

Request for Bid

Fixed-Price Defined Scope of Work to Complete Characterization

Solicitor

Point Service Station

802 Market Street

Port Royal, Pennsylvania 17082

PADEP FACILITY ID #34-02980

PAUSTIF CLAIM #2005-0164(S)

Date of Issuance

July 18, 2014

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The Pennsylvania Underground Storage Tank Indemnification Fund (PAUSTIF), on behalf of the claimant who hereafter is referred to as the Client or Solicitor, is providing this Request for Bid (RFB) to prepare and submit a bid to complete the Scope of Work (SOW) for the referenced site. The Solicitor is the current owner/operator of the Site. PAUSTIF has determined that the claim reported by the Solicitor is eligible for coverage from the PAUSTIF subject to the applicable statutes and regulations. Reimbursement of Solicitor-approved, reasonable and necessary costs, not to exceed the claim aggregate limit, for the corrective action work described in this RFB will be provided by PAUSTIF. Solicitor is responsible to pay any applicable deductible and/or proration.

Each bid response will be considered individually and consistent with the evaluation process described in the PAUSTIF Competitive Bidding Fact Sheet, which can be downloaded from the PAUSTIF website <http://www.insurance.pa.gov>.

Calendar of Events

Activity	Date and Time
Notification of Intent to Attend Site Visit	August 1, 2014 by 5 p.m.
Mandatory Pre-Bid Site Visit	August 5, 2014 at 10 a.m.
Deadline to Submit Questions	August 12, 2014 by 5 p.m.
Bid Due Date and Time	August 21, 2014 by 3 p.m.

Contact Information

ICF International	Solicitor	Technical Contact
<p>Mr. Ronald Moore ICF International 4000 Vine Street Middletown, PA 17057 Email – Ronald.Moore@icfi.com</p>	<p>Mr. Brian Ehrenzeller Point Service Station 802 Market Street Port Royal, PA 17082</p>	<p>Mr. Mark Bedle B&B Diversified Enterprises, Inc. PO Box 16 Barto, PA 19504 Phone – 610-845-0640 Fax – 610-845-0650 Email – mbedle@bbde.com</p>

All questions regarding this Request for Bid (RFB) 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 “[insert site name and claim number provided on cover page] – RFB QUESTION”. Bidders must neither contact nor discuss this RFB with the Solicitor, PAUSTIF, the Pennsylvania Department of Environmental Protection (PADEP), or ICF International (ICF) unless approved by the Technical Contact. Bidders may discuss this RFB with subcontractors and vendors to the extent required for preparing the bid response.

Requirements

Mandatory Pre-Bid Site Meeting

The Solicitor, the Technical Contact, or their designee will hold a mandatory site visit on the date and time listed in the calendar of events to conduct a site tour for one participant per bidding company. The Technical Contact may answer questions at the Site Meeting or may collect questions and respond via email. All questions and answers will be provided via email to all attendees. This meeting is mandatory for all bidders, no exceptions. This meeting will allow each bidding company to inspect the site and evaluate site conditions. **A notice of the bidder’s intent to attend this meeting is requested to be provided to the Technical Contact via email by the date listed in the calendar of events with the subject “[insert site name and claim number provided on cover page]– SITE MEETING ATTENDANCE NOTIFICATION”.** The name and contact information of the company participant should be

included in the body of the e-mail. Notification of intent to attend is appreciated; however, it is not required. Attendance at the Pre-Bid Site Meeting is mandatory.

Submission of Bids

To be considered for selection, **one hard copy of the signed bid package and one electronic copy (one PDF file on a compact disk (CD) included with the hard copy) must be provided directly to the PAUSTIF's third party administrator, ICF, to the attention of the Contracts Administrator.** The Contracts Administrator will be responsible for opening the bids and providing copies to the Technical Contact and the Solicitor. Bid responses will only be accepted from those companies that attended the mandatory pre-bid site meeting. **The ground address for overnight/next-day deliveries is ICF International, 4000 Vine Street, Middletown, PA 17057, Attention: Contracts Administrator. The outside of the shipping package containing the bid must be clearly marked and labeled with "Bid – Claim # [insert claim number provided on cover page]"**. Please note that the use of U.S. Mail, FedEx, UPS, or other delivery method does not guarantee delivery to this address by the due date and time listed in the Calendar of Events for submission. Companies mailing bids should allow adequate delivery time to ensure timely receipt of their bid.

The bid must be received by 3 p.m., on the due date shown in the Calendar of Events. Bids will be opened immediately after the 3 p.m. deadline on the due date. Any bids received after this due date and time will be time-stamped and returned. If, due to inclement weather, natural disaster, or any other cause, the PAUSTIF's third party administrator, ICF's office is closed on the bid due date, the deadline for submission will automatically be extended to the next business day on which the office is open. The PAUSTIF's third party administrator, ICF, may notify all companies that attended the mandatory site meeting of an extended due date. The hour for submission of bids shall remain the same. Submitted bid responses are subject to the Pennsylvania Right-to-Know Law.

Bid Requirements

The Solicitor wishes to execute a mutually agreeable contract with the selected consultant ("Remediation Agreement"). The Remediation Agreement is included as Attachment 1 to this Request for Bid. The bidder must identify and document in their bid any modifications that they wish to propose to the Remediation Agreement language in Attachment 1 other than obvious modifications to fit this RFB (e.g., names, dates and descriptions of milestones). The number and scope of any modifications to the standard agreement language will be one of the criteria used to evaluate the bid. **Any bid that does not clearly and unambiguously state whether**

the bidder accepts the Remediation Agreement language in Attachment 1 "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 in the bid entitled "Remediation Agreement". Any proposed changes to the agreement should be specified in the bid; however, these changes will need to be reviewed and agreed upon by both the Solicitor and the PAUSTIF.

The selected consultant will be provided an electronic copy (template) of the draft Remediation Agreement in Microsoft Word format to allow agreement-specific information to be added. The selected consultant shall complete the agreement-specific portions of the draft Remediation Agreement and return the document to the Technical Contact within 10 business days from date of receipt.

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 in the bid by the selected consultant will be the maximum amount to be paid by the Solicitor unless a change in scope is authorized and determined to be reasonable and necessary. There may be deviations from and modifications to this Scope of Work (SOW) during the project. The Remediation Agreement states that any significant changes to the SOW will require approval by the Solicitor, PAUSTIF, and PADEP. NOTE: Any request for PAUSTIF reimbursement of the reasonable costs to repair or replace a well will be considered on a case-by-case basis.

