

# **Request for Bid**

**Fixed-Price Bid to Result**

**Remediation to Closure**

## **Solicitor**

**United Refining Co of Pa**

**Kwik Fill M-90**

**1322 S. 2<sup>nd</sup> Street  
Clearfield, Pennsylvania 16830**

**PADEP Facility ID #: 17-14821      PAUSTIF Claim #: 2015-0004(I)**

## **Date of Issuance**

**August 10, 2017**

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The Pennsylvania Underground Storage Tank Indemnification Fund (PAUSTIF), on behalf of the claimant who hereafter is referred to as the Client or Solicitor, is providing this Request for Bid (RFB) to prepare and submit a bid to complete the Scope of Work (SOW) for the referenced site. The Solicitor is the current owner/operator of the Site. PAUSTIF has determined that the claim reported by the Solicitor is eligible for coverage from the PAUSTIF subject to the applicable statutes and regulations. Reimbursement of Solicitor-approved, reasonable and necessary costs, not to exceed the claim aggregate limit, for the corrective action work described in this RFB will be provided by PAUSTIF. Solicitor is responsible to pay any applicable deductible and/or proration.

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

### **Calendar of Events**

<b>Activity</b>	<b>Date and Time</b>
Notification of Intent to Attend Site Visit	August 24, 2017 by 5 p.m.
Mandatory Pre-Bid Site Visit	August 25, 2017 at 11 a.m.
Deadline to Submit Questions	September 22, 2017 by 5 p.m.
Bid Due Date and Time	September 29, 2017 by 3 p.m.

## Contact Information

Technical Contact
<p><b>Mr. Joseph Ozog, Jr., P.G.</b> <b>Excalibur Group, LLC</b> <b>91 Park Avenue</b> <b>Windber, PA 15963</b> <a href="mailto:joeszog@excaliburgpllc.com">joeszog@excaliburgpllc.com</a></p>

All questions regarding this RFB and the subject Site conditions must be directed via email to the Technical Contact identified above with the understanding that all questions and answers will be provided to all bidders. The email subject line must be “[insert Site name and claim number provided on cover page] – RFB QUESTION”. Bidders must neither contact nor discuss this RFB with the Solicitor, PAUSTIF, the Pennsylvania Department of Environmental Protection (PADEP), or ICF 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 "[insert Site name and claim number provided on cover page] – SITE MEETING ATTENDANCE NOTIFICATION".** The name and contact information of the company participant should be included in the body of the email. Notification of intent to attend is appreciated; however, it is not required. Attendance at the Pre-Bid Site Meeting is mandatory.

### Submission of Bids

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

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

## Bid Requirements

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

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

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

The bidder shall provide its bid cost using the Bid Cost Spreadsheet (included as Attachment 2) with descriptions for each task provided in the body of the bid document. Please note, if costs are provided within the text of the submitted bid and there is a discrepancy between costs listed in the Bid Cost Spreadsheet and in the text, the costs listed within the Bid Cost Spreadsheet will be used in the evaluation of the bid and in the Remediation Agreement with the selected consultant. Bidders are responsible to ensure spreadsheet calculations are accurate. The technical score for bids will be based solely on those tasks represented as milestones included in the Bid Cost Spreadsheet and the total bid cost. Any optional bidder-defined tasks, milestones, or cost adders that are not requested as part of this RFB will not be considered by the Bid Evaluation Committee in the technical review and technical score for the bid.

In addition, the bidder shall provide:

1. The bidder's proposed unit cost rates for each expected labor category, subcontractors, other direct costs, and equipment;
2. The bidder's proposed markup on other direct costs and subcontractors (if any);
3. The bidder's estimated total cost by task consistent with the proposed SOW identifying all level-of-effort and costing assumptions; and
4. A unit rate schedule that will be used for any out of scope work on this project.

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

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

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

Each bid response document must include at least the following:

1. Demonstration of the bidder's understanding of the Site information provided in this RFB, standard industry practices, and objectives of the project.
2. A clear description, specific details, and original language of how the proposed work scope will be completed for each milestone. The bid should specifically discuss all tasks that will be completed under the Remediation Agreement and what is included (e.g., explain groundwater purging/sampling methods, which guidance documents will be followed, what will be completed as part of the Site specific work scope/SCR/RAP implementation). Bidders shall prepare a conceptual remedial action plan including the conceptual design of a remedial system in their response to this RFB. Recommendations for changes/additions to the Scope of Work proposed in this RFB shall be discussed, quantified, and priced separately; however, failure to 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 closed (i.e., obtained Relief from Liability from the PADEP) using any standard?
  - d. Has your firm ever been a party to a terminated PAUSTIF-funded Fixed-Price (FP) or Pay-for-Performance (PFP) contract without attaining all of the milestones? If so, please explain.
6. A description of subcontractor involvement by task. Identify and describe the involvement and provide actual cost quotations/bids/proposals from all significant specialized subcontracted service (e.g., drilling/well installations, laboratory, etc.). If a bidder chooses to prepare its bid without securing bids for specialty subcontract services, it does so at its own risk. Added costs resulting from bid errors, omissions, or faulty assumptions will not be considered for PAUSTIF reimbursement.
7. A detailed schedule of activities for completing the proposed SOW including reasonable assumptions regarding the timing and duration of Solicitor reviews (if any) needed to complete the SOW. Each bid must provide a schedule that begins with execution of the Remediation Agreement with the Solicitor and ends with completion of the final milestone proposed in this RFB. Schedules must also indicate the approximate start and end date of each of the tasks/milestones specified in the Scope of Work, and indicate the timing of all proposed key milestone activities (e.g., within 30 days of the contract being executed).
8. A description of how the Solicitor, ICF, and the PAUSTIF will be kept informed as to project progress and developments and how the Solicitor (or designee) will be informed of and participate in evaluating technical issues that may arise during this project.



9. A description of your approach to working with the PADEP. Describe how the PADEP would be involved proactively in the resolution of technical issues and how the PADEP case team will be kept informed of activities at the Site.
10. Key exceptions, assumptions, or special conditions applicable to the proposed SOW and/or used in formulating the proposed cost estimate. Please note that referencing extremely narrow or unreasonable assumptions, special conditions, and exceptions may result in the bid response being deemed “unresponsive”.
11. The name and contact information of the person who is to be contacted in the event the bid is selected by the Solicitor and/or a Right to Know request is received by PAUSTIF.

# Bid Review and Evaluation

## Bid Review and Scoring

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

### Technical Scoring

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

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

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

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

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

### Cost Scoring

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

A = the lowest bid cost

B = the bidder's cost being scored

C = the maximum number of cost points available

D = bidder's cost score (points)

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

## **Evaluation of Bids**

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

## **General Site Background and Description**

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

### **Background Summary**

The Kwik Fill M-90 facility is an active retail gasoline / diesel facility and convenience store located at 1322 South 2<sup>nd</sup> Street south of the town of Clearfield, Pennsylvania. It is on a < ½-acre, rectangular-shaped property adjoining the southeast side of South 2<sup>nd</sup> Street, north of the intersection between PA Route 879 and South 2<sup>nd</sup> Street. Major engineered improvements on the subject property include: a one-story commercial structure; a fuel island and canopy; trailer housing an existing remedial system components; and asphalt and concrete surfaces.

Figure 1 (Attachment 3a) shows the Site is situated on the southeast side of South 2<sup>nd</sup> Street, reportedly ~ 275 feet southeast of the West Branch of the Susquehanna River (River). Subject property and surrounding area are zoned primarily for light commercial. Adjacent properties include an automotive repair business to the northeast, roadway right-of-way (ROW) for South 2<sup>nd</sup> Street to the northwest followed by a heavy machine sales and service company, roadway ROW for PA Route 879 to the southwest followed by commercial properties, and a railroad ROW redeveloped into a public walking trail and vacant land to the southeast.

The facility has two 15,000-gallon and one 10,000-gallon steel underground storage tanks (USTs). The 10,000-gallon UST (Tank 001) was installed in 1974 and the two 15,000-gallon USTs (Tanks 002 and 003) were installed in 1969. Product piping is single-walled steel. Tanks 001 and 003 have historically contained unleaded gasoline and Tank 002 has historically contained diesel fuel. Currently, only Tanks 001 and 003 are being used with the Tank 001 contents having recently been switched to diesel fuel and Tank 003 continuing to contain unleaded gasoline. Tank 002 was removed from diesel storage service in late 2014. All three USTs are located in the same tank cavity located in the northeastern portion of the subject property. Dispensing of the fuels occurs at the dispenser island that is fitted with multiple dispensers and located in the central portion of the subject property, between the convenience store building and South 2<sup>nd</sup> Street (Figure 2, Attachment 3a).

