

Request for Bid

Fixed-Price Defined Scope of Work

Performance of Additional Site Characterization Activities and Preparation and Submission of Site Characterization Addendum

Solicitor

Walter J. Benick

Benick Service Station

59 West Main Street, Glen Lyon, PA 18617

PADEP Facility ID #: 40-50096 PAUSTIF Claim #: 1997-0405(S)

Date of Issuance

January 30, 2014

Calendar of Events Revised February 10, 2014

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The Pennsylvania Underground Storage Tank Indemnification Fund (PAUSTIF), on behalf of the claimant who hereafter is referred to as the Client or Solicitor, is providing this Request for Bid (RFB) to prepare and submit a bid to complete the Scope of Work (SOW) for the referenced site. The Solicitor is the current owner 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	March 5, 2014 by 5 p.m.
Mandatory Pre-Bid Site Visit	March 6, 2014 at 11 a.m.
Deadline to Submit Questions	March 13, 2014 by 5 p.m.
Bid Due Date and Time	March 20, 2014 by 3 p.m.

Contact Information

Technical Contact
Scott Morgan Groundwater Sciences Corp 2601 Market Place Street Suite 310 Harrisburg, PA 17110 Phone: (717) 909-8462 smorgan@groundwatersciences.com

All questions regarding this Request for Bid (RFB) and the subject site conditions must be directed via e-mail to the Technical Contact identified above with the understanding that all questions and answers will be provided to all bidders. The email subject line must be “**Benick Service Station PAUSTIF Claim # 1997-0405(S) – 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 "Benick Service Station PAUSTIF Claim # 1997-0405(S) – 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 # 1997-0405(S)".** 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.

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.

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 (including tables and figures provided by the Technical Contact in Attachment 3) and the source documents within Attachment 3, the bidder should defer to the source documents.

Site Name / Address / Location:

Benick Service Station, 59 West Main Street, Glen Lyon, Newport Township, Luzerne County, Pennsylvania. The approximate latitude and longitude of the site are: 41d 10m 24.75s / 76d 04m 35.19s.

Site Use Description:

The site is currently operated as an automobile service facility.

Site Description:

The site is situated on approximately 0.25 acres on the south side of West Main Street, at the intersection of West Main Street and Chestnut Street in Newport Township, Luzerne County (Figure 1, Attachment 3) at an elevation of approximately 695 feet above mean sea level. One building and one shed reside along the southern property boundary. The building consists of a small office area and four automobile service bays. The shed, currently used to store tires and other materials associated with the business, was once used to house the remedial system. The site has operated as an automobile service station since at least the 1950s with petroleum dispensing through 1997. The site is served by public water and sewer.

Nature of Confirmed Release and Subsequent Activities:

According to files reviewed by GSC, the three registered (UST 001, 002, and 003) 4,000-gallon USTs were installed in 1952 by Sun Refining and Marketing Company (Sun) on the Site property, which at the time, was owned by Walter W. and Marcella M. Benick (parents of the claimant). In July 1983, Sun sold the USTs to the claimant.

In November 1997, the USTs were closed by removal. On November 21, 1997, the PADEP was notified of a reportable release and on November 24, 1997, D&A Environmental, Inc. (D&A) submitted to the PADEP a Storage Tank and Spill Prevention Act Notification of Contamination Report. D&A submitted a UST closure report to the PADEP on December 1, 1997 which documented the closure of the USTs and obvious extensive contamination. D&A reportedly excavated 10 tons of contaminated soil and removed 10 feet of piping and two product dispensers. Groundwater was not encountered at the time of closure. Closure soil samples were analyzed for the substances listed on the PADEP's unleaded gasoline shortlist in effect at the time of the closure (old list) (benzene, toluene, ethylbenzene, total xylenes, naphthalene, cumene, and MTBE) and benzo(a)anthracene and benzo(a)pyrene. The UST closure report stated that "tank 002 had rusted through holes" and "the other two tanks exhibited some corrosion but no actual holes". The closure report and PADEP correspondence dated January 13, 1998, identified concentrations of benzene, naphthalene, and toluene in soil sample BT Center 002 and BT Prod Delv 002, collected from beneath UST 002, above PADEP Medium Specific Concentrations (MSCs). The results of the PADEP unleaded gasoline old list analysis for the UST closure soil samples are presented on Table 1 and Figure 2 shows the approximate location of the UST closure soil samples.

In December 1997, two test pits (Test Pit 1 and Test Pit 2, Figure 2) were excavated near the north and south ends of the open UST excavation to a depth of 25 feet below grade (fbg). One soil sample was collected from the bottom of each test pit. The test pit samples (Pit 1 and Pit 2) were analyzed for the substances on the PADEP's old list of unleaded gasoline substances and benzo(a)anthracene and benzo(a)pyrene. All analyzed substances were below applicable PADEP MSCs. The results of the PADEP unleaded gasoline old list analysis for the test pit soil samples are presented on Table 2 and Figure 2 shows the approximate location of the test pits and test pit soil samples.

Following the test pits, in December 1997, 11 soil borings (BH-1 through BH-11, Figure 2) were advanced around the UST excavation to delineate the vertical and horizontal extent of soil contamination. A total of 35 soil samples were collected from between 4 and 20 fbg from the 11 soil borings. The soil samples were analyzed for the substances on the PADEP's old list of unleaded gasoline substances and benzo(a)anthracene and benzo(a)pyrene. Concentrations of analyzed unleaded gasoline substances were detected above applicable PADEP MSCs in soil samples collected from BH-4 (from between 4 and 16 fbg) and BH-5 (from between 8 and 20

fbg), located to the north of the USTs. The results of the PADEP unleaded gasoline old list analysis for the soil samples collected from BH-1 through BH-11 are presented on Table 2 and Figure 2 shows the approximate location of the soil borings.

Between February and July 1998, nine 2-inch diameter groundwater monitoring wells (MW-1 through MW-9, Figure 2) were installed on- and off-site to investigate petroleum impacts to groundwater. Monitoring wells MW-1 through MW-5 and MW-9 were installed on-site, MW-6 and MW-7 were installed off-site along West Main Street and MW-8 was installed in the alley to the north of the Site in the presumably down-gradient direction of groundwater flow. The total depth of the wells ranged from 30 fbg (MW-8) to 55 fbg (MW-1).

