

Request for Bid

Fixed-Price Defined Scope of Work

Additional Site Characterization Activities & Reporting

Falcon Oil Co. Inc. / Turkey Hill Mini Mart #276

311 Main Street

Blakely, Lackawanna County, PA 18447

Solicitor

Falcon Oil Co. Inc.

309 Main Street

Blakely, Lackawanna County, PA 18447

PADEP Facility ID #: 35-50601 PAUSTIF Claim #: 2003-0223(S)

Date of Issuance

April 4, 2013

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The Pennsylvania Underground Storage Tank Indemnification Fund (PAUSTIF), on behalf of the claimant who hereafter is referred to as the Client or Solicitor, is providing this Request for Bid (RFB) to prepare and submit a bid to complete the Scope of Work (SOW) for the referenced site. The Solicitor has an open claim with the PAUSTIF and the corrective action work will be completed under this claim. Reimbursement of Solicitor-approved, reasonable and necessary costs up to claim limits for the corrective action work described in this RFB will be provided by PAUSTIF subject to 90% proration. Solicitor is responsible to pay any applicable deductible and/or proration to the selected consultant.

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

Calendar of Events

Activity	Date and Time
Notification of Intent to Attend Site Visit	April 23, 2013 by 5 p.m.
Mandatory Pre-Bid Site Visit	April 25, 2013 at 1 p.m.
Deadline to Submit Questions	May 3, 2013 by 5 p.m.
Bid Due Date and Time	May 10, 2013 by 3 p.m.

Contact Information

ICF International	Solicitor	Technical Contact
Ms. Linda Crabb Claim Investigator ICF International 4000 Vine Street Middletown, PA 17057	Mr. Rodney Passeri 309 Main Street Blakely, PA 18447	Mr. Joseph Ozog, Jr., P.G. Excalibur Group, LLC 91 Park Avenue Windber, PA 15963 joeozog@excaliburgrpllc.com

All questions regarding this Request for Bid (RFB) 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 email subject line must be “[insert site name and claim number provided on cover page] – RFB QUESTION”. Bidders must neither contact nor discuss this RFB with the Solicitor, PAUSTIF, the Pennsylvania Department of Environmental Protection (PADEP), or ICF International (ICF) unless approved by the Technical Contact. Bidders may discuss this RFB with subcontractors and vendors to the extent required for preparing the bid response.

Requirements

Mandatory Pre-Bid Site Meeting

The Solicitor, the Technical Contact, or their designee will hold a mandatory site visit on the date and time listed in the calendar of events to answer questions and conduct a site tour for one participant per bidding company. **This meeting is mandatory for all bidders, no exceptions.** This meeting will allow each bidding company to inspect the site and evaluate site conditions. **A notice of the bidder's intent to attend this meeting is requested to be provided to the Technical Contact via email by the date listed in the calendar of events with the subject "[insert site name and claim number provided on cover page] – SITE MEETING ATTENDANCE NOTIFICATION".** The name and contact information of the company participant should be included in the body of the e-mail.

Submission of Bids

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

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

Bid Requirements

The Solicitor wishes to execute a mutually agreeable contract with the selected consultant ("Remediation Agreement"). The Remediation Agreement is included as Attachment 1 to this

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

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

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

The bidder shall provide its bid cost using the Bid Cost Spreadsheet (included as Attachment 2) with descriptions for each task provided in the body of the bid document. Please note if costs are provided within the text of the submitted bid and there is a discrepancy between costs listed in the Bid Cost Spreadsheet and in the text, **the costs listed within the Bid Cost Spreadsheet will be used in the evaluation of the bid and in the Remediation Agreement with the selected consultant.** Bidders are responsible to ensure spreadsheet calculations are accurate.

In addition, the bidder shall provide:

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

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

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

Each bid response document must include at least the following:

1. Demonstration of the bidder’s understanding of the site information provided in this RFB, standard industry practices, and objectives of the project.
2. A clear description, specific details, and original language of how the proposed work scope will be completed for each milestone. The bid should specifically discuss all tasks that will be completed under the Remediation Agreement and what is included (e.g., explain groundwater purging/sampling methods, which guidance documents will be followed, what will be completed as part of the site specific work scope/SCR/RAP implementation). Recommendations for changes/additions to the Scope of Work proposed in this RFB shall be discussed, quantified, and priced separately; however, failure to bid the SOW “as is” may result in a bid not being considered.
3. A copy of an insurance certificate that shows the bidder’s level of insurance consistent with the requirements of the Remediation Agreement. Note: The selected consultant shall submit evidence to the Solicitor before beginning work that they have procured and will maintain Workers Compensation; commercial general and contractual liability; commercial automobile liability; and professional liability insurance commensurate with the level stated in the Remediation Agreement and for the work to be performed.
4. The names and brief resumes/qualifications of the proposed project team including the proposed Professional Geologist and Professional Engineer (if applicable) who will be responsible for overseeing the work and applying a professional seal to the project deliverables (including any major subcontractor(s)).
5. Responses to the following specific questions:
 - a. Does your company employ a Pennsylvania-licensed Professional Geologist that is designated as the proposed project manager? How many years of experience does this person have?
 - b. How many Pennsylvania Chapter 245 projects is your company currently the consultant for in the PADEP Region where the site is located? Please list up to ten.
 - c. How many Pennsylvania Chapter 245 Corrective Action projects involving an approved SCR, RAP and RACR has your company and/or the Pennsylvania-

licensed Professional Geologist closed (i.e., obtained Relief from Liability from the PADEP) using any standard?

- d. Has your firm ever been a party to a terminated PAUSTIF-funded Fixed-Price (FP) or Pay-for-Performance (PFP) contract without attaining all of the Milestones? If so, please explain.
6. A description of subcontractor involvement by task. Identify and describe the involvement and provide actual cost quotations/bids/proposals from all significant specialized subcontracted service (e.g., drilling/well installations, laboratory, etc.). If a bidder chooses to prepare its bid without securing bids for specialty subcontract services, it does so at its own risk. Added costs resulting from bid errors, omissions, or faulty assumptions will not be considered for PAUSTIF reimbursement.
 7. A detailed schedule of activities for completing the proposed SOW including reasonable assumptions regarding the timing and duration of Solicitor reviews (if any) needed to complete the SOW. Each bid must provide a schedule that begins with execution of the Remediation Agreement with the Solicitor and ends with completion of the final Milestone proposed in this RFB. Schedules must also indicate the approximate start and end of each of the tasks/milestones specified in the Scope of Work, and indicate the timing of all proposed key milestone activities.
 8. A description of how the Solicitor, ICF and the PAUSTIF will be kept informed as to project progress and developments, and how the Solicitor (or designee) will be informed of and participate in evaluating technical issues that may arise during this project.
 9. A description of your approach to working with the PADEP. Describe how the PADEP would be involved proactively in the resolution of technical issues and how the PADEP case team will be kept informed of activities at the site.
 10. Key exceptions, assumptions, or special conditions applicable to the proposed SOW and/or used in formulating the proposed cost estimate. Please note that referencing extremely narrow or unreasonable assumptions, special conditions and exceptions may result in the bid response being deemed “unresponsive”.

