Request for Bid

Fixed-Price Bid to Result

Remediation to Statewide Health Standard Closure

Solicitor

Estate of Jeffrey P. Weiser

Former Weiser's Service

29128 PA Route 66
Lucinda, Clarion County, PA 16235

PADEP Facility ID #: 16-34573 **PAUSTIF Claim #: 20150142(W)**

Date of Issuance

July 29, 2022

Table of Contents

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 former owner/operator of the Site. PAUSTIF has determined that the claim reported by the Solicitor is eligible for coverage from the PAUSTIF subject to the applicable statutes and regulations. Reimbursement of Solicitor approved reasonable and necessary costs, not to exceed the claim aggregate limit, for the corrective action work described in this RFB will be provided by PAUSTIF.

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	August 11, 2022 by 5 p.m.
Mandatory Pre-Bid Site Visit	August 15, 2022 at 11a.m.
Deadline to Submit Questions	September 9, 2022 by 5 p.m.
Bid Due Date and Time	September 23, 2022 by 3 p.m.

Contact Information

Technical Contact
Mr. Joseph Ozog, Jr., P.G. **Excalibur Group, LLC** **91 Park Avenue** **Windber, PA 15963** **O: 814-467-6359**

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 **"Former Weiser's Service, Claim #2015-0142(W) – 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. Questions and their respective answers will become part of the RFB, which in turn, will become part of the final contract. Bidders are responsible to monitor questions and answers and address any changes, modifications or clarifications made to the RFB as a result of the questions and answers.

Requirements

Mandatory Pre-Bid Site Meeting

On behalf of the Solicitor, the Technical Contact, or their designee will hold a mandatory Site visit on the date listed in the Calendar of Events to conduct a Site tour for one (1) participant per bidding company. The Technical Contact may answer questions at the Site meeting or may collect questions and respond via email. All questions and answers will be provided via email to all attendees. This meeting is mandatory for all bidders, no exceptions. This meeting will allow each bidding company to inspect the Site and evaluate Site conditions. **A notice of the bidder's intent to attend this meeting is requested to be provided to the Technical Contact via email by the date listed in the Calendar of Events with the "[insert Site name and claim number provided on cover page] – SITE MEETING ATTENDANCE NOTIFICATION".** The name and contact information of the company participant should be included in the body of the email. Notification of intent to attend is appreciated; however, it is not required. **Attendance at the Pre-Bid Site Meeting is mandatory, and each attendee must check in with the Technical Contact on site to record attendance**. Due to circumstances surrounding the COVID-19 pandemic, all attendees should follow CDC safety guidelines. 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, an electronic .pdf version of the signed bid package must be submitted to RA-Bid-Submission@icf.com by the bid due date and time in the Calendar of Events. Bid cost spreadsheets may be submitted in Microsoft Excel format. File sizes in excess of 5 MB are to be submitted using a file share service of your choosing. If you do not have access to a file share service, an email must be sent to RA-Bid-Submission@icf.com, at least 24 hours prior to the bid due date and time, to request access to PAUSTIF's third party administrator, ICF, file share service. Reply messages will be sent to acknowledge receipt of emails. Bid responses will only be accepted from those companies that attended the Mandatory Pre-Bid Site Meeting. Bids attempted to be submitted through ground services such as USPS, UPS, Fed-Ex, etc. or hand delivery will not be considered for selection. PAUSTIF, in its discretion, reserves the right to reject or allow correction to bid submissions that are substantively deficient in some manner, but any late submission will be rejected.

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 returned. If, due to inclement weather, natural disaster, or any other cause, the deadline for submission may be extended. 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.

Bid Requirements

The Bid Submission Coversheet included as Attachment 1 to this RFB must be completed, signed by an authorized representative of the company, and included as the first page of the Bid Submission. Bids that are not signed may be rejected. The name and contact information of the person who is to be contacted in the event the bid is selected by the Solicitor must be listed on the Bid Submission Coversheet.

The Solicitor wishes to execute a mutually agreeable contract with the selected consultant ("Remediation Agreement"). The Remediation Agreement is included as Attachment 2 to this RFB. The bidder must indicate if the Remediation Agreement is accepted with no changes. If changes are proposed, bidder must identify and document proposed modifications to the Remediation Agreement language 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 must be listed on the Required Responses Submission Form (Attachment 3), including, but not limited to, terms and conditions, Exhibits A and B, Site-Specific Assumptions and Provisions; and, will be one of the criteria used to evaluate the bid and will need to be agreed upon by both the Solicitor and PAUSTIF (for funding).

The selected consultant will be provided an electronic copy 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 must complete and include in their bid response the Required Responses Submission Form, included as Attachment 3 to this RFB.

The bidder shall provide its bid cost only in the Bid Cost Submission Form (included as Attachment 4) with descriptions for each task provided in the body of the bid document. No cost information should be provided in the technical submittal. Bidders are responsible to ensure all costs are

provided in the Bid Cost Submission Form, and calculations (including, but not limited to the total bid cost) are accurate; the Bid Cost Submission Form must be signed by an authorized representative of the company. In addition, bidders are required to include, as backup for the Bid Cost Submission Form, a list of bid labor rates and a detailed breakdown of each milestone fixed-cost including, but not limited to, labor, subcontractor costs and mark-up, direct costs, and equipment. Copies of subcontractor quotes and/or estimates should be included as part of the cost submittal backup. The technical score for bids will be based solely on those tasks represented as milestones included in the Bid Cost Submission Form 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.

Each bid will be assumed valid for a period of up to 180 days after receipt unless otherwise noted. The costs quoted in the Bid Cost Submission Form will be assumed 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.

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. Completed Bid Submission Coversheet (Attachment 1), Required Responses Submission Form (Attachment 3) and Bid Cost Submission Form (Attachment 4 and must include supporting documentation).

2. Demonstration of the bidder's understanding of the Site information provided in this RFB, standard industry practices, and objectives of the project.

3. 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).

Bidders must bid the Scope of Work as requested in this RFB. Recommendations for changes/additions to the Scope of Work proposed in this RFB shall be discussed, quantified, and priced separately; however, failure to also bid the SOW "as is" may result in a low technical score. 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.

4. 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.

5. The names and brief resumes and statement of 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)). Resumes should directly follow the Required Responses Submission Form.

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.) as part of the bid cost submission back up. 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. Key exceptions, assumptions, or special conditions that bidder proposes as modification to the Remediation Agreement must be identified and listed on the Required Responses Submission Form (Attachment 3). Please note that referencing extremely narrow or unreasonable assumptions, special conditions, and exceptions will be considered during bid evaluation and may negatively impact technical score.

Bid Review and Evaluation

1. Bid Review and Scoring

   Bid submissions where the bidder was represented at the mandatory pre-bid site meeting and that were properly submitted by the designated due date and time will be accepted for review.

   Clarification & Additional Information

   After receipt of the bids, the USTIF shall have the right to contact Bidders for the purpose of:

   - Seeking clarification of the Bid which informs the USTIF's understanding of statements or information in the Bid;
   - As a result of clarification, determining whether the bidder seeks to withdraw their bid.

   Administrative Evaluation

   USTIF will determine if a bid is administratively qualified based on certain criteria including, but not limited to acceptance of the Remediation Agreement, proposed modifications to the Remediation Agreement, history of terminated Remediation Agreements and demonstration of insurance requirements.