In September 1998, D&A submitted a "Soil and Groundwater Site Characterization Report" to the PADEP. The report documented the test pits, soil borings BH-1 through BH-11, and the installation of monitoring wells MW-1 through MW-9. The depth-to-water in the monitoring wells ranged from approximately 29 to 40 fbg and analyzed unleaded gasoline substances were detected in monitoring wells MW-1 through MW-6 above applicable MSCs. No analyzed substance was detected above the laboratory's report detection limit in monitoring wells MW-7, MW-8, and MW-9. The report stated that "approximately 520 cubic yards of contaminated soil remains around the north sidewall and bottom of the former storage tank excavation" that "exceeds PADEP Act II Statewide Health Standards and will require further remediation", and the "groundwater contaminants are mobile and appear to be following the topographical gradient to the north". No written comments from the PADEP regarding the September 1998 Soil and Groundwater Site Characterization Report were discovered during the file review.

In October 1998, D&A submitted a "Remedial Action Plan" (RAP) to the PADEP. The RAP proposed the installation of a recovery well (RW-1), a pump test on RW-1, and an additional off-site monitoring well (MW-10). The proposed remediation for the site was a to-be-determined active groundwater remediation system and the excavation and off-site disposal of contaminated soil. No written comments from the PADEP regarding the October 1998 RAP were discovered during the file review.

Although no formal report detailing a remedial soil excavation was discovered during the PADEP file review, invoices from D&A were discovered during a review of the claimant's personal files that suggest a soil excavation occurred in December 1998. This is supported by subsequent reports and correspondence that refer to a 589 ton soil excavation that extended to a depth of 25 fbg. The approximate location of the excavation boundary, based on figures contained in subsequent reports, is shown on Figure 2.

In April 1999, an "Update Report" was prepared and submitted to the PADEP by D&A. The report discussed the installation of RW-1 (6-inch diameter recovery well to a depth of 50 fbg) on-site, the installation and sampling of MW-10 (2-inch diameter monitoring well to a depth of 39 fbg) off-site along the northern side of West Main Street, and an 8-hour pumping test conducted on RW-1. The report stated that the pumping test "suggests a sustainable flow of 1 [gallon per

minute] gpm from the recovery well” and proposed an air stripper groundwater treatment system to recover contaminated groundwater from RW-1. The groundwater sample collected from MW-10 was analyzed for the substances on the PADEP’s old list of unleaded gasoline substances. No analyzed substance was detected in the groundwater sample collected from MW-10 above the laboratory report detection limits.

In correspondence dated May 28, 1999, among other comments, the PADEP recommended that D&A conduct a 24-hour pump test.

Although no formal report was discovered that detailed the installation of the groundwater remediation system, a review of the claimant’s invoices from D&A suggests that the remediation system was installed in June 1999.

In correspondence to the PADEP dated September 8, 1999, D&A stated that “due to the contaminated soil excavating project, monitoring wells MW-1, MW-2, MW-3, MW-4, and MW-9 were removed to accommodate soil excavating”. The correspondence also reported that, with the exception of monitoring well MW-10, all remaining groundwater monitoring wells were dry during the August 26, 1999 sampling event and therefore the remediation system was not in operation. The low water levels were attributed to “drought conditions in conjunction with pumping activities from the air stripper treatment system”.

In correspondence to the PADEP dated December 16, 1999, D&A reported that with the exception of monitoring wells MW-6 and MW-10, all remaining groundwater monitoring wells were dry during the November 12, 1999 sampling event and therefore the remediation system was not in operation. The report proposed the review of mine maps of the area for the consideration of extending the recovery well beyond 50 fbg.

In correspondence to the PADEP dated February 2, 2000, D&A reported the results of a review of historical anthracite coal mining maps at the U.S. Department of the Interior, Office of Surface Mining. The review revealed information on an exploratory borehole that was located at the intersection of West Main Street and Chestnut Street, approximately 15 feet from the Benick Service Station property line. Reportedly, the borehole’s surface elevation was approximately 683 feet with a depth to bedrock of approximately 597 feet. The first mined anthracite coal vein (named the “Cooper”) was listed at a depth of approximately 523 feet. From this information, D&A reported that the depth to bedrock is 86 feet and the depth to the Cooper coal vein is 160 feet. D&A recommended that a second recovery well be installed to a total depth of no greater than 86 feet (the apparent top of bedrock).

In correspondence to the PADEP dated June 14, 2000, D&A reported that groundwater levels “were found to contain high amounts of groundwater that resembled pre-pumping static levels recorded prior to June, 1999” and that the “airstripper treatment system was found to be in operation and actively recovering groundwater from the recovery well”. Concentrations of analyzed substances were detected in groundwater samples above the MSC in the one

remaining on-site monitoring well (MW-5), the on-site recovery well (RW-1), and off-site monitoring wells MW-6, MW-7, and MW-10.

In correspondence dated August 10, 2000, the PADEP commented on the September 1998, Soil and Groundwater SCR, the October 1998 RAP, the April 1999 Update Report, and several subsequent reports documenting groundwater sampling events.

D&A Environmental responded to the PADEP's comments in writing on August 22, 2000. Noteworthy responses include 1) a proposal to collect soil samples from between 24 to 30 feet from inside and outside the former excavation area, 2) a proposed RAP Addendum in the event additional soil contamination is encountered, 3) proposed soil attainment sampling following the completion of soil remedial activities, 4) a proposed 24-hour pump test, and 5) a proposal to replace monitoring well MW-3 along the western edge of the former excavation.

