance with Pennsylvania's Storage Tank Regulation procedures and cleanup standard criteria as specified in Pennsylvania's Act 2. One (1) soil sample should also be analyzed for fraction of organic carbon and porosity to facilitate modeling efforts;

- The laboratory to be utilized should be identified in the bid package. Upon receipt of the results, the consultant should forward a copy of the analytical data to the Solicitor and PAUSTIF (or its designated representative); and
- Compile the field findings and laboratory data into a summary table and comprehensive soil boring logs.

Task 2.2 Soil Gas Sampling – For this RFB, please assume the total number of soil gas sampling events that will be needed is two (2) events and that samples will be collected from each of the three (3) soil gas sampling points proposed. Please note that USTIF will only pay the winning firm for the actual number of events conducted (i.e. if a firm includes the costs to complete 2 events, but only 1 event is conducted; then the firm will only be paid for the 1 event completed). The selected consultant should be prepared to conduct the first soil gas sampling event at the Site within two (2) weeks of the execution of the contract and conduct the second event approximately six (6) weeks after the first event. As part of the soil gas investigation, the selected consultant should consider the following:

- All soil gas points will be advanced in the locations proposed in the RFB, unless the presence of utilities, obstructions, or safety concerns requires a change in the location. The proposed locations of the soil gas points are provided on the attached Site Plan (Figure 1) in Attachment 1.
- The vapor intrusion investigation should be completed in a manner consistent with the Land Recycling Technical Guidance Manual – Section IV.A.4 Vapor Intrusion Into Buildings from Groundwater and Soil under the Act 2 Statewide Health Standards, Document 253-0330-100, dated January 24, 2004.
- The soil gas samples should be collected utilizing small diameter (1/4-inch) stainless steel probes inserted into predrilled 1/4-inch holes and sealed at the surface. For samples located within asphalt and concrete covered areas, the probe air intake should be set within soil just below asphalt or concrete surfaces and underlying stone/gravel layers.
- Samples should be collected in laboratory provided Summa canisters equipped with laboratory calibrated flow regulators and analyzed for the PADEP Constituents list for unleaded gasoline via TO-15.

- The laboratory to be utilized should be identified in the bid package. Upon receipt of the results, the consultant should forward a copy of the analytical data to the solicitor and PAUSTIF (or its designated representative).

Task 2.3 Evaluation of the Sub-slab Depressurization System – In December 2008, a sub slab depressurization (SSD) system was installed at the Site as an engineering control at the Site. The SSD system was installed in an effort reduce trapped vapors beneath the building. Based on the available information, the SSD system consists of a one horse power SVE type Rotron blower and dual activated carbon 55-gallon filters installed in-series. Vent piping was installed in up to two (2) locations beneath the slab flooring and connected to the Rotron blower with exhaust riser extending above the roofline. The selected consultant should be prepared to collect air samples and evaluate the SSD system at the Site within two (2) weeks of the execution of the contract. As part of the SSD system evaluation, the selected consultant should consider the following:

- Evaluate the condition of the equipment and configuration of the system.
- Determine whether a Request for Determination is needed.
- Collect influent, midfluent, and effluent air samples and submit them to a laboratory for analysis. The three (3) aforementioned samples are to be analyzed for the PADEP Constituents list for unleaded gasoline via method TO-15.
- The laboratory to be utilized should be identified in the bid package. Upon receipt of the results, the consultant should forward a copy of the analytical data to the solicitor and PAUSTIF (or its designated representative).
- Determine whether the two (2) carbon vessel need changed out.
- Evaluate the effectiveness and need for the system.

During each of the groundwater monitoring and sampling events (Task 3.0), the selected consultant shall monitor the SSD system and field screen the SSD system for volatile organic compounds (VOCs) with a PID.

Task 2.4 Aquifer testing – Slug tests, Step test and Pump test –

Task 2.4.1 Slug Tests – Rising head slug testing will be conducted on three (3) of the monitoring wells at the Site. A PVC slug will be used to displace the static water level in the well while a transducer will record water levels before the slug is placed in the well, during the recovery of the water level back to the original static water level, and following the removal of the slug. Transducers should be used to monitor the water levels in the wells during each of the slug tests. The data collected by the transducer during the slug tests, the selected consultant will calculate Site-specific hydrogeologic values including permeability. All of the calculated values will allow

for the modeling efforts and risk assessment activities to be conducted with Site specific data rather than using published values. In addition, the data collected during the slug testing of the monitoring wells will be evaluated to determine the appropriate monitoring well to be used for the step test and the eight (8) hour pump test. Results from the slug testing activities are to be summarized and included in the SCR to be submitted to PADEP.