### **Release History**

There have been three documented releases at the facility since the mid-1990s. These releases have been accompanied by a succession of site investigations and remediation employing a range of technologies including enhanced biodegradation via oxygen injection, air

sparging and soil vapor extraction (AS/SVE), and dual-phase extraction (DPE). More specifics are summarized below.

### 1995 Unleaded Gasoline Release

On June 15, 1995, the 10,000-gallon unleaded gasoline Tank 001 UST failed a tightness test. Tank 001 was subsequently removed from service, and in 1997 the tank was internally relined and returned to service. The PADEP was notified of the failure and subsequently, Mountain Research, LLC (MRLLC) was retained by URC in May 1996 to perform site characterization activities. Soil and groundwater analytical results indicated concentrations of gasoline constituents above their respective Medium-Specific Concentration (MSC) values. MRLLC prepared a Remedial Action Plan (RAP) in July 1999 proposing a trailer-mounted oxygen injection system. Following an amendment to the RAP, PADEP approved the remedial approach in January 2000. In February 2000, the oxygen injection system was installed at the Site and included eight oxygen injection points on-Site. On April 12, 2000, the remedial system was activated, and operated until the 1st quarter 2005.

In early 2005, Austin James Associates, Inc. (AJA) continued with additional site characterization activities along with re-evaluation of the selected remedial technology. As a result of these investigations, AJA prepared an March 2006 Supplemental Site Characterization Report (SSCR), July 2006 Addendum to SSCR, and an October 2006 Supplemental Site Characterization Report & Remedial Action Plan Addendum (SSCR & RAPA) were prepared and submitted to PADEP. The SSCR & RAPA identified two separate source areas: (a) the Tank 001 unleaded gasoline release at subject property; and (b) a separate, unrelated off-property source downgradient of the Site across South 2<sup>nd</sup> Street. In a subsequent December 2006 Addendum to the RAPA, AJA proposed installing an AS/SVE system to remediate soil and groundwater impacts.

Following PADEP approval of the RAPA, the AS/SVE system was installed and became operational on November 6, 2007. This AS/SVE system operated from January 15, 2007 until August 1, 2008, whereupon it was idled to initiate post-remediation compliance monitoring. After several quarters of monitoring, the system was restarted in order to continue with remediation due to a rebound of groundwater concentrations. The AS/SVE system operated until sometime in 2010, at which time the above ground equipment portion was removed from the Site.

### 2008 Unleaded Gas Release

In February 2008, a second Notice of Reportable Release (NORR) was filed with PADEP for a suspected leak of unleaded gasoline at the dispenser island. Subsequently, additional site characterization work in the form of soil and groundwater sampling was initiated by AJA to investigate impacts of the new release. In early 2008, Kleinfelder East, Inc. (Kleinfelder) was then contracted to complete additional characterization work and pilot testing activities in order to address the impacts from this February 2008 release. Kleinfelder prepared a June 2011

Additional Site Characterization and Remedial Action Plan Addendum (June 2011 Additional SC/RAP Addendum) recommending the use of a dual phase extraction (DPE) system for treating on-property soil and groundwater impacts and enhanced in-situ bioremediation for addressing off-property groundwater impacts. PADEP approved the June 2011 Additional SC/RAP Addendum on July 11, 2011. Letterle and Associates, Inc. (Letterle) began implementing the DPE / bioremedial injection approach in October 2012. The DPE system extracted vapors and groundwater from a total of eight on-property wells, MW-1, MW-1A, MW-2, MW-28, MW-31, MW-34, MW-35, and MW-36 (Figure 3 in Attachment 3a), over a period of two years. The system extracted groundwater via down-well pneumatic pumps installed within wells MW-1, MW-1A, MW-2, MW-28, MW-31, and MW-34, and via drop tubes installed in MW-35 and MW-36. Vapor recovery from all eight wells was accomplished by two rotary claw vacuum pumps, with vapor recovery at the well-head for wells MW-1, MW-1A, MW-2, MW-28, MW-31, and MW-34, and via the drop tubes at MW-35 and MW-36. The system was designed and installed based on pilot testing interpretations that had estimated a hydraulic radius of influence (ROI) of 190 feet and pneumatic ROI of 15 feet. It was idled in October 2014 when all on- and off-property monitoring wells were reported to be either “non-detect” or had low concentration below PADEP Statewide Health Standards (SHS).

Post-remediation groundwater attainment demonstration monitoring ensued being initiated during the 4<sup>th</sup> quarter of 2014. Also, during the 4<sup>th</sup> quarter of 2014, Letterle performed soil sampling in an attempt to demonstrate attainment of PADEP’s soil SHS. Additionally, Letterle collected soil gas samples from the on-property soil vapor sampling points to compare to PADEP’s soil gas vapor intrusion screen levels for SHS closures<sup>1</sup>.

The post-remediation soil sampling results failed to demonstrate attainment of PADEP’s SHS for soil meaning that remediation of the 2008 release was incomplete. One on-property soil sample (AB-4) and one off-property soil sample (C-12) contained concentrations of benzene exceeding 10X the PADEP SHS.<sup>2</sup> The 8-quarter demonstration of attainment of PADEP’s groundwater SHS was interrupted by a new release occurring in December 2014.

### 2014 Diesel Release

During the week of December 15, 2014, facility personnel reported the actuation of the diesel fuel line leak detector alarm, and on December 18, 2014 the diesel fuel product piping failed tightness testing.<sup>3</sup> The location of the failed diesel pipe integrity is unknown. The Tank 002 diesel fuel conveyance and dispensing system was reportedly removed from service and a diesel fuel release was reported to PADEP. It is this 2014 release that is the subject of PAUSTIF Claim #2015-0004(I). Manifestations of this new release were found during 1<sup>st</sup> quarter 2015 groundwater sampling when benzene, toluene, and naphthalene concentrations

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<sup>1</sup> Results from these soil gas samples were all below PADEP’s indoor air screening values in PADEP’s pre-2017 guidance.

<sup>2</sup> Soil attainment data is provided in the December 2015 RAP (Attachment 3f), and location of the soil samples is provided in Attachment 3l.

<sup>3</sup> Notification of Reportable Release, dated December 22, 2014.

increased above SHS at on-property wells MW-28 and MW-31 (located near the dispenser island and product piping).

### **Site Characterization & Interim Remedial Activities (#2015-0004I)**

Site characterization and interim remedial activities (IRAs) associated with PAUSTIF Claim # 2015-0004(I) were initiated in May 2015. The characterization activities included: advancing 20 on-property soil borings (SB-1 through SB-20) & two off-property borings (SB-21 and SB-22); collecting / analyzing soil samples from select soil borings; and collecting / analyzing groundwater samples from 24 monitoring wells. The locations of these soil borings are shown on Figures 4 in Attachment 3a. Monitoring well locations can be found in the July 2015 Site Characterization Report (SCR), October 2015 SCR Addendum, and December 2015 RAP (Attachments 3h, 3g, and 3f, respectively). IRAs included the re-activation of the on-property DPE system on May 6, 2015 but with extraction limited to two wells: MW-28; and MW-31.

Soil borings advanced to a depth of eight feet below grade reportedly identified an unconsolidated mixture of fill material and natural silty clay or sandy clay containing some gravel. The fill material (gravel) was encountered to a depth of ~1.5 to 3 feet at boring locations SB-1 through SB-7, SB-10, SB-14 through SB-17 in the area UST system, and SB-20 and SB-21 off-property. Boring SB-2 encountered a gravel fill material to a depth of 8 feet near the southeast side of the tank cavity. Wet soil conditions during drilling were reportedly first encountered in the overburden material at a depth of ~4 to 6 feet below grade. Bedrock was not encountered during advancement of these soil borings; however, bedrock was encountered during previous site characterization activities at a depth of ~10 to 17 feet below grade.

A total of 24 soil samples were collected from on- and off-property soil borings, with most of the soil samples apparently collected from the periodically saturated zone (or smear zone) based on historical water level data. Concentrations of benzene, ethylbenzene, naphthalene, 1,3,5-trimethylbenzene (1,3,5-TMB), and 1,2,4-trimethylbenzene (1,2,4-TMB) were found to exceed the PADEP SHS in soil samples collected within the smear zone. The delineated area of the smear zone soil impacts exceeding PADEP SHS is a relatively narrow strip extending from the UST field to the dispensers. Some soil impacts might also extend to some degree beneath the ROW for South 2<sup>nd</sup> Street. A depiction of the approximate area for smear zone soil impacts exceeding SHS is shown on Figure 4 in the December 2015 RAP provided as Attachment 3f.

