Request for Bid

Fixed-Price Bid to Result

Remediation Project and Closure Activities

Solicitor

Golden Oil Company

1600 Oakdale Road

PO Box 275

Oakdale, PA 15071

PADEP FACILITY ID #02-03827

PAUSTIF CLAIM #2011-0101(I)

Date of Issuance

May 6, 2016

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

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

Calendar of Events

Activity	Date and Time
Notification of Intent to Attend Site Visit	May 24, 2016 by 5 p.m.
Mandatory Pre-Bid Site Visit	May 26, 2016 at 10 a.m.
Deadline to Submit Questions	June 3, 2016 by 5 p.m.
Bid Due Date and Time	June 17, 2016 by 3 p.m.

Contact Information

Technical Contact
Mr. Mark Bedle B&B Diversified Enterprises, Inc. PO Box 16 Barto, PA 19504 Phone – 610-845-0640 Fax – 610-845-0650 Email – mbedle@bbde.com

All questions regarding this RFB and the subject Site conditions must be directed via email to the Technical Contact identified above with the understanding that all questions and answers will be provided to all bidders. The email subject line must be **"[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 International (ICF) unless approved by the Technical Contact. Bidders may discuss this RFB with subcontractors and vendors to the extent required for preparing the bid response.

Requirements

Mandatory Pre-Bid Site Meeting

The Solicitor, the Technical Contact, or their designee will hold a mandatory Site visit on the date and time listed in the Calendar of Events to conduct a Site tour for one (1) participant per bidding company. The Technical Contact may answer questions at the Site meeting or may collect questions and respond via email. All questions and answers will be provided via email to all attendees. This meeting is mandatory for all bidders, no exceptions. This meeting will allow each bidding company to inspect the Site and evaluate Site conditions. **A notice of the bidder's intent to attend this meeting is requested to be provided to the Technical Contact via email by the date listed in the Calendar of Events with the 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 International, 4000 Vine Street, Middletown, PA 17057, Attention: Contracts Administrator. The outside of the shipping package containing the bid must be clearly marked and labeled with "Bid – Claim # [insert claim number provided on cover page]".** Please note that the use of U.S. Mail, FedEx, UPS, or other delivery method does not guarantee delivery to this address by the due date and time listed in the Calendar of Events for submission. Companies mailing bids should allow adequate delivery time to ensure timely receipt of their bid.

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

Bid Requirements

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

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

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

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

In addition, the bidder shall provide:

1. The bidder's proposed unit cost rates for each expected labor category, subcontractors, other direct costs, and equipment;

2. The bidder's proposed markup on other direct costs and subcontractors (if any);

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

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

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

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

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

Each bid response document must include at least the following:

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

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

proposed in this RFB shall be discussed, quantified, and priced separately; however, failure to bid the SOW "as is" may result in a bid not being considered.

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

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

5. Responses to the following specific questions:

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

6. A description of subcontractor involvement by task. Identify and describe the involvement and provide actual cost quotations/bids/proposals from all significant specialized subcontracted service (e.g., drilling/well installations, laboratory, etc.). If a bidder chooses to prepare its bid without securing bids for specialty subcontract services, it does so at its own risk. Added costs resulting from bid errors, omissions, or faulty assumptions will not be considered for PAUSTIF reimbursement.

7. A detailed schedule of activities for completing the proposed SOW including reasonable assumptions regarding the timing and duration of Solicitor reviews (if any) needed to complete the SOW. Each bid must provide a schedule that begins with execution of the Remediation Agreement with the Solicitor and ends with completion of the final

milestone proposed in this RFB. Schedules must also indicate the approximate start and end date of each of the tasks/milestones specified in the Scope of Work, and indicate the timing of all proposed key milestone activities (e.g., within 30 days of the contract being executed).

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

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

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

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.

Site Address

Former Collins Texaco
8000 University Boulevard
Coraopolis, Pennsylvania 15108
Moon Township, Allegheny County

Site Location and Operation Information

The former Collins Texaco Site is located at 8000 University Boulevard, on the southwest corner of the intersection of University Boulevard with Moon-Clinton Road, in Moon Township (Coraopolis mailing address), Allegheny County, Pennsylvania. The subject property is a vacant automotive service station. Historic operations at the Site included retail fuel sales and an automotive repair service in a three-bay, slab-on-grade, masonry garage. The site was first developed as a retail petroleum facility between 1965 and 1970. The former underground storage tanks (USTs) were installed in this time frame and were used to store and dispense gasoline. The facility was acquired by Golden Oil Company (GOC) in 1982 and operated as a Texaco retail gas station and auto repair shop. In the early 1990s, four of the five registered USTs at the Site were upgraded to include new fuel dispensers, automatic tank gauges, and spill and overfill protection. The fifth UST was removed from service at that time, reportedly to consolidate UST systems on the property. Operation and use of the remaining USTs at the site continued until June 2005 when all operations were discontinued. Petroleum-contaminated soils were discovered below the product dispensers during the 2011 UST closure at the Site. The release was reported to PADEP on July 12, 2011, and site characterization activities were subsequently initiated. A Site Plan is attached as Figure 1.

The Site and most surrounding properties are zoned as Highway Commercial. To the north across Moon-Clinton Road, there is a pizza shop and a car dealership. To the west there is West Hills Honda, a Honda motorcycle and ATV dealer, and additional commercial properties further west and northwest. To the south, there is a single residence, and immediately south of the residence is a property containing three water towers owned by Moon Township. South of the water towers are two hotels. To the east across University Boulevard, there is a large, outdoor sports complex owned by Moon Area School District, which is zoned Educational. The

nearest residential neighborhood is located approximately 1,000 feet west of the Site. Public water and public sewer services are available at the Site.

Bedrock underlying the Site was determined by the previous consultant to be the lower portion of the Monongahela Group's Pittsburgh Formation, and immediately below it is the Casselman Formation of the Conemaugh Group. The boundary between these two units is indicated by the Pittsburgh Coal Bed, typically 4 feet to 10 feet thick, which was likely to have been historically strip-mined on the property. The Pittsburgh Formation consists of principally flat-lying, inter-layered limestones and calcareous mudstones. The Pittsburgh coal complex makes up the lower third of the formation. The Casselman Formation is described as cyclic sequences of shale, siltstone, sandstone, red beds, thin, impure limestone, and thin, non-persistent coal. Well logs for the Site (provided in Attachment 3) indicate bedrock is encountered at depths ranging from 14 feet below grade (ftbg) at monitoring wells MW-6 and MW-9 to 24 ftbg at monitoring well MW-4. The average water table depth at the Site is comparable to the average depth to bedrock at the Site.

Site Background Information

The five registered USTs and all associated vestiges were permanently closed via removal on July 12-13, 2011. These systems included five 6,000-gallon, single-walled, steel tanks (USTs #001, 002, 003, 004, and 005) and all associated piping and dispensers. One non-regulated heating oil UST was also removed on July 14, 2011. The closure assessment was documented in the Underground Storage Tank Closure Assessment of Former Golden Oil Collins Texaco, submitted to PADEP on August 29, 2011. The closure assessment noted that unconsolidated materials within the UST removal area extended to approximately 4 ftbg, at which point bedrock, consisting of shale and coal, was encountered. The UST cavity extended to between 13 ftbg and 14 ftbg.