Task 2.4.2 Step Test – The monitoring well demonstrating the highest permeability during the slug test will be used for the step test and the subsequent eight (8) hour pump test. The selected consultant will conduct a two-hour step test on the well determined by the slug test results to have the highest permeability. The data collected during the step drawdown test will be used to determine an optimal pumping rate and yield for the constant rate pumping test. Results from the step testing activities are to be summarized and included in the SCR to be submitted to PADEP.

Task 2.4.3 Pump Test – Once the pumping rate has been determined, an eight (8) hour constant rate pumping test will be conducted by the selected consultant on the selected monitoring well at the Site. Transducers will be used to monitor the resultant water levels in the pumping well and surrounding overburden and bedrock monitoring wells to be determined at a later date. Also, the remaining monitoring well network should be gauged periodically throughout the test to provide additional aquifer characterization data. Data collected during the constant rate pumping test will be analyzed and used to calculate Site specific aquifer values including hydraulic conductivity, transmissivity, storage capacity, and groundwater seepage velocity. All of the calculated values will allow for the modeling efforts and risk assessment activities to be conducted with Site specific data rather than using published values. Results from the pump testing activities are to be summarized and included in the SCR to be submitted to PADEP. The management of the groundwater extracted during the step test and pump test shall be conducted in accordance with standard industry practices and applicable laws, regulations, guidance and Department directives. In an effort to eliminate or minimize the need for change orders on a fixed price contract, please include costs to dispose of all anticipated volumes of waste in your bid response. ICF and PAUSTIF will not entertain any assumptions on the contract with regards to a volume of waste (i.e. Project costs assume that no more than 1,000 gallons of groundwater will require disposal after the completion of the pump test). Bidders will be responsible for including costs in their bid response to cover the disposal of all potential waste related to the tasks included in the SOW. Please estimate the volume of waste using your professional opinion, experience, and the data provided. Invoices submitted to cover additional costs on waste generated as part of activities included under the fixed price contract for this Site will not be paid. The groundwater may be temporarily stored on site, but should be removed from the Site in a timely manner.

Task 2.5 Site Survey – Following the advancement of the proposed soil borings, a professional survey of the Site by a Pennsylvania-licensed surveyor including all current

site features (e.g., buildings, property boundaries, monitoring wells, vapor sampling points, etc.) shall be completed. All monitoring wells, borings, site supply well location, the Site building, property boundaries, important Site features, and the proposed stream gauges are to be surveyed with the purpose of placing their horizontal coordinates on a scaled site map. The benchmark elevation shall be obtained by referencing the approximate ground surface elevation of the property or from an available benchmark from a USGS topographic map or benchmark elevation marker located at the Site. In conjunction with collecting depth to groundwater readings during sampling events and in an effort to establish groundwater flow at the Site, tops of casing for the existing monitoring wells are to be surveyed to facilitate the construction of a Site wide groundwater flow map. In addition, the presence of SPL (if detected) needs to be taken into consideration when calculating the static water levels in the wells and constructing a Site wide groundwater flow map. Groundwater elevation data collected following the installation of the additional monitoring wells along with data from the site survey will be utilized to produce a series of summary figures which will provide additional information as to the groundwater flow direction.

Task 3.0 Groundwater Monitoring and Sampling:

For this RFB, please assume the total number of groundwater monitoring and sampling events that will be needed is two (2) events. Please note that USTIF will only pay the winning firm for the actual number of events conducted (i.e. if a firm includes the costs to complete 2 events, but only 1 events are conducted; then the firm will only be paid for the 1 events completed). The selected consultant should be prepared to conduct the first groundwater sampling event at the Site approximately two (2) weeks after the installation of the proposed monitoring wells and conduct the second event approximately six (6) weeks after the first event.

