# Request for Bid

**Fixed-Price Bid to Result**

**Site Remediation through Closure to Site-Specific Risk-Based Standards**

## Solicitor

**Mr. Jeffrey Bell**

**Point Store Facility**

**5867 Highway 522 North**
**McClure, Decatur Township,**
**Mifflin County, Pennsylvania 17841**

**PADEP Facility ID #: 44-12044  PAUSTIF Claim #: 2014-0116 (I)**

## Date of Issuance

**April 4, 2019**

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The Pennsylvania Underground Storage Tank Indemnification Fund (PAUSTIF), on behalf of the claimant who hereafter is referred to as the Client or Solicitor, is providing this Request for Bid (RFB) to prepare and submit a bid to complete the Scope of Work (SOW) for the referenced Site. The Solicitor is no longer the operator of the Point Store facility, but retains property ownership and responsibility for the environmental cleanup. PAUSTIF has determined that the claim reported by the Solicitor is eligible for coverage from the PAUSTIF subject to the applicable statutes and regulations. Reimbursement of Solicitor-approved reasonable and necessary costs, not to exceed the claim aggregate limit, for the corrective action work described in this RFB will be provided by PAUSTIF. Solicitor is responsible to pay any applicable deductible and/or proration.

Each bid response will be considered individually and consistent with the evaluation process described in the PAUSTIF Competitive Bidding Fact Sheet which can be downloaded from the PAUSTIF website https://ustif.pa.gov.

## Calendar of Events

| Activity | Date and Time |
|---|---|
| Notification of Intent to Attend Site Visit | **April 19, 2019 by 5 p.m.** |
| Mandatory Pre-Bid Site Visit | **April 24, 2019 at 11 a.m.** |
| Deadline to Submit Questions | **May 14, 2019 by 5 p.m.** |
| Bid Due Date and Time | **May 21, 2019 by 3 p.m.** |

## Contact Information

| Technical Contact |
| --- |
| **Mr. Robert Breakwell, P.G.**<br>**Excalibur Group, LLC**<br>**1193 State Road**<br>**Monessen, PA 15062**<br>**rbreakwell@excaliburgrpllc.com** |

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 **"Point Store, Claim #2014-0116 (I) – RFB QUESTION".** Bidders must neither contact nor discuss this RFB with the Solicitor, PAUSTIF, the Pennsylvania Department of Environmental Protection (PADEP), or ICF unless approved by the Technical Contact. Bidders may discuss this RFB with subcontractors and vendors to the extent required for preparing the bid response.

## Requirements

### Mandatory Pre-Bid Site Meeting

The Solicitor, the Technical Contact, or their designee will hold a mandatory Site visit on the date and time listed in the Calendar of Events to conduct a Site tour for one (1) participant per bidding company. The Technical Contact will collect questions and respond via email. All questions and answers will be provided via email to all attendees. This meeting is mandatory for all bidders, no exceptions. This meeting will allow each bidding company to inspect the Site and evaluate Site conditions. **A notice of the bidder's intent to attend this meeting is requested to be provided to the Technical Contact via email by the date listed in the Calendar of Events with the subject "Point Store, Claim #2014-0116 (I) – SITE MEETING ATTENDANCE NOTIFICATION".** The name and contact information of the company participant should be included in the body of the email. Notification of intent to attend is appreciated; however, it is not required. Attendance at the Pre-Bid Site Meeting is mandatory. Changes to the Site meeting date and/or time due to inclement weather conditions or other unexpected circumstances will be posted at https://ustif.pa.gov/bids; and, the Technical Contact may notify via email all companies that provided Site Meeting Attendance Notification.

### Submission of Bids

To be considered for selection, **one (1) hard copy of the signed bid package and one (1) electronic copy (one (1) PDF file on a compact disk (CD) included with the hard copy) must be provided directly to the PAUSTIF's third party administrator, ICF, to the attention of the Contracts Administrator.** The Contracts Administrator will be responsible for opening the bids and providing copies to the Technical Contact and the Solicitor. Bid responses will only be accepted from those companies that attended the Mandatory Pre-Bid Site Meeting. **The ground address for overnight/next-day deliveries is ICF, 4000 Vine Street, Middletown, PA 17057, Attention: Contracts Administrator. The outside of the shipping package containing the bid must be clearly marked and labeled with "Bid – Claim #2014-0116 (I)".** Please note that the use of U.S. Mail, FedEx, UPS, or other delivery method does not guarantee delivery to this address by the due date and time listed in the Calendar of Events for submission. Companies mailing bids should allow adequate delivery time to ensure timely receipt of their bid.

**The bid must be received by 3 p.m., on the due date shown in the Calendar of Events.** Bids will be opened immediately after the 3 p.m. deadline on the due date. Any bids received after this due date and time will be time-stamped and returned. If, due to inclement weather, natural disaster, or any other cause, the PAUSTIF's third party administrator, ICF's office is closed on the bid due date, the deadline for submission will automatically be extended to the next business day on which the office is open. The PAUSTIF's third party administrator, ICF, may notify all companies that attended the Mandatory Pre-Bid Site Meeting of an extended due

date. The hour for submission of bids shall remain the same. Submitted bid responses are subject to the Pennsylvania Right-to-Know Law.

**Bid Requirements**

The Solicitor wishes to execute a mutually agreeable contract with the selected consultant ("Remediation Agreement"). The Remediation Agreement is included as Attachment 1 to this RFB. The bidder must identify and document in their bid any modifications that they wish to propose to the Remediation Agreement language in Attachment 1 other than obvious modifications to fit this RFB (e.g., names, dates, and descriptions of milestones). The number and scope of any modifications to the standard agreement language will be one (1) of the criteria used to evaluate the bid. **Any bid that does not clearly and unambiguously state whether the bidder accepts the Remediation Agreement language in Attachment 1 "as is", or that does not provide a cross-referenced list of requested changes to this agreement, will be considered non-responsive.** This statement should be made in a Section in the bid entitled "Remediation Agreement". Any proposed changes to the agreement should be specified in the bid; however, these changes will need to be reviewed and agreed upon by both the Solicitor and the PAUSTIF.

The selected consultant will be provided an electronic copy (template) of the draft Remediation Agreement in Microsoft Word format to allow agreement-specific information to be added. The selected consultant shall complete the agreement-specific portions of the draft Remediation Agreement and return the document to the Technical Contact within 10 business days from date of receipt.

The Remediation Agreement fixed costs shall be based on unit prices for labor, equipment, materials, subcontractors/vendors, and other direct costs. The total cost quoted in the bid by the selected consultant will be the maximum amount to be paid by the Solicitor unless a change in scope is authorized and determined to be reasonable and necessary. There may be deviations from and modifications to this SOW during the project. The Remediation Agreement states that any significant changes to the SOW will require approval by the Solicitor, PAUSTIF, and PADEP. NOTE: Any request for PAUSTIF reimbursement of the reasonable costs to repair or replace a well will be considered on a case-by-case basis.

The bidder shall provide its bid cost using the Bid Cost Spreadsheet (included as Attachment 2) with descriptions for each task provided in the body of the bid document. Please note, if costs are provided within the text of the submitted bid and there is a discrepancy between costs listed in the Bid Cost Spreadsheet and in the text, the costs listed within the Bid Cost Spreadsheet will be used in the evaluation of the bid and in the Remediation Agreement with the selected consultant. Bidders are responsible to ensure spreadsheet calculations are accurate. The technical score for bids will be based solely on those tasks represented as milestones included in the Bid Cost Spreadsheet and the total bid cost. Any optional bidder-defined tasks,

milestones, or cost adders that are not requested as part of this RFB will not be considered by the Bid Evaluation Committee in the technical review and technical score for the bid.

In addition, the bidder shall provide:

1. The bid unit cost rates for each expected labor category, subcontractors, other direct costs, and equipment;

2. The bid markup on other direct costs and subcontractors (if any);

3. The bid total cost by task consistent with the proposed SOW identifying all level-of-effort and costing assumptions; and

4. The bid unit rate schedule that will be used for any out of scope work on this project.

Each bid will be assumed to be valid for a period of up to 120 days after receipt unless otherwise noted. The costs quoted in the Bid Cost Spreadsheet will be assumed to be valid for the duration of the Remediation Agreement.

Please note that the total fixed-price bid must include all costs, including those cost items that the bidder may regard as "variable". These variable cost items will not be handled outside of the total fixed-price quoted for the SOW unless the RFB requests costing alternatives for specific items or services. Any bid that disregards this requirement will be considered non-responsive to the bid requirements and, as a result, will be rejected and will not be evaluated.

The RFB is requesting a total fixed-price bid (unless the RFB requests costing alternatives for specific items or services). PAUSTIF will not agree to assumptions (in bids or the selected bidders executed Remediation Agreement) referencing a level of effort and/or hours. Costs provided in your bid should be developed using your professional opinion, experience, and the data provided. PAUSTIF will not reimburse costs for additional hours to complete activities included as part of the base bid/contract price.

Each bid response document must include at least the following:

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

2. A clear description, specific details, and original language of how the proposed work scope will be completed for each milestone. The bid should specifically discuss all tasks that will be completed under the Remediation Agreement and what is included (e.g., explain groundwater purging/sampling methods, which guidance documents will be followed, what will be completed as part of the Site specific work scope/SCR/RAP

implementation). Recommendations for changes/additions to the Scope of Work proposed in this RFB shall be discussed, quantified, and priced separately; however, failure to bid the SOW "as is" may result in a bid not being considered. Bids should include enough original language conveying bidder's thought such that the understanding of site conditions, closure approach (if applicable), and approach to addressing the scope of work can be evaluated. Since bidders are not prequalified, the bid response must provide the Bid Evaluation Committee and Solicitor enough information to complete a thorough review of the bid and bidder.

3. A copy of an insurance certificate that shows the bidder's level of insurance consistent with the requirements of the Remediation Agreement. Note: The selected consultant shall submit evidence to the Solicitor before beginning work that they have procured and will maintain Workers Compensation, commercial general and contractual liability, commercial automobile liability, and professional liability insurance commensurate with the level stated in the Remediation Agreement and for the work to be performed.

4. The names and brief resumes/qualifications of the proposed project team including the proposed Professional Geologist and Professional Engineer (if applicable) who will be responsible for overseeing the work and applying a professional seal to the project deliverables (including any major subcontractor(s)).

5. Responses to the following specific questions:

    a. Does your company employ a Pennsylvania-licensed Professional Geologist or Professional Engineer that is designated as the proposed project manager? How many years of experience does this person have?
    b. How many Pennsylvania Chapter 245 projects is your company currently the consultant for in the PADEP Region where the Site is located? Please list up to 10.
    c. How many Pennsylvania Chapter 245 Corrective Action projects involving an approved SCR, RAP, and RACR has your company and/or the Pennsylvania-licensed Professional Geologist or Professional Engineer closed (i.e., obtained Relief of Liability [ROL] from the PADEP) using any standard?
    d. Has your firm ever been a party to a terminated PAUSTIF-funded Fixed-Price (FP) or Pay-for-Performance (PFP) contract without attaining all of the milestones? If so, please explain.

6. A description of subcontractor involvement by task. Identify and describe the involvement and provide actual cost quotations/bids/proposals from all significant specialized subcontracted service (e.g., drilling/well installations, laboratory, etc.). If a bidder chooses to prepare its bid without securing bids for specialty subcontract

services, it does so at its own risk. Added costs resulting from bid errors, omissions, or faulty assumptions will not be considered for PAUSTIF reimbursement.

7. A detailed schedule of activities for completing the proposed SOW including reasonable assumptions regarding the timing and duration of Solicitor reviews (if any) needed to complete the SOW. Each bid must provide a schedule that begins with execution of the Remediation Agreement with the Solicitor and ends with completion of the final milestone proposed in this RFB. Schedules must also indicate the approximate start and end date of each of the tasks/milestones specified in the Scope of Work, and indicate the timing of all proposed key milestone activities (e.g., within 30 days of the contract being executed).

8. A description of how the Solicitor, ICF, and the PAUSTIF will be kept informed as to project progress and developments and how the Solicitor (or designee) will be informed of and participate in evaluating technical issues that may arise during this project.

