Request for Bid

Fixed-Price Defined Scope of Work to Complete Characterization

Solicitor

Cedar Crest Exxon

Shiv Pari, Inc.

301 North Cedar Crest Boulevard

Allentown, Pennsylvania 18104

PADEP FACILITY ID #39-24400

PAUSTIF CLAIM #2009-096(I)

Date of Issuance

December 30, 2013

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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 has an open claim with the PAUSTIF and the corrective action work will be completed under this claim. Reimbursement of Solicitor-approved, reasonable and necessary costs up to claim limits for the corrective action work described in this RFB will be provided by 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	January 10, 2014 by 5 p.m.
Mandatory Pre-Bid Site Visit	January 14, 2014 at 10 a.m.
Deadline to Submit Questions	January 23, 2014 by 5 p.m.
Bid Due Date and Time	January 30, 2014 by 3 p.m.

Contact Information

ICF International	Solicitor	Technical Contact
Ms. Patricia Condran ICF International 4000 Vine Street Middletown, PA 17057 Email – Patricia.Condran@icfi.com	Shiv Pari, Inc. Cedar Crest Exxon 301 North Cedar Crest Blvd. Allentown, Pennsylvania 18104	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

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 answer questions and conduct a site tour for one participant per bidding company. 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.

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 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.

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. 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.

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 of each of the tasks/milestones specified in the Scope of Work, and indicate the timing of all proposed key milestone activities.

8. A description of how the Solicitor, ICF 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

Cedar Crest Exxon
301 North Cedar Crest Boulevard
Allentown, Pennsylvania 18104
City of Allentown, Lehigh County

Site Location and Operation Information

The Site is an active gasoline/diesel station and convenience store located at the intersection of Cedar Crest Boulevard and Chew Street in Allentown, Pennsylvania. The current underground storage tank (UST) system at the Site consists of one 6,000-gallon gasoline UST, two 8,000-gallon gasoline USTs, one 4,000-gallon diesel UST, one diesel dispenser island, two gasoline dispenser islands, and associated single wall fiberglass product piping. The gasoline USTs are constructed of fiberglass and were installed in 1985 in the same tank pit as three older steel USTs that they replaced. No soil impact was reported during the UST upgrade activities. The diesel UST was installed in 1983 and is single wall steel with cathodic protection installed in September 1999. Also on site is a 1,000-gallon heating oil UST. The surrounding properties are a mix of residential and commercial properties, and Trexler Memorial Park towards the west. Available information indicates that the Site and surrounding properties are provided with water and sewer from the City of Allentown. The closest surface water bodies are Little Cedar Creek, located approximately 700 feet southwest of the Site and Cedar Creek, located approximately 1,300 feet south.

Site Background Information

In February 1994, five tons of petroleum impacted soil, encountered while excavating to install new canopy footers, was removed from the Site. The soil impact was observed at approximately five feet below surface grade (ftbsg).

In May 1994, eight soil borings (B-1 through B-8) were advanced around the area that impacted soil was encountered in February 1994 to depths ranging from five ftbsg to 11 ftbsg. Soil samples were collected from each boring location and laboratory analyzed for total petroleum hydrocarbons-gasoline range organics (TPH-GRO), benzene, toluene, ethylbenzene, and xylenes (BTEX). Soil Sample B-1 exhibited constituents of concern (COCs) with concentrations greater than the Pennsylvania Department of Environmental Resources (PADER), predecessor to the PADEP, Statewide Health Standards (SHS) in use at that time. The soil boring locations are provided on the attached Figure 1 and the laboratory analytical data is summarized in Table 1 of the Soil Borings and Remedial Action Plan dated June 1994. Both documents are included in Attachment 3.

On June 30, 2005, as part of a Phase II Investigation, five soil borings (B-1 through B-5) were advanced at the Site to 28 ftbsg. (refusal). Soil samples were collected from the bottom of each boring location and two groundwater samples were collected from temporary wells constructed in borings B-1 and B-3. In addition, one surface soil sample (S-1) was collected from the area of the former heating oil AST, which was still in service at that time, because visible soil contamination was observed below the AST. The soil and groundwater samples were laboratory analyzed for unleaded gasoline and diesel parameters including BTEX, methyl tert-butyl ether (MTBE), naphthalene, cumene, fluorene, and phenanthrene. Soil samples S-1 and B-5 exhibited COCs with concentrations greater than the PADEP SHS. The soil boring locations are indicated on the attached Figure 1. The soil boring logs and the laboratory analytical data is summarized in Tables 1 and 3, respectively, of the Phase II Investigation dated July 27, 2005 that is included in Attachment 3.