There are 22 monitoring wells currently used to evaluate groundwater quality & flow direction consisting of: (a) on-property wells MW-1, MW-1A, MW-2, MW-2A, MW-28, MW-31 through MW-36 and; (b) off-property wells MW-3, MW-4, MW-5, MW-7, MW-10, MW-12, MW-14, MW-15, MW-21, MW-29, and MW-30.<sup>4</sup> Monitoring wells are variously installed to depths ranging between 19 and 23 feet. Static groundwater levels within the on-property monitoring wells have ranged from ~2 to 6 feet below top of casing. Groundwater flow direction appears to be

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<sup>4</sup> Off-property wells MW-7 and MW-10 have been removed from being sampled during quarterly monitoring and will only be used for collection of water levels as part of the RFB SOW.

generally to the northwest towards the West Branch of the Susquehanna River, located ~275 feet northwest of the Site.

After the December 2014 release, there were two on-property monitoring wells (MW-28 and MW-31) located immediately downgradient of the existing dispenser island and product piping, that appear to have reflected a new contribution of petroleum contaminant mass to the subsurface. For the first time in five years (MW-28) and three years (MW-31), these wells exhibited concentrations of benzene, toluene, and naphthalene exceeding SHS. Also, for the first time in five years, downgradient off-property well MW-30 had concentrations of benzene exceeding the SHS. Concentrations of 1,2,4-TMB exceeding SHS were also detected in MW-28, MW-30, and MW-31; however, the TMBs have historically not been part of the analytical program. More recently, as of the 4<sup>th</sup> quarter in 2016 and 1<sup>st</sup> quarter 2017 (two years after the diesel release), first time since 1<sup>st</sup> quarter 2015, all of the COC are non-detect in on-property wells MW-28 and MW-31 and off-property well MW-30.

Immediately before and a few months after the diesel release, soil vapor samples were collected from SG-1 and SG-2 located adjoining the northwest side of the Site building (SG-2) and northwest of the UST cavity (SG-1). The sampling points were each sampled twice (12/10/14 and 3/12/15), as part of attainment demonstration associated with the 2008 release, with the soil gas samples analyzed by a laboratory each time. None of the samples contained COCs exceeding any of the PADEP's pre-2017 indoor air screening levels.

The 2008 spill DPE system was re-started in May 2015 in response to the 2014 diesel release but the system was re-configured to only extract soil vapor and groundwater from two wells: MW-28 and MW-31. Reportedly, only one of the two rotary claw vacuum pumps is being used to extract vapors from the two wells, and groundwater is extracted via down-well pneumatic pumps in each of the wells. Groundwater extraction rates from the 2-well configuration reportedly are ~2 gallons per minute (gpm) using an applied vacuum of ~11 inches of mercury (inHg), with a vapor flow rate of ~150 standard cubic feet per minute (scfm). Treated groundwater is discharged to sanitary sewer. When concentrations in the monitoring wells were below the PADEP SHS for two consecutive quarters (4<sup>th</sup> quarter 2016 and 1<sup>st</sup> quarter 2017), Solicitor and Consultant reportedly idled the DPE system on 4/5/17 to monitor for dissolved contaminant rebound.

### **Solicitor's Selected Closure Standards & Remedial Approach**

Solicitor's chosen closure approach for the Site is residential SHS for both soil and groundwater. In December 2015, a RAP submitted to PADEP prescribed soil excavation/removal both on- and off-property combined with continued use of the DPE system to remediate residual impacts. The RAP proposed off-property excavation is to address limited residual smear zone soil impacts off-property discovered during the failed soil attainment demonstration for the 2008 unleaded gasoline release. PADEP subsequently provided approval of the remedial goals and proposed approach (with no comments/modifications) via letter to the Solicitor dated January 8, 2016.



The RAP-specified on-property remedial approach required the removal of the existing UST system to allow access to the smear zone soil contamination. However subsequent to PADEP approval of the RAP, the Claimant's plans for UST system upgrades, which included removal of the existing UST system, have since been put on hold, and it is unknown at this time when this work would occur. Therefore, since the UST system upgrades are no longer imminent, a revised RAP is needed for continued operation of the existing in-situ DPE system with some necessary modifications to more efficiently and completely remediate the on-property soil and groundwater contamination. These modifications are discussed in more detail in the Scope of Work section.

In order to address the residual off-property soil contamination, the 2015 RAP proposes that an off-property soil excavation (Figure 6 in Attachment 3f) be performed to address a localized area where soil attainment sampling found residual benzene concentrations exceeding SHS in one sample (soil sample C-12). To address this area, the RAP proposes a limited excavation footprint of 10 feet by 10 feet dug 4 to 8 feet.

Segregation of excavated soil for off-property disposal and reuse as backfill was proposed in the December 2015 RAP to be based on a PID screening value of 0.00 parts per million (ppm). It is unclear from the RAP what the rationale was behind the 0.00 ppm screening level for soil segregation and the value of doing any screening if the segregation criterion is 0.00 ppm. Bid responses to the SOW will be required to propose an alternative field screening criteria that will help ensure that only excessively contaminated soil is transported off-site for disposal.

Although the existing in-situ remedial system is referred to as a DPE system, the system as constructed is a combination of vacuum enhanced groundwater extraction (VEGE) and DPE. The remedial system was designed to extract vapors and groundwater from a total of eight on-property wells, MW-1, MW-1A, MW-2, MW-28, MW-31, MW-34, MW-35, and MW-36 (Figure 3 in Attachment 3a). Groundwater is extracted via down-well pneumatic pumps installed and set one foot above the bottom of wells MW-1, MW-1A, MW-2, MW-28, MW-31, and MW-34, and via drop tubes set ~10 feet below grade in MW-35 and MW-36. Vapor recovery from all eight wells is accomplished by two rotary claw vacuum pumps, with vapor recovery at the well-head for VEGE wells MW-1, MW-1A, MW-2, MW-28, MW-31, and MW-34, and via the drop tubes at DPE wells MW-35 and MW-36.

When the DPE system operated from 2012 through 2014 to remediate the older 2008 release, only VEGE wells MW-1, MW-28, MW-31, and MW-34 were used as there reportedly was short-circuiting of air flow / vacuum at MW-1 (through the UST field bedding and/or other nearby utilities) and groundwater extraction rates that overwhelmed the system with all eight wells in operation.

When the DPE system was re-started in May 2015 to address the 2014 diesel release, it was configured to only extract vapors and groundwater from two VEGE wells MW-28 and MW-31, and only using one of the two rotary claw vacuum pumps. During this operational timeframe of

May 2015 to April 2017, well MW-31 was not used for ~7 months in 2016 due to a broken groundwater extraction line. Groundwater extraction rates during this timeframe were ~0.5 to 2 gallons per minute (gpm) under an applied vacuum of ~11 inches of mercury (inHg), with a vapor flow rate of ~150 standard cubic feet per minute (scfm).

As mentioned above, only wells MW-28 and MW-31 are currently used for extraction of groundwater and vapors; however, given the location of the soil contamination, additional VEGE and DPE wells (i.e. MW-1, MW-2, MW-34, and MW-35) will likely need to be re-activated and perhaps additional extraction wells added in order to address the significant soil impacts identified by the 2015 soil investigation.

### **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. PADEP – Northcentral Regional Office (NCRO) was given the opportunity to review the SOW; however, no response was provided from PADEP.

### Objective

The Solicitor, PADEP, the Technical Contact, and the PAUSTIF have agreed that one of the following will likely be a technically viable and cost effective remedial approach that can bring this site to the stated cleanup goal:

- 1) Alternative 1 – Continued operation of existing in-situ remedial system as a combined VEGETATION and DPE, including use of VEGETATION and DPE wells MW-1, MW-2, MW-28, MW-31, MW-34, MW-35, and MW-36; or
- 2) Alternative 2 – Modification and operation of modified in-situ remedial system as DPE-only. The principal modification to the system would consist of changing from VEGETATION / DPE to solely DPE with emphasis on shallow soil remediation instead of groundwater remediation. Under Alternative 2, down-well pumps would be removed and replaced with drop tubes set with extraction tip only 6 feet below grade in wells MW-1, MW-2, MW-28, MW-31, MW-34, MW-35, and MW-36 corresponding to the top of the zone of permanent saturation.

Bidders shall propose one of these two specific remedial approaches in their bid response.