During closure assessment activities, soil contamination was identified below the product dispensers, extending to the soil bedrock interface at approximately 4 ftbg. A written Notification of Contamination was submitted to PADEP on July 20, 2011. It was suspected that the likely source of the contamination was a combination of chronic leaks from dispensing equipment and spills/overfills at the dispensers. Although specific failure points were not identified, there were no under-dispenser containment sumps present at the Site. The total volume and extent of the release are not known. During the system closure, a total of 21 confirmatory soil samples were collected and submitted for laboratory analysis of the PADEP unleaded gasoline short list of parameters. Analytical results from confirmatory soil samples D-1, D-2, and D-4 (Table 1) revealed multiple contaminants of concern concentrations (COCs) exceeding closure action levels for at least one of the following target analytes: benzene, toluene, methyl tert-butyl ether (MTBE), naphthalene, 1,2,4-trimethylbenzene (1,2,4-TMB) and 1,3,5-trimethylbenzene (1,3,5-TMB). Groundwater was not encountered during the excavation activities. No interim remedial actions (IRAs) were conducted at the time of closure, because the extent and the magnitude of

the release into bedrock was not immediately apparent. The excavated areas were completely backfilled on July 14, 2011.

Soil Investigation and Results

Seventeen site characterization soil borings were advanced in December 2011. Three additional soil borings were advanced in January 2012 to delineate soil impacts discovered near the north dispenser island.

During the site characterization process, a total of 20 soil samples were submitted for laboratory analysis. Selected soil samples from soil borings were submitted for laboratory analysis for the Pennsylvania unleaded gasoline parameters by US EPA Method 5035/8260B. Out of the 20 total samples analyzed during site characterization, nine samples were reported to contain at least one unleaded gasoline target analyte at a concentration exceeding the Non-Residential Soil to Groundwater MSCs for a Used Aquifer (NRSGUA MSC). The comprehensive soil analytical results are provided on Table 1 and depicted on Figure 2. Soil samples collected from borings SB-12, SB-13, SB-14 and MW-5 contained benzene, 1,2,4-TMB and 1,3,5-TMB at concentrations exceeding their NRSGUA MSC. Samples from borings SB-12, SB-13 and SB-14 were also reported to have MTBE at concentrations above its NRSGUA MSC. Samples from borings SB-4, SB-10, SB-18 and SB-19 were reported to have only benzene above its NRSGUA MSC. The sample from boring SB-14 also had toluene above its NRSGUA MSC, and the sample from SB-2 also had 1,3,5-TMB exceeding its NRSGUA MSC. The soil contamination appears to be centered around the two dispenser islands (see Figure 2 in Attachment 3).

Soil contamination exceeding the SHS was identified between 2 ftbg and 8 ftbg in six of nine soil samples with exceedances, with the remaining three samples with exceedances coming from the 8 ftbg to 14 ftbg range. All soil boring logs are provided in Attachment 3.

Groundwater Investigation and Results

The groundwater characterization began with the installation of four groundwater monitoring wells between January and February 2012. Based on the analytical results from the first round of groundwater monitoring in February 2012, five additional monitoring wells (MW-4D and MW-5 through MW-8) were installed in March 2012 to delineate the lateral and vertical extent of the groundwater impacts and to establish point of compliance (POC) monitoring wells. Two additional monitoring wells (MW-9 and MW-10) were installed in November 2012 and the final two on-site monitoring wells (MW-11 and MW-12) were installed in April 2013. Two offsite monitoring wells (MW-13 and MW-14) were installed in July 2015 after lengthy access negotiations with the property owners. The offsite wells were installed to the west of the Site at the West Hills Honda property; and to the north of the Site at the Angelia's Pizza shop to delineate the liquid petroleum hydrocarbon (LPH) that was present in upgradient, on-site

monitoring well MW-5. All monitoring well construction logs are included in Attachment 3 as is Table 2 which summarizes the monitoring well construction specification.

Static water levels at the Site have been as high as 10.03 ftbg (MW-5) and as low as 30.41 ftbg (MW-4D). Including the off-site wells, the lowest measured depth to groundwater was 33.29 ftbg at MW-14 at the West Hills Honda property. The hydraulic gradient calculated for the two most recent gauging events (May and August 2015) has been generally to the east with flow converging on MW-2. This recent groundwater flow pattern is consistent with historic gauging events for the Site. Historically, there has never been any measureable groundwater present in MW-1.

Quarterly groundwater monitoring began in February 2012. Since the inception of quarterly monitoring, groundwater samples collected from monitoring wells MW-2, MW-3, MW-4, MW-4D, MW-5, MW-9, MW-11, and MW-12 have been reported with concentrations of at least one of the following unleaded gasoline constituents in exceedance of their respective Groundwater MSCs: benzene, ethylbenzene, naphthalene, MTBE, 1,2,4-TMB and 1,3,5-TMB. However, monitoring wells MW-2, MW-3, and MW-4D have had only isolated exceedances and have had no exceedances since May 2012. Monitoring well MW-11 has had no exceedances since May 2013.

In groundwater samples from the two most recent monitoring events (May 2015 and August 2015), exceedances of the NRSGUA MSCs were reported for benzene, ethylbenzene, naphthalene, MTBE, 1,2,4-TMB, and 1,3,5-TMB affecting three monitoring wells (MW-4, MW-5, and MW-12). The data from the recent events is provided in the summary tables and recent progress report included in Attachment 3.

The two off-site monitoring wells have been sampled only once since they were installed. All analytes in the samples from monitoring wells MW-13 and MW-14 from August 2015 were reported at concentrations less than their laboratory reporting limits, with the exception of MTBE at 6.1 μg/L in MW-14.

Isoconcentration maps for the May 2015 event are provided for benzene, ethylbenzene, naphthalene, MTBE, 1,2,4-TMB, and 1,3,5-TMB in Attachment 3. Isoconcentration maps for the August 2015 event are provided for benzene, ethylbenzene, naphthalene, MTBE, 1,2,4-TMB, and 1,3,5-TMB in Attachment 3. All groundwater analytical results are summarized on Table 3 in Attachment 3.

Measurable LPH, which was observed by the previous consultant to be aged considerably and exhibiting a gasoline-like odor, has been present in monitoring well MW-5 during six gauging events. The most recent monitoring event during which LPH was observed in monitoring well MW-5 was in February 2014. Petroleum was recovered from this well and disposed of when present. Given the intermittent nature of the product, however, a regularly scheduled recovery

program was not implemented. LPH measurements are summarized on Table 3 in Attachment 3.