   Technical Scoring

   Bids that are considered administratively qualified are evaluated for technical viability before cost is considered. Bids that have technical scores that are equal to or greater than 70% of the highest technical score will advance to cost scoring. Bids with technical scores below 70% 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)) x 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 double or greater than double the amount of the lowest bid cost 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 TPA staff, and the TPR who assisted in developing the RFB will score all bids that are administratively qualified based on the above criteria. USTIF reserves the right to assign additional non-scoring members to the evaluation committee as needed. 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 had a technical score that allowed the bid to advance to cost scoring, 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 5. The information and documentation has not been independently verified. Bidders may wish to seek out other appropriate sources of information and documentation specific to this Site. If there is any conflict between the general Site background and description provided herein and the source documents within Attachment 5, the bidder should defer to the source documents.

Background Summary

The Former Weiser's Service property ("Site") encompasses ~0.5-acre on the southeast side of PA Route 66 near the town of Lucinda, Pennsylvania. It is improved with two single-story buildings (Building #1 and #2). There are currently no business operations conducted on Site. Site and vicinity are shown on Figure 1 (Attachment 5a). Former Site business operations included retail gasoline sales and automobile service/repair. These operations date back to at least the 1950s, with all operations ceasing in late 2015.

Surrounding properties are a mix of residential and commercial. Site and neighboring properties obtain potable water via private water supply wells or are connected to the public water supply line within the eastern side of the right-of-way (ROW) for PA Route 66. Site and immediate neighboring properties on opposite sides of PA Route 66 to the west (Griebel and Lander) and adjoining north (Hartle) have not yet connected to this available public water line. Reportedly, the Solicitor has installed a water supply line on the Site property, which is connected to the Site building; however, connections have not been completed to the public water line in the road. See Figure 2 for the location of this inactive water supply line. The private water well on-Site remains active supplying potable water to the Site. The locations of the Site and immediate vicinity private water supply wells are shown on Figure 2 (Attachment 5a).

At least two generations of UST systems have operated on Site. The 1st generation UST system was installed in the early 1970s under different ownership and included one 4,000-gallon gasoline, one 3,000-gallon gasoline, and one 550-gallon kerosene/diesel (identified as Tanks 001, 002, 003, respectively). Tanks 001 – 003 were formerly located in three separate tank cavities, north, south, and southwest of Building #1, with the three tanks being closed via removal in May 1992.

A 1,000-gallon "orphan" tank also was formerly located along the south side of "Building #1". This orphan tank reportedly was discovered and found to be filled with pea gravel during the closure work at Tank 003 in 1992.[1] This orphan tank was also removed along with Tanks 001 – 003 in May 1992.

[1] No other information regarding age, type of product stored, and when backfilled in-place was made available.

The 2nd generation UST system (associated with PAUSTIF Claim #2015-0142(W)) was reportedly installed by Solicitor in May 1992 and included one 12,000-gallon compartment UST partitioned into three unleaded gasoline (ULG) tanks (one 9,000-gallon, one 1,800-gallon, and one 1,200-gallon, identified as Tanks 004, 005, and 006, respectively). Tanks 004 – 006 were closed via removal in November 2015 and were formerly located west of Site "Building #1".

Locations of former Tanks 001 – 003, 004 – 006, and the orphan tank are shown on Figure 1 (Attachment 3a).

Release History

There are two documented Site releases, one that occurred in 1992 and the second in 2015.

1992 UST Closure and ULG Release

During the 1992 Tanks 001 – 003 closure work and the discovery of the orphan tank (1,000-gallon UST) next to Tank 003 (550-gallon diesel UST), contaminated sand backfill and soils were noted upon removal of Tank 001 and the orphan tank[2]. Contaminated soil was excavated and removed for disposal. An ULG release was reported to PADEP in July 1992.[3] Soil confirmation samples were collected from the tank excavations and excavated soil stockpile. Only one soil sample, collected from the stockpile, contained petroleum contamination (benzene) exceeding the current PADEP SHS. There is no record that any site characterization or remediation occurred following the 1992 release discovery.

2015 UST Closure and ULG Release (PAUSTIF Claim #2015-0142W)

During the 2015 closure / removal of the 12,000-gallon compartmental UST (Tanks 004 – 006) and associated two dispensers / canopy, contaminated soil was discovered. The visual and odor indications of contamination were discovered beneath the southern dispenser. Approximately 15 tons of soil was excavated from beneath the dispenser and transported off-site for disposal.[4] Closure confirmation soil samples collected from beneath the removed southern dispenser and product piping, along with two water samples collected from the tank cavity contained concentrations of the COCs exceeding SHS.

[2] Site Assessment Report, prepared by Earthworks, date unknown.

[3] Storage Tank & Spill Prevention Act Notification of Contamination Report, dated 7/9/92.

[4] Notification of Contamination form, prepared by Flynn Environmental, Inc., dated 11/12/15.

Site Characterization & Interim Remedial Activities

Site characterization and interim remedial activities (IRA) associated with PAUSTIF Claim # 2015-0142(W) were initiated in June 2016 by Flynn Environmental, Inc. (Flynn). The characterization activities included:

- Completing a geophysical survey;
- Advancing 23 on-property soil borings (SB-1 through SB-23);
- Analyzing soil samples from select soil borings and well borings;
- Installing nine on-property shallow monitoring wells (MW-1, MW-2/MW-2R, MW-3/MW-3R[5], and MW-4 through MW-9) and seven on-property bedrock wells (MW-1B through MW-4B, MW-6B, MW-7B, and MW-8B);
- Installing six off-property monitoring wells (MW-5B and MW-10 through MW-14)[6];
- Analyzing groundwater samples from the 22 monitoring wells, on-property private water supply well, and five off-property private water supply wells;
- Installing and sampling two on-property sub-slab soil vapor points;
- Advancement of one rock core hole (designed as "INJ")[7];
- Installing one on-property bedrock recovery well (RW-1) to be used for remedial pilot testing; and
- Excavation and off-site disposal of contaminated soils as an IRA.

The locations of the soil borings, monitoring wells, and the extent of soil excavations are shown on Figure 2 (Attachment 5a) and the figures in the attached June 2019 SCR (Attachment 5f).

Soil & Bedrock Profile

Unconsolidated deposits at the Site consist of fill material underlain by native soils consisting mainly of clay containing varying amounts of sand, gravel, and weathered sandstone rock fragments. The fill material is generally 0.5 to 5.5 feet in thickness, but in the area of the IRA excavations the fill can extend to a depth of ~19 feet. Wet soil conditions during drilling in the overburden material was reportedly first encountered at a depth of ~1.5 to 11 feet below grade. A sandstone bedrock was encountered at the Site at a depth of ~8.5 to 19 feet below grade. Soil and bedrock conditions are similar off-property with bedrock encountered at ~13 to 22 feet.

[5] Shallow wells MW-2 and MW-3 were abandoned prior to the IRA excavation and replaced with MW-2R and MW-3R.

[6] Although off-property wells MW-10 through MW-14 are constructed with screening in both the overburden and bedrock, these wells are considered monitoring the bedrock groundwater as water levels are typically within the bedrock.

[7] Boring was intended to be used for an injection pilot test to ascertain the feasibility of injecting remedial reagents; however, no injection test was performed by Flynn.