Solicitor seeks competitive, fixed-price bids, for this Bid to Result RFB to complete the milestones outlined below intended to take this Site to closure. To be deemed responsive, each bid must respond in detail to each of the milestones, including describing the bidder's understanding of the conceptual site model and how that model relates to the bidder's proposed approach to executing the SOW. "Bid to Result" RFBs identify task goals and rely on the bidders to provide a high level of project-specific detail on how they will achieve the goal. Each bid must detail the approach and specific methods for achieving the milestone objectives. In reviewing the quality of bids submitted under Bid to Result solicitations, there is an increased emphasis placed on technical approach and reduced emphasis on cost (as compared to bids for "Defined Scope of Work" RFBs). The Solicitor has elected to pursue environmental closure based on demonstrating attainment of the PADEP Act 2 used aquifer SHS Medium-Specific Concentrations (MSCs) in a Residential setting for soils and groundwater.

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

## **Constituents of Concern (COCs)**

The COC for soils, groundwater, and vapors associated with the December 2014 diesel fuel release are the short list for diesel fuel, which consist of benzene, toluene, ethylbenzene, MTBE, cumene, naphthalene, 1,2,4-TMB, and 1,3,5-TMB. The COC for soils associated with demonstrating attainment off-property for the 2008 unleaded gasoline release are the short list for unleaded gasoline (benzene, toluene, ethylbenzene, xylenes (BTEX); MTBE; cumene; naphthalene; 1,2,4-TMB; and 1,3,5-TMB).

## **General SOW Requirements**

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

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

During completion of the milestone objectives specified below and throughout implementation of the project, the selected consultant shall:<sup>5</sup>

- Conduct necessary, reasonable, and appropriate project planning and management activities until the project (i.e., Remediation Agreement) is completed. Such activities may include Solicitor communications/updates, meetings, record keeping, subcontracting, personnel and subcontractor management, quality assurance/quality control, scheduling, and other activities (e.g., utility location). Project planning and management activities will also include preparing and implementing plans for Health and Safety, Waste Management, Field Sampling/Analysis, and/or other plans that are necessary and appropriate to complete the SOW, and shall also include activities related to establishing any necessary access agreements. Project planning and management shall include identifying and taking appropriate safety precautions

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<sup>5</sup> As such, all bids shall include the costs of these activities and associated functions within the quote for applicable milestones.

to not disturb site utilities; including but not limited to, contacting Pennsylvania One Call as required prior to any ground-invasive work. As appropriate, project management costs shall be included in each bidder's pricing to complete the milestones specified below.

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

### **Site –Specific Guidelines**

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

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

**Field Activities.** All on- and off-site work should be conducted during the normal business days and hours of 8:00 AM to 5:00 PM from Monday through Friday, unless work outside of these normal business days and hours is authorized by the respective Solicitor / property owner. The selected consultant will be responsible for determining and adhering to other restrictions that may apply to the Site 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 PAUSTIF with respect to the project. This includes utilizing professional judgment to ensure reasonable, necessary and appropriate

actions are recommended and undertaken to protect sensitive receptors and carry out adequate remedial actions in order to move the site toward closure.

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

**Safety Measures.** Each bidder should determine the safety measures necessary to appropriately complete the milestones. Specifically, if a consultant feels that it is appropriate and necessary to complete utility clearance using an air knife, the cost should be included in their fixed-price cost. If a bidder includes costs to conduct specific safety measures or activities, the bidder should specify it in the bid response and discuss why it is appropriate and necessary and indicate which methods will be utilized and to what extent. As discussed in the RFB, cost is not the only factor when evaluating bid responses and other factors are taken into consideration during the bid evaluation process, including appropriate safety measures.

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

### **Site –Specific Milestones**

**Milestone A – Supplemental Site Characterization Activities.** This milestone provides bidders the opportunity to identify which additional site characterization work will be completed in advance of finalizing the remedial approach design and moving ahead with its implementation. Conducting supplemental investigative activities under this milestone is mandatory. PAUSTIF will be reimbursing up to \$10,000 for supplemental site characterization and reporting costs under this milestone. Bidders are to describe what supplemental site characterization will be completed, the rationale for the work and how the derived data will be used. For purposes of bidding, and to ensure consistent cost scoring of bids, each bidder will enter exactly \$10,000 as the bid price for Milestone A in the Bid Cost Spreadsheet. PAUSTIF

will only reimburse up to \$10,000 of reasonable and necessary costs for those tasks actually performed. The selected bidder must provide time and material documentation in addition to supporting documentation required (in Exhibit B of the executed Remediation Agreement) to support the requested reimbursement and completion of this milestone.

Bidders may use this opportunity to: 1) confirm any elements of the site characterization completed by a previous consultant; 2) address any perceived data gaps in the existing site characterization work; 3) assist in the evaluation and determination of remedial technologies and remedial design which are characterization-type activities (e.g. analysis for inorganics, C<sub>4</sub>-C<sub>10</sub>) assist with refining the cleanup timeframe estimate and/or other reasons related to validating the bidder's remedial approach and design (e.g. additional sampling to better determine mass in place).

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

Each bidder shall describe in detail its scope of work for additional site characterization activities along with corresponding technical 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 Letterle's July 2015 SCR, October 2015 SCR Addendum, and December 2015 RAP (Attachments 3h, 3g, and 3f, respectively) and the other documents provided in Attachment 3, rather than relying solely on the summary information presented in this RFB.

Example potential activities for bidders to consider may include tasks such as – advancing additional soil borings to assist in defining the extent of unsaturated / smear zone soil contamination (i.e. beneath roadway ROW). 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<sup>6</sup>.

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<sup>6</sup> In order to receive reimbursement under this task, thorough documentation of any additional site characterization activities must be provided to PAUSTIF.

**Milestone B – Documentation of Findings in a Revised RAP.** Upon completing Milestone A described above, each bidder shall describe their approach and provide a fixed price for preparation and submitting a revised RAP (RRAP). The RRAP shall be prepared to document the supplemental site characterization activities/findings, along with the details of the revised remedial approach of either remedial Alternative 1 or 2. This RRAP shall contain all necessary information required under 25 PA Code §245.311, and be of sufficient quality and content to reasonably expect PADEP approval.

The RRAP shall be first submitted in draft form to the Solicitor and PAUSTIF for review and comment before being finalized and submitted to PADEP. Each bidder's project schedule shall provide two (2) weeks for Solicitor and PAUSTIF review of the draft document. The final 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 applicable document / report shall document, describe, and evaluate all findings provided from Milestone A above, updating the conceptual site model (CSM) for the Site and its vicinity based on evaluating the results from the additional site characterization task outlined above, and detailing any proposed modifications to the existing PADEP-approved remedial approach. The applicable document / report 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 these documents.

The applicable document / report shall be signed and sealed by a Professional Geologist in the Commonwealth of Pennsylvania, and may also require the signature and seal of a Professional Engineer registered in the Commonwealth of Pennsylvania (bidders shall refer to state licensing laws to determine if the Professional Engineer seal is required based on the work performed for and documented in the combined report). The fixed-price cost shall also include addressing any PADEP comments on the RRAP report.<sup>7</sup>

In addition, within the fixed price for this milestone, bidders shall include the work necessary to negotiate and secure access to off-property locations to complete work within this RFB.

**Milestone C – Continue Quarterly Groundwater Monitoring, Sampling & Reporting.** Under this milestone, bidders shall provide a firm fixed-price to continue with quarterly groundwater monitoring, sampling, and reporting events while performing the supplemental site characterization activities (Milestone A), preparation/submittal of the RRAP (Milestone B), waiting on PADEP approval of the RRAP, design and implement modifications to the on-property remedial system (Milestone D1), and implementing the off-property soil excavation (Milestone D2). For the purposes of this RFB, it is assumed that this work will be required for three quarters. However, each bid must specify the number of quarterly events that will be

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<sup>7</sup> All figures included in the RRAP (e.g., site plan, remedial design layout, etc.) shall be available in electronic format to the Solicitor upon request.



needed prior to implementation of Milestone D along with supporting rationale. Any additional quarterly monitoring and reporting events, beyond the three quarters specified in this RFB, shall be defined on the Bid Cost Spreadsheet and shall be incorporated in the Remediation Agreement as Optional Cost Adder Milestone C.<sup>8</sup>

Each groundwater monitoring and sampling event shall include all 11 existing on-property wells MW-1, MW-1A, MW-2, MW-2A, MW-28, MW-31 through MW-36 and the 11 existing off-property wells MW-3, MW-4, MW-5, MW-7, MW-10, MW-12, MW-14, MW-15, MW-21, MW-29, and MW-30.<sup>9 10</sup> During each quarterly groundwater monitoring and sampling event, the depth to groundwater shall be gauged in all existing available monitoring wells and prior to purging any of the wells for sampling. Groundwater level measurements obtained from the monitoring wells shall be converted to groundwater elevations for assessing groundwater flow direction and hydraulic gradient.