9. A description of your approach to working with the PADEP. Describe how the PADEP would be involved proactively in the resolution of technical issues and how the PADEP case team will be kept informed of activities at the Site.

10. Key exceptions, assumptions, or special conditions applicable to the proposed SOW and/or used in formulating the proposed cost estimate. Please note that referencing extremely narrow or unreasonable assumptions, special conditions, and exceptions may result in the bid response being deemed “unresponsive”.

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

## Bid Review and Evaluation

1. Bid Review and Scoring

   Bidders' submissions that are administratively qualified (i.e., attended the mandatory pre-bid site meeting and submitted the bid in strict accordance with instructions by the designated due date and time) will be evaluated.

   Technical Scoring

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

   Numerical values will be assigned to each of three categories to derive the technical score for this bid-to-result solicitation:

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

2. Evaluation of Bids

   A committee comprised of at least two members of the USTIF staff, two members of ICF staff, and the TPR who assisted in developing the bid package will score all bids that are administratively qualified based on the above criteria. USTIF recognizes that several bids may be acceptable and receive similar numerical scores. At the conclusion of the

scoring process, Solicitor will receive those bids with numerical scores placing them in the category of meeting Reasonable and Necessary criteria and acceptable for USTIF funding. Solicitor may select any of the consulting firms that submitted a qualified bid package to implement the tasks described in the bid; however, USTIF will only provide funding up to the highest fixed price of those bids determined to be Reasonable and Necessary for USTIF funding.

## General Site Background and Description

Each bidder should carefully review the information and documentation provided in Attachment 3. The information and documentation have not been independently verified. Bidders may wish to seek out other appropriate sources of information and documentation specific to this Site. If there is any conflict between the general Site background and description provided herein and the source documents within Attachment 3, the bidder should defer to the source documents.

### Summary of Site Background and Features

The Point Store facility is located at 5867 Highway 522 North in the town of McClure, Decatur Township, Mifflin County, Pennsylvania, and is currently operated as a retail convenience store (c-store). Petroleum storage and dispensing no longer occurs at this facility since the infrastructure has been removed as summarized in more detail below. At some point over the past couple of years, the Solicitor sold the c-store business operations but retains property ownership and responsibility for the environmental clean-up associated with the subject USTIF claim.[1] The first floor of the c-store building supports retail operations and a residential apartment is located on the second floor. The c-store basement configuration is discussed in a subsequent section of this RFB.

The Point Store facility occupies an approximate 1.7-acre triangular-shaped parcel. Existing facility features include a two-story c-store building with a partial basement located in the western portion of the property, and a truck trailer used for storage, a loading ramp, propane tanks, a shed and a generator located adjacent to or beyond the northeast side of the c-store building. The Point Store facility obtains potable water from a supply well located beneath the floor in the northwest portion of the c-store. Additionally, an above grade heating oil tank is installed in the partial basement which reportedly is used only occasionally and is filled via a remote delivery port. Based on recent images, it appears that used automobile sales business operations may still occur in the eastern portion of the property.

As part of the site characterization activities completed at the Point Store site, a total of 23 groundwater monitoring wells and piezometers were installed including the following:[2]

*On-property overburden*: MW-1 through MW-10, MW-14 and PZ-1;
*On-property shallow bedrock*: PZ-3BR;
*Off-property overburden*: MW-11, MW-12, MW-13 and MW-15 through MW-18; and
*Off-property shallow bedrock*: MW-19BR, MW-20BR and PZ-2BR.

[1] The date / details of the sale transaction and identity of the current facility operator are not available.
[2] Overburden wells / piezometers range in depth from approximately 9.5 (MW-17) to 22 (MW-7) feet below grade (ft-bg) and shallow bedrock wells / piezometers range in depth from approximately 20.5 (PZ-2BR) to 29.5 (MW-20BR) ft-bg.

Attachment 3a of this RFB provides figures depicting the general facility layout, site features including monitoring well and piezometer locations, and adjoining parcels. Facility street view images are provided in Attachment 3b.

Underground utilities beneath the Point Store property include a sanitary sewer line associated with the on-lot septic system and electric. The sanitary sewer line is buried at a depth of approximately five feet below grade (ft-bg) and extends from the northeast side of the building toward the septic system. Buried electric lines are installed at an approximate depth of one ft-bg and extend: i) from the western side of the c-store building to a sign located near the western property boundary; ii) from the eastern side of the c-store to a shed; and iii) from the northeast side of the c-store paralleling the sanitary sewer line. Overhead electric and utility lines are located along the northwest and southern facility property boundaries. Approximate locations of underground utilities are shown on the figure provided in Attachment 3c. The ground surface at the Point Store facility is covered with deteriorated asphalt, gravel, and vegetated soil. Parcels in the vicinity of the Point Store facility consist of residential properties and wooded land.

**Historical Petroleum Storage and Dispensing Operations, Release History and Underground Storage Tank (UST) System Closures**

Available historical information indicates that retail gasoline sales began at Point Store sometime before 1987. In October 1989, Solicitor removed the previous generation of motor fuel USTs and replaced them with one 550-gallon kerosene / diesel fuel tank and two 2,000-gallon unleaded gasoline tanks.[3] These unleaded gasoline USTs were located in a common cavity adjacent to the dispenser island west of the c-store. The kerosene / diesel fuel UST and dispenser were located in a different area of the property beyond the southern corner of the c-store. The locations of the former 1989 generation of USTs and the dispenser island are depicted in the figures provided in Attachment 3a.[4] In November 1998, the 550-gallon kerosene / diesel fuel UST was removed and replaced with a 1,000-gallon kerosene tank. During the November 1998 UST replacement, localized impacts to soil were observed. Soil samples collected from the excavated soil and from the base of the tank cavity revealed that all target compounds were below applicable soil standards except for naphthalene (357 mg/kg) in a sample collected from the excavated soil stockpile. The 1998 UST Closure Report is provided in Attachment 3d.

In November 2007, the kerosene UST and the two unleaded gasoline USTs were placed into "Temporary Out-of-Service" status. These tanks, along with the associated dispensers and product piping, were subsequently removed from the property in August 2014. Although petroleum odors were noted during removal of these USTs, no obvious impacts to soil or to

[3] No Closure Report is available for the USTs removed from the property in 1989 and, therefore, no information is available regarding the number of tanks removed or the volume / construction / contents of these tanks.
[4] The USTs installed in October 1989 are believed to have been located at the same, or near the same location as the previous generation of USTs.

groundwater that accumulated in the excavation were observed. Results from the analysis of UST closure soil samples indicated that concentrations of target compounds were below applicable PADEP Act 2 standards. However, samples collected from groundwater that entered the UST excavations revealed concentrations of target compounds exceeding the applicable standards.[5] A Notification of Reportable Release was submitted to the PADEP in September 2014 and the subject USTIF claim subsequently was opened. The October 2014 UST Closure Report is contained in Attachment 3e. The source of the petroleum release was interpreted to be chronic leakage from the former unleaded gasoline product dispensers.

In October 2016, Mountain Research, LLC (MRLLC) initiated site characterization work to further investigate the subsurface contamination discovered during removal of the facility UST and dispensing systems in August 2014. Following several phases of soil and groundwater investigations, MRLLC prepared and submitted a preliminary Site Characterization Report (SCR) to the PADEP in September 2017. The information contained in the preliminary SCR, along with documentation of subsequent site investigation activities and the proposed site remedial approach, are provided in MRLLC's September 2018 Supplemental SCR (SSCR) / Remedial Action Plan (RAP) provided in Attachment 3f. The RAP remedial approach generally involves targeted soil excavation on- and off-property to stabilize the dissolved-phase contaminant plume and eliminate vapor intrusion source material in support of a risk-based site closure under the Site Specific Standard (SSS). The SSCR / RAP was unconditionally approved by the PADEP in a letter dated 10/31/18 (Attachment 3g). The remedial strategy proposed in the RAP is summarized in more detail below.

**Overview of Site Characterization Activities and Results**

Site Geology, Hydrogeology and Hydrology

Beneath the deteriorated asphalt surface cover is an approximate 0.5 to 1 foot thick layer of gravel fill (asphalt subbase) that was encountered at several on-property boring locations. Approximately 8 feet of gravel fill is also present in the area of soil boring SB-16 advanced near the southern corner of the c-store which likely represents material used to backfill the former kerosene UST cavity. Thicker fill material was also encountered in the former gasoline UST cavity which is comprised mostly of gravel and clay with some concrete waste. Beneath these fill materials is natural clay, silty clay and sandy clay soil with sand lenses and varying amounts of gravel in some areas.[6] Drilling information from on- and off-property locations indicates the clay soil extends to depths ranging from approximately 11 to 23 ft-bg. Underlying the clay soil is weathered shale bedrock that becomes more competent with depth.

[5] The groundwater samples collected from the unleaded gasoline and kerosene UST excavations each contained benzene and 1,2,4-TMB at concentrations above applicable SHS MSCs.
[6] The clay was described as "tight" (i.e., dense) at various depth intervals within some soil borings.

Hydrogeologic data for the Point Store site has been provided through gauging and testing of the previously mentioned network of on- and off-property overburden and shallow bedrock monitoring wells and piezometers. The depth to the shallow unconfined water table beneath the site averages about 8 ft-bg based on groundwater gauging data from the on- and off-property overburden monitoring points. The depth to the zone of permanent groundwater saturation in the overburden is ~12 ft-bg beneath the source area in the western portion of the Point Store property. Further east in the area of on-property well MW-10, and in the northern part of the Mellott property near wells MW-11, 12 and 13, the depth to permanent groundwater saturation is ~7.5 ft-bg. The depth to groundwater in the only shallow bedrock monitoring point beneath the Point Store property (PZ-3BR) has averaged approximately 14 ft-bg.[7] Tabulated historical groundwater gauging data through the third quarter 2018 is provided in Attachment 3h. The horizontal hydraulic gradient for the water table aquifer has generally been on the order of 0.05 ft/ft in the overburden and 0.03 ft/ft in the shallow bedrock. Groundwater flow in the overburden is variable beneath the Point Store property due to the tank excavations and fill materials. Beyond the Point Store property, local groundwater flow in the overburden is toward the southeast in the direction of Jack's Creek which is located approximately 580 feet southeast of the Point Store facility. Groundwater flow in the shallow bedrock is also toward the southeast in the direction of Jack's Creek.[8]

Hydraulic characteristics of the overburden and deep bedrock were determined through slug testing and long-term constant rate pumping tests. Slug testing (rising and falling head) was performed in on-property overburden monitoring wells MW-4, MW-6 and MW-7 and in off-property overburden well MW-3. Results from the slug testing indicate an average hydraulic conductivity of approximately 0.8 ft/day and a transmissivity of about 9.2 $ft^2$/day for the clay overburden.

Constant rate pumping tests were conducted on the Point Store water supply well and on the supply well for the Mellott property located southeast and hydraulically downgradient of the Point Store facility. The Point Store water supply well was pumped at a constant rate of ~2.0 gpm for a period of 16 hours. The Mellott water supply well was also pumped at a constant rate of ~2.0 gpm for a duration of slightly more than 17 hours. Hydraulic parameters for the deeper shale bedrock provided from the Point Store and Mellott supply well pumping tests indicate respective hydraulic conductivities of ~1.7 and 1.2 ft/day and respective transmissivities of ~62.8 and 169.6 $ft^2$/day. Pumping of the Point Store water supply well produced drawdown of the water table surface in shallow bedrock observation points MW-20BR and PZ-3BR[9] although no pumping influence was measured in the overburden observation points. During pumping of

[7] PZ-3BR intercepts a deeper zone of the water table aquifer and the gauging data appear to reflect a downward vertical hydraulic gradient.
[8] Jack's Creek likely forms a local groundwater divide.
[9] Groundwater samples have never been collected from shallow bedrock piezometer PZ-3BR which is located within the overburden source area at a distance of ~40 feet from the Point Store water supply well. Due to the influence observed in this piezometer during pumping of the Point Store supply well, groundwater sample collection from PZ-3BR has been included in the RFB scope of work.

the Mellott supply well, no influence was measured in the overburden or shallow bedrock observation points.