On July 7, 2005, tank tightness tests were performed on the gasoline and diesel USTs and the associated product piping. All four tanks and the product piping passed the tightness tests.

On October 13, 2005, as part of an additional Phase II Investigation, eight soil borings (SB-1 through SB-8) were advanced at the Site to 20 ftbsg. Soil samples were collected from each boring location and were laboratory analyzed for leaded gasoline parameters including BTEX, naphthalene, cumene, 1,2-Dibromoethane, 1,2-Dicholoroethane, lead, and MTBE. All COC concentrations were less than the PADEP SHS. Please note that the aforementioned soil samples were submitted to Blue Marsh laboratories for analysis and as such are to be considered as possibly fraudulent, as per the PADEP. The soil boring locations are included on Figure 1. The laboratory analytical data is summarized in Table 3 of the March 15, 2013 Site Characterization Report (SCR) and the soil boring logs are included in the Phase II Geoprobe investigation dated November 2005. The aforementioned documents are included in Attachment 3.

On June 2, 2009, as part of a limited Environmental Site Assessment (ESA), nine soil borings (SB-1 through SB-9) were advanced at the Site. A total of 16 soil samples were collected from the nine borings. In addition, two groundwater samples (WSB-1 and WSB-2) were collected from borings SB-1 and SB-5. The soil and groundwater samples were laboratory analyzed for unleaded gasoline and diesel parameters including BTEX, MTBE, naphthalene, cumene, 1,2,4-Trimethylbenzene (TMB) and 1,3,5-TMB. Soil from SB-5 and SB-6 and groundwater from SB-1 and SB-5 exhibited COCs with concentrations greater than the PADEP SHS. The soil boring locations are indicated on the attached Figure 1 and the laboratory analytical data is summarized in Tables 1 and 2 of the Limited Environmental Site Assessment dated June 2009. Both documents are included in Attachment 3.

On June 10, 2009, the 275-gallon heating oil AST located behind the station building was decommissioned and removed from the Site. An area of impacted soil was present under the tank believed to be due to historic use of the tank. The impact did not extend deeper than six inches below the ground surface. Approximately 1.2 tons of visibly contaminated soil was

excavated from the area underneath and around the AST to a depth of approximately one ftbsg. Two biased soil samples (SS-1 and SS-2) were collected from the excavation and laboratory analyzed for BTEX, MTBE, naphthalene, cumene, 1,2,4-TMB, 1,3,5-TMB, fluorene, and phenanthrene. Neither sample exhibited COCs with concentrations greater than the PADEP SHS. The soil sample locations are indicated on the attached Figure 1 and the laboratory analytical data is summarized in Table 4 of the March 15, 2013 SCR, which is included in Attachment 3.

On June 11, 2012, four four-inch diameter monitoring wells (MW-1 through MW-4) were installed at the Site. Monitoring wells MW-1, MW-2, and MW-4 were drilled to total depths of 30 ftbsg and were constructed with 10 feet of riser and 20 feet of PVC well screen. Monitoring well MW-3 was drilled to a total depth 29 ftbsg and was constructed with 10 feet of riser and 19 feet of PVC well screen. The monitoring well locations are indicated on the attached Figure 1 and the well construction logs are included in Appendix D of the March 15, 2013 SCR. The aforementioned documents are included in Attachment 3.

On June 12, 2012, as part of site characterization activities, a total of 11 soil borings (SB-10 through SB-20) were advanced at the Site. At least one soil sample was collected from each boring and laboratory analyzed for unleaded gasoline and diesel parameters including BTEX, MTBE, naphthalene, cumene, 1,2,4- TMB and 1,3,5-TMB. Soil from SB-12 and SB-16 exhibited TMB concentrations greater than the PADEP SHS. The soil boring locations are indicated on the attached Figure 1 and the laboratory analytical data is summarized in Table 6 of the March 15, 2013 SCR. The aforementioned documents are included in Attachment 3.