Each of the monitoring wells designated for sample collection shall be purged and sampled in accordance with the PADEP Groundwater Monitoring Guidance Manual and standard industry practices. Any well exhibiting a measurable thickness of separate-phase hydrocarbons (SPH) shall not be purged and sampled.<sup>11</sup> Bidders shall manage purged groundwater and other derived IDW generated by the well purging and sampling activities in accordance with the PADEP NCRO guidance.

Groundwater samples shall be analyzed for the PADEP short-list of diesel fuel parameters (benzene, toluene, ethylbenzene, cumene, naphthalene, 1,2,4-TMB, and 1,3,5-TMB) by a PADEP-accredited laboratory using appropriate analytical methods and detection levels. Bidders shall specify the analytical methods to be used for the monitoring well samples and potable water well samples. Appropriate quality assurance / quality control (QA/QC) samples shall also be collected during each event and analyzed for the same parameters.<sup>12</sup> In addition, each event shall include field measurements for the following parameters: pH, temperature, specific conductance, dissolved oxygen (measured in-situ), oxidation/reduction potential, and total dissolved solids (TDS).

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

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<sup>8</sup> The Remediation Agreement includes a Site Specific Assumption that the quarterly site monitoring, sampling & reporting events will not exceed the three quarters under Milestone C plus any additional quarters under Optional Cost Adder Milestone C.

<sup>9</sup> Off-property wells MW-7 and MW-10 are currently NOT sampled, and only used for collection of water level measurements.

<sup>10</sup> The fixed price cost shall also include any additional monitoring well(s) that the bidder proposes to install under Milestone A (if any).

<sup>11</sup> No SPH has been observed in any of the monitoring wells.

<sup>12</sup> 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.

- A summary of site operations and remedial progress made during the reporting period;
- Narrative description of the sampling procedures and results;
- Tabulated data collected from the monitored wells documenting the depth to groundwater and thickness of any free product encountered;
- Groundwater elevation contour maps depicting groundwater flow direction;
- Tabulated historical quantitative groundwater analytical results including results from the current quarter;
- Current quarter laboratory analytical report(s);
- One site-wide iso-concentration contour map for each compound detected in any one well above the SHS during the quarter;<sup>13</sup>
- For each well exceeding SHS, a graphical depiction of historical key contaminant concentrations and groundwater elevations to provide an assessment of correlations between fluctuating water levels / precipitation events and contaminant concentrations;
- For each well exceeding SHS, a graphical depiction of recent key contaminant concentration trends;
- Discussion of the data to offer an updated assessment whether these data are consistent with a stable, shrinking, or expanding plume;
- Treatment and disposal documentation for waste generated during the reporting period; and
- Demonstration of compliance with the required Federal, State, and local permits and approvals.

PAUSTIF will only reimburse for the necessary quarterly groundwater sampling / reporting events actually completed under this milestone (e.g., this milestone shall be considered completed with the initiation of Milestone 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 and documented in the groundwater attainment demonstration report).

**Milestone D – RAP Implementation.** Under this milestone, bidders shall provide a fixed price bid inclusive of all the manpower, machinery, materials, and other costs needed to fully implement the remedial solution for the Site whether it be remedial Alternative 1 or 2 described in the bidder’s RRAP once approved by PADEP.

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<sup>13</sup> 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.

Whether bidding on Alternative 1 or Alternative 2, bidders shall prepare a fixed-price cost to implement that is broken down into the sub-milestone components listed below. Bidders shall clearly identify which alternative is being bid and the bidders work scope shall be detailed within each sub-milestone, including the modifications being made to the remedial system.

#### Milestone D1 – Remedial System Modifications, Repairs and Improvements

Under this milestone, bidders shall identify the remedial system modifications, if any, that will be completed to prepare the system for continued operation under Milestone D2. Bidders proposing Alternative 2, will need to include costs in this milestone for modifying VEGE extraction wells to DPE extraction. Bidders may also choose to propose replacing short-circuiting well MW-1 if this is believed to be technically important. Bidders may notice other issues in their inspection of the existing remedial system that warrant modification for improved performance / efficiency / cost effectiveness.

During the pre-bid meeting, Bidders will be given an opportunity to inspect the remedial system equipment and observe the equipment in operation. Bidders shall use the opportunity to identify, based on experience, any and all remedial system components that will likely need to be repaired or replaced during the period of performance of the Agreement. As stated in the Agreement, through the effective period of the Agreement, the selected consultant, at its own expense, shall be responsible for all costs for repairing or replacing Client- and Consultant-owned equipment purchased and used for completing the Agreement work scope that may, by any means, have become stolen, damaged, deteriorated, or destroyed over the course of completing the Agreement work scope. Each bid shall, therefore, be inclusive of all such costs to repair and/or replace remedial system components in Milestone D1, with the exception of replacing of vacuum pump(s), down-well pneumatic pump(s), and air compressor, as this work shall be performed using Optional Cost Adder Milestones D1A, D1B, and D1C, respectively.

Milestone D2 – Remediation System O&M, Site Monitoring & Sampling, & Reporting. For this milestone, bidders choosing either Alternative 1 or 2 shall provide the Solicitor and PAUSTIF with firm quarterly fixed-price unit costs that would include the routine O&M of the remedial system;<sup>14</sup> quarterly groundwater, monitoring, and sampling of the on- and off-property monitoring wells, and reporting. The quarterly fixed price cost shall also include responding to any unexpected telemetry-triggered O&M visits. Bidders shall identify which wells will be used for extraction, mode of operation and rationale.

For the purposes of this RFB, it is assumed the Milestone D2 activities will be required for four quarters. However, each bid must specify the remediation timeframe (i.e., number of O&M quarters) that the bidder's proposed remedial approach will need in order to achieve the project goal of reducing soil and groundwater contaminant concentrations to below residential SHS,

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<sup>14</sup> Electric usage; telephone, cable, internet service; and any discharge to local treatment facility will be reimbursed as time and material cost adders to the Remediation Agreement.

enabling initiation of groundwater and soil attainment demonstration.<sup>1516</sup> The bidders realistic assessment of remediation timeframe (total number of operating quarters) shall be defined on the Bid Cost Spreadsheet, and shall include the additional number of remediation quarters, beyond four quarters specified in this RFB (i.e., if a bidder believes it can complete the remediation in a total of six quarters of O&M, the additional number of quarters to be included on the Bid Cost Spreadsheet is two quarters). If the bidder's O&M remediation timeframe exceeds the RFB-specified four quarters, the number of quarters exceeding four will be incorporated in the Remediation Agreement as Optional Cost Adder Milestone D2. Bidders shall assume that the remediation will need to continue until the contaminant concentrations in all of the point of compliance (POC) wells (as defined in Milestone E) are either below the PADEP SHS or "non-detect" for at least two consecutive quarterly monitoring and sampling events. Under these conditions, it is deemed reasonable to initiate the groundwater attainment demonstration. Each bid must explicitly state bidder's understanding of the project goal for when the remedial system would be discontinued and attainment sampling shall begin.

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

- *Performance monitoring* shall include data collection and evaluations geared toward evaluating how well the remedial strategy is working and making necessary adjustments to the system operational configuration to optimize system performance. Performance monitoring activities are to include, but not necessarily be limited to, measurements that show the design vacuum is being applied to the well heads that demonstrate that the water table is maintained in depressed condition, reveal pneumatic influence across the target contaminant zone and allow contaminant mass recovery quantification. The selected consultant shall report quarterly concerning its evaluations of system performance and system optimizations performed.
- *System maintenance & monitoring* shall include monitoring and routine maintenance as specified by the equipment manufacturer(s) to ensure warranties are not voided and the equipment is kept in good working order. Operational time shall be logged by system instrumentation and reported quarterly to the Solicitor. The selected consultant is expected to maintain at least an 85% uptime on the system during each quarter. Failure to meet this minimum expectation over two consecutive quarters will constitute, at the Solicitor's sole discretion, a breach of contract and the Solicitor may chose to terminate the contract.

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<sup>15</sup> During the bidder's specified timeframe of site operations, maintenance, and monitoring subsequent to remediation system startup, the selected consultant, at its own expense, including all associated labor, shall be responsible for repairing or replacing equipment purchased for the RAP implementation that becomes damaged, destroyed, or defective.

<sup>16</sup> If the groundwater data allows for discontinuing remedial activities prior to reaching the bidders specified timeframe for remedial system operation, the selected consultant will only be reimbursed for O&M events that have been completed.

- *Compliance monitoring* shall include system and site sampling needed to demonstrate compliance with permits and other applicable regulatory requirements. Documentation of compliance shall be provided to the Solicitor in quarterly RAPRs and in any other reporting required by permitting agencies (i.e. local POTW).