The Point Store and Mellott water supply wells were geophysically logged using various methods primarily to confirm well construction and identify the depth of water-bearing fractures / groundwater inflow zones. In general, the geophysical logging indicated the following regarding construction of the water supply wells:

*Point Store Well Construction*

- Total Depth: 58 feet
- Casing diameter: 6 inches
- Bottom of Casing Depth: 22.3 feet

*Mellott Well Construction*

- Total Depth: 183 feet
- Casing diameter: 6 inches
- Bottom of Casing Depth: 39.9 feet

A site geophysical survey was also conducted to locate buried utilities and the possible presence of undocumented USTs. The geophysical survey identified the subsurface utilities and backfilled former UST cavities described above. No undocumented USTs were found. Additional details regarding the site geophysical survey and private supply well geophysical logging, including fractures and groundwater inflow zones, can be found in the SSCR / RAP (Attachment 3f) or the geophysical reports (Attachment 3i).

Soil Quality

During the various phases of site characterization, a total of 102 soil samples were collected from on- and off-property soil borings and monitoring well / piezometer borings. All of the soil samples were submitted for laboratory analysis of the current PADEP short list of unleaded gasoline compounds including benzene, toluene, ethylbenzene, xylenes, MTBE, naphthalene, cumene, 1,2,4-TMB and 1,3,5-TMB. Based on historical depth to groundwater measurements and the depth to permanently saturated soil beneath the site as referenced above, it appears that approximately 70% of the soil samples were collected from unsaturated to periodically saturated (i.e., smear zone) soils and approximately 30% of the samples were obtained from permanently saturated soil.

The historical analytical dataset reveals that the primary constituents of concern (COCs or compounds exceeding SHS MSCs[10]) in site soil appear to be benzene and 1,2,4-TMB. To a lesser extent, soil COCS also include toluene, ethylbenzene, xylenes, MTBE, naphthalene, and 1,3,5-TMB. Observed soil impacts exceeding the SHS MSC benchmarks seem to be concentrated in the area of the former gasoline dispenser island and generally extend to the southeast (hydraulically downgradient) beneath U.S. Route 522 and onto the northern portion of the Mellott property. Concentrations of target compounds exceeding the SHS MSC benchmarks in unsaturated soil have been identified beginning at about 1 ft-bg below the deteriorated asphalt / subbase of the facility parking lot.[11] Impacts to periodically saturated soil exceeding applicable standards have been identified at depths up to 9 ft-bg at locations in the site interior near the former dispensers / unleaded gasoline UST cavity (SB-10), near the southern facility property boundary (SB-18 and SB-23) and in the northern portion of the Mellott parcel (SB-33).[12] Petroleum contamination exceeding the SHS MSC benchmarks in deeper permanently saturated soil has also been identified beneath the Point Store property at depths reaching 17.5 ft-bg (SB-11 and SB-13 in the former gasoline UST / dispenser area). Overall, soil impacts appear to have been reasonably delineated.

Maximum concentrations for the primary COCs identified in soil (benzene and 1,2,4-TMB) were reported at the following locations and depths:

- benzene: 107,000 micrograms per kilogram (ug/kg); soil boring SB-13 advanced adjacent to the former gasoline dispenser pad; unsaturated sample (2 ft-bg).
- 1,2,4-TMB: 1,170,000 ug/kg; soil boring SB-13 advanced adjacent to the former gasoline dispenser pad; unsaturated sample (2 ft-bg).

Historical soil sampling locations, boring logs, analytical results and soil isoconcentration maps are provided in the September 2018 SSCR / RAP (Attachment 3f).

Groundwater Quality

Groundwater quality has been assessed through collecting and analyzing aqueous samples from the network of 20 overburden and shallow bedrock monitoring wells including on-property facility wells MW-1 through MW-10 and MW-14, and off-property wells MW-11, MW-12, MW-13, MW-15 through MW-18, MW-19BR and MW-20BR located on the Mellott parcel. Groundwater samples have also been collected from the Point Store and Mellott potable water supply wells and submitted for laboratory analysis. Point of compliance (POC) wells and off-property attainment wells do not seem to be identified in the September 2018 SSCR / RAP. Therefore,

[10] SHS MSCs are referenced as a benchmark for comparison purposes only as the actual soil cleanup standards for this site are PADEP risk-based SSS.
[11] These shallow soil impacts are believed to be related to historical leaks from the former dispensers, customer overfills in the former dispenser area and leaks from parked vehicles in other parts of the parking lot.
[12] The impacts to periodically saturated soil at a depth of approximately 9 ft-bg in soil boring SB-33 were not confirmed in adjacent soil boring MW-33R.

for the purpose of this RFB, bidders shall assume that the POC wells will include MW-6 through MW-10 and MW-14, and the off-property attainment wells shall consist of MW-11, MW-12, MW-13, MW-15 through MW-18, MW-19BR and MW-20BR. **The selected consultant shall identify the proposed site POCs in its bid and in all future RAPRs and in any RAP Addendum**. Groundwater samples have historically been analyzed for the current PADEP short list of unleaded gasoline parameters including benzene, toluene, ethylbenzene, xylenes, MTBE, naphthalene, cumene, 1,2,4-TMB and 1,3,5-TMB. Historical groundwater analytical results through the third quarter 2018 sampling event are provided in Attachment 3h. Figures depicting the site monitoring well locations can be found in Attachment 3a (Site Features Maps) and Attachment 3f (September 2018 SSCR / RAP). The SSCR / RAP also contains dissolved-phase contaminant plume maps and monitoring well boring logs / construction details.

*Overburden Groundwater Quality*

Consistent with historical groundwater analytical data, the current third quarter 2018 analytical results indicate that the COCs in overburden groundwater consist of benzene, toluene, ethylbenzene, MTBE, naphthalene and 1,2,4-TMB. Concentration ranges for the wells in which these compounds were detected above PADEP SHS MSC[13] during the third quarter 2018 are summarized below:

- Benzene: Wells MW-4, -7, -8, -10, -12 and -13 at concentrations ranging from **5.75 ug/l** (MW-12) to **6,540 ug/l** (MW-7).
- Toluene: Wells MW-4 and MW-7 at concentrations ranging from **1,680 ug/l** (MW-7) to **3,380 ug/l** (MW-4).
- Ethylbenzene: Wells MW-4 and MW-7 at concentrations ranging from **919 ug/l** (MW-7) to **1,010 ug/l** (MW-4).
- MTBE: Wells MW-4, -6, -7, -11, -12 and -13 at concentrations ranging from **32.6 ug/l** (MW-6) to **1,140 ug/l** (MW-13).
- Naphthalene: Wells MW-4 and MW-7 at concentrations ranging from **280 ug/l** (MW-4) to **349 ug/l** (MW-7).
- 1,2,4-TMB: Wells MW-4 and MW-7 at concentrations ranging from **880 ug/l** (MW-4) to **910 ug/l** (MW-7).[14]

Concentrations of all other target unleaded gasoline compounds were either not detected or were below the SHS MSC benchmark for the third quarter 2018 sampling event.

Overall contaminant trends in the overburden monitoring wells are decreasing except for: 1) benzene and naphthalene in POC well MW-7; and 2) benzene and MTBE in MW-13 located on

[13] SHS MSCs are referenced as a benchmark for comparison purposes only as the actual groundwater cleanup standards for this site are PADEP risk-based SSS.
[14] Note that a petroleum sheen was reported for groundwater samples collected from MW-4 during the third quarter 2018 sampling event.

the Mellott property. The shallow dissolved-phase contaminant plume originates in the former dispenser / gasoline UST source area and extends to the southeast migrating with groundwater flow.

*Shallow Bedrock Groundwater Quality*

Through the third quarter 2018, groundwater samples collected from off-property shallow bedrock well MW-19BR located near the Mellott residence have been "non-detect" for all target unleaded gasoline compounds. Groundwater samples obtained from shallow bedrock well MW-20BR installed on the Mellott property near the southern shoulder of U.S. Route 522 contained only trace detections of ethylbenzene, xylenes and 1,2,4-TMB during the first quarter 2018 sampling event.

*Potable Supply Well Groundwater Quality*

No target unleaded gasoline constituents have been detected in groundwater samples collected from the Point Store and Mellott water supply wells except for trace detections of toluene at concentrations of 3.10 and 30.5 ug/l, respectively, during the first quarter 2018 sampling event. These low-level toluene detections were attributed to the use of a rented pump during the long-term constant rate pumping tests and were not confirmed during the subsequent third quarter 2018 sampling event.[15]

Separate Phase Hydrocarbons

No separate phase hydrocarbons (SPH) have been observed in any of the site monitoring wells or piezometers except for the reported petroleum sheen on groundwater samples collected from well MW-4 during the third quarter 2018 sampling event.

Contaminant Fate and Transport Modeling

Analytical contaminant fate and transport modeling (PADEP Quick Domenico spreadsheet) was completed for benzene, toluene, ethylbenzene, xylenes, MTBE, naphthalene, 1,2,4-TMB and 1,3,5-TMB assuming a hypothetical, constant, ongoing source of contamination. Predictions from the contaminant fate and transport modeling suggest:

- Benzene, ethylbenzene, MTBE, naphthalene and 1,2,4-TMB will migrate beyond the Point Store facility southern property boundary at concentrations above their respective PADEP Act 2 residential used aquifer groundwater MSCs within 30 years;
- Ethylbenzene will migrate off-property beneath U.S. Route 522, but not beyond the roadway;

[15] No groundwater samples were collected during the second quarter 2018.

- Benzene, MTBE, naphthalene and 1,2,4-TMB will migrate across Route 522 and onto the Mellott property;
- Concentrations of toluene, xylenes and 1,3,5-TMB will not migrate beyond the Point Store southern property boundary in 30 years; and
- COCs are not predicted to migrate to the area of the Mellott water supply well or to Jack's Creek within 30 years.[16]

Additional details regarding the contaminant fate and transport modeling can be found in the September 2018 SSCR / RAP (Attachment 3f). Completing updated fate and transport modeling and a quantitative / qualitative plume stability assessment are components of the SOW requested in this RFB.

Vapor Intrusion Assessment

MRLLC completed vapor intrusion (VI) screening for the Point Store site, reportedly in accordance with the revised PADEP Technical Guidance Manual for Vapor Intrusion into Buildings from Groundwater and Soil Under Act 2 (effective 1/18/17). Assessment activities included soil and groundwater screening to identify the location and depth of potential VI sources and Johnson & Ettinger (J&E) modeling. However, no sub-slab soil vapor or indoor-air sampling has been performed which appears to be a data gap in this site characterization with respect to prescribed evaluations set forth in PADEP's 2017 VI guidance. The RAP appears to address this gap by proposing post-remediation VI sub-slab, crawl space and other VI sampling as discussed further below.

*General VI Considerations*

As mentioned earlier, the c-store building is currently used for both commercial and residential purposes. The c-store has a basement located beneath the central portion of the building that is constructed with cinder block walls and a concrete floor. The partial basement extends to an estimated depth of approximately 6 ft-bg. The portion of the c-store building north of the basement is constructed as slab-on-grade and the portion of the building south of the basement is constructed with a crawlspace. Reportedly, no significant foundation openings have been identified. The three basement sections are illustrated on the figures provided in Attachment 3a. The locations of underground utilities that could serve as potential vapor migration pathways were discussed in a previous section.

[16] Based on predictions from the contaminant fate and transport modeling, the need for SWLOAD and PentoxSD surface water modeling is not anticipated.

*Screening for Potential VI Sources*

Groundwater sample point locations were horizontally and vertically screened against proximity and/or separation distances from the building receptors and underground utilities. Screening for petroleum constituents in groundwater considered a horizontal separation distance of 30 feet and a vertical separation distance of 5 feet. For the non-petroleum compound MTBE, a horizontal separation distance of 100 feet was considered.[17] Results from the groundwater VI screening indicate that concentrations of target unleaded gasoline compounds exceeding screening values were identified at the following locations: MW-1, MW-2, MW-4, MW-5, MW-6, MW-7, MW-8, MW-9 and MW-10 (Point Store property), and MW-11, MW-12 and MW-13 (Mellott property).