Each event should include the following:

- Collect water level readings from each of the monitoring wells using an interface probe capable of distinguishing water and/or the presence or absence of product to the nearest 0.01 feet;
- Record the depth to water readings from the monitoring wells and then use the data to determine water level elevations such that groundwater flow direction can be confirmed;
- Groundwater sampling activities should be conducted in accordance with generally accepted practices as outlined in the final version of the PADEP Groundwater Monitoring Guidance Manual;
- Prior to the collection of groundwater samples, the water column in each of the monitoring wells should be purged by either the removal of approximately three (3) volumes of the water column or via low flow sampling method;

- Sampling equipment should be decontaminated prior to sample collection in accordance with generally accepted industry practices;
- Following purging activities, groundwater samples should be collected as quickly as practical from each of the wells directly from a bailer into laboratory supplied bottleware;
- The management of the groundwater removed from the well during purging shall be conducted in accordance with standard industry practices and applicable laws, regulations, guidance and Department directives;
- Samples should be properly handled under chain of custody documentation protocol and kept cold from sample collection until the samples are relinquished to the accredited laboratory;
- Samples should be analyzed for the PADEP expanded Petroleum Hydrocarbon Constituents list for unleaded gasoline components using laboratory method 8260B in accordance with Pennsylvania's Storage Tank Regulation procedures and cleanup standard criteria as specified in Pennsylvania's Act 2 (benzene, toluene, ethylbenzene, and xylenes (BTEX); cumene; naphthalene; methyl tert-butyl ether (MTBE); 1,2,4-trimethylbenzene; and 1,3,5-trimethylbenzene.
- In addition to the samples collected from the monitoring wells, one (1) duplicate sample and one (1) equipment blank sample will be collected and submitted per day of sampling.
- The laboratory to be utilized should be identified in the bid package. Upon receipt of the results, the consultant should forward a copy of the analytical data to the solicitor and PAUSTIF (or its designated representative).
- During each of the groundwater monitoring and sampling events, the selected consultant shall monitor the SSD system and field screen the SSD system for volatile organic compounds (VOCs) with a PID.

Task 4.0 Fate and Transport Modeling and Site Characterization Report:

Task 4.1 Fate and Transport Modeling – Fate and Transport evaluations shall be completed as appropriate and consistent with Act 2 guidance documents in order to assess the potential for contaminant migration. This evaluation should take into consideration both the groundwater and soil exceedances at the Site. Each firm should evaluate the data and site specific information provided and determine the most applicable model or models needed to complete appropriate fate and transport modeling for the Site. Please specify which modeling software will be used to predict fate and

transport of the constituents of concern exceeding the PADEP statewide health standards in groundwater at the release location and its applicability to the Site.

Task 4.2 Preparation of a Site Characterization Report - Following the completion of the activities proposed in Task 1.0 and Task 2.0 as well as the two (2) groundwater sampling events from Task 3.0 and the Fate and Transport Modeling noted in Task 4.1, the selected consultant will prepare a SCR for the Site. The information gathered during the aforementioned tasks should be incorporated into a comprehensive SCR that will be submitted to the PADEP and will facilitate the objective to complete regulatory requirements governing the SCR and gain PADEP approval for the report. Specifically, the report should summarize the results of the recent investigations, the findings of the previous investigations, a comprehensive Site history, sensitive receptor information, risk assessment, geologic data, results and analysis of the aquifer testing, discussion on the completed remediation efforts, summary of the predictive modeling efforts completed, and a series of summary tables, appendices, and figures illustrating the information provided in the report.

The Report will be completed following the guidelines specified in Pennsylvania Code, Title 25, Chapter 245 and the Land Recycling Program (Act 2) Technical Guidance Manual for a Site Characterization Report. The selected consultant will also present significant conclusions and make recommendations for future work at the Site in the SCR. The report will be appropriately signed and sealed by a licensed Professional Geologist.

Within 120 days of contract execution, a draft SCR and all AutoCAD maps / plans included in the report (e.g., site plan / base map, groundwater elevation maps, dissolved plume maps, soil contaminant distribution maps, etc.) and appendices (e.g., boring logs, tables, waste disposal documentation, aquifer testing and analysis, transducer survey results and analysis, and sensitive receptor information) shall be submitted electronically (in Adobe PDF format) and in hard copy to the Solicitor, ICF / USTIF and the Technical Contact for review / comment prior to finalizing the SCR. Once the selected consultant has addressed comments on the draft, the selected consultant shall finalize and issue the report to the PADEP. The draft report is to be submitted no later than the date specified in the schedule presented by the winning bidder.