During the rock coring drilling of the boring for well MW-8B and the “INJ’ well, at a depth of ~30 feet, air pressures from the drilling activities affected wells MW-2B, MW-3B, MW-6B and RW-1 as the well caps popped off and groundwater was ejected from the wells suggesting connection of the bedrock fractures across the Site.

Resolution of Soil via IRA

Soil contamination appears to have been fully addressed via IRA excavations. Two separate IRA soil excavations were completed in June 2018 that included the area of the former dispensers and wells MW-2 and MW-3, and the area occupied by former Tank 001 and MW-4. Excavation locations and dimensions are provided in Appendix K of the June 2019 SCR (Attachment 5f). Post-excavation sidewall soil sampling results were determined to be sufficient to demonstrate attainment of the PADEP’s Residential SHS for soils via statistical 75% 10x rule at both excavation locations (see Figure 7b and Appendix K of the June 2019 SCR in Attachment 5f). Reportedly, the smaller excavation completed in the area of former Tank 001, was backfilled with native material from the site, and the larger excavation in the area of the former dispenser island was backfilled as follows – sandstone / sandy shale rock fragments of various sizes from the bottom (19 feet) to 15 feet; loam / fill soil from 15 to 2 feet; sandstone / sandy shale rock from 2 feet to 0.5 foot; and limestone gravel from 0.5 foot to grade. The below photograph reportedly shows the character and placement of the sandstone / sandy shale rock.

Source: Flynn Environmental, Inc. Used with permission.

Groundwater / Hydrology

Groundwater is found in both overburden and in shallow bedrock zones. Overburden static groundwater levels vary widely from less than one foot to almost 21 feet below top of casing (TOC). Groundwater flow in the overburden appears generally to the north, with very localized radial flow in the area of wells MW-2R and MW-3R, and well MW-6 due to mounding. Static groundwater levels within the bedrock on-property ranges from ~10 to 34 feet below TOC, and off-property ranging from ~17 to 31 feet below TOC. Bedrock groundwater flow appears to be generally to the northwest.

Dissolved Groundwater Contamination

The overburden dissolved ULG contamination appears to have been adequately remediated by the IRA soil excavations. Although overburden POC MW-5 had contained benzene above PADEP's SHS during one of 15 quarterly sampling events following the June 2018 soil excavations, it appears attainment can be demonstrated via the 75%, 10X statistical rule.[8]

Bedrock groundwater contamination is the focus of remediation. Concentrations of benzene, 1,2,4-TMB, and/or 1,3,5-TMB exceed the SHS in on-property bedrock wells MW-2B, MW-3B, MW-4B, and MW-7B, and off-property downgradient wells MW-10 and MW-11. Naphthalene also exceeds the SHS at one on-property well, MW-3B.

Light Non-Aqueous Phase Liquid (LNAPL)

LNAPL was first, and only observed, in late 2020 in one on-property well, MW-3B, at measured thicknesses of 0.15 feet on 9/29/20 and 0.02 feet on 12/14/20. The appearance of LNAPL during the 3rd and 4th quarters of 2020 coincides with the historical low water levels at MW-3B with greater than 30 feet below top of casing recorded.

Private Water Supply Wells

Private water supplies that have been sampled include – the on-property Weiser water supply well (unknown depth); the Lander well (60 feet deep); the two Griebel wells (shallow & deep of unknown depths); and the two Hartle wells (25 feet & 90 feet deep).

No contaminants have been detected in the on-property supply well. In the off-property Lander water supply well, petroleum contaminants have been detected on a few occasions but with concentrations below PADEP's SHS for used residential aquifers. Most of the detections were identified as estimated concentrations below the laboratory reporting limit. No contaminants have been detected in the Hartle's deep well in concentrations exceeding the laboratory reporting limits.

[8] The 1,2,4-TMB detections in overburden MW-5 do not exceed the recently revised TMB SHSs.

The Hartle's shallow well had 1,2,4-TMB detections on two occasions, with a concentration of 1,2,4-TMB above the laboratory reporting limit on one of the two occasions, and below PADEP's SHS. The Griebel's wells were sampled on three occasions with no detections. The limited data is due to access issues (i.e. property owners not being available to provide access to the wells).

Soil Vapor

None of the sub-slab soil vapor samples exceeded PADEP's 2017 soil gas screening levels.

Solicitor's Selected Closure Standards & Remedial Approach

Cleanup Standard

Solicitor's chosen cleanup standard is PADEP's residential SHS for both soil and groundwater. While Solicitor had entertained PADEP's more relaxed site-specific clean-up standards (SSS), complications arose with neighboring properties / owners that could not be reasonably resolved in a timely fashion.

The SHS cleanup is memorialized in Solicitor's 5/11/17 SCR/RAP, 6/25/19 SCR and 8/12/19 RAP. The RAP prescribes vacuum-enhanced groundwater extraction (VEGE) to remediate bedrock groundwater to attain the residential SHS. PADEP subsequently provided approval of the remedial goals and proposed approach (with no comments/modifications) via letter to the Solicitor dated 10/18/19.

VEGE Pilot Testing

VEGE pilot testing was performed in April 2019. Bedrock recovery well (RW-1), located near the former dispensers, was used as the pilot study extraction point. Overburden and bedrock monitoring wells along with the Lander and Hartle water supply wells were monitored during the feasibility testing. The feasibility testing included:

- A 40-hour long groundwater pump test at RW-1, which reportedly achieved a sustained yield of about 1.25 gallons per minute (gpm) with widespread hydraulic influence recorded in the bedrock water bearing zone.
- Subsequent VEGE pilot testing at an initial vacuum of 24 inches of mercury (in Hg) followed by a reduced 12 in Hg. vacuum. Reportedly, with applied vacuum of 24 in Hg, the sustained yield increased to ~1.82 gpm and generated a hydraulic radius of influence (ROI) on the order of 100 feet. Hydraulic influence was noted, to some extent in the overburden. The 12 in Hg vacuum reportedly yielded subsurface air flow at an extraction rate of roughly 50 standard cubic feet per minute (scfm). Pneumatic influence was not

expected in the saturated bedrock and overburden pneumatic influence was inconclusive since there was insufficient data available from testing.

The Hartle deep water supply well (90 feet) operated episodically during the pilot test. As a result, the pilot test monitoring data was able to show a hydraulic connection between the 90-foot deep Hartle supply well and the 60-foot deep Lander supply well. Pilot test hydraulic monitoring data showed that the pumping of the Hartle deep supply well (90-feet depth) directly influenced the water level in the Lander supply well (60-feet depth). Although the degree of hydraulic connection between shallower Site bedrock wells (e.g., RW-1 ~40 feet) and the Lander & Hartle water supply wells has not been established, it is conceivable that extraction from the RAP-approved full-scale system may have some effect on these and other (Griebel)[9] nearby water supply wells.[10] Therefore, bid responses shall consider these nearby private water supply wells when deciding the bid remedial approach / final design.

Re-Infiltration Pilot Test

Practical options for discharging treated water to the storm drain or to a local POTW are limited. The nearby storm drain in the adjoining PennDOT roadway discharges onto private property (Ochs Lumber Property), at the headwaters of an intermittent drainage swale. Discharging treated groundwater to this headwater location would most likely require access and permission from both PennDOT and the private landowner. Access to a public sanitary sewer is not available. The closest creek / public roadway intersection / potential discharge location may be where Little Toby Creek crosses beneath Sarvey Mill Road; discharge to this location would require over 3,600 feet of trenching /piping.

