

Request for Bid

**Fixed-Price Defined Scope of Work
to Complete Characterization**

Solicitor

**Mr. Harry Guleria
Sanneet, Inc. dba Broad & Diamond BP
5 Whitesell Lane
Newtown, PA 18940
PADEP FACILITY ID #51-21007
PAUSTIF CLAIM #2012-0155(S)**

Date of Issuance

June 9, 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	June 23, 2015 by 5 p.m.
Mandatory Pre-Bid Site Visit	June 25, 2015 at 11 a.m.
Deadline to Submit Questions	July 2, 2015 by 5 p.m.
Bid Due Date and Time	July 16, 2015 by 3 p.m.

Contact Information

Technical Contact
<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 RFB and the subject Site conditions must be directed via email 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 (1) 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 email. Notification of intent to attend is appreciated; however, it is not required. Attendance at the Pre-Bid Site Meeting is mandatory.

Submission of Bids

To be considered for selection, **one (1) hard copy of the signed bid package and one (1) electronic copy (one (1) 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 Pre-Bid 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 RFB. 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 (1) 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 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 10.
 - 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 (e.g., 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

Former Broad & Diamond BP
2042 N. Broad St.
Philadelphia, PA 19121
City of Philadelphia, Philadelphia County

Site Location and Operation Information

The Site is located at 2042 North Broad Street, Philadelphia, Pennsylvania, Philadelphia County. The Site was recently reconstructed and is currently occupied by a slab-on-grade, single-story building, operated as a 7-Eleven convenience store. The Site has been in operation since the 1920's as a retail gasoline station and has changed ownership several times over the years. Most recently (as of 2013), the Site was operated as a BP Gasoline Station and was owned by Sanneet, Inc. (Sanneet). The underground storage tanks (USTs) associated with the BP Station were excavated in 2012 and 2013 and the site structures were demolished. Currently there are no USTs located at the Site. The former BP Station consisted of a single story kiosk, canopy, three product dispensers, and the following USTs:

- Tank 001 – 6,000-gallon gasoline, installed in 1984 and closed by removal in 2012
- Tank 002 – 8,000-gallon gasoline, installed in 1984 and closed by removal in 2012
- Tank 003 – 8,000-gallon gasoline, installed in 1984 and closed by removal in 2012
- Tank 004 – 8,000-gallon gasoline, installed in 1994 and closed by removal in 2012
- Tank 005 – 4,000-gallon diesel, installed in 2005 and closed by removal in 2013

Tanks 001 through 004 were contained together inside a concrete vault and Tank 005 was located separately, in its own tankfield. Tanks 001 and 004 were drone tanks that were connected to Tanks 002 and 003, respectively. The drone tanks were not connected to the dispensers. All five of the tanks were of single-walled fiberglass construction, with leak detection and spill/overflow protection. The product piping was double-walled fiberglass.

The areas surrounding the Site are a mix of residential and commercial properties. The Site is provided water from the Philadelphia Water Department (PWD). The closest surface water body is the Delaware River located approximately two miles southeast of the Site. A SEPTA subway is located underground, directly below Broad Street, along the east side of the property. A Site Plan Map is attached as Figure 1.

Site Background Information

On October 24, 2001, as part of a baseline environmental assessment, seven soil borings (SB-1 through SB-7) were advanced at the Site utilizing direct push drilling techniques. The borings were advanced to refusal with total depths ranging from approximately four to 28 feet below grade (ftbg). Twelve soil samples were collected and laboratory analyzed for benzene, toluene, ethylbenzene, xylenes (BTEX), methyl tert-butyl ether (MTBE), naphthalene, and cumene. The results indicated MTBE greater than its respective Pennsylvania Department of Environmental Protection (PADEP) Statewide Health Standard (SHS) in sample SB-2 (11.25 - 11.5). The PADEP was notified of the release on November 7, 2001. The soil sample locations are presented on Figure 2 and the soil analytical data is summarized in Table 1.

On February 9, 2004, three monitoring wells (MW-1 through MW-3) were installed at the Site. The wells were constructed of 4-inch PVC well casing and drilled to total depths ranging from 30 to 35 ftbg. The monitoring well locations are presented on Figure 1 and the well construction details are summarized in Table 1 of the October 2006 Site Characterization Report (SCR) prepared by Science Applications International Corporation (SAIC).

