

Request for Bid

Fixed-Price Defined Scope of Work to Complete Characterization

Solicitor

Ryan and Carrie Varner

16838 Mill Road

Spring Run, PA 17262

PADEP FACILITY ID #28-01621

PAUSTIF CLAIM #2013-0047(I)

Date of Issuance

January 15, 2015

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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 and 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	January 30, 2015 by 5 p.m.
Mandatory Pre-Bid Site Visit	February 2, 2015 at 11 a.m.
Deadline to Submit Questions	February 9, 2015 by 5 p.m.
Bid Due Date and Time	February 19, 2015 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>Ryan and Carrie Varner Varner’s Country Store 16838 Mill Road Spring Run, PA 17262</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, is it 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 score 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, 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

Varner's Country Store
11195 Forge Hill Road
Roxbury, PA 17251
Lurgan Township, Franklin County

Site Location and Operation Information

The Site is an active convenience store and retail gasoline station owned by Ryan and Carrie Varner since 2009. The Site is currently occupied by a three-story building on block foundation with a basement. The building is operated as Varner's Country Store (Varner's) and is located at 11195 Forge Hill Road, Roxbury, Pennsylvania, Lurgan Township, Franklin County. The Site has been in operation since the early 1940's as a retail gasoline station and has changed ownership several times over the years. The seven known underground storage tanks (USTs) associated with the Site are as follows:

- Tank 001 – 2,000-gallon gasoline, installed in 1983 and closed by removal in 1998
- Tank 002 – 2,000-gallon gasoline, installed in 1983 and closed by removal in 1998
- Tank 003 – 550-gallon kerosene, installed in 1983 and closed by removal in 1998
- Tank 004 – 2,000-gallon off-road diesel, installed in 1999 and is currently in use
- Tank 005 – 4,000-gallon diesel, installed in 1999 and is currently in use
- Tank 006 – 8,000-gallon regular unleaded gasoline, installed in 1999 and is currently in use
- Tank 007 - 4,000-gallon premium unleaded gasoline, installed in 1999 and is currently in use

The USTs currently in use at the Site (Tanks 004 through 007) are cathodically protected, single walled steel, with spill and overfill protection. On March 22, 2013, the Pennsylvania Department of Environmental Protection (PADEP) identified a leak at the gasoline dispenser. The cause of the leak was a bad seal on one of the blending pumps. The leaking dispenser was installed sometime in the 1990's.

The properties surrounding the Site are a mix of rural, agricultural, residential, and commercial properties. The on-site building is heated utilizing an aboveground storage tank (AST) located outside the western side of the building. The Site is reportedly provided water from the Shippensburg Borough Water Department. The closest surface water body is an unnamed culverted stream that runs along the western property boundary. The unnamed stream empties into the Conodoguinet Creek, located approximately 550 feet south of the Site. A Site Plan Map is provided in Attachment 3.

Site Background Information

In 1998, Tanks 001 through 003 were removed from the Site. A Pennsylvania Department of Environmental Resources (PADER), predecessor to the PADEP, Storage System Report Form stated that a complaint was filed indicating when the USTs were removed, "holes were (present) in the tanks (and there were) odors in the soil" and contaminated soil was possibly used as backfill. The tank owner at the time (Chambersburg Produce) reported "there was some contamination which was cleaned up and disposed of at a landfill (and) sampling indicates all clean." The former location of Tanks 001 through 003 is suspected to be between the convenience store building and Forge Hill Road/Newburg Road. No other information regarding these USTs could be found during a PADEP file review.