Similar to the groundwater VI screening, soil sample locations were horizontally and vertically screened in comparison to proximity and/or separation distances from the building receptors and buried utilities. Because SPH has not been identified in soil, the separation distances used for groundwater screening were also applied to the soil screening. Results from the soil VI screening indicate that concentrations of unleaded gasoline compounds exceeding VI screening values were identified at the following locations: SB-10 through SB-14, SB-17, SB-18, SB-24, SB-25, SB-31, SB-37, SB-38, SB-39 and PZ-3BR (Point Store property), and SB-28, SB-30, SB-34 and SB-36 (Mellott property).[18]

*Pre-Remediation Baseline J&E Modeling*

Baseline J&E modeling was conducted to further assess potential indoor air risk related to the shallow soil and groundwater sources identified through the VI screening process. The modeling was based on several assumptions and considered only soil and groundwater impacts at depths of 3 ft-bg or shallower. Deeper soil and groundwater impacts were not modeled because of the probability the results would indicate unacceptable risk and because other alternatives are available for assessing VI risk for deeper contamination. In general, results from the J&E modeling suggest an unacceptable level of VI risk related to petroleum impacts in shallow soil, but an acceptable level of risk for shallow groundwater impacts. Specific details regarding the J&E modeling methods, assumptions and results are provided in the September 2018 SSCR / RAP (Attachment 3f).

*RAP-proposed Post-Remediation VI Sampling*

The PADEP-approved RAP (Attachment 3f) proposes on- and off-property soil excavation to remediate accessible soil impacts including those identified within vertical and horizontal separation distances that exceed the residential VI screening values. The RAP also proposes a

[17] Vertical separation distance does not apply to non-petroleum compounds.
[18] Note that in some cases, laboratory method detection limits for benzene and MTBE were above their respective VI screening values and additional potential VI sources may be present in soil.

post-remediation VI assessment involving: a) installing three near source vapor sampling points adjacent to SB-12 / MW-4, SB-41 / MW-12 and SB-33R / MW-13 (to be revisited following soil attainment sampling); b) installing two sub-slab vapor sampling points in the basement portion of the c-store building; c) installing one sub-slab vapor sampling point in the slab-on-grade portion of the building; d) collecting indoor air samples from the crawl-space underlying the southern part of the building; and e) reevaluating the potential for VI following collection of the aforementioned vapor samples. A post-remediation VI assessment is a component of the SOW requested in this RFB.

**Solicitor's Selected Site Closure Standard**

Solicitor intends to secure a PADEP ROL for unleaded gasoline constituents in soil and groundwater pursuant to the PADEP Act 2 requirements for a risk-based closure under PADEP's Site Specific Standard (SSS) via: (a) pathway elimination for on-property; and (b) developed risk-based numerical standards for both the roadway right-of-way and for the off-property Mellott parcel ("The SSS"). Possible exposure pathways which may need to be eliminated via land use restrictions for successful SSS closure of the subject property include:

- No new potable water wells unless installed outside the contaminated part of the property and demonstrated to be hydraulically isolated like the current site potable well;
- Vapor barrier on future building construction;
- Vapor mitigation (engineering control) on existing structures (e.g., radon type venting) if current vapor intrusion risks are excessive[19];
- Soil management plan for future digging on excessively contaminated portions of property; and / or
- Post-remedial care periodic inspections of the Mellott property for new water well installations.

**Remedial Actions**

To achieve the risk-based site closure, the remedial approach prescribed in the September 2018 RAP generally calls for excavating accessible unsaturated, periodically saturated and saturated impacted soil. Soil excavation is facilitated since the UST system infrastructure has been removed and the impacts are relatively shallow. The objectives of the RAP-prescribed excavation are to: i) significantly diminish & stabilize the shallow groundwater contaminant plumes; ii) remove the identified sources of potential VI concern; iii) reduce potential future risks

[19] If a vapor mitigation system is required on the facility building as a result of VI sampling, such work would be completed under a contract provision on a T&M basis.

to utility and construction workers in the U.S. 522 right-of-way (ROW); and iv) reduce the potential for impact to the deeper Point Store facility water supply well.

To achieve these objectives, the on-property excavation shall target soil with contamination above PADEP Act 2 Residential Used Aquifer MSCs (SHS) benchmark. However, this RFB notes that the on-property excavation will not be required to actually attain the PADEP soil SHS as the site will be closed to risk-based SSS using as many of the land use restrictions discussed above (or others) as may be necessary.

The RAP also proposes limited soil excavation on the Mellott property (on the southern side of U.S. Route 522), also targeting soil that is either known or suspected to exceed PADEP's SHS. Since no deed restrictions are anticipated to be applied to the Mellott property, the post-excavation attainment sampling will need to demonstrate attainment of numerical SSS developed for shallower and deeper soil, protective of residents via all applicable residential exposure pathways.

Natural degradation of residually impacted soil beneath the roadway following excavation is designed to be enhanced by either oxygen delivery product (ODP) or Carbon Based Product (CBP) emplacement into the excavations. ODP or CBP application is proposed for excavations on both sides of the roadway (Point Store *and* Mellott properties). For roadway SSS attainment demonstration, either: (a) soil samples collected along the roadway excavation sidewalls (together with post-excavation groundwater quality data) will need to be shown to be safe to utility and construction workers via numerical SSS; or (b) subsequent roadway soil sampling conducted after the ODP or CBP has been fully depleted (after 6 months to 1 year) will need to show that utility and construction worker exposures to soil and groundwater (and associated vapors) will be within acceptable limits.

**Other Information**

To the extent there is any discrepancy between the summary of site conditions provided above and the source documents, bidders shall rely on the source document information. Bidders should carefully consider what information, analyses, and interpretations contained in the background documents can be used in developing their scope of work for their bid in response to this RFB.

## Scope of Work (SOW)

This RFB seeks competitive bids from qualified contractors to perform the activities in the SOW specified herein. The PADEP case manager reviewed the SOW presented in this RFB and the Department's comments have been incorporated.

**Objective**

As described above, excavation and enhanced monitored natural attenuation (MNA) are proposed in the 2018 RAP to: i) significantly diminish & stabilize the shallow groundwater contaminant plumes; ii) remove the identified sources of potential VI concern; iii) reduce potential future risks to utility and construction workers in the U.S. 522 right-of-way (ROW); and iv) reduce the potential for impact to the deeper Point Store facility water supply well.

Through remedial actions, the successful bidder will be expected to attain The SSS. The PADEP, the Technical Contact and the PAUSTIF have agreed that any of the following remedial approaches offers a technically viable and cost effective means of attaining The SSS:

1) **Alternative #1 – Soil Excavation and ODP[20] application followed by monitored natural attenuation (MNA) as described in the RAP.** Soil excavation shall be conducted on- and off-property to remove subsurface source material within the four areas (A through D) and to the depths defined in the RAP (Figure 1, Attachment 3j). The soil contamination is relatively shallow and accessible given that all facility UST systems infrastructure has been removed. ODP shall be applied to the open excavations prior to backfilling. Inaccessible contamination (e.g., beneath U.S. Route 522) or any other post-remedial residual contamination shall be addressed via ODP-enhanced MNA. Water management will likely be necessary on- and off-property.

2) **Alternative #2 – Tailored Soil Excavation and ODP application followed by MNA (modified-RAP approach).** Soil excavation shall be conducted on- and off-property focusing on excessively contaminated soil & groundwater in critical areas with rectangular boundaries / dimensions (Figure 2, Attachment 3j). As with Alternative 1, ODP shall be applied to the open excavations prior to backfilling. Inaccessible contamination (e.g., beneath U.S. Route 522) or any other post-remedial residual contamination shall be addressed via ODP-enhanced MNA. Water management will likely be necessary on- and off-property. Bidders selecting Alternative #2 shall propose these modifications in a RAP Addendum (RAPA) to be prepared under Milestone B.

[20] ODP describes a host of commercially available products designed to impart oxygen to the subsurface in order to enhance aerobic biodegradation and sequential chemical / biological destruction of residuals.

3) **Alternative #3 – Tailored Soil Excavation and CBP[21] application followed by MNA (modified approach).** Remedial activities will be consistent with those described under Alternative 2 with the exception that CBP technology will be used in the excavation backfill in lieu of ODP (Figure 3, Attachment 3j). Bidders selecting Alternative #3 shall propose these modifications in a RAPA to be prepared under Milestone B.

Each bidder shall propose one of these three remedial alternatives in its bid response. For the purpose of this RFB, bidders shall assume excavating soil from the areas outlined, and from the depths indicated, in Figures 1 through 3 provided in Attachment 3j for remedial Alternatives 1 through 3, respectively.

Solicitor seeks competitive, fixed-price bids for this Bid to Result RFB to complete the eleven (11) milestones outlined below intended to take this site to closure under the SSS. To be deemed responsive, each bid ***must*** respond ***in detail*** to each of the milestones, including describing the bidder's understanding of the conceptual site model and how that model relates to the bidder's proposed approach to executing the SOW. "Bid to Result" RFBs identify task goals and rely on the bidders to provide a high level of project-specific detail on how they will achieve the goal. Each bid must detail the approach and specific methods for achieving the milestone objectives. In reviewing the quality of bids submitted under Bid to Result solicitations, there is an increased emphasis placed on technical approach and reduced emphasis on cost (as compared to bids for "Defined Scope of Work" RFBs).

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

**Constituents of Concern (COCs)**

Soil and groundwater samples collected at the Point Store site have been analyzed for the current PADEP Act 2 short-list of unleaded gasoline compounds. Based on these analyses, the COCs (i.e., those constituents exceeding the applicable SHS MSCs benchmark) present in site environmental media include the following:

*Soil* – Impacts exceeding applicable standards have been identified in soil beneath the Point Store property, and beneath the northern portion of the adjacent Mellott parcel near U.S. Route 522, and have collectively included all of the target short-list unleaded gasoline compounds except cumene. Sustained dissolved-phase contamination suggests soil remains an ongoing secondary source of groundwater impacts.

*Groundwater* – Dissolved-phase contaminants exceeding applicable standards have historically included all of the target short-list unleaded gasoline compounds except

[21] CBP refers to a range of commercially available pulverized / amended activated carbon products designed to sorb and provide surfaces to facilitate in-situ biodegradation of residual organic contaminants.

cumene. Based on the most recent groundwater analytical data available (third quarter 2018), compounds exceeding applicable standards included benzene, toluene, ethylbenzene, MTBE, naphthalene, and 1,2,4-TMB beneath the Point Sore property, and benzene and MTBE beneath the northern portion of the Mellott property.

*Soil gas* – Soil and groundwater VI screening has been completed through which several potential VI sources of concern have been identified. However, soil gas and/or indoor air sampling has not yet been performed. Conduct of a post-remediation VI study based on the revised PADEP guidance is required under this RFB.

**General SOW Requirements**

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

- The Storage Tank and Spill Prevention Act (Act 32 of 1989, as amended);
- Pennsylvania Code, Title 25, Chapter 245 - Administration of the Storage Tank Spill and Prevention Program;
- The Land Recycling and Environmental Remediation Standards Act of 1995 (Act 2), as amended);
- Pennsylvania Code, Chapter 250 - Administration of Land Recycling Program; and
- Pennsylvania's Underground Utility Line Protection Law, Act 287 of 1974, as amended by Act 121 of 2008.

During completion of the milestone objectives specified below and throughout implementation of the project, the selected consultant shall:[22]

- Conduct necessary, reasonable, and appropriate project planning and management activities until the project (i.e., Remediation Agreement) is completed. Such activities may include Solicitor communications/updates, meetings, record keeping, subcontracting, personnel and subcontractor management, quality assurance/quality control, scheduling, and other activities (e.g., utility location). Project planning and management activities will also include preparing and implementing plans for health and safety, waste management, field sampling/analysis, and/or other plans that are necessary and appropriate to complete the SOW, and shall also include activities related to

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

establishing any necessary access agreements.[23] Project planning and management shall include identifying and taking appropriate safety precautions to not disturb Site utilities including, but not limited to, contacting Pennsylvania One Call as required prior to any ground-invasive work. As appropriate, project management costs shall be included in each bidder's pricing to complete the milestones specified below.