On September 20, 2004, three monitoring wells (MW-4 through MW-6) were installed at the Site. The wells were constructed of 4-inch PVC well casing and drilled to total depths of 35 ftbg. Soil samples were collected during the well drilling at depths ranging from 10 to 21.5 ftbg. The samples were laboratory analyzed for BTEX, MTBE, naphthalene, and cumene. The results indicated no constituents of concern (COCs) greater than PADEP SHS. The monitoring well locations are presented on Figure 1 and the well construction details are summarized in Table 1 of the 2006 SCR. The soil analytical data is summarized in Table 1.

On February 7, 2005, slug testing was completed at the Site utilizing wells MW-1 through MW-6. The results indicated an average hydraulic conductivity of 5.7 ft. per day.

On August 5, 2005, the SEPTA subway, located beneath Broad Street along the east side of the Site, was inspected by SAIC and SEPTA personnel. The subway is constructed between eight and 28 ftbg. and the groundwater table at the Site (21 to 25 ftbg.) is believed to infiltrate the subway. The following conclusions were made from the inspection:

- No groundwater infiltration was observed.

- The subway walls are approximately two ft. thick.
- The interior surface of the subway was well maintained.
- Surface water was seeping into the subway through vents and other structures that penetrate the subway ceiling.
- Water entering the subway is channeled in a drain that discharges into the sanitary sewer system.
- No petroleum vapors were identified in the subway.
- The construction and condition of the subway restrict vapor ingress.
- Subway traffic causes significant airflow in the subway, diluting any potential vapor build-up.
- The subway is acting as a hydraulic barrier, which restricts the movement of the upper extent of the groundwater column, however, the exact effect the subway has on the groundwater movement at the Site is unknown.

On February 7, 2006, off-site monitoring well MW-101 was installed east of Broad Street, down-gradient to the Site. The well was constructed of 2-inch PVC well casing and drilled to a total depth of 40 ftbg. The well construction details are summarized in Table 1 of the 2006 SCR.

The 2006 SCR summarizes groundwater sampling events conducted at the Site on a quarterly basis from March 10, 2004 through September 26, 2006. The depths to groundwater in that time period ranged from 18.48 ftbg. (MW-2 on Sept. 26, 2006) to 25.34 ftbg. (MW-5 on Sept. 19, 2005). The groundwater flow direction is indicated to be towards the southeast. For each event the samples were laboratory analyzed for BTEX, MTBE, naphthalene, and cumene. The results indicated benzene (MW-2 & MW-3), MTBE (MW-1 through MW-6), and naphthalene (MW-2) present in groundwater at concentrations greater than their respective PADEP SHS. The historical groundwater analytical data is summarized in Table 2.

On October 17, 2006, two monitoring wells, MW-102 and MW-103, were installed at the Site to total depths of 40 and 35 ftbg. respectively. The wells were constructed of 2-inch PVC well casing. The well construction details are summarized in Table 1 of the 2006 SCR.

In a letter dated February 2, 2007, the PADEP disapproved the 2006 SCR.

On February 5, 2007, the PADEP received a complaint of petroleum odors present at the adjacent Messiah College (College) property. A PADEP inspection of the College indicated elevated volatile organic compound (VOC) readings within the basement area. The PADEP requested that the Site's UST systems be leak tested.

On February 7, 2007, leak detection tests were performed at the Site. The test results indicated a failed line leak detector associated with Tank 005. The leak detector was replaced on February 8, 2007. All other system components passed the leak detection tests.

On February 14, 2007 and March 6, 2007, two air samples were collected in the College basement and one air sample was collected above ground on the Site/College property line. The samples were laboratory analyzed and the results of the indoor samples indicated concentrations of chloroform, hexane, and 1,3,5-trimethylbenzene (TMB) greater than the PADEP Indoor Air Criteria for Residential Settings. The vapor analytical data is summarized in Table 6 of the April 29, 2009 Remedial Action Completion Report (RACR) prepared by Sovereign Consulting Services, Inc. (Sovereign).