The bidder shall provide its bid cost using the Bid Cost Spreadsheet (included as Attachment 2) with descriptions for each task provided in the body of the bid document. Please note if costs are provided within the text of the submitted bid and there is a discrepancy between costs listed in the Bid Cost Spreadsheet and in the text, the costs listed within the Bid Cost Spreadsheet will be used in the evaluation of the bid and in the Remediation Agreement with the selected consultant. Bidders are responsible to ensure spreadsheet calculations are accurate. The technical score for bids will be based solely on those tasks represented as milestones included in the Bid Cost Spreadsheet and the total bid cost. Any optional bidder-defined tasks, milestones or cost adders that are not requested as part of this RFB will not be considered by the Bid Evaluation Committee in the technical review and technical scores for the bid.

In addition, the bidder shall provide:

1. The bidder's proposed unit cost rates for each expected labor category, subcontractors, other direct costs, and equipment;
2. The bidder's proposed markup on other direct costs and subcontractors (if any);
3. The bidder's estimated total cost by task consistent with the proposed SOW identifying all level-of-effort and costing assumptions; and

4. A unit rate schedule that will be used for any out-of-scope work on this project.

Each bid 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 Cost Spreadsheet will be assumed to be valid for the duration of the Remediation Agreement.

Please note that the total fixed-price bid must include all costs, including those cost items that the bidder may regard as “variable”. These variable cost items will not be handled outside of the total fixed price quoted for the SOW unless the RFB requests costing alternatives for specific items or services. Any bid that disregards this requirement will be considered non-responsive to the bid requirements and, as a result, will be rejected and will not be evaluated.

The RFB is requesting a total fixed-price bid (unless the RFB requests costing alternatives for specific items or services). PAUSTIF will not agree to assumptions (in bids or the selected bidders executed Remediation Agreement) referencing a level of effort and/or hours. Costs provided in your bid should be developed using your professional opinion, experience, and the data provided. PAUSTIF will not reimburse costs for additional hours to complete activities included as part of the base bid/contract price.

Each bid response document must include at least the following:

1. Demonstration of the bidder’s understanding of the site information provided in this RFB, standard industry practices, and objectives of the project.
2. A clear description, specific details, and original language of how the proposed work scope will be completed for each milestone. The bid should specifically discuss all tasks that will be completed under the Remediation Agreement and what is included (e.g., explain groundwater purging/sampling methods, which guidance documents will be followed, what will be completed as part of the site specific work scope/SCR/RAP implementation). Recommendations for changes/additions to the Scope of Work proposed in this RFB shall be discussed, quantified, and priced separately; however, failure to bid the SOW “as is” may result in a bid not being considered.
3. A copy of an insurance certificate that shows the bidder’s level of insurance consistent with the requirements of the Remediation Agreement. Note: The selected consultant shall submit evidence to the Solicitor before beginning work that they have 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 for the work to be performed.
4. The names and brief resumes/qualifications of the proposed project team including the proposed Professional Geologist and Professional Engineer (if applicable) who will be

responsible for overseeing the work and applying a professional seal to the project deliverables (including any major subcontractor(s)).

5. Responses to the following specific questions:
 - a. Does your company employ a Pennsylvania-licensed Professional Geologist that is designated as the proposed project manager? How many years of experience does this person have?
 - b. How many Pennsylvania Chapter 245 projects is your company currently the consultant for in the PADEP Region where the site is located? Please list up to ten.
 - c. How many Pennsylvania Chapter 245 Corrective Action projects involving an approved SCR, RAP and RACR has your company and/or the Pennsylvania-licensed Professional Geologist closed (i.e., obtained Relief from Liability from the PADEP) using any standard?
 - d. Has your firm ever been a party to a terminated PAUSTIF-funded Fixed-Price (FP) or Pay-for-Performance (PFP) contract without attaining all of the Milestones? If so, please explain.
6. A description of subcontractor involvement by task. Identify and describe the involvement and provide actual cost quotations/bids/proposals from all significant specialized subcontracted service (e.g., drilling/well installations, laboratory, etc.). If a bidder chooses to prepare its bid without securing bids for specialty subcontract services, it does so at its own risk. Added costs resulting from bid errors, omissions, or faulty assumptions will not be considered for PAUSTIF reimbursement.
7. A detailed schedule of activities for completing the proposed SOW including reasonable assumptions regarding the timing and duration of Solicitor reviews (if any) needed to complete the SOW. Each bid must provide a schedule that begins with execution of the Remediation Agreement with the Solicitor and ends with completion of the final Milestone proposed in this RFB. Schedules must also indicate the approximate start and end date of each of the tasks/milestones specified in the Scope of Work, and indicate the timing of all proposed key milestone activities (i.e. within 30 days of the contract being executed).
8. A description of how the Solicitor, and the 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.
9. A description of your approach to working with the PADEP. 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.

10. Key exceptions, assumptions, or special conditions applicable to the proposed SOW and/or used in formulating the proposed cost estimate. Please note that referencing extremely narrow or unreasonable assumptions, special conditions and exceptions may result in the bid response being deemed “unresponsive”.

General Site Background and Description

Each bidder should carefully review the existing information and documentation provided in Attachment 3. The information and documentation has not been independently verified. Bidders may wish to seek out other appropriate sources of information and documentation specific to this site. If there is any conflict between the general site background and description provided herein and the source documents within Attachment 3, the bidder should defer to the source documents.

Site Address

Point Service Station
802 Market Street
Port Royal, Pennsylvania 17082
Port Royal Borough, Juniata County

Site Location and Operation Information

The Site is an active vehicle repair station located at the intersection of Market Street (State Route 75) and Eighth Street in Port Royal, Pennsylvania. The Site is an approximate 0.7-acre property that was operated as a gasoline fueling station from 1963 until 2007, when the former underground storage tank (UST) system was removed. The UST system was installed in 1987 and was located on the northeast side of the Site, adjacent to the Site building. The UST system contained (1) 6,000 gallon regular unleaded gasoline tank (Tank 001), one (1) 4,000 gallon super unleaded gasoline tank (Tank 002), and one (1) 4,000 gallon diesel tank (Tank 003). The USTs were steel with fiberglass lining. The UST system also included four (4) product dispensers and approximately 80 feet of steel product piping. The surrounding properties are a mix of residential and commercial properties. The Site and surrounding properties are provided with water and sewer from the Port Royal Municipal Authority (PRMA). The closest surface water body is Tuscarora Creek, which lies approximately 1,600 feet south of the Site.