Task 5.0 Risk Assessment and Feasible Remedial Alternatives Analysis:

Task 5.1 Risk Assessment Evaluation – A risk assessment evaluation shall be completed consistent with the guidelines provided in the Act 2 Guidance Manual (applicable portions of *Sections II.C.4 IV.G and IV.H*). These sections provide general information on risk assessment; developing appropriate site specific standards; discuss potential for pathway elimination; and guidance on site-specific human health assessment procedures. This guidance should be followed to conduct a risk assessment. Results of the risk assessment should be taken into consideration when developing a feasible remedial strategy and determining appropriate site specific standards for the Site. Results

of the evaluation should be discussed in the Risk Assessment and Feasible Remedial Alternatives Analysis Report.

Task 5.2 – Remedial Alternatives Analysis - A Remedial Alternatives Analysis should be completed for the Site to compare cleanup alternatives and evaluate which remedial action is most appropriate for the Site and the developed site specific standards. The evaluation should specifically focus on eight (8) key considerations including cost-effectiveness, proven performance, public and environment protectiveness, regulatory compliance, reliability, practical implementation, health & safety and effects on public health and the environment. The findings of the Remedial Alternatives Analysis will be summarized and presented as part of the Risk Assessment and Feasible Remedial Alternatives Analysis Report. Information/data generated during the interim remedial activities conducted at the Site should be taken into consideration.

Task 5.3 – Risk Assessment and Feasible Remedial Alternatives Analysis Report - Following the completion of the proposed Risk Assessment Evaluation and Remedial Alternatives Analysis, a Risk Assessment and Feasible Remedial Alternatives Analysis Report should be prepared for the Site. The report should detail the procedures and findings from the completed baseline risk assessment and describe the calculations and resultant estimate of the amount of hydrocarbon mass present in the Site's subsurface. It should also take into consideration and summarize the assumption, parameters, and predictions from the predictive modeling scenarios included in the SCR. Figures and appendices supporting the findings of the report should be attached to further illustrate the current condition of the Site. The report should appropriately evaluate the Site and assess the risks as well as provide a proper closure strategy and remedial alternative for the Site. Information/data generated during the interim remedial activities conducted at the Site should be incorporated into this task.

All AutoCAD maps / plans included in the report (e.g., site plan / base map, proposed remediation location map, dissolved plume maps, soil contaminant distribution maps, etc.) and appendices (e.g., boring logs, tables, remediation technology information, fate and transport modeling, risk assessment and sensitive receptor information) shall also be submitted electronically on CD and in hard copy to Solicitor and Technical Contact for review / comment prior to finalizing it. Once the selected consultant has addressed comments on the draft, the selected consultant shall finalize and issue the report to the PADEP.

Optional Cost Adders:

Task 1.0 through Task 5.0 above represents the base Scope of Work for this RFB solicitation. These tasks have been specifically developed in an effort to complete the PADEP's site characterization requirements. In addition to the base Scope of Work tasks, ***Optional Cost Adders*** are being requested for the following tasks:

- ***Optional Cost Adder #1*** – Provide a Unit Cost to complete an additional groundwater monitoring and sampling event. The scope of work for this cost adder should follow Task

3.0. The cost provided should be to complete only one (1) event with all wells in the network being sampled.

- **Optional Cost Adder #2** – Provide a Unit Cost to Prepare a Summary Progress Report for submittal to the PADEP. The Progress Report should detail the observations documented during the event, summarize the analytical results, map the groundwater flow direction for the Site, provide iso-concentration maps for compounds exceeding the SWHS, provide hydro-graphs, discuss the interim remediation efforts (if any), and provide additional scheduling details for upcoming events. Once the report is approved by the Solicitor, the report can be finalized and submitted to the PADEP. The progress reports discussed are being proposed to meet the PADEP obligation on progress reporting before RAP approval.
- **Optional Cost Adder #3** – Provide a Unit Cost to extend the Pump test for four (4) additional hours at the Site. The pump test would be extended if stabilization does not occur by the end of the eight (8) hour pump test.
- **Optional Cost Adder #4** – Provide a Unit Cost to install one (1) groundwater monitoring well. The scope of work for this cost adder is to install the well to a total estimated depth of 65 feet below grade (ftbg) with approximately 45 feet of four-inch diameter, schedule 40 PVC flush threaded casing and approximately 20 feet of four-inch diameter, schedule 40 PVC flush threaded 0.010 slot size screening. The wells should be drilled and constructed in accordance with generally accepted practices as outlined in the PADEP Groundwater Monitoring Guidance Manual, dated January 1, 1999 (Document # 383-3000-001). Based on anticipated drilling conditions, a Pennsylvania-licensed driller should install the wells using air-rotary methods.
- **Optional Cost Adder #5** – Provide a Unit Cost to secure offsite access on one (1) adjacent residential/commercial property in an effort to install a groundwater monitoring well. The cost should cover the necessary time and materials needed to contact the off-site property owner, draft an access agreement, and obtain approval with one (1) draft revision to the access agreement. The cost does not include any legal fees, payments or permitting costs. Providing this Unit Cost does not commit the consultant to obtain the access agreement. If necessary, the cost should also cover the necessary time and material needed to provide the PADEP with the information they will require to facilitate access to the property.
- **Optional Cost Adder #6** – Provide a Unit Cost to update the Site's survey to include the necessary off-site well location(s). The scope of work for this cost adder should follow Task 2.4.
- **Optional Cost Adder #7** – Provide a Unit Cost to prepare a combined SCR/RAP for submittal to the PADEP instead of a SCR. The RAP portion of the report would propose eight (8) quarters of groundwater attainment monitoring. The costs included in this optional cost adder would just be the additional costs needed to write the SCR/RAP above and beyond the costs included in the bid response to write the SCR.