Therefore, re-infiltration testing was performed to assess the capacity of the former UST excavation to be used to reinject treated groundwater from the RAP-specified VEGE remedial alternative. Re-infiltration testing performed included the re-infiltration of potable water into existing shallow overburden well MW-2R, installed and screened within the former UST excavation backfill and the underlying weathered bedrock. Results of the testing suggested that reinjection rates of up to 2 to 3 gpm could be accommodated for most of year, with exception to times (e.g. March/April) when water levels in MW-2R and MW-3R (also installed/screened in the UST excavation backfill)[11] rise to levels close to the surface. Test information suggests that former UST field water level controls would need to be incorporated into the VEGE remedial system to cycle the system if water levels rose too high at any time. This re-injection flow rate restriction means that only one to two of the RAP's planned 5 recovery wells could be operated

[9] Flynn was not provided access to the Griebel water supply wells during the pilot testing.

[10] If the full-scale VEGE system excessively diminishes the yield or use of the nearby private water supply wells during the monitoring program, work required to resolve this water supply issue would be considered on a T&M basis outside the current scope of work described for the remediation agreement.

[11] MW-3R is installed/screened only to 16 feet, above the rock backfill and did not show any change in water level during the test.

simultaneously. Given the data recorded during the VEGE pilot test showed some hydraulic influence on groundwater in the overburden, suggests that groundwater extracted from the bedrock would be expected to at least temporarily increase infiltration rates of the treated influent.

Scope of Work (SOW)

This RFB seeks competitive bids from qualified contractors to perform the activities in the SOW specified herein. The treated water discharge difficulties associated with the RAP remedial approach were discussed with the PADEP case manager in March 2022 along with potential modifications / alternatives to the RAP remedy (Alternatives 2 and 3 below). Additionally, the PADEP Northwestern Regional Office (NWRO) was given the opportunity to review the SOW; however, no comments were provided by PADEP.

Objective

1) **Alternative 1 – VEGE Remediation as per the PADEP-approved RAP.** This alternative would include the installation of a VEGE system to mitigate contaminated bedrock groundwater using the five recovery wells as per the RAP. Bidders are required to provide, in detail, convincing demonstration of how/where the treated groundwater could be permissibly discharged to the surface and if proposing to discharge to the PennDOT stormwater, how approvals would be gained from PennDOT and owners of land (Ochs Lumber Property) that the PennDOT storm water / creek crosses. Bid responses that do not provide convincing details and rationale on the NPDES discharge location and obtaining necessary approvals will reduce the favorability of the bid during evaluation by the bid evaluation committee, having a significant negative impact on the bid score. For purposes of fixed price bidding, this alternative assumes an operation and maintenance (O&M) timeframe of the VEGE system for four full years (85% minimum operational efficiency) after which, a demonstration of attainment of the residential SHS may be made for groundwater; OR
2) **Alternative 2 – Modified VEGE (reduced number of recovery wells and re-infiltration of treated groundwater).** This alternative would include the installation of a VEGE system to mitigate contaminated bedrock groundwater with the following modifications – 1) reduce the number of VEGE recovery wells to two (existing RW-1 and one new bedrock recovery well adjacent to LNAPL area); 2) operation would involve only one or both recovery wells at a time since the volume of treated groundwater infiltration would be limited using the former UST excavation area; 3) given the moderately high (15 – 16 mg/l) iron concentrations identified during pilot testing on-Site, this alternative shall include either an iron sequestration or an iron filtration/ removal system to limit fouling problems / operational costs associated with treatment and infiltration equipment / systems (bidder shall provide technical rationale for bid approach); 4) reinfiltrating treated groundwater into the former UST backfilled excavation area that removed source material from the area of former dispenser island; 5) installation of primary and backup infiltration wells (backups activated in turn if primary gets clogged); and 6) water level controls used in the infiltration area to control system operation to prevent treated water from surfacing and ponding in the former UST excavation area. For the purposes of fixed price bidding, this alternative

assumes an O&M timeframe of the VEGE system of three full years (85% minimum operational efficiency) after which a demonstration of attainment of the residential SHS may be made for groundwater; OR

3) **Alternative 3 – Modified VEGE (reduced number of recovery wells and re-infiltration of treated groundwater), and injection of pulverized carbon into the shallow bedrock (CBI).** This alternative would include the installation of a VEGE system to mitigate contaminated bedrock groundwater with the following modifications – 1) reduce the number of VEGE recovery wells to two (existing RW-1 and one new bedrock recovery well adjacent to LNAPL area); 2) operate one or both recovery wells at a time given the limited volume of treated water that can be reinfiltrated into the former UST excavation; 3) given the moderately high (15 – 16 mg/l) iron concentrations identified during pilot testing on-Site, this alternative shall include either an iron sequestration or an iron filtration/ removal system to limit fouling problems / operational costs associated with treatment and infiltration equipment / systems (bidder shall provide technical rationale for bid approach); 4) reinfiltrating treated groundwater into the former UST backfilled excavation area that removed source material from the area of former dispenser island; 5) installation of primary and backup infiltration wells (backups activated in turn if primary gets clogged); 6) level controls used in the former UST excavation infiltration area to control system operation to prevent treated water from surfacing; and 7) performing CBI within the bedrock hydraulic capture zone within the area of impacted wells along the downgradient property boundary (bidders will be required to identify the target bedrock depth interval for each of the injection locations). For the purposes of fixed price bidding, this alternative assumes an O&M timeframe of the VEGE system of two full years (85% minimum operational efficiency) after which a demonstration of attainment of the residential SHS may be made for 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 PADEP 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 execute 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 for 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, Title 25, Chapter 250 - Administration of Land Recycling Program;
- The PADEP Land Recycling Program Technical Guidance Manual dated January 19, 2019 (Technical Guidance Document 261-0300-101); 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, the selected consultant shall:[12]

- Conduct necessary, reasonable, and appropriate project planning and management activities. 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). 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. 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

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

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 property owner with adequate advance notice prior to each visit to the property. The purpose of this notification is to coordinate with the Solicitor and property owner 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:

Property and Off-Property Access. Selected consultant will be responsible for securing access to the property with the current contact for the Estate of Jeffrey P. Weiser, Ms. Emily A. Weiser, and off-property access where needed to implement the remedial approach. Work required to negotiate, and secure access shall be included within the fixed price of the associated milestones for which access is necessary. It is reasonable to assume that Solicitor 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.

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 used 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 additional site characterization work that will be completed in advance of finalizing the remedial approach design and moving ahead with its implementation. 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., iron and sediment sampling); 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.

Bidders may elect to accept the data provided in technical documents and propose no additional site characterization tasks as part of their bid submission. If so, bidder must include a statement in the bid response accepting the existing data and proposing no additional site characterization tasks. For purposes of bidding, and to ensure consistent cost scoring of bids, each bidder will still enter exactly $10,000 as the bid price for Milestone A in the Bid Cost Spreadsheet. If the bid is selected by Solicitor, the milestone will be included in the Remediation Agreement as an optional milestone. Solicitor and PAUSTIF approval will be required prior to initiating any additional site characterization activities under the milestone. 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 other requested documentation to support PAUSTIF reimbursement and completion of this Milestone.

