

Request for Bid

Fixed-Price Bid to Result

Remediation to Statewide Health Standard Closure

Solicitor

Superior Petroleum Company

Radhe Oil

**222 Buffalo Street
Freeport, Armstrong County, PA 16229**

PADEP Facility ID #: 03-29674 PAUSTIF Claim #: 20170012(I)

Date of Issuance

October 3, 2019

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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 <https://ustif.pa.gov>.

Calendar of Events

Activity	Date and Time
Notification of Intent to Attend Site Visit	October 17, 2019 by 5 p.m.
Mandatory Pre-Bid Site Visit	October 18, 2019 at 11 a.m.
Deadline to Submit Questions	November 15, 2019 by 5 p.m.
Bid Due Date and Time	November 22, 2019 by 3 p.m.

Contact Information

Technical Contact
<p>Mr. Joseph Ozog, Jr., P.G. Excalibur Group, LLC 91 Park Avenue Windber, PA 15963 joeozog@excaliburgrpllc.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 “**Superior Petroleum-Radhe Oil, Claim #20170012(I) – RFB QUESTION**”. Bidders must neither contact nor discuss this RFB with the Solicitor, PAUSTIF, the Pennsylvania Department of Environmental Protection (PADEP), or 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 will 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 "Superior Petroleum-Radhe Oil, Claim #2017-0012(I) – 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. Changes to the Site meeting date and/or time due to inclement weather conditions or other unexpected circumstances will be posted at <https://ustif.pa.gov/bids>; and, the Technical Contact may notify via email all companies that provided Site Meeting Attendance Notification.

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, 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. Bids should include enough original language

conveying bidder's thought such that the understanding of site conditions, closure approach (if applicable), and approach to addressing the scope of work can be evaluated. Since bidders are not prequalified, the bid response must provide the Bid Evaluation Committee and Solicitor enough information to complete a thorough review of the bid and bidder.

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”.
11. The name and contact information of the person who is to be contacted in the event the bid is selected by the Solicitor and/or a Right to Know request is received by PAUSTIF.

Bid Review and Evaluation

1. Bid Review and Scoring

Bidders' submissions that are administratively qualified (attend the mandatory pre-bid site meeting, submission of the bid by the designated due date and time) will be evaluated.

Technical Scoring

Bids are evaluated for technical viability before cost is considered. Bids that have technical scores that fall within 75% of the highest technical score will advance to cost scoring. Bids with technical scores below 75% of the highest technical score are eliminated from further consideration.

Numerical values will be assigned for defined SOW bids for two categories:

- Understanding the problem and demonstrating knowledge of how to perform the work
- Qualifications and Experience

Numerical values will be assigned to three categories in those cases where there is a bid-to-result request:

- Understanding of the problem
- Technical and Regulatory Approach to Remediation
- Qualifications and Experience

Cost Scoring

Cost scores are determined by a cost formula. The bid(s) with the lowest total cost receives the maximum cost points available. The remaining bids are scored by applying the following cost formula: $(1 - ((B - A) / A)) \times C = D$

A = the lowest bid cost

B = the bidder's cost being scored

C = the maximum number of cost points available

D = bidder's cost score (points)

If a bid cost is equal to, or greater than, twice the amount of the lowest bid cost, the formula calculation will result in a negative number and the bid will be assigned zero cost points.

2. Evaluation of Bids

A committee comprised of at least two members of the USTIF staff, two members of ICF staff, and the TPR who assisted in developing the bid package will score all bids that are administratively qualified based on the above criteria. USTIF recognizes that several bids may be acceptable and receive similar numerical scores. At the conclusion of the scoring process, the claimant will receive those bids whose numerical scores place them in the category of meeting Reasonable and Necessary criteria and acceptable for USTIF funding. The claimant may select any of the consulting firms that submitted a qualified bid package to implement the tasks described in the bid; however, USTIF will only provide funding up to the highest fixed price of those bids determined to be Reasonable and Necessary for USTIF funding.

General Site Background and Description

Each bidder should carefully review the existing information and documentation provided in Attachment 3. The information and documentation have 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.

Background Summary

The Superior Petroleum property (“Site”) is a 0.33-acre parcel on the north side of Buffalo Street, at the northwest corner of Buffalo Street and Mill Street, in the town of Freeport, Pennsylvania. It is improved with a single-story building, two gasoline dispensers and associated canopy, and three underground storage tanks (USTs). Figures 1 and 2 (Attachment 3a) show Site location and layout, respectively. Convenience store and gasoline station commercial operations currently occur at the Site. These commercial operations date back until at least the late 1980s. Historical operations have included automobile service/repair (1980s to sometime in the 1990s), and a drive-through car wash. Surrounding properties have been developed for a mix of residential and commercial land uses.

At least two generations of UST systems have been used at the Site. The previous (or first generation) UST system was reportedly removed in 1987. The current UST system includes three 10,000-gallon gasoline tanks (identified as Tanks 001 – 003) and two dispenser islands, installed in 1987 and originally owned/operated by Amoco Oil. Subsequent ownership has included BP, Glassmere Fuels, and Superior Petroleum, who currently owns the property with the Site operations being conducted by Radhe Oil under the BP brand. The gasoline UST system has generally occupied the same area as current configuration, except for equipment upgrades over the years, and a reconfiguration of the dispenser islands during a partial closure and upgrades in 2016-2017 by Superior Petroleum.¹ The location and layout of the current UST system is shown on Figure 2 (Attachment 3a).

A 550-gallon used motor oil UST (Tank 004), also installed in 1987, formerly occupied the Site (see Figure 2, Attachment 3a). This used motor oil UST was removed in April 1994.

Release History

1994 Used Motor Oil UST Closure

In April 1994, a 550-gallon used motor oil UST (Tank 004) was closed via removal. The former location of the used motor oil UST was on the north side of the existing Site building (see Figure

¹ In the process of finalizing this RFB, PADEP noted that a UST System Modification Report documents partial system closure and upgrades completed on 1/19/19. No further details were available at the time before the RFB was finalized.

2, Attachment 3a). Reportedly, “minor soil contamination”² was noted upon removal of the UST, with two confirmation samples containing concentrations of Total Petroleum Hydrocarbons (TPH).³

2000 Gasoline Release (PAUSTIF Claim #20010256)

In September 2000, a Phase I environmental site assessment (ESA) was completed by IT Corporation for BP, owner/operator of the subject property at the time. Also, in November 2000, a Phase II investigation was performed by American Geoscience, Inc. (AGI). The Phase I and II work was performed in support of a real estate transaction between BP and Glassmere Fuel.

The due diligence work included collecting six soil samples from six soil borings (SB-1 through SB-6) positioned both around the UST system and former location of the used oil UST, and collecting groundwater samples from four observation wells (OW-1 through OW-4). These four observation wells were reportedly installed in 1987, after installation of the UST system, to monitor any potential leaks from the UST system.⁴ None of the soil samples contained unleaded gasoline (ULG) or used oil parameter concentrations above PADEP’s Statewide Health Standards (SHS). Only the OW-3 groundwater sample exceeded PADEP’s SHS. This sample contained benzene, ethylbenzene, and naphthalene in excess of the respective PADEP SHS. A confirmed release was subsequently reported to PAUSTIF in 2001 (Claim #20010256).

A succession of site investigations and interim remedial action followed the 2000 ULG release discovery, performed by various consultants from January 2002 to 2010. This work included: installing additional on-property monitoring wells MW-5 through MW-7 and one off-property well, MW-8; sampling / analyzing groundwater on quarterly basis; supplemental soil sampling; soil vapor sampling / analysis; and performing a human health risk assessment.

Benzene, ethylbenzene, naphthalene, and MTBE were found in groundwater above the respective PADEP SHS. Soil contamination exceeding PADEP’s SHS included benzene and naphthalene in a limited area on the north side of the tank field. Benzene was also found in soil gas above PADEP’s screening value. Interim remedial action in the form of limited high vacuum extraction events were performed in April, May, and June 2004.

Activities were documented in an April 2006 Site Characterization Report (SCR), April 2006 Risk Assessment Report, June 2008 SCR/Remedial Action Plan (SCR/RAP), and groundwater summary reports. The remedial approach included quarterly groundwater monitoring.

A July 2010 Remedial Action Completion Report (RACR) documented soil attainment in the area along the north side of the UST cavity (see Figure 2, Attachment 3a), and groundwater attainment

² Notification of Contamination report dated April 6, 1994.

³ No other information was made available regarding the closure of the used oil UST.

⁴ Summary Letter Report for Former Amoco Site No. 1748, prepared by IT Corporation, dated December 13, 2000.

at the point of compliance (POC) of the PADEP Residential SHS for the ULG contaminants of concern (COC)⁵. Vapor intrusion risk was eliminated via modeling using a non-residential site worker exposure scenario. PADEP approved the 2010 RACR in January 21, 2011, and the site wells were abandoned in March 2011.