Site Background Information

On September 25, 2005, approximately 1,000 gallons of gasoline was delivered to the 4,000 gallon super unleaded UST (Tank 002) at the Site. The following day it was discovered that the product had leaked from the tank. The loss was immediately reported to the PADEP. A tank tightness test was conducted on September 29, 2005, and the UST was confirmed to be leaking. On this same date, both of the UST field monitoring points were gauged for product and both were found to be dry. A photoionization detector (PID) was used to monitor the air for hydrocarbons and explosive vapors inside the station building, at downgradient residential properties, and in the downgradient sanitary and storm water sewer manholes. No positive readings were observed.

The UST system at the Site was excavated on April 17, 2007 and an UST Closure Report (UCR) was completed and dated July 16, 2007. The UCR indicates that when Tank 002 was excavated, extensive contamination was encountered. Therefore, the other two (2) USTs were excavated along with approximately 80 feet of product piping and 162 tons of contaminated soil. A "quarter size" hole was identified in Tank 002 after it was excavated. A total of nine (9) soil samples (Pit-01 through Pit-09) were collected from the UST excavation at fourteen (14) feet below surface grade (ftbsg), three (3) from beneath the product lines (Line-01 through Line 03) at two (2) ftbsg and four (4) from beneath the dispensers (Dispenser 01 through Dispenser 04) at two (2) ftbsg. The soil samples were laboratory analyzed for benzene, toluene, ethylbenzene, xylenes (BTEX), methyl-tert-butyl-ether (MTBE), naphthalene and cumene. Samples Pit-01, Pit-03, Pit-05, Line-03, Dispenser-02, and Dispenser-04 were also analyzed for the diesel parameters fluorene and phenanthrene. The laboratory analytical results indicted concentrations of benzene, toluene, MTBE and naphthalene above the PADEP Statewide Health Standards (SHS) in six (6) of the samples collected from the UST excavation. The UCR is included in the June 6, 2008 Site Characterization Report (SCR).

A SCR was prepared for the Site and dated June 6, 2008. Site characterization activities included a Sensitive Receptor Survey (SRS), the advancement of soil boring, installation of monitoring wells and collection of samples at the Site. The three (3) monitoring wells (MW-1 through MW-3) were installed at the Site in April 2008 using an air rotary drilling rig at locations believed to be upgradient (MW-1) and downgradient (MW-2 and MW-3) to the former UST field. Following installation, groundwater samples were collected from monitoring wells MW-1 through MW-3. The samples were laboratory analyzed for leaded and unleaded gasoline and diesel compounds. Specifically, the samples were analyzed for BTEX, MTBE, naphthalene, cumene, 1,2-dichloroethane, 1,2-dibromoethane, 1,2,4-trimethylbenzene (TMB), 1,3,5-TMB and dissolved lead. Laboratory analytical results from the April 14, 2008 groundwater sampling

event indicated benzene, 1,2,4-TMB and 1,3,5-TMB in MW-1 and MTBE in MW-2 at concentrations above the PADEP SHS. With regards to the soil investigation, a total of nine (9) soil borings (SB-01 through SB-09) were advanced utilizing a Geoprobe® direct-push rig and focused on the area of the former UST field and dispensers. The soil borings were advanced to refusal depths ranging from nine (9) to eighteen (18) ftbsg. The samples were laboratory analyzed for leaded and unleaded gasoline and diesel compounds. Benzene, 1,2,4-TMB and 1,3,5-TMB concentrations were detected above the PADEP SHS in soil samples collected during the investigation.

In a letter dated June 11, 2008, the PADEP approved the June 6, 2008 SCR with the following modifications:

- “An additional downgradient point of compliance (POC) monitoring well located between MW-2 and MW-3 is suggested to confirm that contaminants have not migrated off-site. Data from this well would also allow the calibration of the Quick Domenico (QD) Fate and Transport model.”
- “The QD Fate and Transport model should be modified by using values for effective porosity (specific yield) rather than actual porosity to calculate point concentrations.”
- “...the Department’s approval of a Remedial Action Completion Report (RACR) must be supported by an environmental covenant, to be recorded on the deeds of affected properties. The Department will have to approve such covenants as part of its review of any RACR.”

A Remedial Action Plan (RAP) dated August 21, 2008 was prepared for the Site and detailed completed supplemental site characterization activities including the installation and surveying of MW-4 and an additional round of groundwater sampling. The RAP states that, based on these analytical results, the fact that the source of the contamination has been removed and that there are no downgradient groundwater receptors within 2,500 feet of the Site, the most prudent remedial option is to allow natural attenuation to continue to remediate groundwater beneath the Site. Based on a Fate and Transport Analysis (FTA), the RAP recommends closure utilizing Site Specific Standards (SSS) for groundwater and for soil at the Site. The SSS is proposed for soil since the UST closure and soil boring samples demonstrate that not all of the impacted soils were removed. Additional groundwater monitoring will be needed to establish the extent of the contaminant plume at the Site and to allow refinement of the FTA model. The proposed SSS cleanup standard may be changed to SHS if future downgradient groundwater concentrations decrease. Specifically, the RAP recommends the following in order to bring the Site to closure:

- Groundwater monitoring and sampling on a quarterly basis.
- Update the FTA on a periodic basis as additional groundwater monitoring data becomes available. The first update will include consideration of effective porosity as suggested by PADEP.
- Evaluate the vapor pathway by collecting and analyzing sub-slab vapor samples.
- Prepare and submit a RACR after additional characterization data is generated.

In a letter dated October 8, 2008, the PADEP approved the August 21, 2008 RAP with the following modifications:

- Additional sampling of monitoring well MW-4 is needed to characterize the groundwater contamination at the Site. If contaminant concentrations remain elevated in MW-4, additional downgradient monitoring wells will be required to be installed.
- Data gathered from additional quarters of groundwater monitoring will be useful to update the fate and transport analysis.