General Site Background and Description

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

Site Description / UST Release

The former Falcon Oil Co. facility (“subject property” or “Site”) is located at 311 Main Street within the borough of Blakely, Pennsylvania. At the time the release was discovered in November 2003 and when the claim was filed with PAUSTIF in December 2003, the Site was comprised of two parcels of land with the address 309 Main Street (see Figure 1, Attachment 3a). Lot #1 totaled ~21,000 square feet, encompassed a one-story building which was owned and occupied by the corporate offices of the Falcon Oil Co., petroleum fuels and heating oil distributor. Lot #2, totaling ~34,000 square feet, encompassed a one-story convenience store building (“C-Plus Mini Market”) with retail gasoline, diesel fuel, and kerosene sales. Both lots were reportedly owned by the J.R. J.P. Realty Company, an entity related to or shares similar ownership with Falcon Oil Co (Falcon Oil). Sometime shortly after December 2003, Lot #2 was redeveloped and is currently leased by Turkey Hill Mini Markets (Turkey Hill) and occupied by Turkey Hill Mini Mart convenience store (#276) with retail fuel sales, and was assigned the address of 311 Main Street. Lot #1 was retained the 309 Main Street address and remains occupied by Falcon Oil as its headquarters office location. Both lots currently remain under the ownership of Falcon Oil. Given the site configuration at the time the release was discovered, the Site, as defined under Act 2, encompasses both properties (309 and 311 Main Street). The current Site configuration is shown in Figure 2 (Attachment 3a).

The Site is approximately one acre and located on the northwest side of Main Street in an area that is used for a mix of commercial and residential purposes (see Figure 3, Attachment 3a). Below-grade utilities on-site and in the area of the subject property consist of natural gas, water, sanitary, and storm sewer service, but the locations of these utilities are not known with certainty and shall be evaluated by the successful bidder. Currently, the northeastern portion of the Site (Lot #2), currently leased and operated by Turkey Hill, is occupied by a single-story building (convenience store), four dispenser islands with overhead canopy, and associated USTs and piping. On the southwestern portion of the Site (Lot #1) is a single-story building occupied by Falcon Oil offices. No USTs exist on the southwestern portion of the Site. Remaining portions of Site are mainly covered with asphalt and concrete. The existing UST system owned / operated by Turkey Hill was installed in 2004, with the tanks including one 18,000-gallon containing unleaded gas and one 4,000-gallon containing diesel UST located on the southwestern side of the existing dispenser islands. The 18,000-gallon tank is divided into two compartments (6,000-gallon and 12,000-gallon). A 10,000-gallon heating UST (referred to

Tank 012), of unknown age, also currently exists on the northeastern portion of the Site near the western corner of the Turkey Hill convenience store building. Locations for the existing USTs are shown on Figures 2 and 4 (Attachment 3a).

Since at least the early 1970's, the Site was used historically for the storage and dispensing/retail sales of unleaded gasoline and diesel fuel. The Falcon Oil UST systems existing prior to the redevelopment of the northeastern portion of the Site (Lot #2) by Turkey Hill in 2004 included 12 USTs (Tanks 001 through 012) along with associated piping and dispenser islands. The release of unleaded gasoline that is subject to this claim was discovered during Falcon Oil's November 2003 closure of 11 USTs (Tanks 001 through 011¹), associated piping and dispenser islands, which they completed in preparation for the redevelopment of Lot #2. The removed USTs included five 10,000-gallon unleaded gasoline (Tanks 001 thru 005); one 10,000-gallon kerosene (Tank 006); one 10,000-gallon fuel oil No. 1 (Tank 007); one 3,000-gallon unleaded gas (Tank 008); and three 8,000-gallon unleaded gas (Tanks 009 thru 011). Locations of the former 11 USTs and dispenser island are shown on Figures 1, 4, & 5 (Attachment 3a).

During UST closure activities, petroleum hydrocarbon contamination was identified based on unusual level of vapors and product stained soils/backfill.² The environmental contamination was believed to originate from operations associated with Tanks 008, 009, and 011 (all unleaded gasoline USTs), but reportedly not with any of the other eight USTs removed from the ground. The source/cause of the releases at Tanks 009 and 011 was reported to be a "piping union for delivery line" (Tank 009) and a "piping nipple/connector" at submersible pump connection (Tank 011). No specific source/cause of environmental impacts at Tank 008 were offered to explain the product saturated soils and an unusual high level of vapors that were encountered in and around the tank.³ In each case, the observed contamination was reported as "not localized" to the tank (i.e., not within 3 feet in every direction), and both product-saturated and "highly odorous" soils were noted. No groundwater was reportedly encountered in any of the tank removal excavations. Following removal of the USTs, ~3,000 tons of near-surface and subsurface soils were over excavated from several areas on Lot #2 (the former USTs and pump islands vicinity) and removed from the Site for disposal.⁴ See Figure 6 in Attachment 3a for the approximate boundaries of the soil excavations.

Post-excavation confirmatory soil sampling was conducted at the base and sidewalls of the excavations. Most of the soil sampling results were below PADEP Statewide Health Standards (SHS), with the exception of the post-excavation confirmatory sampling in the area of Tank #008, which indicated that additional impacted soils remained in place with constituent levels in excess of the applicable SHS for soils. The soil sample with exceedences of SHS ("T008 PDLC") was collected at the southeast side of former Tank #008 at a depth of 17.5 feet below ground surface (bgs), which was the maximum depth achieved in this area of the excavation.

¹ Tank 012 (10,000-gallon heating oil UST) was not removed and still exists at the Site.

² Notification of Reportable Release/Notification of Contamination Form, dated November 20, 2003.

³ Notification of Reportable Release/Notification of Contamination Form, dated November 26, 2003.

⁴ "Underground Storage Tank System Closure Report Form", prepared by J. Rockwood & Associates, dated January 16, 2004.