Locations for the historical soil borings, monitoring wells, and soil vapor sampling locations are provided in the documents in Attachment 3d.

2017 Unleaded Gasoline Release (Claim #20170012(I))

The ULG release associated with PAUSTIF Claim #20170012(I) was discovered in December 2016 during UST system partial closure and upgrade activities that included removing and replacing dispensers and product piping between the dispensers and UST cavity. The product piping, dispensers, and canopy were reconfigured and replaced at this time.

The release mechanism was reportedly leakage from “heavily corroded product piping connectors” beneath each of the dispensers.⁶ Petroleum odors and product stained soils were encountered beneath the dispensers with ~123 tons of contaminated soil being removed and transported off-site for disposal. Concentrations of naphthalene, 1,2,4-trimethylbenzene (TMB), and/or 1,3,5-TMB exceeded the PADEP SHS⁷ in confirmation soil samples collected from beneath both dispenser locations. Benzene exceeded the PADEP SHS in one of the soil samples collected from beneath product piping.

Soil sample locations, including those beneath and near the former dispensers are shown on Figure 2 in Attachment 3a. The reconfigured dispenser locations are also shown on Figure 2 in Attachment 3a. A succession of site investigations followed the 2017 ULG release discovery.

Site Characterization & Interim Remedial Activities

Site characterization for the release associated with PAUSTIF Claim # 20170012(I) was initiated in March 2017 by Letterle & Associates, Inc. (Letterle). The characterization activities included: a geophysical survey to identify underground utilities; advancing 16 on-property soil borings (SB-1 through SB-10 and SB-12 through SB-17), and one off-property boring (SB-18); collecting / analyzing soil samples from select soil borings; installing five on-property monitoring wells (MW-1 through MW-5); installing one off-property monitoring well MW-6; and collecting / analyzing groundwater samples from the six monitoring wells. The locations of the soil borings and monitoring wells are shown on Figure 3 in Attachment 3a.

⁵ Does NOT include 1,2,4-TMB and 1,3,5-TMB.

⁶ Notification of Reportable Release form dated January 3, 2017.

⁷ Non-Residential, Used Aquifer SHS.

Soil borings advanced to a depth of ~15 to 36 feet below grade reportedly identified unconsolidated deposits that consist mainly of a mix of silt, sand, and sandy clay underlain by a ~10-foot layer of clayey sand and gravel that overlies bedrock. Wet soil conditions during drilling were reportedly first encountered at a depth of ~23 to 25 feet below grade. Weathered sandstone bedrock was encountered during advancement of the soil borings at a depth of ~15 to 25 feet below grade.

A total of 22 soil samples were collected from on-property soil borings, with all the soil samples apparently collected from the unsaturated zone. The unleaded gasoline constituent 1,2,4-TMB was found to exceed the PADEP SHS in multiple soil samples. Excessive soil impacts were generally found in the vicinity of the former and existing dispenser islands and product piping, with highest concentrations in the area former northern dispenser island (see Figure 4 in Attachment 3a).

There are six monitoring wells used to evaluate groundwater quality and flow direction consisting of on-property wells MW-1 through MW-5, and off-property well MW-6. Monitoring wells MW-1 through MW-5 are installed to the depth of 30 feet below grade and MW-6 is installed to a depth of 25 feet below grade, with monitoring wells screened in the unconsolidated soils and weathered bedrock. Static groundwater levels within the on-property monitoring wells range from ~20 to 26 feet below top of casing (TOC), with off-property well MW-6 water levels around ~16 feet below TOC. Groundwater flow has been depicted to be generally in a westerly direction with a hydraulic gradient of ~0.001 foot/foot.

Naphthalene is the only unleaded gasoline parameter compound that has been found in excess of PADEP's SHS of 100 ug/L in groundwater and it is only found in one monitoring well. The dilute naphthalene plume is generally limited to POC well MW-2. Unleaded gasoline compounds in all other monitoring wells have either been undetectable or have been detected at concentrations below PADEP SHS. Even at MW-2, naphthalene concentrations in groundwater samples have been relatively dilute with measured concentrations both above and below PADEP's SHS (highest concentrations range from 131 to 156 ug/L).

Solicitor's Selected Closure Standards & Remedial Approach

Solicitor's chosen closure approach for the Site is the non-residential SHS for both soil and groundwater. In May 2019, the Solicitor's consultant, Letterle, provided PADEP with a SCR/RAP prescribing soil vapor extraction (SVE) on-property to remediate residual soil impacts in the area of the former dispenser islands along with enhanced in-situ bioremediation in the area of MW-2 to reduce naphthalene concentrations at the POC. PADEP subsequently provided approval of the remedial goals and proposed approach (with no comments/modifications) via letter to the Solicitor dated 7/30/19.

Pilot Testing to assess the feasibility of the proposed SVE remedial approach was performed at the Site in February 2019. Wells and monitoring points installed at the Site for use during the pilot testing included two recovery wells SVE-1 and SVE-2 and three monitoring points MP-1, MP-2, and MP-3. SVE-1 and SVE-2 are 4-inch diameter and installed to a depth of 20 feet with 17 feet of screen (3 to 20 feet), and the three monitoring points are 2-inch diameter wells installed to a depth of 20 feet with 17 feet of screen (3 to 20 feet). Locations of the recovery wells and monitoring points are shown on Figure 3 (Attachment 3a).

The feasibility testing included a short term SVE test using SVE-1 and a second separate test using both SVE-1 and SVE-2 in combination. Wells MP-1, MP-2, and MP-3 and existing monitoring wells MW-1 through MW-6 were utilized as observation wells. Letterle performed the SVE test on SVE-1 for five hours and the combination of SVE-1 and SVE-2 for six hours using a regenerative blower. Reportedly, the test at SVE-1 was performed using varied vacuums (34 inches of water [in H₂O], 48 in H₂O, 75 in H₂O, and 95 in H₂O), 2.5 and, resulting in a vapor flow rate of 75 standard cubic feet per minute (scfm) under an max applied vacuum of 95 inches of water (in H₂O), with most of the surrounding wells responding with a vacuum reading greater than 0.1 in H₂O, resulting in a calculated pneumatic radius of influence (ROI) of ~50 feet. Maximum PID reading during test was 3,860 parts per million (ppm). Vapor total petroleum hydrocarbon (TPH) concentrations ranged from 2,000 ppmv at start of the test and decreased to 770 ppmv during the last vacuum stage (95 in H₂O) of the test.

The second test revealed soil vapor yield of 212 scfm while extracting from both SVE-1 and SVE-2 simultaneously under an applied vacuum of around 54 in H₂O. Most of the surrounding observation wells were influenced with a response vacuum reading greater than 0.1 in H₂O. A pneumatic ROI was estimated to be ~50 feet. The maximum PID reading on extracted vapors during test was 1,257 ppm. Extracted soil vapor TPH concentrations averaged 220 ppmv during the test. No groundwater significant mounding was noted during either of the pilot tests.

The RAP-prescribed SVE system prescribes using only the two existing on-property SVE wells (SVE-1 and SVE-2) located in the vicinity of the existing UST system (no additional SVE wells). Letterle's RAP prescribes an SVE system that anticipates a soil vapor flow rate of 213 actual cubic feet per minute (acfm) under a vacuum of 64 in H₂O.

The RAP-prescribed enhanced in-situ bioremediation in the area of MW-2 involves using pulverized and amended activated carbon injected in the subsurface to sorb and bio-stimulate aerobic biodegradation of the naphthalene in groundwater (PetroFix, manufactured by Regenesis). PetroFix is proposed to be injected via four injection points to a depth of 30 feet in the vicinity of well MW-2. Proposed injection volume is 10.2 gallons of PetroFix, mixed with one gallon of electron acceptors and ~220 gallons of water per injection point. The design calls for the injections to occur at a depth interval of 22 to 30 feet below grade.

Scope of Work (SOW)

This RFB seeks competitive bids from qualified contractors to perform the activities in the SOW specified herein. The PADEP case manager has reviewed and comments provided were incorporated into the RFB SOW.