On March 14, 2007, the spill buckets associated with each of the USTs on-site were hydrostatically tested and no failures were indicated.

On March 29, 2007, five soil borings (SB-8 through SB-12) were advanced at the Site. Eight soil samples were collected from the borings at depths ranging from 4.15 ftbg to 15.5 ftbg. The samples were laboratory analyzed for BTEX, MTBE, naphthalene, and cumene. The results indicated ethylbenzene and naphthalene greater than their respective PADEP SHS in sample SB-10A (14.0 - 14.5). Vapor monitoring points (VMP-1 through VMP-3) were constructed in three of the boring locations. The screened intervals of the VMPs were installed to depths coinciding with the known depth of the College basement. The VMP and soil sample locations are presented on Figures 1 and 2, respectively. The soil analytical data is summarized in Table 1.

On April 18, 2007, soil vapor samples were collected from VMP-1 through VMP-3. The samples were laboratory analyzed for PA Unleaded Gasoline Compounds via TO-15 and the results indicated concentrations of gasoline constituents, including ethanol. Ethanol was reportedly not used by Shell Oil Products US (Shell), whom operated a Texaco station at the Site until December 2004. The source of the vapors in the College basement was believed to be from the UST system in operation on-site at that time (owned by Sanneet). The vapor analytical data is summarized in Table 7 of the RACR.

The PADEP was notified of the ethanol present in the analytical data from the samples collected from the VMPs. In turn, the PADEP issued a Notice of Violation (NOV) to Sanneet dated August 17, 2007.

On August 29, 2007, the basement of the College was inspected. Isolated photoionization detector readings (PID) readings of 0.2 to 0.5 parts per million (ppm) were recorded. A College employee who worked in the basement area indicated that petroleum odors have not been noticed in the basement since first being identified in February 2007.

In September 2007, Sovereign submitted an Amended SCR/Remedial Action Plan (RAP) to PADEP that was revised based on the disapproved 2006 SCR. The PADEP approved the ASCR/RAP in a letter dated January 3, 2008.

In a letter dated July 30, 2009, the PADEP disapproved the RACR for the following reasons:

- Attainment of the Site Specific Standard (SSS) via pathway elimination for groundwater was not demonstrated.
- A geologic cross-section showing the location and elevation of the SEPTA subway tunnel, the other utilities, and the relative elevation of the groundwater table was not included.
- The analysis of the fate and transport of contaminants from down-gradient well MW-3 was lacking in necessary detail.
- The necessary Environmental Covenant was not provided.

A May 17, 2010, RACR Addendum letter prepared by Sovereign, was submitted to PADEP to address the above listed concerns. The RACR Addendum was disapproved by PADEP in a letter dated February 9, 2011 for the following reasons:

- The only revised model submitted was for benzene in MW-3. Several variables used in the model were changed and no explanation for the changes was provided.
- Revised models for benzene and naphthalene in MW-3, and MTBE in MW-4 and MW-5 should be submitted. If the row home property directly south of the Site may be impacted above the PQL, it will need to be addressed. PADEP subsequently identified the PQL for MTBE to be 0.5 micrograms per liter ($\mu\text{g/L}$).
- Additional information about the pumps (SEPTA or otherwise) and/or discharge of the water within the SEPTA subway tunnel is required.

In a Risk Assessment Report dated October 28, 2010, and in a letter dated February 24, 2011, Sovereign provided additional information to the PADEP in support of the disapproved RACR and RACR Addendum. Aside from addressing the PADEP's concerns with the certain contaminant models, the following information was also provided regarding the SEPTA subway:

- Groundwater potentially seeping into the subway tunnel is controlled by continuous operating pumping stations, so that the tunnel does not flood. This water is pumped to the sanitary sewer and treated at the Southwest Wastewater Treatment Plant under a NPDES permit. There is no likelihood that groundwater entering the subway tunnel could be used for potable or irrigation purposes, and no exploration of groundwater is possible within the footprint of the subway tunnel or along the tunnel right-of-way within Broad Street.

- There should be no activity or use restrictions on the SEPTA tunnel with respect to the potential for groundwater infiltration.