Groundwater samples were collected from monitoring wells MW-1 through MW-4 on July 5, 2012, October 25, 2012 and January 15, 2013. For each event, the groundwater samples were laboratory analyzed for unleaded gasoline and diesel parameters including BTEX, MTBE, naphthalene, cumene, 1,2,4- TMB and 1,3,5-TMB. Monitoring well MW-4 exhibited COC concentrations greater than the PADEP SHS for the two sampling events in 2012. On January 15, 2013, none of the wells exhibited COC concentrations greater than the PADEP SHS. The laboratory analytical data is summarized in Table 7 of the March 15, 2013 SCR. The aforementioned document is included in Attachment 3.

On March 15, 2013, a SCR was submitted to the PADEP for the site. The SCR summarized the investigations completed at the Site. The March 15, 2013 SCR was disapproved by PADEP in a letter dated July 15, 2013. The aforementioned correspondence cited 15 reasons and/or comments as to why the SCR was disapproved. A copy of the SCR and the PADEP letter are attached in Attachment 3.

On July 12, 2013, B&B resurveyed the monitoring wells at the Site in order to verify its accuracy and confirm the indicated groundwater flow direction at the Site. The survey data is summarized in Table 1 below and the groundwater flow direction based on this data is indicated on the attached Figure 1 included in Attachment 3.

TABLE 1
Summary of Monitoring Well Survey Data - July 12, 2013

Well	Top of Casing Elevation (feet)	Depth to Groundwater (ftbsg.)	Groundwater Elevation (feet)
MW-1	95.64	26.66	68.98
MW-2	98.15	29.44	68.71
MW-3	93.23	24.10	69.13
MW-4	93.99	24.67	69.32

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 not received from the PADEP.

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

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

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

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.

    - **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 Milestones

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 ICF/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. 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.

- **Milestones Requiring Approval Before Initiation:** Due to limited information and issues with the historical data, the selected consultant will be required to obtain approval to proceed from the solicitor, PAUSTIF, and the technical contact prior to initiating several specific milestones. The approval to proceed with the milestones in question is being done in an effort to determine whether the milestones in question will be warranted based on the data collected during the additional characterization investigation milestones proposed in the RFB. Please note that PAUSTIF will only pay the selected consultant for the milestones completed. The following milestones will require specific approval prior to initiating the milestone:

    - **Aquifer Testing**
    - **Fate and Transport Modeling**
    - **Feasible Remedial Alternatives Analysis**

- **Optional Cost Adder Milestones:** Milestone A through Milestone K 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 L through Milestone R) need to be addressed in your bid response. These cost 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.

- **June 2009 Heating Oil AST release:** Multiple documents in the case file discuss a release at the Site discovered during the June 2009 removal of a heating oil AST at the

Site. The July 15, 2013 PADEP correspondence discussed the heating oil AST as follows:

> *"The sampling and remediation completed associated with the former heating oil AST is inadequate to verify that the extent of contamination was fully characterized and remediated. Furthermore, since this release is from a non-regulated storage tank, you will need to satisfy the requirements of the Clean Streams Law, and if a release of liability is desired, you will need to follow the Act 2 processes and administrative requirements."*

As indicated by the PADEP, the heating oil AST was a non-regulated tank and would need to be addressed under the Pennsylvania Clean Stream Laws as well as the Act 2 (1995) processes and administrative requirements. The SOW presented in this RFB has been developed to address only the releases that are governed under the Corrective Action Process included in Pennsylvania Code, Title 25, Chapter 245 - Administration of the Storage Tank Spill and Prevention Program in a timely, efficient, and cost effective manner as well as facilitate progress towards site closure. As such, the heating oil AST is not to be considered part of the SOW in the RFB.