Objective

The Solicitor, PADEP, the Technical Contact, and the PAUSTIF have agreed that each of the following alternative remedial pathways forward offers a technically viable and cost-effective means of attaining residential SHS soil and groundwater cleanup goal:

- 1) **Alternative 1 – SVE and enhanced *in-situ* bioremediation via injection of pulverized activated carbon (RAP alternative).** This alternative would include the installation of an SVE system to address contaminated soil utilizing the existing two SVE wells and enhanced in-situ bioremediation of limited groundwater impacts using a carbon-based injection (CBI) technology deployed in the vicinity of POC well MW-2 as per the approved RAP. For the purposes of fixed price bidding, this alternative assumes an operation and maintenance (O&M) timeframe of the SVE system of one full year (85% minimum operational efficiency) after which a demonstration of attainment of the non-residential SHS may be made for soil and groundwater, OR;
- 2) **Alternative 2 – SVE and enhanced *in-situ* bioremediation via oxygen delivery product (ODP).** This alternative would include installing and operating an SVE system to address soil impacts utilizing the existing two SVE wells and enhanced in-situ bioremediation of limited groundwater contamination using a slow release ODP product injected in the vicinity of POC well MW-2. For the purposes of fixed price bidding, this alternative assumes an O&M timeframe of the SVE system of one full year (85% minimum operational efficiency) after which a demonstration of attainment of the non-residential SHS may be made for soil and groundwater, OR;
- 3) **Alternative 3 – SVE and enhanced *in-situ* chemical oxidation.** This alternative would include installing an SVE system to remediate soil impacts utilizing the existing two SVE wells and combined oxidization and enhanced aerobic biodegradation of the limited residual groundwater contamination by injecting a chemical oxidant (e.g., persulfate) in the vicinity of POC well MW-2. For the purposes of fixed price bidding, this alternative assumes an O&M timeframe of the SVE system of one full year (85% minimum operational efficiency) after which a demonstration of attainment of the non-residential SHS may be made for soil and groundwater.

Each bidder shall propose one of these three remedial approaches in its bid response.

Solicitor seeks competitive, fixed-price bids, for this Bid to Result RFB to complete the milestones outlined below intended to take this Site to closure. To be deemed responsive, each bid *must* respond *in detail* to each of the milestones, including describing the bidder's understanding of the conceptual site model and how that model relates to the bidder's proposed approach to executing the SOW. "Bid to Result" RFBs identify task goals and rely on the bidders to provide a high level of project-specific detail on how they will achieve the goal. Each bid must detail the approach and specific methods for achieving the milestone objectives. In reviewing the quality of bids submitted under Bid to Result solicitations, there is an increased emphasis placed on technical approach and reduced emphasis on cost (as compared to bids for "Defined Scope of Work" RFBs).

Selecting one of the three remedial approaches as discussed above shall be the basis for preparing a SOW and presenting a competitive fixed-price bid.

Constituents of Concern (COCs)

The COCs for soils and groundwater associated with demonstrating attainment for the 2017 ULG release are the short list for ULG (benzene, toluene, ethylbenzene, xylenes (BTEX); MTBE; cumene; naphthalene; 1,2,4-TMB; and 1,3,5-TMB).

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:⁸

⁸ As such, all bids shall include the costs of these activities and associated functions within the quote for applicable tasks/milestones.

- 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 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:

Off-Property Access. Selected consultant will be responsible for securing off-property access where needed to implement the remedial approach. Work required to negotiate, and secure off-property access shall be included within the fixed price of the associated milestones for which off-

property access is necessary. It is reasonable to assume that Claimant will assist, as needed, with this effort.

Field Activities. All on- and off-site work should be conducted during the normal business days and hours of 8:00 AM to 5:00 PM from Monday through Friday, unless work outside of these normal business days and hours is authorized by the respective Solicitor / property owner. The selected consultant will be responsible for determining and adhering to the restrictions discussed in this section that apply to the Site.

Bidders shall assume that facility operations will remain active during the scope of work in this RFB; therefore, the work shall be completed in such a way to allow continued access to the gasoline dispensers and convenience store.

Responsibility. The selected consultant will be the consultant of record for the site. The selected consultant will be required to take ownership of the project and will be responsible for representing the interests of the Solicitor and PAUSTIF with respect to the project. This includes utilizing professional judgment to ensure reasonable, necessary and appropriate actions are recommended and undertaken to protect sensitive receptors and carry out adequate remedial actions in order to move the site toward closure.

Field Instrumentation. Each bidder should state in their bid response the appropriate field instrumentation (e.g., pumps, meters, photoionization detectors, etc.) to be used during the completion of the SOW. Specifically, the product associated with the regulated release at this site is unleaded gasoline. As such, any field-screening instrumentation used at the site should be able to detect the presence of hydrocarbons associated with that type of product.

Safety Measures. Each bidder should determine the safety measures necessary to appropriately complete the milestones. Specifically, if a consultant feels that it is appropriate and necessary to complete utility clearance using an air knife, the cost should be included in their fixed-price cost. If a bidder includes costs to conduct specific safety measures or activities, the bidder should specify it in the bid response 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 bid responses and other factors are taken into consideration during the bid evaluation process, including appropriate safety measures.

Investigation Derived Waste Disposal. The investigation derived waste (including, but not limited to, soil/rock cuttings, used carbon, well development/purging liquids, and groundwater during pilot testing activities) shall be disposed per the instructions included in the "General SOW Requirements" section of the RFB. Bidders will be responsible for arranging any off-site 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. 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. Each bidder should estimate the volume of waste using its professional opinion, experience and the data provided. **PAUSTIF will not entertain any assumptions from the selected bidder in the Remediation Agreement with regards to a volume of waste. Invoices submitted by the selected bidder to cover additional waste disposal costs as part of activities included under the fixed-price Remediation Agreement for this site will not be paid.**

Site-Specific Milestones

Milestone A – Supplemental Site Characterization Activities and Reporting. This Milestone provides bidders the opportunity to identify the additional site characterization work that will be completed in advance of finalizing the remedial approach design and moving ahead with its implementation. Conducting supplemental investigative activities under this Milestone is mandatory. PAUSTIF will be reimbursing up to \$10,000 for supplemental site characterization and reporting costs under this Milestone. Bidders are to describe what supplemental site characterization will be completed, the rationale for the work, and how the derived data will be used. For purposes of bidding, and to ensure consistent cost scoring of bids, each bidder will enter exactly \$10,000 as the bid price for Milestone A in the Bid Cost Spreadsheet. PAUSTIF will only reimburse up to \$10,000 of reasonable and necessary costs for those tasks actually performed. The selected bidder must provide time and material documentation in addition to supporting documentation required (in Exhibit B of the executed Remediation Agreement) to support the requested reimbursement and completion of this Milestone.

Bidders may use this opportunity to: 1) confirm any elements of the site characterization completed by a previous consultant; 2) address any perceived data gaps in the existing site characterization work; 3) assist in the evaluation and determination of remedial technologies and system design which are characterization-type activities (e.g., analysis for C₄-C₁₀); 4) assist with refining the cleanup timeframe estimate and/or other reasons related to validating the bidder's remedial approach and design (e.g., additional sampling to better determine mass in place). Note that all tasks and costs related to pilot testing and reporting must be captured under the Pilot Testing and Reporting Milestone, not Supplemental Site Characterization Activities and Reporting. If pilot testing tasks and costs are included in this Site Characterization Milestone, the bidder's technical score will be negatively impacted.

Milestone A activities shall be conducted as soon as possible following execution of the Fixed-Price Agreement.

Each bidder shall describe in detail its scope of work for additional site characterization activities along with corresponding technical rationale supporting the need for each additional activity. When considering what additional site characterization activities may or may not be necessary, bidders are strongly encouraged to review Letterle's May 2019 SCR / RAP (Attachment 3b), and the other documents provided in Attachment 3, rather than relying solely on the summary information presented in this RFB.

Example potential activities for bidders to consider may include tasks such as – advancing additional soil borings to assist in defining the extent of unsaturated / smear zone soil contamination and / or to better determine the volume of contaminant mass that remains in-place. Any and all Milestone A activities that are proposed with your firm's bid shall be accompanied by the following:

- The purpose and need for each Milestone A activity and an appropriate breakdown;
- A detailed scope description of each activity including the use and incorporation of any pre-existing site data;
- The timing and schedule of each activity relative to the overall project schedule; and
- A description of the anticipated results of each activity and how such results may impact your proposed conceptual remedial action plan.

Following completion of the additional site characterization activities, these Milestone A activities shall be documented as discussed in Milestone C.

Milestone B – Pilot Testing and Reporting

Bidders shall prepare a conceptual remedial action plan including the conceptual design of an SVE remedial system in their response to this RFB. To support the feasibility of bidder's proposed SVE technology, approach and design, a pilot test shall be conducted. The purpose of the SVE pilot test is to confirm that the bidder's proposed SVE is:

- Technically feasible;
- Cost-effective;
- Will provide a timely closure; and,
- Designed consistently with site-specific criteria.