In November 2008, a Site Characterization Addendum Workplan (SCAWP) was prepared and proposed the following in order to further characterize the Site:

- The four (4) existing monitoring wells need to be re-constructed in order to seal the upper portion of the wells and prevent the possibility of cross contamination from impacted soil to the groundwater. After re-construction, the wells should be sampled and laboratory analyzed.
- A review of soil boring and wells logs indicate that the actual depth to bedrock may be in question. Refusal was met during soil boring activities at approximately eleven (11) ftbsg. An additional monitoring well is proposed west of the former UST field, slightly downgradient of the source area, in order to better understand the subsurface.
- Additional soil borings are needed around the former UST field in order to further delineate soil contamination beyond eleven (11) ftbsg.

- Soil gas samples may need to be collected and analyzed from the area near the former UST field and/or below the service station concrete slab.

The PADEP responded to the November 18, 2008 SCAWP with the following comments:

- “Based on the original well logs, there were no field indications that soil contamination was encountered in the well borings. Additionally, a comparison of the depth to first water encountered during drilling and static groundwater levels measured in the wells to date does not indicate the presence of a perched groundwater zone. Reconstructing the existing groundwater monitoring wells would not appear necessary.”
- In regards to additional soil borings: “If you are intending to use the SSS through pathway elimination for soil attainment as noted in the (PADEP) approved SCR and RAP, it may be unnecessary to further delineate the vertical extent of the soil contamination. Alternatively, you may choose a different standard for soil such as SHS. However, remediation and attainment sampling to achieve the SHS for soil may be difficult as impacted soil may extend beneath the site structure.”
- “If contaminate concentrations remain in point of compliance (POC) well MW-4, additional downgradient wells may be needed to fully delineate the groundwater contaminant plume.”

In April 2009, as recommended by PADEP, four (4) additional monitoring wells (MW-5 through MW-8) were installed at the Site. Monitoring wells MW-5, MW-6 and MW-7 were installed hydraulically downgradient of the source area on an off site property and MW-8 was installed in an upgradient direction of the source area. Monitoring wells MW-6, MW-7 and MW-8 were advanced to total depths of approximately 60 ftbsg and constructed using twenty (20) feet of PVC well screen. MW-5 was advanced to a total depth of 70 ftbsg and constructed using 30 feet of PVC well screen.

A Site Characterization Update Report (SCUR) was submitted in June 2009. The report detailed recent investigations. Field data collected during two (2) groundwater sampling events during second quarter of 2009 indicated contradiction with the flow direction previously established by the previous consultant. As such the SCUR proposed the following:

- Drill a hollow stem auger boring through the center of the former UST field to the top of bedrock (approximately 50 ftbsg),
- Collect split spoon samples for field screening the entire length of the boring,

- Install at least three (3) piezometers within the boring with different screen intervals to determine if overburden water is present,
- Reconstruct MW-1 with a screen interval from 40 -60 ftbsg,
- Collect an additional groundwater monitoring and sampling event.

The PADEP approved the June 18, 2009 SCUR with the following modifications:

- “It may be useful to contour the groundwater flow from similarly constructed wells separately, or eliminate MW-8, the apparently anomalous well, from the contouring.
- “The Site should be evaluated for the presence of shallow groundwater. The potential exists that shallow monitoring wells will need to be installed at the Site to evaluate contaminant movement.”
- The PADEP agrees that piezometers should be installed to evaluate the presence of shallow groundwater at the Site.
- The groundwater contaminant plume should be fully delineated and after reconstructing MW-1, it may be necessary to address potential shallow impacts to groundwater.
- “Based on the contaminant isoconcentration maps, an off-site monitoring well should be installed to the east of the Site, across Eighth Street, to evaluate potential impacts to that residential property.”

In July 2009, MW-1 was reconstructed and six (6) soil borings (SB-101 through SB-106), one (1) nested piezometer, and one (1) additional monitoring well (MW-9), were installed at the Site utilizing a drill rig with a hollow stem auger. Twenty (20) soil samples were collected from these eight (8) locations and sent for laboratory analysis of leaded and unleaded gasoline and diesel compounds. When hand clearing the soil boring location for MW-8, what was believed to be a perched water table was encountered at three (3) ftbsg. Because of this suspected perched water table, monitoring well MW-9 was installed in close proximity to MW-8. MW-9 was drilled to a total depth of ten (10) ftbsg and gauged for water on August 19, 2009 and January 29, 2010

but was found to be dry. Also, MW-1, which was formally screened from five (5) to 60 ftbsg, was re-drilled, and the well was reconstructed with a screen interval of 40 to 60 ftbsg. The two (2) nested piezometers (PZ-1 and PZ-2) were installed immediately southeast of the former UST excavation. PZ-1 was installed at a total depth of 20 ftbsg and screened ten (10) to 20 ftbsg. PZ-2 was installed at a total depth of 30 ftbsg and screened 23 to 30 ftbsg. Both piezometers were gauged for water on August 19, 2009 and January 29, 2010 but were found to be dry.

In April 2010, the previous consultant prepared a Site Characterization Addendum Work Plan for the Site. The aforementioned report summarized activities and investigations completed since the submission of the SCUR in June 2009.

In July 2010, monitoring well MW-10 was installed at the Site along the northwest property boundary. Also at this time, monitoring well MW-8 was drilled ten (10) feet deeper and monitoring wells MW-2, MW-3 and MW-4 were reconstructed. The entire monitoring well network (MW-1 through MW-10) was gauged and sampled on July 7 and 8, 2010. The samples were laboratory analyzed for leaded and unleaded gasoline and diesel compounds.

Based on the newly established groundwater flow direction confirmed with the expanded monitoring well network at Site, one (1) monitoring well (MW-11) was installed to the west of the Site building and another monitoring well (MW-12) was installed across Eighth Street, east of the Site. Both wells were installed during an October 2010 drilling event. The entire monitoring well network (MW-1 through MW-12) was gauged and sampled twice during November 2010. The samples were laboratory analyzed for leaded and unleaded gasoline and diesel compounds.

The entire monitoring well network (MW-1 through MW-12) was last gauged and sampled on May 24, 2011. The samples were laboratory analyzed for leaded and unleaded gasoline and diesel compounds. Specifically, the samples were analyzed for BTEX, MTBE, naphthalene, cumene, 1,2-dichloroethane, 1,2-dibromoethane, 1,2,4-TMB, 1,3,5-TMB and dissolved lead. The laboratory analytical results indicated exceedences of the PADEP SHS in the following wells: MW-4 (MTBE), MW-5 (benzene, 1,2,4-TMB), MW-11 (benzene, MTBE, TMBs), MW-12 (BTEX, MTBE, naphthalene, TMBs). Groundwater flow at the Site, based on the well gauging data collected on May 24, 2011, is towards the northwest and southeast with mounding exhibited through the center of the Site around MW-1.