- Be responsible for coordinating, managing, and completing the proper management, characterization, handling, treatment, and/or disposal of all impacted soils, water, and derivative wastes generated during the implementation of this SOW. The investigation-derived wastes, including purge water, shall be disposed in accordance with standard industry practices and applicable laws, regulations, guidance, and PADEP directives. Waste characterization and disposal documentation (e.g., manifests) shall be maintained and provided to the Solicitor and the PAUSTIF upon request. All investigation derived wastes shall be handled and disposed per PADEP's Regional Office guidance. It is the selected consultant's responsibility to conform with current PADEP Regional Office guidance requirements in the region where the Site is located.
- Be responsible for providing the Solicitor and facility operator with adequate advance notice prior to each visit to the property. The purpose of this notification is to coordinate with the Solicitor and facility operator to ensure that appropriate areas of the property are accessible. Return visits to the Site will not constitute a change in the selected consultant's SOW or result in additional compensation under the Remediation Agreement.

**Site-Specific Guidelines**

As part of this RFB, the selected consultant will need to consider the following site-specific guidelines:

**On-Property Access.** Given that the Point Store property is bordered on two sides by roadways, customer traffic can be heavy at times and maneuverability can be challenging - especially during peak business hours. As such, safety precautions should be carefully considered prior to and during any field activities along with an elevated level of attentiveness. Should it be necessary to temporarily disrupt business operations to complete any of the milestones within this RFB, the Solicitor and facility operator require at least two (2) weeks advance notice and coordination with site personnel.

[23] MRLLC previously entered into an access agreement with the owners of an adjacent residential property (Mellott) for advancing / sampling soil borings, installing / sampling monitoring wells, and geophysical logging / hydraulic testing of the potable water supply well. Bid responses shall assume that reestablishing the access agreement with this property owner will be necessary.

**Off-Property Access.** The selected consultant will be responsible for securing off-property access where needed to implement the remedial approach. Work required to negotiate and secure off-property access shall be included within the fixed price for Milestone B. It is reasonable to assume that Solicitor will assist, as needed, with this effort.

**Field Activities.** All on- and off-property 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 facility operator / adjacent property owner(s). The selected consultant will be responsible for determining and adhering to other restrictions that may apply to the Point Store property or surrounding properties.

**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 ICF/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 its 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 its fixed-price cost. If a bidder includes costs to conduct specific safety measures or activities, the bidder should specify it in the bid response and discuss why it is appropriate and necessary and indicate which methods will be utilized and to what extent. As discussed in the RFB, cost is not the only factor when evaluating bid responses and other factors are taken into consideration during the bid evaluation process, including appropriate safety measures.

**Waste Disposal.** The investigation derived waste (including, but not limited to, soil/rock cuttings, used carbon, well development / purging liquids, groundwater removed during pilot testing activities, etc.) 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 or other non-essential items may be temporarily staged on the Point Store property, <u>but should be removed from the property as quickly as possible.</u> Each bidder should

estimate the volume of waste using its professional opinion, experience and the data provided. **ICF and 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.** This milestone provides bidders the opportunity to identify which additional site characterization work that will be completed in advance of finalizing the remedial approach design and moving ahead with its implementation. Conducting supplemental investigative activities under this milestone is mandatory. PAUSTIF will be reimbursing up to $10,000 for supplemental site characterization and documentation 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 that are characterization-type activities (e.g. analysis for $C_4$-$C_{12}$); or 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 contaminant mass in place).

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

Each bidder shall describe in detail its scope of work for additional site characterization activities along with corresponding technical justification to support 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 the SSCR / RAP (Attachment 3f) and the other documents provided in Attachment 3, rather than relying solely on the summary information presented in this RFB.

Example potential activities for bidders to consider may include tasks such as: i) advancing and sampling additional soil borings to further assess the extent and magnitude of impacted

unsaturated / smear zone soils on- and off-property; ii) performing additional overburden aquifer testing and geotechnical sampling / analyses to assist with determining excavation sidewall stability or updating the site contaminant fate & transport model; iii) conducting additional well gauging to refine the vertical limits of unsaturated, smear zone and permanently saturated soils; and / or iv) waste characterization / profile sampling. 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 B.[24]

**Milestone B – Documentation of Findings: Preparation of an Expanded Remedial Action Progress Report (RAPR) or Preparation, Submittal and PADEP Approval of a RAPA.** Upon completing Milestone A described above, there are two possible documentation scenarios for Milestone B. Each bidder shall choose one documentation scenario. The scenarios, triggers for each, and minimum required components are summarized as follows:

(1) **Expanded RAPR (Remedial Alternative 1).** Bidders proposing to implement the PADEP-approved RAP with no modification shall document and report the additional site characterization conducted under Milestone A to the PADEP in a concurrent quarterly RAPR that shall be supplemented to describe the Milestone A activities, methods and results. The expanded RAPR shall first be submitted in draft form to the Solicitor and PAUSTIF for review and comment. At Solicitor's sole discretion, the expanded RAPR will be finalized and submitted to the PADEP. Each bidder's project schedule shall provide two (2) weeks for Solicitor and PAUSTIF review of the draft document. The final report shall address comments received from the Solicitor and PAUSTIF on the draft report before it is submitted to the PADEP for its review.

The expanded RAPR shall describe and provide evaluations of all findings generated under Milestone A above, updating the conceptual site model (CSM) for the Site and its vicinity. The report shall incorporate information and relevant findings from the previous

[24] In order to receive reimbursement under this task, thorough documentation of the additional site characterization activities must be provided to PAUSTIF.

site documentation (as necessary), and contain all necessary and appropriate figures, tabulated data and appendices to comply with the regulatory requirements.

The expanded RAPR shall be signed and sealed by the appropriate environmental professional (i.e., a Professional Geologist and / or Professional Engineer, licensed 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 report. The fixed-price cost shall also include responding to any PADEP questions or comments on the expanded RAPR; or

(2) **RAPA (Remedial Alternatives 2 and 3).** If a bidder proposes to implement the PADEP-approved RAP with modifications (e.g., adjustments to the soil excavation footprints / depths), then the supplemental site characterization activities conducted under Milestone A and the remedial approach modifications shall be documented and reported to the PADEP in a RAPA to secure PADEP approval. The RAPA shall first be submitted in draft form to the Solicitor and PAUSTIF for review and comment before being finalized and submitted to the PADEP. Each bidder's project schedule shall provide two (2) weeks for Solicitor and PAUSTIF review of the draft document. The final report shall address comments received from the Solicitor and PAUSTIF on the draft report before it is submitted to the PADEP for its review.

The RAPA shall describe and provide an evaluation of all findings generated under Milestone A above, updating the conceptual site model (CSM) for the Site and its vicinity, and detailing any proposed modifications to the PADEP-approved RAP remedial approach. The RAPA shall incorporate information and relevant findings from the previous site documentation (as necessary), and contain all necessary and appropriate figures, tabulated data and appendices to comply with the regulatory requirements for and to obtain PADEP approval of the RAPA.

The RAPA shall be signed and sealed by the appropriate environmental professional (i.e., a Professional Geologist and / or Professional Engineer, licensed 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 report. The fixed-price cost shall also include addressing any PADEP comments on the RAPA.[25]

The successful bidder will be eligible to receive payment for 75% of the bid amount for Milestone B when there is proof the RAPA has been completed and submitted to the

[25] All figures to be included in the expanded RAPR or RAPA (e.g., site plans, etc.) shall be available in electronic format to the Solicitor upon request.

PADEP. The 25% balance for Milestone B will be due for reimbursement once proof has been provided that the PADEP has approved the RAPA.

**Milestone C – Pre-Remediation Quarterly Groundwater Monitoring, Sampling & Reporting.** Under this task, bidders shall provide a firm fixed-price to continue with quarterly groundwater monitoring, sampling, and reporting events while performing the supplemental site characterization activities under Milestone A, preparing an expanded RAPR or RAPA (and PADEP approval) under Milestone B, and completing preparations leading up to implementation of the RAP or RAPA (e.g., scheduling, coordination & site preparation). For the purposes of this RFB, it is assumed the Milestone C activities will be required for two (2) quarters. However, each bid must specify the number of quarterly events that will be needed prior to implementation of the remedial approach (Milestone D) along with supporting rationale. Any additional quarterly monitoring, sampling and reporting events, beyond the two quarters specified in this RFB, shall be defined on the Bid Cost Spreadsheet and shall be incorporated in the Remediation Agreement as per event Optional Cost Adder Milestone C3.[26]

Each groundwater monitoring and sampling event shall include the on- and off-property overburden and shallow bedrock monitoring well network currently sampled consisting of MW-1 through MW-18, MW-19BR and MW-20BR.[27] Also during each quarterly groundwater monitoring and sampling event, groundwater samples shall be collected from on-property shallow bedrock piezometer PZ-3BR given the proximity of the Point Store potable water supply well and influence (groundwater drawdown) observed in PZ-3BR during the constant rate pumping test of the facility supply well. The conduct and results of each event shall be documented in quarterly RAPRs. During each quarterly groundwater monitoring and sampling event, the depth to groundwater shall be gauged in all existing monitoring wells and piezometers, and before purging the wells / piezometer designated above for sample collection. Groundwater level measurements shall be converted to groundwater elevations for assessing groundwater flow direction and hydraulic gradient.

Each of the monitoring points 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 PADEP SCRO guidance.

Groundwater samples shall be analyzed for the current PADEP short-list of unleaded gasoline parameters (benzene, toluene, ethylbenzene, xylenes, MTBE, cumene, naphthalene, 1,2,4-TMB and 1,3,5-TMB) by a PADEP-accredited laboratory using appropriate analytical methods and

[26] The Remediation Agreement includes a Provision that the pre-remedial quarterly site monitoring, sampling & reporting events will be limited to the two quarters under Milestone C plus the number of additional events under Optional Cost Adder Milestone C3 as defined in the selected bid. If additional events are required under Milestone C3, pre-approval from Client and PAUSTIF (for funding) is required.

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

detection levels. Appropriate QA/QC samples shall also be collected during each event and analyzed for the same parameters.[28] In addition, each quarterly event shall include field measurements for the following parameters: pH, temperature, specific conductance, dissolved oxygen (measured in-situ), oxidation/reduction potential, and total dissolved solids (TDS).

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

- A summary of site operations and remedial progress made during the reporting period;
- Narrative description of the sampling procedures and results;
- Tabulated data collected from the monitored points documenting the depth to groundwater and thickness of any free product encountered. This data shall be presented on the same table as the historical quantitative groundwater analytical results mentioned below;
- Groundwater elevation contour maps depicting groundwater flow direction in the overburden and shallow bedrock;
- Tabulated historical quantitative groundwater analytical results including results from the current quarter;
- Current quarter laboratory analytical report(s);
- One site-wide iso-concentration contour map for each compound detected in any one well above the SHS during the quarter;[29]
- 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, contracting, or expanding plume;
- Treatment and disposal documentation for waste generated during the reporting period; and

[28] Each bidder's approach to implementing Milestone C 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.
[29] 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.

- 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 D). 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 for and documented in the quarterly RAPRs).

**Milestone D – Implementation of RAP or RAPA.** Under this milestone, bidders shall provide a fixed-price cost inclusive of all the manpower, machinery, materials, and other costs needed to fully implement the remedial solution for the Point Store site as described in the PADEP-approved RAP, or in the bidder's RAPA once approved by the PADEP. The cost breakdown for implementing the remedial approach described in the RAP or RAPA shall follow the format prescribed by sub-Milestones D1 through D4. Provided below are brief conceptual descriptions for remedial Alternatives 1, 2 and 3 that the bidder may choose from for inclusion in its bid response:

1) **Alternative #1 – Soil Excavation and ODP application followed by MNA as described in the RAP.** Soil excavation shall be conducted to remove subsurface source material within the four areas (A through D) and at the depths defined in the RAP. The soil contamination is relatively shallow and accessible given that all facility UST systems infrastructure has been removed. ODP shall be applied to the downgradient perimeter and any residual hot spots of the open excavations prior to backfilling for controlled time-release of oxygen to enhance in-situ aerobic bioremediation of petroleum hydrocarbons in groundwater or saturated soil. Any post-remedial residual contamination (e.g., beneath U.S. Route 522) will be addressed via MNA. Water management will likely be necessary both on- and off-property.