In a letter dated June 30, 2011, the PADEP approved the RACR and made the following comments:

- The SSS attained at the Site for soils are: benzene (500 micrograms per kilogram (mg/kg)), toluene (100,000 mg/kg), ethylbenzene (87,000 mg/kg), xylenes (1,000,000 mg/kg), MTBE (2,000 mg/kg), naphthalene (50,000 mg/kg), and cumene (110,000 mg/kg).
- The SSS attained at the Site for groundwater are: benzene (587 µg/L), toluene (1,000 µg/L), ethylbenzene (700 µg/L), xylenes (10,000 µg/L), MTBE (307 µg/L), naphthalene (100 µg/L), and cumene (1,100 µg/L).
- A Relief of Liability (ROL) was granted based on attainment of the above listed SSS.
- An Environmental Covenant for the Site was received by PADEP.

Sometime in 2011 or 2012, after the approval of the RACR, all of the monitoring wells were abandoned except for MW-3.

The Environmental Covenant was approved by the PADEP, appropriately signed by the required parties, and recorded on September 11, 2012.

An October 4, 2011, RACR Addendum with Revised Post Remedial Care Plan (PRCP) was prepared by Sovereign and submitted to PADEP. The PADEP approved PRCP for the Site includes the following:

- An annual inspection of the property located at 2032 N. Broad Street.
- An annual report from the Philadelphia Department of Public Health (PDPH) and the PWD confirming that no potable, industrial, or commercial irrigation wells have been installed within the area of this off-site property.
- An annual verification by SEPTA that the pump that removes any groundwater entering the subway is still active.

On October 18, 2011, the PADEP conducted an UST Facility Operations Inspection at the Site. Except for a minor issue with the tank release detection for Tanks 001 and 002, all system components were reported to be in compliance.

On September 10, 2012, a leak detection test was conducted on the UST systems present at the Site. A discrepancy in the test results was identified and initial indications were of a fault in

the leak detection system, not an actual release. After several weeks of efforts to identify and correct the suspected fault, an UST tightness test was conducted on November 13, 2012. The results indicated failure of Tank 003. Tank 003 was immediately emptied into the other gasoline tanks on-site and taken out of service. The total volume of product lost is unknown, however based on the leak detection test results, it is estimated that 1,018 gallons were lost between September 10, 2012 and November 13, 2012. A Notification of Reportable Release Form (NORR) was submitted to PADEP indicating a confirmed release at the Site on November 13, 2012. In turn, the PADEP issued a NOV dated November 15, 2012.

From December 10 - 11, 2012, a total of 10 soil borings (B-1 through B-10) were advanced at the Site utilizing direct-push boring techniques. The borings were advanced to bedrock refusal of 22 to 24 ftbg. Eleven soil samples were collected from the 10 soil borings and laboratory analyzed for BTEX, MTBE, naphthalene, cumene, 1,2,4-TMB, and 1,3,5-TMB. The results indicated concentrations of benzene, toluene, ethylbenzene, naphthalene, 1,2,4-TMB, and 1,3,5-TMB greater than their respective PADEP SHS. Groundwater was encountered in six of the boring locations (B-1, B-2, B-3, B-7, B-8, and B-10) at 19 to 21 ftbg. Temporary well points (TWP) were installed in borings B-1 through B-3. The TWPs and MW-3 were gauged, and a non-aqueous phase liquid (NAPL) was present in MW-3, B-3, and B-7. Groundwater samples were collected from each TWP and laboratory analyzed for BTEX, MTBE, naphthalene, cumene, 1,2,4-TMB, and 1,3,5-TMB. The results indicated concentrations of BTEX, naphthalene, 1,2,4-TMB, and 1,3,5-TMB greater than their respective PADEP SHS. The soil boring / TWP locations are indicated on Figure 2. The soil analytical data is summarized in Table 1 and the groundwater data is summarized in Tables 3 and 4. The boring logs are located in Appendix B of the 2013 SCR prepared by Brilliant Environmental Services, LLC (Brilliant).

On December 12, 2012, weekly 8-hour multiple phase recovery (MPR) events were initiated at the Site utilizing MW-3 as an extraction well. Also, weekly vapor monitoring events utilizing a PID were initiated, and conducted in the basements of the commercial properties surrounding the Site. The monitoring events were eventually reduced to monthly events due to the lack of vapors and odors present. A list of the buildings monitored can be found in Section 11.3 of the 2013 SCR.