Historical Investigations / Site Characterization

Known historical site investigation activities, not associated with Claim #2003-0223(S) include a January 1995 Phase I Environmental Site Assessment (ESA)⁵ and an August 1995 Phase II ESA completed by Synergist Inc. on behalf of Falcon Oil Co. A copy of the Phase II ESA is provided as Attachment 3I. The August 1995 Phase II investigation included the advancement and sampling of six soil boreholes (TB-1 through TB-6) completed to depths ranging from 13.5 to 16 feet bgs on Lot #2 of the Site. A total of six soil samples were collected from the boreholes and analyzed for total petroleum hydrocarbons (TPH) in the gasoline range (TPH-GRO) and diesel range (TPH-DRO), and benzene, toluene, ethyl benzene, and xylenes (BTEX). The sample results indicated exceedences of the standards existing at the time (Level 1 Protection Standards) for benzene and TPH. However, the detected contaminant concentrations do not exceed the currently applicable Act 2 SHS. Locations for the soil borings can be found in the Phase II ESA (Attachment 3I) and on Figures 4 and 6 (Attachment 3a).

Site characterization activities associated with Claim #2003-0223(S) were initiated by Groundwater & Environmental Services, Inc. (GES) following the discovery of the unleaded gasoline release in November 2003. The site characterization activities were initiated in March 2004 and included a detailed reconnaissance of area / sensitive receptor survey; advancement of twelve (12) soil borings (SB-1 through SB-4, and ASCSB-1 through ASCSB-8); collection / analysis of soil samples; installation of four bedrock groundwater monitoring wells (MW-1 through MW-4); installation of three shallow piezometers (PZ-1 through PZ-3); installation of three soil vapor monitoring points (SVP-01 through SVP-03); and groundwater monitoring / sampling and reporting. Soil boring and monitoring well locations are shown on Figures 4, 6, and 7 in Attachment 3a.

During the characterization activities, soil borings were advanced to depths ranging from 15 to 68 ft. bgs. A total of 23 soil samples were collected and submitted for laboratory analysis; however, only one sample (ASCSB-3), collected at a depth of 26 to 28 ft. bgs, exceeded SHS. Benzene was the only compound in ASCSB-3 that exceeded SHS. ASCSB-3 is located on the southeast side of former tank #008, in the same vicinity as the November 2003 post-UST pull over-excavation soil sample that exceeded SHS. The data suggest that the area of the soil impacts exceeding SHS is limited to the area of former tank #008. However, the full extent of the soil impacts exceeding SHS does not yet appear to have been fully delineated.

Historically, there have been some exceedences of the SHS for MTBE in groundwater at on-site wells MW-1 and MW-3; however, currently dissolved contaminant levels at all four monitoring wells are either “non-detect” or below the SHS. Insufficient water column in the three shallow piezometers has precluded sampling these locations. Soil vapor monitoring points SV-01 through SV-03 are installed to an approximate depth of 9 ft. bgs. None of the soil vapor samples collected from SVP-01 through SVP-03 have exceeded PADEP’s vapor intrusion screening levels.

The unconsolidated overburden material beneath the asphalt surface (outside the former

⁵ A copy of the Phase I ESA is not available.

excavations) consists of a mixture of sand, silt, cobbles, with some clay, along with shale and sandstone rock fragments. Underlying the overburden soils is a sandstone bedrock that is apparently encountered at varying depths ranging from 8 to 40 ft. bgs across the Site. In the boreholes for wells MW-1 and MW-2, a mine void was encountered at a depth of ~70 and 82 ft. bgs, respectively. Wells MW-1 through MW-4 are installed to depths ranging from 68 to 86 ft. bgs, with the screened intervals for MW-1 and MW-2 extending into the mine voids. Water levels in the bedrock wells (MW-1 through MW-4) is generally consistent across the Site and fluctuating between ~55 to 70 feet with a flow that has a radial pattern outward from MW-3. The piezometers are installed within the overburden soils and weathered bedrock; however, there have been no measureable amounts of water in these shallow piezometers.

Claimant's / Solicitor's chosen closure approach for the Site is a combination of SHS for groundwater and Site-Specific Standards (SSS) for soils. A draft Environment Covenant has been prepared for the Site specifying that the property be restricted to non-residential usage.

GES prepared and submitted a Site Characterization Report (SCR), dated September 2004 (Attachment 3j), an Additional SCR / Remedial Action Completion Report (RACR), dated November 2009 (Attachment 3c), and an Additional SCR, dated October 2010 (Attachment 3b). PADEP has reviewed and disapproved each of these reports offering comments/reasons for the disapprovals. Copies of PADEP's disapproval letters are provided in Attachment 3m. The most recent PADEP disapproval letter is dated November 13, 2012, offering comments from review of GES' Additional SCR dated October 2010 (Attachment 3b). A summary of PADEP's comments from the November 13, 2012 disapproval letter are –

- Additional characterization is needed to delineate soil impacts. PADEP believes that contamination may be following the top of competent irregular bedrock surface.
- Abandonment and re-installation of soil vapor monitoring points is needed as PADEP believes SVP-01 and SVP-02 are not properly located and/or constructed.
- Continued characterization work is needed to determine if water is present in the overburden, and if so, to evaluate and delineate impacts in this water-bearing zone.
- Abandoning and installing replacement bedrock groundwater monitoring wells is needed. More specifically, this is needed for MW-1 and MW-2, which are screened and monitoring conditions within the mine pool. There is a need to evaluate and determine the locations and depths of replacement wells around the source area to evaluate the release and determining groundwater flow direction in the bedrock groundwater.

Other Information

In June 2012, an estimated 10 to 15 gallons of unleaded gasoline was reportedly spilled on the ground surface due to an automobile accident with a dispenser island at the Turkey Hill facility.⁶ The spill response was reportedly able to contain the gasoline to prevent it from entering the storm water drain located within Main Street along the east side of the Site. Following the release, the dispenser was repaired and passed product line tightness testing. On October 1, 2012, Liberty Environmental, Inc. (Liberty) advanced a total of eight shallow soil borings in the area of the surface spill, and collected a total of nine soil samples from a depth of 10 to 14 inches below grade for laboratory analysis. None of the soil samples contained concentrations of unleaded gas constituents exceeding SHS. Liberty prepared and submitted a SCR and RACR, dated December 6, 2012 (Attachment 3n). PADEP has reviewed and disapproved the report offering comments/reasons for the disapproval. Copy of PADEP's disapproval letter is provided in Attachment 3n.

In March 2013, another release of unleaded gasoline was reported to PADEP by Turkey Hill. The cause of the release is allegedly a faulty secondary containment mechanism ("Spill Bucket") at a tank fill port, which was discovered during tank field upgrade activities. No specific details on the release were available at the time of this RFB. However, given the alleged release mechanism (faulty secondary containment bucket) and timing, it is unlikely that the March 2013 reported release will be found to be significant.