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

Each bidder proposing additional site characterization activities, shall describe in detail its scope of work 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 Flynn's June 2019 SCR and August 2019 RAP (Attachment 5f and 5e, respectively), and the other documents provided in Attachment 5, rather than relying solely on the summary information presented in this RFB.

Example potential activities for bidders to consider may include tasks such as – collecting groundwater samples to better determine the distribution of residual contamination and mass, assessing the former excavation backfill material / infiltration geotechnical properties, and/or evaluate the potential for and mechanisms to avoid treatment system fouling (i.e. iron, sediment). 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 a VEGE remedial system in their response to this RFB. To support the feasibility of the bidder's proposed VEGE remedial technology, approach and design, a pilot test shall be conducted. The purpose of the VEGE pilot test is to confirm that the bidder's proposed VEGE 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 VEGE pilot testing including objectives and rationale, the use of existing or installation of new data monitoring/collection points (e.g., re-infiltration well), proposed methods and equipment to be used, data that is proposed to be collected, and identifying any concerns with the project file pilot testing and perceived data gaps. If either Alternative 2 or Alternative 3 is bid and the bidder will therefore perform a re-infiltration pilot test, bidders shall propose methods that avoid scheduling this testing during times of increased precipitation (e.g. April/May) given that the groundwater fluctuations in the shallow wells within the former UST excavation backfill are likely influenced by precipitation. The

infiltration testing shall be proposed of sufficient duration to provide a reliable understanding of long-term, sustained infiltration rate potential with water levels stabilized beneath the surface.

Bidders 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 hydraulic ROI of at least X feet;
2. A single well vacuum-assisted sustained groundwater extraction yield between Y and Z;
3. A sustained re-infiltration rate potential of at least AA gpm per excavation injection well; and
4. Iron and manganese levels within groundwater at or below BB and CC milligrams per liter (mg/L)."

These are only examples. 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 their technical review. Unrealistic critical criteria, or unreasonable or too narrowly restricted critical criteria will reduce the favorability of the bid as viewed by the bid evaluation committee and will have a significant adverse impact on bidder's technical score.

Please note that all bidders shall perform a VEGE 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 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 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 collected during Milestone B. Exhibit A of the Remediation Agreement (Attachment 2) 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 and that the cost and/or period of time necessary to remediate the Site is materially increased, or that it is no longer practicable to implement all or part of the Scope of Work, Section 11, New Condition, of the Remediation Agreement will apply.

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 I (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 I (excluding B) is determined to be $500,000, 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 account for the added work necessary to document the supplemental site characterization activities/findings and pilot testing in a standard RAPR completed under 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 (Alternative 1) or RAPA (Alternatives 2 or 3) 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. The RAPA shall include design drawings including a process flow diagram (PFD), a piping and instrumentation diagram (P&ID), and an equipment layout plan.

If preparing the 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.[13]

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

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 Pre-Remediation 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 F6). For the purposes of this RFB, it is assumed that this work will be required for three quarters. However, each bid must specify the number of quarterly events that will be needed prior to, and during implementation of Milestone F6 along with their supporting rationale. Any additional quarterly monitoring and reporting events, beyond the three 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.[14]

Each groundwater monitoring and sampling event shall include the sampling of – existing on-property shallow wells MW-1, MW-2R, MW-3R, and MW-5 through MW-9; on-property bedrock wells MW-1B through MW-4B, MW-6B, MW-7B, and MW-8B; and existing off-property bedrock wells MW-5B and MW-10 through MW-14.[15] The quarterly events shall also include the sampling of the on-property potable supply well and the following off-property private water supply wells – one at the Lander's property; two at the Hartle's property; and two at the Griebel's property.

During each quarterly groundwater monitoring and sampling event, and prior to any well purging, the depth to groundwater shall be gauged at all existing available monitoring wells. 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 and private water supply wells designated for sample collection shall be purged and sampled in accordance with the PADEP Groundwater Monitoring Guidance Manual and standard industry practices. Bidders shall manage purged groundwater and other derived IDW generated by the well purging and sampling activities in accordance with the PADEP NWRO guidance. Private water supply wells shall be sampled as close to the well as practical and prior to any treatment or filtering equipment. Given that a carbon treatment system exists on

[14] The Remediation Agreement includes a Provision that the quarterly site monitoring, sampling & reporting events are limited to the three 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.

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

the water well at the Lander's property, each sampling event at the Lander's property will include an influent (pre-treatment), mid-fluent, and effluent sample.

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. Samples from the water supply wells shall be analyzed by USEPA Method 524.2. Bidders shall specify the analytical methods to be used for the monitoring well and private water supply samples. Appropriate quality assurance / quality control (QA/QC) samples shall also be collected during each event and analyzed for the same parameters.[16] In addition, each event shall include field measurements at each of the monitoring wells 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 operation and progress made toward installation/startup of the remedial approach;
- 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;
- Tabulated LNAPL recovery estimates, if necessary;
- Groundwater elevation contour maps depicting groundwater flow direction – separate maps for the overburden and bedrock groundwater;
- Tabulated historical quantitative groundwater analytical results including results from the current quarter;
- Current quarter laboratory analytical report(s);
- Graphical depiction of LNAPL thickness across the site and per well and total recovery estimates over time;
- One site-wide iso-concentration contour map for each compound detected in any one well above the SHS during the quarter – separate maps for overburden and

[16] 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.

bedrock groundwater;[17]

- 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 F6). 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).

In addition, this milestone shall also include providing only the groundwater data from off-property monitoring wells MW-11 through MW-14 to the owner of the Lander property (Ms. Julie Lander) along with the data from the Lander's potable water supply well; the groundwater data from off-property MW-5B and the two Hartle potable supply wells to the owner of the Hartle property (Mr. Dennis Hartle); and the sampling data from the two Griebel private water wells to the owner of the Griebel property (Mr. Michael & Mrs. Carrie Griebel). A copy of the approved reporting for these off-property well locations is provided in Attachment 5j for guidance.

Milestone E – Pre-Remediation LNAPL Testing. No data has been collected concerning the physical and hydraulic properties of the LNAPL. Therefore, in order to establish hydraulic parameters for the LNAPL and assist with demonstrating recovery to the maximum extent practicable (MEP), the bidders shall perform the following testing if LNAPL should appear in bedrock well MW-3B, or any other bedrock wells prior to start-up of the VEGE system (Milestone F6).

[17] 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.

Milestone E1. LNAPL Transmissivity Testing. Bidders shall provide a firm fixed-price cost to perform single well transmissivity tests on MW-3B, or any other bedrock well that may exhibit measurable LNAPL, and each bid must identify the most likely well to be used for transmissivity testing, rationale, and provide a description of the proposed transmissivity test procedures and the planned techniques for reducing the data. Each bid response must also identify the amount of LNAPL necessary in order to perform the transmissivity testing. The transmissivity tests shall be performed in accordance with accepted industry standards and the data shall be reduced / evaluated using appropriate methods. (e.g., ASTM E2856). Documentation of the transmissivity testing methods, results, and conclusions shall be provided in the reporting for Milestone C or Milestone D, and the transmissivity testing results shall be utilized when demonstrating that LNAPL has been recovered to the MEP in the Remedial Action Closure Report (RACR) in Milestone H.