From December 14 – 20, 2012, the gasoline USTs (Tanks 001 through 004), along with the majority of the associated product piping, were excavated and removed from the Site. The piping was described to be in “satisfactory” condition, and the condition of the tanks was unknown because they were crushed in place prior to removal. A “water/gasoline emulsion” was present in the concrete tank vault and approximately 800 gallons of the solution were removed utilizing a vacuum truck. The water is believed to be surface infiltrated water and not groundwater. The tank closure activities are summarized in an April 2013 UST Closure Report prepared by Brilliant.

From December 28, 2012 to February 1, 2013, five monitoring wells (MW-1, MW-2, MW-4, MW-5, and MW-6) were installed at the Site utilizing hollow stem auger drilling techniques. The total

well depths ranged from 28 and 33 ftbg. The wells were constructed with 4-inch PVC well casing and approximately 15 ft. of PVC slotted well screen. The well construction logs can be found in Appendix D of the 2013 SCR.

From February 1 – 8, 2013, the remaining product piping, dispensers, pump islands, kiosk, and canopy were demolished and removed from the Site.

From February 14 - 15, 2013, the concrete vault, that previously contained Tanks 001 through 004, was removed. During excavation it was evident that the vault did not hold the product released from the leaking UST and contamination was present in the soil below it. A total of 685 tons of contaminated soil was excavated to depths reaching 21 ftbg. A “distinct zone of product saturated soil” was observed along the southern and eastern walls of the excavation. A total of 10 post excavation soil samples were collected from the bottom and sidewalls of the former tank field excavation. The samples were laboratory analyzed for BTEX, MTBE, naphthalene, cumene, 1,2,4-TMB, and 1,3,5-TMB. The results indicated concentrations of BTEX, naphthalene, 1,2,4-TMB, and 1,3,5-TMB greater than their respective PADEP SHS at depths ranging from 19 to 21 ftbg. The soil sample locations and the area of extended soil excavation are indicated on Figure 2. The soil analytical data is summarized in Table 1.

On February 18, 2013, a free product/vapor recovery point, constructed of 4-inch PVC, was installed within the southeast corner of the tank excavation. Vertical casing was connected to horizontal screened laterals running along the southern and eastern limits of the tank excavation in the area where the product saturated soil was encountered.

On February 21, 2013, indoor air samples were collected from the College basement and first floor office due to elevated PID readings and petroleum odors observed earlier in the month. The samples were laboratory analyzed for BTEX, MTBE, naphthalene, cumene, 1,2,4-TMB, and 1,3,5-TMB via TO-15. The results indicated concentrations of benzene, toluene, ethylbenzene, 1,2,4-TMB, and 1,3,5-TMB greater than their respective PADEP Residential Indoor Air Criteria. The vapor analytical data is summarized in Table 6 of the 2013 SCR. It should be noted that the three VMPs installed at the Site in March 2007 (VMP-1 through VMP-3) were destroyed during the 2012 tank closure activities.

In February 2013, the MPR events were modified to utilize monitoring wells MW-3 and MW-4 as extraction wells.

On March 26, 2013, two recovery wells (RW-7 and RW-8) were installed at the Site utilizing hollow stem auger drilling techniques. The total well depths were 33 to 35 ftbg, respectively. The wells were constructed with 6-inch PVC well casing and approximately 20 ft. of PVC slotted well screen. The well construction logs can be found in Appendix D of the 2013 SCR.

On March 18, 2013, indoor air samples were again collected from the College basement and first floor office. The samples were laboratory analyzed and the results indicated no COC concentrations greater than the PADEP Residential Indoor Air Criteria. The removal of the

“staged impacted soil” at the Site was believed to have had a significant impact on the “clean” vapor sample results.