Geophysical Survey

In an effort to explain the observed groundwater depression at monitoring well MW-2, as well as to identify any possible preferential pathway for LPH to have migrated toward MW-5 from the dispenser area near MW-4, a geophysical survey of the Site was completed in April 2013. The survey was conducted in an attempt to elucidate the subsurface geology and potential groundwater flow regime. The results of the geophysical survey (provided in Attachment 3) confirm the observed groundwater elevation data as the results of "Line 2" specifically illustrate that the depth to water at the location of MW-2 does in fact appear to be deeper than elsewhere on the site.

The geophysical report prepared by THG Geophysics Limited (THG) indicates that the subject property was historically deep and then surface mined for coal. According to THG's interpretation, the material underlying the site consists of coal spoils generated by the strip mining activities. The presence of this fill material can/might explain the variability in relative groundwater elevation observed at the site. The geophysical report also offered a potential explanation for the presence of free-phase product in monitoring well MW-5, which appears to have migrated in the upgradient direction from shallow product lines at the former northern dispenser area near Moon-Clinton Road.

Analysis of the imaging from geophysical transect Line #3 identified the transition between dry spoil material and wet spoil material at depths trending downward from wells MW-4 and MW-4D to the west toward MW-5. The general slope of the dry spoil above the saturated zone also showed a similar slope. Results for transect Line #4 showed a similar trend in the wet spoil interface sloping toward monitoring well MW-5 from MW-9. THG's interpretation of these profiles was that it is feasible that gasoline gradually discharging from shallow dispenser lines could eventually migrate to depth along the westward sloping spoil material. Although this migration appears to have been an unusual circumstance, it could potentially explain why the free-phase product that was intermittently present in well MW-5 appeared to have migrated slightly in an up-gradient direction from the original source. THG's geophysical data and report are provided in Attachment 3.

Scope of Work (SOW)

This RFB seeks competitive bids from qualified contractors to perform the activities in the SOW specified herein. The SOW presented in this RFB was provided to the PADEP for review and comment. A response was received from the PADEP related to the soil gas sampling efforts that were incorporated into the final version of the RFB.

Objective

This RFB is seeking qualified firms to prepare and submit a fixed price proposal to complete a Bid to Result project. “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).

For this Site, the selected goal for the project is to obtain a release of liability from the PADEP under Chapter 245 regulations by demonstrating attainment of the selected Statewide Health Standards for both soil and groundwater. In order to achieve the aforementioned goals, Bidders may propose to remediate the Site by one of the strategies listed below:

- Pump and Treat combined with Soil Vapor Extraction
- Air Sparge/Soil Vapor Extraction
- Dual Phase Extraction

The specific remedial technologies previously mentioned shall be the basis for preparing a SOW and presenting a competitive fixed-price bid. The selected bidder shall perform pilot testing to confirm that the remedial technology proposed in their bid would be feasible to meet the milestone objectives and remedial goal for this site.

Constituents of Concern (COCs)

The list of COCs for this Site include the following:

- Benzene
- Toluene
- Ethylbenzene
- Xylenes

- MTBE
- Naphthalene
- Cumene
- 1,2,4-Trimethylbenzene
- 1,3,5-Trimethylbenzene

General SOW Requirements

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

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

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

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

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

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

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

Site-Specific Guidelines

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

- **Scheduling:** As part of this RFB, the selected consultant shall provide a clear deadline (e.g. within 30 days of the contract being executed) as to when each of the milestones will be completed. This includes the expected date (e.g. within 90 days of the contract being executed) when the draft deliverables will be submitted to the Solicitor and PAUSTIF for review. All on-site work should be completed during the normal working days and hours of 8 am to 5 pm from Monday through Friday.

- **Responsibility:** The selected consultant will be the consultant of record for the Site. They will be required to take ownership and responsibility for the project and will be responsible for representing the interests of the Solicitor and PAUSTIF with respect to the project. This includes utilizing their professional judgment to ensure reasonable and

appropriate actions are recommended and undertaken to protect sensitive receptors and move the Site towards closure.

- **Scope of Work:** Please bid the scope of work as provided in the RFB. Consultants are welcome to propose or suggest a change in the SOW; however the consultant should bid the SOW as presented in the RFB and provide any suggested modification to the SOW and provide the cost difference (+ or -) separately in the proposal.

- **Selected Standards**: The claimant has selected to remediate the Site to the PADEP Non-Residential Statewide Health Standard (SHS) for Used Aquifers for all constituents of concern in all affected media.

- **Safety Measures**: Each consultant should determine the level of safety measures needed to appropriately complete the milestones. Specifically, if a consultant feels it is appropriate and necessary to complete additional safety measures other than or beyond what is required in the SOW, the cost should be included in their proposal and costs. More importantly, if a consultant includes the cost to complete safety activities, they should specify it in their proposal 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 proposals and other factors are taken into consideration during the review process, including appropriate safety measures.

- **Waste Disposal:** The IDW waste (including soil/rock cuttings, development water, and liquids generated during installation and aquifer testing) should be disposed of per the instructions included in the "General SOW Requirements" section of the RFB. Bidders will be responsible for arranging any offsite 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. In an effort to eliminate or minimize the need for change orders on a fixed price contract, please include costs to dispose of all anticipated volumes of waste in your bid response. PAUSTIF will not entertain any assumptions on the contract with regards to a volume of waste (i.e. Project costs assume that no more than 1,000 gallons of groundwater will require disposal after the completion of the pump test). 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. Please estimate the volume of waste using your professional opinion, experience, and the data provided. Invoices submitted to cover additional costs on waste generated as part of activities included under the fixed price contract for this Site will not be paid. If your bid proposes to dispose of waste under a permit, then your bid needs to address the potential situation of a permit not being approved. Bids need to specifically indicate that your bid costs include the costs to

dispose of the waste even if a permit is not approved. As indicated in the bid, there should be no assumptions on waste and assuming that a permit will be approved is still making an assumption on waste.

- **Standard Operating Procedures:** Please include in the bid as an attachment, your firm's standard operating procedures for all major field tasks proposed in the scope of work.

- **Optional Cost Adder Milestones:** Milestone A through Milestone M (excluding Milestone C4, Milestone C5, Milestone C6, and Milestone D2) represents the base Scope of Work for this RFB solicitation. These milestones have been specifically developed in an effort to complete the applicable PADEP requirements. In addition to the above base Scope of Work, the Optional Cost Adder Milestones (Milestone C4, Milestone C5, Milestone C6, Milestone D2, Milestone N and Milestone O) need to be addressed in your bid response. These cost adders will not be part of your initially approved base contract price. However, if it becomes necessary to complete any of these activities, they will be completed under the Remediation Agreement signed as part of this project. For consideration of PAUSTIF reimbursement, Solicitor and PAUSTIF approval must be obtained prior to completing Optional Cost Adder Milestones.

Site-Specific Milestones

The following Milestones are to be included in bid responses:

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

Bidders may use this opportunity to: 1) confirm any elements of the site characterization completed by a previous consultant; 2) address any perceived data gaps in the existing site characterization work; 3) assist in the evaluation and determination of remedial technologies and system design which are characterization-type activities (e.g., analysis for C_4-C_{10}); 4) assist with refining the cleanup timeframe estimate and/or other reasons related to validating the bidder's remedial approach and design (e.g., additional sampling to better determine mass in place). Note that tasks and costs related to pilot testing and reporting must be captured under the Pilot Testing and Reporting Milestone, not Supplemental Site Characterization Activities and Reporting. If pilot testing tasks and costs are included in this Site Characterization Milestone, the bidder's technical score may be negatively impacted.