Addressing Turkey Hill's June 2012 surface spill and the new release discovered in March 2013 to PADEP's satisfaction is NOT part of this RFB. Given the nature of this recent 2012 release and results of initial characterization activities, this recent release is not expected to tangibly impact the characterization and future cleanup (if necessary) of the 2003 Falcon Oil release that is the subject of this RFB.

However, in order to present a complete characterization of the site, **the selected bidder shall obtain the March 2013 Notification of Reportable Release (NORR) report and associated subsequent characterization information and data from Turkey Hill, its consultant (Liberty) or PADEP so the information can be accounted for, as appropriate, in the Risk Assessment (Milestone F) and included in the selected bidder's SCR/RAP (Milestone H).**

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

⁶ This surface spill is the responsibility of Turkey Hill and not associated with PAUSTIF Claim #2003-0223S.

Scope of Work (SOW)

This RFB seeks competitive bids from qualified contractors to perform the activities in the Scope of Work (SOW) specified herein. PADEP – Northeast Regional Office (NERO) has reviewed and commented on the SOW provided within this RFB.

Objective

Solicitor seeks competitive, fixed-price bids, for this Defined Scope of Work RFB to complete the eight (8) milestones outlined below to complete the site characterization and prepare / submit a combined SCR / Remedial Action Plan (SCR / RAP). To be deemed responsive, each bid must respond in detail to each of the milestones, including describing the bidder's understanding of the conceptual site model and how that model relates to the bidder's proposed approach to executing the SOW. In other words, bidders shall respond to the SOW as stated herein to enable as much of an “apples-to-apples” comparison of the bids as possible. The Solicitor has elected to pursue environmental closure based on demonstrating attainment of the PADEP Act 2 used aquifer SHS Medium-Specific Concentrations (MSCs) in a Non-Residential setting for groundwater, and Act 2 SSS for soils.

Constituents of Concern (COCs)

The COC for soils, groundwater, and vapors are the post-March 2008 short list for unleaded gasoline, which consist of benzene, toluene, ethylbenzene, xylenes (BTEX); MTBE, cumene, naphthalene, 1,2,4-Trimethylbenzene (1,2,4-TMB), and 1,3,5-Trimethylbenzene (1,3,5-TMB).

General SOW Requirements

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

- The Storage Tank and Spill Prevention Act (Act 32 of 1989, as amended),
- Pennsylvania Code, Title 25, Chapter 245 - Administration of the Storage Tank Spill and Prevention Program,
- The Land Recycling and Environmental Remediation Standards Act of 1995 (Act 2), as amended),
- Pennsylvania Code, Chapter 250 - Administration of Land Recycling Program, and

- Pennsylvania's Underground Utility Line Protection Law, Act 287 of 1974, as amended by Act 121 of 2008.

During completion of the milestone objectives specified below and throughout implementation of the project, the selected consultant shall:⁷

- Conduct necessary, reasonable, and appropriate project planning and management activities until the project (i.e., Remediation Agreement) is completed. Such activities may include Solicitor communications/updates, meetings, record keeping, subcontracting, personnel and subcontractor management, quality assurance/quality control, scheduling, and other activities (e.g., utility location). Project planning and management activities will also include preparing and implementing plans for Health and Safety, Waste Management, Field Sampling/Analysis, and/or other plans that are necessary and appropriate to complete the SOW, and shall also include activities related to establishing any necessary access agreements. Project planning and management shall include identifying and taking appropriate safety precautions to not disturb site utilities; including but not limited to, contacting Pennsylvania One Call as required prior to any ground-invasive work. As appropriate, project management costs shall be included in each bidder's pricing to complete the milestones specified below.
- Be responsible for coordinating, managing, and completing the proper management, characterization, handling, treatment, and/or disposal of all impacted soils, water, and derivative wastes generated during the implementation of this SOW. The investigation-derived wastes, including purge water shall be disposed of in accordance with standard industry practices and applicable laws, regulations, guidance, and PADEP directives. Waste characterization and disposal documentation (e.g., manifests) shall be maintained and provided to the Solicitor and the PAUSTIF upon request.
 - **If the site is located in PADEP Southwest Region:** All investigation derived wastes shall be handled and disposed of per PADEP's Southwest Regional Office guidance. Investigation derived wastes include personal protective equipment, disposable equipment, soil and drill cuttings and groundwater obtained through monitoring well development and purging, as well as equipment decontamination fluids. Investigation derived wastes must be containerized in DOT-approved drums and staged on-site in a pre-determined location, pending results of laboratory analyses and selection of final disposal method(s). Each container must be labeled to indicate contents, site location and date of generation. It is the selected consultant's responsibility to conform with current PADEP Southwest Regional Office guidance requirements.

⁷ As such, all bids shall include the costs of these activities and associated functions within the quote for applicable tasks/milestones.

- **If the site is located in any PADEP Region other than Southwest:** 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 are accessible. Return visits to the site will not constitute a change in the selected consultant's SOW or result in additional compensation under the Remediation Agreement.

Site – Specific Milestones

Milestone A – Additional Soil Characterization / Delineation. Although soil samples have been collected / analyzed at the Site, additional delineation appears necessary due to some uncertainty in past soil sampling methodology and concerns that soil contamination may not be adequately delineated along the bedrock / overburden interface. It is possible infiltrating water that becomes contaminated, migrates along the top of bedrock, contaminating soil along the way. Additional soil characterization is needed to delineate soil impacts in the area of former Tank #008 to PADEP's satisfaction, and in addition, more adequately define the bedrock surface.

Under this task, bidders shall provide a fixed-price cost for implementing a soil boring program to assess the magnitude and extent of potential soil impacts in the area of former Tank #008, and more adequately define the bedrock surface. Each bid shall assume advancing eight (8) soil borings in this area, and **each bid must provide the proposed locations on a site drawing, along with the rationale for each location.**⁸ Each bid shall also describe the methods used to investigate and locate the existing below grade UST infrastructure and other utilities so that this work can be accomplished safely and without risking damage to the below grade utilities and UST system infrastructure.

Bidders shall be responsible for securing an access agreement with the current property owner (Solicitor) prior to beginning any of the milestone SOW. Access to the property is to be acquired for the purpose of performing each of the milestones in this RFB. Bids shall anticipate and include the level of effort / costs involved with all elements of securing access to the subject property. The costs associated with site access shall be included within this milestone. In addition, if it may be necessary to close one lane of each pump island at a time to complete this milestone, or any other of the milestones within this RFB, the Solicitor requires at least two (2) weeks advance notice and coordination with Turkey Hill personnel.