In November 2000, D&A Environmental submitted to the PADEP a "Supplemental Site Characterization Report and Remedial Action Plan". The Supplemental SCR presented the results of an 8-hour and 24-hour pump test, the results of 10 soil borings (B-1 through B-10, Figure 2) advanced through and around the UST excavation in October 2000, the replacement of MW-3 to the west of the former UST excavation, and the results of an ingestion and vapor inhalation pathway analysis. Based on the results of the pumping test, D&A concluded that "the existing air stripper treatment system is appropriate". The ingestion and pathway analysis stated that "the results of the soil boring analyses, down-gradient reconnaissance and the latest round of groundwater sampling, it is unlikely that there is a down-gradient concern for ingestion or vapor inhalation". Thirty (30) soil samples were collected from between 24 and 30 fbg from the 10 soil borings (B-1 through B-10) and were analyzed for the substances on the PADEP old list of unleaded gasoline substances. Concentrations of analyzed unleaded gasoline substances were detected above applicable PADEP MSCs in soil samples collected from B-1 and B-2 (located to the north of the former UST excavation), B-5, B-6, and B-8 (advanced through the former UST excavation), B-9 (located to the south of the former UST excavation), and B-10 (located to the east of the former UST excavation). The analytical results for the soil samples are presented on Table 3. As shown on Table 3, concentrations of analyzed substances generally increased with depth. The RAP calculated that approximately 296 cubic yards of contaminated soil remained at the site between the depths of 25 and 30 fbg which was reported to be "not practical to excavate". The RAP proposed soil vapor extraction (SVE) pilot tests to be performed on two vapor extraction points proposed to be installed in the area of contamination.

In August 2001, the claimant retained Quad 3 Group (Quad 3) to provide consulting services.

In correspondence dated September 5, 2001, the PADEP commented on the November 2000 Supplemental SCR and RAP and subsequent quarterly reports prepared by D&A. The PADEP's correspondence stated that "the proposed remedial solution of pump and treat is

acceptable to the Department” and that “permission is granted to conduct a pilot SVE study on the impacted soil”.

On November 20, 2001 Quad 3 submitted to the PADEP a quarterly report for the fourth quarter 2001. According to the report, monitoring well MW-7 was paved over during road repairs to West Main Street and the remaining monitoring wells were dry.

On February 22, 2002 Quad 3 submitted to the PADEP a quarterly report for the first quarter 2002. According to the report, with the exception of the recovery well, all monitoring wells were dry. The report stated that “after purging the recovery well for a few minutes some free product (gasoline) was observed at the pump discharge”. The thickness of the product in the well (if measured) and the volume recovered was not reported. The report concluded that “free product recovery will need to be implemented as soon as possible to eliminate this concentrated area of pooled gasoline” and that “it is anticipated that product will be periodically recovered and placed in approved containers for off-site disposal”.

On May 6, 2002 Quad 3 submitted to the PADEP a quarterly report for the second quarter 2002. According to the report, all wells were dry and as a result of low water levels for several consecutive quarters, a plan to “extend the depth of one monitoring well in order to assess the subsurface for groundwater contamination beyond 50 feet” was presented. The report did not note what monitoring well would be extended.

On January 8, 2003, Quad 3 submitted a “Supplemental Site Characterization Report and Remedial Action Plan”. The report detailed the extension of monitoring wells MW-1, MW-2, MW-3, and MW-4 (which reportedly were destroyed in 1999) and Recovery well RW-1 to a total depth of 70 fbg. The report also stated that “it should be noted that the redrilling of these wells changed the location and identification from the original well installations that occurred in the previous years”. Monitoring wells MW-1, MW-2, and MW-3 were installed on the Benick property while MW-4 was installed on the north side of West Main Street (adjacent to MW-10) (Figure 3). Additionally, the report included the results of one groundwater sampling event (conducted on December 10, 2002), the results for soil samples collected during the installation of monitoring well MW-3 and seven soil borings (B-1 through B-7, Figure 2) advanced through and around the former UST excavation, and the results of an indoor air sample collected from the basement of a residence located “topographically down-gradient” 60-feet away from the site. The December 10, 2002 groundwater samples were analyzed for the substances on the PADEP old list of unleaded gasoline substances and concentrations of unleaded gasoline substances were detected above PADEP MSCs in samples collected from monitoring wells MW-1, MW-2, MW-3, and RW-1. The soil samples collected from soil boring B-1 through B-7 and monitoring well MW-3 were from approximately 15 fbg to 37 fbg and were analyzed for the substances on the PADEP old list of unleaded gasoline substances. Concentrations of analyzed unleaded gasoline substances were detected above applicable PADEP MSCs in soil samples collected from the deeper sampled intervals (generally 25 to 37 fbg) in six of the seven soil borings (B-1 through B-6) and monitoring well MW-3. The analytical results for the soil samples are

presented on Table 4. No analyzed substance was detected above the laboratory report detection limits in the residential air sample. The report concluded that as “precipitation migrates downward through the smear zone, a soil washing effect will drain these elevated smear zone contaminants into the water table where they will be recovered and treated in the site airstripper groundwater treatment system”. The report deemed this “the most feasible method to remediate smear zone soil” at the site. Reportedly, recovery well RW-1 can maintain a constant flow of 1 gallon per minute.

In correspondence dated January 23, 2003 from Quad 3 to the PADEP, the SHS for soil and groundwater at the site was chosen as the remedial goal.

In correspondence dated January 24, 2003, the PADEP approved the January 2003 Supplemental SCR and RAP. In the correspondence, the PADEP suggested that “Monitoring Well -1, which is located in the northeast corner of the property, be incorporated into the present remedial system to mitigate any impacts off-property above your chosen cleanup standard”. The PADEP also stated that “although the Department recognizes no technical fault with what you propose, you may wish to consider a dual phase remedial system” to “reduce the time to clean this site to the SWHS by remediating the soil and groundwater simultaneously”.

In 2003 and 2004, eight quarterly reports were submitted to the PADEP by Quad 3. The first quarter 2003 reported that all monitoring wells (and RW-1) contained concentrations of unleaded gasoline substances above the MSC, including MW-4 which contained concentrations of MTBE above the MSC for the first time. The second quarter 2003 report indicated that a second recovery well (RW-2) had been installed (but not yet connected to the treatment system) in the vicinity of MW-1 in an effort to capture the off-site MTBE contamination (MTBE was again detected above the MSC in MW-4). The third and fourth quarter reports for 2003 and the four quarterly reports for 2004 indicate that both recovery wells were continuously pumping water through the treatment system but off-site concentrations of MTBE remained above MSCs in MW-4. No pumping rates or pumping totals were provided in the quarterly reports

On June 13, 2005 Quad 3 Group submitted to the PADEP a quarterly report for the first quarter 2005 and an amended RAP for the site. According to the report, all wells (including MW-4) contained concentrations of unleaded gasoline substances above the MSC and both recovery wells were continuously recovering groundwater. The amended RAP proposed the injection of Fenton’s Reagent into six injection points to remediate soil and groundwater.