The bidder shall provide a detailed description of the proposed SVE pilot testing including objections and rationale, the use of existing or installation of new data monitoring/collection points, proposed methods and equipment to be used, data that is proposed to be collected, and including identifying any concerns with the project file pilot testing and perceived existing data gaps. During the pilot testing, in addition to collecting PID readings of the extracted vapors, bidders shall also collect vapor samples of the extracted air (pre-treatment) to be analyzed for BTEX, MTBE; cumene; naphthalene; 1,2,4-TMB; and 1,3,5-TMB, in addition, laboratory analyses shall include TPH (C4-C12).

Additionally, the bidder shall specify up to five basic, objective criteria that would be evaluated to determine whether the remedial action proposed in the bid response document is feasible. These "critical criteria" shall be listed with an upper and lower limit that will define the range of acceptable results (i.e., pilot testing results) relevant to the proposed remedial approach. These critical

criteria must be tightly-controlled measurements or calculations that could be independently measured or verified by others during the pilot test.

For example, bids shall include language such as, “For our proposed remedial action approach to be successful and for the technology(ies) used thereby to operate as planned and meet our proposed clean up schedule, the Milestone B pilot testing must show:

1. A pneumatic radius of influence of greater than X;
2. An soil vapor yield of at least Y; and
3. A maximum initial vapor-phase TPH mass removal rate of Z.

This is only an example. Actual bid language and the associated critical criteria will vary by bidder.

The critical criteria identified in each bid and their associated acceptable range of testing results will be evaluated by the bid evaluation committee as part of the technical review. Unrealistic critical criteria or critical criteria that are unreasonable narrow will reduce the favorability of the bid as viewed by the bid evaluation committee.

Please note that all bidders shall perform an SVE pilot test, even if the bidder is proposing to use exactly the same design as specified in a PADEP approved RAP for the subject site. In the event a bidder is proposing to use exactly the same remedial technology and design as specified in a PADEP approved RAP for the subject site, the bidder shall perform pilot testing to confirm the data and conclusions presented in the PADEP approved RAP and to confirm that the proposed remedial system and design as proposed in the bid response is feasible.

The selected bidder will prepare a Pilot Test Report and submit it to the Solicitor and PAUSTIF. The Pilot Test Report shall show that the SVE pilot test was conducted according to the selected consultant’s bid and shall constitute documentation for payment of Milestone B regardless of the result. If the results of the pilot testing show that the proposed remedial action is feasible based on the specified critical criteria and ranges, the selected consultant shall move forward on the project.

“Pilot Test Off-Ramp” – The selected consultant and the Solicitor are protected from being obligated to move forward with a remedial action under the executed Remediation Agreement if the proposed remedial approach cannot be implemented as proposed in the conceptual design based on critical criteria outside the bidder’s defined ranges from the pilot test data from Milestone B. Exhibit A of the Remediation Agreement (Attachment 1) will contain a provision that if the selected consultant’s proposed remedial approach is not reasonable based solely on pilot test results indicating that it cannot be implemented as proposed in the conceptual design based on critical criteria outside the bidders defined ranges from the pilot test data from Milestone B, then one of the following conditions will apply:

1. With advance Solicitor and PAUSTIF approval, the selected bidder may elect to modify the remediation plan and continue with the project at no additional cost; that is, for the same total fixed price found in the bid response or a lesser fixed-cost. If selected consultant's modified plan is approved by Solicitor and by PAUSTIF for funding, the executed Remediation Agreement may be amended, if necessary, to agree with the modified remediation plan and costs; however, the total fixed price of the Remediation Agreement shall not be increased.
2. If the Solicitor or PAUSTIF choose not to approve the selected consultant's revised remediation plan adjusting to the new data, the Remediation Agreement for the project will terminate.
3. If the selected consultant adequately demonstrates the site conditions revealed by the results of pilot testing performed under Milestone B could not have reasonably been expected prior to conducting the Milestone B activities, the selected consultant may elect to not proceed and to terminate the Remediation Agreement for the project.

If either party elects to cancel the Remediation Agreement, the PAUSTIF will have complete discretion regarding the use of the information obtained during Milestone B activities and/or in the Pilot Test Report. The PAUSTIF may use the data as the basis for rebidding the project; however, it will be specified that any use that a third party makes of the supplemental site characterization data and/or Pilot Test Report will be at the sole risk of the third party. End of "Pilot Test Off-Ramp" language.

For consistency, bidders shall budget a maximum of 10% of the total bid cost for this Milestone, with a maximum of \$50,000. For example, if the total proposed cost for Milestones A through K (excluding B) is determined to be \$300,000, the fixed-price cost of Milestone B specified in the bid cost spreadsheet shall be up to, but not exceed \$30,000. However, if the total proposed cost for Milestones A through K (excluding B) is determined to be \$550,000, the fixed-price cost of Milestone B specified on the bid cost spreadsheet shall be up to, but not exceed \$50,000.

Milestone C – Preparation/Submittal and PADEP Approval of a RAP Addendum or Preparation of a Modified Remedial Action Progress Report (RAPR). Upon completing Milestones A and B described above, and if a bidder has chosen remedial Alternative 1, the bidder's fixed price for this milestone shall include the work necessary to document the supplemental site characterization activities/findings and pilot testing in a RAPR (Milestone D). If on the other hand a bidder has chosen remedial Alternative 2 or 3, a RAP Addendum (RAPA) shall be prepared to document the supplemental site characterization activities/findings, pilot testing, and the details of the amended remedial approach. This RAPA shall contain all necessary information required under 25 PA Code §245.311 and be of sufficient quality and content to reasonably expect PADEP approval.

The modified RAPR or RAPA shall document, describe, and evaluate all findings provided from Milestones A and B, incorporate information and relevant findings from the previous site documentation (as necessary), and contain all necessary and appropriate figures, tabulated data, and appendices. The work for the RAPA shall be completed to comply with the regulatory requirements for and to obtain PADEP approval of this document. The modified RAPR or RAPA shall include updating the conceptual site model (CSM) for the Site and its vicinity based on evaluating the results of the milestones outlined above.

If preparing a RAPA, this report shall be first submitted in draft form to the Solicitor and PAUSTIF for review and comment before being finalized and submitted to PADEP. Each bidder's project schedule shall provide two (2) weeks for Solicitor and PAUSTIF review of the draft document. The final RAPA shall address comments received from the Solicitor and PAUSTIF on the draft report before it is submitted to the PADEP for its review.

The applicable document / report shall be signed and sealed by a Professional Geologist in the Commonwealth of Pennsylvania and may also require the signature and seal of a Professional Engineer registered in the Commonwealth of Pennsylvania (bidders shall refer to state licensing laws to determine if the Professional Engineer seal is required based on the work performed for and documented in the combined report). The fixed-price cost shall also include addressing any PADEP comments on the RAPA.⁹

For only the RAPA, the successful bidder will be eligible to receive payment for 75% of the bid amount for Milestone C when there is proof the document has been completed and submitted to PADEP. The 25% balance will be due for reimbursement once proof has been provided that PADEP has approved the Milestone C deliverable document.

Milestone D – Continue Quarterly Groundwater Monitoring, Sampling & Reporting. Under this milestone, bidders shall provide a firm fixed-price to continue with quarterly groundwater monitoring, sampling, and reporting events while performing the supplemental site characterization activities (Milestone A), pilot testing (Milestone B), preparation/submittal of the modified RAPR or RAPA (Milestone C), waiting on PADEP approval of the RAPA, and install/startup of the remedial system (Milestone E). For the purposes of this RFB, it is assumed that this work will be required for two quarters. However, each bid must specify the number of quarterly events that will be needed prior to, and during implementation of Milestone E along with supporting rationale. Any additional quarterly monitoring and reporting events, beyond the two quarters specified in this RFB, shall be defined on the Bid Cost Spreadsheet and shall be incorporated in the Remediation Agreement as Optional Cost Adder Milestone D.¹⁰

⁹ All figures included in the report (e.g., site plan, remedial design layout, etc.) shall be available in electronic format to the Solicitor upon request.

¹⁰ The Remediation Agreement includes a Provision that the quarterly site monitoring, sampling & reporting events are limited to the two quarters in the base contract under Milestone D plus the number of events defined in Selected Consultant's bid under Optional Cost Adder Milestone D. If additional events are required under Milestone D, pre-approval from Solicitor and PAUSTIF (for funding) is required.

Each groundwater monitoring and sampling event shall include the sampling of the existing on-property wells MW-1 through MW-5 and existing off-property well MW-6.¹¹ During each quarterly groundwater monitoring and sampling event, the depth to groundwater shall be gauged in all existing available monitoring wells and prior to purging any of the wells for sampling. Groundwater level measurements obtained from the monitoring wells shall be converted to groundwater elevations for assessing groundwater flow direction and hydraulic gradient.

Each of the monitoring wells designated for sample collection shall be purged and sampled in accordance with the PADEP Groundwater Monitoring Guidance Manual and standard industry practices. Any well exhibiting a measurable thickness of separate-phase hydrocarbons (SPH) shall not be purged and sampled.¹² Bidders shall manage purged groundwater and other derived IDW generated by the well purging and sampling activities in accordance with the PADEP SWRO guidance.