   The lateral and vertical dimensions of each of the four areas (A through D) proposed for soil excavation are depicted in Figure 1, Attachment 3j. The full lateral and vertical dimensions of the depicted volumes shall be excavated, backfilled and restored under Milestone D. Soil excavation activities will not extend into the U.S. Route 522 ROW.

2) **Alternative #2 – Tailored Soil Excavation and ODP application followed by MNA (modified approach).** Soil excavation shall be conducted on- and off-property focusing on excessively contaminated soil & groundwater in critical areas with rectangular boundaries / dimensions (Figure 2, Attachment 3j). As with Alternative 1, ODP shall be applied to the open excavations prior to backfilling. Inaccessible contamination (e.g., beneath U.S. Route 522) or any other post-remedial residual contamination shall be

addressed via ODP-enhanced MNA. Water management will likely be necessary on- and off-property.

3) **Alternative #3 – Tailored Soil Excavation and CBP application followed by MNA (modified approach).** Remedial activities will be consistent with those described under Alternative 2 with the exception that CBP technology will be used in the excavation backfill in lieu of ODP (Figure 3, Attachment 3j).

As mentioned above, each bidder shall propose one of these three remedial alternatives in its bid response. For bidding purposes, bid responses shall assume excavating all soil from the outlined areas, fully extending to the depths indicated in Figures 1 through 3 (Attachment 3j) for remedial Alternatives 1 through 3, respectively. Additional information regarding remedial Alternatives 1, 2 and 3 and related bid details for implementation of the RAP or RAPA are provided in sub-Milestones D1 through D4 below.

Milestone D1 – Pre-Excavation Preparation Activities. The selected consultant shall complete preparatory activities in advance of the soil excavation. These activities may include coordination and scheduling with subcontractors / vendors, procuring equipment and materials, and providing notifications to Solicitor and other stakeholders (i.e., affected third party property owners).

A mark-out of buried utilities or other subsurface features shall be completed within and in the general vicinity of the areas designated for soil excavation. PA One Call notification shall also be made and documented prior to mobilizing to the site. Given the overhead electric lines that extend along the southern facility property boundary, the electric service provider may need to be contacted to determine whether the power lines might require shielding.

Milestone D2 – Soil Excavation, Transport & Disposal of Impacted Soil, ODP (Alternatives 1 & 2) or CBP (Alternative 3) Application and Backfilling. Bidders proposing to implement the RAP with no modification (remedial Alternative #1), or a modified version of the RAP remedial approach under a RAPA (remedial Alternatives #2 and #3) shall provide a firm fixed-price cost to complete excavation of soil along with associated ODP or CBP application, backfilling and surface restoration consistent with pre-existing surface conditions.

Should the horizontal and/or vertical boundaries of one or more of the excavation areas need to be expanded based on field screening / observations, and after written consultation with USTIF / ICF, the costs of the added digging, backfilling, surface restoration and management will be addressed via a bid optional unit cost adder (discussed below).

Accumulating groundwater during excavation can be expected and will require proper management. Since the volume of impacted groundwater that would require management for disposal cannot be precisely determined at this time, compensation to the successful bidder will

be based on a fixed, per gallon unit cost for the management, sampling, loading, transportation and disposal (or on-site treatment & regulatory permitted discharge) of impacted groundwater removed from the soil excavations. The successful bidder will only be reimbursed for the actual gallons of water removed from the excavations and properly disposed. The successful bidder is expected to follow normal industry practices when scheduling the work to avoid excessive precipitation events to the extent possible and to conduct the excavation and backfilling work as quickly and efficiently as possible to minimize water production.

As previously mentioned, subsurface utilities beneath the Point Store facility include a sanitary sewer line leading to the on-lot septic system and shallow electric service lines. Given the locations of these underground utilities as depicted in the figure contained in Attachment 3c, and the estimated soil excavation footprints delineated on the figures provided in Attachment 3j, soil removal activities are not expected to encounter these buried utilities. It is possible, however, that the electric service line located beyond the northwest perimeter of excavation Area A may be encountered should excavation in this area need to be expanded. In this event, costs for removing and replacing the affected section of electric line shall be covered under optional cost adder Milestone D2A.

The bidder's fixed-price cost for this milestone shall describe how the bidder shall apply the ODP or CBP to excavations to enhance in-situ aerobic bioremediation of petroleum hydrocarbons in groundwater or saturated soils, including applied volumes / mass and focus zones. Each bid shall provide details regarding the proposed manufacturer and product model / composition of the product, the volume / mass to be used (and basis), and how the material will be applied.

Fixed-price bids shall also include backfilling and mechanically compacting in lifts the excavated volumes. The successful bidder shall backfill using a combination of reused "clean" site soil and imported clean fill. Excavated material stockpiled on site for re-use shall be sampled prior to backfilling, and the fixed-price bid shall include costs for the sampling and laboratory work in accordance with PADEP guidance documents. Backfill material and placement/compaction methods shall result in a stabilized soil condition capable of supporting normal traffic and use loads at this commercial facility. The backfill materials shall be free of vegetation, stone exceeding gravel dimensions, trash, lumber, and other unsuitable materials. In general, backfill shall be mechanically compacted by means of tamping rollers, sheep foot rollers, pneumatic tire rollers, vibrating rollers, or other mechanical tampers that are appropriate for the material being compacted. Bids shall also include surface paving and other completion / restoration (e.g., revegetation) to restore the excavated areas to pre-excavation conditions.

Fixed-price bids for the excavation work shall include any waste profiling (including any sampling & laboratory work) and securing waste facility acceptance prior to beginning the soil excavation.

The SOW and fixed-price cost for Milestone D2 shall state / provide the following:

- Only excessively impacted soil (i.e., excavated soil exceeding the stated PID screening threshold) shall be transported and disposed off-site;
- Several monitoring wells are anticipated to be destroyed during the excavation work. Bids shall identify the wells within the excavation footprint to be destroyed. These wells will need to be decommissioned in accordance with PADEP guidance as part of this task prior to initiating the excavation activities. Any destroyed monitoring or observation well shall be replaced at, or as close as possible to its original location. Construction details for the replacement wells shall be identical, or as close as possible to the original wells. Note that the number of wells requiring decommissioning / replacement will vary depending on whether a bidder chooses remedial Alternative 1, 2 or 3;
- A detailed discussion regarding the excavation approach; groundwater management; soil screening and segregation techniques (including the PID screening threshold for determining "clean" versus excessively impacted soil); clean fill sampling and plans for reuse; waste management and profiling; plans for soil staging; the possibility for direct loading of excessively impacted soil; type of backfill; backfilling / compaction methods; plans for surface restoration; records keeping, etc.;
- **A comprehensive and complete fixed-price bid for Milestone D2 that shall *only* <u>exclude</u> the costs for (1) contaminated soil transportation and disposal ($/ton); (2) clean fill importation ($/ton); and (3) contaminated water transportation and disposal ($/gal).** Bidders shall provide fixed-cost unit rates for these tasks under Optional Cost Adder Milestones UC1, UC2, and UC3, respectively; and
- A schedule for implementing and completing the excavation work.

In addition to providing a fixed-price bid for excavating, backfilling, restoring the defined excavation area, and well abandonment and replacement activities, bidders shall also provide excavation-related unit costs (included on the Attachment 2, Bid Cost Spreadsheet) to accommodate variable quantities and changes that may be required. These unit costs are:

UC1 Management, loading, transportation and proper off-site disposal of excessively contaminated soils (cost per ton);

UC2 Purchase, transportation and on-site management of clean imported fill to replace exported excessively contaminated soil (cost per ton);

UC3 Management, sampling / analysis, loading, transportation and disposal of impacted groundwater removed from the soil excavation (cost per gallon);

UC4 Additional excavation beyond identified excavation limits, excluding excessively contaminated soil transportation / disposal costs since these

are captured under UC1 (cost per in-place cu yard);[30] It shall also exclude UC2, UC3, UC5 and UC6 cost components as these would be accounted for under these other unit cost factors.

UC5 Additional backfilling and compaction beyond identified limits, excluding clean imported fill costs since these are captured under UC3 (cost per in-place cu yard); and

UC6A Surface restoration of asphalt areas beyond identified target excavation limits (cost per square foot).

UC6B Surface restoration of vegetated soil areas beyond identified target excavation limits (cost per square foot).

UC6C Surface restoration of gravel-covered areas beyond identified target excavation limits (cost per square foot).

When evaluating the cost component of bid responses, the bidders unit costs for UC1, UC2, and UC3 will be added to the bidders total fixed price provided in Attachment 2 using the following assumed totals – 1,620 tons (Remedial Alternative 1) and 820 tons (Remedial Alternatives 2 & 3) of T&D of impacted soils (assumed fraction of the excavated soil requiring off-property T&D and same amount of clean fill importation) and 10,000 gallons (Alternative 1) and 5,000 gallons (Alternatives 2 & 3) of impacted groundwater for disposal.

The details of the soil removal activities shall be documented in a concurrent quarterly RAPR (Milestone E) and the RACR (Milestone I) and, at a minimum, shall include the following: scaled drawings depicting the lateral and vertical dimensions of the completed excavations superimposed on the site plan; all field observations and PID readings; the volume of soil excavated, disposed off-site, used as backfill, and imported for backfill; waste profiling documentation; soil waste disposal manifests and disposal facility; source and amount of imported fill; quantity of added ODP or CBP and emplacement details; impacted groundwater management; systematic random and biased soil sampling locations & depths and laboratory analyses; dated photographs taken before breaking ground, throughout the excavation, and after restoration; and documentation (boring logs / well construction diagrams and survey information) for any replacement monitoring wells.

Milestone D3 – Risk-Based Trench Air Sampling. In conjunction with the soil excavation activities described under Milestone D2 above for remedial Alternatives 1, 2 and 3, the selected bidder shall collect trench vapor samples to assist with evaluating potential current and future

[30] The successful bidder cannot count on reimbursement of excavation beyond the limits depicted in Figures 1, 2 and 3 (Attachment 3j) without having obtained prior written approval of the supplemental work by Solicitor and PAUSTIF or their agents before completing the supplemental excavation work.

inhalation risk to the utility / construction worker in the U.S. Route 522 ROW. Air sample analytical results produced under this milestone shall be used for developing roadway worker inhalation risk calculations and incorporated into the Post-Remediation Risk Assessment (Milestone H).

Trench air sampling shall be performed upon completion of the Milestone D2 excavation work by excavating an approximate 8 ft long x 4 ft wide trench adjacent to and parallel with the highway ROW, and downgradient of the source area (between wells MW-6 and MW-7). The trench shall be extended to a depth approximately one-foot below the water table surface (~ 8 ft-bg). The trench shall be kept open by a trench box and covered overnight as a safety precaution (e.g., steel plates) along with any other safety measures deemed necessary such as barricades.[31] On the following day, after the trench box has been uncovered, 8-hour time-weighted air samples shall be collected at depths of approximately 1/3 and 2/3 the distance to the water table in the trench box (e.g., if groundwater is encountered at 8 feet, then sample at ~3 and ~5 ft-bg. Air samples shall be collected in 6-liter laboratory-certified Summa canisters and submitted for analysis of the current PADEP short-list of unleaded gasoline parameters according to USEPA Method TO-15. Duplicate QA/QC samples shall also be collected at both depth intervals. Additionally, one ambient air sample shall be collected outside the trench for background ambient air evaluation (e.g., to account for potential influence from exhaust emissions related to roadway traffic). Diesel or gasoline powered equipment used for the soil excavation work shall be shut down during collection of these samples.