- **Optional Cost Adder #8** – Provide a Unit Cost to change-out the two (2) 55-gallon vapor phase carbon vessels.

SCHEDULING

As part of this RFB, the selected consultant shall be prepared to install the new monitoring wells at the Site within 30 days of the project award date and submit the draft SCR to the Solicitor, ICF / USTIF and the Technical Contact within 120 days of the project award date. In addition, a detailed schedule indicating when specific activities and reports (soil investigation, aquifer testing, report submittal, groundwater sampling, well installation activities, etc.) will be completed needs to be prepared and included in the bid response. All on-site work should be completed during the normal working days and hours of 8 am to 5 pm from Monday through Friday.

QUALIFICATION QUESTIONS

Proposals need to provide answers to the five (5) qualifications and experience questions provided below:

- Does your company employ the Pennsylvania licensed Professional Geologist (P.G.) that is designated as the proposed project manager? How many years of experience does this person have?
- How many Chapter 245 projects are your company currently consultant on record for in the Southeast region and all regions of Pennsylvania?
- How many Chapter 245 projects have your company and/or the proposed Pennsylvania licensed P.G. worked on in the Southeast region and all regions of Pennsylvania during the last five (5) years?
- How many Chapter 245 projects have your company and/or the Pennsylvania licensed P.G. closed (i.e., obtained relief from liability from the PADEP) using either the Statewide Health Standards or Site Specific Standards? Please list.
- Has your company ever walked away from a PAUSTIF Fixed Price Contract or Pay For Performance contract without attaining all of the Milestones? If so, please explain why the contract was not fulfilled?

CONTRACT INFORMATION AND BID INSTRUCTION

The Solicitor wishes to execute a mutually agreeable fixed price contract based on unit prices for labor, equipment, materials, subcontractors/vendors and other direct costs. The prices provided in the bid will remain in effect for the duration of the project (i.e. no escalation clause). The total fixed cost quoted by the selected consultant will be the maximum amount to be paid by the

Solicitor unless a change of scope is authorized and determined to be reasonable, necessary, and appropriate. A copy of the proposed fixed price contract is included in Attachment 4.

The bidding firm will need to include the following in their proposal:

- A demonstration of the bidder's understanding of the objectives of the project and the bidder's approach to achieving those objectives efficiently based on the existing site information provided in this RFB;
- Provide a clear description of how the proposed work scope will be completed. The bid package should specifically discuss all tasks that will be completed under the fixed price contract and what is included (i.e. explain your groundwater sampling method, which guidance documents will be prepared, what will be completed as part of the SRS, etc.);
- A fixed price cost estimate for work through the completion of the characterization activities;
- Provide a detailed schedule of activities for completing the proposed scope of work inclusive of reasonable assumptions regarding the timing and duration of Solicitor reviews (if any) needed to complete the scope of work;
- Indication of whether the bidder accepts or seeks changes to the proposed contract / terms and conditions;
- The bidder's level of insurance;
- The bidder's proposed unit cost rates for each expected labor category, subcontractors, other direct costs and equipment;
- The bidder's proposed markup on other direct costs and subcontractors (if any);
- Identify and describe the involvement of subcontractors;
- Identify any exceptions, assumptions, or special conditions applicable to scope;
- Cost by task and total costs must be defined within the proposal text and on the cost spreadsheets (Attachment 2 and Attachment 3);
- The bidder's total cost by task consistent with the proposed scope of work identifying all level-of-effort and costing assumptions;
- A statement of qualifications including that of any major subcontractor(s);
- Describe your approach to working with the PADEP from project inception to submittal of the SCR. Describe how the PADEP would be involved proactively in the

resolution of technical issues and how the PADEP case team will be kept informed of activities at the Site;