Groundwater samples shall be analyzed for the PADEP short-list of unleaded gasoline parameters (BTEX, MTBE, cumene, naphthalene, 1,2,4-TMB, and 1,3,5-TMB) by a PADEP-accredited laboratory using appropriate analytical methods and detection levels. Bidders shall specify the analytical methods to be used for the monitoring well samples. Appropriate quality assurance / quality control (QA/QC) samples shall also be collected during each event and analyzed for the same parameters.¹³ In addition, each event shall include field measurements for the following parameters: pH, temperature, specific conductance, dissolved oxygen (measured in-situ), oxidation/reduction potential, and total dissolved solids (TDS).

The Remedial Action Progress Reports (RAPRs) describing the sampling methods and results will be provided to the PADEP on a quarterly basis and within 30 days of the receipt of analytical results for each quarter. At a minimum, each RAPR shall contain the following:

- A summary of site operations and remedial progress made during the reporting period;
- Narrative description of the sampling procedures and results;
- Tabulated data collected from the monitored wells documenting the depth to groundwater and thickness of any free product encountered;
- Groundwater elevation contour maps depicting groundwater flow direction;
- Tabulated historical quantitative groundwater analytical results including results

¹¹ The fixed price cost shall also include any additional monitoring well(s) that the bidder proposes to install under Milestone A (if any).

¹² No SPH has been observed in any of the monitoring wells.

¹³ Each bidder's approach to implementing Milestone D shall clearly identify the number of sampling events, number of wells / samples per event, well purging and sampling method(s), QA/QC measures, analytes, purge water management methods, and other key assumptions affecting the bid price.

from the current quarter;

- Current quarter laboratory analytical report(s);
- One site-wide iso-concentration contour map for each compound detected in any one well above the SHS during the quarter;¹⁴
- For each well exceeding SHS, a graphical depiction of historical key contaminant concentrations and groundwater elevations to provide an assessment of correlations between fluctuating water levels / precipitation events and contaminant concentrations;
- For each well exceeding SHS, a graphical depiction of recent key contaminant concentration trends;
- Discussion of the data to offer an updated assessment whether these data are consistent with a stable, shrinking, or expanding plume;
- Treatment and disposal documentation for waste generated during the reporting period; and
- Demonstration of compliance with the required Federal, State, and local permits and approvals.

PAUSTIF will only reimburse for the necessary quarterly groundwater sampling / reporting events actually completed under this milestone (e.g., this milestone shall be considered completed with the initiation of Milestone E). Each RAPR shall be sealed by a Professional Geologist and / or Professional Engineer registered in the Commonwealth of Pennsylvania (bidders shall refer to state licensing laws to determine which seals are required based on the work performed and documented in the groundwater attainment demonstration report).

Milestone E – RAP Implementation. Under this milestone, bidders shall provide a fixed price bid inclusive of all the manpower, machinery, materials, and other costs needed to fully implement the remedial solution for the site whether it be remedial Alternative 1, 2, or 3 as described in the bidders modified RAPR or RAPA.

Milestone E1 – In-Situ SVE Remedial System Final Design, Equipment Purchase, and Assembly.

Any equipment¹⁵ that has moving parts or is part of the electronic control system (e.g. pumps, blowers, gauges, electrical sensors & switches) necessary to implement the PADEP approved RAP or RAPA shall be purchased new, and other equipment (e.g. holding tanks, trailer/shed) is not required to be purchased new provided that such used equipment is guaranteed to properly function for the life of the contract. The remedial system shall be pre-assembled and tested as much as possible as a turn-key prefabricated system prior to site deployment. Under this

¹⁴ All figures included in each RAPR (e.g., site plan, groundwater elevation maps, dissolved plume maps, etc.) shall be available in electronic format to the Solicitor upon request.

¹⁵ All equipment purchased under this contract will become the property of the Solicitor. The selected consultant shall be responsible for operating and maintaining the equipment for the effective period of the Remediation Agreement.

approach, the purchased equipment is to be fully integrated and tested electrically and mechanically inside an enclosure (properly insulated with appropriate lighting, and heating & ventilation systems) meeting applicable NFPA/NEC codes before being shipped to the site. After delivery and setting in place, final connections shall be made to the electrical service and subsurface piping / conduits installed as part of the Site Preparation Work (see below). Clear and legible copies of all equipment manuals and warranties shall be provided to Solicitor.

Please note that the proposed remedial system shall be equipped with some form of telemetry as indicated in the PADEP approved RAP. The selected consultant shall coordinate with the telephone, cable or internet service provider to bring and provide appropriate service to the location of the remediation equipment to allow remote communications and document up-time. Payment of the service connection shall be the responsibility of the selected consultant and shall be accounted for in the quoted fixed-price bid.

Milestone E2. Site Preparation Work. The selected consultant shall obtain all necessary construction and operational permits and/ or permit exemptions and post same as required. Solicitor shall be provided copies of all permits / permit exemptions before field construction activities commence. On-site mark-out of buried utilities shall be completed in advance of any drilling or trenching activities. PA One Call notification shall be made and documented prior to drilling or trenching activities.

The selected consultant shall coordinate with the electrical service provider to bring and provide appropriate electrical service to the location of the remediation equipment. Payment of the electrical service connection, permitting, and inspections shall be the responsibility of the selected consultant and accounted for in the fixed-price bid.

Milestone E3 – In-Situ SVE Remediation Equipment Pad, Trenching, Subsurface Piping, Mechanical, and Electrical. The selected consultant shall prepare the area where the remediation equipment will be located as specified in the approved RAP or RAPA, or as otherwise directed by the Solicitor, including, if necessary, construction of a concrete pad. Required and appropriately sized piping and electrical conduit/wiring shall be trenched and buried below the frost line extending between the remediation equipment location and the recovery wells. Buried piping shall be installed with tracer wire to facilitate locating the subsurface lines after the trenches have been backfilled. Buried piping shall be tested for integrity and documented before trench backfilling. The successful bidder shall provide the Solicitor and ICF/PAUSTIF with documentation demonstrating integrity of the buried piping. Buried piping and conduit stub-ups shall be terminated and secured in the remediation equipment area to facilitate final connections to remediation equipment and winterization of the stub-ups. Surface restoration from all trenching and well head completions shall be similar to current conditions.

Milestone E4 – Final Connections and Startup / Trouble-Shooting of the In-Situ SVE Remediation System. The selected consultant shall make the final connections between piping/conduit stub

ups and power drop/meter and the manifold(s)/conduits on the interior of the pre-assembled and tested treatment system. Any sections of above-grade piping located outside of the equipment enclosure will need to be freeze-protected (e.g., by insulation and heat tracing).

The selected consultant shall start up and demonstrate proper operation of the remediation system equipment, and each bid response shall describe start up / trouble-shooting procedures. At a minimum, such demonstration shall include documentation that: (a) above-grade piping final connections shall be tested for integrity and documented; (b) all below- and above-grade equipment is operational; (c) the design parameters are achievable at the treatment system and at the well heads; (d) all safety and control switches function properly; and (e) the system can operate automatically (without manual intervention). The successful bidder shall provide the Solicitor and ICF/PAUSTIF with startup documentation demonstrating integrity and proper operation of the system. To the extent problems are identified during the site work preparation and/or remediation system installation and start-up phases, the successful bidder shall repair these problems and repeat the proper system operation demonstration.

Also as part of this task, the selected consultant shall prepare an operations and maintenance (O&M) Plan, and as part of the O&M Plan, the selected consultant shall also be responsible for developing a checklist to be completed by field technicians during subsequent O&M visits that will provide key information deemed necessary to evaluate remediation performance, permit compliance, and system maintenance on a continuing basis. Each bid response shall include an appropriate example of an O&M checklist that identifies typical minimum data requirements to be recorded during each O&M site visit.

The selected consultant will provide the Solicitor with a copy of the O&M Plan prior to remediation system startup, and a hard copy of as-built drawings for the remediation system upon completion of the successful system startup.

The Solicitor, PAUSTIF, and PADEP shall have the opportunity to inspect and confirm that the system has been installed as described in the fixed-price agreement and in the remedial system final design and is in daily operation as described in the remedial system final design. The selected consultant shall contact ICF/PAUSTIF and PADEP immediately following completion of startup / trouble-shooting and when the system is fully operational in order to advise that the system is ready for ICF / PAUSTIF, and PADEP inspection.

