

COMPETITIVE FIXED-PRICE BID SOLICITATION

SITE CLOSURE VIA STATEWIDE HEALTH STANDARDS (Residential, Used-Aquifer)

ERIE PETROLEUM ROUTE 8 BP
5901 WATTSBURG ROAD (STATE ROUTE 8)
MILLCREEK TOWNSHIP, ERIE COUNTY
ERIE, PENNSYLVANIA 16509

PADEP FACILITY ID #25-26572
PAUSTIF CLAIM #2002-0195(F)

October 24, 2013 (revised 10/30/13 – new bid due date)

The Pennsylvania Underground Storage Tank Indemnification Fund (PAUSTIF or “Fund”) issues this “Bid to Result”¹ Request for Bid (RFB) on behalf of the Claimant, Erie Petroleum, Inc.², who hereafter is referred to as the Client or Solicitor. This RFB seeks competitive bids from qualified contractors (consultants) to perform fixed-price activities in accordance with the performance milestones referenced herein, the goal of which is to close the site under The Pennsylvania Land Recycling and Environmental Remediation Standards Act of 1995 (Act 2) and to procure an associated relief of liability from the Pennsylvania Department of Environmental Protection (PADEP). The milestone-oriented work described in this RFB shall be conducted relative to an identified petroleum release at Erie Petroleum Route 8 BP, 5901 Wattsburg Road (State Route 8 [SR8]), Erie, Pennsylvania (site). The Solicitor, who leases the Erie Petroleum Route 8 BP, **hereby requests bidders to provide their written approach to achieve the project goal in accordance with the work milestones presented in this RFB, which will be incorporated into an associated fixed-price Remediation Agreement (Attachment 1).**

Because **this is a results-oriented remediation bid solicitation, each bid response must detail the approach and specific methods for achieving the milestone objectives. In other words, there is a premium on thoroughly describing the bidder’s understanding of the site conditions along with the conceptual site model, and how that model relates to the bidder’s proposed approach to attaining the objectives of each milestone.** Furthermore, each bid will need to contain a higher level of project-specific details sufficient for the Solicitor and USTIF to accurately assess each bid and differentiate among them. Each bidder should keep in mind that the quality of the technical approach is emphasized with these results-oriented bid solicitations as compared to bids submitted in response to solicitations that define the work scope with greater specificity (often referred to as Defined Scope of Work [SOW] RFBs). Conversely, while cost remains a significant factor in the evaluation of bids, the emphasis on cost is reduced *in comparison to* the evaluation of the bid for a Defined SOW RFB. At the same time, the Solicitor and PAUSTIF recognize that each bidder may propose a unique path forward for a given site.

¹ “Bid to Result” solicitations identify task goals and rely on the bidders to provide a higher level of detail on how they will achieve the goal. The outcome of this type of solicitation is a performance-oriented contract under which payment is based on actual achievement of task goals. 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 (e.g., as compared to bids for “Defined Work” RFBs).

² Erie Petroleum Inc. changed its name and is currently conducting business as MKP Enterprises, Inc.

Remediation of the site pursuant to this RFB shall address all known contaminants of concern (COCs), including any associated phase-separated petroleum products, if identified, at concentrations in groundwater above the Statewide Health Standards – Medium Specific Concentrations for a residential used aquifer (SHS-MSCs/RUA) for soils and groundwater with total dissolved solids in groundwater less than or equal to 2,500 mg/l and soil vapors greater than soil vapor screening values absent the use of any activity and use limitations, institutional controls, or engineering controls. However, remediation of soil and the demonstration of SHS-MSCs/RUA attainment in soil are not anticipated because the consultant of record conducted soil attainment demonstration sampling and successfully achieved attainment of the SHS-MSCs/RUA for soil using the 75%/10X ad hoc statistical rule.

Although not a party to the agreement, PAUSTIF will, subject to the claim limit cap, reimburse 90 percent of the reasonable, necessary, and appropriate costs associated with the Milestone Payment Schedule specified in Section 4 below and as incorporated into the associated fixed-price Remediation Agreement. Solicitor is responsible to pay any applicable deductible and/or proration.

The following Milestones are provided below to facilitate the preparation of a bid and to maintain consistency among the bids for bid evaluation:

- Milestone A Series – Temporary Operation and Maintenance (O&M) and Winterization of the Existing Remedial System;
- Milestone B Series – Installation of Point of Compliance (POC) Groundwater Monitoring Wells, Millcreek Surface Water Sampling, and Quarterly Groundwater Monitoring and Reporting;
- Milestone C – Site Characterization and Associated Site Characterization Update Report;
- Milestone D Series – Discretionary Pilot Testing and Reporting
- Milestone E – Discretionary Preparation, Submission, and PADEP Approval of a Revised Remedial Action Plan (RRAP);
- Milestone F Series – RRAP Implementation;
- Milestone G Series – Post-Remedial Soil Vapor Assessment;
- Milestone H Series – Groundwater Attainment Demonstration;
- Milestone I – Preparation, Submission, and PADEP Approval of Remedial Action Completion Report (RACR); and
- Milestone J – Site Restoration and Well Abandonment.

By submitting a bid in response to this RFB, a firm (consultant or contractor) indicates their acceptance of the contractual terms (Attachment 1) and Milestone requirements of this project, including schedule deadlines, unless explicitly stated to the contrary in their bid.

To be considered for selection, **one hard copy of the signed bid package and one electronic copy (one PDF file on a compact disk (CD) included with the hard copy) must be provided directly to the Fund's third party administrator, ICF International (ICF), to the attention of the Contracts Administrator.** 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 bid must be sealed and the outside of the shipping package containing the bid must be clearly marked and labeled with "Bid – Claim #2002-195(F)". 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 below for submission. Companies mailing bid responses should allow adequate delivery time to ensure timely receipt of their bid package.

The bid must be received by 3:00 PM, on Tuesday, December 10, 2013. Bids will be opened immediately after the 3:00 PM deadline on the due date. Any bid received after this due date and time will be time-stamped and returned. If, due to inclement weather, natural disaster, any other cause, or if 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 Fund's third party administrator, ICF, may notify all firms who attended the mandatory site meeting of an extended due date. The hour for submission of bid responses shall remain the same. Submitted bid responses are subject to Pennsylvania Right-to-Know Law.

Bids will be considered individually, consistent with the evaluation process described in the PAUSTIF Competitive Bidding Fact Sheet, which can be downloaded from the PAUSTIF website (www.insurance.pa.gov). While the Technical Contact will assist ICF, PAUSTIF, and the Solicitor in evaluating the bids, it is up to the Solicitor to select the bidder with whom he wishes to execute the Remediation Agreement. The Technical Contact will assist the Solicitor in communicating its choice of the successful bidder.

1. ICF, SOLICITOR, AND TECHNICAL CONTACT INFORMATION

ICF International: Ms. Linda Crabb ICF International 4000 Vine Street Middletown, PA 17057	Solicitor: Mr. Mike Callahan MKP Enterprises Formerly Erie Petroleum Inc. PO Box 8326 Erie, PA 16505	Technical Contact: Mr. R. Michael Lowe Excalibur Group, LLC (703) 256-3671 mlowe@excaliburgrpllc.com
---	--	--

Please note that the Technical Contact is the single point of contact regarding this RFB.

Questions regarding this RFB and the associated Site conditions must only be directed **in writing** to the Technical Contact via the email address shown above, not to the Solicitor or PAUSTIF. Bidder questions must be received no later than seven (7) calendar days prior to the due date for the bid. Bidders shall not contact or discuss this RFB with the Solicitor, PAUSTIF, ICF, or PADEP unless approved, in advance, by the Technical Contact. This RFB, however, may be discussed with subcontractors and vendors to the extent required for preparing a responding bid. If a bidder has specific questions for PADEP, such questions shall be submitted only to the Technical Contact, who will forward the questions to PADEP. PADEP may choose not to reply to questions it receives, or may not reply in time for their response to be beneficial.

Please note that:

- Unless a bidder is able to demonstrate its question is proprietary in nature, all questions and responses exchanged before, during, and after the mandatory pre-bid site meeting (see Section 7) will be provided to all bidders on a non-attributable basis. A bidder must specify any questions it regards as proprietary at the time it submits these questions to

the Technical Contact. If said question(s) is (are) determined to be non-proprietary by the Solicitor and the Technical Contact, the bidder will be given the option of withdrawing its question(s) before it is answered and a response distributed.

- All questions regarding this RFB Solicitation and the subject site conditions must be directed via e-mail to the Technical Contact identified above with the understanding that all questions and answers will be provided to all bidders. The e-mail subject line must be "Erie Petroleum Route 8 BP 2002-0195(F) – RFB Question".

2. SITE INFORMATION³

The site is a former retail gasoline service station located along Wattsburg Road (SR 8) in Millcreek Township, Erie County, Pennsylvania. The property was utilized as a retail gasoline service station and a convenience store prior to closing in 2002. The site once featured a station building/convenience store and fuel islands situated beneath a canopy, but both the building and pump islands/canopy have been removed from the property. The only building remaining on-site is the remedial system treatment shed. During station operations, the on-property surface cover consisted of asphalt and concrete. The property is serviced by public water and sewage.⁴ Overhead utilities include electric and telephone service. The site is located at an approximate elevation 1,100 feet above sea level. The nearest surface water body is an unnamed tributary to Millcreek, which is located directly south of and adjacent to the subject site. Millcreek flows in southwesterly direction in the vicinity of the subject site. The immediate site vicinity is a mix of commercial, industrial, and residential land uses.

Bidders should consult the accompanying electronic files in Attachment 3 for more reference information on the site. If there is any conflict between the information provided in this RFB and the source documents, bidders shall defer to the source documents.

Brief History of the Erie Petroleum Route 8 BP Property

Prior to 2002, the site was operated by Unocal 76 followed by Mobil Oil Corp. (Station 15-NL8). The station consisted of a one-story brick building with an office and a one-bay garage. In front of the station building and parallel to SR 8 were two pump islands located beneath a single canopy. The tank field was located on the southern side of the building and a single waste oil UST was located on the northern side of the building. A former pump-and-treat remediation system (unrelated to the current PAUSTIF claim release) was located in the northeast corner of the site. Several of the documents provided in Attachment 3 relate to a previous on-site petroleum release, which was remediated prior to the release associated with the current PAUSTIF claim. Bidders should note that the subject property is currently owned by United Refining Corp. (URC) and was leased by the PAUSTIF claimant, Erie Petroleum Inc. whose trade name was changed to MKP Enterprises, Inc. A relatively current Google Maps[®] aerial photo of the site area is provided with this RFB (Attachment 3J).

³ The information provided in this section of the RFB has been excerpted and/or summarized from the site-related documents provided as attachments to this RFB. However, since this Site Information section contains only a brief summary of the available information, bidders are encouraged to carefully review all of the documents provided as attachments to this RFB to gain a more complete understanding of site conditions and issues.

⁴ A water well (referred to as the Station Well or Former Station Well) exists or existed on-site, but is apparently no longer used as a source of potable water. The status of this well is currently unknown. The location of the supply well is depicted in Attachment 1L, Figure 5.

Discovery of the Petroleum Release

The release associated with the current PAUSTIF claim was discovered during underground storage tank (UST) closure activities conducted at the site on April 15, 2002. The associated UST closure report documents that the following on-property USTs were closed via removal: 1) 4,000-gallon premium unleaded gasoline tank, 2) 6,000-gallon mid-grade unleaded gasoline tank, 3) 10,000-gallon regular unleaded gasoline tank, and 4) 550-gallon used motor oil tank. The release was determined to be associated with the product delivery line connected to the mid-grade unleaded gasoline tank (see Attachment 3L). Analysis of confirmatory soil samples obtained from the UST cavity exhibited unleaded gasoline constituent concentrations exceeding SHS-MSCs/RUA. Accordingly, interim remedial actions pursuant to 25 PA Code 245, were implemented, and 796 tons of grossly contaminated soil (soil believed to be contaminated above SHS) was excavated and reportedly transported off-site for disposal at Lakeview Landfill in Erie, PA. In addition, 663 gallons of a "hydrocarbon/water mixture" was pumped from the four USTs and an undocumented volume of "sludges" were recovered and transported off-site for disposal. The Northwest Regional Office (NWRO) of PADEP was notified of the release on April 15, 2002. A copy of the UST Closure Report is provided as Attachment 3L.