In February 2013, a draft RFB with a proposed scope of work was sent to the PADEP case manager for possible review and comment. On April 16, 2013, the PADEP case manager responded to the provided draft RFB and proposed scope of work. Following review of the aforementioned correspondence, it was determined that a significant amount of relevant data and information completed by the previous consultant was never provided to the PADEP. As such, B&B requested all documentation from the previous consultant in an effort to provide the PADEP with an updated catalog of data and summary of investigations.

In February 2014, a response package to the April 2013 PADEP correspondence was sent to the PADEP for their possible review and comment. The package included a response letter addressing the PADEP's points of concerns/questions noted in their April 16, 2013 correspondence. The aforementioned package also included a revised RFB as well as a significant amount of data and information to update the PADEP's files that will also be incorporated in the SCR proposed in Milestone K2. No response was received from the PADEP.

Scope of Work (SOW)

This RFB seeks competitive bids from qualified contractors to perform the activities in the Scope of Work (SOW) specified herein. The SOW presented in this RFB was provided to the PADEP for review and comment. A response was received from the PADEP with comments that were incorporated into the final version of the RFB.

Objective

This RFB is seeking qualified firms to prepare and submit a fixed price proposal to complete a Defined Scope of Work. Specifically, this RFB seeks competitive bids 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. A petroleum release has been confirmed at the Site in both soil and groundwater.

Constituents of Concern (COCs)

The list of COCs for this Site include the following:

- Benzene
- Toluene

- Ethylbenzene
- Xylenes
- MTBE
- Naphthalene
- Cumene
- 1,2,4-Trimethylbenzene
- 1,3,5-Trimethylbenzene
- Lead
- 1,2-Dichloroethane
- 1,2-Dibromoethane

General SOW Requirements

The bidder's approach to completing the SOW shall be in accordance with generally accepted industry standards/practices and all applicable federal, state, and local rules, regulations, guidance, and directives. The latter include, but are not limited to, meeting the applicable requirements of the following:

- The Storage Tank and Spill Prevention Act (Act 32 of 1989, as amended),
- Pennsylvania Code, Title 25, Chapter 245 - Administration of the Storage Tank Spill and Prevention Program,
- The Land Recycling and Environmental Remediation Standards Act of 1995 (Act 2), as amended),
- Pennsylvania Code, Chapter 250 - Administration of Land Recycling Program, and
- Pennsylvania's Underground Utility Line Protection Law, Act 287 of 1974, as amended by Act 121 of 2008.

During completion of the milestone objectives specified below and throughout implementation of the project, the selected consultant shall:¹

- Conduct necessary, reasonable, and appropriate project planning and management activities until the project (i.e., Remediation Agreement) is completed. Such activities may include Solicitor communications/updates, meetings, record keeping, subcontracting, personnel and subcontractor management, quality assurance/quality control, scheduling, and other activities (e.g., utility location). Project planning and management activities will also include preparing and implementing plans for Health and Safety, Waste Management, Field Sampling/Analysis, and/or other plans that are necessary and appropriate to complete the SOW, and shall also include activities related to establishing any necessary access agreements. Project planning and management shall include identifying and taking appropriate safety precautions to not disturb site utilities; including but not limited to, contacting Pennsylvania One Call as required prior to any ground-invasive work. As appropriate, project management costs shall be included in each bidder's pricing to complete the milestones specified below.

- Be responsible for coordinating, managing, and completing the proper management, characterization, handling, treatment, and/or disposal of all impacted soils, water, and derivative wastes generated during the implementation of this SOW. The investigation-derived wastes, including purge water shall be disposed of in accordance with standard industry practices and applicable laws, regulations, guidance, and PADEP directives. Waste characterization and disposal documentation (e.g., manifests) shall be maintained and provided to the Solicitor and the PAUSTIF upon request.
 - **If the site is located in PADEP Southwest Region:** All investigation derived wastes shall be handled and disposed of per PADEP's Southwest Regional Office guidance. Investigation derived wastes include personal protective equipment, disposable equipment, soil and drill cuttings and groundwater obtained through monitoring well development and purging, as well as equipment decontamination fluids. Investigation derived wastes must be containerized in DOT-approved drums and staged on-site in a pre-determined location, pending results of laboratory analyses and selection of final disposal method(s). Each container must be labeled to indicate contents, site location and date of generation. It is the selected consultant's responsibility to conform with current PADEP Southwest Regional Office guidance requirements.

¹ As such, all bids shall include the costs of these activities and associated functions within the quote for applicable tasks/milestones.

- **If the site is located in any PADEP Region other than Southwest:** All investigation derived wastes shall be handled and disposed of per PADEP's Regional Office guidance. It is the selected consultant's responsibility to conform with current PADEP Regional Office guidance requirements in the region where the site is located.
- Be responsible for providing the Solicitor and facility operator with adequate advance notice prior to each visit to the property. The purpose of this notification is to coordinate with the Solicitor and facility operator to ensure that appropriate areas of the property are accessible. Return visits to the site will not constitute a change in the selected consultant's SOW or result in additional compensation under the Remediation Agreement.

Site Specific Guidelines

As part of this RFB, the selected consultant will need to consider the following site specific guidelines:

- **Scheduling:** As part of this RFB, the selected consultant shall provide a clear deadline (i.e. within 30 days of the contract being executed) as to when each of the milestones will be completed. This includes the expected date (i.e. within 90 days of the contract being executed) when the draft SCR will be submitted to the Solicitor, PAUSTIF and B&B for review. All on-site work should be completed during the normal working days and hours of 8 am to 5 pm from Monday through Friday.
- **Responsibility:** The selected consultant will be the consultant of record for the Site. They will be required to take ownership and responsibility for the project and will be responsible for representing the interests of the Solicitor and PAUSTIF with respect to the project. This includes utilizing their professional judgment to ensure reasonable and appropriate actions are recommended and undertaken to protect sensitive receptors, adequately characterize the Site, and move the Site towards closure.
- **Scope of Work:** 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.