- Describe how the Solicitor and ICF/PAUSTIF 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;
- Answers to the qualification questions discussed in the RFB;
- Complete the provided Milestone Payment Schedules included as Exhibit B and Exhibit C in the contract included as Attachment 4; and
- Identify the names of the proposed project team for the key project staff, including the proposed Professional Geologist of Record who will be responsible for overseeing the work and applying a professional geologist's seal to the project deliverables.

The bidder shall provide its bid using the format identified in this RFB and will provide brief descriptions of each task in the body of the bid document. In addition, the bidder will complete both the cost summary sheet included as Attachment 2, and the detailed cost sheet included as Attachment 3. An electronic version of the cost spreadsheets included in Attachment 2 and Attachment 3 (in Microsoft Excel Format) have been provided.

In addition to the cost spreadsheets, each bidder should modify the Milestone / Proposed Payment Schedules included as Exhibit B and Exhibit C of the fixed price contract in Attachment 4 to reflect the bidder's anticipated time schedule. The detailed cost spreadsheet and the RFB SOW will be incorporated as attachments to the Fixed Price Contract (also included in Attachment 4). Actual milestone payments will occur after all tasks in the milestone (as documented in Exhibit B and Exhibit C in the Fixed Price Contract) have been successfully completed and results (reports, analytical data package, boring logs, etc.) have been provided to the Solicitor.

Please bid the scope of work as provided in the RFB. Consultants are welcome to propose or suggest a change in the SOW; however the consultant should bid the SOW as presented in the RFB and provide any suggested modification to the SOW and provide the cost difference (+ or -) separately in the proposal.

The scope of work, as described in this RFB, shall be conducted in accordance with industry standards / practices, and consistent with the PADEP requirements and guidelines. The selected consultant's work to complete the tasks discussed will be subject to ongoing review by the PAUSTIF or its representatives to assess whether the work actually completed and the associated incurred costs are reasonable, necessary, and appropriate.

In order to facilitate PAUSTIF'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.

The bid responses must clearly and unambiguously accept the provided contract or must clearly cross reference any requested changes.

In an effort to eliminate or minimize the need for change orders on a fixed price contract, please include costs to dispose of all anticipated volumes of waste in your bid response. ICF and PAUSTIF will not entertain any assumptions on the contract with regards to a volume of waste (i.e. Project costs assume that no more than 500 gallons of groundwater will be extracted during the aquifer testing and require disposal). Bidders will be responsible for including costs in their bid response to cover the disposal of all potential waste related to the tasks included in the SOW. All waste generated during the completion of tasks related to the SOW may be temporarily stored on site, but must be disposed of offsite in a timely manner. Please estimate the volume of waste using your professional opinion, experience, and the data provided. Invoices submitted to cover additional costs on waste generated as part of activities included under the fixed price contract for this Site will not be paid.

Each bid package received will be assumed to be good for a period of 120 days after receipt unless otherwise noted. Please note that ICF, PAUSTIF, and B&B will treat the bids as confidential, but that limited general information may be released by the solicitor and/or B&B after the bid selection process is completed. In addition for your reference, a copy of the PAUSTIF Competitive Bidding Fact Sheet is provided in Attachment 5. The aforementioned guidance document can provide you with additional information of the bidding process.

MANDATORY SITE VISIT

On January 6, 2011, the Technical Contact (or designee) will be at the site at 10:00 am to answer questions and conduct a site tour for a limited number of participants per firm. Please inform the Technical Contact at least five (5) business days in advance of the aforementioned meeting date as to whether your firm will be in attendance. In order to accurately track meeting participants, the subject line of the email must state the following: Knapp's Service Station Bid Walk Claim No. 99-018(M). **Any firm that does not attend the January 6, 2011 mandatory site visit will not be eligible to submit a bid response.**

ATTACHMENTS

- Attachment 1 – Tables, Figures, Historical Documentation and Correspondence
- Attachment 2 – Cost Summary Sheet
- Attachment 3 – Detailed Cost Sheet
- Attachment 4 – Fixed Price Contract with Milestone / Proposed Payment Schedules
- Attachment 5 – USTIF Competitive Bidding Fact Sheet