Subsurface Conditions Summary

The regional geology in the site vicinity is the Devonian aged Northeast Shale Formation. The Northeast Shale Formation chiefly consists of variegated shale and thin-bedded sandstone. The sandstone generally yields small supplies of water. Site-specific depth to bedrock is unknown, as bedrock was reportedly not encountered during the installation of site monitoring wells to depths of up to 30 feet below ground surface (bgs). The local geology beneath the site generally consists of unconsolidated materials, mainly a mixture of silts, sand, and clays which reportedly exist from grade to 30 feet bgs. Groundwater beneath the site generally resides at depths ranging from 5.61 to 10.88 ft bgs.

Site Characterization

Claim related site characterization activities were initiated in September 2002 with the advancement of six soil borings that were completed as 4-inch diameter flush-mount PVC-constructed groundwater monitoring wells (MW-1 through MW-7). A former site owner/operator (Mobil Oil Company) had previously installed seven site monitoring wells (currently designated as MOC-1 through MOC-7), and one tank pit well (TPW). Wells MOC-1 through MOC-5 and the TPW are on-property wells whereas MOC-6 (formerly designated by another consultant as MW-9) and MOC-7 (formerly designated by another consultant as MW-10) and MW-11 are located off-property. MOC-6 is reportedly located west of the site across Wager Road whereas MOC-7 and MW-11 are reportedly located south of site across Wattsburg Road (SR 8).⁵ Some but not all of the MOC wells were incorporated into the monitoring well network by the consultant of record although it appears that MOC-2, MOC-3 and MOC-6 have not been sampled since July 2003. The most recent Site Characterization Report (SCR) for the site is the July 2003 Interim SCR (see Attachment 3D).

Bidders will note that some monitoring well designations appear to have been revised (changed) as the consultant of record handling the site characterization activities changed. Consequently, bidders should take extreme care when assessing the historical soil boring and monitoring well data and linking the data

⁵ Bidders should note that the last time MW-9 (MOC-6) was sampled was in July 2003. MW-10 (MOC-7), and MW-11 were last sampled on 11/11/00. All COCs were less than SHS-MSCs/RUA at the time of the last groundwater sampling event. No COCs greater than SHS-MSCs/RUA were detected in any of these wells since at least September 1993. The current condition of these wells or if they currently exist is not known.

to specific soil boring/monitoring well locations. For example, it appears that the monitoring well MW-2A installed by the Mobil Oil Corporation in August 1999 (see the December 2002 Remedial Action Closure Report; Attachment 3C) is the same monitoring well now designated as MOC-5 (see Quarter 2, 2012 Remedial Action Progress Report; Attachment 3L).

COCs in Soil

COC impacts to site soils appear to have been fully delineated and adequately remediated. A soil attainment demonstration was completed in August 2012 and the results were transmitted to the PADEP on January 31, 2013. The analytical results indicate attainment of the SHS-MSCs/RUA for soils has been demonstrated through application of the 75%-10X ad hoc statistical rule (see Attachment 3M). Nine of the twelve soil samples collected at randomly selected locations were below the SHS-MSCs/RUA for all site COCs. Three of the twelve soil samples exhibited benzene concentrations (1.7 mg/kg to 2.9 mg/kg) exceeding the SHS-MSCs/RUA (0.5 mg/kg), but none of the soil samples exhibited benzene concentrations ten times the SHS. A 5/24/13 email confirmation of demonstration of attainment of the SHS for soil for this site from the PADEP's Case Manager, Mr. Jack Ashton, P.G. is included as Attachment 3M.⁶ Bidders are to assume that soil is not a media of concern at the site unless notified otherwise through an RFB amendment prior to the bid due date.

COCs in Groundwater

The Quarter 2, 2013 Remedial Action Progress Report (RAPR) (see Attachment 3L) indicates that site groundwater remains impacted by several dissolved-phase COCs at concentrations above the SHS-MSCs/RUA. On June 4, 2013, benzene was detected at concentrations greater than SHS-MSCs/RUA in three groundwater samples: MW-2 (355 ppb), MW-3 (254 ppb), and MOC-4 (7 ppb). On June 4, 2013, the groundwater samples collected from MW-1, MW-4, MOC-1, and MOC-5 either exhibited COC concentrations below the SHS-MSCs/RUA or did not exhibit concentrations above analytical method detection limits. No separate-phase hydrocarbons (SPH) were reportedly encountered in any monitoring well on that date.

Bidders should note that point of compliance (POC) wells were never established with the PADEP by the consultant of record. Therefore, the selected bidder must establish POC wells in the RRAP (Milestone E). Necessary and appropriate POC wells would be expected to include on-property wells MW-1, MW-2, MW-3, PC-MW-7, PC-MW-3A and PC-MW1A.

Bidders are encouraged to review all available groundwater elevation and quality data to identify variations in COC concentrations with respect to monitoring well construction and/or to evaluate COC concentration trends that may be useful in developing an effective remedial strategy for the Site.

COCs in Soil Vapor

Following AEA's soil attainment demonstration sampling, two soil vapor sample points were installed at this site in August 2012 and soil vapor samples were collected from the sample points on three occasions; 8/13/12, 10/2/12, and 10/24/12. Soil vapor sample wells VP-1 and VP-2 were installed by AEA in test borings TB-F and TB-I, respectively. VP-1 (TB-F) is located downgradient of the former dispenser island area and VP-2 (TB-I) is located between the former facility building and the UST system conveyance piping trench.

⁶ The PADEP Case Manager assigned to this case is Jack E. Ashton, II, P.G.

Each soil vapor sample point was reportedly installed to a depth of six feet below grade in a 3.5 in. diameter borehole. The soil vapor well casing is constructed of 0.75 in. PVC and is screened in the 5 to 6 ft. interval (1 ft.) below grade surface. Filter sand was installed between the well screen and borehole wall and the remainder of the borehole was sealed with bentonite to the surface. The vapor wells are reportedly sealed with a manhole cover set in a concrete collar and a locking well cap.

Analysis of the soil vapor samples indicates that the associated screening levels for Soil Gas Thresholds for Residential MSCs were exceeded. For example, in the soil vapor sample collected from VP-1 on 8/13/12, the concentrations of benzene (2,200 $\mu\text{g}/\text{m}^3$) and ethylbenzene (3,000 $\mu\text{g}/\text{m}^3$), exceed the respective PADEP soil gas screening values associated with the Soil Gas Thresholds for Residential MSCs. Similarly, in the soil vapor sample collected from VP-2 on 8/13/12, the concentrations of benzene (500,000 $\mu\text{g}/\text{m}^3$), ethylbenzene (680,000 $\mu\text{g}/\text{m}^3$), toluene (1,500,000 $\mu\text{g}/\text{m}^3$), and total xylenes (3,000,000 $\mu\text{g}/\text{m}^3$) also exceed PADEP's soil gas screening values associated with the Soil Gas Thresholds for Residential MSCs. Similar soil vapor sample results were obtained from VP-1 and VP-2 on the 10/2/12 and 10/24/12 soil vapor sampling events. The results obtained by the consultant of record from the 8/13/12, 10/2/12, and 10/24/12 soil vapor sampling events are tabulated and a diagram of a soil vapor monitoring point (typical) is contained in Attachment 30.

On-Site and Nearby Potable Wells

The December 2002 Remedial Action Completion Report (Attachment 3C) states that 25 potable water supply wells are potentially located with a 0.5-mile radius of the site. Fourteen of these wells were identified as being located up gradient of the site, and ten wells were identified as being located side-gradient of the site. The remaining well was identified as being located on the subject property and is referenced on site maps in the December 2002 RACR as the "Former Supply Well." The December 2002 RACR indicates that, at that time, the Former Supply Well was reportedly used for toilet and sink purposes only. Groundwater samples collected from the Former Supply Well on September 10, 1999, December 23, 1999, March 25, 2000, August 11, 2000, and November 11, 2000 "indicated non-detectable concentration of BTEX and MTBE." The current status of the former supply well is unknown.

Utilities

Commercial businesses and nearby residential homes reportedly rely on municipal water, although site reports indicate that some residences up-gradient of the site may use potable water supply wells.

Utilities traversing the site include overhead electric lines and underground gas lines. The underground gas lines are reportedly present at depths no deeper than 4 feet bgs.⁷ As such, the July 2003 Interim SCR (Attachment 3D) reports, "[W]ith the shallowest static water level at the site being nearly eight feet below grade, no potential human receptors exist at the site..." The 2003 Interim SCR also concludes, "Due to the detected constituents being associated with light petroleum products, no ecological screening is required".

According to the Millcreek Township Sewer Authority (MTSA), a proposed sanitary force main sewer project will be constructed along Wattsburg Rd. (SR 8) fronting the southwestern side of the subject property. The start date is scheduled for June 2013 although the exact start date of the project is unknown. The sewer line project will include the construction of a 6-inch C-900 PVC force main sanitary sewer that will be installed approximately 4 – 5 ft. below grade in the right of way of Wattsburg Rd. (SR

⁷ It is not known whether an underground water line exists or formerly existed at the site.

8) adjacent to the subject property. The estimated project completion date is unknown. A copy of the engineering plans for the MTSA project is included as Attachment 3N.

The Pennsylvania Department of Transportation (PADOT) notified PAUSTIF that a proposed pre-cast reinforced concrete (RC) culvert will be constructed to replace the existing RC slab culvert that is currently installed under Wattsburg Rd. (SR 8) that allows flow of surface water in Millcreek to pass below the road surface. The PADOT project start date is estimated as mid-Summer 2013 but the exact start and completion dates are unknown. The proposed culvert will include "wing walls" and rip-rap aggregate on its upstream and downstream ends. The limits of the construction project could come to within 4 - 8 ft. of the southeastern corner of the subject property. A copy of the engineering plans for the PADOT project is included as Attachment 3O.

Remedial Feasibility Testing

Due to its location near the former dispenser island and given the soil and groundwater analytical data, MW-3 was identified as being located in a hydrocarbon source area. MW-3 is reportedly 20 feet deep and was installed in unconsolidated silt, sand, and gravel. On March 29, 2004, a dual-phase high vacuum extraction (DPHVE) pilot test was performed on MW-3 to characterize the hydraulic and pneumatic properties of the shallow aquifer and vadose zone, as well as to evaluate this technology as a remedial alternative.

Prior to, during, and after HVE testing, applied vacuum, groundwater flow rate, vapor flow rate, lower explosive limit, photoionization detector (PID) readings, oxygen levels, and groundwater depths were recorded in select monitoring wells. Testing was initiated by applying a wellhead vacuum of 13 inches of mercury (Hg), which corresponded to an airflow of 12 standard cubic feet per minute (SCFM). Vapor effluent PID readings fluctuated throughout the test from 19.8 parts per million (ppm) to 77.8 ppm. Groundwater recovery rates during HVE testing averaged 0.46 gallons per minute (gpm). Maximum drawdown (in wells other than extraction well MW-3) ranged from 0.01 feet in MW-4 to 0.06 feet in MW-2. Groundwater drawdown in extraction well MW-3 reached a maximum of 15.8 ft bgs after four hours of pumping. The pilot tests data were interpreted by the consultant as indicating a hydraulic influence of approximately 65 feet and a pneumatic influence of approximately 40 feet. Separate phase hydrocarbons were not encountered during the test. A more complete description of the pilot testing and presentation of the pilot testing data can be found in the May 2004 RAP (Attachment 3E).