⁸ If gross soil impacts are evident based on field screening data and observations, and additional soil borings are necessary for characterizing and delineating the soil impacts, these additional borings will be considered out-of-scope under the Fixed-Price Agreement, which will require Solicitor and PAUSTIF approval of a detailed work plan and cost estimate before beginning the work.

Each soil boring shall achieve a depth that ensures vertical delineation of unsaturated and periodically saturated soils down to bedrock. For the purposes of this bid, bidders shall assume each soil boring shall be completed to a depth of 40 feet below grade based on the range in depth to bedrock encountered during previous characterization activities.

In addition to contacting PA One Call and other methods to locating below grade utilities, bidders shall assume clearing the initial five (5) feet of each boring location using air knife / vacuum extraction. Below five feet, each soil boring shall be advanced using hollow stem auger / split-spoon sampling methods. Continuous soil samples shall be collected for description of lithologic characteristics, groundwater occurrence, and staining / odor indicative of potential petroleum impacts. The split-spoon soil core samples shall be screened in the field using a calibrated photoionization detector (PID) and standard headspace methods. One soil sample per boring shall be submitted for laboratory analysis (eight total). This soil sample shall be collected from the depth interval exhibiting the highest organic vapor concentration based on PID headspace screening. If no elevated organic vapor levels are measured along the length of a boring and no staining and/or odors are evident, the one sample shall be obtained either from the depth interval immediately above the water table or from the soil immediately above the bedrock interface, whichever occurs first. However, to accommodate the possible need to collect additional soil samples based on field observations and in order to delineate the vertical extent of soil contamination, bidders shall provide a unit cost per additional soil sample for analysis on the Bid Cost Spreadsheet (Attachment 2).

Soil samples shall be analyzed for the post-March 2008 PADEP short-list of unleaded gasoline parameters (BTEX, MTBE, cumene, naphthalene, 1,2,4-TMB, and 1,3,5-TMB) by a PADEP-accredited laboratory using appropriate analytical methods and detection levels. Appropriate quality assurance/quality control (QA/QC) samples shall also be obtained for laboratory analysis.⁹ Based on these analytical results, the approximate dimensions and volume of remaining source material exceeding the PADEP Act 2 SHS MSCs for soil, if any, shall be estimated.

Each bidder's fixed-price cost for this milestone shall also account for: (i) identifying subsurface utilities, UST infrastructure, and other buried features of concern including, but not necessarily limited to, contacting PA One Call, and clearing the borehole location to a minimum depth of 5 feet; (ii) professional surveying of the soil boring locations and elevations for inclusion on the site plan and geologic cross sections; (iii) sealing each boring with bentonite and an asphalt or concrete surface patch after completion; and (iv) management of IDW. The soil boring program methods and results with supporting documentation (e.g., waste manifests, boring logs, etc.) shall be detailed in the SCR / RAP to be prepared under Milestone H.

Milestone B – Installation of Monitoring Wells. Bedrock groundwater monitoring wells and shallow / overburden piezometers have been installed during previous characterization activities. However, it still has not yet been determined to PADEP's satisfaction if groundwater exists in the overburden material above bedrock, and PADEP questions the construction of the

⁹ Each bidder's approach to implementing Milestone A shall clearly identify the number of samples, QA/QC measures, analytes, and other key assumptions affecting the bid price.

existing bedrock monitoring wells and whether they adequately characterize the release being evaluated. More specifically, concern has been raised that the existing bedrock wells may be yielding samples more representative of the “mine pool” water rather than representative of groundwater in competent bedrock. Therefore, supplemental characterization activities are necessary to evaluate the existing data and determine with input from PADEP the locations and depth for additional monitoring wells both in the shallow overburden and bedrock.

Under this milestone, bidders shall provide a firm fixed-price cost for abandoning shallow piezometer PZ-1¹⁰, and two bedrock wells MW-1 and MW-2¹¹, and installing two new shallow monitoring wells and three new bedrock monitoring wells. Each bid shall explain the bidder’s technical approach to complete the well abandonments. Bidder’s shall assume that each well would be abandoned in-place consistent with PADEP guidelines, and including well head removals and re-surfacing using either concrete / asphalt, as necessary. This work shall also include photo-documenting the abandonment work and completion / submittal of the well abandonment forms.

The two shallow overburden monitoring wells shall consist of a replacement well for PZ-1 and an additional shallow well at the source area (Tank #008). The three bedrock wells shall consist of installing replacement wells for MW-1 and MW-2 and an additional bedrock well near former Tank #008. **Each bid must identify the proposed locations for the two shallow overburden and three bedrock wells on a site drawing, and include a discussion detailing the rationale for each location.** The bids shall demonstrate an understanding that the objectives for installing the new wells at this site are to: (a) determine if groundwater exists within the shallow overburden material; (b) delineate the horizontal extent of dissolved-phase contaminants in shallow and bedrock groundwater; (c) refine the interpretation of groundwater flow; (d) enable representative aquifer testing (if required); (e) facilitate contaminant fate-and-transport modeling (if required); and (f) evaluate natural attenuation processes.¹²

Borings for the shallow monitoring wells shall be advanced to the depth of the bedrock surface. Borings for the bedrock wells shall be advanced to intersect the water-bearing zone intercepted by the existing bedrock monitoring wells. However, the bottom of the bedrock wells must be above the top of the mine void encountered at existing MW-1 and MW-2. For costing purposes, bidders shall assume that each shallow well boring will attain a depth of 40 feet below grade, and each bedrock well boring will attain a depth of 65 feet, although the total depth is likely to vary based on actual field conditions encountered. In the event that additional drilling footage is required, bidders shall provide unit costs per foot inclusive of borehole advancement, logging, screening with PID, and well installation on the Bid Cost Spreadsheet (Attachment 2).

Bidders shall assume advancing all monitoring well borings using standard hollow stem auger and continuous split-spoon sampling drilling methods for the overburden material coupled with

¹⁰ PZ-1 does not appear to be installed to the overburden – bedrock interface to allow investigation of groundwater quality where PADEP believes it needs to occur.

¹¹ The bottom of the well screen in wells MW-1 and MW-2 is within a mine void.