On April 9, 2013, a total of eight soil borings (B-11 through B-18) were advanced at the Site utilizing direct-push boring techniques. The borings were advanced to bedrock refusal of 22 to 24 ftbg. Fourteen soil samples were collected from the eight soil borings and laboratory analyzed for BTEX, MTBE, naphthalene, cumene, 1,2,4-TMB, and 1,3,5-TMB. The results indicated concentrations of benzene, toluene, ethylbenzene, naphthalene, 1,2,4-TMB, and 1,3,5-TMB greater than their respective PADEP SHS. The soil boring locations are indicated on Figure 2. The soil analytical data is summarized in Table 1 and the Soil Boring Logs are located in Appendix B of the 2013 SCR.

In April 2013, the weekly MPR events were modified to utilize monitoring wells MW-3, MW-4, and RW-8 as extraction wells.

On May 23, 2013, the first full round of groundwater sampling from the new monitoring well network (MW-1 through RW-8) was conducted. Groundwater gauging data indicated the presence of NAPL in wells MW-3, MW-4, and RW-8 and a groundwater flow direction at the Site towards the southeast. The groundwater samples were laboratory analyzed for BTEX, MTBE, naphthalene, cumene, 1,2,4-TMB, and 1,3,5-TMB. The results indicated concentrations of BTEX, naphthalene, 1,2,4-TMB, and 1,3,5-TMB greater than their respective PADEP SHS in groundwater at the Site. The current groundwater data is summarized in Tables 3 and 4.

On June 18, 2013, Tank 005 (4,000-gallon diesel) was excavated and removed from the Site. No impacted soils were encountered during the excavation. Three soil samples were collected within two ft. of the tank bottom and “no impacts were identified.” The tank closure activities are summarized in a July 5, 2013 UST Closure Report prepared by Brilliant.

In October 2013, the weekly MPR events were reduced to a bi-weekly schedule due to the diminishing free product results in the wells since June 2013.

In a letter dated October 29, 2013, the PADEP disapproved the 2013 SCR. The PADEP stated that “further site characterization is warranted and the extent of contamination, including the extent of NAPL, has not been fully delineated.”

As of December 2014, it is reported that 12,700 gallons of groundwater was recovered during the MPR events (beginning in December 2012) and NAPL thicknesses at the Site have been reduced to non-detect in all wells.

Scope of Work (SOW)

This RFB seeks competitive bids from qualified contractors to perform the activities in the SOW specified herein. The SOW presented in this RFB was provided to the PADEP for review and comment. The PADEP has opted to not review or comment on the RFB via email.

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 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 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 per PADEP's

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

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.
- **Selected Standards:** As indicated in the August 2013 SCR, the claimant has selected to remediate the Site to Site Specific Standards for all constituents of concern in all affected media.
- **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 J1, 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 H - Product Recovery Efforts**
 - **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 Q) 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 F.

Milestone C – Obtain Off-Site Access – Provide a Unit Cost to secure off-site access in an effort to install groundwater monitoring well MW-9. The cost should cover the necessary time and materials needed to contact the Philadelphia Streets Department, complete permit application requirements, and obtain approval. The proposed off-site monitoring well location is located in the concrete walkway, adjacent to N. Broad Street, in front of the College.

Milestone D – Installation of Overburden Monitoring Wells – A total of three monitoring wells (MW-9 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 PAUSTIF, discuss the need for the changes, and provide PAUSTIF 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 depth of approximately 30 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 overburden aquifer. Bid responses should provide 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 December 1, 2001 (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 E – Soil Gas Point Installation and Soil Gas/Indoor Air Sampling – As part of this milestone, two new soil gas sampling point (VMP-4 and VMP-5) are to be installed and samples are to be collected from the two proposed soil gas point (VMP-4 and VMP-5) during two separate sampling events. In addition, during each of the soil gas sampling events, the selected consultant will collect indoor air samples from both the College Basement and First Floor. For this RFB, please assume that a total of two rounds of samples will be collected from each of the 2 soil gas sampling points and 2 indoor air sampling locations, for a total of eight 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/indoor air sampling event at the Site within two weeks of the installation of VMP-4 and VMP-5. The selected consultant should conduct the second event approximately six

(6) weeks after the first event. As part of the soil gas and indoor air investigation, the selected consultant should consider the following:

- Soil gas points (VMP-4 and VMP-5) 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 points are 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 soil gas/indoor air sampling activities should be summarized and presented in the report to be completed as part of Milestone K2.