In June 2010, a public water supply line was installed along Forge Hill Road/Newburg Road. During the excavation, petroleum odors were observed in areas near the Site. On June 30, 2010, the PADEP conducted oversight of four test pits (Test Pits #1 through #4) adjacent to the Site. The depths of the test pits ranged from 6.5 to seven feet below grade (ftbg), and water was observed flowing into several of the pits. Stained soil, petroleum odors, and elevated PID readings were observed in the northwest corner of Test Pit #2, which is near the suspected location of the former dispensers and USTs (Tanks 001 through 003). No evidence of petroleum impacts were observed in Test Pits #1, #3, or #4. Two water samples (448 and 449) and two soil samples (450 and 451) were collected from Test Pit #2 and two soil samples (446 and 447) were collected from Test Pit #4. The samples were submitted for laboratory analysis of volatile organic compounds (VOCs) and semi-VOCs (SVOCs). Several of the constituents of concern (COCs) exhibited concentrations greater than their respective PADEP Statewide Health Standard (SHS) in both the soil and groundwater samples. No documentation of a further investigation into the source of the contamination was found during review of PADEP files. The locations of the test pits and the laboratory analytical data are provided in Attachment 3.

On March 22, 2013, the PADEP conducted a periodic inspection of the Site and reported a leak beneath the gasoline dispenser associated with the regular and super UST. The cause of the leak was discovered to be a bad seal on one of the blending pumps when the dispenser was operating. The dispenser was immediately shut down and on April 4, 2013, a gravel sample (G1) was collected from beneath the leaking dispenser. The laboratory analytical results indicated concentrations of naphthalene and 1,2,4-Trimethylbenzene (TMB) greater than their respective PADEP SHS. The soil sample location and the soil analytical data is provided in Attachment 3.

On August 26, 2013 and December 9, 2013, a total of 14 soil borings (GP-1 through GP-14) were advanced at the Site in areas surrounding the current tank field. Total depths of the borings ranged from nine to 16 ftbg. Groundwater was encountered in four of the borings. Elevated PID readings and petroleum odors were noted in several of the borings. Soil samples were collected from each boring at depths ranging from 3.5 to 15 ftbg. Groundwater samples were collected from GP-1 and an on-site observation well (OW-1). The samples were laboratory analyzed for benzene, toluene, ethylbenzene, xylenes (BTEX), methyl-tert butyl ether (MTBE), naphthalene, cumene, 1,2,4-TMB, and 1,3,5-TMB. The soil analytical results indicated none of the COC concentrations greater than their respective PADEP SHS. The groundwater analytical results indicated several COC concentrations greater than their respective PADEP SHS. The soil boring locations, the soil and groundwater analytical data, and the soil boring logs are included Attachment 3.

On December 10 and 11, 2013, a total of six monitoring wells (MW-1S, MW-2S, MW-3S, MW-3D, MW-4S, and MW-4D) were installed at the Site. The wells were installed to depths ranging from 14 to 28 ftbg. The well locations and the well construction details are provided in Attachment 3.

On December 27, 2013, a high-vacuum extraction (hi-vac) event was conducted utilizing OW-1. A total of 3,708 gallons of impacted groundwater was recovered during the event.

On January 14, 2014 and February 19, 2014, observation well OW-1 and all of the monitoring wells were sampled and laboratory analyzed for BTEX, MTBE, naphthalene, cumene, 1,2,4-TMB, and 1,3,5-TMB. COC concentrations greater than their respective PADEP SHS were reported in wells OW-1 and MW-2S. Groundwater gauging data indicted groundwater at the Site at approximately three ftbg to five ftbg with a flow direction across the Site towards the south-southeast. The groundwater analytical data is summarized in Attachment 3.

In a letter dated April 8, 2014, the PADEP approved the 2014 SCR with the following modification:

- “Further site characterization is warranted. The extent of soil and groundwater contamination has not been fully delineated.”

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. Modifications were made to the RFB to reflect the PADEP's comments following their cursory review of the documentation provided.

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
- 1,2-Dichloroethane
- 1,2-Dibromoethane

- Lead
- SVOCs

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

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

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. 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 (e.g. within 30 days of the contract being executed) as to when each of the milestones will be completed. This includes the expected date (e.g. within 90 days of the contract being executed) when the draft deliverables will be submitted to the Solicitor and PAUSTIF 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 additional safety measures other than or beyond what is required in the SOW (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. 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.