Please note that the expectation is that bidders will use at least a portion of this Milestone to propose a comprehensive soil investigation that will both tighten the delineation of the soil and further define the area of soil contamination requiring remediation. Specifically, bidders should consider a soil boring investigation that will include the advancement of at least 15 soil borings and the collection of at least 25 soil samples from appropriate soil depths.

Please note that during the 2011 and 2012 site characterization soil sampling activities, exceedances of non-residential soil to groundwater MSCs were reported in nine of the 20 samples analyzed. These exceedances were located at three specific areas at the Site: at the northern dispenser island, at the eastern dispenser island, and at MW-5. The exceedances at the eastern dispenser island are delineated only to the north and only loosely to the east, west and south. Exceedances at MW-5 are not delineated at all. Tighter delineation of impacted soils is necessary to accurately estimate the volume of soil that must be remediated and possibly excavated. During site characterization activities, direct-push refusal was encountered at depths ranging from 5 ftbg to 13.5 ftbg. Additional details are provided below:

Northern Dispenser Island

The exceedances in borings SB-12 and SB-14 at the northern dispenser island are approximately delineated to the south and southwest. However, exceedances in borings SB-10, SB-14, SB-18, and SB-19 must be more tightly delineated to the west, north, and east.

Eastern Dispenser Island

Soil impacts in borings SB-2 and SB-4 at the eastern dispenser island require tighter delineation horizontally. Borings SB-2 and SB-4 appear to be suitably delineated to the south by boring SB-1 and to the north by boring SB-6. Borings SB-2 and SB-4 are currently delineated to the west by boring SB-3 (approximately 15 feet away) and to the

east by boring SB-5 (approximately 18 feet away). In addition, one of the proposed soil borings should be advanced at SB-2 until bedrock refusal. It is suggested the multiple soil samples be collected from the aforementioned boring in an effort to vertically delineate the historic sampling result as well as guide the excavation efforts discussed in Milestone C.

MW-5 Area

Soil impacts at well MW-5 must be fully delineated horizontally and vertically. The soil sample from MW-5 was collected from the 10-12 ftbg interval, and competent bedrock was encountered at approximately 20 ftbg. Therefore, vertical delineation must also be accomplished at this location. There are currently no horizontal delineation borings surrounding MW-5. Bidders should bear in mind that a preferential pathway for LPH migration through fill materials may exist between MW-5 and the northern dispenser island to the east.

Bid responses should provide clear details and specifics on what will be completed as part of Milestone A and the specific methods in which the proposed activities will be completed. Details should include such items as soil sampling depths, boring locations, number of samples, etc. All activities completed as part of Milestone A should be summarized in the SCR/RAP to be submitted in Milestone H.

Milestone B – Private Utility Markout. Prior to any intrusive investigation work at the Site (i.e. soil borings, excavation, system install), a private markout is to be conducted at the Site (and/or off-site location where intrusive activities will be conducted) to confirm the location of any obstruction or underground utility present in the vicinity of the proposed intrusive activity locations. The locations of the identified features should be marked with white paint on the asphalt areas and white flags in grassy areas. A report shall be provided with an explanation of the identified features.

Milestone C – Soil Excavation. Bidders shall describe specifics on how the limited on-site excavation will be completed. Each bid response must clearly describe in detail the bidders approach and provide a cost inclusive of all excavation related activities such as planning, preparation, excavation, backfilling, restoration, etc. The proposed excavation is to be completed in the area of the Eastern Dispenser Island and is estimated to be approximately 41 cubic yards based on the available data. The exact dimensions and extent of the excavation is unknown until the selected consultant completes the soil boring investigation that was suggested in Milestone A.

To enable demonstration of attainment of the SHS in soils in the area of the Eastern Dispenser Island, the impacted soil with contaminant concentrations exceeding SHS

shall be removed. Bidders should take into consideration that they may need to field screen and segregate soils from below surface cover all the way to bedrock in certain sections of the excavation. It should not be assumed that the selected consultant will dig to a uniform depth without analytical data and field PID measurements to justify it. Bidders should assume that the soil will be field screened and segregated to separate the "not suspected to be contaminated" and "obviously contaminated" soil. To be deemed responsive to this task, bids must discuss:

- The photoionization detector (PID) screening value selected somewhere around 50 parts per million (ppm) that will be applied to segregate the "obviously contaminated" and "not suspected to be contaminated" soil removed from the excavation;

- The field screening approach and frequency. All "obviously 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 base fixed excavation cost to be included as Milestone C1 for the estimated 41 cubic yards. The contaminated soil transportation and off-site disposal costs as well as the clean fill import costs will be handled separately on an actual per ton unit cost in Milestones C2 and C3, respectively.

After the excavation is completed, and prior to backfilling, appropriate systematic random sampling should be conducted. Bids shall describe the sampling approach, including the number of soil samples, and discuss methods to be used. The soil samples collected following the excavation shall be collected both in laboratory-sterilized sample jars and using a PADEP approved soil sampling method. The samples will then be placed on ice and delivered to an accredited laboratory to be tested for the required constituents of concern in accordance with Pennsylvania's Storage Tank Regulation procedures and cleanup standard criteria as specified in Pennsylvania's Act 2. Specifically, each sample will be analyzed for BTEX, MTBE, naphthalene, cumene, 1,2,4-TMB and 1,3,5-TMB. Samples should be properly handled under chain of custody documentation protocol and kept cold from sample collection until the samples are relinquished to the accredited laboratory. The laboratory to be utilized should be identified in the bid package. Upon receipt of the results, the consultant should forward a copy of the analytical data to the Solicitor and PAUSTIF (or its designated representative). Bids should also both discuss and include costs for the appropriate quality assurance/quality control (QA/QC) samples to be obtained for laboratory analysis during the event.

Bids shall include backfilling and mechanically compacting in lifts the excavated area. The successful bidder shall backfill to within 5 inches of grade using a combination of reused "clean" site soil and imported clean fill. Excavated material stockpiled on site for

re-use shall be sampled prior to backfilling, and the fixed-price bid shall include costs for the sampling and laboratory work in accordance with PADEP guidance documents. Backfill material and placement/compaction methods shall result in a stabilized soil condition capable of supporting normal traffic and use loads. 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 rollers, pneumatic tire rollers, vibrating rollers, or other mechanical tampers which are appropriate for the material being compacted. Bids shall also include surface completion / restoration to restore the area to pre-excavation conditions.

The details of the soil removal activities shall be documented in an appropriately timed quarterly RAPR (Milestone F) as well as the RACR (Milestone L), 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; 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.

Specifics on how bidders should prepare costs for each of the excavation related Milestones are discussed below. Please note that Milestone C1 is related to the base soil excavation estimated at 41 cubic yards. Should the selected consultant determine using analytical data and field screening data that the excavation needs to be expanded beyond the 41 cubic yards, then the costs related to the expansion will be handled using Milestones C4 through C6.