The quarterly groundwater monitoring and sampling events will include the 11 on-property wells (MW-1, MW-1A, MW-2, MW-2A, MW-28, MW-31 through MW-36) and 11 off-property wells (MW-3, MW-4, MW-5, MW-7, MW-10, MW-12, MW-14, MW-15, MW-21, MW-29, and MW-30).<sup>17</sup>

<sup>18</sup> If the RRAP proposes the use of fewer or more remediation wells, this should be explicitly stated in the Milestone D2 response and accounted for in the bidder's Milestone D2 quarterly and total cost.

During each event, the depth to groundwater and any potential SPH shall be gauged in all available monitoring wells prior to purging any of the wells for sampling. Groundwater level measurements obtained from the monitoring wells shall be converted to groundwater elevations for assessing groundwater flow direction and hydraulic gradient. The conduct and results of each event shall be documented in RAPRs. Any well exhibiting more than a sheen of SPH shall not be purged and sampled.<sup>19</sup> Bidders shall manage purged groundwater and other derived IDW generated by the well purging and sampling activities in accordance with the PADEP NCRO guidance.

Groundwater samples shall be analyzed for the PADEP short-list of diesel fuel parameters (benzene, toluene, ethylbenzene, cumene, MTBE, naphthalene, 1,2,4-TMB, and 1,3,5-TMB) by a PADEP-accredited laboratory using appropriate analytical methods and detection levels. Bidders shall specify the analytical methods to be used for the monitoring well samples and potable water well samples. Appropriate QA/QC samples shall also be collected during each event and analyzed for the same parameters.<sup>20</sup> In addition, each event shall include field measurements for these water quality parameters: pH, temperature, specific conductance, dissolved oxygen (measured in-situ), oxidation/reduction potential, and TDS.

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

- A summary of site operations and remedial progress made during the reporting period, including contaminant mass recovery estimates in groundwater;
- Narrative description of the sampling procedures and results;

<sup>17</sup> Off-property wells MW-7 and MW-10 are only to be used for collection of water levels.

<sup>18</sup> The fixed price cost shall also include any additional monitoring wells installed under Milestone A.

<sup>19</sup> No SPH has historically been observed in any of the monitoring wells installed on- and off-property.

<sup>20</sup> Each bidder's approach to implementing Milestone D2 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.

- Tabulated data collected from the monitored wells documenting the depth to groundwater and thickness of any free product encountered;
- Groundwater elevation contour maps depicting groundwater flow direction;
- Tabulated historical quantitative groundwater analytical results including results from the current quarter;
- Current quarter laboratory analytical report(s);
- One site-wide iso-concentration contour map for each compound detected in any one well above the SHS during the quarter;<sup>21</sup>
- For each well exceeding SHS, a graphical depiction of historical key contaminant concentrations and groundwater elevations to provide an assessment of correlations between fluctuating water levels / precipitation events and contaminant concentrations;
- For each well exceeding SHS, a graphical depiction of recent key contaminant concentration trends;
- Discussion of the data to offer an updated assessment whether these data are consistent with a stable, shrinking, or expanding plume;
- Evaluation of system performance including contaminant mass recovery quantification and system optimizations performed;
- Operational time shall be logged by system instrumentation and reported in the RAPRs. If less than 85% uptime has been achieved, documentation of operations problems shall be provided along with the changes/modifications implemented to improve performance consistency;
- Treatment and disposal documentation for waste generated during the reporting period; and
- Demonstration of compliance with the required Federal, State, and local permits and approvals.

PAUSTIF will only reimburse for the necessary quarterly O&M and groundwater sampling / reporting events actually completed under this milestone (e.g., this milestone shall be considered completed with the initiation of Milestone E). If, in order to achieve the cleanup goals, it is necessary to extend the period of O&M beyond the RFB-specified four quarters, each additional quarter, up to the total number of Consultant's bid O&M remedial timeframe, will be addressed via Optional Cost Adder Milestone D2. Consultant shall seek and obtain written approval from Solicitor and PAUSTIF to continue operation of the remedial system (Optional Cost Adder Milestone D2).<sup>22</sup>

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<sup>21</sup> 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.

<sup>22</sup> The Remediation Agreement includes a Site Specific Assumption that remediation will be complete and soil and groundwater attainment activities will be initiated within the O&M timeframe Consultant has bid.

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

To provide added incentive to the successful bidder to regularly scrutinize remedial system performance and optimize system operations for maximal efficiency in completing the remedial O&M to achieve closure as expeditiously and cost effectively as possible, **10% of each quarterly payment for this milestone (and Optional Cost Adder Milestone D2, if implemented) will be withheld and accumulated pending successful completion of remediation and initiation of soil and groundwater attainment activities (Milestones E and F).** When this condition has been met, the accumulation of 10% holdback payments, for the Milestones actually completed, will be reimbursed in one lump sum to the successful bidder.<sup>23</sup> The 10% hold-back milestone will not be paid for an in-situ remediation system that has not attained the cleanup goal within the Consultant's bid remediation timeframe.

**Milestone D3. Off-Property Soil Excavation.** Each bid response must describe the bidders approach in detail and provide a fixed-price inclusive of excavation planning / preparation work (e.g., buried utility location / mark-out, surveying excavation locations, etc.) and excavation and backfilling for the area / volume of the off-property excavation area as defined on Figure 6 in the Dec. 2015 RAP (Attachment 3f) and as modified herein. The selected consultant will be required to coordinate this work with the owner/operator of this property.

Each bid must also include a drawing depicting the area to be excavated along with dimensions. The unsaturated / "smear" zone and shallow permanently saturated soils in this area contain residual petroleum contaminant mass (e.g., benzene) exceeding the SHS. To enable demonstration of attainment of the SHS in soil above the zone of permanent saturation, and to reduce contaminant concentrations in groundwater, the excavations shall remove impacted soil to a depth of 6 feet throughout the entire excavation area.

Bidders are to assume that the excavated soil will be field screened with a PID and segregated to separate the "not suspected to be excessively contaminated" and "excessively contaminated" soil. To be deemed responsive to this task, bids must discuss: (a) the photoionization detector (PID)<sup>24</sup> screening value selected somewhere around 50 ppm that will be applied to segregate the "excessively contaminated" and "not excessively contaminated" soil removed from the excavation; and (b) the field screening approach and frequency. All "excessively contaminated" soil shall be removed from the site for off-site disposal and "clean" fill shall be imported to replace the exported soil. **Contaminated soil transportation and off-site disposal and clean fill import costs shall not be included in the fixed price bid for this task as these will be based on unit costs.** Fixed-price and unit cost bids for this work task shall be based upon RFB specifications.

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<sup>23</sup> Lump sum payment request shall be made prior to the on-set of initiating Milestones E and F.

<sup>24</sup> PID with 10.6 eV bulb calibrated to 100 ppm isobutylene.

Figure 6 in the Dec. 2015 RAP (Attachment 3f) depicts the RAP-specified lateral limits for the off-property soil excavation. The bidder's fixed cost shall include the costs to perform all work necessary to safely excavate, screen, segregate / manage soil, backfill, and surface restore the area, including contacting / obtaining the required permits that may be needed before initiating this task. Groundwater level data (~1 to 6 feet) from the existing monitoring wells in the area of the excavation, and the soil types (i.e. mixture of silty clay, sandy clay, and gravels) suggests that there may be groundwater accumulation in the excavation, which may require the temporary extraction, removal, sampling, loading, transportation and disposal of impacted groundwater. 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 that needed to be removed from the excavation and properly disposed. The successful bidder is expected to follow normal industry practices when scheduling the work to avoid precipitation events and to conduct the excavation and backfilling work as quickly and efficiently as possible to minimize water production.

After the excavation is completed, and prior to backfilling, systematic random soil sampling of the side-walls of the excavation shall be completed to demonstrate attainment of soils above the zone of permanent saturation. Fixed-price bids shall describe the approach, including the depth interval, and the number of soil samples for side wall attainment soil sampling from the completed excavation. Since this work is being done to demonstrate attainment for soils associated with the 2008 unleaded gasoline release, the attainment soil samples shall be analyzed for the PADEP short-list of unleaded gasoline parameters (BTEX, MTBE, cumene, naphthalene, 1,2,4-TMB, and 1,3,5-TMB) by a PADEP-accredited laboratory using appropriate analytical methods and detection levels. Appropriate QA/QC samples shall also be obtained for laboratory analysis.<sup>25</sup> The soil sampling results shall be analyzed using PADEP's 75%/10x Ad Hoc Rule, which shall be documented in detail in the RACR.