- **Standard Operating Procedures:** Please include in the bid as an attachment, your firm's standard operating procedures for all major field tasks proposed in the scope of work.

- **Milestones Requiring Approval Before Initiation:** Following the collection of the data from Milestone A through Milestone I, the selected consultant will be required to obtain approval to proceed from the PAUSTIF 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:
 - **Milestone J2 – Step Test**
 - **Milestone J3 – Pump Test**
 - **Milestone L1 - Remedial Alternatives Analysis**
 - **Milestone L2 – Feasible Remedial Alternatives Analysis Report**

- **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 price. 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. For consideration of PAUSTIF reimbursement, Solicitor and PAUSTIF approval must be obtained prior to completing Optional Cost Adder Milestones.

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 – 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 H.

Milestone C – Obtain PennDOT Right of Way Permit – Some of the proposed monitoring wells and proposed soil borings are located within the PennDOT right of way of Forge Hill Road and Newburg Road (State Road 641). The selected consultant will be responsible for obtaining any/all necessary PennDOT authorizations to advance borings, install wells, and conduct routine sampling within their right-of-way. Please note; PennDOT typically waives permit fees for other state agencies including the insurance department upon issuance of a letter from the requesting agency, which will be provided upon request. Therefore bidders should not include permit fees in this bid. The selected consultant should be prepared to submit the Right of Way Permit to the PennDot within two (2) weeks of the execution of the contract.

Milestone D – 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 eight soil borings (GP-15 through GP-22) utilizing appropriate equipment. Please note that consultants need to utilize appropriate equipment that is capable of reaching depths required to appropriately terminate the boring. Boring investigations noting shallow refusal will not be reimbursed. Consultants should review the available soil boring logs and monitoring well logs included in Attachment 3 in order to determine the appropriate equipment needed to complete the investigation (i.e. historic events note shallow geoprobe refusal met due to possible presence of boulders in the overburden, so investigation may need equipment more capable than a standard GeoProbe). Bids should specifically discuss how the borings will be advanced at the Site. Specifics on the proposed investigation are provided below:

- The proposed locations of the eight (8) soil borings (GP-15 through GP-22) 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 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 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 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 16 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 16 soil samples are proposed to be collected both in laboratory-sterilized sample jars and using a PADEP approved soil 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 Unleaded and Leaded Gasoline, Diesel, Kerosene, and SVOCs via appropriate laboratory methods
- The analytical data, field results; boring logs, and sampling map from the event will be summarized and included in the report to be completed in Milestone K2.
- 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).

Milestone E – Installation of Overburden Monitoring Wells – A total of seven (7) monitoring wells (MW-5 through MW-11) are proposed for installation to delineate groundwater at the Site. The proposed locations of the monitoring wells are provided on the attached Figure 1. 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 drilling the monitoring wells, 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 monitoring wells, the borehole will be drilled to an anticipated maximum depth of approximately 15 feet bsg, and a monitoring well will be constructed using schedule 40 PVC flush threaded casing and schedule 40 PVC flush threaded screening. The total depth is approximated based on available information from previous investigations. 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 screening and casing intervals should be installed appropriately to intersect the shallow overburden aquifer. Bid responses should provided a clear description as to how the consultant anticipates the wells will be installed (i.e. drilling method and anticipated casing and screening lengths) using their professional opinion.

- 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 multiple water bearing zones. Shallow refusal due to underscoping of equipment is not acceptable and will not be reimbursed. The selected consultant is responsible for appropriately installing the well.
- 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 – Bedrock Monitoring Well Installation – In order to characterize the dissolved phase plume in the first bedrock aquifer and obtain the data necessary to evaluate exposure pathways for the risk assessment, one additional bedrock monitoring wells (MW-12) is to be installed at the Site. The proposed location of the bedrock monitoring well is provided on the attached Figure 1. As part of the installation of the bedrock well, the selected consultant should consider the following:

- The monitoring well will be advanced in the location 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 bedrock well should be advanced to a total estimated depth of 30 feet bsg with approximately 20 feet of four-inch diameter, schedule 40 PVC flush threaded casing and approximately 10 feet of four-inch diameter, schedule 40 PVC flush screening. The total depth, casing interval, and screening interval provided are approximated based on available information from previous investigations. 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 selected consultant should select an appropriate casing length and seal the annular space 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 should penetrate competent bedrock five (5) feet. The well 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 well using air-rotary methods. In addition, B&B will remind the selected consulting firm that careful consideration needs to be taken when installing the proposed bedrock monitoring well. Specifically, the well 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 well 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 – Soil Gas Point Installation and Sampling – As part of this milestone, one additional soil gas sampling point (VP-4) is to be installed and samples are to be collected from both the three existing soil gas point (VP-1 through VP-3) and the one proposed soil gas points (VP-4) during two separate soil gas sampling events. For this RFB, please assume that a total of two rounds of samples will be collected from each of the four soil gas sampling points, for a total of eight soil gas samples. 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 1 event, but no event is conducted; then the firm will not be paid for the milestone). The selected consultant should be prepared to conduct the first soil gas sampling event at the Site within two weeks of the installation of VP-4 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 point (VP-4) will be advanced in the location proposed in the RFB, unless the presence of utilities, obstructions, or safety concerns requires a change in the location. The proposed location of the aforementioned soil gas point is provided on the figures attached in Attachment 3.
- 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. Bid responses should specifically indicate how the consultant anticipates constructing the proposed soil gas point and completing the proposed sampling events.
- Samples should be collected in laboratory provided Summa canisters equipped with laboratory calibrated flow regulators and analyzed for benzene, toluene, ethylbenzene, MTBE, naphthalene, isopropylbenzene, 135-TMB, and 124-TMB 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 point installation and sampling activities should be summarized and presented in the report to be completed as part of Milestone K2.

Milestone H – Site Survey – Following the completion of Milestone A through Milestone G, a professional survey of the Site by a Pennsylvania-licensed surveyor including all current site features (i.e., buildings, property boundaries, monitoring wells, sanitary and storm sewers, etc.) shall be completed. All onsite and offsite monitoring wells, soil borings, soil gas points, stormwater inlets, 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 grades stormwater inlets. 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 I – Groundwater Monitoring and Sampling – Following the installation and development of the additional 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 Unleaded and Leaded Gasoline, Diesel, Kerosene, and SVOCs via appropriate laboratory methods.
- Samples should be collected from monitoring well MW-1S, MW-2S, MW-3S, MW-3D, MW-4S, MW-4D, MW-5, MW-6, MW-7, MW-8, MW-9, MW-10, MW-11, and MW-12. 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. Please note, that observation well OW-1 has not been included on the initial sampling list. If it is determined that OW-1 will be added into the event under the cost adder Milestone M3.
- 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 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.

- In the event that the PennDot Right of Way Permit takes longer to obtain than anticipated and as such the proposed off site monitoring well installation activities are delayed, a groundwater sampling event completed at the Site before the permit is secured and the monitoring wells are installed would be done so under the costs provided in the Optional Cost Adder Milestone M1.

Milestone J – Aquifer Testing –

Milestone J1 - 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 Addendum to be completed as part of Milestone K2.

Milestone J2 - Step Test (Milestone Requiring Approval before Initiation) – 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 Addendum to be completed as part of Milestone K2.

Milestone J3 – Pump Test (Milestone Requiring Approval before Initiation) – 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 Addendum to be completed as part of Milestone K2. **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 Addendum - 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 a SCR Addendum for the Site. The information gathered during the aforementioned milestones should be incorporated into a comprehensive SCR Addendum 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 Addendum. The report will be appropriately signed and sealed by a licensed Professional Geologist.