Prior to December 2005, the claimant retained James P. Sposito Associates (Sposito) to provide consulting services.

In correspondence dated August 22, 2006, following the review of the first quarter 2006 report, the PADEP stated that “the chemical history of MW-4 has not shown a significant difference in MTBE concentration over time. Therefore the following must be completed: an additional monitoring well located hydraulically downgradient of MW-4 is needed and the current remedial

system must be expanded to include MW-4 or you may wish to choose a new remedial option that includes this well in the treatment process”.

In September 2006, at the request of the PADEP (correspondence dated March 3, 2006) Sposito submitted to the PADEP a “Bench Scale Test Report, Soil Permeability Impact by Fenton’s Reagent”. The report concluded that “soil fouling by iron oxide precipitation will not affect the proposed remedy”, “the doses and application rates presented in the remediation proposal are feasible under the observed soil conditions”, “the components of the Fenton’s Reagent will not adversely affect the soil”, and “the Fenton’s Reagent will reach the leading edge of the plume”. The PADEP approved the Fenton’s Reagent injection in correspondence dated December 12, 2006.

On February 12, 2007, Sposito submitted to the PADEP a quarterly report for the fourth quarter 2006. All monitoring wells contained concentrations of unleaded gasoline substances above MSCs. The report noted that the recovery wells were not pumping during the sampling event and these wells were not sampled. The fourth quarter 2006 sampling event was the last discovered event that included the sampling of MW-1.

No reports, and therefore groundwater chemistry data, were noted for 2007 during the PADEP file review or the review of the claimant’s files. An invoice was discovered for the third quarter 2007 sampling event that reportedly occurred on October 8, 2007.

Although no reports were discovered documenting the details of the installation of injection points, according to invoices reviewed the injection points were installed in January 2007. The EPA approved the use of the Fenton’s Reagent in correspondence dated February 22, 2007, and according to invoices reviewed, the first Fenton’s Reagent injection occurred in April 2007. The approximate location of the injection points is shown on Figure 2.

According to invoices reviewed, the air stripper groundwater treatment system was decommissioned and removed from the site in October of 2007, off-site monitoring well MW-5 was installed in January 2008, a soil attainment sampling plan was submitted to the PADEP in March 2008, and soil attainment sampling was conducted in April 2008.

On April 18, 2008, Sposito submitted to the PADEP a quarterly report for the second quarter 2008. According to the report, a new well (MW-5, Figure 3) was installed to a total depth of 30 fbg off-site and down gradient of MW-4 and did not contain detectable concentrations of analyzed substances. The report also provided the results of fourteen systematic random soil attainment samples (SA-1 through SA-14, Figure 2) advanced in the former UST excavation area. Eight soil attainment samples were collected from what appear to be the sidewalls of the 1998 excavation from depths ranging from 2 to 17.8 fbg and six soil attainment samples were collected from a depth of 25 fbg from beneath the 1998 excavation area. The samples were analyzed for the substances on the PADEP’s old list of unleaded gasoline substances. The results of the attainment sampling are presented on Table 5. As shown on Table 5, all analyzed

unleaded gasoline substances in the fourteen soil samples were below the laboratory's report detection limit.

In correspondence dated December 3, 2009, the PADEP stated that "from March 2003 to December 2006 there have been either asymptotic or slowly decreasing levels in contaminants within the monitoring well network. However, the last few sampling events from point of compliance well MW-3 shows an increase in contaminant levels. The Department is not confident that continued addition of Fenton's Reagent will have a positive effect in reducing the contaminant concentrations. Therefore, the Department is requiring that a feasibility study be conducted in order to ascertain which remedial technology would be best used in reducing the contaminant concentration within this well."

On January 15, 2008, Sposito submitted to the PADEP a quarterly report for the fourth quarter 2009. The report presented a remedial option to close the site using the Site Specific Standard (SSS). The remedial option suggested comparing the results of the planned first quarter 2010 groundwater sampling event to the fourth quarter 2009 groundwater sampling event, and: 1) In the event that the first quarter 2010 groundwater concentrations are similar or reduced, Sposito would conduct quarterly sampling for six additional quarters and submit a report closing the site under the SSS, or 2) In the event the first quarter 2010 groundwater concentrations were greater than the fourth quarter 2009 concentrations, an additional Fenton's Reagent injection would be conducted.

On April 29, 2010, Sposito submitted to the PADEP a quarterly report for the second quarter 2010. According to the quarterly report, a monitoring well identified as MW-6 is sampled (but not gauged for elevation). Based on the figure attached to the report, the well identified as "MW-6" is located along the eastern property line adjacent to Chestnut Street. Based on the well's location, GSC has concluded that this well is likely the well originally identified as MW-5 (Figure 3).

In correspondence dated May 9, 2012, the PADEP approved an additional Fenton's Reagent injection with the caveat that if dissolved-phase concentrations increase after the injection, a new RAP will need to be submitted.

According to invoices reviewed, Sposito conducted a Fenton's Reagent injection in mid-May 2012.

On December 17, 2012, Sposito submitted a quarterly report for the third and fourth quarter 2012 to the PADEP. The report showed that concentrations of MTBE in off-site monitoring well MW-4 remained above the MSC and that up-gradient monitoring well MW-6 (historically known as MW-5) contained a concentration of MTBE (22.7 ug/l) above the MSC during the fourth quarter 2012. Additionally, the report references a second quarter 2012 Fenton's injection event. According to the report, "contaminant concentrations have increased significantly" for "which there does not seem to be any reasonable explanation for". The report proposed an additional Fenton's Reagent injection.