- Safety Measures:** Each consultant should determine the level of safety measures needed to appropriately complete the milestones. Specifically, if a consultant feels it is appropriate and necessary to complete activities such as a hole clearing activities, the cost should be included in their proposal and costs. More importantly, if a consultant includes the cost to complete safety activities, they should specify it in their proposal and discuss why it is appropriate and necessary and indicate which methods will be utilized and to what extent. As discussed in the RFB, cost is not the only factor when evaluating proposals and other factors are taken into consideration during the review process, including appropriate safety measures.
- Waste Disposal:** The IDW waste (including soil/rock cuttings, development water, and liquids generated during installation and aquifer testing) should be disposed of per the instructions included in the “General SOW Requirements” section of the RFB. Bidders will be responsible for arranging any offsite waste disposal (if required) and including costs in their bid response to cover the disposal of all potential waste related to the milestones included in the SOW. Containerized soil and groundwater may be temporarily stored on site, but should be removed from the Site in a timely manner. 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. 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 milestones included in the SOW. If your bid proposes to dispose of waste under a permit, then your bid needs to address the potential situation of a permit not being approved. Bids need to specifically indicate that your bid costs include the costs to dispose of the waste even if a permit is not approved. As indicated in the bid, there should be no assumptions on waste and assuming that a permit will be approved is still making an assumption on waste. 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.
- Optional Cost Adder Milestones:** Milestone A through Milestone L represents the base Scope of Work for this RFB solicitation. These milestones have been specifically developed in an effort to complete the PADEP’s site characterization requirements. In addition to the above base Scope of Work, the Optional Cost Adder Milestones (Milestone M through Milestone R) need to be addressed in your bid response. These cost adders will not be part of your initially approved base 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.

Site Specific Milestones

The following Milestones are to be included in bid responses:

Milestone A – 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.

Milestone B – Offsite Access and Permitting –

Milestone B1 – Offsite Access/Permitting to Borough Property – Provide a Unit Cost to secure offsite access in an effort to install groundwater monitoring wells and soil gas points. The cost should cover the necessary time and materials needed to contact the off-site property owners, draft an access agreement, and obtain approval with one (1) draft revision to the access agreement. All of the proposed offsite monitoring well and soil gas point locations are on Port Royal Borough property. A permit to install the off-site monitoring wells and soil gas points on Port Royal Borough property can be obtained by contacting Mr. Dick Baade, Port Royal Code

Officer, at 717-495-5390. The cost should 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.

Milestone B2 – Pennsylvania Department of Transportation (PennDOT) Permitting –

The proposed location of monitoring well MW-17 is in Market Street, which is a State Road (SR-75). Since the location of the proposed monitoring well is on PennDOT property, a permit will need to be acquired before drilling can begin. Permit preparation costs should be included in this milestone; however the actual PennDOT permitting fee should not be included. The PennDot permitting fee should be waived since the cleanup is being paid for by another state agency (PAUSTIF).

Milestone C – Private Utility Markout - Prior to any intrusive investigation work at the Site (i.e. soil borings, monitoring well drilling), a private markout is to be conducted at the Site (and/or off-site location where intrusive activities will be conducted) to confirm the location of any obstruction or underground utility present in the vicinity of the proposed intrusive activity locations. The locations of the identified features should be marked with white paint on the asphalt areas and white flags in grassy areas. A report shall be provided with an explanation of the identified features. The identified features should be included in the site survey described in Milestone G.

Milestone D – Soil Boring Investigation – In an effort to fully investigate 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 fifteen (15) soil borings (B-1 through B-15) utilizing a hollow stem auger drilling rig. Specifics on the proposed investigation are provided below:

- The proposed locations of the fifteen (15) soil borings (B-1 through B-15) are provided on the attached Figure 1. 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. If due to valid concerns prior to the advancement of borings, the general locations of the proposed borings need to be altered significantly from the approximate locations provided on the attached figure, then the selected consultant will be required to contact the Technical Contact, discuss the need for the changes, and provide the Technical Contact with a revised soil boring location map.

- Prior to the advancement of the soil borings, the selected consultant will be required to complete a private markout at the Site to identify the location of obstructions and underground utilities as part of Milestone C. If a consultant feels it is appropriate and necessary to complete hole-clearing activities before advancing the borings, the cost should be included in their proposal and costs. If a consultant includes the cost to complete hole-clearing, they should state it in their proposal and discuss why it is appropriate and necessary. As discussed in the RFB, cost is not the only factor when evaluating proposals and other factors are taken into consideration during the review process, including appropriate safety measures.
- Soil borings will be advanced to groundwater, bedrock, or refusal, whichever is encountered first. However, in the event that there is no evidence of petroleum hydrocarbon impact (includes olfactory, visual, and field instrument detections) for more than 50 feet, then the boring maybe terminated. Soil samples will be collected and logged continuously by an on-site 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 30 soil samples (two (2) soil samples per boring) shall be collected and submitted to an accredited laboratory for analysis. One (1) sample from each boring should be collected from the soil interval exhibiting the highest PID reading in each borehole. The second 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. If no elevated PID readings are observed, one soil sample will still be collected at the base of the boring or refusal and the depth of other soil sample will be determined by the Professional Geologist based on the previous release locations and investigations, available information, and their professional opinion and experience.
- Soil samples shall be collected using a PADEP approved soil sampling method 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 analyzed for BTEX, MTBE, naphthalene, cumene, 1,2-dichloroethane, 1,2-dibromoethane, 1,2,4-TMB, 1,3,5-TMB, and total lead 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).
- Compile the field findings and laboratory data into a summary table and comprehensive soil boring logs.

Milestone E – Bedrock Monitoring Well Installation – In order to fully characterize the dissolved phase plume in the first bedrock aquifer and obtain the data necessary to evaluate exposure pathways for the risk assessment, a total of six (6) bedrock monitoring wells (MW-13 through MW-18) are to be installed at the Site. The proposed locations of the bedrock monitoring wells are provided on the attached Figure 1. As part of the installation of the bedrock wells, the selected consultant should consider the following:

- All monitoring well 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 location of the monitoring wells is provided on Figure 1.
- The six (6) bedrock wells will be advanced to a total estimated depth of 60 ftbsg with approximately 40 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 upper 40 feet will be cased and the annular space will be sealed in an effort to prevent possible vertical movement

through the borehole from the shallower intervals to deeper water bearing zones. At a minimum, the casing for each bedrock well must penetrate competent bedrock five (5) feet. The total depth and screening interval provided are approximated based on available information.