If an adequate LNAPL thickness, as identified by the selected bidder, is not measured in one of the bedrock monitoring wells, resulting in the transmissivity testing not able to be completed prior to implementing the remedial approach, then the selected bidder would not be reimbursed for this milestone. The successful bidder will only be reimbursed for necessary tasks actually performed.

Milestone E2. LNAPL Physical/Chemical Properties. Bidders shall provide a firm fixed-price cost to perform testing on a LNAPL sample to evaluate the chemical/physical properties of the LNAPL. This testing may include, but is not limited to, vapor pressure, density, viscosity, solubility, and mole fractions. Each bid must identify the most likely well to be sampled, number of samples, and provide a description of the proposed test procedures and how the data would be used. Each bid response must also identify the amount of LNAPL necessary in order to perform the proposed testing. The proposed tests shall be performed in accordance with accepted industry standards. Documentation of the testing methods, results, and conclusions shall be provided in the reporting for Milestone C or Milestone D, and also utilized when demonstrating that LNAPL has been recovered to the MEP in the RACR in Milestone H.

If an adequate LNAPL thickness, as identified by the selected bidder, is not measured in one of the bedrock monitoring wells, resulting in the proposed testing not able to be completed prior to implementing the remedial approach, then the selected bidder would not be reimbursed for this milestone. The successful bidder will only be reimbursed for necessary tasks actually performed.

Milestone F – 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 #s 1, 2, or 3 as described in the bidders modified RAPR or RAPA.

Milestone F1. Installation of Recovery Wells. Under this task, bidders shall provide a firm fixed-price cost for installing the four additional VEGE recovery wells as described in the RAP (remedial Alternative 1) or an alternative one additional recovery well as per remedial Alternative #2 or #3. A bidder that has chosen remedial Alternative #2 or #3, shall explicitly identify the location of proposed VEGE well along with their rationale. Each bidder shall independently consider the final location relative to utilities, bidder's own interpretation of groundwater flow variations, evaluation of the available remedial feasibility testing data, and configuration of the bedrock dissolved-phase plumes. Each bid response must provide the proposed labeled (with distinct identification) well location on a site drawing, along with their rationale for the location.

The borings for the remediation wells shall be advanced into bedrock to a depth no greater than 40 feet per the RAP. Although the RAP provides a depth range of 40 to 45 feet, the depth is to be limited to 40 feet to limit the potential for adverse hydraulic impacts to nearby residential water supply wells. If a bidder believes the recovery well depths should be shallower or deeper than 40 feet, the bidder shall provide an alternative depth along with their rationale. Bidders shall assume examining and describing drill cuttings / soil cores for lithology, groundwater occurrence, and potential staining / odor indicative of hydrocarbon contamination. No soil samples will be collected from the well borehole for laboratory analysis.

The remediation wells shall be constructed in general accordance with the PADEP Groundwater Monitoring Guidance Manual. Each bidder in the bid response shall indicate the drilling methods used to advance boreholes, total depth for each well, and well construction details (i.e. well casing diameter, screened interval, sand pack, etc.). Final construction of the VEGE recovery wells must ensure that the screened interval intersects the depth interval where LNAPL was first observed in MW-3B, and accounts for seasonal groundwater fluctuations of the shallow bedrock water table.

Each bid response shall describe and include in the fixed-price: (i) identify subsurface utilities and other buried features of concern including, but not necessarily limited to, contacting PA One Call and clearing the borehole location to a minimum depth of 5 feet using vacuum excavation; (ii) well development activities; (iii) management of IDW; and (iv) professional surveying of the new well locations and top-of-casing elevations relative to the site's known benchmark. Well drilling / installation and development along with supporting documentation (e.g., waste manifests, boring logs and construction details, etc.) shall be documented in a quarterly RAPR (Milestone D).

Milestone F2. Installation of Re-Infiltration Wells (Alternative #2 or #3). Under this task, bidders shall provide a firm fixed-price cost for installing re-infiltration wells within the backfilled soil excavation in the area of the former USTs and dispenser island. A bidder that has chosen remedial Alternative #2 or #3, shall explicitly identify the location of the proposed re-infiltration wells along with their technical rationale. Each bidder shall independently consider the final location relative to utilities, evaluation of the available feasibility testing data, and configuration of the former excavation. Each bid response must provide the proposed labeled (with distinct identification) well locations on a site plan, along with their rationale for the locations.

The borings for the re-infiltration wells shall be advanced through the former UST excavation backfill into the underlying weathered bedrock to a depth of 24 feet. If a bidder believes the re-infiltration well depths should be shallower or deeper than 24 feet, the bidder shall provide an alternative depth along with their technical rationale. Bidders shall assume examining and describing drill cuttings / soil cores for lithology and groundwater occurrence. No soil samples will be collected from the well borehole for laboratory analysis.

The re-infiltration wells shall be constructed in general accordance with the PADEP Groundwater Monitoring Guidance Manual. Each bidder in the bid response shall indicate the drilling methods used to advance boreholes, total depth for each well, and well construction details (i.e. well casing diameter, screened interval, sand pack, etc.). Final construction of the re-infiltration wells must ensure that the wells are screened within the excavation backfill and underlying weathered rock and account for seasonal groundwater fluctuations.

Each bid response shall describe and include in the fixed-price: (i) identify subsurface utilities and other buried features of concern including, but not necessarily limited to, contacting PA One Call and clearing the borehole location to a minimum depth of 5 feet using vacuum excavation; (ii) well development activities; (iii) management of IDW; and (iv) professional surveying of the new well locations and top-of-casing elevations relative to the known site benchmark. Well drilling / installation and development along with supporting documentation (e.g., waste manifests, boring logs and construction details, etc.) shall be documented in a quarterly RAPR (Milestone D).

Milestone F3 – In-Situ VEGE Remedial System Final Design, Equipment Purchase, and Assembly. Any equipment[18] 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 contaminant-free and 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 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, warranties and as-built drawings shall be provided to the Solicitor.

[18] 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.

If choosing remedial Alternative #2 or #3, either iron sequestration or iron filtration/removal equipment shall be included in the fixed price cost for these milestones. Bidders shall review the iron and manganese data provided in the PADEP approved RAP (Attachment 5e) and identify bid equipment along with rationale and associated costs within the fixed price cost for this milestone.

Please note that the proposed remedial system shall be equipped with some form of telemetry as indicated in the PADEP approved RAP. Bidders shall describe the proposed telemetry system, it's capabilities and what it will monitor. 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 for use in documenting remedial system up-time in Milestone F7. 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 F4. 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 F5 – In-Situ VEGE 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 and between the equipment compound and the discharge location(s).

Under remedial Alternative #1, connections of treated water discharge piping to existing storm sewers shall meet all regulatory, PennDOT and permit requirements. The closest storm sewers and catch basins are located in the adjoining PennDOT SR 66 ROW (see Figure 3 in Attachment 3a), with the stormwater outfall location ~150 feet north/northwest of the Site on the opposite side of SR 66 as shown on Figure 3 (and Figure 1 in Attachment 3a). Bidders proposing this discharge location shall provide clear and convincing evidence that the bidder will be able to secure both PennDOT approval for the tap-in and approval from the landowner for the added discharge to flow across their property. If a bidder chooses an alternative discharge location associated with

Alternative #1 (e.g., along Sarvey Mill Road, greater than 3,600 feet away), the details of how this would be accomplished will need to be thoroughly and convincible described in the bid response.