A draft SCR Addendum 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 and PAUSTIF (within the timeframe established in the consultant's schedule provided in the bid response) for review / comment prior to finalizing the SCR Addendum. 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 (Milestone Requiring Approval before Initiation) – 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 (Milestone Requiring Approval before Initiation) - 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 J 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 Addendum. 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 PAUSTIF 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 only the existing monitoring wells (MW-1S, MW-2S, MW-3S, MW-3D, MW-4S, and MW-4D). In the event that the PennDot Right of Way Permit takes longer to obtain than anticipated, this cost adder would be utilized for a groundwater sampling event completed at the Site before the permit is secured and the monitoring wells are installed.

Milestone M2 - The cost provided should be to complete only one (1) event with all the existing and proposed monitoring wells (MW-1S, MW-2S, MW-3S, MW-3D, MW-4S, MW-4D, MW-5, MW-6, MW-7, MW-8, MW-9, MW-10, MW-11, and MW-12).

Milestone M3 - 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 – Stream Investigation: Provide the following Unit Costs to investigate the unnamed culverted stream that runs along the west property boundary of the Site. Stream gauge and sampling locations should be discussed with the Technical Contact prior to install and collection, if determined that a stream investigation is warranted.

Milestone N1 – Stream Gauge Install – The cost should cover the necessary time and materials needed for the following:

- Investigate the condition of the stream north of the Site prior to it being diverted into the underground culvert, at the storm water inlet located southwest of the convenience store building, and south of the Site where it exits the culvert.
- Install two graduated stream gauges. Stream gauging data would be included on all groundwater contour and elevation maps.

Milestone N2 – Stream Sampling – The cost should cover the necessary time and materials needed to collect one round of stream samples from three locations. Sampling procedures and parameters should be in accordance with Milestone I.

Milestone O – Preparation of Progress Report (Cost Adder Milestone) – Provide a Unit Cost to Prepare a Progress Report for submittal to the PADEP. The Progress Report should detail the observations documented during the event, summarize the analytical results, map the groundwater flow direction for the Site, provide iso-concentration maps for compounds exceeding the SWHS, provide hydro-graphs, discuss the interim remediation efforts (if any), and provide additional scheduling details for upcoming events. 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 P – Installation of Additional Overburden Monitoring Wells (Cost Adder Milestone) – Provide a Unit Cost to install one (1) additional overburden monitoring well. The scope of work for this cost adder should follow Milestone E construction guidelines. Please provide costs for the following:

- **Milestone P1** – Installation of one (1) additional overburden monitoring well during a separate mobilization event. The provided cost would be to cover all labor, equipment, subcontractors, waste, etc.
- **Milestone P2** - Installation of one (1) additional overburden monitoring well as an add-on to a drilling investigation where mobilization cost has already been included. The provided cost would be to cover all labor, equipment, subcontractors, waste, etc.

Milestone Q – 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 F construction guidelines. Please provide costs for the following:

- **Milestone Q1** - Installation of one (1) additional bedrock monitoring well during a separate event. Assume the bedrock monitoring well will be installed to a depth of 30 feet. The provided cost would be to cover all labor, equipment, subcontractors, waste, etc.
- **Milestone Q2** - 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 30 feet. The provided cost would be to cover all labor, equipment, subcontractors, waste, etc.
- **Milestone Q3** - Per foot cost for drilling and constructing a monitoring well that extends past the 30 foot depth assumed in Milestone Q1 and Milestone Q2. The provided cost would be to cover all labor, equipment, subcontractors, waste, etc.

Milestone R – 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 H.

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 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 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. Site Characterization Report – March 14, 2014
 - b. Table 1a – Soil Analytical Data (VOCs)
 - c. Table 1b – Soil Analytical Data (Additional Compounds)
 - d. Table 2a – Groundwater Analytical Data (VOCs)
 - e. Table 2b – Groundwater Analytical Data (Additional Compounds)
 - f. Figure 1 – Site Plan Map
 - g. Figure 2 – Historical Soil Sample Location Map
 - h. Figure 3 – Proposed Soil Boring, Monitoring Well, and Vapor Point Sample Location Map