May 2004 RAP Implementation Summary

The current RAP (Attachment 3E), was approved by the PADEP via a letter dated May 13, 2004. In accordance with the RAP, a DPHVE system was installed to remediate the dissolved-phase COCs in site groundwater. This system, which reportedly went on line on May 3, 2000 and was still operating through the second quarter of 2013), consists of a five horsepower (hp) liquid ring pump (LRP) to recover COCs detected in the shallow water-bearing zone located at the weathered sandstone bedrock interface from four, 2-ft deep recovery wells (designated RW-1 through RW-4). Recovered fluids are pumped through a vapor/liquid knockout tank. The separated liquids are pumped through liquid-phase granular activated carbon (LGAC) units for treatment prior to discharge via a NPDES permit. The extracted vapors are drawn from the knockout tank, treated via vapor-phase granular activated carbon (VGAC) units, and discharged to the atmosphere.⁸ Bidders should assume that both pairs of LGAC and VGAC units will be replaced within 14 days of contract execution.

⁸ The two LGAC units were reportedly last replaced on June 20, 2013, and the two VGAC units were last replaced on April 9, 2013.

While the remedial system is operational, "before" and "between" LGAC unit water, submersible pump, and high vacuum pump samples are collected twice a month and analyzed for benzene, toluene, ethylbenzene, total xylenes (BTEX), cumene, naphthalene, and MTBE constituents. "After" LGAC unit water, submersible pump, and high vacuum pump samples are collected twice a month and analyzed for BTEX, naphthalene, cumene, and MTBE. NPDES permit parameters are also analyzed in the LGAC units effluent samples (manganese, lead, dissolved iron, oil & grease, total suspended and dissolved solids, and pH). A copy of the current NPDES Permit is included as Attachment 3M.

"Between" and "after" VGAC unit air samples are collected monthly and analyzed for BTEX, cumene, naphthalene, MTBE, and gasoline range organics.

Static water levels are measured and recorded quarterly at MW-1, MW-2, MW-3, MW-4, MW-5, MW-6, MOC-1, MOC-4 and MOC-5. To assess remedial progress, quarterly groundwater samples are collected from MW-1, MW-2, MW-3, MW-4, MW-5, MOC-1, MOC-4 and MOC-5 and analyzed for BTEX, cumene, naphthalene, and MTBE. Laboratory analysis report forms are included in Appendix A and spreadsheets showing COC trends are included in Appendix B of the May 2004 RAP.

The existing remedial system has recovered and treated approximately 423,346 gallons of groundwater during the second quarter of 2013, and approximately 16,232,922 gallons of groundwater since it began operating in May 2000.

Existing Remedial System Effectiveness

According to the Quarter 1, 2013 RAPR, the total mass of on-site benzene and ethylbenzene in groundwater in select monitoring wells have been reduced by 89% and 86%, respectively, since the current remedial system was put into operation.⁹ However, the report notes that the total mass of naphthalene does not appear to be decreasing, residual benzene remains in three monitoring wells (MW-2, MW-3, MOC-4) but all other site COC concentrations in groundwater have been reduced to below SHS-MSCs/RUA.

It appears that the ability of the existing remedial system to extract additional dissolved- and vapor-phase contaminant mass exceeding SHS from the subsurface has stalled. This may be due to the current remedial system operating at the site being potentially undersized, the extraction well screens may have been installed at too shallow of a depth to effectively recover dissolved-phase contaminant mass, and/or there may be an insufficient number of extraction wells located where contaminant mass exceeding SHS currently resides at the site.

In light of the residual benzene concentrations in MW-2, MW-3, and MOC-4 and the soil vapor screening level exceedances at VP-1 and VP-2, either modifications to the existing remedial system or implementation of an alternative remedial approach for this site appears warranted to accelerate further contaminant reductions and hasten the estimated remedial timeframe.

3. PROJECT MILESTONES OBJECTIVES

⁹ Baseline data appears to be derived from the sum of dissolved phase constituent concentrations of each COC in groundwater collected from MW-2, MW-3, MW-4, and the Tank Pit well on 9/30/02 and was compared to the current data that was derived from the sum of dissolved phase constituent concentrations of each COC in groundwater collected from MW-2, MW-3, MW-5, and MOC-4.

The Solicitor seeks competitive, fixed-price bids and SOW to complete the ten (10) milestones outlined below and for successfully attaining the Solicitor's selected remediation goals for soil, soil vapor and groundwater. Consequently, each bidder is identifying its proposed SOW to "close" this site under Chapter 245 consistent with PADEP Act 2 standards, and obtain an associated ROL from the PADEP. To be deemed responsive, each bid must address in detail each of the RFB milestones, including describing the bidder's understanding of the conceptual site model and how that model relates to the bidder's proposed approach. Recommendations for changes/additions to the RFB outline shall be discussed, quantified, and priced separately; however, **failure to bid the RFB milestone format "as is" may result in a bid not being considered.**

This solicitation requests a fixed price guaranteed cost-to-close bid for achieving the selected remediation standards by using the bidder's recommended course of action through the completion of the specific milestones defined in this RFB. Again, the desired result or project goal is to "close" the site under Pennsylvania Act 2 and obtain an associated relief of liability from PADEP by demonstrating attainment of residential SHS-MSCs/RUA for soil (already completed), attainment of residential used-aquifer SHS-MSCs/RUA for groundwater, and addressing soil vapor exceeding applicable screening values. To be deemed responsive, each bid must respond in detail to each of the milestones (see following), including describing the bidder's understanding of the conceptual site model and how that model relates to the bidder's proposed approach to executing the SOW. Any recommendations for changes/additions to the SOW can be discussed, but are to be discussed, quantified, and priced separately. Subsequent to bid award, any modification of the selected consultant's SOW will require prior written approval by the Solicitor **and PAUSTIF** through its third-party administrator, and may require PADEP pre-approval.

Because this RFB includes results-oriented fixed price milestones, each bid response must contain a higher level of project-specific details, which will allow the Solicitor and PAUSTIF to accurately assess each bid and differentiate among them (see further discussion below). In reviewing responses to this RFB, the bid review committee will use the following criteria (questions) to assess whether bids are technically sound:

- Does the bid demonstrate that the bidder has an understanding of existing site conditions (COC mass distribution with the subsurface, site geology and hydrogeology, etc.)?
- Does the bid demonstrate that bidder has an understanding of site-specific regulatory and permitting issues?
- Does the bid demonstrate that the bidder has an understanding of individual milestone objectives as well as the overall project goal?
- Does the bid present an appropriate remedial solution that uses quantitative physical and laboratory data to document and confirm remedial progress?
- Is the remedial solution presented reasonably capable of achieving site closure in conformance with PADEP guidance and PA Code, Title 25, Chapter 245 within a reasonable timeframe?
- Does the bid provide a convincing argument that the proposed remedial technology (or combination of technologies) will be effective, will be efficient, and will ultimately achieve all project goals with the lowest cost-to-closure using SHS-MSCs/RUA under Act 2?

Each bidder should carefully review the existing site information provided in the attachments to this RFB and seek out other appropriate sources of information to develop their response to this RFB. Nothing stated or implied within this RFB shall be construed as an endorsement by the Solicitor or by PAUSTIF of a particular remedial technology or remedial solution for the site, including continued use or disuse of any components of the existing remedial system.

The bidder's approach to achieving closure of this site under PA Act 2 and an associated relief of liability from PADEP 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 necessarily limited to meeting the 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 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,
- Pennsylvania's Underground Utility Line Protection Law, Act 287 of 1974, as amended by Act 121 of 2008, and
- Pennsylvania's Engineer, Land Surveyor and Geologist Registration Law, P.L. 913, No. 367 Cl. 63.

Each bid must provide the Solicitor and PAUSTIF with a schedule that begins with execution of the fixed-price Remediation Agreement with the Solicitor and ends with site closure under Pennsylvania Act 2 (and the associated relief of liability from PADEP). Schedules must also indicate the start and end of each of the milestones specified below, and indicate the timing of all proposed key milestone activities. Schedules must also specify no less than two weeks for the Solicitor and PAUSTIF to review and comment, on the Revised SCR and/or new RAP documents that will be submitted to PADEP. As appropriate, bid schedules must include time to address any comments received from PADEP on the Revised SCR and/or a new RAP.

Bidders should note that this solicitation requests a fixed-price bid for several specific tasks defined in this RFB and for successfully attaining the Solicitor's selected remediation goals for soil and groundwater. Consequently, each bidder is identifying its proposed SOW to "close" this site under Chapter 245 consistent with PADEP Act 2 standards, and obtain an associated relief of liability from the PADEP. Therefore, because **this is a results-oriented remediation bid solicitation, each bid response must detail the approach and specific methods for achieving the milestone objectives. In other words, there is a premium on thoroughly describing the bidder's understanding of the site conditions along with the conceptual site model, and how that model relates to the bidder's proposed approach to attaining the objectives of each milestone.** Furthermore, each bid will need to contain a higher level of project-specific details sufficient for the Solicitor and PAUSTIF to accurately assess each bid and differentiate among them. Each bidder should keep in mind that the quality of the technical approach is emphasized with these results-oriented bid solicitations as compared to bids submitted in response to solicitations that define the work scope with greater specificity (often referred to as Defined SOW RFBs). Conversely, while cost remains a significant factor in the evaluation

of guaranteed cost-to-close bids, the emphasis on cost is reduced *in comparison to* the evaluation of the bid for a Defined SOW RFB. At the same time, the Solicitor and PAUSTIF recognize that each bidder may propose a unique path forward for a given site within the general framework of the milestones specified below.

During completion of the milestone objectives specified below and throughout implementation of the project, the selected consultant shall:¹⁰

- Conduct necessary, reasonable, and appropriate project planning and management activities until the project (fixed-price 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, etc.). 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 may be required by regulations or that may be necessary and appropriate to complete the SOW, and shall also include activities related to establishing any necessary access agreements. Project planning and management shall include identifying and taking appropriate safety precautions to not disturb site utilities, including, but not limited to, contacting Pennsylvania One Call as required prior to any ground-invasive work.¹¹ As appropriate, project management costs shall be included in each bidder's pricing to complete the milestones specified below.
- Be responsible for coordinating, managing and completing the proper management, characterization, handling, treatment, and/or disposal of all impacted soils, water, and derivative wastes generated during the implementation of this SOW. The investigation-derived wastes, including purge water shall be disposed of in accordance with standard industry practices and applicable laws, regulations, guidance, and PADEP directives. Waste characterization and disposal documentation (e.g., manifests, chain of custody forms, etc.) shall be maintained and provided to the Solicitor upon request. All investigation-derived wastes shall be handled and disposed of 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

¹⁰ As such, all bids shall include the fixed costs of these activities and associated functions within the pricing for applicable milestones.

¹¹ Pennsylvania's Underground Utility Line Protection Law, Act 287 of 1974, as amended by Act 121 of 2008 (the "Act"); OSHA Standard 1926.651 (revised 1990); the Federal Pipeline Safety Act of 1968, as amended, protecting underground liquid (CFR 49 Part 195) and natural gas (CFR 49 Part 192.614) pipelines; and the National Electric Safety Code, ANSI C-2 (revised 1997); require anyone who engages in any type of excavation or demolition, (see the Act for definition of excavation), to provide advance notice. In Pennsylvania, the Act requires "*notice in the design or planning phase of every work operation that involves the movement of earth with powered equipment. This notice is not less than 10 or more than 90 business days before final design approval. In the Construction phase of a work operation involving movement of earth with powered equipment or explosives the notice required is at least 3 business days but not more than 10 business days prior to actual excavation.*" The Pennsylvania One Call website is www.paonecall.org.

are accessible. Return visits to the site will **not** constitute a change in the selected consultant's SOW or compensation under the fixed-price Remediation Agreement.

- Be responsible for keeping all site monitoring wells, recovery wells, and vapor monitoring points in good condition, with each well properly sealed and locked in-between each monitoring/sampling event. The selected consultant is responsible for repairing any seals or locks that become defective during the period of this Fixed-Price Agreement at its expense. Any request for Fund reimbursement of the reasonable costs to repair or replace a well will be considered on a case-by-case basis.