On February 11, 2013 Sposito responded to a PADEP correspondence dated January 4, 2013 (this correspondence could not be located) in which the PADEP apparently requested an inquiry into the possibility of another release in the area. Sposito's correspondence reported that no new release occurred at the site property, no documented releases occurred in the area based on a review of the PADEP's eFACTS database, and that a local residential heating oil release "could very well go un-noticed and unreported". The correspondence also modified the site's RAP. The modified RAP proposed pumping MW-4 using a small diameter submersible pump for 8-hours (estimated pumped volume of 250 to 300-gallons). Following the pumping event a groundwater sample would be collected for analysis. Based on the MTBE concentrations in the sample, the need for a second pumping event would be determined. Additionally, based on the MTBE concentrations, additional Fenton's Reagent injections would occur. In correspondence dated April 25, 2013, the PADEP responded to Sposito's correspondence. The PADEP stated that "your proposal to surge pump and re-inject Fenton's Reagent into MW-4 is not an acceptable remedial plan given the most recent data" and that "searching the eFACTS database for releases relative to this facility and interviewing Mr. Walter Benick is insufficient to determine the causal effect for the elevated contamination levels observed during the last two quarters". The PADEP correspondence also stated that "additional work is needed in the area relative to the areas of noted increase to assess if there is a residual mass within the soil column that is responsible for the contaminant level increase within the groundwater".

According to correspondence from Sposito to GSC, five Fenton's Reagent injections occurred at the site (April 9, 2007, September 30, 2009, July 20, 2010, April 13, 2011, and November 20, 2011). Based on the files and invoices reviewed during the development of this RFB, it appears that at least seven injections occurred at the site (April 9, 2007, November 7, 2007, September 30, 2009, July 20, 2010, April 13, 2011, November 30, 2011, and May 15, 2011).

Although the quarterly reports presented to the PADEP following the installation of the groundwater treatment system provided updates on whether or not the recovery wells and the treatment system were operational, the reports did not present pumping rates or pumping totals.

Current Site Conditions:

On August 20, 2013, GSC conducted a site visit. During the site visit, the remediation shed (without the treatment system) was present along with several groundwater monitoring wells. Many of the groundwater monitoring wells were observed to be in disrepair with obstructions, non-securable manholes, and/or missing well caps. Off-site and down-gradient monitoring well MW-5 could not be located by GSC during the site visit or by the PADEP case manager during a subsequent site visit conducted in October.

Following the file review GSC conducted a second site visit on October 14, 2013, to evaluate the existing monitoring well network. The following observations were made:

- MW-1 – This 2-inch diameter PVC well was observed to have an obstruction at approximately 17.5 fbg that prevented the measurement of groundwater and the bottom of the well. Additionally, the manhole lid could not be secured.
- MW-3 – This 2-inch diameter PVC well was observed to have an obstruction at approximately 26 fbg that prevented the measurement of water and the bottom of the well.
- MW-4 – This off-site down-gradient 2-inch diameter PVC well did not have a well cap and the manhole lid could not be secured.
- MW-5 – This off-site down-gradient 2-inch diameter PVC well is missing the surface completion and is screened to the surface.
- MW-6 – This 2-inch diameter PVC well was observed to have a depth-to-bottom (DTB) of 38.74 fbg. The log for this well (originally identified as MW-5) indicates the well's DTB is 45 fbg, suggesting that the well has several feet of silt in it. Additionally, the manhole lid could not be secured.
- MW-8 – The lid to this monitoring well could not be removed during the site visit and so the condition of this well is unknown.
- MW-10 - This off-site down-gradient 2-inch diameter PVC was observed to have a DTB of 35 fbg. The log for this well indicates the well's DTB is 39 fbg, suggesting that the well has several feet of silt in it. Additionally, the manhole lid could not be secured.
- RW-1 – This 6-inch diameter PVC well was observed to have a pitless adapter and apparently inactive wiring in it. Additionally, the well did not have a well cap and the manhole lid could not be secured.
- RW-2 – This 6-inch diameter PVC well was observed to have a pitless adapter and apparently inactive wiring in it. Additionally, the well did not have a well cap and the manhole lid could not be secured.

Based on a review of the most recent available groundwater chemistry data (presented in the “4th Quarter 2012 Remedial Action Progress Monitoring Report”, dated December 17, 2012), dissolved-phase concentrations of MTBE, benzene, ethylbenzene, and naphthalene was present in groundwater above MSCs during the 4th quarter 2012 groundwater sampling event conducted by Sposito. More specifically, dissolved-phase concentrations of benzene, MTBE, ethylbenzene, and naphthalene were present in point-of-compliance (POC) monitoring well MW-3 above MSC's, dissolved-phase concentrations of benzene and MTBE were present in RW-2 above MSCs, and dissolved-phase concentrations of MTBE was present in POC well MW-6 and off-site monitoring well MW-4 above MSCs. These results indicate that dissolved-phase concentrations of MTBE, and possibly benzene, extend beyond the property line to the north/northeast and dissolved-phase concentrations of benzene, MTBE, ethylbenzene, and naphthalene above MSCs extend beyond the property line to the east.

With regard to soil, based on the results of soil samples collected from the northern portion of the property (B-1 and B-2 collected in 2000 and B-4 and B-6 collected in 2006), the eastern portion of the property (B-10 collected in 2000 and B-1 and B-5 collected in 2002), and the

southcentral portion of the property (B-9 collected in 2000), soil characterization is not complete laterally to the north, east, or south of the USTs.

USTs On-Site

There are no known USTs on-site.

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 PADEP has reviewed this RFB and did not have any comments.

Objective

The objective of this RFB is to execute the defined SOW that will gather additional soil chemistry, groundwater chemistry, and other subsurface information necessary to evaluate site conditions that will enable the submission of a SCR Addendum. Following the completion of the SOW specified in this RFB, the remaining corrective action activities necessary for the Solicitor to obtain relief from liability will either be competitively bid or the consultant selected for this RFB may be invited to continue work under a fixed-price contract.

Constituents of Concern (COCs)

The Constituents of Concern (COCs) for this site are the volatile organic compounds (VOCs) listed on the pre-March 18, 2008 PADEP unleaded gasoline shortlist (benzene, toluene, ethylbenzene, total xylenes, cumene, naphthalene, and methyl tert-butyl ether (MTBE)).