If proposing remedial Alternative #2 or #3, bidders shall include in Milestone F5 a description and associated cost for the installation of the level/float controls within the re-infiltration wells to control VEGE system operation if the water levels in the re-infiltration wells becomes too shallow and would turn off the VEGE system and be able to re-start system when water levels decline to a lower level. Each bid shall include the make/model of the level/float controls to be used, taking into consideration potential iron/dispositional issues, and describe installation, including the anticipated high-low set level depths for each level control. Bidders should also describe how the treated water would be discharged into the re-infiltration well(s) to avoid any disturbance to the level/float controls and accidental downtime of the VEGE system.

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. Bids shall clearly describe the proposed activities to complete this milestone.

Milestone F6 – Final Connections and Startup / Trouble-Shooting of the In-Situ VEGE 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 startup / 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 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 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, uptime/runtime, 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 agreement with the remedial system final, as-built 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 / troubleshooting and when the system is fully operational in order to advise that the system is ready for ICF / PAUSTIF, and PADEP inspection(s).

Milestone F7 – VEGE 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;[19] quarterly groundwater, monitoring, and sampling of the on- and off-property monitoring wells; system operation up-time, and reporting. The 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 F7 activities will be required for 16 quarters (four years) for Alternative #1, 12 quarters (three years) for Alternative #2, and eight quarters (two years) for Alternative #3. 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 groundwater contaminant concentrations to below residential SHS, enabling initiation of groundwater attainment demonstration.[20][21] 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 16 quarters (Alternative #1), 12 quarters (Alternative #2), or 8 quarters (Alternative #3) specified in this RFB (i.e., if a bidder believes it can complete the Alternative #1 remediation in a total of 20 quarters of O&M, the additional number of quarters to be included on

[19] Electric use; telephone, cable, internet service; and any discharge will be reimbursed as time and material cost adders to the Remediation Agreement.

[20] 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.

[21] 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.

the Bid Cost Spreadsheet is four quarters). If the bidder's O&M remediation timeframe exceeds the RFB-specified 16 (Alternative #1), 12 (Alternative #2), or 8 (Alternative #3) quarters, the number of quarters exceeding the number assumed in the RFB will be incorporated into the Remediation Agreement as Optional Cost Adder Milestone F7. Bidders shall assume that the remediation will need to continue until the contaminant concentrations in all of the point of compliance (POC) wells (as defined in Milestone G) are either below the PADEP SHS or "non-detect" for at least two consecutive quarterly monitoring and sampling events. Under these remediation "Termination Criterion" conditions, it is deemed reasonable to initiate the groundwater attainment demonstration. Each bid must explicitly state bidder's understanding of the project remedial timeframe and the remediation "Termination Criterion" criteria, for when the remedial system would be discontinued, allowing groundwater attainment sampling to 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. The fixed price for this milestone shall include the necessary work to maintain any iron sequestering or iron filtration/ removal equipment / system, along with any sampling associated with the equipment and/or discharge permits.

- *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 groundwater is being recovered and the expected groundwater yield is not exceeded, design vacuum is being applied to the well heads, reveal hydraulic and 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.
- *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 logged by system instrumentation and monthly run-time meter readings for the VEGE extraction blower shall be reported in each quarterly RAPR. If less than 85% uptime has been achieved, documentation of operation 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 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, unless the 85% uptime cannot be maintained due to system downtime caused by high water levels in the infiltration well(s), if applicable.

- *Compliance monitoring* shall include system and site sampling needed to demonstrate compliance with permits and other applicable regulatory requirements. Under remedial Alternative #1, bidders shall assume that the NPDES sampling will per performed as per the PAG-05 Discharge Monitoring Report (DMR) parameter and frequency monitoring requirements. Documentation of compliance shall be provided to the Solicitor in quarterly RAPRs and in any other reporting required by permitting agencies (i.e. PADEP).

The quarterly groundwater monitoring and sampling events will include the on- and off-property monitoring wells and private water supply wells as detailed in Milestone D. If a RAPA is proposed which includes fewer or more wells, this should be explicitly stated in the Milestone F7 response and accounted for in the bidder's Milestone F7 quarterly and total cost. Groundwater samples shall be analyzed as detailed in Milestone D. During the quarterly sampling events, bidders shall keep the VEGE system operating during the monitoring and sampling events, until the last year of O&M. During the last scheduled year of O&M, the VEGE system shall be idled at least two weeks prior to the scheduled quarterly monitoring and sampling event and restarted immediately upon completion of the sampling event.

The RAPRs shall be prepared as detailed in Milestone D, with the addition of the following:

- A summary of site operations and remedial progress made during the reporting period, including estimates of contaminant mass recovery by the VEGE extraction along with LNAPL recovery estimates, if necessary. These estimates shall be based on accurate groundwater recovery and air flow rate measurements and laboratory analyses of extracted groundwater and air (pre-treatment) samples collected at the same location. Laboratory analyses of the air samples shall include the ULG short list parameters[22] plus TPH (C4-C12), collected quarterly at a minimum;
- Graphical depiction of LNAPL thickness and recovery estimates over time, including an evaluation to demonstrate LNAPL recovery to the MEP, if applicable;
- Evaluation of system performance including TPH contaminant mass recovery quantification for the quarter and cumulatively, and system optimizations performed;
- Hydraulic and pneumatic influence measurements each quarter to demonstrate the effectiveness across the treatment area;

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

- If applicable, groundwater chemistry measurements indicating successful influence of applied pulverized activated carbon technology at the bedrock wells along the downgradient POC wells (Milestone F8); and
- 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.

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 G). If, in order to achieve the cleanup goals, it is necessary to extend the period of O&M beyond the RFB-specified 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 F7. Consultant shall seek and obtain written approval from Solicitor and PAUSTIF to continue operation of the remedial system (Optional Cost Adder Milestone F7).[23]

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).

Milestone F8 – Enhanced *In-Situ* Bioremediation via Injection of Pulverized Activated Carbon. If a bidder has chosen remedial Alternative #3, bidders are required under this milestone to provide a detailed work scope and fixed price cost for the injection of a pulverized activated carbon (PAC/CBI) technology into the bedrock in the area of the impacted wells MW-2B, MW-3B, MW-4B, and MW-7B to address the residual contamination exceeding the SHS at those locations. Bidders shall assume that the injections would be applied to the periodic saturated / smear zone and saturated zone of the bedrock to aid in reducing contaminant concentrations along the downgradient POC. Each bid must provide a schedule for when the injection event would occur, a site plan showing the proposed injection locations, permitting, details regarding the proposed manufacturer and product model / composition, design 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 target 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

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

event. For the purposes of this RFB, it is assumed that only one injection event would be required to assist in reducing contaminant concentrations at these locations. 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 G). 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 F8-1.

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) abandoning borehole(s) and surface restoration; and (iii) managing IDW. Detailed description of this work and any supporting records (e.g., waste manifests, etc.) shall be documented in a quarterly RAPR (Milestone F7).