Milestone A Series – Temporary O&M and Winterization of the Existing Remedial System

Under this milestone, bidders shall provide a firm fixed price to operate and maintain the existing on-site remedial system starting 14 days after the associated Remediation Agreement is executed and ending within 30 days following the PADEP's approval of the bidder's proposed remedial solution for the site, at which time the implementation of the new remedial solution shall begin under Milestone F below. As such, in submitting a bid, it is assumed that the bidder has reviewed the accompanying documents and is reasonably knowledgeable of the safety, regulatory, operational, maintenance, permit compliance (e.g. NPDES discharge permit sample collection, analysis, and reporting), inspection requirements, access, and costs associated with O&M of the existing on-site remedial system.¹² An opportunity to ask questions and inspect/photograph the remedial equipment and controls will be provided during the mandatory on-site pre-bid meeting (see Section 7 below).

Once PADEP has approved a revised remedial solution for the site (as submitted under Milestone E) and its implementation has begun (under Milestone F), bidders shall winterize the components of the existing remedial system that will not be incorporated in or made use of as part of the revised remedial solution under Milestone A. Winterization shall consist of all work necessary to de-energize and protect the unused elements of the existing remedial system while they are not being used up to the time all remedial system components are removed from the site (i.e., Milestone J). This work may include, but may not be necessarily limited to the following: draining water from all equipment, tanks, and pipelines; de-energizing, locking-out, and tagging-out all associated hydraulic, pneumatic, and electrical systems (etc.); repairs to the remediation shed; proper disposal of all associated wastes, debris, and trash; and securing all such equipment and systems (recovery wells, equipment, treatment building, etc.) from potential theft or vandalism.

For bidding purposes, all bidders shall assume that they will operate and maintain the existing on-site remedial system for three (3) quarters, and that the quoted quarterly O&M unit rate will apply should there be an increase or decrease in the length of time that the existing on-site remedial system needs to be operated and maintained prior to implementing the new remedial solution. In addition, all bidders shall assume that the existing remedial system will be winterized once. Again, these bid requirements regarding O&M and winterization of the existing remedial system shall be assumed by all bidders whether or not the bidder intends to use part or all of the existing remedial system in their proposed remedial solution for the site (i.e., Milestone F).

Milestone B Series – Installation of Point of Compliance Groundwater Monitoring Wells, Millcreek Surface Water Sampling, and Quarterly Groundwater Monitoring and Reporting

¹² Treated effluent from the existing remedial system is discharged via a NPDES permit.

Milestone B1 - Installation of Point of Compliance Groundwater Monitoring Wells. Under this milestone, bidders shall provide a firm fixed-price cost for installing two (2) additional on-property POC groundwater monitoring wells. Based on comments made by the PADEP Case Manager in his 5/14/13 email (see Attachment 3M) to the consultant of record, it would appear appropriate that the new POC groundwater monitoring wells be located near the southwestern property boundary adjacent to Wattsburg Rd. (SR 8), downgradient of MW-2 and MW-3.

Each bidder shall independently consider the final locations of the POC groundwater monitoring wells relative to the location of buried utilities; bidders own interpretation of historical groundwater flow variations, configuration of the dissolved-phase plume, and perception of data gaps. However, it would appear appropriate that the final locations of the new POC wells be situated close to Wattsburg Rd. (SR 8) on the Subject Property. Each bidder must show their proposed locations for the additional groundwater monitoring wells on a site drawing and provide their rationale for those locations in their bid response.

The objectives for installing additional wells at the POC at this site are to: (a) further delineate the extent of dissolved-phase contaminants in groundwater; (b) refine the interpretation of groundwater flow; (c) facilitate contaminant fate-and-transport modeling; (d) evaluate natural attenuation processes; and (e) provide for POC monitoring. Should additional wells be needed to accomplish delineation of the dissolved-phase plume, bidders shall provide an all-inclusive unit cost on the Standardized Bid Form (Attachment 2) for borehole advancement, logging and screening, well installation, materials, well development, waste management and disposal.

Borings for the two on-property POC overburden monitoring wells shall be advanced to intersect the water table aquifer intercepted by existing on-property monitoring wells, which is expected to be present at depths of between 5 and 11 feet below grade based on the existing groundwater elevation data. For cost estimating purposes, bidders shall assume that each of the two (2) well borings will attain a depth of 15 feet below grade (30 total vertical linear feet of well installation). In addition, bidders shall provide an all-inclusive per foot unit cost on the Standardized Bid Form (Attachment 2) should additional or less drilling footage / well installation be required. The per foot unit cost shall include borehole advancement, logging and screening, well installation and materials, and waste management / disposal.

Each bidder shall describe the methods used to advance the well borehole including total depth of the boring and well construction details.¹³ Drill cuttings returned to the surface shall be examined in the field and described for lithology, groundwater occurrence, and potential staining/odor indicative of hydrocarbon contamination. Although the bid shall assume no soil samples will be collected from the monitoring well boreholes for laboratory analysis, the soil cuttings shall be screened in the field with a PID and PID readings will be recorded on the boring / well construction logs.

The additional POC groundwater monitoring wells shall be constructed in accordance with the PADEP Groundwater Monitoring Guidance Manual. Bidders shall assume constructing each well with 2-inch diameter Schedule 40 PVC casing and well screen. Final construction for the two monitoring wells must ensure that the screened interval intersects the water table surface and accounts for seasonal groundwater fluctuations.¹⁴ For cost comparison purposes, bidders shall assume 8 feet of well screen, 0.010-inch slot-size screen.

¹³ Although borehole collapse is not anticipated based on the clay-rich and relatively thin soil horizon, bidders should consider the use of a multi-capacity drilling rig capable of auger / air rotary drilling in the unexpected event of borehole instability.

¹⁴ If a bidder believes additional monitoring wells are needed to assess the shallow perched water-bearing zone at the POC, additional details in support of installing such wells along with a fixed price cost should be provided in the proposal as an optional task.

Annulus materials shall consist of a filter-pack of silica sand extending to a height of approximately two feet above the top of the screen section overlain by a minimum 3.0 feet thick hydrated bentonite pellet seal. The remaining annulus shall be filled with a cement / bentonite slurry to within approximately one-foot below grade. Bidders shall assume surface finishing consisting of an expandable locking cap fitted to the top of the PVC riser and a flush-mounted traffic-rated manhole with a bolt-on lid. The flush-mounted manholes shall be set into a 2 ft. by 2 ft. concrete pad.

Each bidder's fixed-price cost for this task shall describe the proposed well construction specifications along with rationale and also shall account for: (i) identifying subsurface utilities and other buried features of concern including, but not necessarily limited to, contacting PA One Call and clearing each borehole location to a minimum depth of 5 feet using vacuum excavation or hand auger; (ii) well development activities; (iii) management and disposal of investigation derived wastes (IDW); and (iv) professional surveying of the new well locations and top-of-casing elevations. Well drilling/installation and development activities along with supporting documentation (e.g., waste manifests, boring logs and well construction details, etc.) shall be documented in the Revised Site Characterization Report (Milestone C). Bidders shall manage groundwater generated by the drilling and well development activities in accordance with standard industry practices and applicable laws, regulations, guidance, and PADEP directives.

Milestone B2 - Millcreek Surface Water Sampling. Under these milestones, bidders shall provide a firm fixed price to conduct four (4) consecutive quarterly surface water sampling events from the surface water drainage tributary "Millcreek" which is located adjacent to the southeastern side of the subject property. Surface water sampling events shall include the collection of three (3) surface water samples and appropriate QA/QC samples, and shall be performed in conjunction with routine quarterly groundwater monitoring events. Bidders should note that surface water sampling of Millcreek was specifically requested by the PADEP Case Manager, Jack Ashton (see Attachment 3M). Each of the four quarterly surface water steam sampling events will be collected from the following three locations:

- i) Adjacent to the northeast corner of the subject property – This surface water sample will serve as a representative upstream and background sample data point;
- ii) Adjacent to MW-1 – This surface water sample will serve as a representative mid-stream data point for the subject site;
- iii) Adjacent to MW-MOC-5 – This surface water sample will serve as a representative downstream data point for the subject site.

Bidders are encouraged to refer to appropriate guidance documents (USEPA, PADEP) on appropriate surface water sampling methods and protocols. At a minimum, the following surface water sampling protocols shall be employed at the site:

- Surface water samples shall be initiated at the downstream sampling point, followed by the mid-stream sampling point, and ending with the upstream sampling point. This sampling methodology will likely ensure that the samples will be free of organic debris originating from upstream disturbance of the streambed;
- The sampler collecting the surface water samples shall be positioned downstream of the sample bottle taking care not to introduce turbid surface water or organic debris into the sample; and
- Surface water and stream depth data shall be collected at each sample collection location and shall include the depth from the stream surface to the stream bed.

Each surface water sample collected from the three locations listed above shall be analyzed for the pre-March 2008 PADEP short-list for unleaded gasoline.¹⁵ Samples are to be analyzed by a PADEP-accredited laboratory using USEPA Method SW-846 8260B, with achieved method detection limits that are below the individual SHS-MSCs/RUA for each analyte. Appropriate quality assurance/quality control (QA/QC) samples shall also be collected and analyzed for the same parameters as part of each event.¹⁶

The results of each quarterly surface water sampling event shall be documented in separate quarterly RAPRs (see below). In addition, surface water data shall also be documented in the Revised SCR (RSCR) or the Revised RAP (RRAP) (i.e., Milestones C and E).

Milestone B3 - Quarterly Groundwater Monitoring and Reporting. Under these milestones, bidders shall provide a firm fixed price to complete quarterly groundwater gauging, sampling, and reporting events at the site. This milestone shall commence immediately following execution of the Remediation Agreement and shall terminate with RRAP implementation.¹⁷ For bidding purposes, **all bids shall assume three quarterly gauging, sampling, and reporting events under Milestone B3, and the quoted quarterly event unit rate will apply should there be an increase or decrease in the number of quarterly events actually required prior to implementing Milestone F4 below.**

Each quarterly event shall include gauging the depth to groundwater (and SPH, if present) in all existing on- and off-property groundwater monitoring wells prior to purging any of the wells for sampling. Groundwater-level measurements shall be converted to groundwater elevations consistent with the current (i.e., most recent) vertical datum used at the site to assess groundwater flow direction and hydraulic gradient. The following site wells are designated for sample collection and analysis during each quarterly groundwater monitoring event: MW-1, MW-2, MW-3, MW-4, MW-5, MOC-1, MOC-4, MOC-5, RW-1, RW-2, RW-3, RW-4, and the two new POC wells (Milestone B1). Each monitoring well designated for sample collection shall be purged and then sampled in accordance with PADEP Groundwater Monitoring Guidance Manual, other applicable PADEP guidance and directives, and standard industry practices. Recovery wells (RW-1, RW-2, RW-3, and RW-4) shall be deactivated for a period of three (3) days before groundwater monitoring is conducted on those wells. Any well with a numerically quantifiable thickness of SPH shall not be purged or sampled. Bidders shall manage equipment decontamination fluids and groundwater generated by the well purging and sampling activities in accordance with standard industry practices and currently applicable laws, regulations, guidance, and PADEP directives regardless of how purge water was managed historically at this Site.

Each groundwater sample collected from the 14 wells listed above shall be analyzed for the pre-March 2008 PADEP short-list for unleaded gasoline.¹⁸ Samples are to be analyzed by a PADEP-accredited laboratory using USEPA Method SW-846 8260B, with achieved method detection limits that are below the

¹⁵ Parameters include: BTEX, isopropylbenzene (cumene), methyl-tert-butyl ether (MTBE), and naphthalene, *excluding* 1,2,4-trimethylbenzene and 1,3,5-trimethylbenzene.

¹⁶ Each bidder's approach to implementing Milestone B2 shall clearly identify the number of sampling events, number of stream samples per event, sampling method(s), QA/QC measures, analytes, and other key assumptions affecting the bid price.

¹⁷ The first quarterly event conducted under Milestone B3 shall be timed to continue the pre-existing sequence of quarterly groundwater monitoring events without disruption.