Fixed-price bids shall also include backfilling and mechanically compacting in lifts the excavated area as per the PADEP-approved RAP and in accordance with Solicitor's specifications (above). The successful bidder shall backfill to within 5 inches of grade using a combination of reused "clean" site soil and imported clean fill. Replacement paving shall match the existing site paving (asphalt for removed asphalt and concrete for removed concrete).

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. The backfill materials shall be free of vegetation, lumps, trash, lumber, and other unsuitable materials. In general, backfill shall be mechanically compacted by means of tamping rollers, sheep foot

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<sup>25</sup> 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.



rollers, pneumatic tire rollers, vibrating rollers, or other mechanical tampers which are appropriate for the material being compacted. Bids shall also include surface paving and other completion / restoration to restore the area to pre-excavation conditions.

Bidders shall also investigate and locate any below grade utilities that may be encountered before the digging occurs. The fixed-price cost for this task shall include costs for the management and / or replacement of any utilities that may be identified and encountered in the excavation. Costs should also include any temporary repairs made prior to permanent replacements.

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.

Expansion of the defined limits of the excavation is not currently anticipated given the results of the 2014 soil attainment sampling. However, should it become necessary and appropriate to expand the excavation and should it be expanded to the extent it impacts nearby well MW-3 to the south, well MW-3 will need to be abandoned in accordance with PADEP guidance and replaced. Reimbursement of costs for the unexpected well abandonment and replacement due to an expanded excavation would be handled on a unit cost basis under Optional Cost Adder Milestone J.

The details of the soil removal activities shall be documented in a concurrent quarterly RAPR (Milestone D2) and the RACR (Milestone H), and at a minimum shall include the following: scaled drawings depicting the lateral and vertical dimensions of the completed excavation superimposed on the site plan; all field observations and PID readings; the quantity 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; impacted groundwater management, laboratory analyses, and disposal (if needed); soil sampling locations and depths, and laboratory analysis; and dated photographs taken before breaking ground, throughout the excavation, and after restoration. Additionally, the locations and results of the soil attainment sampling shall be well detailed and documented in text, photographs and figures.

In addition to providing a fixed-price bid for excavating, backfilling, restoring the defined excavation area, the bidder's unit costs supplied for the on-property excavation work shall also apply to the off-property spot excavation (included on the Attachment 2, Bid Cost Spreadsheet) to accommodate changes that may be required. For convenience, these unit costs are listed / defined again here:

- UC1 Management, loading, transportation and proper off-site disposal of excessively contaminated soils (cost per ton);
- UC2 Management, sampling / analysis, loading, transportation and disposal of impacted groundwater removed from the soil excavation (cost per gallon);

- UC3 Purchase, transportation and on-site management of clean imported fill to replace exported excessively contaminated soil (cost per ton);
- UC4 Surface restoration of areas beyond identified target excavation limits (cost per square foot);
- UC5 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);<sup>26</sup> and
- UC6 Additional backfilling and compaction beyond identified limits, excluding clean imported fill costs since these are captured under UC3 (cost per in-place cu yard).

When evaluating the cost component of bid responses, the bidder's unit costs for UC1, UC2, and UC3 will be added to the bidder's total fixed price provided in Attachment 2 using the following assumed volumes – 30 tons for T&D of impacted soils / clean fill and 500 gallons of impacted groundwater for disposal.

**Milestone E – Groundwater Attainment Demonstration.** Under this task, bidders shall provide a firm fixed-price to complete up to eight quarters of groundwater monitoring and sampling events.<sup>27</sup> Each groundwater monitoring and sampling event shall include the sampling of on-property wells MW-1, MW-1A, MW-2, MW-2A, MW-32, MW-33, MW-35, MW-36, MW-28, MW-31, and MW-34; and the 11 existing off-property wells MW-3, MW-4, MW-5, MW-12, MW-14, MW-15, MW-21, MW-29, and MW-30. The conduct and results of each event shall be documented in quarterly RAPRs. If additional quarterly attainment events would be needed beyond eight quarters, up to an additional four quarters are incorporated in the Remediation Agreement as Optional Cost Adder Milestone E.<sup>28</sup> Consultant shall seek and obtain written approval from Solicitor and PAUSTIF to continue with quarterly groundwater attainment events (Optional Cost Adder Milestone E).

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

Each of the monitoring wells designated for sample collection shall be purged and sampled in

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<sup>26</sup> The successful bidder cannot count on reimbursement of excavation beyond the limits depicted on Figure 6 in the Dec. 2015 RAP (Attachment 3f) without having obtained prior written approval of the supplemental work by Solicitor and PAUSTIF or their agents before completing the supplemental excavation work.

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

<sup>28</sup> If it becomes evident anytime during the groundwater attainment demonstration (initiated subsequent to completing Milestone D) that the attainment demonstration will not be successful within the 8 quarters, and up to 4 additional quarters (Optional Cost Adder Milestone E) in one or more of the POC wells (e.g., a greater than 10X result or more than two SHS exceedances, etc.), this will represent a New Condition under the contract.

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

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

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

- A summary of site operations and remedial progress made during the reporting period;
- Narrative description of the sampling procedures and results;
- Tabulated data collected from the monitored wells documenting the depth to groundwater and thickness of any free product encountered;
- Groundwater elevation contour maps depicting groundwater flow direction;
- Tabulated historical quantitative groundwater analytical results including results from the current quarter;
- Current quarter laboratory analytical report(s);
- One site-wide iso-concentration contour map for each compound detected in any one well above the SHS during the quarter;<sup>30</sup>
- For each well exceeding SHS, a graphical depiction of historical key contaminant concentrations and groundwater elevations to provide an assessment of correlations between fluctuating water levels / precipitation events and contaminant concentrations;
- For each well exceeding SHS, a graphical depiction of recent key contaminant concentration trends and results of any qualitative and quantitative analysis;

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<sup>29</sup> 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.

<sup>30</sup> 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.

- Discussion of the data to offer an updated assessment whether these data are consistent with a stable, shrinking, or expanding plume;
- Treatment and disposal documentation for waste generated during the reporting period; and
- Demonstration of compliance with the required Federal, State, and local permits and approvals.

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

**Milestone F1 – On-Property Soil Attainment Demonstration.** Under this task, bidders shall develop and implement a soil boring program for systematic random soil sampling to demonstrate attainment of the SHS for the unsaturated and periodically saturated soils in areas in the vicinity of the UST system where previous site characterization activities have identified soil exceedances of the SHS to be remediated by the in-situ remedial system. Three dimensional attainment sampling shall be completed to demonstrate attainment of this area(s) and each bid *must* describe in detail their approach at addressing soil attainment, and include the depth interval and a drawing showing the locations where the sampling grid would be applied to demonstrate soil attainment.

The location / depth of the soil samples shall be determined using PADEP's SRSS procedures, assuming one soil sample per boring shall be submitted for laboratory analysis. Alternate SRSS points shall be selected for any primary SRSS sample locations positioned within the existing UST system and any existing below grade utilities (i.e. public water, electric, etc). Soil samples shall be analyzed for the PADEP short list for diesel fuel parameters (benzene, toluene, ethylbenzene, MTBE, cumene, naphthalene, 1,2,4-TMB, and 1,3,5-TMB). Appropriate QA/QC samples shall also be obtained for laboratory analysis. The soil sampling results shall be analyzed using PADEP's 75%/10x Ad Hoc Rule, which shall be documented in detail in the RACR<sup>31</sup>.

**Milestone F2 – Off-Property Soil Attainment Demonstration.** Milestone F2 is a contingent milestone that is necessary only if the post-excavation side-wall SRSS fails to demonstrate attainment of the selected standard at the off-property soil excavation (Milestone D3).

Under this task, bidders shall develop and implement a soil boring program for systematic random soil sampling to demonstrate attainment of the SHS for the unsaturated and periodically saturated soils at the perimeter of the soil excavation completed under Milestone D3. Three dimensional attainment sampling shall be completed to demonstrate attainment of this area(s)

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<sup>31</sup> If the sampling data does not allow for attainment of the selected standard, additional work will be considered an out-of-scope task under the Fixed-Price Agreement, which will require Solicitor and PAUSTIF approval of a work plan and cost estimate before beginning the work.

and each bid must describe in detail their approach at addressing soil attainment, and include the depth interval and a drawing showing the locations where the sampling grid would be applied to demonstrate soil attainment.