Milestone E5 – SVE Remediation System O&M, Site Monitoring, Sampling, and Reporting. For this milestone, bidders shall provide the Solicitor and PAUSTIF with firm quarterly fixed-price unit costs that would include the routine O&M of the remedial system;¹⁶ quarterly groundwater, monitoring, and sampling of the on- and off-property monitoring wells; and reporting. The

¹⁶ Electric usage; telephone, cable, internet service; and any discharge will be reimbursed as time and material cost adders to the Remediation Agreement.

quarterly fixed price cost shall also include responding to any unexpected telemetry-triggered O&M visits.

For the purposes of this RFB, it is assumed the Milestone E5 activities will be required for four quarters (one year). However, each bid must specify the remediation timeframe (i.e., number of O&M quarters) that the bidder's proposed remedial approach will need in order to achieve the project goal of reducing soil contaminant concentrations to below non-residential SHS, enabling initiation of soil and groundwater attainment demonstration.¹⁷¹⁸ The bidders realistic assessment of remediation timeframe (total number of operating quarters) shall be defined on the Bid Cost Spreadsheet, and shall include the additional number of remediation quarters, beyond four quarters specified in this RFB (i.e., if a bidder believes it can complete the remediation in a total of eight quarters of O&M, the additional number of quarters to be included on the Bid Cost Spreadsheet is four quarters). If the bidder's O&M remediation timeframe exceeds the RFB-specified four quarters, the number of quarters exceeding four will be incorporated in the Remediation Agreement as Optional Cost Adder Milestone E5. Once the full year of SVE system operation has been completed at 85% minimum operational efficiency, it will be appropriate to initiate soil and groundwater attainment demonstration. However, if SVE contaminant mass recovery remains significant at the end of the one-year period (e.g., >1 pound per day), the selected bidder may petition to continue additional O&M under Optional Cost Adder Milestone E5. Therefore, each bid must provide a fixed unit cost for Optional Cost Adder Milestone E5. Each bid must explicitly state bidder's understanding of the project goal for when the remedial system would be discontinued, and attainment sampling shall begin.

Each bid must specify the number of site visits to occur each quarter. O&M tasks will be primarily focused on data collection and evaluations to: (1) determine, demonstrate, and document remediation performance; (2) properly maintain the system equipment; and (3) demonstrate compliance with permits and other applicable regulatory requirements.

- *Performance monitoring* shall include data collection and evaluations geared toward evaluating how well the remedial strategy is working and making necessary adjustments to the system operational configuration to optimize system performance. Performance monitoring activities are to include, but not necessarily be limited to, measurements that show the design vacuum is being applied to the well heads, reveal pneumatic influence across the target contaminant zone, and allow contaminant mass recovery quantification. The selected consultant shall report quarterly concerning its evaluations of system performance and system optimizations performed.

¹⁷ During the bidder's specified timeframe of site operations, maintenance, and monitoring subsequent to remediation system startup, the selected consultant, at its own expense, including **all** associated labor, shall be responsible for repairing or replacing equipment purchased for the RAP implementation that becomes damaged, destroyed, or defective.

¹⁸ If the remediation is discontinued prior to reaching the bidders specified timeframe for remedial system operation, the selected consultant will only be reimbursed for O&M events that have been completed.

- *System maintenance & monitoring* shall include monitoring and routine maintenance as specified by the equipment manufacturer(s) to ensure warranties are not voided and the equipment is kept in good working order. Operational time shall be logged by system instrumentation and monthly run-time meter readings for the SVE extraction blower shall be reported in each quarterly RAPR. If less than 85% uptime has been achieved, documentation of operations problems shall be provided along with the changes/modifications implemented to improve performance consistency. The selected consultant is expected to maintain system operations for at least an 85% uptime by design vacuum during each quarter. Failure to meet this minimum expectation over two consecutive quarters will constitute, at the Solicitor's sole discretion, a breach of contract and the Solicitor may choose to terminate the contract.
- *Compliance monitoring* shall include system and site sampling needed to demonstrate compliance with permits and other applicable regulatory requirements. Documentation of compliance shall be provided to the Solicitor in quarterly RAPRs and in any other reporting required by permitting agencies (i.e. local POTW).

The quarterly groundwater monitoring and sampling events will include the five existing on-property monitoring wells (MW-1 through MW-5) and off-property well MW-6.¹⁹ If a RAPA is proposed which includes fewer or more remediation wells, this should be explicitly stated in the Milestone E5 response and accounted for in the bidder's Milestone E5 quarterly and total cost.

During each event, the depth to groundwater and any potential SPH shall be gauged in all available monitoring wells prior to purging any of the wells for sampling. Groundwater level measurements obtained from the monitoring wells shall be converted to groundwater elevations for assessing groundwater flow direction and hydraulic gradient. The conduct and results of each event shall be documented in RAPRs. Any well exhibiting more than a sheen of SPH shall not be purged and sampled.²⁰ Bidders shall manage purged groundwater and other derived IDW generated by the well purging and sampling activities in accordance with the PADEP SWRO guidance.

Groundwater samples shall be analyzed for the PADEP short-list of unleaded gasoline parameters (BTEX, MTBE, cumene, naphthalene, 1,2,4-TMB, and 1,3,5-TMB) by a PADEP-accredited laboratory using appropriate analytical methods and detection levels. Bidders shall specify the analytical methods to be used for the monitoring well samples. Appropriate QA/QC samples shall also be collected during each event and analyzed for the same parameters.²¹ In

¹⁹ The fixed price cost shall also include any additional monitoring wells installed under Milestone A.

²⁰ No SPH has historically been observed in any of the monitoring wells installed on- and off-property.

²¹ Each bidder's approach to implementing Milestone E5 shall clearly identify the number of sampling events, number of wells / samples per event, well purging and sampling method(s), QA/QC measures, analytes, purge water management methods, and other key assumptions affecting the bid price.

addition, each event shall include field measurements for these water quality parameters: pH, temperature, specific conductance, dissolved oxygen (measured in-situ), oxidation/reduction potential, and TDS.

The RAPRs describing the sampling methods and results will be provided to the PADEP on a quarterly basis and within 30 days of the receipt of analytical results for each quarter. At a minimum, each RAPR shall contain the following:

- A summary of site operations and remedial progress made during the reporting period, including estimates of contaminant mass recovery by the soil vapor extraction. These estimates shall be based on accurate air flow rate measurements and laboratory analyses of extracted air (pre-treatment) samples collected at the same location. Laboratory analyses shall include the ULG short list parameters²² plus TPH (C4-C12), collected quarterly at a minimum;
- Narrative description of the sampling procedures and results;
- Tabulated data collected from the monitored wells documenting the depth to groundwater and thickness of any free product encountered;
- Groundwater elevation contour maps depicting groundwater flow direction;
- Tabulated historical quantitative groundwater analytical results including results from the current quarter;
- Current quarter laboratory analytical report(s);
- One site-wide iso-concentration contour map for each compound detected in any one well above the SHS during the quarter;²³
- For each well exceeding SHS, a graphical depiction of historical key contaminant concentrations and groundwater elevations to provide an assessment of correlations between fluctuating water levels / precipitation events and contaminant concentrations;
- For each well exceeding SHS, a graphical depiction of recent key contaminant concentration trends;
- Discussion of the data to offer an updated assessment whether these data are consistent with a stable, shrinking, or expanding plume;
- Evaluation of system performance including TPH contaminant mass recovery quantification for the quarter and cumulatively and system optimizations performed;
- Pneumatic influence measurements each quarterly demonstrating effectiveness

²² BTEX, MTBE, cumene, naphthalene, 1,2,4-TMB, and 1,3,5-TMB.

²³ All figures included in each RAPR (e.g., site plan, groundwater elevation maps, dissolved plume maps, etc.) shall be available in electronic format to the Solicitor upon request.

across the treatment area;

- Groundwater chemistry measurements indicating successful influence of applied ODP, CBI or chemical oxidation technologies at the target POC well MW-2;
- Operational time shall be logged by system instrumentation and reported in the RAPRs. If less than 85% uptime has been achieved, documentation of operations problems shall be provided along with the changes/modifications implemented to improve performance consistency;
- Treatment and disposal documentation for waste generated during the reporting period; and
- Demonstration of compliance with the required Federal, State, and local permits and approvals.

PAUSTIF will only reimburse for the necessary quarterly O&M and groundwater sampling / reporting events actually completed under this milestone (e.g., this milestone shall be considered completed with the initiation of Milestone F). If, in order to achieve the cleanup goals, it is necessary to extend the period of O&M beyond the RFB-specified four quarters, each additional quarter, up to the total number of Consultant's bid O&M remedial timeframe, will be addressed via Optional Cost Adder Milestone E5. Consultant shall seek and obtain written approval from Solicitor and PAUSTIF to continue operation of the remedial system (Optional Cost Adder Milestone E5).²⁴

Each quarterly RAPR shall be signed and sealed by a Professional Geologist and / or Professional Engineer registered in the Commonwealth of Pennsylvania (bidders shall refer to state licensing laws to determine which seals are required based on the work performed for and documented in the RAPR).