¹⁸ Parameters include: BTEX, isopropylbenzene (cumene), methyl-tert-butyl ether (MTBE), and naphthalene, *excluding* 1,2,4-trimethylbenzene and 1,3,5-trimethylbenzene.

individual SHS-MSCs/RUA for each analyte. Appropriate quality assurance/quality control (QA/QC) samples shall also be collected and analyzed for the same parameters as part of each event.¹⁹

Each groundwater purge and sampling event shall also include collection of the following field parameters: temperature, pH, specific conductance, dissolved oxygen (measured *in-situ*), and oxidation/reduction potential.

The results of each quarterly groundwater gauging and sampling event shall be documented in separate quarterly RAPRs (see below). In addition, any such available data shall also be documented in any Revised SCR (RSCR) or the Revised RAP (RRAP) (i.e., Milestones C and E).

Each quarterly RAPR shall be prepared and submitted for PADEP review in accordance with standard industry practices and applicable laws, regulations, guidance, and PADEP directives. Each quarterly RAPR shall be signed and sealed by a Professional Geologist registered in the Commonwealth of Pennsylvania. Finally, each quarterly report shall (a) provide all the data generated during the reporting period, (b) be complete and concisely organized, and (c) contain at least the following elements:

- As applicable, a summary of site operations and remedial progress made during the reporting period that addresses whether or not the degree of remedial progress is reasonably "on track" to achieve a timely and cost-effective Site closure consistent with the selected remediation goals.
- All data collected from the monitored wells, including the depth to groundwater and thickness of any free product encountered.
- At least one groundwater elevation contour map per groundwater zone (shallow and intermediate if such hydrogeologic conditions exist at the site), that depicts an interpretation of groundwater flow direction.
- Tabulated historical quantitative groundwater analytical results, including results from the current quarter.
- The laboratory analytical report(s) for the samples collected during the current quarter.
- One site-wide iso-concentration contour map for each compound detected in groundwater at a concentration exceeding its SHS-MSCs/RUA within an individual groundwater zone (shallow or intermediate if such hydrogeologic conditions exist at the site) during the quarter.²⁰
- For each well that has exhibited concentrations of the COC exceeding SHS-MSCs/RUA during the reporting period and/or during the previous year, a graphical depiction of historical key contaminant concentrations and groundwater elevations to provide an assessment of correlations between fluctuating water levels and contaminant concentrations. This assessment should specifically address whether observed dissolved-phase constituent concentration fluctuations may be related to changing hydrogeologic conditions.

¹⁹ Each bidder's approach to implementing Milestone B3 shall clearly identify the number of sampling events, number of wells/samples per event, well purging and sampling method(s), QA/QC, analytes, purge water disposal methods, and other key assumptions affecting the bid price.

²⁰ All figures included in each quarterly report (e.g., site plan, groundwater elevation maps, dissolved plume maps, etc.) shall be available in electronic format to the Solicitor upon request.

- For each well that has exhibited concentrations of the COC exceeding SHS-MSCs/RUA during the current reporting period or historically, a graphical depiction of recent key contaminant concentration trends. Each quarter, contaminant concentration trend lines shall be calculated using at a minimum, the previous two-years of analytical data (or data collected after the active remediation has been initiated, if applicable) to be plotted on an x-y scatter plot with a logarithmic scale. The exponential trend lines shall be projected forward in time to assess the pace of or projected timeframe for remediation to achieve attainment of the selected remediation standard(s).
- As applicable, a discussion of the data to offer an updated assessment whether these data are consistent with a stable, shrinking, or expanding plume and, therefore, whether or not the plume appears to be responding to the remedial action in a manner suggestive of a timely and cost-effective Site closure.
- Treatment and disposal documentation for waste generated during the reporting period.

PAUSTIF will only reimburse costs for necessary quarterly groundwater gauging, sampling, and reporting events actually completed under this milestone.

Milestone C – Site Characterization and Associated Revised Site Characterization Update Report

This milestone provides bidders the opportunity to identify which additional site characterization work will be completed in advance of finalizing the remedial approach design and moving ahead with its implementation. Conducting supplemental investigative activities under this milestone is mandatory. PAUSTIF will be reimbursing up to \$10,000 for supplemental site characterization and reporting costs under this milestone. Bidders are to describe what supplemental site characterization will be completed, the rationale for the work and how the derived data will be used. For purposes of bidding, and to ensure consistent cost scoring of bids, each bidder will enter exactly \$10,000 as the bid price for Milestone C in the Standard 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 C 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; 4) assist with refining the cleanup timeframe estimate and / or other reasons related to validating the bidder's remedial approach and design.

Bidders shall also use this task to complete and verify their site conceptual model and sustain their proposed remedial plan for the site. Bidders are to: (a) provide their technical rationale (basis) within the bid, along with supporting examples (as appropriate); (b) explicitly state what risks are perceived in relying upon the data previously collected; and (c) enter their fixed prices by subtask activity into the appropriate cells (Milestone C) of the Standardized Bid Form (Attachment 2). It is understood that the supplemental work scope that may be proposed by bidders under this milestone may vary considerably according to each bidder's site conceptual model and vision for site remediation.

All proposed Milestone C activity shall be accompanied by the following:

- The purpose and need for each Milestone C activity specified in the proposed work scope.

- A detailed scope description of each activity, including the use of and incorporation of pre-existing Site data.
- The timing and schedule of each activity relative to the overall project schedule.
- A description of the anticipated results of each activity and how such results may impact the potential bidder's proposed conceptual remedial action plan.

The scope, purpose, and results of the supplemental site characterization activities conducted under Milestone C shall be documented in a RSCR, which shall be submitted to both the Solicitor and PAUSTIF in draft-form for review prior to its submission to the PADEP. Therefore, costs associated with the preparation, submittal, and approval of the RSCR are to be included in this milestone. Each bidder's project schedule for this milestone shall provide two weeks advance notice for Solicitor and PAUSTIF review of the draft RSCR. Consequently, the final RSCR shall address comments received from the Solicitor and PAUSTIF on the draft RSCR before the final RSCR is submitted to the PADEP. The RSCR shall be consistent (with regard to approach and level of effort) with the conceptual remedial action plan provided in the selected consultant's bid.

The resulting RSCR shall appropriately address and conform with the updates to 25 Pa. Code Chapter 250 that became effective January 8, 2011. The updates include changes to the regulated substances listed in the Statewide Health Cleanup Standard tables, a requirement to evaluate impacts due to vapor intrusion in accordance with the Department's guidance document titled "Vapor Intrusion into Buildings from Groundwater and Soil under the Act 2 Statewide Health Standard," and changes to certain SHS-MSCs/RUA for some unleaded gasoline short list constituents.²¹

Milestone D Series – Discretionary Pilot Testing and Reporting

Under this milestone, a bidder has the option to provide a firm fixed price for pilot testing activities at the site deemed necessary and appropriate to collect the data it believes are necessary to assess or finalize the design of the remedial system (or approach) to be used at the site to efficiently close the site under Act 2, including addressing soil vapor screening values. This stage of the project is referred to as the "Pilot Test Off-Ramp" and is intended to protect the selected consultant and the Solicitor from being obligated to move forward with a remedial action that is not optimal or is expected to fail. Milestone D activities (if any) shall be conducted as soon as possible following the completion of Milestones B and C.

The selected consultant and the Solicitor are protected from being obligated to move forward with a remedial action under Milestones E and F if new **pilot testing data** is inconsistent with the Milestones E and F proposed remedial approach or the proposed remedial approach could be expected to fail based on new pilot study data from Milestone D Series. While the selected bidder will be under no obligation to cancel the Remediation Agreement if the pilot test results are outside the criteria or range specified in the bidder's RFB Solicitation response, the following are **the only possible outcomes associated with these unanticipated results:**

- a. With advance Solicitor and PAUSTIF approval, the selected bidder may elect to modify the Milestones E and F remediation plan to accommodate the new pilot testing information and continue with the cleanup **at no additional cost**; that is, for

²¹ As noted earlier, parameters include: BTEX, isopropylbenzene (cumene), methyl-tert-butyl ether (MTBE), and naphthalene, *excluding* 1,2,4-trimethylbenzene and 1,3,5-trimethylbenzene.

- the same total fixed price found in the RFB Solicitation response, complete the cleanup using the modified approach the bidder believes is demanded by the new pilot testing information.
- b. Or if the Solicitor or PAUSTIF do not accept the selected bidder's revised plan adjusting to the new Milestone D pilot testing data, the Remediation Agreement for the project will terminate.
 - c. Or if the selected bidder adequately demonstrates the site conditions revealed by Milestone D Series pilot testing activities are significant and could not have reasonably been expected prior to conducting the Milestone D Series activities, the selected bidder may elect not to proceed and withdraw from / terminate the Remediation Agreement for the project.

In any case, there will be no negotiations on changing bid work scope or pricing in response to the results of Milestone D activities.

It should be obvious, therefore, that careful consideration should be given to the criteria put forth in the bid for evaluating the results of any feasibility/pilot testing proposed for Milestone D Series.

Any bidder electing not to conduct any activities under Milestone D Series must: (a) provide their technical rationale (basis) for this decision within the bid, along with supporting examples (as appropriate); (b) explicitly state within their bid that they accept the inherent risk in relying almost entirely or exclusively on data collected by others; and (c) enter a fixed price of \$0.00 into the appropriate cells (Milestone D Series) of the Standardized Bid Form (Attachment 2).

Any bidder concluding that it is necessary and appropriate to conduct feasibility studies or pilot testing to assess the feasibility of or finalize the design of the proposed remedial system or approach shall propose a scope of work and associated bid pricing for Milestone D Series. Potential considerations regarding the need for Milestone D Series activities include, but may not be necessarily limited to: determining site-specific remedial design data, confirming that the proposed technology is technically feasible, confirming that the proposed technology is cost-effective, and confirming that the proposed technology will provide a timely closure of the site under Pennsylvania Act 2.

Although the following should not be construed as an endorsement to propose (or not propose) activities under this milestone, potential activities for bidders to consider may include, but are not limited to, any of the following:

- In-situ pneumatic and/or hydraulic permeability studies (radius of influence tests);
- In-situ soil vapor extraction studies;
- Feasibility studies and/or pilot testing activities to assess the effectiveness of a specific remedial technology or approach; and/or
- Remedial design calculations, technology information, equipment specifications, and materials specifications as appropriate to support implementation and PADEP approval of the remedial technology proposed within your bid.

Bidders shall specify within their bids the critical criteria that will be used to evaluate data obtained through Milestone D Series activities. These critical criteria shall be used by the successful bidder to assess whether or not their proposed conceptual remedial action plan is feasible, i.e., the critical criteria

and quantified ranges of values that will make the proposed conceptual remedial action plan technically feasible, cost-effective, and timely. As such and as applicable, bidders that choose to perform pilot / feasibility testing shall list an upper and lower limit for each critical criterion that will define the range of acceptable results (i.e., feasibility study or pilot testing results). These criteria must be tightly controlled measurements or calculations that could be independently measured or verified by others during testing. These criteria will be referenced in the Remediation Agreement (see Attachment 1) executed with the selected consultant.

For example (only if a bidder proposes to conduct activities under Milestone D Series), a bid might include language like the following:

"For our proposed conceptual remedial action plan to be successful and the for technology(ies) used thereby to operate as planned and meet our proposed cleanup schedule, our proposed recovery well pumping test must demonstrate the following:

1. The long-term, sustainable groundwater recovery rate must be assessed to be greater than X gpm per recovery well,
2. Recovery well capture zones at the minimum sustainable groundwater recovery rate will require no more Y recovery wells to hydraulically manage the site contaminant plume,
3. The dissolved iron concentration within groundwater collected during the pumping test will not exceed Z milligrams per liter (mg/L)."

While the actual bid language (if any) and the associated critical criteria will vary by bidder, it is imperative that the pilot study off-ramp assumptions are specific to evaluating the feasibility of the technology relative to the bidder's approach. Therefore, **identifying assumptions regarding the bidder's remedial system design is not acceptable in this context.** Some examples of inappropriate assumptions would include the length of remedial system trenching, number of extraction points, type of remediation equipment, duration of remediation, and the like. Please note that the critical feasibility study/pilot testing criteria identified in each bid and their associated acceptable range of testing results will be closely evaluated by the bid evaluation committee as part of the technical review. Unrealistic criteria, inappropriate criteria, or criteria that are unreasonably narrow will diminish a favorable review of the bid by the bid evaluation committee.