General SOW Requirements

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

- The Storage Tank and Spill Prevention Act (Act 32 of 1989, as amended),
- Pennsylvania Code, Title 25, Chapter 245 - Administration of the Storage Tank Spill and Prevention Program,
- The Land Recycling and Environmental Remediation Standards Act of 1995 (Act 2), as amended),
- Pennsylvania Code, Chapter 250 - Administration of Land Recycling Program, and

- Pennsylvania's Underground Utility Line Protection Law, Act 287 of 1974, as amended by Act 121 of 2008.

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

- Conduct necessary, reasonable, and appropriate project planning and management activities until the project (i.e., Remediation Agreement) is completed. Such activities may include Solicitor communications/updates, meetings, record keeping, subcontracting, personnel and subcontractor management, quality assurance/quality control, scheduling, and other activities (e.g., utility location). Project planning and management activities will also include preparing and implementing plans for Health and Safety, Waste Management, Field Sampling/Analysis, and/or other plans that are necessary and appropriate to complete the SOW, and shall also include activities related to establishing any necessary access agreements. Project planning and management shall include identifying and taking appropriate safety precautions to not disturb site utilities; including but not limited to, contacting Pennsylvania One Call as required prior to any ground-invasive work. As appropriate, project management costs shall be included in each bidder's pricing to complete the milestones specified below.
- Be responsible for coordinating, managing, and completing the proper management, characterization, handling, treatment, and/or disposal of all impacted soils, water, and derivative wastes generated during the implementation of this SOW. The investigation-derived wastes, including purge water shall be disposed of in accordance with standard industry practices and applicable laws, regulations, guidance, and PADEP directives. Waste characterization and disposal documentation (e.g., manifests) shall be maintained and provided to the Solicitor and the PAUSTIF upon request.
 - **If the site is located in PADEP Southwest Region:** All investigation derived wastes shall be handled and disposed of per PADEP's Southwest Regional Office guidance. Investigation derived wastes include personal protective equipment, disposable equipment, soil and drill cuttings and groundwater obtained through monitoring well development and purging, as well as equipment decontamination fluids. Investigation derived wastes must be containerized in DOT-approved drums and staged on-site in a pre-determined location, pending results of laboratory analyses and selection of final disposal method(s). Each container must be labeled to indicate contents, site location

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

and date of generation. It is the selected consultant's responsibility to conform with current PADEP Southwest Regional Office guidance requirements.

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

Site –Specific Guidelines

Not Applicable

Site –Specific Milestones

Milestone A – Performance of a Professional Land Survey

All bidders are required to provide in Attachment 2 the cost to conduct a professional land survey of the site. The survey shall be conducted by a Pennsylvania-licensed land surveyor. The survey should include all principal site features (including but not limited to: buildings, walkways, areas of pavement, concrete, and grass, manholes, tops of well casings, catch basins, and valve boxes) and the site's property lines and rights of way.

Milestone B – Performance of a Geophysical Survey and an Engineering Evaluation of Underground Utilities

All bidders are required to provide in Attachment 2 the cost to perform a geophysical survey of the site and an evaluation of the underground utilities beneath the site. The geophysical survey and engineering evaluation of the underground utilities shall be conducted prior to intrusive characterization activities described within this SOW.

The purpose of the geophysical survey is to attempt to identify and locate the historic UST excavation, potential unknown USTs, conveyance lines, and other underground utilities and features. It is anticipated that both electromagnetic (EM) and ground-penetrating radar (GPR) technologies would be employed.

The purpose of the underground utility evaluation is to locate and investigate possible contaminant migratory pathways. The evaluation should include (but not be limited to) storm sewers, sanitary sewers, water lines, and natural gas lines beneath the site property. The survey should extend to a distance of 50 feet beyond the property line in all directions. The evaluation should include any on-site laterals to these utilities which may have served or currently serve as preferential migration pathways for petroleum impacted water, potential separate phase liquid (SPL), and vapor. This evaluation should include a review of available municipal and authority plans of the utilities beneath West Main and Chestnut Streets.

Milestone C –Soil Boring Installation and Soil Sampling

All bidders are required to provide in Attachment 2 the cost to perform a soil boring investigation on the site property. The selected bidder shall perform a soil investigation at the Site to characterize the lateral and vertical extent of petroleum impacts to soil and evaluate if the active soil and groundwater remediation programs conducted at the Site have been effective at reducing soil concentrations. Seventeen soil borings (SB-101 through SB-117) are proposed to characterize soil conditions at the Site. The approximate location of fifteen of the proposed soil borings (SB-101 through SB-115) are shown on Figure 4 in Attachment 3. The location of soil borings SB-116 and SB-117 shall be determined at the discretion of the selected bidder based on field observations made during the installation of soil borings SB-101 through SB-115 to allow for further vertical and/or horizontal investigation/delineation of suspected petroleum impacts. The location of soil borings SB-116 and SB-117 should be placed outside of the former remedial excavation boundary.

Based on historic groundwater sampling data, the selected bidder shall assume that permanently saturated soil begins at 35 fbg, and so all soil borings should be advanced to 35 fbg.

As shown on Figure 4, soil borings SB-101 through SB-109 shall be advanced around the perimeter of the former remedial excavation and soil borings SB-110 through SB-115 shall be advanced through the former remedial excavation. The selected bidder shall refer to the results of the geophysical survey prior to advancing the soil borings to validate their respective locations.

The soil borings should be installed using hollow stem auger technology and soil samples should be collected from split spoons advanced ahead of the augers. Bidders shall assume for the purpose of this RFB that two discrete soil samples will be collected from each soil boring (a total of thirty-four (34) soil samples). Soil samples collected from the split spoons should be screened at two-foot intervals with a photoionization detector (PID) (using headspace measurements).

The first soil sample collected from soil borings SB-101 through SB-109 and SB-116 and SB-117 should be collected from the depth above 25 fbg that exhibits the greatest PID response and the second soil sample should be collected from the depth that exhibits the greatest PID response between 25 and 34 fbg.

The first soil sample collected from soil borings SB-110 through SB-115 should be collected from the depth between 25 fbg and 30 fbg that exhibits the greatest PID response and the second soil sample should be collected from the depth that exhibits the greatest PID response between 30 and 34 fbg.