Milestone C1 – Milestone C1 will include all of the fixed costs to complete the base excavation activities (Excavating, Backfilling, Sampling, and Restoring the excavation area (assumed to be approximately 41 cubic yards) with the exception of the actual costs for transportation and disposal of the contaminated soil as well as the cost of the replacement clean fill which will be handled under Milestone C2 and Milestone C3 on an actual per ton cost. Any costs related to necessary waste profiling (including any sampling & laboratory work) and securing waste facility acceptance prior to beginning the soil excavation, should also be included in the fixed costs in Milestone C1.

Milestone C2 - Milestone C2 will include the management, loading, transportation and proper off-site disposal of excessively contaminated soils. The cost should be presented on a per ton basis.

Milestone C3 – Milestone C3 will include the purchase, transportation and on-site management of clean imported fill to replace exported excessively contaminated soil.

The cost should be presented on a per ton basis.

Milestone C4 (Cost Adder Milestone) - Milestone C4 will include the surface restoration of areas beyond the base excavation if the excavation needs to be expanded based on analytical data and field screening data. The cost should be presented on a per square foot basis.

Milestone C5 (Cost Adder Milestone) – Milestone C5 will include any additional excavation, backfilling, and compaction beyond the base excavation if the excavation needs to be expanded based on analytical data and field screening data. The cost should be presented on a per in-place cubic yard basis, but should exclude excessively contaminated soil transportation / disposal costs and clean imported fill costs since these are captured under Milestone C2 and Milestone C3.

For the purpose of fairly evaluating the costs included in the bid responses, each bidder's unit costs for Milestone C2 and Milestone C3 will be added to the bidder's costs provided for Milestone C1 using the following assumed volumes for Milestone C2 and Milestone C3 – 46 tons for T&D of impacted soils (75% excavated from the assumed excavation size provided in Milestone C1) and 46 tons of imported clean fill.

With regards to the soil excavation milestones, bidders should also note the following:

- Monitoring well MW-2 is located in the vicinity of the location of the excavation; however, it is not anticipated that the monitoring well will be destroyed and need replacement, as a result of the excavation. Bidders should try to maintain the integrity of that monitoring well, if possible.

- Groundwater is not anticipated to be encountered during the excavation activities.

Milestone D – Soil Vapor Sampling Point Installation and Soil Gas Sampling – Recently, the PADEP has advised that the Vapor Intrusion Guidance is currently being revised and as a result vapor assessments may change significantly. The aforementioned PADEP guidance document has not yet been finalized; however, it may be in place prior to the completion of the investigation included in this RFB. The PADEP has advised that the new draft guidance document is requiring that vapor points be constructed to near source sample depths. In an effort to cover both scenarios – completing the investigation with the revised guidance document in place as well as completing it under the current guidance document; the RFB is requesting two separate milestone costs to complete the task (Milestone D1 and Milestone D2). The scope of both Milestone D1 and Milestone D2 will be identical with the exception of the total installed depth of the proposed soil vapor points (SVPs). Just prior to the time of contract execution, PAUSTIF, the solicitor and the selected consultant will make the

determination as to which milestone (Milestone D1 or Milestone D2) will be completed based on the status of the PADEP's Vapor Intrusion Guidance. For the purpose of fairly evaluating the costs included in the bid responses, each bidder's cost provided for Milestone D1 will be used in the total bid base cost analysis. A Bidder's Milestone D2 will be reviewed in a manner consistent to that of an optional cost adder milestone.

- Milestone D1 will be if the existing guidance document is still in place and the SVPs will be installed to an approximate total depth of 5.0 ftbg or to the interface with weathered bedrock if encountered at a depth shallower than 5.0 ftbg.

- Milestone D2 will be utilized if the revised guidance document is in place. The SVPs should be constructed to near source sample depths. Bid responses should clearly discuss how points will be constructed.

For both Milestone D1 and Milestone D2, the costs should include the installation and sampling for a total of two onsite SVPs. Samples are to be collected from each of the two proposed SVPs during two separate sampling events appropriately spaced. The selected consultant should install two permanent SVPs at the Site as part of the selected milestone (Milestone D1 or Milestone D2). Please note that PAUSTIF will only pay the selected firm for the actual number of events conducted (i.e. if a firm includes the costs to complete 1 event, but no event is conducted; then the firm will not be paid for the milestone). The selected consultant should be prepared to conduct the first soil gas/indoor air sampling event at the Site within two weeks of the installation of the two SVPs. The selected consultant should conduct the second event 45 days after the first event. As part of the soil gas investigation, the selected consultant should consider the following:

- Bidders should select two appropriate locations to install the Soil Vapor Points at the Site and provide those locations in their bid response. The points will be advanced in the location proposed in the selected consultant's bid response, unless the presence of utilities, obstructions, or safety concerns requires a change in the location.

- Sampling should be performed using a tracer gas to confirm that ambient air is not short-circuiting and mixing with the soil gas samples. Photodocumentation of the tracer gas procedure should be part of the documentation required for this milestone.

- The vapor intrusion investigation should be completed in a manner consistent with the Land Recycling Technical Guidance Manual – Section IV.A.4 Vapor Intrusion Into Buildings from Groundwater and Soil under the Act 2 Statewide Health Standards, Document 253-0330-100, dated January 24, 2004. Bid responses should specifically indicate how the consultant anticipates

constructing the proposed soil gas point and completing the proposed sampling events.

- Samples should be collected in laboratory provided Summa canisters equipped with laboratory calibrated flow regulators and analyzed for benzene, toluene, ethylbenzene, MTBE, naphthalene, isopropylbenzene, 1,3,5-TMB, and 1,2,4-TMB via TO-15.

- The laboratory to be utilized should be identified in the bid package. Upon receipt of the results, the consultant should forward a copy of the analytical data to the solicitor and PAUSTIF (or its designated representative).

- Results from soil gas point installation and soil gas/indoor air sampling activities should be summarized and presented in the report to be completed as part of Milestone H.

Milestone E – Pilot Testing and Reporting. Bidders shall prepare a conceptual remedial action plan including the conceptual design of a remedial system in their response to this RFB. It is industry practice to perform a pilot test and provide the results of this testing to support the feasibility of the proposed remedial technology and approach. More specifically, the purpose of the pilot test is to:

- Confirm that the proposed technology is technically feasible;
- Confirm that the proposed technology is cost-effective;
- Confirm that the proposed technology will provide a timely closure; and,
- Determine design criteria.

The bidder shall provide a detailed description of the proposed pilot testing including rationale, the use of existing or installation of new data monitoring/collection points, proposed equipment to be used, and the data that is proposed to be collected. Additionally, the bidder shall specify up to five basic, objective criteria that would be evaluated to determine whether the remedial action proposed in the bid response document is feasible. These “critical criteria” shall be listed with an upper and lower limit that will define the range of acceptable results (i.e., pilot testing results) relevant to the proposed remedial approach. These critical criteria must be tightly-controlled measurements or calculations that could be independently measured or verified by others during the pilot test.