To provide added incentive to the successful bidder to regularly scrutinize remedial system performance and optimize system operations for maximal efficiency in completing the remedial O&M to achieve closure as expeditiously and cost effectively as possible, **10% of each quarterly payment for this milestone (and Optional Cost Adder Milestone E5, if implemented) will be withheld and accumulated pending successful completion of remediation and initiation of soil and groundwater attainment activities (Milestones F and G).** When this condition has been met, the accumulation of 10% holdback payments, for the Milestones actually completed, will be reimbursed in one lump sum to the successful bidder.²⁵ The 10% hold-back milestone will not be paid for an in-situ remediation system that has not attained the cleanup goal within the Consultant's bid remediation timeframe.

²⁴ The Remediation Agreement includes a Site Specific Assumption that remediation will be complete and soil and groundwater attainment activities will be initiated within the O&M timeframe Consultant has bid.

²⁵ Lump sum payment request shall be made prior to the on-set of initiating Milestones F and G.

Milestone E6 – In-Situ Bioremediation at POC well MW-2. Under this milestone, bidders are required to provide a detailed work scope and fixed price cost for the injection of CBI, ODP or chemical oxidation technologies in the area of POC well MW-2 to address the persistent naphthalene concentrations exceeding the non-residential SHS. Bidders shall assume that the injections would be applied to the periodic saturated / smear zone and saturated zone, to aid in reducing contaminant concentrations at this well. Each bid must provide a drawing showing the proposed injection locations, permitting, details regarding the proposed manufacturer and product model / composition, volume of material to be used (and basis), how the product will be applied to the subsurface and volume per injection location, the number of injection locations, and depth interval for the injectant. In addition, bidders shall provide their injection performance criteria and proposed approach for determining if this criteria has been met.

Upon proof of successful delivery / application of the mass of the product into the subsurface as bid, the successful bidder will be eligible for reimbursement of the bid price for the application event. For the purposes of this RFB, it is assumed that only one injection event would be required to have groundwater concentrations reduced to below SHS at the POC. However, each bid must specify the timeframe along with supporting rationale for when a second injection event would occur if a second injection event is eventually determined to be necessary prior to implementation of attainment monitoring (Milestone F). Any additional injection event, beyond the one specified in this RFB, shall be defined on the Bid Cost Spreadsheet and shall be incorporated in the Remediation Agreement as Optional Cost Adder Milestone E6.²⁶

Each bid response shall describe and include in the fixed-price for: (i) identifying subsurface utilities and other buried features of concern including, but not necessarily limited to, contacting PA One Call and clearing the borehole location using vacuum excavation; (ii) borehole abandonment and surface restoration; and (iii) management of IDW. Detailed description of this work and any supporting documentation (e.g., waste manifests, etc.) shall be documented in a quarterly RAPR (Milestone E5).

Milestone E7 – Engineering Performance Review. After the second quarter of consistent remedial system operation, the selected bidder shall complete an engineering performance evaluation of the remedial system in the second quarterly report. The performance evaluation shall determine if the remedial approach is efficiently and effectively remediating contaminant mass to achieve the remedial goal in the contract timeframe. The remedial performance evaluation shall be concluded with a written report at the end of the second quarter of operation. Milestone E7 shall culminate in a written report presenting the testing performed, conclusions reached and recommendations to address any deficiencies and to improve remediation effectiveness. Recommendations may include both changes to operations and modifications / augmentations to the remedial design. All recommendations shall include estimated costs to implement and

²⁶ The Remediation Agreement includes a Site Specific Assumption that the injection events will not exceed the one under Milestone E6 plus the one additional event under Optional Cost Adder Milestone E6.

Solicitor may decide to accept or reject any or all recommendations. Should the selected consultant identify deficiencies and recommend actions to optimize remedial effectiveness, and the stakeholders agree with the necessity and appropriateness of one or more of the recommendations, then enabling contracting mechanisms will be explored at that time.

More specifically, the purposes of the performance evaluation shall include a critical analysis of:

- Pneumatic influence measurements for the operating in-situ remediation system;
- Quantified vapor-phase contaminant mass recovery estimates;
- Groundwater quality and contaminant distribution; and
- Comparison of progress relative to plan, identifying any deficiencies / planned corrective measures.

The bidder shall provide a detailed description of the: i) proposed performance evaluation and rationale for testing; ii) proposed methods; iii) use of existing or installation of new data monitoring/collection points; iv) proposed equipment to be used; and v) data that is proposed to be collected. Each bid shall also describe how the data/information would be evaluated.

The Milestone E7 shall reflect an understanding that the selected bidder will prepare the final Remedial Performance Evaluation Report (RPER) as an attachment to the applicable RAPR for PADEP's, Solicitor's, ICF's and its technical agent's review and comment. The final RPER shall show that the performance evaluation testing was conducted according to the selected consultant's bid and shall constitute documentation for payment of Milestone E7.

Milestone F – Groundwater Attainment Demonstration. Under this task, bidders shall provide a firm fixed-price to complete up to eight quarters of groundwater monitoring and sampling events.²⁷ Each groundwater monitoring and sampling event shall include the sampling of on-property POC wells MW-2, MW-3, and MW-4, off-property well MW-6, and interior monitoring wells MW-1, MW-5, and MW-6. The conduct and results of each event shall be documented in quarterly RAPRs. If additional quarterly attainment events would be needed beyond eight quarters, four additional quarters will be incorporated in the Remediation Agreement as Optional Cost Adder Milestone F.²⁸ Consultant shall seek and obtain written approval from Solicitor and PAUSTIF to continue with quarterly groundwater attainment events (Optional Cost Adder Milestone F).

²⁷ Bidders shall include language in their bid that if groundwater data in the POC wells has been either non-detect or below SHS for four consecutive quarters, the PADEP will be petitioned to approve a reduction in the number of groundwater attainment sampling events.

²⁸ If it becomes evident anytime during the groundwater attainment demonstration (initiated subsequent to completing at least the Milestone E four quarters of remedial O&M and the bio-remedial injection [Milestones E5 and E6]) that the attainment demonstration will not be successful within the 8 quarters, and up to 4 additional quarters (Optional Cost Adder Milestone F) in one or more of the POC wells (e.g., a greater than 10X result or more than two SHS exceedances, etc.), this will represent a New Condition under the contract.

During each quarterly groundwater monitoring and sampling event, the depth to groundwater shall be gauged in all existing available monitoring wells and prior to purging any of the wells for sampling. Groundwater level measurements obtained from the monitoring wells shall be converted to groundwater elevations for assessing groundwater flow direction and hydraulic gradient.

Each of the monitoring wells designated for sample collection shall be purged and sampled in accordance with the PADEP Groundwater Monitoring Guidance Manual and standard industry practices. Any well exhibiting a measurable thickness of SPH shall not be purged and sampled. Bidders shall manage purged groundwater and other derived IDW generated by the well purging and sampling activities in accordance with the PADEP SWRO guidance.

Groundwater samples shall be analyzed for the PADEP short-list of unleaded gasoline parameters (BTEX, MTBE, cumene, naphthalene, 1,2,4-TMB, and 1,3,5-TMB) by a PADEP-accredited laboratory using appropriate analytical methods and detection levels. Bidders shall specify the analytical methods to be used for the monitoring well samples. Appropriate QA/QC samples shall also be collected during each event and analyzed for the same parameters.²⁹ In addition, each event shall include field measurements for the following parameters: pH, temperature, specific conductance, dissolved oxygen (measured in-situ), oxidation/reduction potential, and TDS.

The groundwater attainment demonstration reports describing the sampling methods and results will be provided to the PADEP on a quarterly basis and within 30 days of the receipt of analytical results for each quarter. At a minimum, each attainment demonstration report shall contain the following:

- A summary of site operations and remedial progress made during the reporting period;
- Narrative description of the sampling procedures and results;
- Tabulated data collected from the monitored wells documenting the depth to groundwater and thickness of any free product encountered;
- Groundwater elevation contour maps depicting groundwater flow direction;
- Tabulated historical quantitative groundwater analytical results including results from the current quarter;
- Current quarter laboratory analytical report(s);
- One site-wide iso-concentration contour map for each compound detected in any

²⁹ Each bidder's approach to implementing Milestone F shall clearly identify the number of sampling events, number of wells / samples per event, well purging and sampling method(s), QA/QC measures, analytes, purge water management methods, and other key assumptions affecting the bid price.

one well above the SHS during the quarter;³⁰

- For each well exceeding SHS, a graphical depiction of historical key contaminant concentrations and groundwater elevations to provide an assessment of correlations between fluctuating water levels / precipitation events and contaminant concentrations;
- For each well exceeding SHS, a graphical depiction of recent key contaminant concentration trends and results of any qualitative and quantitative analysis;
- Discussion of the data to offer an updated assessment whether these data are consistent with a stable, shrinking, or expanding plume;
- Treatment and disposal documentation for waste generated during the reporting period; and
- Demonstration of compliance with the required Federal, State, and local permits and approvals.