If a scope of work is provided for Milestone D Series, it shall include preparing a Pilot Test Report and submitting the draft report to the Solicitor and PAUSTIF (through its representatives) for review in addition to documenting the pilot testing in a RRAP (see below). The Pilot Test Report shall (a) show that the pilot test was conducted according to the work scope presented in the bid and (b) constitute documentation for the payment requests submitted under Milestone D Series whether or not the pilot test produces an acceptable result. As noted above, if the results of the pilot testing show that the proposed remedial action is feasible based on applying the pre-specified criteria and ranges, the selected consultant shall move forward with the project at no additional cost. However, if the results of the pilot testing are outside of the pre-determined critical criteria/ranges that define whether the remedial approach is feasible and is able to achieve the remedial goals in a timely cost-effective manner, either party to the Remediation Agreement may cancel executing the remaining work scope.

Any and all Milestone D Series activities proposed in your bid shall be accompanied by the following:

- The purpose and need for each Milestone D Series activity specified in the proposed work scope (Milestones D1, D2, etc., as applicable).
- A detailed scope description of each activity, including the use of and incorporation of pre-existing site data.
- The timing and schedule of each activity relative to the overall project schedule.
- A description of the anticipated results of each activity and how such results may impact your proposed conceptual remedial action plan.
- For activities involving the evaluation of a remedial technology, such as a feasibility study or pilot test, bids shall describe in detail the likelihood that the resulting data will dictate a change in the conceptual remedial action plan proposed in your bid.
- Firm fixed pricing and any appropriate unit pricing for each Milestone D Series activity (D1, D2, etc.) within the completed Standardized Bid Form (Attachment 2).

The additional feasibility/pilot testing activities conducted under Milestone D Series shall also be documented in the RRAP (Milestone E), which is to be submitted to both the Solicitor and PAUSTIF for review in draft form prior to its submission to the PADEP in final form.

Milestone E – Discretionary Preparation, Submission, and PADEP Approval of a Revised RAP

Under this discretionary milestone, bidders shall provide a firm fixed price for the preparation, submission to the PADEP, and approval by the PADEP of a RRAP. Milestone E shall be conducted immediately upon completing Milestones B, C, and D. Under Milestone E, the selected consultant may prepare a RRAP that is consistent with the conceptual remedial action plan proposed in its bid and consistent with any new data obtained via work conducted under Milestones A through D.

Should the bidder decide to revise the existing RAP, the RRAP shall contain all information required under 25 PA Code 245.311 and other applicable statutes, regulations, and guidance and is to be signed and sealed by a Professional Geologist and a Professional Engineer registered in the Commonwealth of Pennsylvania (bidders shall refer to state licensing laws to determine which seals are required based on the work performed for and documented in the RRAP). The RRAP shall be of sufficient quality and content to reasonably expect PADEP approval. In addition, should a RRAP be developed, it shall appropriately address the requirement to evaluate impacts due to vapor intrusion in accordance with the Department's guidance document titled "Vapor Intrusion into Buildings from Groundwater and Soil under the Act 2 Statewide Health Standard." The analyte list for characterization and cleanup will not include the TMB isomers but will only consist of PADEP's pre-March 2008 short list for unleaded gasoline.

The RRAP shall detail the methodology and incorporate results of any new groundwater monitoring results (Milestone B), any new site characterization data (Milestone C), and any new pilot test results (Milestone D)²² conducted to assess site-specific conditions. The RRAP shall clearly discuss what activities and testing has been completed, the associated results, and a structured argument as to why the selected remedial strategy is reasonable, appropriate, and necessary for the site. As necessary, tables, site plans, a P&ID, calculations, photographs, equipment requirements, and material specifications, and relevant attachments shall be incorporated into the RRAP to support the narrative discussions. In addition, the RRAP **and each bid** shall:

²² As applicable, this may in part be accomplished by incorporating the Pilot Test Report prepared for Milestone D.

- Identify and present the selection rationale for all site monitoring wells identified as point-of-compliance (POC) wells that will be sampled as part of Milestone H (but, for consistency of bid evaluation and pricing, each bid for Milestone H shall assume sampling six POC wells²³ and the two new POC wells installed under Milestone B above).
- Provide the conceptual design that clearly identifies how the selected technology(ies) will achieve site closure under Act 2 via SHS-MSCs/RUA (e.g., areas/zones of remedial focus and the expected timeframe required to achieve SHS-MSCs/RUA).
- Describe the proposed remedial system, including (as appropriate) the number, depth, construction of treatment points; expected rates/pressures for addition or removal of gases, liquids or solids; major equipment items, including motor horsepower expectations for each planned major unit; size/specifications of any liquid or off-gas control units; etc.
- Identify all applicable construction permits and operational permits.

Again, note that each bidder is **to submit its conceptual remedial action plan** for the site **as part of its bid response**. This conceptual remedial action plan, which may or may not incorporate some or all of the existing remedial system (e.g., the dormant lateral recovery lines installed during the May 2006 soil excavation event), **must provide the narrative and graphic information necessary** for the Solicitor and Technical Contact/PAUSTIF to fully understand the bidder's intentions.

A responsive bidder's conceptual design shall clearly show how its proposed remedial approach will cost effectively address the residual groundwater and soil gas exceedences of the SHS and screening values, respectively, in a reasonable timeframe. For in-situ remediation, the proposed conceptual design would be expected to include remediation well locations, areas of influence and underground piping routes. Should ex-situ methods be proposed to address soil gas screening threshold exceedences, the proposed conceptual design would be expected to include the lateral boundaries and maximum depth of soil excavation(s) and how the soil would be screened, segregated, and treated or disposed. There will be added emphasis on remedial design / approach for this bid to result work so successful communication of a bidder's proposed plans will be a key consideration.

Each bidder's project schedule for Milestone E shall provide two weeks advance notice for Solicitor and PAUSTIF review of the draft RRAP. Consequently, the final RRAP shall address comments received from the Solicitor and PAUSTIF on the draft report before the final RRAP is submitted to the PADEP, and the quote for this milestone shall also include reasonable costs for addressing any comments received from PADEP on the final RRAP. The final RRAP must be consistent (with regard to approach and level of effort) with the conceptual remedial action plan provided in the selected consultant's bid.

Milestone F Series – RRAP Implementation (Final Design, Remedial System Permitting, Installation, Start-Up, Operation and Maintenance)

Consistent with the conceptual remedial action plan specified in the bid (and ultimately specified in the RRAP), bidders shall provide firm fixed price for this milestone to: 1) finalize the remedial system design; 2) finalize selecting and procuring the remedial system equipment and/or materials; 3) complete all applicable remedial system permitting; 4) install the remedial system; 5) start up the remedial system; and 6) operate & maintain the remedial system, including ongoing permit compliance-related sampling and ongoing quarterly groundwater gauging, sampling, and reporting. Bidders shall agree and the bids

²³ See Section 3, Site Information, COC in Groundwater.

shall indicate that the Solicitor and PAUSTIF will have the opportunity to inspect and confirm that the remedial system installed and operating at the site is as described in the scope of work referenced in the Remediation Agreement.

Each Milestone F bid is to offer an all-inclusive “turnkey” design-build scope of work and the associated pricing to implement the RRAP following its approval by PADEP. To assist in the bid evaluation process, all bids shall conform to the following general breakdown of Milestone F activities (both in the bid description of Milestone F and in the Standardized Bid Form {Attachment 2}):

- **Milestone F1** – Final design, equipment and material selection/procurement, preparation of associated work plans (Health and Safety, Construction Quality Assurance Plan, Remedial System Start-Up and Testing Plan, etc.).
- **Milestone F2** – Remedial system permit procurement, installation, start-up and testing.
- **Milestone F3** – Quarterly remedial system O&M, reporting via Quarterly RAPRs, and NPDES permit compliance monitoring and reporting.
- **Milestone F4** – Ongoing quarterly groundwater gauging, sampling, and reporting and soil vapor monitoring during remedial system operation as a continuation of and consistent with the requirements of Milestone B beginning with PADEP approval of the RRAP and ending with the start of Milestone H.

Milestones F1 and F2 shall be presented in the bid and within the Standardized Bid Form (Attachment 2) as a single firm fixed price. Milestones F3 and F4 shall be presented in the bid and within the Standardized Bid Form as a quarterly unit price. Each bid shall specify the length of time (i.e., number of quarters) that the bidder's remedial system will need to be operated and maintained in order to achieve the project goals and initiate Milestone H. However, please note that the Standardized Bid Form (Attachment 2) assumes 8 quarters of remedial system O&M (Milestone F3) and eight quarters of groundwater gauging, sampling, and reporting events during remedial system O&M (Milestone F4).

Each bid shall describe the specific remedial system monitoring, permit compliance tests/reporting, operation protocols, and maintenance procedures that will be used once the system is operational to monitor and evaluate its performance and effectiveness. Each bid shall also describe how the proposed remediation system may be adjusted to address changing site conditions as the remedial action proceeds. Operational time shall be logged by system instrumentation and reported quarterly to the Solicitor. The selected consultant is expected to maintain at least an 85% uptime on the system during each quarter. Failure to meet this minimum expectation over two consecutive quarters will constitute, at the Solicitor's sole discretion, a breach of contract and the Solicitor may chose to terminate the contract.

To provide added incentive to the successful bidder for completing the remedial O&M to achieve closure as expeditiously and cost effectively as possible, bidders shall acknowledge that **15% of each quarterly payment will be withheld and accumulated pending successful completion of Milestones F3 and F4 and initiation of groundwater attainment activities (Milestone H).** When this condition has been met, the accumulation of 15% holdback payments will be reimbursed in one lump sum to the successful bidder.²⁴

Milestone G Series – Post-Remedial Soil Vapor Assessment

²⁴ Lump sum payment will be made prior to the onset of initiating Milestone H.

Under this milestone, bidders shall provide a fixed price for conducting two post-remedial confirmation rounds of soil vapor sampling from the two sample points installed by the consultant of record in August 2012 (Milestones G1 and G2). Bidders shall provide a fixed price for completing an initial post-remedial soil vapor sampling event (Milestone G1) and a separate fixed price for completing a confirmation post-remedial soil vapor sampling event (Milestone G2) after at least four (4) weeks subsequent to the first post-remediation sampling event.

Each soil gas sample shall be collected in pre-certified Summa canisters supplied by the analytical laboratory. Bidders shall use 6L Summa canisters to collect the soil gas samples with sampling rates not to exceed 200 ml/min. Bidders shall base their bids on the required canister size, sample flow rates below 200 ml/min, and other applicable PADEP guidance on soil gas sampling. All soil vapor samples shall be submitted to a PADEP-accredited laboratory for analysis of the PADEP pre-March 2008 unleaded gasoline parameters using appropriate analytical methods (Method TO-15) and detection levels. Appropriate QA/QC samples shall also be collected and analyzed for the same unleaded gasoline compounds.

The soil vapor study results shall be described in the associated RAPR and in the RACR (Milestone I). In the case of the RAPR presenting these results, any recommendations regarding the need for additional vapor intrusion assessment shall be described and will be subject to the quoted unit price.

Milestone H Series – Groundwater Attainment Demonstration

Consistent with the bidder's proposed list of POC wells (see Milestone E), this milestone requires bidders to provide a firm fixed price for completing eight consecutive quarters of groundwater monitoring, sampling, and reporting events intended to demonstrate attainment of the residential used aquifer SHS-MSCs/RUA for groundwater at this site. This milestone shall commence following successful remediation of the site to the SHS-MSCs/RUA and shall continue, as required, for a total of eight consecutive quarterly events (i.e., for 24 months). However, each bid is to include language that if the groundwater data meet the conditions for demonstrating SHS-MSCs/RUA attainment after four consecutive quarterly sampling events, a petition to approve a reduction in the total number of groundwater attainment sampling events will be filed with PADEP. Should such a petition be filed and approved, the selected consultant will be reimbursed for only the milestones actually completed.