In the absence of a PID response in any soil boring, the shallow soil sample should be collected from a depth of 26 fbg and the deep soil sample should be collected from a depth of 34 fbg.

Soil samples shall be collected in laboratory-provided containers in accordance with EPA Method 5035 and analyzed for the substances listed in the COC section of this RFB by EPA Method 5035/8260B.

In addition to the petroleum analytical samples, representative discrete soil samples should be collected from two soil borings located outside of the former remedial excavation every five feet (5', 10', 15', 20', 25', 30', and 35') and conveyed to a laboratory for grain size analysis including quantification of silt and clay content and fraction organic carbon. Assume for the purpose of this RFB, that fourteen (14) soil samples will be collected and analyzed based on the stratigraphy and soil types observed during the soil sampling.

Continuous geological logs should be prepared by or under the supervision of a Professional Geologist (PG) licensed in the Commonwealth for each boring advanced at the site using either Modified Burmister or USCS.

All bidders are also required to provide an all-inclusive (mobilization, sample collection, sample analysis, etc.) fixed unit-rate cost to advance six additional soil borings with the collection and analysis of twelve soil samples. This cost will be used to determine possible additional Milestone payouts in the event that additional soil delineation is required to characterize the site. This information shall be provided in the Schedule of Unit Rates in Attachment 2.

Milestone D – Monitoring Well Installation, Development, Abandonment, and Refurbishment

All bidders are required to provide in Attachment 2 the cost to perform the tasks described below. Please include all reasonable and necessary costs associated with obtaining access to the alley way from Newport Township for work associated with monitoring wells MW-5 and MW-8 and from PennDot for work associated with monitoring wells MW-4, MW-8R, and MW-10. Figure 5 in Attachment 3 shows the approximate locations of the monitoring wells referenced in Milestone D.

- Abandon monitoring wells RW-1, RW-2, MW-3, and MW-10 (Figure 5). These monitoring wells should be abandoned in accordance with the PADEP's Groundwater Monitoring Guidance Manual (Document No. 383-3000-001). The abandonment of RW-1 and RW-2 shall include the removal of the wiring and the abandonment of the former remedial piping from the remedial shed to the wells. Additionally, the selected bidder shall remove the surface completions (manholes) and repair the disturbed surface area (including where the remedial piping associated with RW-1 and RW-2 is cut below grade) to match the surrounding grade.
- Over-drill and recomplete monitoring wells MW-1 and MW-5. Monitoring well MW-1 should be installed to a total depth of 50 fbg and MW-5 should be installed to a total depth of 40 fbg. Both wells should be over-drilled and installed using HSA drilling techniques and constructed with 2-inch diameter PVC materials. Monitoring well MW-1 should be constructed with 10 feet of riser and 40 feet of screen and MW-5 should be constructed with 5 feet of riser and 35 feet of screen. Monitoring wells MW-1 and MW-5 shall be completed at the surface with a securable manhole, set in concrete flush with the ground surface. A locked, pressure fit, watertight cap shall be used to prevent the infiltration of surface runoff and rainwater and to restrict access by unauthorized individuals. Well logs should be prepared for MW-1 and MW-5 by or under the supervision of a PG.
- Installation of three groundwater monitoring wells, replacement monitoring well MW-3R, MW-7R, and MW-8R. Replacement well MW-3R shall be installed to the east of the abandoned MW-3 location along the site's eastern property boundary. Proposed monitoring well MW-7R shall be installed between the former UST excavation and the site building. Proposed monitoring well MW-8R shall be installed in the general vicinity of the southeastern corner of West Main Street and Chestnut Street. The monitoring wells shall be installed to a total depth of 50 fbg using hollow stem auger (HSA) drilling techniques. The monitoring wells shall be constructed of 2-inch PVC materials with 10 feet of riser and 40 feet of screen. Continuous geological logs should be prepared by or under the

supervision of a PG using the same standard and consistent classification system used in Milestone C. The monitoring wells shall be completed at the surface with a securable manhole, set in concrete flush with the ground surface. A locked, pressure fit, watertight cap shall be used to prevent the infiltration of surface runoff and rainwater and to restrict access by unauthorized individuals.

- Recomplete the surface completions of monitoring wells MW-2, MW-4, and MW-6. The surface completions of these monitoring wells shall be recompleted with new flush mounted manholes that allow for the securing of the wells with locked, pressure fit, watertight caps used to prevent the infiltration of surface runoff and rainwater and to restrict access by unauthorized individuals.
- Develop monitoring wells MW-1, MW-2, MW-3R, MW-4, MW-5, MW-6, MW-7R, and MW-8R. The development of these monitoring wells should be performed in accordance with the PADEP's Groundwater Monitoring Guidance Manual (Document No. 383-3000-001).
- Following the surface completion of each well, the tops of casings of the eight monitoring wells in the newly established monitoring well network (MW-1, MW-2, MW-3R, MW-4, MW-5, MW-6, MW-7R, and MW-8R) shall be vertically and horizontally surveyed by a Pennsylvania-licensed land surveyor to allow for the calculation of groundwater elevations across the site.

Milestone E – Soil Gas Sampling

All bidders are required to provide in Attachment 2 the cost to install one soil gas sampling point and sample it twice. The selected bidder shall install the soil gas sampling point outside the former excavation, between the excavation boundary and the Site building (approximate location shown on Figure 5 included in Attachment 3).

Bidders shall install the soil gas sampling assembly in a 2-inch diameter soil boring advanced to a depth of approximately 10 fbg. The soil gas sampling assembly shall consist of polytetrafluoroethylene (PTFE) tubing connected to a 6-inch long stainless steel mesh screen by a barbed or compression-type fitting and an anchor that is threaded onto the bottom of the screen. The mesh screen and anchor shall rest on top of a 6-inch deep sand sump placed at the bottom of the borehole. Sand shall then be poured into the boring to no more than 6 inches above the top of the mesh screen. The remaining annulus shall then be sealed to approximately 6 inches from the surface with hydrated bentonite chips. The PTFE tubing shall then be capped at the surface and secured inside a flush-mounted manhole set in concrete flush with the surface. Bidders may propose an alternative soil gas sampling assembly that will allow for the collection of soil gas samples from the depth specified above.