- Drilling is to be conducted under the supervision of a Pennsylvania-licensed Professional Geologist and the construction specifications will be determined by the Professional Geologist and dictated by actual site conditions (i.e. actual depth to bedrock, actual depth to groundwater, etc.). 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. In addition, B&B will remind the selected consulting firm that careful consideration needs to be taken when installing the six (6) proposed bedrock monitoring wells. Specifically, the wells should not be over drilled, under screened, or screened across the overburden and bedrock.
- A flush-mounted manhole shall be cemented into place to complete the well at grade level. A locking, pressure fit, watertight cap will be used to prevent the infiltration of surface runoff and rainwater and to restrict access by unauthorized individuals.
- Drilling should be conducted under the supervision of a Pennsylvania-licensed Professional Geologist, although a field supervisor may be used in the field on a day-to-day basis. The field supervisor should visually inspect subsurface materials encountered during drilling, screen cuttings with a PID, and complete field well construction logs. When encountered, soils should be described using the Unified Soil Classification System. Bedrock should be described using USGS descriptive protocol, with the identification of the depth of and size of potential fractures and/or other subsurface anomalies.
- The newly installed monitoring wells should be developed to promote adequate hydraulic connection between the aquifer and the well. Depending on the depth and amount of sediment in the well, development should be completed via mechanical surging using either a bailer or an electric submersible pump, or by airlift techniques.

- Compile the field findings into comprehensive monitoring well construction diagrams and logs.
- **All IDW waste** should be disposed of per the instructions included in the “General SOW Requirements” and “Site Specific Milestones” section of the RFB.

Milestone F – Shallow Water Monitoring Well Installation – In order to fully characterize the dissolved phase plume in the overburden aquifer and obtain the data necessary to evaluate exposure pathways for the risk assessment, a total of four (4) shallow water monitoring wells (MW-19 through MW-22) are to be installed at the Site. As part of the installation of the shallow water wells, the selected consultant should consider the following:

- All monitoring wells 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 shallow water monitoring wells are provided on the attached Figure 1.
- For the four (4) shallow water monitoring wells, the borehole will be drilled to the completed depth of approximately 10 ftbsg, and a monitoring well will be constructed using approximately 1.5 feet of four-inch diameter, schedule 40 PVC flush threaded casing and approximately 8.5 feet of four-inch diameter, schedule 40 PVC flush threaded 0.010 slot size screening. The shallow wells will be cased for the first 1.5 feet with screening extending from the bottom of the casing to the well completion depth. In addition, the estimated construction specifications provided above may need to be altered during drilling as dictated by actual site conditions (i.e. actual depth to bedrock, actual depth to groundwater, etc.).
- A flush-mounted manhole shall be cemented into place to complete the well at grade level. A locking, pressure fit, watertight cap will be used to prevent the infiltration of surface runoff and rainwater and to restrict access by unauthorized individuals.
- 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.

- Drilling should be conducted under the supervision of a Pennsylvania-licensed Professional Geologist (P.G.), although a field supervisor may be used in the field on a day-to-day basis. The field supervisor should visually inspect subsurface materials encountered during drilling, screen cuttings with a PID, and complete field well construction logs. When encountered, soils should be described using the Unified Soil Classification System. Bedrock should be described using USGS descriptive protocol, with the identification of the depth of and size of potential fractures and/or other subsurface anomalies.
- All wells are to be installed to the specifications included in the RFB. If the RFB indicates that the well should be overburden then it would only be installed as overburden. If installation of an overburden well in a location is deemed not feasible by a P.G. due to the shallow presence of competent bedrock after an appropriate attempt has been documented and logged, then a well would not be installed in that location and a credit/cost adjustment would be given to the claimant for that well not being installed. Please indicate in your bid the cost adjustment amount that would be given back to the claimant if a shallow well is not able to be installed due to shallow bedrock.
- The newly installed monitoring wells should be developed to promote adequate hydraulic connection between the aquifer and the well. Depending on the depth and amount of sediment in the well, development should be completed via mechanical surging using either a bailer or an electric submersible pump, or by airlift techniques.
- Compile the field findings into comprehensive monitoring well construction diagrams and logs.
- **All IDW waste** should be disposed of per the instructions included in the “General SOW Requirements” and “Site Specific Milestones” section of the RFB.

Milestone G – Site Survey – Following the installation of the proposed soil borings and monitoring wells, a professional survey of the Site by a Pennsylvania-licensed surveyor

including all current site features (e.g., buildings, property boundaries, monitoring wells, etc.) shall be completed. All monitoring wells, borings, the Site building, property boundaries and other important Site features are to be surveyed with the purpose of placing their horizontal coordinates on a scaled site map. In addition, the vertical coordinates of the new monitoring well top of casings and surface grade are to be surveyed. 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 in each of the monitored water bearing zones.

Milestone H – Aquifer Testing –

Milestone H1 - Slug Tests – Rising head slug testing will be conducted on four (4) of the bedrock 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 bedrock 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.

Milestone H2 - Step Test – The bedrock 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.

Milestone H3 – 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 bedrock 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. **All IDW waste** should be disposed of per the instructions included in the “General SOW Requirements” and “Site Specific Milestones” section of the RFB.

Milestone I – Soil Gas Point Installation and Sampling – During the characterization of the Site, a total of five (5) soil gas points (SG-1 through SG-5) are to be installed and samples should be collected during two (2) separate soil gas sampling events. Please note that PAUSTIF will only pay the selected firm for the actual number of events conducted (i.e. if a firm includes the costs to complete two (2) events, but only one (1) event is conducted; then the firm will only be paid for the one (1) event completed). The selected consultant should be prepared to conduct the first soil gas sampling event at the Site within two (2) weeks after the soil gas points are installed 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:

- Soil gas points (SG-1 through SG-4) 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 Figure 1.
- As recommended by the PADEP case manager in an April 16, 2013 email, at least one of the soil gas points should be installed in the “worse case” source area. Soil gas point SG-5 will be installed in a location to fulfill the aforementioned PADEP recommendation with the location that takes into

consideration the additional characterization data to be collected as part of the RFB as well as the catalog of historic data completed previously at the Site, as determined by the Professional Geologist.

- 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.
- 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).