Each quarterly groundwater monitoring and sampling event shall only include the monitoring wells designated in the approved RRAP as POC wells; however, for consistency of bid evaluation and pricing, all bids shall assume sampling eight POC wells. **All work under Milestone H shall be conducted in accordance with (a) 25 PA Code §250.702, §250.704, and §250.707, and (b) all protocols specified under Milestone B.**²⁵ Each quarterly groundwater attainment sampling event shall be documented in a quarterly RAPR submitted to PADEP within 30 days of receiving the analytical results for each event. At a minimum, each RAPR prepared during Milestone H shall contain the following:

- The applicable RAPR requirements specified under Milestone B;
- A narrative description of the sampling procedures and results;
- Tabulated data from current quarterly and all historical data; and

²⁵ This includes, but is not limited to, groundwater depth gauging, SPH monitoring, monitoring well purging, groundwater sample management, purge water management, QA/QC protocols, documentation and reporting protocols, etc.

- A discussion of the data and an updated assessment of progress toward successful demonstration of attainment via application of the 75%-10X ad hoc statistical rule.

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

Milestone I – Preparation, Submission, and PADEP Approval of RACR

Under this milestone, the bidder will offer a fixed-price cost to prepare a draft and final RACR following the successful completion of Milestones F, G, and H. The RACR shall contain all information required under 25 PA Code 245.313 and other applicable statutes, regulations, and guidance including being signed and sealed by a Professional Geologist registered in the Commonwealth of Pennsylvania (bidders shall refer to state licensing laws to determine which seals are required based on the work performed for and documented in the RACR).

Each bidder's project schedule shall provide two weeks advance notice for Solicitor and PAUSTIF review of the draft RACR before it is to be submitted in final form to the PADEP. All comments on the draft RACR received from the Solicitor and PAUSTIF shall be addressed in the final report before it is submitted to the PADEP. The RACR shall request relief of liability relative to soils and groundwater for the site and the release subject to this claim by demonstrating compliance with the residential, used-aquifer SHS-MSCs/RUA for soils and groundwater with total dissolved solids in groundwater less than or equal to 2,500 mg/l absent the use of any activity and use limitations, institutional controls, or engineering controls.

Milestone J – Site Restoration and Well Abandonment

Under this milestone, bidders shall provide a firm fixed price for: (a) proper abandonment of all site-related monitoring wells, recovery/injection wells, piezometers, vapor extraction wells, and vapor monitoring wells (as applicable); (b) removal and proper disposal of any remaining wastes; (c) removal and proper disposal of the on-site treatment building;²⁶ (d) removal and proper disposal of all remedial equipment and materials, including all such equipment and materials that pre-date this RFB, (e) as-needed grading of all ground surface areas that were disturbed by the site characterization or remedial action activities; and (f) in-kind restoration of all ground surface areas that were disturbed by the site characterization or remedial action activities.

The work scope and bid pricing for this milestone shall include all associated documentation required by PADEP or the Solicitor. This includes, but is not necessarily limited to: daily photo-documentation of all site restoration and well abandonment activities, and submitting properly completed well abandonment forms to PADEP on behalf of the Solicitor. Copies of these photographs and well abandonment forms shall be provided to the Solicitor and PAUSTIF.

Work under Milestone J shall be completed within 60 days of final RACR approval by the PADEP and shall be conducted in accordance with standard industry practices and applicable laws, regulations, guidance, and PADEP directives. The schedule for the monitoring well abandonment and other Site restoration activities will be coordinated with the Solicitor. Prior to abandonment, all monitoring wells shall be

²⁶ The selected consultant shall determine whether the Solicitor wishes to retain any components of the remedial system (e.g., the treatment building) before removing it from the site.

checked for obstructions that may interfere with any abandonment/grouting protocol. If obstructions are found, they are to be removed prior to monitoring well abandonment. Abandonment protocols specified in the bid are to be consistent with PADEP's 2001 Groundwater Monitoring Guidance Manual. Copies of the completed Groundwater Monitoring Abandonment Forms shall be forwarded to PADEP so that PADEP may close its files on this facility.

All debris and waste materials generated during well abandonment and site renovation activities shall be properly disposed of in accordance with all applicable laws, regulations, and PADEP guidance.

4. TYPE OF AGREEMENT/PRICING

The Solicitor wishes to execute a mutually agreeable fixed-price Remediation Agreement for the work addressed by Milestones A through J. A sample fixed-price Remediation Agreement is included as Attachment 1. 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. Selected consultant will have ten (10) business days to return the initial draft of the fixed-price Remediation Agreement for review by Solicitor and PAUSTIF (through its representatives).

As noted earlier, a firm submitting a response to this RFB is assumed to accept the contractual terms (Attachment 1) and milestone requirements of this project, including all schedule-related requirements, unless explicitly stated to the contrary in its bid. Therefore, if a bidder seeks changes to the fixed-price Remediation Agreement (other than obvious modifications specific to this RFB such as names, dates, and milestone descriptions), these changes are to be specified in detail in the submitted bid. Please note that any requested changes must be agreed upon by both the Solicitor and PAUSTIF and, if there is concurrence, will be included in the final Remediation Agreement to be executed.

Each bid shall identify unit cost rates for labor, other direct costs, and equipment, as well as proposed mark-ups on other direct costs and subcontracted services for Milestones A through J. Associated unit price quotes shall be entered into the Standardized Bid Form included as Attachment 2 to this RFB (see also the accompanying electronic files). **Bid costs will be evaluated solely on the basis of the cost information presented in the Standardized Bid Form.** Bidders are responsible to ensure spreadsheet calculations are accurate.

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. Any bid response 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. Similarly, bids that reference unreasonable assumptions, unreasonable special conditions, or unreasonable exemptions may make the bid too difficult to evaluate, and therefore, may result in a bid being deemed "unresponsive."

Payment Milestones: Table 1 below illustrates the approximate timing expected for completion of respective milestone activities and milestone payments. 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 milestones (and tasks within a milestone) that are necessary. The selected consultant will not perform, invoice, or be reimbursed for any unnecessary work completed under a Milestone.

TABLE 1 – SAMPLE MILESTONE COMPLETION/PAYMENT SCHEDULE

<u>Est. Milestone Month After Contract Award</u>	<u>SOW Activities Anticipated/Completed for that Month</u>	<u>Milestone ¹</u>
1 - 9	Temporary O&M and Winterization of the Existing Remedial System	A1A - A1C, and A2
2	Installation of POC Groundwater Monitoring Wells, Millcreek Surface Water Sampling, and Quarterly Groundwater Monitoring and Reporting	B1, B2A, and B3A
5	Millcreek Surface Water Sampling and Quarterly Groundwater Monitoring and Reporting	B2B and B3B
8	Millcreek Surface Water Sampling and Quarterly Groundwater Monitoring and Reporting	B2C and B3C
3	Site Characterization and Updated Site Characterization Report	C
5	Discretionary Pilot Testing Series and Reporting (if conducted)	D1, D2, etc.
7	Discretionary Preparation, Submission, and PADEP Approval of a Revised RAP, Design and Installation of Remedial System	E, F1, and F2
9 through 32	Millcreek Surface Water Sampling and Revised RAP Implementation	B2D, F3, and F4
9	Revised RAP - Quarterly Remedial System O&M and Quarterly Groundwater Monitoring	F3A, F4A
12	Revised RAP - Quarterly Remedial System O&M and Quarterly Groundwater Monitoring	F3B, F4B
15	Revised RAP - Quarterly Remedial System O&M and Quarterly Groundwater Monitoring	F3C, F4C
18	Revised RAP - Quarterly Remedial System O&M and Quarterly Groundwater Monitoring	F3D, F4D
21	Revised RAP - Quarterly Remedial System O&M and Quarterly Groundwater Monitoring	F3E, F4E
24	Revised RAP - Quarterly Remedial System O&M and Quarterly Groundwater Monitoring	F3F, F4F
27	Revised RAP - Quarterly Remedial System O&M and Quarterly Groundwater Monitoring	F3G, F4G
30	Revised RAP - Quarterly Remedial System O&M and Quarterly Groundwater Monitoring	F3H, F4H
33	Post-Remedial Soil Vapor Assessment - Initial Round	G1
34	Post-Remedial Soil Vapor Assessment – Final Round	G2
33	Groundwater Attainment Demonstration	H1
36	Groundwater Attainment Demonstration	H2
39	Groundwater Attainment Demonstration	H3
42	Groundwater Attainment Demonstration	H4
45	Groundwater Attainment Demonstration	H5
48	Groundwater Attainment Demonstration	H6

Est. Milestone

<u>Month After Contract Award</u>	<u>SOW Activities Anticipated/Completed for that Month</u>	<u>Milestone</u> ¹
51	Groundwater Attainment Demonstration	H7
54	Groundwater Attainment Demonstration	H8
56	Preparation, Submission, and PADEP Approval of RACR	I
58	Site Restoration and Well Abandonment	J

1. Each bidder should modify this sample Milestone Completion/Payment Schedule to reflect its proposed (anticipated) milestone completion schedule, as long as the proposed schedule meets the specified deliverable deadlines.
2. This sample table assumes that: a) three (3) quarterly Milestone A1 events will be needed; b) four (4) quarterly Milestone B2 events and three (3) quarterly Milestone B3 events will be needed; c) eight (8) quarterly Milestone F3 and F4 events will be needed; and d) eight (8) quarterly Milestone H events will be needed. Individual bidder schedules will vary. Actual project and site conditions shall govern schedule events and timing.

Please note that the selected consultant's work may be subject to ongoing review by the PAUSTIF or its representatives to assess whether the proposed and completed work and the associated costs are reasonable, necessary, and appropriate. In order to facilitate review and reimbursement of submitted invoices by PAUSTIF, project costs shall be invoiced following the milestone structure specified the Remediation Agreement executed with the selected consultant.

Unless otherwise noted by the bidder, each bid received is required to be good for a period of up to 120 days after its receipt. All bid pricing (fixed prices and unit prices) shall be good for the duration of the period of performance cited in the associated fixed-price Remediation Agreement.

5. ADDITIONAL BID PACKAGE REQUIREMENTS

Each submitted bid must include the following:

- A reasonable demonstration that the bidder: (i) understands the objectives of the project, (ii) offers a reasonable approach for achieving those objectives efficiently, and (iii) has reviewed the existing site information provided in or attached to this RFB.
- Provide answers to the following questions regarding the bidder's qualifications and experience:
 - How many Chapter 245/250 sites has your company closed (i.e., obtained a Relief of Liability under Act 2) in Pennsylvania?
 - How many Chapter 245/250 sites has your company or the proposed PA-licensed Professional Geologist (P.G.) and Professional Engineer (P.E.) closed (i.e., obtained a Relief of Liability from PADEP) under either the SHS-MSCs/RUA and/or the Site Specific Standard? [*NOTE: The Solicitor requires the work described herein to be completed under the responsible care and directly supervised by a P.G. and P.E. consistent with applicable regulations and licensing standards.*]

- Regardless of whether there were/were not circumstances consistent with the cancellation provision of a signed contractual agreement, has your firm ever terminated work under a fixed-price or pay-for-performance contract before attaining all of the project objectives and milestones? If yes, please list and explain the circumstances of each such occurrence.
- A complete firm fixed-price based on completion of the milestones specified herein (above) by completing the Standardized Bid Form (see Attachment 2, which is also included among the accompanying electronic files).
- Key exceptions, assumptions, or special conditions applicable to the proposed work 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.
- Indicate whether the bidder accepts the proposed terms and conditions of the fixed-price Remediation Agreement (Attachment 1) or has provided a list of requested changes to the fixed-price Remediation Agreement.
- Provide a statement of applicable/pertinent qualifications, including the qualifications of any proposed subcontractors (relevant project descriptions are encouraged).
- Identify the proposed project team and provide resumes for the key project staff, including the proposed Professional Geologist and Professional Engineer of Record who will be responsible for endorsing work products prepared for PADEP review and approval.
- Provide a specific description of your proposed technical approach for each milestone, including detailed protocols for the handling, management, and proper disposal of all investigation-derived waste (e.g., monitoring well purge water, and excess soil boring cuttings). **If this milestone-by-milestone description fails to address a specific requirement of this RFB, it will be assumed that the bidder has accepted all the requirements specified herein by milestone.**
- Identify and sufficiently describe subcontractor involvement by milestone (if any). 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.
- Provide a detailed schedule complete with specific by-month dates for completing all milestones, inclusive of reasonable assumptions regarding the timing and duration of Solicitor, PAUSTIF, and PADEP reviews needed to complete milestone work. Details on such items as proposed meetings and work product submittals shall also be reflected in the schedule of activities.
- Describe your approach to working with PADEP from project inception to site closure. Describe how PADEP would be involved proactively in the resolution of technical issues and how PADEP case team will be kept informed as to project status.
- Describe how the Solicitor and PAUSTIF (through its third-party administrator) will be kept informed as to project progress and developments and how the Solicitor will be

informed of, and participate in, evaluating potential alternatives/tradeoffs with regard to the work addressed by the milestones.