For example, bids shall include language such as, “For our proposed remedial action approach to be successful and for the technology(ies) used thereby to operate as

planned and meet our proposed clean up schedule, the Milestone E pilot testing must show:

1. A hydraulic conductivity greater than A, but not more than B;
2. A pumping rate exceeding AA gpm at the end of BB hours of vacuum-enhanced pumping;
3. The capacity to generate a soil vapor extraction vacuum of at least A in the native soil while not exceeding a soil flow rate of B; and,
4. Iron and manganese hardness within groundwater at or below AA milligrams per liter (mg/L)."

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

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

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

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

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

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

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

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

Milestone F – Quarterly Groundwater Monitoring, Sampling, and Reporting Before Remediation Implementation. For this milestone, the total number of groundwater monitoring and sampling events that will be needed will be based on the schedule proposed by the consultant. Specifically, consultants should include costs to complete all quarterly groundwater sampling activities scheduled to be completed prior to the implementation of the remedial strategy. Bid responses as well as the Bid Cost Spreadsheet should clearly indicate the number of quarters that are included in the costs for this milestone. Please note that USTIF will only pay the selected firm for the actual number of events conducted (i.e. if a firm includes the costs to complete two (2) events, but only one (1) event is conducted; then the firm will only be paid for the one (1) event

completed). The selected consultant should be prepared to conduct the first groundwater sampling event at the Site approximately two (2) weeks after the execution of the contract. Following the completion of each quarterly groundwater sampling event, the selected consultant should prepare a summary progress report for submittal to the PADEP.

Each event should include the following:

- Collect water level readings from each of the monitoring wells using an interface probe capable of distinguishing water and/or the presence or absence of product to the nearest 0.01 feet.

- Record the depth to water readings from the monitoring wells and then use the data to determine water level elevations such that groundwater flow direction can be confirmed.

- Groundwater sampling activities should be conducted in accordance with generally accepted practices as outlined in the final version of the PADEP Groundwater Monitoring Guidance Manual.

- Prior to the collection of groundwater samples, the water column in each of the monitoring wells should be purged by either the removal of approximately three (3) volumes of the water column or via low flow sampling method.

- Sampling equipment should be decontaminated prior to sample collection in accordance with generally accepted industry practices.

- Following purging activities, groundwater samples should be collected as quickly as practical from each of the wells into laboratory supplied bottleware.

- Samples should be properly handled under chain of custody documentation protocol and kept cold from sample collection until the samples are relinquished to the accredited laboratory.

- Groundwater samples collected during each of the events will be sent to an accredited laboratory to be tested for the required constituents of concern in

accordance with Pennsylvania's Storage Tank Regulation procedures and cleanup standard criteria as specified in Pennsylvania's Act 2. Specifically, each sample will be analyzed for BTEX, MTBE, naphthalene, cumene, 1,2,4-TMB and 1,3,5-TMB.

- In addition to the samples collected from the monitoring wells, one (1) duplicate sample and one (1) equipment blank sample will be collected and submitted per day of sampling.

- The laboratory to be utilized should be identified in the bid package. Upon receipt of the results, the consultant should forward a copy of the analytical data to the solicitor and PAUSTIF (or its designated representative).

- The quarterly progress reports should detail the observations documented during the event, summarize the analytical results, map the groundwater flow direction for the Site, provide iso-concentration maps for compounds exceeding the SWHS, provide hydro-graphs, discuss the interim remediation efforts (if any), and provide additional scheduling details for upcoming events. A draft of the progress report should be provided to the Solicitor for review and approval prior to submittal to the PADEP. Once the report is approved by the Solicitor, the report can be finalized and submitted to the PADEP.

- **All IDW waste** should be disposed of per the instructions included in the "General SOW Requirements" and "Site Specific Milestones" section of the RFB.

Milestone G - Fate and Transport Modeling – Fate and Transport evaluations shall be completed as appropriate and consistent with Act 2 guidance documents in order to assess the potential for contaminant migration. This evaluation should take into consideration both the groundwater and soil exceedances at the Site. Each firm should evaluate the data and site specific information provided and determine the most applicable model or models needed to complete appropriate fate and transport modeling for the Site. Please specify which modeling software will be used to predict fate and transport of the COCs exceeding the PADEP SHS in groundwater at the release location and its applicability to the Site. Bidders must identify a fate and transport modeling software capable of modeling contaminants in a bedrock aquifer.

Milestone H – Preparation of a Site Characterization Report (SCR) / Remedial Action Plan (RAP). Following the completion of the activities proposed in Milestone A, Milestone B, Milestone D, Milestone E, relevant number of events in Milestone F, and Milestone G, the selected consultant will prepare a combined SCR/RAP for the Site. The information gathered during the aforementioned milestones should be incorporated into a comprehensive SCR with RAP that will be submitted to the PADEP and will facilitate the objective to complete regulatory requirements governing both the SCR and RAP and gain PADEP approval. Specifically, the SCR should summarize the results of the recent investigations, the findings of the previous investigations, a comprehensive Site history, sensitive receptor information, risk assessment, geologic data, results and analysis of the aquifer testing, discussion on the completed remediation efforts, summary of the predictive modeling efforts completed, and a series of summary tables, appendices, and figures illustrating the information provided in the report.

The RAP should present a clear discussion to the PADEP as to what testing has been completed, the results (lab and fields) collected, and a structured argument as to why the selected remedial design is appropriate and applicable for this Site. The RAP should also reference the feasibility testing results as well as provide the design and specifications of the remedial strategy to be implemented at the Site. Specifically, the selected consultant should include tables, figures, and attachments that detail the proposed remediation specifics, equipment specifications, operation parameters, and any applicable drawings or figures (i.e. P&IDs, remediation equipment and treatment point location figures, etc.) in the RAP. The RAP should clearly identify the parameters to be tested and the methodology that will be incorporated to determine when active remediation is completed. In addition, the RAP should clearly define the anticipated standards selected for the project. The aforementioned standards should be supported in the RAP by pathway elimination and/or risk assessment, as required by the applicable regulations and guidelines.

The Report will be completed following the guidelines specified in Pennsylvania Code, Title 25, Chapter 245 and the Land Recycling Program (Act 2) Technical Guidance Manual with regards to both the Site Characterization Report as well as a Remedial Action Plan. The report will be appropriately signed and sealed by a Professional Geologist and a Professional Engineer registered in the Commonwealth of Pennsylvania.

The draft SCR / RAP and all AutoCAD maps / plans included in the report (e.g., site plan / base map, groundwater elevation maps, dissolved plume maps, soil contaminant distribution maps, etc.) and appendices (e.g., boring logs, tables, waste disposal documentation, aquifer testing and analysis, transducer survey results and analysis, and sensitive receptor information) shall be submitted electronically (in Adobe PDF format) to the Solicitor and PAUSTIF for review / comment prior to finalizing the RAP. Once the

selected consultant has addressed comments on the draft, the selected consultant shall finalize and issue the report to the PADEP. The draft report is to be submitted no later than the date specified in the schedule presented by the selected bidder.