Milestone J – 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. During each of the two (2) groundwater monitoring and sampling events, the selected consultant shall collect groundwater samples from monitoring wells MW-1 through MW-22. Please note that PAUSTIF will only pay the selected consultant for the actual number of events conducted (i.e. if a firm includes the costs to complete two (2) events, but only one (1) event is conducted; then the firm will only be paid for the one (1) event completed). The selected consultant should be prepared to conduct the first groundwater sampling event at the Site approximately two (2) weeks after the installation and development of the ten (10) proposed monitoring wells. 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 into laboratory supplied bottleware.
- 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.
- Groundwater samples collected during each of the events will be sent to an accredited laboratory to be tested for the required constituents of concern in accordance with Pennsylvania's Storage Tank Regulation procedures and cleanup standard criteria as specified in Pennsylvania's Act 2. Specifically, each sample will be analyzed for BTEX, MTBE, naphthalene, cumene, 1,2-dichloroethane, 1,2-dibromoethane, 1,2,4-TMB, 1,3,5-TMB, and dissolved lead.
- 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). Following collection of the second round of groundwater monitoring and sampling data, a determination will be made whether additional characterization efforts will be needed or if the completed efforts have fully characterized and delineated the groundwater and

soil at the Site. The selected consultant will keep PAUSTIF and the Technical Contact updated on the progress of the investigation.

- **All IDW waste** should be disposed of per the instructions included in the “General SOW Requirements” and “Site Specific Milestones” section of the RFB.

Milestone K – Fate and Transport Modeling and Site Characterization Report –

Milestone K1 - 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 COCs exceeding the PADEP SHS in groundwater at the release location and its applicability to the Site.

Milestone K2 - Preparation of a Site Characterization Report - Following the completion of the activities proposed in Milestone A through Milestone J as well as the Fate and Transport Modeling noted in Milestone K1, the selected consultant will prepare an SCR for the Site. The information gathered during the aforementioned milestones 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 (if applicable), 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.

The 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, modeling results and analysis, and sensitive receptor information) shall be submitted electronically (in Adobe PDF format) and in hard copy to the Solicitor, PAUSTIF 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 selected consultant.

Milestone L - Feasible Remedial Alternatives Analysis –

Milestone L1 – 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. 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 Feasible Remedial Alternatives Analysis Report. Information/data generated during the interim remedial activities conducted at the Site should be taken into consideration.

Milestone L2 – Feasible Remedial Alternatives Analysis Report - Following the completion of the proposed Remedial Alternatives Analysis, a Feasible Remedial Alternatives Analysis Report should be prepared for the Site. The report should detail the procedures and findings from the activities completed in Milestone A through Milestone K 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 milestone.

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, assessment of risks documentation 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.

- **Milestone M – Additional Groundwater Monitoring and Sampling (Cost Adder Milestone)** – Provide a Unit Cost to complete an additional groundwater monitoring and sampling event. The scope of work for this cost adder should follow Milestone I.
 - **Milestone M1** - The cost provided should be to complete only one (1) event with all wells (existing and proposed) in the network being sampled.
 - **Milestone M2** - The cost provided should be to sample one (1) additional monitoring well during a groundwater sampling event. The provided cost would be to cover all labor, equipment, laboratory, waste, etc.
- **Milestone N – Preparation of Summary Progress Report (Cost Adder Milestone)**– 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 hydrographs, 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.
- **Milestone O – Installation of Additional Bedrock Monitoring Wells (Cost Adder Milestone)** – Provide a Unit Cost to install one (1) additional bedrock monitoring well.

The scope of work for this cost adder should follow Milestone E construction guidelines. Please provide costs for the following:

- **Milestone O1** - Installation of one (1) additional bedrock monitoring well during a separate event. Assume the bedrock monitoring well will be installed to a depth of 60 feet. The provided cost would be to cover all labor, equipment, subcontractors, waste, etc.
- **Milestone O2** - Installation of one (1) additional bedrock monitoring as an add-on to a drilling investigation. Assume the bedrock monitoring well will be installed to a depth of 60 feet. The provided cost would be to cover all labor, equipment, subcontractors, waste, etc.
- **Milestone O3** - Per foot cost for drilling and constructing a monitoring well that extends past the 60 foot depth assumed in Milestone N1 and Milestone N2. The provided cost would be to cover all labor, equipment, subcontractors, waste, etc.
- **Milestone P – Installation of additional shallow Monitoring Wells (Cost Adder Milestone)** – Provide a Unit Cost to install one (1) additional shallow water monitoring well. The scope of work for this cost adder should follow Milestone F construction guidelines. Please provide costs for the following:
 - **Milestone P1** – Installation of one (1) additional shallow monitoring well during a separate event. The provided cost would be to cover all labor, equipment, subcontractors, waste, etc.
 - **Milestone P2** - Installation of one (1) additional shallow monitoring well as an add-on to a drilling investigation. The provided cost would be to cover all labor, equipment, subcontractors, waste, etc.
- **Milestone Q – Update Survey (Cost Adder Milestone)** – Provide a Unit Cost to update the Site’s survey to include any additional on-site or off-site well location(s). The scope of work for this cost adder should follow Milestone G.

- **Milestone R – Prepare a Combined SCR/RAP instead of a SCR (Cost Adder Milestone)** - 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.

Additional Information

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 Milestone tasks identified in the executed Remediation Agreement. Actual milestone payments will occur only after successful and documented completion of the work defined for each milestone. The selected consultant will perform only those tasks/milestones that are necessary to reach the Objective identified in this RFB. Selected consultant will not perform, invoice, or be reimbursed for any unnecessary work completed under a Milestone.

Any "new conditions", as defined in Attachment 1, arising during the execution of the SOW for any of the milestones may result in termination of or amendments to the Remediation Agreement. Modifications to the executed Remediation Agreement will require the written approval of the Solicitor and the PAUSTIF. PADEP approval may also be required.

List of Attachments

1. Remediation Agreement
2. Bid Cost Spreadsheet
3. Site Information/Historic Documents
 - a. July 2007 UST Closure Report
 - b. June 2008 SCR
 - c. June 2008 PADEP Correspondence
 - d. August 2008 RAP
 - e. October 2008 PADEP Correspondence
 - f. November 2008 Site Characterization Addendum Workplan
 - g. December 2008 PADEP Correspondence
 - h. June 2009 Site Characterization Update Report
 - i. April 2010 Site Characterization Addendum Workplan
 - j. February 2013 Correspondence
 - k. April 2013 PADEP Response
 - l. February 2014 Correspondence and Attachments
 - m. Proposed Sample Location Map