¹² Should additional wells be needed to accomplish horizontal delineation of the dissolved-phase plumes, such work will be considered an out-of-scope task under the Fixed-Price Agreement, which will require Solicitor and PAUSTIF approval of a work plan and cost estimate before beginning the work.

air rotary for bedrock. Continuous soil samples of the overburden and bedrock cuttings 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 samples shall be screened in the field with a PID. Should field screening and/or visual or olfactory observations suggest petroleum impacts to soil in these monitoring well locations, bidders shall quote a unit cost for sample collection and laboratory analysis as an option.¹³ If any soil samples are collected for laboratory analysis, these samples shall be analyzed for the post-March 2008 PADEP short-list of unleaded gasoline parameters (BTEX, MTBE, cumene, naphthalene, 1,2,4-TMB, and 1,3,5-TMB) by a PADEP-accredited laboratory using appropriate analytical methods and detection levels.

The shallow and bedrock groundwater monitoring wells will be constructed in accordance with the PADEP Groundwater Monitoring Guidance Manual. Bidders shall assume constructing each well of 2-inch diameter Schedule 40 PVC casing and well screen. Final construction must ensure that the screened interval intersects the water table surface and accounts for seasonal groundwater fluctuations. For cost comparison purposes, bidders shall assume 20 feet of well screen for both shallow and bedrock wells.

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 2.0 feet of hydrated bentonite pellets as a well seal. The bentonite seal for the bedrock wells must be within competent bedrock and of sufficient thickness to reduce the potential for creating a migratory pathway or cross contamination of aquifers. The remaining annulus shall be filled with a cement / bentonite slurry to within approximately one-foot below grade. Considering the suggested locations of the two shallow and three bedrock monitoring wells, 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 account for: (i) identifying subsurface utilities, UST infrastructure, 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; (ii) well development activities; (iii) management of 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 construction details, etc.) shall be documented in the SCR / RAP (Milestone H).

Milestone C – Groundwater Monitoring & Sampling. Under this task, bidders shall provide a firm fixed-price to complete two (2) groundwater monitoring and sampling events (an initial and a confirmatory monitoring and sampling event). The costs for the two groundwater monitoring and sampling events will be separated into Milestones C1 and C2 on the Bid Cost Spreadsheet (Attachment 2). Milestone C1 shall only include the monitoring and sampling of the two newly

¹³ The additional analysis of the soil samples would require Solicitor and PAUSTIF pre-approval.

installed shallow wells under Milestone B and existing wells PZ-2 and PZ-3.¹⁴ Milestone C2 shall only include the monitoring and sampling of the three newly installed bedrock wells under Milestone B and existing wells MW-3 and MW-4.

The initial groundwater monitoring and sampling event shall be performed no later than two weeks, but no sooner than one week after installing and developing the two shallow and three bedrock wells discussed under Milestone B. The confirmatory monitoring and sampling event shall be conducted no less than eight (8) and no more than twelve (12) weeks after the initial event.¹⁵ During each event, the depth to groundwater and any potential separate-phase hydrocarbons (SPH) shall be gauged in all available monitoring wells prior to purging any of the wells for sampling. Groundwater level measurements obtained from the monitoring wells during both events shall be converted to groundwater elevations for assessing groundwater flow direction and hydraulic gradient.

Each of the monitoring wells designated for sample collection during each event shall be purged and sampled in accordance with the PADEP Groundwater Monitoring Guidance Manual and standard industry practices. Any well exhibiting more than a sheen of SPH shall not be purged and sampled.¹⁶ Bidders shall manage equipment decontamination fluids and groundwater generated by the well purging and sampling activities in accordance with PADEP NERO guidance.

Groundwater samples collected during these two events shall be analyzed for the post-March 2008 PADEP short-list of unleaded gasoline parameters (BTEX, MTBE, cumene, naphthalene, 1,2,4-TMB, and 1,3,5-TMB) by a PADEP-accredited laboratory using appropriate analytical methods and detection levels. Appropriate QA/QC samples shall also be collected during each event and analyzed for the same parameters.¹⁷ In addition, each event shall include field measurements for these natural attenuation parameters: pH, temperature, specific conductance, dissolved oxygen (measured in-situ), and oxidation/reduction potential.

The conduct and results of these two events shall be documented in the SCR / RAP (Milestone H) and shall at least include a description of the following: narrative description of the sampling procedures and results; tabulated data collected from the monitored wells documenting the depth to groundwater and thickness of any free product encountered; groundwater elevation contour maps depicting groundwater flow direction in both the shallow (if required) and bedrock; tabulated historical quantitative groundwater analytical results; laboratory analytical report(s); one site-wide iso-concentration contour map for the shallow and bedrock for each compound

¹⁴ The successful bidder will only be reimbursed for milestones actually required and completed, and PAUSTIF will not reimburse the successful bidder for Milestone C1 if the shallow wells are dry, or contain insufficient water for monitoring/sampling.

¹⁵ If the initial round of groundwater sampling results indicate that site characterization is not complete, additional delineation shall be completed prior to conducting any further groundwater monitoring sampling events. Additional monitoring wells will be considered an out-of-scope task under the Fixed-Price Agreement, which will require Solicitor and PAUSTIF approval of a work plan and cost estimate before beginning the work.

¹⁶ SPH has not historically been observed in any of the monitoring wells. If measurable SPH is discovered, any work to address this SPH would be considered a changed condition of the fixed price contract.

¹⁷ Each bidder's approach to implementing Milestone C shall clearly identify the number of sampling events, number of wells / samples per event, well purging and sampling method(s), purge water disposal methods, QA/QC measures, analytes, and other key assumptions affecting the bid price.

detected in any one well above the SHS during the quarter (if needed); and treatment and disposal documentation for waste generated.

Milestone D – Contaminant Fate-and-Transport Modeling. After completing groundwater monitoring well installations and sampling (Milestones B and C), and if the new wells contain detectable concentrations of one or more dissolved-phase constituents above respective PADEP SHS, quantitative contaminant fate-and-transport modeling shall be developed to calibrate to current conditions and predict future contaminant distribution. The costs for the fate-and-transport modeling efforts will be separated into Milestones D1 and D2 on the Bid Cost Spreadsheet (Attachment 2). **Note: One or both of these milestones shall not be completed if the detected concentrations of the dissolved-phase constituents do not exceed SHS-MSCs in the shallow overburden and/or bedrock groundwater.**¹⁸

Milestone D1 shall only include fate and transport modeling of the shallow overburden groundwater zone, and Milestone D2 shall only include fate and transport modeling of the bedrock groundwater.