Milestone I – Remedial Design, Installation and Implementation. For this milestone, bidders should include all necessary activities and costs associated with the design, purchase, installation, startup, and implementation of the remedial strategy. The successful bidder shall demonstrate that their remedial strategy selection would be effective in attaining the remediation goals for the project in the schedule proposed. The three generally acceptable remedial technologies discussed with PADEP include:

- Pump and Treat combined with Soil Vapor Extraction
- Air Sparge/Soil Vapor Extraction
- Dual Phase Extraction

Bidders must propose one of these three alternatives as their proposed remedial approach, and it is critical that the bidder show that their proposed technology and system design is feasible on a conceptual level before pilot testing. The bidder should perform a thorough demonstration of the feasibility and practicality during pilot testing. It is also critical that any proposed alternatives do not exacerbate site impacts.

This milestone would cover all activities and costs related to the implementation of the strategy as described in the selected consultant's approved RAP including the quarterly groundwater sampling events and quarterly remedial progress reports to be completed during the implementation of the remedial strategy. As discussed, the fixed cost for this milestone in submitted bid responses needs to include all activities and sufficient costs related to the selected remediation strategy. Where applicable, this may include activities such as all telemetry triggered visits, all carbon change outs, and equipment maintenance, etc. The only cost that should be excluded from the bid response is the monthly electric bill, which is discussed below in greater detail.

Bid responses should note the following:

- Bid responses should describe in great detail how the strategy has been designed and how it will be implemented.

- Bid responses should clearly discuss the reasons as to why the selected strategy is applicable to this site.

- Bid responses should clearly note on a schedule how the payments for this milestone will be specifically broken out for the remedial strategy, the anticipated completion date, and the documentation to be submitted as proof of payment by providing a specific milestone schedule in the bid response that details the strategy proposed in the bid response. The aforementioned milestone schedule should be in a format similar to the milestone schedule included in the Remediation Agreement.

- Where applicable, the bid response should provide specifics on all equipment and vendors to be utilized.

- Where applicable, the bid response should provide Process and Instrumentation Diagrams and Cut Sheets.

- The Solicitor and PAUSTIF will be provided the opportunity to inspect and confirm the remediation strategy has been implemented as per the RAP.

- Where applicable, the bid response should describe what permits are anticipated and include all associated costs in this milestone.

- Bid response should describe with detail how progress of the remedial strategy will be monitored and how/when adjustments may be made. Bid response should provide specific parameters to be monitored and data values.

- Bid responses should provide a specific proposed remediation timeline and expected results with a discussion as to how the proposed timeline was calculated.

- Bid responses need to provide a clear discussion referencing specific data and available information that supports that the proposed remedial strategy will remediate the contaminants to the selected standards in the proposed timeframe.

- Bid responses need to clearly define both intermediate and end remedial strategy goals that will be used as a guideline to determine if the proposed strategy is successfully remediating the site. The end goals would be used to determine when remediation will be considered complete and successful.

- Quarterly groundwater sampling events proposed to be completed during the implementation of the remedial strategy should be included in Milestone I and conducted in a manner consistent with Milestone F.

- Following the completion of each quarterly groundwater sampling event, the selected consultant should prepare a Remedial Action Progress Report (RAPR) for submittal to the PADEP. The RAPR should detail the observations documented during the event, summarize the analytical results, provide applicable summary maps and tables, provide iso-concentration maps for compounds exceeding the

SWHS, provide hydro-graphs, discuss/detail the remediation efforts, and provide additional scheduling details for upcoming events. A draft of the progress report should be provided to the Solicitor for review and approval prior to submittal to the PADEP. Once the report is approved by the Solicitor, the report can be finalized and submitted to the PADEP.

- Please note that PAUSTIF will only pay the selected firm for the actual number of milestone or events conducted (i.e. if a firm includes the costs to complete two (2) events, but only one (1) event is conducted; then the firm will only be paid for the one (1) event completed).

- System maintenance & monitoring shall include monitoring and routine maintenance as specified by the equipment manufacturer(s) to ensure warranties are not voided and the equipment is kept in good working order. Operational time shall be logged by system instrumentation and reported quarterly in a RAPR. 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 choose to terminate the contract.

- If there is an unscheduled shutdown of the system, the selected bidder must notify the Solicitor and PAUSTIF within 48 hours after knowledge of the shutdown. If there is a scheduled shutdown of the system that will last greater than seven days, the selected bidder must notify the Solicitor and PAUSTIF at least 30 days prior to the planned system shutdown.

- Since the monthly electric charges can be variable, consultants should <u>not include</u> any costs for monthly electric charges in their fixed price bid, as all monthly electric charges will be handled separately. Monthly electric bills will be paid based on the actual bill amount and will be treated as a separate milestone payment in the Remediation Agreement with a cost to be listed in the milestone schedule as TBD. Please note that USTIF will not reimburse any markup added the monthly electric bill as it is a utility related expense.

With this being a Bid-to-Result RFB, please note that this Milestone also has a performance-based component to it. In the event that the remedial system operated for the entire time specified in the selected bidder’s bid response, and the criteria for demonstrating attainment of the selected standards as described in the RFB is not met either prior to the initiation of attainment activities, during any of the eight quarters of the initial attainment groundwater demonstration following system shutdown, or based on soil attainment sampling then the system must be restarted within seven days following the receipt of the analytical results and operated for an additional two quarters at no additional cost to the Solicitor. Please note, this includes the necessary groundwater

sampling as well as reporting costs required to be completed during each of the quarters. The two aforementioned quarters will be included in the milestone schedule with separate milestone designations in the Remediation Agreement with $0 and marked as TBD in a similar fashion to the Optional Cost Adder Milestones.

If, following system shut down and restart, attainment of the selected standards can be reinitiated, PAUSTIF will reimburse (assuming all conditions have been met) remaining Milestone J events (J1 through J8). Any additional attainment groundwater sampling events beyond the 8 events included as part of Milestone J will be completed as an Optional Cost Adder Milestone J9 through J12 and will require approval from all parties before proceeding. In the event that attainment of the applicable remediation standards are determined to not be feasible following the additional two quarters of system operation, the selected bidder or the Solicitor would have the option to terminate or modify the Remediation Agreement.

Milestone J – Demonstration of Groundwater Attainment. For this milestone, bidders should include all necessary activities and costs associated with the completion of a groundwater monitoring and sampling attainment program. Bid responses should clearly detail the approach proposed (i.e. wells, quarters, etc.) to complete the PADEP's attainment monitoring requirements. Costs for each quarterly event in Milestone J should include the costs to prepare and submit quarterly RAPRs as well. The groundwater monitoring, sampling and reporting efforts completed as part of the demonstration of attainment should be done in a manner consistent with Milestone F.

As discussed in Milestone I, this is a Bid-to-Result RFB and as such there are some performance based components to the project. If some or all of the events included in Milestone J are unable to be completed due to the incomplete remediation of the Site to the selected standards, then PAUSTIF will only pay the selected firm for the actual number of milestone or events conducted (i.e. if a firm includes the costs to complete 8 quarterly events, but only one event is conducted; then the firm will only be paid for the one (1) event completed).