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 – 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 to confirm the location of the steam lines, the sanitary sewer lines, and the storm water sewer lines as well as any other obstruction or underground utility present in the vicinity of the powerhouse and the former powerhouse UST field. 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 C – Soil Boring Investigation – In an effort to fully investigate the impact to the soil media, a series of soil borings is being proposed. Specifically, the activities include the completion of 21 soil borings (B-1 through B-21) utilizing a direct push sampling approach (e.g., Geoprobe®). Specifics on the proposed investigation are provided below:

- The proposed locations of the 21 soil borings (B-1 through B-21) are provided on the attached Figure 2. 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 the general locations of the proposed borings need to be altered more than eight (8) feet from the approximate locations provided on the attached figure, then the selected consultant will be required to contact the PADEP, discuss the need for the changes, and provide the PADEP 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 B. 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 30 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, visual petroleum impacts and screened with an appropriate field-screening instrument. Soils should be described using the Unified Soil Classification System.

- A total of 42 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 field-screening reading or evidence of petroleum impacts (i.e., staining, free product, etc.) 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 impacts. Please note that If no elevated field-screening readings or other indicators of impact are observed, two (2) soil samples should still be collected from each boring with one sample to still be collected at the bedrock interface or just above groundwater (if encountered). The depth of the other sample (if no elevated field-screening readings or other indicators of impact are observed) should be determined based on the selected consultant's professional opinion.

- A total of 42 soil samples are proposed to be collected both in laboratory-sterilized sample jars and using the Encore sampling method. The samples will then be placed on ice and delivered to an accredited laboratory for chemical analysis. Soil samples will be collected and analyzed for the PADEP unleaded gasoline and diesel short list (benzene, toluene, ethylbenzene, total xylenes, MTBE, naphthalene, isopropylbenzene, 1,3,5-trimethylbenzene, and 1,2,4-trimethylbenzene). The analytical data, field results; boring logs, and sampling map from the event will be summarized and included in a SCR.

- 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.

- 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 D – Deep Monitoring Well Installation – In order to fully characterize the dissolved phase plume in the deep overburden aquifer, a total of four monitoring wells (MW-2A and MW-5 through MW-7) are to be installed at the Site. The proposed locations of the monitoring wells are provided on the attached Figure 2. As part of the installation of the wells, the selected consultant should consider the following:

- All monitoring well locations will be advanced in the locations proposed in the RFB, unless instructed otherwise by the Technical Contact or 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 2 in Attachment 3. If due to valid concerns prior to drilling, the general locations of the proposed monitoring wells 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 well location map.

- Prior to the advancement of the monitoring wells, 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 B. 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.

- The four monitoring wells will be advanced to a total estimated depth of 40 ftbsg with approximately 20 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 annular space should be appropriately sealed in an effort to prevent possible vertical movement through the borehole from the shallower intervals to deeper water bearing zones. 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 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 may install the wells using either hollow-stem auger or air-rotary methods. In addition, B&B will remind the selected consulting firm that careful consideration needs to be taken when installing the proposed 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 an appropriate field-screening instrument, 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 E – Installation of Shallow Monitoring Wells – A total of five shallow monitoring wells (MW-8 through MW-12) are proposed for installation at this Site to investigate whether a shallow water bearing zone is present. The proposed locations of the monitoring wells are provided on the attached Figure 2. As part of the installation of the wells, the selected consultant should consider the following:

- All monitoring well locations will be advanced in the locations proposed in the RFB, unless instructed otherwise by the Technical Contact or the presence of utilities, obstructions, or safety concerns requires a change in the location. If due to valid concerns prior to drilling, the general locations of the proposed monitoring wells 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 well location map.

- Prior to the advancement of the monitoring wells, 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 B. 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.

- For the shallow monitoring wells, the borehole will be drilled to an anticipated maximum depth of approximately 10 feet bsg, and a monitoring well will be

constructed using no more than 2 feet of schedule 40 PVC flush threaded casing and with schedule 40 PVC flush threaded 0.010 slot size screening to be installed in the remaining length of the well column. The total depth and screening interval provided are approximated based on limited 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 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). In addition, B&B will remind the selected consulting firm that careful consideration needs to be taken when installing the proposed monitoring wells. Specifically, the wells should not be over drilled, under screened, or screened across the multiple water bearing zones.

- 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 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.

- 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 an appropriate field-screening instrument, 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 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 – Soil Gas Sampling – During the characterization of the Site, a total of three (3) soil gas samples are proposed to be collected during each of the two (2) 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 2 events, but only 1 events are 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 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.