Milestone F9 – Engineering Performance Review. After the fourth quarter of consistent remedial system operation, the selected bidder shall complete an engineering performance evaluation of the remedial system in the fourth 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 fourth quarter of operation. Milestone F9 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 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:

- Groundwater extraction rates:
- Continuous water level monitoring in the former UST excavation area (Alternatives 2 and 3);
- Hydraulic yield and pneumatic influence measurements for the operating in-situ VEGE remediation system;
- Quantified liquid, vapor-phase, and LNAPL contaminant mass recovery estimates;
- Changes in LNAPL thickness, if necessary and recovery rates:

- Groundwater quality improvement trends before and after initiating remediation and changes to contaminant distribution;
- Whether or not remedial system performance uptime has met the 85% requirement; 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.

Milestone F9 shall reflect an understanding that the selected bidder will prepare the final Remedial Performance Evaluation Report (RPER) for Solicitor's, PAUSTIF'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 F9, and the activities shall also be reported in a concurrent RAPR.

Should the selected bidder ultimately identify deficiencies and recommend actions to optimize remedial effectiveness in the RPER, 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.

Milestone G – 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.[24] Each groundwater monitoring and sampling event shall include the sampling of – a) on-property shallow POC wells MW-1, MW-3R, MW-5, MW-7, MW-8, and MW-9; b) on-property bedrock POC wells MW-1B through MW-4B, MW-6B, MW-7B, and MW-8B; off-property defacto POC wells MW-5B and MW-10 through MW-14; on-property shallow interior well MW-2R, on-property water supply well, and private water supply wells off-property, one at the Lander's property, two at the Hartle's property, and two at the Greible property. If a RAPA is proposed which includes fewer or more wells, this should be explicitly stated in the Milestone G response and accounted for in the bidder's Milestone G quarterly and total cost.

Groundwater gauging, purging, sampling, and sample analysis shall be completed as detailed in Milestone D. The conduct and results of each event shall be documented in quarterly RAPRs as described in Milestone D with the addition of the following:

[24] Bidders shall include language in their bid that if groundwater data in the on-property POC wells and off-property 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.

- a historical graphical depiction of LNAPL thickness and recovery estimates over time (i.e. trend graphs, chronological LNAPL extent maps over time);
- a discussion of LNAPL transmissivities; and
- Discussion of the data to offer an updated assessment whether these data are consistent with a stable, shrinking, or expanding LNAPL and dissolved contaminant plume, and demonstration of LNAPL recovery to MEP.

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 G.[25] Consultant shall seek and obtain written approval from Solicitor and PAUSTIF to continue with quarterly groundwater attainment events (Optional Cost Adder Milestone G).

Milestone H – 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 E through G, and related optional cost adder milestones. The RACR shall be prepared in accordance with Chapter 245.313. At a minimum, the RACR shall provide the details for Tasks A through G, 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 Chapter 245.313. The final RACR 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 RACR). The fixed-price cost shall also include addressing any PADEP comments on the RACR.

Milestone I – 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, concrete / asphalt repairs, as necessary, for areas that have been disturbed by site characterization or remedial action activities, and removal / disposal of the GAC treatment system at the off-property Lander residence. This task shall also include photo–documenting the site

[25] If it becomes evident anytime during the groundwater attainment demonstration (initiated subsequent to completing at least the Milestone F 16, 12, or 8 quarters of remedial O&M [Milestones F7]) that the attainment demonstration will not be successful within the eight quarters, and up to four additional quarters (Optional Cost Adder Milestone F7) in one or more of the POC wells (e.g., a greater than 10X result on-property and 2X result off-property, or more than two SHS exceedances, etc.), this will represent a New Condition under the contract.

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 I 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, and off-property owners, as appropriate.

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 requests by the selected consultant along with rationale; review of selected consultant's written request by Solicitor, PAUSTIF through its third-party administrator; 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 existing on- and off-property monitoring wells and private water supply wells;[26] and reporting beyond the two or three quarters specified in Milestone D. The SOW for this unit cost adder milestone should follow Milestone D guidelines. Each bid must include their rationale for needing to implement this optional cost adder milestone.

Optional Cost Adder Milestone F7 – 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 wells and private water supply wells; and reporting beyond the timeframe specified in Milestone F7 (consistent with bidder's defined number of operating quarters). The SOW for this unit cost adder milestone should follow Milestone F7 guidelines. Each bid must include the rationale for needing to implement this optional cost adder milestone.

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

Optional Cost Adder Milestone F8-1 – Additional Enhanced *In-situ* Bioremediation via Injection of Pulverized Activated Carbon. 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 in the vicinity of the wells identified in Milestone F8. 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 F8 guidelines. Each bid must include their rationale for needing to implement this optional cost adder milestone.

Optional Cost Adder Milestone G – 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, on-property interior well, off-property monitoring wells, and private water supply wells; and reporting beyond the timeframe specified in Milestone G. The SOW for this unit cost adder milestone should follow Milestone G guidelines. Each bid must include the rationale for needing to implement this optional cost adder milestone.

Optional Cost Adder Milestone J – Replacement of the GAC on the Lander Water Supply Well. Under this milestone, bidders shall provide the Solicitor and PAUSTIF with a firm unit fixed-price cost that would include the replacement of the GAC on the Lander Water Supply Well. The system reportedly includes two Water-Rite UF1054 Activated Carbon Units that are fitted with an influent, mid-fluent, and effluent sampling ports. The fixed cost shall be inclusive of all labor, equipment, subcontractors, waste handling / disposal, and reporting. Each bid response must include the rationale for needing to implement this optional cost adder milestone.

Optional Cost Adder Milestone K – Liquid GAC (LGAC) Change-Out. Under this milestone, bidders shall provide a firm fixed-price unit cost for each LGAC change-out event of the “primary” LGAC vessel, placing the vessel with the fresh virgin GAC in the secondary position. Bidders shall detail the size of the LGAC units (pounds / type of GAC), scope of work and provide the criteria or “trigger(s)” that would be used in determining when the LGAC needs to be replaced (e.g., once the carbon in the LGAC unit has adsorbed 3 to 5% of its weight in TPH as gasoline contamination determined by mass recovery calculations). The fixed-price cost shall be inclusive of all labor, subcontractor costs, LGAC replacement, and waste handling / disposal items.

Optional Cost Adder Milestone L – Vapor GAC (VGAC) Change-Out. Under this milestone, bidders shall provide a firm fixed-price unit cost for each VGAC change-out event of the “primary” VGAC vessel, placing the vessel with the fresh virgin GAC in the secondary position. Bidders shall detail the size of the VGAC units (pounds / type of GAC), scope of work and provide the criteria or “trigger(s)” that would be used in determining when the VGAC needs to be replaced (e.g., once the carbon in the VGAC unit has adsorbed 15 to 20% of its weight in TPH as gasoline contamination determined by mass recovery calculations). The fixed-price cost shall be inclusive of all labor, subcontractor costs, VGAC replacement, and waste handling / disposal items.

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 2, 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. Bid Submission Coversheet
2. Remediation Agreement
3. Required Responses Submission Form
4. Bid Cost Submission Form
5. Site Information/Historic Documents
    a. Figures 1 through 3
    b. 2022 & 2021 RAPRs
    c. 2020 RAPRs
    d. 2019 RAPRs
    e. RAP dated 8/12/19 and PADEP SCR & RAP Approval Letter, dated 10/18/19
    f. SCR dated 6/25/19
    g. SCR dated 5/11/17
    h. UST Closure Report dated 1/11/16
    i. May 1992 UST Removal Report
    j. Other Information (Lander Access Agreement, Notification of Release)