If additional groundwater attainment monitoring Milestone J quarterly events (sampling and reporting) beyond the 8 quarterly events included in the Milestone J costs (to be noted as Milestone J1 through J8 in the Remediation Agreement) are needed, then up to 4 additional events will be handled as an Optional Cost Adder (Milestones J9 through J12). Optional Cost Adder Milestones J9 through J12 will require approval from all parties before proceeding.

Specifically, bidders should include the following costs in their bid response –

- Milestone J (Milestone J1 through Milestone J8) – Costs to complete the 8 quarterly groundwater attainment events (sampling and reporting)
- Milestone J9 (Optional Cost Adder) - Provide a Unit Cost to complete one additional groundwater attainment sampling event and the subsequent RAPR preparation. The scope of work for this cost adder should follow Milestone J.
- Milestone J10 (Optional Cost Adder) - Provide a Unit Cost to complete one additional groundwater attainment sampling event and the subsequent RAPR preparation. The scope of work for this cost adder should follow Milestone J.
- Milestone J11 (Optional Cost Adder) - Provide a Unit Cost to complete one additional groundwater attainment sampling event and the subsequent RAPR preparation. The scope of work for this cost adder should follow Milestone J.
- Milestone J12 (Optional Cost Adder) - Provide a Unit Cost to complete one additional groundwater attainment sampling event and the subsequent RAPR preparation. The scope of work for this cost adder should follow Milestone J.

Milestone K – Demonstration of Soil Attainment. For this milestone, bidders should include all necessary activities and costs associated with the completion of a soil boring program that will demonstrate attainment with the selected soil standards for all COCs. Bid responses must describe in detail how the soil boring program will be completed and reference relevant data and historic investigations. Specifically, each bid response should discuss the soil sampling depth interval, the interpreted depth to the saturation zone, an illustration of the sampling grid location and extent, and how the aforementioned parameters were selected. The soil investigation should take into consideration the following:

- The locations and depths of the soil samples shall be determined using the recent recommendation from the PADEP on the subject of Soil attainment.

- If a consultant feels it is appropriate and necessary to complete hole-clearing activities before advancing the borings, the cost should be included in their proposal and costs. If a consultant includes the cost to complete hole-clearing, they should state it in their proposal and discuss why it is appropriate and necessary. As discussed in the RFB, cost is not the only factor when evaluating proposals and other factors are taken into consideration during the review process, including appropriate safety measures.

- Soil samples shall be collected using Encore Samplers (or equivalent) and field-preserved in laboratory-provided glassware with the appropriate preservatives

(e.g., methanol or sodium bisulfate) provided by the laboratory in general accordance with USEPA Method 5035 and the PADEP guidance.

- In addition, one (1) duplicate sample and one (1) equipment blank sample will be collected and submitted per day of sampling.

- Samples should be properly handled under chain of custody documentation protocol and kept cold from sample collection until the samples are relinquished to the accredited laboratory.

- Soil samples shall be analyzed for benzene, toluene, ethylbenzene, total xylenes, MTBE, naphthalene, cumene, 1,3,5-trimethylbenzene, and 1,2,4-trimethylbenzene using laboratory EPA method 8260B in accordance with Pennsylvania's Storage Tank Regulation procedures and cleanup standard criteria as specified in Pennsylvania's Act 2.

- The laboratory to be utilized should be identified in the bid package. Upon receipt of the results, the consultant should forward a copy of the analytical data to the Solicitor and PAUSTIF (or its designated representative).

- Compile the field findings and laboratory data into a summary table and comprehensive soil boring logs.

Milestone L – Preparation of Remedial Action Completion Report. Prepare and submit a RACR for the PADEP approval that will appropriately present an evaluation of current Site conditions and present significant conclusions and request closure and a release from liability from the PADEP for all COCs. The information gathered during the activities completed as part of Milestone A through Milestone K should be incorporated into a comprehensive RACR that will be submitted to the PADEP and will facilitate the objective to complete regulatory requirements governing the RACR and gain PADEP approval for the report. Specifically, the report should summarize the results of the recent investigations, the findings of the previous investigations, a comprehensive Site history, sensitive receptor information, geologic data, results and analysis of historical aquifer testing, discussion on the completed remediation efforts, summary of the predictive modeling efforts completed, risk assessments, and a series of summary tables, appendices, and figures illustrating the information provided in the report.

The Report will be completed following the guidelines specified in Pennsylvania Code, Title 25, Chapter 245 and the Land Recycling Program (Act 2) Technical Guidance Manual for a Remedial Action Completion Report. The RACR shall be sealed by a Professional Geologist registered in the State of Pennsylvania. A draft RACR shall be

submitted electronically (in Adobe PDF format) to Solicitor and Technical Contact for review / comment prior to finalizing the RACR. Once the selected consultant has addressed comments on the draft, the selected consultant shall finalize and issue the report to the PADEP. The report submission is to be submitted no later than the date specified in the schedule presented by the selected consultant. All AutoCAD maps / plans included in the report (e.g., site plan / base map, groundwater elevation maps, dissolved plume maps, soil contaminant distribution maps, etc.) and appendices (e.g., boring logs, tables, disposal documentation, fate and transport modeling, risk assessment and sensitive receptor information) shall also be submitted electronically and in hard copy to Solicitor and Technical Contact for review / comment prior to finalizing it.

Milestone M – Site Restoration / Well Abandonment. Following confirmation that cessation of the remedial strategy is appropriate, any remaining equipment should be removed, and the site restored to as close a condition as possible prior to the remediation efforts. The selected consultant will abandon all of the monitoring wells in accordance with Pennsylvania Act 610 and the Groundwater Monitoring Guidance Manual. Upon completion, a well abandonment report will be prepared and submitted to the DCNR on behalf of the claimant. Bidders should specify in the bid packages how the wells will be abandoned and the site restoration activities included in the specified costs.

Milestone N - Soil Gas Sampling (Cost Adder Milestone). Provide a Unit Cost for the collection of one round of samples from all vapor sampling points. The scope of work for this cost adder should follow the sampling guidelines in Milestone D.

Milestone O – Additional Quarterly Groundwater Monitoring, Sampling, and Reporting Before Remediation Implementation. (Cost Adder Milestone). Provide a Unit Cost to complete one additional groundwater sampling event and the subsequent RAPR preparation. The scope of work for this cost adder should follow Milestone F.

Additional Information

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

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

List of Attachments

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

    a. Attachment 3A – Summary Tables and Figures
    b. Attachment 3B – Monitoring Well Construction Logs and Soil Boring Logs
    c. Attachment 3C – Geophysical Survey Report
    d. Attachment 3D – SCR dated October 2013
    e. Attachment 3E – 3rd Quarter Remedial Action Progress Report dated August 26, 2015
    f. Attachment 3F – November 2015 Groundwater Analytical Results
    g. Attachment 3G – February 2016 Groundwater Analytical Results