Milestone D4 – Post-Excavation Soil Attainment Sampling. After the excavations are completed for remedial Alternatives 1, 2 or 3 and prior to backfilling, soil samples shall be collected from the excavation sidewalls (and base, for any excavations that do not fully extend to the zone of permanent saturation) within the depth interval covering the unsaturated and smear zones. The location / depth of the soil samples shall be determined in advance using PADEP's systematic random soil sampling (SRSS) procedures. The soil sample results for the spill-site property excavations will be used in the Post-remediation Risk Assessment (Milestone H) to determine what, if any, land use restrictions (e.g., soil management plan) are necessary to adequately control current and future human health risks on Solicitor's property. SRSS soil sample analytical results for the Mellott property excavations will be used in the Post-remediation Risk Assessment (Milestone H) to determine if the human health risks have been rendered acceptable for unrestricted residential land use (i.e., without restrictions on the Mellott deed). The SRSS analytical results for samples collected from the excavation sidewalls along the roadway shall be used in the Post-remediation Risk Assessment (Milestone H) to determine whether the residual impacts present an excessive risk to current or future construction and utility workers in the roadway ROW (it shall be assumed that PADEP will waive the need for an environmental covenant restricting the use of groundwater beneath the roadway footprint).

[31] A trench box or other type of shoring may be required to maintain trench stability.

Fixed-price bids shall describe the approach, including a drawing showing where soil attainment sampling will be performed, the depth interval, and the number of soil samples for side wall (and base, where applicable) attainment soil sampling from the completed excavations for the bidder's selected remedial alternative (Alternative 1, 2, or 3). Appropriate quality assurance/quality control (QA/QC) samples shall also be obtained for laboratory analysis.[32] Soil samples shall be analyzed for the PADEP short list for unleaded gasoline parameters (BTEX, MTBE, cumene, naphthalene, 1,2,4-TMB, and 1,3,5-TMB). The soil sampling results from SRSS shall be analyzed using PADEP's 75%/10x, or 75%/2x Ad Hoc Rules, as appropriate. Following completion of this milestone, the selected consultant shall provide ICF / PAUSTIF with a copy of the laboratory analytical report documenting the soil attainment sampling results along with the systematic random soil sampling plan to receive reimbursement for this milestone. Soil attainment sampling results shall also be subsequently documented in the RACR.

**Milestone E – Post-Remediation Quarterly Groundwater Monitoring, Sampling & Reporting.** Under this milestone, bidders shall provide a firm fixed-price to complete six quarterly groundwater monitoring and sampling events to generate the data needed to demonstrate stability / contraction of the contaminant plumes and support closure to the SSS. Each groundwater monitoring and sampling event shall include existing on- and off-property overburden and shallow bedrock monitoring wells MW-1 through MW-18, MW-19BR and MW-20BR, and shallow bedrock piezometer PZ-3BR.[33] The conduct and results of each event shall be documented in quarterly RAPRs.

Any additional post-remediation quarterly groundwater monitoring, sampling and reporting events, beyond the six quarters specified in this RFB, shall be defined on the Bid Cost Spreadsheet and shall be incorporated in the Remediation Agreement as per-event Optional Cost Adder Milestone E7.[34, 35]

During each quarterly post-remediation groundwater monitoring and sampling event, the depth to groundwater shall be gauged in <u>all existing monitoring wells and piezometers,</u> and before purging the wells / piezometer designated above for sample collection. Groundwater level measurements shall be converted to groundwater elevations for assessing groundwater flow direction and hydraulic gradient.

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[32] Each bidder's approach to the collection of the soil samples shall clearly identify the number of samples, QA/QC measures, analytes, and other key assumptions affecting the bid price.

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

[34] The Remediation Agreement includes a Provision that the post-remediation quarterly site monitoring, sampling & reporting events will be limited to the six quarters under Milestone E plus the number of additional events under Optional Cost Adder Milestone E7 as defined in the selected bid. If additional events are required under Milestone E7, pre-approval from Solicitor and PAUSTIF (for funding) is required.

[35] If it becomes evident anytime during the groundwater plume stability demonstration that plume stability will not be successful within the six quarters plus any additional quarters conducted under Optional Cost Adder Milestone E7, this will represent a New Condition under the contract.

Each of the monitoring points 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 PADEP SCRO guidance.

Groundwater samples shall be analyzed for the current PADEP short list of unleaded gasoline parameters (benzene, toluene, ethylbenzene, xylenes, MTBE, naphthalene, cumene, 1,2,4-TMB and 1,3,5-TMB) by a PADEP-accredited laboratory using appropriate analytical methods and detection levels. Appropriate QA/QC samples shall also be collected during each event and analyzed for the same parameters.[36] In addition, each event shall include field measurements for the following parameters: pH, temperature, specific conductance, dissolved oxygen (measured in-situ), oxidation / reduction potential, and TDS.

The post-remediation groundwater monitoring reports describing the sampling methods and results shall be provided to the PADEP on a quarterly basis and within 30 days of the end of each quarter. At a minimum, each quarterly report shall contain the following:

- A summary of site operations and remedial progress made during the reporting period;
- Narrative description of the sampling procedures and results;
- Tabulated data collected from the monitored wells documenting the depth to groundwater and thickness of any free product encountered. This data shall be presented on the same table as the historical quantitative groundwater analytical results;
- Groundwater elevation contour maps depicting groundwater flow direction in the overburden and shallow bedrock;
- Tabulated historical quantitative groundwater analytical results including results from the current quarter;
- Current quarter laboratory analytical report(s);
- One site-wide iso-concentration contour map for each compound detected in any one well above the SHS during the quarter;[37]
- 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

[36] Each bidder's approach to implementing Milestone E 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.
[37] 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.

events and contaminant concentrations;

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

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

**Milestone F – Post-Remediation Plume Stability Assessment.** Under this task, bidders shall provide a fixed-price cost and describe their approach in detail for evaluating the groundwater data and demonstrating contaminant plume stability. This work is anticipated to include evaluating contaminant trends in individual wells and performing both a quantitative (e.g., Mann-Kendall statistical analyses) and qualitative (e.g. chronological contaminant extent maps, trend lines, etc.) evaluations to address all dissolved-phase constituents whose concentrations exceed the residential used aquifer SHS MSCs. The plume stability assessment shall be conducted after Milestone E has been completed.

Bid responses will be expected to describe how the preponderance of data would be used to assess the nature of overall plume stability with the recognition there may be localized perturbation of constituent concentrations (e.g., due to groundwater fluctuations in the plume core) that may or may not be a reflection of the stability of the plume as a whole. Bidders are expected to provide a description of how plume stability will be evaluated qualitatively (e.g., using a sequence of plume limit contours chronologically over the post-remedial period to evaluate if the plume generally remains in the same area over time). Additionally, if quantitative statistics are proposed to be used by bidders (e.g., Mann-Kendall) to supplement a qualitative evaluation, bidders shall describe these techniques and how any difference between qualitative analysis and quantitative analysis will be resolved.

**Milestone G – Post-Remediation Vapor Intrusion Study.** In the General Site Background and Description section of this RFB, it was noted that VI assessment activities at the Point Store site were initiated and involved J&E modeling and soil / groundwater screening to identify the location and depth of potential VI sources to assist with developing a soil excavation plan for inclusion in the RAP. However, soil gas and/or indoor air sampling have not yet been

completed. In order to comply with the requirements of the revised PADEP Technical Guidance Manual for Vapor Intrusion into Buildings from Groundwater and Soil Under Act 2 (effective 1/18/17) and to determine whether vapor mitigation may be necessary for the c-store building, a post-remediation vapor intrusion study shall be conducted to assess potential current or future indoor air exposure risks that may need to be controlled via institutional and/or engineering controls.

Under this milestone, bidders shall describe and provide a firm fixed-price cost for conducting a VI study post-remediation that shall adhere to the new PADEP guidance. The VI study shall be implemented after completing Milestones E and F and may include, as necessary, soil vapor sampling, sub-slab vapor sampling, and indoor air sampling within the crawl-space portion of the c-store building as outlined in the site RAP, or could possibly include indoor air sampling within the building, if deemed appropriate. Results shall be used to determine if excessive indoor air human health risks may exist requiring mitigation via engineering and institutional controls.[38] Each bidder shall provide a detailed description of its proposed methods, installation details for any proposed vapor points, number of sampling points, sampling techniques and analysis, and number / timing of sampling events along with a site plan depicting the locations of any new soil, sub-slab, crawl-space or indoor air monitoring point locations, as applicable.

Vapor samples shall be submitted to a PADEP-accredited laboratory for analysis of the current PADEP short-list of unleaded gasoline parameters using appropriate analytical methods and detection levels. Appropriate QA/QC samples shall also be collected during each event and analyzed for the same parameters (e.g., trip blank, blind duplicate). Results from the post-remediation VI assessment shall be taken into account when preparing the Remedial Action Completion Report (RACR) under Milestone I.

**Milestone H – Post-Remediation Risk Assessment with Updated Fate & Transport Modeling.** Under this milestone, each bidder shall provide a detailed work scope and fixed-price cost to develop a quantitative risk assessment incorporating updated contaminant fate & transport (F&T) modeling following the site remedial efforts. The post-remediation risk assessment with updated F&T modeling shall be conducted concurrent with the plume stability assessment described in Milestone F and the VI study described in Milestone G.

This task shall include conducting an exposure pathway analysis for: (i) on-property; (ii) roadway right-of-way; and (iii) Mellott property to determine potentially complete and incomplete exposure pathways. This shall be followed by a risk assessment process that begins by comparing current and projected future residual soil & groundwater contaminant levels against

[38] In the event that the outcome of Milestone G determines that installation of a vapor mitigation system is required for the c-store building (e.g., radon type vapor mitigation system), the design and implementation of such a VI mitigation system would be completed under a contract provision on a time & materials (T&M) basis.

applicable soil & groundwater screening criteria[39]. For those soil and groundwater contaminants passing through the screening criteria, the human health exposure risks shall be quantified. If human health risks are excessive (organ-specific HI >1 and/or carcinogenic risk of >1 x $10^{-4}$), then appropriate land use restrictions for the spill property shall be identified to eliminate the pathway causing the excessive human health risk. If after remediating the site and eliminating pathways via spill property land use restrictions or engineering controls (e.g., radon-type vapor abatement system)[40], excessive human health risks persist on- or off-property, then this would represent a New Condition under the contract. Any further remediation of the property or other off-property parcel(s) would need to be conducted either through a contract modification or through other means. The successful bidder will be responsible for producing a post-remediation risk assessment that is approved by PADEP.

Spill property land use restrictions to be considered for pathway elimination on-property include:

- No new potable water wells unless installed outside the contaminated part of the property and demonstrated to be hydraulically isolated like the current site potable well;
- Vapor barrier on future building construction;
- Vapor mitigation (engineering control) on existing structures (e.g., radon type venting) if current vapor intrusion risks are excessive[41]; and
- Soil management plan for future digging on excessively contaminated portions of property.

Additionally, the risk assessment shall consider the need for a land use restriction for the spill property deed that requires periodic inspection of the Mellott property for new supply well installations near the roadway ROW if excessive groundwater contamination persists on the Mellott property post-remediation.

Bidders shall assume that no environmental covenants (EC) / land use restrictions will be applied to adjoining off-property parcel(s).

The risk assessment shall encompass completing an exposure assessment, toxicity assessment, and risk characterization. The identification of exposure pathways for the Site shall be based upon guidance from the American Society for Testing and Materials (ASTM) and the United States Environmental Protection Agency (USEPA), as required by Act 2, Section 250.404. The risk assessment deliverable shall include Exposure Pathway Flowcharts graphics

[39] The selected consultant shall confirm with the PADEP that constituent concentrations are to be screened against the USEPA RSLs and not against the PADEP Statewide Health Standards (SHS). Only those constituents that do not screen out against the risk-based screening levels remain as COPCs for the exposure pathway analysis.
[40] If a vapor mitigation system is required on the facility building as a result of VI sampling, such work would be completed under a contract provision on a T&M basis.
[41] If vapor mitigation is required on the current commercial building, the design and implementation of such a VI mitigation system would be reimbursed on a T&M basis under a contract provision.

for current and future potential pathways (i) on-property; (ii) in the roadway ROW; and (iii) on the Mellott property to support the risk assessment text. These charts shall graphically depict the thought process in identifying the potentially complete pathways. The exposure evaluation charts shall include the exposure pathway steps of Constituent Source, Receiving Media, Transport Mechanisms, Exposure Routes and current and future human receptors (i.e., facility workers, construction / utility workers, trespassers, residents, and recreational users and others).