Prior to implementing this task, the selected consultant shall contact the PADEP project officer for his/her input on the type of modeling to be performed. Use of the PADEP New Quick Domenico model may be appropriate for any modeling of the shallow overburden groundwater; however, is not appropriate for bedrock groundwater. Therefore, each bid shall assume the use of New Quick Domenico for the modeling effort in the shallow/overburden¹⁹ and each bid must assume the use of MT3D coupled with MODFLOW to be used for the bedrock aquifer. Bidders are invited to recommend a different fate and transport model for the bedrock groundwater; however, the fixed price cost provided for Milestone D2 on the Bid Cost Spreadsheet (Attachment 2) shall be based on the use of MT3D and MODFLOW modeling approach. If a bidder is recommending an alternative fate and transport model for the bedrock groundwater, bidder shall include the cost difference within the text of the bid, along with the rationale for this alternative model.

Based on the available document record, it appears that no data have been collected concerning the hydraulic properties of either the shallow/overburden groundwater or bedrock aquifer to date. Therefore, the fixed-price cost under Milestones D1 and D2 shall include conducting single well slug testing for both the shallow overburden and bedrock groundwater in accordance to accepted industry standards and reduce / evaluate the data using appropriate methods. For the purpose of its bid, the bidder shall perform slug tests on three shallow overburden monitoring wells and three bedrock monitoring wells, and each bid must identify the wells to be used for slug testing, rationale, and provide a description of the proposed slug test procedures and the planned techniques for reducing the data (e.g., Bouwer and Rice slug test solution for determining the hydraulic conductivity of unconfined aquifers with completely or partially penetrating wells [1976]). Documentation of the slug testing methods, results, and

¹⁸ The successful bidder will only be reimbursed for milestones actually required and completed.

¹⁹ Should the PADEP subsequently disagree with the use of Quick Domenico, such work to perform alternative fate & transport modeling will be considered an out-of-scope task under the Fixed-Price Agreement, which will require Solicitor and PAUSTIF approval of a work plan and cost estimate before beginning the work.

conclusions shall be provided in the SCR / RAP (Milestone H), and the slug testing results shall be utilized in the fate-and-transport modeling described in this milestone.

The fate-and-transport modeling completed under D1 and D2 shall utilize the data generated from the slug testing and any relevant historical site characterization data. Each bidder shall describe in detail the specific proposed approach to completing the fate and transport modeling for this site. The fixed-price cost shall include documenting the modeling effort in the SCR / RAP. This documentation shall describe all model input/output, provide a thorough explanation of model construction, justify all input parameters, and include a detailed discussion of the modeling results and conclusions regarding current and predicted future plume stability (or lack thereof).

Milestone E – Soil Vapor Study. Soil vapor sampling has been completed during previous characterization activities; however, PADEP does not believe the existing soil vapor monitoring points (i.e. SVP-01 and SVP-02) are properly located and constructed. Therefore, additional characterization of the vapor intrusion at the Site is required, and that this work should not be completed until Milestones A, B, and C have been completed, so that the new soil vapor points can be appropriately positioned and constructed.²⁰

Under this task, bidders shall provide a fixed-price cost for abandoning existing soil vapor monitoring points SVP-01 and SVP-02, and installation of two new soil vapor monitoring points. It is anticipated that the new soil vapor monitoring points would be installed at the presumed source area (Tank #008) and one in between the source area and the existing convenience store, close to the footprint of the convenience store. **Each bid must identify the proposed locations for the two soil vapor monitoring points on a site drawing, including the depth and rationale for each location and depth.**²¹

The successful bidder shall seek PADEP concurrence on the scope of the study before implementing this work. The work shall be consistent with the requirements, guidance, and decision matrices in the *Land Recycling Program Technical Guidance Manual – Section IV.A.4, Vapor Intrusion into Buildings from Soil and Groundwater*.

Each of the two newly installed soil vapor monitoring points and existing SVP-03 shall be sampled twice with each sampling event separated by a period of at least four (4) weeks. Each soil vapor sample shall be collected in pre-certified Summa canisters supplied by the analytical laboratory. The Summa canisters must be fitted with a properly calibrated regulator to ensure the flow into the canister does not exceed 200 ml/min. All soil vapor samples shall be submitted to a PADEP-accredited laboratory for analysis of the PADEP post-March 2008 unleaded gasoline parameters (BTEX, MTBE, cumene, naphthalene, 1,2,4-TMB, and 1,3,5-TMB) using appropriate analytical methods and detection levels. Soil vapor samples shall be analyzed by Method TO-15. Appropriate QA/QC samples shall also be collected and analyzed for the same

²⁰ PADEP makes certain recommendations in the agency's 11/13/12 letter; however, PADEP should be consulted prior to final replacement vapor point placement.

²¹ Should additional soil vapor monitoring points be needed to complete characterization of the indoor vapor intrusion, such work will be considered an out-of-scope task under the Fixed-Price Agreement, which will require Solicitor and PAUSTIF approval of a work plan and cost estimate before beginning the work.

unleaded gasoline compounds.²² The soil vapor study shall be described in the SCR / RAP along with any recommendations regarding the necessity for an expanded vapor intrusion assessment inclusive of indoor air quality sampling, if appropriate.

Milestone F – Risk Assessment. Under this task, bidders shall provide a fixed-price cost for performing an exposure evaluation & risk assessment relative to soil. A residential / commercial well use survey and evaluation of local groundwater ordinances shall be performed as part of this task, as well as research concerning zoning ordinances, flood zones, and future land use plans for the properties in the area of concern. This task shall include updating the exposure pathway analysis to determine potentially complete and incomplete exposure pathways followed by a risk assessment to compare detected soil contaminant levels against applicable soil screening criteria²³ and then calculate risk-based numerical site-specific standards for screened soil contaminants with respect to any complete exposure pathway that has not already been or will not be able to be eliminated by means of environmental covenants. The successful bidder will be responsible for producing a risk assessment that is approved by PADEP.

In developing the SOW and costs for this milestone, bidders may assume that groundwater has not been impacted in excess of SHS at the Site POCs and beyond / off-site and soil impacts do not extend off-property.²⁴ Furthermore, the risk assessment may assume non-residential exposure scenarios on the subject property as Solicitor is amenable to restricting future property use to non-residential purposes through ECs.²⁵ Other ECs may or may not need to be assumed by the risk assessment in order to ensure safe conditions into the future.

In addition, the selected bidder shall obtain characterization information and data from Turkey Hill, its consultant (Liberty) or PADEP so the information can be accounted for, as appropriate, in the Risk Assessment.