- 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).

Results from soil gas sampling events will be summarized and presented to the PADEP in the SCR.

Milestone G – Site Survey – Following the completion of Milestone B, Milestone C, Milestone D, Milestone E, and Milestone F, a professional survey of the Site by a Pennsylvania-licensed surveyor including all current site features (e.g., buildings, property boundaries, monitoring wells, sanitary and storm sewers, etc.) shall be completed. All monitoring wells, soil borings, soil gas points, the Site building, sanitary and storm sewer lines, 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 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.

Milestone H2 - 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.

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 monitoring well at the Site. Transducers will be used to monitor the resultant water levels in the pumping well and surrounding overburden 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 – Groundwater Monitoring and Sampling – Following the installation and development of the four additional deep monitoring wells and four shallow monitoring wells, the selected consultant will gauge and sample the entire expanded monitoring well network. 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 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 groundwater sampling event at the Site approximately two (2) weeks after the installation of the proposed monitoring wells and conduct the second event approximately four (4) 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 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 PADEP unleaded gasoline and diesel short lists (benzene, toluene, ethylbenzene, total xylenes, MTBE, naphthalene, isopropylbenzene, 1,3,5-trimethylbenzene, and 1,2,4-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). 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 J – Fate and Transport Modeling and Site Characterization Report –

Milestone J1 - 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 J2 - Preparation of a Site Characterization Report - Following the completion of the activities proposed in Milestone A through Milestone I as well as the Fate and Transport Modeling noted in Milestone J1, 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.

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, 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 K - Feasible Remedial Alternatives Analysis –

Milestone K1 – 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 K2 – 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 I 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, 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.

- **Milestone L – 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 L1 -*** The cost provided should be to complete only one (1) event with all the monitoring wells (existing and proposed).

  - ***Milestone L2 -*** 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 M – Preparation of Quarterly Progress Report (Cost Adder Milestone)** – Provide a Unit Cost to Prepare a Quarterly 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. A draft of the progress report should be provided to the Solicitor for review and approval prior to submittal to the PADEP. 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 N – 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 E construction guidelines. Please provide costs for the following:

  - ***Milestone N1*** – Installation of one (1) additional shallow monitoring well during a separate mobilization event. The provided cost would be to cover all labor, equipment, subcontractors, waste, etc.

- ***Milestone N2 -*** Installation of one (1) additional shallow monitoring well as an add-on to a drilling investigation where mobilization costs has already been included. The provided cost would be to cover all labor, equipment, subcontractors, waste, etc.

- **Milestone O – Installation of Additional Deep Monitoring Wells (Cost Adder Milestone)** – Provide a Unit Cost to install one (1) additional deep water monitoring well. The scope of work for this cost adder should follow Milestone D construction guidelines. Please provide costs for the following:

  - ***Milestone O1*** – Installation of one (1) additional shallow monitoring well during a separate mobilization event. The provided cost would be to cover all labor, equipment, subcontractors, waste, etc.

  - ***Milestone O2 -*** Installation of one (1) additional shallow monitoring well as an add-on to a drilling investigation where mobilization costs has already been included. The provided cost would be to cover all labor, equipment, subcontractors, waste, etc.

- **Milestone P – Update Survey (Cost Adder Milestone)** – Provide a Unit Cost to update the Site's survey to include any additional monitoring well location(s). The scope of work for this cost adder should follow Milestone G.

- **Milestone Q – Offsite Access (Cost Adder Milestone) -** 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.

- **Milestone R – Combined SCR/RAP rather than SCR -** 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 bid. The standard practice of tracking total cumulative costs by milestone will also be required to facilitate invoice review. 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. All necessary modifications to the executed Remediation Agreement will require the prior 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. Soil Borings and Remedial Action Plan - June 1994
    b. Phase II Investigation Report - July 2005
    c. Phase II Investigation Report - November 2005
    d. Limited Environmental Site Assessment Report - June 2009
    e. Site Characterization Report - March 2013
    f. PADEP SCR Disapproval Letter - July 15, 2013
    g. Figure 1 – Historical Soil Borings and Groundwater Flow Direction Map
    h. Figure 2 – Proposed Monitoring Well, Soil Boring and Soil Gas Point Location Map