Two rounds of samples shall be collected from each soil vapor sampling point. The samples should be collected at least 14 days apart with the first sampling event

occurring no sooner than 72 hours after the installation of the sampling point. Soil vapor samples shall be collected in 6-liter laboratory-provided stainless steel evacuated cylinders connected to laboratory-calibrated flow controllers set to a maximum flow rate of 200 ml/min. QA/QC for each sampling event shall consist of one ambient air sample. All samples shall be analyzed for the substances listed in the COC section of this RFB by EPA Method TO-15 by a NELAP-certified laboratory.

Milestone F – Single Well Aquifer Testing

All bidders are required to provide in Attachment 2 the cost to perform single well aquifer testing (“slug tests”). Both rising head and falling head tests shall be performed in accordance with standard industry practices and applicable guidance on monitoring wells MW-5 and MW-7R. The aquifer test data should be analyzed by, or under the direction of, a PG licensed in the state of Pennsylvania using standard industry practices and applicable guidance.

Milestone G – Groundwater Sampling

All bidders are required to provide in Attachment 2 the cost to conduct two comprehensive groundwater sampling events. The first groundwater sampling event shall occur no sooner than two weeks after the development of monitoring wells MW-1, MW-2, MW-3R, MW-4, MW-5, MW-6, MW-7R, and MW-8R (Milestone D). The second sampling event shall occur no sooner than two weeks after the first sampling event. All wells shall be gauged for the presence of separate-phase product (SPL) and to measure the depth-to-water prior to purging and the collection of groundwater samples during each sampling event. All groundwater samples shall be collected in laboratory-provided containers and analyzed for the substances listed in the COC section of this RFB by EPA Method 5030B/8260B.

All bidders are also required to provide an all-inclusive, per-well, fixed, unit-rate for a reduction in the number of groundwater monitoring wells sampled. This cost will be used to determine the applicable Milestone payout in the event that one or more wells cannot be sampled (wells are inaccessible, dry, etc.). This information shall be provided in the Schedule of Unit Rates in Attachment 2.

Milestone H – Preparation and Submission of a Site Characterization Report Addendum

All bidders are required to provide in Attachment 2 the cost to prepare and submit a Site Characterization Report (SCR) Addendum. Following the completion of Milestones A through G, the selected bidder shall prepare an SCR Addendum that documents and discusses the data obtained and the conclusions drawn from the completion of the SOW

contained within this RFB. The selected bidder shall include, as necessary, additional investigation work required for the successful characterization of the site. Additionally, the selected bidder shall incorporate a vapor intrusion evaluation with regard to the unleaded gasoline release into the SCR Addendum by comparing the results of the soil, groundwater, and soil gas data collected as a result of work described within this RFB to the PADEP's Vapor Intrusion Guidance Screening Values.

Tables, figures, and other attachments that support the text shall include but not be limited to the following:

- Updated comprehensive historical groundwater elevation data;
- Updated comprehensive historical groundwater analytical data;
- Site map (showing surveyed site boundaries and pertinent site features);
- Monitoring well and soil boring location maps;
- Groundwater elevation isopleth maps for each comprehensive sampling round conducted as part of this RFB;
- Groundwater chemistry concentration isopleth (plume) maps for each analyte found to be above the RUA MSC in any well for each sampling round conducted as part of this RFB;
- Updated comprehensive historical soil analytical data;
- Laboratory analytical reports for groundwater and soil with chains of custody and field sampling documentation;
- Soil boring logs for new soil borings and well logs for groundwater monitoring wells;
- Results of the engineering survey; and
- Results of the geophysical survey.

Additionally, the selected bidder shall conduct a receptor survey for potential future remedial actions. The selected bidder shall perform the following tasks:

1. Review the PA Groundwater Information System (PAGWIS) records available from the PA Topographic and Geologic Survey website. This task shall include plotting all recorded wells within a ½-mile radius of the Site on a map and including a copy of the database records for that search distance in an appendix to the SCR, and
2. Perform a Pennsylvania Natural Diversity Inventory (PNDI) environmental review to evaluate for the presence of special concern species and resources. This review can be performed over the internet at <http://www.gis.dcnr.state.pa.us/hgis-er/Login.aspx>.

The selected bidder shall prepare the SCR Addendum in draft form for review and comment by the Solicitor and the PAUSTIF prior to submitting it to the PADEP. The bidders' schedule shall provide two weeks for this review.

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
 - GSC Generated Tables and Figures
 - a. Tables
 - i. Table 1 – UST Closure Sampling Data
 - ii. Table 2 – 1997 Soil Characterization Data
 - iii. Table 3 – 2000 Soil Characterization Data
 - iv. Table 4 – 2002 Soil Characterization Data
 - v. Table 5 – 2008 Soil Attainment Data
 - b. Figures
 - i. Figure 1 – Site Location map
 - ii. Figure 2 – Soil Sampling Summary Map
 - iii. Figure 3 – Site Map Showing Well Installation History
 - iv. Figure 4 – Soil Exceedance Summary Map Showing Proposed Soil Borings
 - v. Figure 5 – Site Map Showing Proposed Monitoring Well and Soil gas Sampling Point Locations
 - Source Documents
 - c. Underground Storage Tank System Closure Report – December 1997
 - d. Soil and Groundwater Site Characterization Report – September 1998
 - e. Remedial Action Plan – October 1998
 - f. Update Report - April 1999
 - g. PADEP Comment Letter – August 10, 2000
 - h. Supplemental Site Characterization and Remedial Action Plan – November 2000
 - i. Supplemental Site Characterization and Remedial Action Plan – January 2003
 - j. Bench Scale Test Report, Soil Permeability Impact by Fentons Reagent – September 2006
 - k. 1st Quarter 2008 Remedial Action Progress Report – April 18, 2008
 - l. 4th Quarter 2012 Remedial Action Progress Report – December 17, 2012
 - m. Sposito Correspondence to PADEP “Modification of Site Remedial Action” – February 11, 2013
 - n. PADEP Correspondence to Sposito – April 25, 2013