Milestone F – Site Survey – Following the completion of Milestone A through Milestone E, 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, subway location 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 G – Monthly Indoor Air Monitoring with PID – A total of three indoor locations (Current 7-eleven Building, College Basement, and College First Floor) are monitored with a PID on a monthly basis. For purposes of preparing this bid, the bidders should include costs to complete enough monthly indoor air monitoring events to continue the monitoring at all three locations through the completion of the SCR noted in Milestone K2. The events should be specifically noted in the schedule to be provided in each bidder’s bid response. In addition, bidders should coordinate the monthly indoor air monitoring events to occur during the mobilization to the Site for another event, where possible, such as during the quarterly groundwater sampling and/or the product recovery efforts to be conducted at the Site. The provided cost would be to cover all labor, equipment, laboratory, waste, etc. 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 twelve events, but only six events are conducted; then the firm will only be paid for the six events completed). Please indicate in the bid at what frequency Milestone G will be billed (monthly or quarterly).

Milestone H – Product Recovery Efforts *(Milestone Requiring Approval before Initiation)* – The previous consultant has completed product recovery efforts at the Site over the last few years. The selected consultant should develop a plan on how to address the recovery of product present in monitoring wells at the Site. The plan should be detailed with the strategies to be employed, equipment to be used, and the frequency at which the efforts will be conducted. For purposes of preparing this bid, the bidders should assume that the only product to be recovered will be from a single monitoring well and should include enough product recovery events (conducted every two weeks) through the completion of the SCR noted in Milestone K2. The events should be specifically noted in the schedule to be provided in each bidder’s bid response. The provided cost would be to cover all labor, equipment, laboratory, waste, etc. 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 twelve events, but only six events are conducted; then the firm will only be paid for the six events completed). Regardless of the strategy employed, all waste will

need to be disposed of appropriately and the costs to dispose of all wastes will need to be included in bids.

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 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 events, but only one event is conducted; then the firm will only be paid for the one event completed). The selected consultant should be prepared to conduct the first groundwater sampling event at the Site approximately two weeks after the installation of the proposed monitoring wells and conduct the second event approximately four 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-1 through MW-11 during each of the two groundwater sampling events. 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 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 offsite access 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 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 - 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 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.

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 and PAUSTIF (within the timeframe established in the consultant's schedule provided in the bid response) for review / comment prior to finalizing the SCR. Once the selected consultant has addressed comments on the draft, the selected consultant shall finalize and issue the report to the PADEP. The draft report is to be submitted no later than the date specified in the schedule presented by the selected consultant.

Milestone L - Feasible Remedial Alternatives Analysis –

Milestone L1 – Remedial Alternatives Analysis (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. The selected consultant should be prepared to request approval to complete Milestone L1 and start the analysis (if warranted) immediately following the submission of the SCR. The selected consultant should not assume that the analysis and subsequent report should not be completed until after the PADEP responds to the SCR.

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. 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-1 through MW-8). In the event that the off-site access takes longer to obtain than anticipated, this cost adder would be utilized for a groundwater sampling event completed at the Site before the access 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-1 through MW-11).

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 – 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 O – 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 D construction guidelines. Please provide costs for the following:

- **Milestone O1** – 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 O2** - 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 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 F.

Milestone Q - Obtain Off-Site Access (Cost Adder Milestone) – Provide a Unit Cost to secure off-site access 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 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.

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 the written approval of the Solicitor and the PAUSTIF. PADEP approval may also be required.

List of Attachments

1. Remediation Agreement
2. Bid Cost Spreadsheet
3. Site Information/Historic Documents
 - a. Table 1 – Soil Analytical Data
Table 2 – Historic Groundwater Analytical Data
Table 3 – Current Groundwater Analytical Data
Table 4 – Current Groundwater Elevation Data
 - b. Figure 1 – Site Plan Map
Figure 2 – Historical Soil Sample Location Map
Figure 3 & 4 – Proposed Soil Boring and Monitoring Well Location Maps
 - c. October 2006 - Site Characterization Report
 - d. April 2009 – Remedial Action Completion Report
 - e. April 2013 – UST Closure Report
 - f. August 2013 – Site Characterization Report