Each groundwater attainment demonstration report shall be sealed by a Professional Geologist and / or Professional Engineer registered in the Commonwealth of Pennsylvania (bidders shall refer to state licensing laws to determine which seals are required based on the work performed for and documented in the groundwater attainment demonstration report).

Milestone G – Soil Attainment Demonstration. Under this task, bidders shall develop and implement a soil boring program for systematic random soil sampling to demonstrate attainment of the non-residential SHS for the unsaturated and periodically saturated soils in the area of the former dispenser islands, and vicinity, where previous site characterization activities have identified soil exceedances of the SHS. Three-dimensional attainment sampling shall be completed to demonstrate attainment of this area(s) and each bid must describe in detail their approach at addressing soil attainment and include the depth interval and a drawing showing the locations where the sampling grid would be applied to demonstrate soil attainment.

The location / depth of the soil samples shall be determined using PADEP's systematic random sampling (SRSS) procedures, assuming one soil sample per boring shall be submitted for laboratory analysis. Alternate SRSS points shall be selected for any primary SRSS sample locations positioned within the existing UST system and any existing below grade utilities (i.e. public water). Soil samples shall be analyzed for the PADEP short list for unleaded gasoline parameters (BTEX, MTBE, cumene, naphthalene, 1,2,4-TMB, and 1,3,5-TMB). Appropriate quality assurance/quality control (QA/QC) samples shall also be obtained for laboratory analysis.

³⁰ All figures included in each RAPR (e.g., site plan, groundwater elevation maps, dissolved plume maps, etc.) shall be available in electronic format to the Solicitor upon request.

The soil sampling results shall be analyzed using PADEP's 75%/10x Ad Hoc Rule, which shall be documented in detail in the RACR³¹.

Milestone H – Post-Remedial Vapor Intrusion Evaluation. Bidders shall provide a firm fixed-price to conduct an evaluation of the indoor air exposure pathway post-remediation, which shall be consistent with the requirements, guidance document, "Land Recycling Program Technical Guidance Manual for Vapor Intrusion into Buildings from Groundwater and Soil under Act 2", dated January 18, 2017. As part of this evaluation, each bid shall include the sampling of the three on-property soil vapor sampling points. Each of the sampling events shall be completed twice post-remediation and separated by at least 45 days. The samples shall be analyzed for the PADEP short-list of unleaded gasoline parameters (BTEX, MTBE, cumene, naphthalene, 1,3,5-TMB, and 1,2,4-TMB) by a PADEP-accredited laboratory using appropriate analytical methods and detection levels. Each bid shall describe their approach in detail, including providing the location of the sampling points on a site drawing, rationale for the proposed locations, sampling methods and analysis, and schedule for when the sampling would be anticipated. Each bidder's approach to implementing this milestone shall clearly identify the number of sampling events, number of samples per event, QA/QC measures and samples, analytes, analytical method, and other key assumptions affecting the bid price.

Milestone I – Preparation, Submission, and PADEP Approval of Remedial Action Completion Report (RACR). Under this milestone, the bidder will prepare a fixed-price cost to prepare a draft and final RACR following the completion of milestones D through H, and related optional cost adder milestones. The RACR shall be prepared in accordance with Section 245.313. At a minimum, the RACR shall provide the details for Tasks A through H, and optional cost adder milestones. The RACR shall also discuss the selected closure criteria for the site, provide proof of soil and groundwater attainment, and request permanent closure for the site for the current release under an Act 2 Relief of Liability (ROL). The project schedule should allow two (2) weeks for Solicitor and PAUSTIF review of the draft RACR before a final version is submitted to the PADEP. The selected consultant shall then prepare and submit the final RACR to the PADEP in accordance with Section 245.313, and be sealed by a Professional Geologist and / or Professional Engineer registered in the Commonwealth of Pennsylvania (bidders shall refer to state licensing laws to determine which seals are required based on the work performed for and documented in the RACR). The fixed-price cost shall also include addressing any PADEP comments on the RACR.

Milestone J – Site Closure / Restoration Activities. Under this milestone, the bidder shall describe and provide a fixed-price bid for properly closing the site, including: removal of the remedial system and proper disposal of any remaining wastes; in-place abandonment of remedial system below grade piping; in-place abandonment of monitoring and recovery wells, and vapor monitoring points consistent with PADEP guidelines; well head removals; and re-vegetation,

³¹ If the sampling data does not allow for attainment of the selected standard, a New Condition will exist under the Fixed-Price Agreement.

concrete / asphalt repairs, as necessary, for areas that have been disturbed by site characterization or remedial action activities. This task shall also include photo-documenting the site restoration work and completion / submittal of the well abandonment forms. Copies of these photographs and forms shall be provided for the Solicitor's files.

Each bid shall specify the number of days for initiating Milestone J following approval of the RACR by PADEP, and shall be conducted in accordance with standard industry practices and applicable laws, regulations, guidance, and PADEP directives. Well, vapor monitoring point abandonment, remedial system removal, and restoration activities will be coordinated with the Solicitor.

The selected consultant shall determine whether the Solicitor wishes to maintain any components of the remedial system (e.g. treatment building), as applicable, before removing it from the Site.

Optional Site Specific Milestones

Bidders shall also provide fixed unit pricing on a number of optional milestones that may or may not be required over the course of the contract. These optional milestones are not expected to be required and none shall be implemented by selected consultant without all of the following: written request by the selected consultant along with rationale; review of selected consultant's written request by Solicitor, PAUSTIF / ICF and its technical agent; and written approval by Solicitor. Reimbursement for the optional milestones will only be for those pre-approved in writing.

Optional Cost Adder Milestone D – Additional Pre-Remediation Quarterly Monitoring, Sampling & Reporting. Under this milestone, bidders shall provide the Solicitor and PAUSTIF with a firm quarterly unit fixed-price cost that would include the quarterly groundwater monitoring, sampling / analysis of the six existing on- and off-property monitoring (MW-1 through MW-6);³² and reporting beyond the two quarters specified in Milestone D. The SOW for this unit cost adder milestone should follow Milestone D guidelines. Each bid must include the rationale for needing to implement this optional cost adder milestone.

Optional Cost Adder Milestone E5 – Additional Remediation System O&M, Site Monitoring, Sampling, & Reporting. Under this milestone, bidders shall provide the Solicitor and PAUSTIF with a firm quarterly unit fixed-price cost that would include the routine O&M of the remedial system; quarterly groundwater, monitoring, and sampling of the on- and off-property monitoring; and reporting beyond the timeframe specified in Milestone E5. The SOW for this unit cost adder milestone should follow Milestone E5 guidelines. As described in Milestone E5, a 10% holdback will be applied to each Optional Cost Adder Milestone E5 payment. Each bid must include the rationale for needing to implement this optional cost adder milestone.

³² The fixed price cost shall also include any additional monitoring well(s) that the bidder proposes to install under Milestones A and B (if any).

Optional Cost Adder Milestone E6 – Additional In-Situ CBI, ODP or Chemical Oxidation Injection Event at POC Well MW-2 Vicinity. Under this milestone, bidders shall provide the Solicitor and PAUSTIF with a firm unit fixed-price cost that would include one additional remedial injection event. Each bid must specify the timeframe along with supporting rationale for when a second injection event would occur if a second injection event is eventually determined to be necessary. The SOW for this unit cost adder milestone should follow Milestone E6 guidelines. Each bid must include the rationale for needing to implement this optional cost adder milestone.

Optional Cost Adder Milestone F – Additional Groundwater Attainment Demonstration. Under this milestone, bidders shall provide the Solicitor and PAUSTIF with a firm quarterly unit fixed-price cost that would include the quarterly groundwater, monitoring, and sampling of the on-property POC wells MW-2, MW-3, and MW-4, off-property well MW-6, and interior monitoring wells MW-1, MW-5, and MW-6; and reporting beyond the timeframe specified in Milestone F. The SOW for this unit cost adder milestone should follow Milestone F guidelines. Each bid must include the rationale for needing to implement this optional cost adder milestone.

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 (for funding consideration). PADEP approval may also be required.

List of Attachments

1. Remediation Agreement
2. Bid Cost Spreadsheet
3. Site Information/Historic Documents
 - a. Figures 1 through 4
 - b. SCR/RAP, dated May 2019
 - c. UST Closure Report, dated January 2017
 - d. Documents Associated with Used Oil Removal & 2000 Gasoline Release