The location / depth of the soil samples shall be determined using PADEP's SRSS procedures, assuming one soil sample per boring shall be submitted for laboratory analysis. Alternate SRSS points shall be selected for any primary SRSS sample locations positioned within any existing below grade utilities (i.e. public water, electric, etc). Soil samples shall be analyzed for the PADEP short list for unleaded gasoline parameters (BTEX, MTBE, cumene, naphthalene, 1,2,4-TMB, and 1,3,5-TMB). Appropriate QA/QC samples shall also be obtained for laboratory analysis. The soil sampling results shall be analyzed using PADEP's 75%/10x Ad Hoc Rule, which shall be documented in detail in the RACR<sup>32</sup>.

**Milestone G – Post-Remedial Vapor Intrusion Evaluation.** Bidders shall provide a firm fixed-price to conduct an evaluation of the indoor air exposure pathway post-remediation, which shall be consistent with the requirements, guidance document, "Land Recycling Program Technical Guidance Manual for Vapor Intrusion into Buildings from Groundwater and Soil under Act 2" that became effective on 1/18/17. As part of this evaluation, each bid shall include the installation and sampling of two on-property soil vapor sampling points. Each of the sampling events shall be completed twice post-remediation and separated by at least 45 days. The samples shall be analyzed for the PADEP short-list of diesel fuel parameters (benzene, toluene, ethylbenzene, MTBE, cumene, naphthalene, 1,3,5-TMB, and 1,2,4-TMB) by a PADEP-accredited laboratory using appropriate analytical methods and detection levels. Each bid shall describe their approach in detail, including the installation details for the soil vapor points, sample locations provided on a drawing, sampling methods and analysis and schedule for when the sampling would be anticipated. Each bidder's approach to implementing this milestone shall clearly identify the number of sampling events, number of samples per event, QA/QC measures and samples, analytes, analytical method, and other key assumptions affecting the bid price.

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

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<sup>32</sup> If the sampling data does not allow for attainment of the selected standard, additional work will be considered an out-of-scope task under the Fixed-Price Agreement, which will require Solicitor and PAUSTIF approval of a work plan and cost estimate before beginning the work.

refer to state licensing laws to determine which seals are required based on the work performed for and documented in the RACR). The fixed-price cost shall also include addressing any PADEP comments on the RACR.

**Milestone I – Site Closure / Restoration Activities.** Under this milestone, the bidder shall describe and provide a fixed-price bid for properly closing the site, including: removal of the remedial system and proper disposal of any remaining wastes; in-place abandonment of remedial system below grade piping; in-place abandonment of all on- and off-property monitoring and recovery wells, and vapor monitoring points consistent with PADEP guidelines; well head removals; and re-vegetation, concrete / asphalt repairs, as necessary, for areas that have been disturbed by site characterization or remedial action activities. This task shall also include photo-documenting the site restoration work and completion / submittal of the well abandonment forms. Copies of these photographs and forms shall be provided for the Solicitor's files.

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

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

**Optional Cost Adder Milestone C – Additional Quarterly Monitoring, Sampling & Reporting.** Under this milestone, bidders shall provide the Solicitor and PAUSTIF with a firm quarterly unit fixed-price cost that would include the quarterly groundwater monitoring, sampling / analysis of 11 existing on-property wells MW-1, MW-1A, MW-2, MW-2A, MW-28, MW-31 through MW-36 and the 11 existing off-property wells MW-3, MW-4, MW-5, MW-7, MW-10, MW-12, MW-14, MW-15, MW-21, MW-29, and MW-30 and reporting beyond the three quarters specified in Milestone C.<sup>33 34</sup> The SOW for this unit cost adder milestone should follow Milestone C guidelines. Each bid must include the rationale for needing to implement this optional cost adder milestone.

**Optional Cost Adder Milestone D1A – Replacement of Remedial System Vacuum Pump.** Under this milestone, bidders shall provide the Solicitor and PAUSTIF with a firm fixed price cost for the purchase and installation of one replacement vacuum pump for the remedial system. This fixed price cost shall include all labor, materials, and expenses. Each bid must also include the rationale for implementing this optional cost adder milestone.

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<sup>33</sup> Off-property wells MW-7 and MW-10 are ONLY used for collection of water level measurements.

<sup>34</sup> The fixed price cost shall also include any additional monitoring well(s) that the bidder proposes to install under Milestone A (if any).

**Optional Cost Adder Milestone D1B – Replacement of Down-Well Pneumatic Groundwater Pump.** Under this milestone, bidders shall provide the Solicitor and PAUSTIF with a firm fixed price cost for the purchase and installation of one replacement pneumatic groundwater pump. This fixed price cost shall include all labor, materials, and expenses. Each bid must also include the rationale for implementing this optional cost adder milestone.

**Optional Cost Adder Milestone D1C – Replacement of Air Compressor.** Under this milestone, bidders shall provide the Solicitor and PAUSTIF with a firm fixed price cost for the purchase and installation of one air compressor for the remedial system. This fixed price cost shall include all labor, materials, and expenses. Each bid must also include the rationale for implementing this optional cost adder milestone.

**Optional Cost Adder Milestone D2 – Additional Remediation System O&M, Site Monitoring, Sampling, & Reporting.** Under this milestone, bidders shall provide the Solicitor and PAUSTIF with a firm quarterly unit fixed-price cost that would include the routine O&M of the remedial system; quarterly groundwater, monitoring, and sampling of the 11 on-property wells (MW-1, MW-1A, MW-2, MW-2A, MW-28, MW-31 through MW-36) and 11 off-property wells (MW-3, MW-4, MW-5, MW-7, MW-10, MW-12, MW-14, MW-15, MW-21, MW-29, and MW-30) and reporting beyond the timeframe specified in Milestone D2.<sup>35 36</sup> The SOW for this unit cost adder milestone should follow Milestone D2 guidelines. As described in Milestone D2, a 10% holdback will be applied to each Optional Cost Adder Milestone D2 payment. Each bid must include the rationale for needing to implement this optional cost adder milestone.

**Optional Cost Adder Milestone E – Additional Groundwater Attainment Demonstration.** Under this milestone, bidders shall provide the Solicitor and PAUSTIF with a firm quarterly unit fixed-price cost that would include the quarterly groundwater sampling of the on-property POC wells MW-1, MW-1A, MW-2, MW-2A, MW-28, MW-31, MW-32, MW-33, MW-34, MW-35, and MW-36; and the 11 existing off-property de-facto POC wells MW-3, MW-4, MW-5, MW-12, MW-14, MW-15, MW-21, MW-29, and MW-30; and reporting beyond the timeframe specified in Milestone E. The SOW for this unit cost adder milestone should follow Milestone E guidelines. Each bid must include the rationale for needing to implement this optional cost adder milestone.

**Optional Cost Adder Milestone J – Monitoring Well Abandonment and Installation of Replacement Monitoring Well.** Under this milestone, bidders shall provide the Solicitor and PAUSTIF with a firm fixed-price unit cost per monitoring well abandonment / replacement, and including well development and surveying if the off-property excavation is extended beyond bidder's defined excavation area to require abandoning and replacing a monitoring well. Each bid shall include a description of the methods for well abandonment and drilling / installation of the replacement well. Construction details for the replacement wells shall be identical to existing wells abandoned. Each bid must also include the rationale for implementing this optional cost adder milestone.

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<sup>35</sup> Off-property wells MW-7 and MW-10 are only to be used for collection of water levels.

<sup>36</sup> The fixed price cost shall also include any additional monitoring wells installed under Milestone A (if any).

## **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 tasks identified in the bid. The standard practice of tracking total cumulative costs by milestone will also be required to facilitate invoice review. 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. All necessary modifications to the executed Remediation Agreement will require the prior written approval of the Solicitor and the PAUSTIF (for funding consideration). PADEP approval may also be required.



## List of Attachments

1. Remediation Agreement
2. Bid Cost Spreadsheet
3. Site Information/Historic Documents
  - a. Figures 1 through 4
  - b. 2<sup>nd</sup> Quarter 2017 RAPR, dated July 2017
  - c. 1<sup>st</sup> Quarter 2017 RAPR, dated April 2017
  - d. 4<sup>th</sup> Quarter 2016 RAPR, dated January 2017
  - e. 3<sup>rd</sup> Quarter 2016 RAPR, dated October 2016
  - f. Remedial Action Plan, dated December 23, 2015
  - g. Site Characterization Report Addendum, dated October 26, 2015
  - h. Site Characterization Report, dated July 13, 2015
  - i. 1<sup>st</sup> Quarter 2015 RAPR, dated May 2015
  - j. 2014 RAPRs
  - k. 2013 RAPRs
  - l. Remedial System Start-Up Engineering Evaluation report, dated December 2012
  - m. 3<sup>rd</sup> & 4<sup>th</sup> Quarter 2012 RAPRs
  - n. Systematic Random Soil Sampling locations
  - o. 2014 Notification of Reportable Release & PADEP approval of 2015 reports.