6. MANDATORY PRE-BID SITE MEETING AND FOLLOW-UP QUESTIONS

On Thursday, November 7, 2013, **THERE WILL BE A MANDATORY PRE-BID SITE MEETING** facilitated by the Technical Contact or his representative. The Technical Contact (or their representative) will be present at the site between 1:00 PM and 3:00 PM to answer general questions and conduct a site tour for no more than two (2) participants per firm. **Any firm that does not attend this mandatory pre-bid site meeting on the date and during the hours specified will not be eligible to submit a bid.**

A CONFIRMATION OF YOUR INTENT TO ATTEND THIS PRE-BID SITE MEETING IS REQUESTED and shall be provided to the Technical Contact via e-mail at least three business days in advance of this date with the subject headed "Erie Petroleum Route 8 BP, Claim #2002-0195(F), Site Meeting Attendance Confirmation." This e-mail is to indicate the number and names of the participants (no more than two) attending from your firm. Each attending firm will be asked to enter the contact information for the individual at the firm who is to receive all subsequent RFB-related communications to help ensure the receipt of this information (e.g., responses to bidder questions).

Questions will be entertained as part of the pre-bid site tour and every attempt will be made to answer questions at that time. Verbal questions and responses discussed during the site meeting will also be distributed in writing to the attendees after the tour, as will the answers to any questions submitted in writing after the pre-bid site meeting has been concluded. Consequently, bidders are strongly encouraged to ask clarifying questions sufficient to minimize the number of assumptions, special conditions, and exemptions referenced in the submitted bid.²⁷ Questions will be accepted by the Technical Contact up to seven days prior to the date when bids are due.

7. CRITICAL BID PROCESS DATES

The following list provides a general recap of important bid process events and dates.

- **Mandatory Pre-Bid Site Meeting held on Thursday, November 7, 2013 from 1:00 PM to 3:00 PM.**
- **Bid Responses Must be Received by 3:00 PM On Tuesday, December 10, 2013.**

²⁷ As appropriate, the list of assumptions, special conditions, or exemptions will be discussed with the Solicitor. As part of that discussion, the PAUSTIF may advise the Solicitor that some or all of the assumptions, special conditions, or exemptions that are likely to generate change orders may be the financial responsibility of the Solicitor.

ATTACHMENT 1

Fixed-Price Remediation Agreement Available Online

(This agreement is provided in an electronic form that does not permit modifications. An electronic version of the agreement that can be modified will be provided to the selected consultant at the appropriate time.)

*Request for Bid
PAUSTIF #2002-0195(F)
Erie Petroleum Route 8 BP
Erie, Pennsylvania
October 24, 2013*

ATTACHMENT 2

Standardized Bid Form Available Online

ATTACHMENT 3

Project Documents Available Online

Name of File Containing Document:

Documents:

<p>Attachment 3A_1991-1993 Status Reports_Emer Discharge Permit Request_Lab Data (PEI).pdf</p>	<ul style="list-style-type: none"> • <i>Project Status Report II</i>, Mobil Service Station, March 1, 1991, by Pollution Enterprises, Inc. • <i>Project Status Report</i>, Mobil Service Station [Site], January 16, 1992, by Pollution Enterprises, Inc. • <i>Emergency Discharge Permit Request</i>, Mobil Oil Corporation [Site], August 10, 1992, by Pollution Enterprises, Inc. • Analytical Data Report, May 10, 1993, Betz Laboratories. • <i>Quarterly Status Report</i>, Mobil Service Station, June 17, 1993, by Pollution Enterprises, Inc.
<p>Attachment 3B_1993-1995 GW Monit & System Operation Rpt_Maps (GTI).pdf</p>	<ul style="list-style-type: none"> • <i>Groundwater Monitoring & System Operation Report</i>, Mobil Service Station [Site], November 22, 1993, Groundwater Technology, Inc. • <i>Groundwater Monitoring Plan and Site Map</i>, Mobil Service Station [Site], October 13, 1993, Groundwater Technology, Inc. • <i>Groundwater Monitoring Plan and Site COC Map</i>, Mobil Service Station [Site], August 9, 1995, Groundwater Technology, Inc.
<p>Attachment 3C_2001-2002 Act 2 Closure Request Report_RACR (B&B).pdf</p>	<ul style="list-style-type: none"> • <i>Act 2 Closure Request Report</i>, Former Mobil Station, March 16, 2001, B&B Diversified Enterprises, Inc. • <i>Remedial Action Completion Report</i>, Former ExxonMobil Service Station, December 20, 2002, B&B Diversified Enterprises, Inc.

<p>Attachment 3D_2002-2003 Reports_Data_Maps (various).pdf</p>	<ul style="list-style-type: none"> • <i>Notice of Release</i>, Erie Petroleum Route 8 BP Site, June 26, 2002 • <i>UST Closure Report</i>, Erie Petroleum Route 8 BP Site, May 31, 2002, American Environmental Associates, Inc. • <i>Initial Site Characterization Report</i>, Erie Petroleum Route 8 BP Site, November 15, 2002, American Environmental Associates, Inc. • <i>Historic Soil Sample Locations and Concentrations</i> [Map], Former Mobil Service Station, November 24, 2002, B&B Diversified Enterprises, Inc. • <i>Interim Site Characterization Report</i>, Erie Petroleum Route 8 BP Site, February 14, 2003, American Environmental Associates, Inc. • <i>Groundwater Contour Map</i>, Erie Petroleum Route 8 BP Site, January 15, 2003, RAR Engineering Group, Inc. • <i>Treatment System P&ID</i>, Erie Petroleum Route 8 BP Site, July 1, 2003, RAR Engineering Group, Inc. • <i>Interim Site Characterization Report</i>, Erie Petroleum Route 8 BP Site, July 22, 2003, American Environmental Associates, Inc.
<p>Attachment 3E_2004 RAP_Photo and Map (AEA_RAR).pdf</p>	<ul style="list-style-type: none"> • <i>Remedial Action Plan</i>, Erie Petroleum Route 8 BP Site, May 01, 2004, American Environmental Associates, Inc. • <i>Areal Photos</i>, Erie Petroleum Route 8 BP Site, May 12, 2004, RAR Engineering Group, Inc. • <i>Site Map</i>, Erie Petroleum Route 8 BP Site, May 12, 2004, RAR Engineering Group, Inc.
<p>Attachment 3F_2006-Q4 and 2007-Q4 RAPR (AEA).pdf</p>	<ul style="list-style-type: none"> • <i>Remedial Action Progress Report</i>, Fourth Quarter 2006, Erie Petroleum Route 8 BP Site, American Environmental Associates, Inc. • <i>Remedial Action Progress Report</i>, Fourth Quarter 2007, Erie Petroleum Route 8 BP Site, American Environmental Associates, Inc.
<p>Attachment 3G_2008-Q4 RAPR (AEA).pdf</p>	<ul style="list-style-type: none"> • <i>Remedial Action Progress Report</i>, Fourth Quarter 2008, Erie Petroleum Route 8 BP Site, American Environmental Associates, Inc.
<p>Attachment 3H_2009-Q4 and 2010-Q4 RAPR (AEA).pdf</p>	<ul style="list-style-type: none"> • <i>Remedial Action Progress Report</i>, Fourth Quarter 2009, Erie Petroleum Route 8 BP Site, American Environmental Associates, Inc. • <i>Remedial Action Progress Report</i>, Fourth Quarter 2010, Erie Petroleum Route 8 BP Site, American Environmental Associates, Inc.
<p>Attachment 3I_2011-Q4_RAPR (AEA).pdf</p>	<ul style="list-style-type: none"> • <i>Remedial Action Progress Report</i>, Fourth Quarter 2011, Erie Petroleum Route 8 BP Site, American Environmental Associates, Inc.

Attachment 3J_2011-2012 Various Documents (RAR_AEA).pdf	<ul style="list-style-type: none"> • <i>Treatment Shed Schematic Diagram</i>, June 1 2011, Erie Petroleum Route 8 BP Site, RAR Engineering Group, Inc. • <i>Google Earth Areal Photos</i>, Erie Petroleum Route 8 BP Site. • <i>SRSS Random Soil Sample Locations with Vapor Points</i>, Erie Petroleum Route 8 BP Site, August 1, 2012, RAR Engineering Group, Inc. • <i>SRSS Analysis Results</i>, Erie Petroleum Route 8 BP Site, August 22, 2012, American Environmental Associates, Inc. • <i>Soil Vapor Samples Analyses</i>, Erie Petroleum Route 8 BP Site, August 22, 012, Lancaster Laboratories.
Attachment 3K_2012-Q1 RAPR (AEA).pdf	<ul style="list-style-type: none"> • <i>Remedial Action Progress Report</i>, First Quarter 2012, Erie Petroleum Route 8 BP Site, American Environmental Associates, Inc.
Attachment 3L_2013-Q2 RAPR (AEA).pdf	<ul style="list-style-type: none"> • <i>Remedial Action Progress Report</i>, Second Quarter 2013, Erie Petroleum Route 8 BP Site, American Environmental Associates, Inc.
Attachment 3M_2012-2013_Various Documents.pdf	<ul style="list-style-type: none"> • <i>Soil Attainment Demonstration Report</i>, January 30, 2013, Erie Petroleum Route 8 BP Site, American Environmental Associates, Inc. • <i>Confirmation Email of SHS Attainment Demonstration for Soil</i>, dated May 24, 2013, PADEP • <i>National Pollutant Discharge Elimination System (NPDES) Permit</i>, dated June 6, 2012, PADEP
Attachment 3N_2011_January_Proposed Sanitary Force Main Sewer Project.pdf	<ul style="list-style-type: none"> • <i>Proposed Sanitary Force Main Sewer Project, Engineering Drawings</i>, Millcreek Township Sewer Authority, January 2011
Attachment 3O_2012 Culvert Project and SV Data.pdf	<ul style="list-style-type: none"> • <i>Proposed Pre-Cast Reinforced Concrete Culvert Project, Engineering Drawings</i>, PADOT, November 2012 • <i>Soil Vapor Analytical Data and Typical Vapor Monitoring Well Diagram</i>, American Environmental Associates, Inc., 8/13/12
Attachment 3P_1995-2004 PADEP Correspondence	<ul style="list-style-type: none"> • <i>Notice of Contamination</i>, Former Mobil Service Station [Site], December 18, 1995, PADEP • <i>Act 2 Closure Disapproval Letter</i>, Former Mobil Service Station, February 4, 2002, PADEP • <i>RACR Memo</i>, Former Mobil Service Station, January 16, 2003, PADEP • <i>Email RACR Memo</i>, Former Service Station, March 28, 2003, PADEP • <i>Act 2 Deficiency Letter [Partial]</i>, Erie Petroleum Route 8 BP Site, March 28, 2003, PADEP • <i>RAP Approval Letter</i>, Former Route 8 BP, May 13, 2004, PADEP