The post-remediation risk assessment shall identify the current and forecast future site soil and groundwater samples used in the risk assessment, show how the constituents of interest (COI) were identified and present the COI for each contaminated media with a potentially complete pathway to a human receptor. Additionally, the risk assessment shall show how the risk assessment exposure point concentrations (EPCs) were calculated[42] for each contaminated media with a potentially complete human exposure pathway and summarize the calculated EPCs.

For each potentially complete exposure pathway in each area: (a) spill property; (b) roadway ROW; and (c) Mellott property, the level of carcinogenic risk shall be quantified, and the total cumulative carcinogenic risks shall be calculated. Non-carcinogenic risks shall be calculated using the hazard index. If necessary, the hazard index shall be evaluated on an organ specific basis. Exposure and toxicity assumptions shall be presented and well documented in the risk assessment report along with an uncertainty analysis.

The risk assessment shall clearly identify whether the residual soil and groundwater contaminants in areas (a), (b) and (c) present an unacceptable carcinogenic or non-carcinogenic risk to receptors of each of these three land use areas and, if so, identify which excessive risks cannot be eliminated via land use restrictions or engineering controls on the spill property deed. For those excessive risks that cannot be eliminated, the risk assessment shall calculate numerical risk-based concentrations for soil and groundwater for each applicable area (a), (b) and/ or (c) that will constitute the preliminary remediation goals for each of the areas.

Each bidder shall provide a detailed description of how it will evaluate exposure pathways for the construction / utility worker on the commercial spill property[43] and potential future exposure pathways for the construction / utility worker within the U.S. Route 522 ROW including how it will estimate the construction / utility worker EPCs. If a model is to be used in lieu of the trench air samples (Milestone D3) to estimate the vapor concentrations, bidders shall identify the model and the input assumptions that will be used (e.g., trench width and depth dimensions, wind speed / direction, etc.).

[42] EPCs shall be derived for COIs by statistical analysis (maximum concentrations shall not be used for EPCs).
[43] To determine what deed restrictions and/or post-remedial care monitoring activities might be necessary.

For roadway SSS attainment demonstration, either: (a) soil samples collected along the roadway excavation sidewalls (together with post-excavation groundwater quality data) will need to be shown to be safe to utility and construction workers; or (b) subsequent roadway soil sampling conducted after the ODP or CBP has been fully depleted (after 6 months to 1 year) will need to show that utility and construction worker exposures to soil and groundwater (and associated vapors) will be within acceptable limits.

In addition, an ecological screening assessment shall be performed to determine if the site poses an unacceptable risk to ecological receptors. The screening assessment shall be conducted in accordance with Section IV.H of the Pennsylvania Land Recycling Program's Technical Guidance Manual and USEPA Region 3 risk assessment screening criteria insofar as is necessary for determining any potential ecological risk.

After completing the exposure analysis / risk assessment, the selected consultant will present its draft findings to the Solicitor and PAUSTIF for review and comment as a separate deliverable. The project schedule should allow two (2) weeks for Solicitor and PAUSTIF to review the draft Risk Assessment before being finalized and incorporated into the RACR (Milestone I).

**Milestone I – Preparation, Submittal and PADEP Approval of Remedial Action Completion Report (RACR).** Under this milestone, the bidder shall provide a fixed-price cost to prepare a draft and final RACR following the completion of Milestones C through H and related optional cost adder milestones, as necessary. The RACR shall be prepared in accordance with Section 245.313. At a minimum, the RACR shall provide the details for Milestones A through H, and any optional cost adder milestones. The RACR shall also discuss the selected closure criteria for the Site and provide proof that human health risks: (a) on-property have been eliminated via pathway elimination, incorporating institutional and/or engineering controls as necessary; and (b) off-property via attainment of SSS numerical standards. It shall request permanent closure for the site for the current release under an Act 2 ROL. The project schedule should allow two (2) weeks for Solicitor and PAUSTIF review and comment on the draft RACR before a final version is submitted to the PADEP. The selected consultant shall then prepare and submit the final RACR to the PADEP in accordance with Section 245.313, and the report shall be sealed by a Professional Geologist and / or Professional Engineer registered in the Commonwealth of Pennsylvania (bidders shall refer to state licensing laws to determine which seals are required based on the work performed and documented in the RACR). The fixed-price cost shall also include addressing any PADEP comments on the RACR.

The successful bidder will be eligible to receive payment for 75% of the bid amount for Milestone I 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 I deliverable document.

**Milestone J – Finalizing / Filing of Environmental Covenant.** Under this task, the bidder shall describe and provide a fixed-price bid for finalizing and filing the Environmental Covenant (EC) associated with the PAUSTIF eligible release. The fixed-price shall include all reasonable and necessary activities and required fees to finalize and file the EC for the Point Store property with the local court house and other required entities. The successful bidder will be responsible for coordinating this work with the impacted property owner and his legal counsel. Legal fees are not to be included in bid costs. PAUSTIF reimbursement of Solicitor and/or third party legal fees will be considered outside of the executed Remediation Agreement. The fixed-price cost for this task shall also include the work necessary in petitioning PADEP for any EC waiver(s) (e.g., with respect to potable well prohibitions within the ROW of U.S. Route 522). Bidders should note that Solicitor (property owner) has agreed in advance to accept an EC applied to the Point Store property deed.[44]

**Milestone K – Site Closure / Restoration Activities.** Under this milestone, the bidder shall describe and provide a fixed-price bid for properly closing the site, including: in-place abandonment of monitoring wells, piezometers, and soil vapor sampling points consistent with PADEP guidelines; well head removals; and surface re-vegetation and concrete / asphalt repairs, as applicable, for areas that have been disturbed by site characterization or remedial action activities. This milestone shall also include photo–documenting the site restoration work and completing well abandonment forms to be submitted to the appropriate regulatory agencies. Copies of these photographs and forms shall also be provided for the Solicitor's files.

Each bid shall specify the estimated number of days between PADEP approval of the RACR and initiating the Milestone K site restoration work. Site restoration activities shall be conducted in accordance with standard industry practices and applicable laws, regulations, guidance, and PADEP directives. Conduct of all site closure / restoration activities shall be coordinated with the Solicitor and facility operator.

**Optional Cost Adder Milestones**

A number of optional cost adders may come into play at this site. Therefore, bidders shall provide unit pricing for these contingencies outside the base RFB scope. Note that before any work associated with these unit cost adders is conducted, the selected consultant shall provide a written request and detailed technical explanation for review and consideration by ICF (PAUSTIF Administrator) and/or its technical agent ahead of any written authorization to proceed.

[44] Finalizing and implementation of a Post Remedial Care Plan will be considered outside of the executed Remediation Agreement and is not a component of this RFB SOW.

**Optional Cost Adder Milestone C3 – Additional Pre-Remediation Quarterly Groundwater Monitoring, Sampling & Reporting.** Under this milestone, bidders shall provide Solicitor and PAUSTIF with a firm quarterly fixed-price unit cost that would include the quarterly groundwater monitoring, sampling, analysis and reporting beyond the two quarters specified in Milestone C. The SOW for this unit cost adder milestone shall follow Milestone C guidelines. Technical justification will be required by the selected consultant prior to implementing this optional cost adder milestone.

**Optional Cost Adder Milestone D2A – Remove / Replace Affected Section of Electric Service Line.** Under this milestone, bidders shall provide a firm, comprehensive fixed-price unit cost to remove and replace the affected segment of electrical service line including any subcontractor costs (e.g., electrician), as necessary.

**Optional Cost Adder Milestone E7 – Additional Post-Remediation Groundwater Monitoring and Reporting.** Under this milestone, bidders shall provide the Solicitor and PAUSTIF with a firm quarterly fixed-price unit cost that would include the quarterly groundwater monitoring, sampling, analysis, and reporting beyond the six quarters specified in Milestone E. The SOW for this unit cost adder milestone shall follow Milestone E guidelines. Technical justification will be required by the selected consultant prior to implementing this optional cost adder milestone.

**Optional Cost Adder Milestone UC1 – Excessively Contaminated Soil Transportation and Disposal.** Under this milestone, bidders shall provide a firm fixed-price unit cost ($/ton) for managing, loading, transporting and properly disposing excessively contaminated soil at a facility approved for accepting this waste stream.

**Optional Cost Adder Milestone UC2 – Clean Fill Importation.** Under this milestone, bidders shall provide a firm fixed-price unit cost ($/ton) for importing clean fill material (purchase, transport and on-site management) for use in backfilling the excavation. The imported clean fill will be used to supplement any excavated soil that is determined to be suitable for reuse based on sampling and laboratory analysis.

**Optional Cost Adder Milestone UC3 – Contaminated Water Transportation and Disposal.** Under this milestone, bidders shall provide a firm fixed-price unit cost ($/gallon) for managing, sampling / analysis, loading, transporting and disposing excessively contaminated excavation water at a facility approved for treating this waste stream.

**Optional Cost Adder Milestone UC4 – Expansion of Soil Excavation.** Under this milestone, bidders shall provide a firm fixed-price unit cost ($/in-place cubic yard) should expansion of the soil excavation beyond the dimensions defined in this RFB become necessary as warranted by field screening and other appropriate observations. The cost for this milestone shall exclude excessively contaminated soil transportation / disposal costs since these are captured under

milestone UC1.[45] It shall also exclude UC2, UC3, UC5 and UC6 cost components as these would be accounted for under these other unit cost factors.

**Optional Cost Adder Milestone UC5 - Additional Backfilling and Compaction.** Under this milestone, bidders shall provide a firm fixed-price unit cost ($/in-place cubic yard) for additional backfilling of the excavations and backfill compaction beyond the dimensions defined in this RFB. The cost for this milestone shall exclude importation of clean fill since this is captured under Milestone UC2.

**Optional Cost Adder Milestone UC6A – Surface Restoration (Asphalt).** Under this milestone, bidders shall provide a firm fixed-price unit cost ($/square foot) for surface restoration of asphalt areas beyond the designated target excavation limits.

**Optional Cost Adder Milestone UC6B – Surface Restoration (Vegetated Soil).** Under this milestone, bidders shall provide a firm fixed-price unit cost ($/square foot) for surface restoration of vegetated soil areas beyond the designated target excavation limits.

**Optional Cost Adder Milestone UC6C – Surface Restoration (Gravel Cover).** Under this milestone, bidders shall provide a firm fixed-price unit cost ($/square foot) for surface restoration of gravel-covered areas beyond the designated target excavation limits.

**Additional Information**

In order to facilitate PAUSTIF's review and reimbursement of invoices submitted under this claim, the Solicitor requires that project costs be invoiced by the milestone identified in the executed Remediation Agreement. Actual milestone payments will occur only after successful and documented completion of the work defined for each milestone. The selected consultant will perform only those tasks/milestones that are necessary to reach the Objective identified in this RFB. Selected consultant will not perform, invoice, or be reimbursed for any unnecessary work completed under a milestone.

Any "new conditions", as defined in Attachment 1, arising during the execution of the SOW for any of the milestones may result in termination of or amendments to the Remediation Agreement. Modifications to the executed Remediation Agreement will require the written approval of the Solicitor and the PAUSTIF (for funding consideration). PADEP approval may also be required.

[45] The successful bidder cannot count on reimbursement of excavation beyond the limits depicted in Figures 1, 2 and 3 (Attachment 3j) without having obtained prior written approval of the supplemental work by Solicitor and PAUSTIF or their agents before completing the supplemental excavation work.

## List of Attachments

1. Remediation Agreement
2. Bid Cost Spreadsheet
3. Site Information / Historic Documents

    a. Site Features Maps
    b. Facility Street View Images
    c. Underground Utilities Map
    d. UST Closure Report (1998)
    e. UST Closure Report (2014)
    f. SSCR / RAP (September 2018)
    g. PADEP SSCR / RAP Approval Letter (10/31/18)
    h. Historical Groundwater Gauging and Analytical Data
    i. Geophysical Reports
    j. Soil Excavation Areas (Remedial Alternatives 1, 2 and 3)