The risk assessment shall encompass an exposure assessment, toxicity assessment, and risk characterization. The identification of exposure pathways for the site shall be based upon guidance from the American Society for Testing and Materials (ASTM) and the United States Environmental Protection Agency (USEPA), as required by Act 2, Section 250.404. The exposure pathway analysis shall consider these four pathway elements:²⁶

- A source and mechanism of release;
- A retention or transport medium (e.g., groundwater);

²² Each bidder's approach to implementing Milestone E shall clearly identify the number of sampling events, number of samples per event, purging and sampling method(s), QA/QC measures, analytes, and other key assumptions affecting the bid price.

²³ Based on discussions with the PADEP, constituent concentrations are to be screened against the USEPA RSLs and not against the PADEP Statewide Health Standards (SHS). Only those constituents that do not screen out against the risk-based screening levels remain as COPCs for the exposure pathway analysis and/or demonstrating attainment of the PADEP SHS or a risk-based numeric Site Specific Standard.

²⁴ If it has been determined that concentrations of the COC exceed SHS in off-site groundwater and off-site soil, modifications to the risk assessment would be considered an out-of-scope task under the Fixed-Price Agreement, which will require Solicitor and PAUSTIF approval of a work plan and cost estimate before beginning the work.

²⁵ An EC has already been drafted restricting site to non-residential.

²⁶ All four elements are necessary for an exposure pathway to be deemed complete; otherwise, the pathway is not complete and there is no risk.

- A point where a receptor can contact the impacted medium (e.g., a drinking water well); and
- A mechanism (exposure route) by which the receptor contacts the impacted medium (e.g., ingestion).

The chemicals of potential concern (COPCs) will be those constituents whose concentrations in soil and groundwater do not screen out when compared to the USEPA Regional Screening Levels (RSLs). (i.e., if the maximum of a chemical constituent is less than the respective RSL, it is not a COPC). Exposure point concentrations (EPCs) shall be derived for COPCs by statistical analysis (maximum concentrations shall not be used for EPCs).

Exposure pathways for the identified COPCs shall then be evaluated to determine if the pathway is complete or can be rendered incomplete through the application of pathway elimination measures, i.e., institutional and/or engineering controls. For any exposure pathways that cannot be eliminated by means of institutional and/or engineering controls, a toxicity assessment and risk characterization shall be performed. The determination of whether exposure to a COPC will cause adverse health effects in exposed individuals shall be evaluated based on available toxicity information and regulatory limits, and, if required, risk-based numeric Site-Specific Standards shall be developed.

For carcinogenic substances, cancer slope factors developed by the USEPA shall be used to assess the increased probability of developing cancer following exposure to a chemical. For non-carcinogenic (or systemic) substances, reference doses developed by the USEPA shall be used to estimate potential for adverse effects other than cancer. The COPCs that yield an adverse risk level shall be further evaluated during the risk characterization step, which shall combine the components of exposure (i.e., estimate of intake) and toxicity to estimate potential risk for the completed exposure pathways.

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

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

Milestone G – Conceptual Site Model. Under this task, bidders shall provide a fixed-price cost for updating the conceptual site model (CSM) for the Site and its vicinity based on evaluating the results of the site characterization tasks outlined above. Information contained in the prior SCR may also be referenced, although bidders are reminded that this report was not approved by PADEP.

Information considered in developing the CSM shall consist of, but should not necessarily be limited to, stratigraphic and lithologic characteristics / relationships; groundwater elevations and flow direction; hydrogeologic controls on groundwater movement and contaminant transport; intrinsic aquifer parameters; the distribution of hydrocarbon contaminants in soil and groundwater; evaluation of potential sensitive receptors, and consideration of the contaminant fate-and-transport modeling results. The CSM shall be presented and discussed in the SCR / RAP.

Milestone H – Prepare a Draft and Final Combined SCR / RAP. Upon completing Milestones A through G described above, the selected consultant will prepare the combined SCR / RAP for review and comment by the Solicitor and PAUSTIF. This SCR / RAP shall contain all necessary information required under 25 PA Code §§245.309, 245.310, and 245.311 and be of sufficient quality and content to reasonably expect PADEP approval. Each bidder's project schedule shall provide two (2) weeks for Solicitor and PAUSTIF review of the draft document. The final SCR / RAP shall address comments received from the Solicitor and PAUSTIF on the draft report before it is submitted to the PADEP for its review.²⁷

The combined SCR / RAP shall document, describe, and evaluate all findings provided from Milestones A through G above and incorporate information and data from the previous site documentation as necessary to comply with the regulatory requirements for and to obtain PADEP approval of these documents. In addition, the selected bidder shall obtain the March 2013 NORR report and associated subsequent characterization information and data from Turkey Hill, its consultant (Liberty) or PADEP so the information can be included in the SCR / RAP.

For the RAP portion of the document, bidders may assume that the groundwater is not impacted and the risk assessment will find that no further remediation is required for soils and the RAP, therefore, will state that no further remediation will be required.²⁸ The comprehensive document shall also: (a) contain all necessary and appropriate figures, tabulated data, and appendices; (b) reference the selected remedial goal for soil and groundwater; (c) discuss the recommended site closure strategy and its viability for achieving the remedial goal within a reasonable time frame; (d) identify the proposed point-of-compliance (POC) monitoring wells; (e) present a detailed schedule for implementing the recommended remedial approach (if applicable); and (f) provide the proposed post remedial care plan (PRCP) as required in 245.311(a)(12) due to the reliance on activity and use limitations that need to be conveyed in the EC and by EC waivers. In addition, since the PADEP may prefer that the draft EC language be included in the SCR / RAP, the draft ECs shall be a component of the SCR / RAP when it is submitted for review.²⁹ According to the PADEP's Northeast Regional Office, the SCR / RAP must be sealed by a Professional Geologist in the Commonwealth of Pennsylvania, and may also require the

²⁷ Addressing potential PADEP comments on the SCR / RAP is not a component of this RFB. Should addressing PADEP comments on the SCR / RAP become necessary, the selected consultant will define a scope of work and associated cost at that time for approval by the Solicitor and PAUSTIF.

²⁸ If the Risk Assessment (Milestone F) determines that remediation is required, this work would constitute as a "new condition" under the Fixed-Price Agreement.

²⁹ The PADEP expects the draft environmental covenant language to employ all of the model language found on PADEP's website.

signature and seal of a Professional Engineer registered in the Commonwealth of Pennsylvania (bidders shall refer to state licensing laws to determine if the Professional Engineer seal is required based on the work performed for and documented in the SCR / RAP).

Additional Information

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

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

List of Attachments

1. Remediation Agreement
2. Bid Cost Spreadsheet
3. Site Information/Historic Documents
 - a. Figures 1 through 7
 - b. Additional Site Characterization Report, dated October 18, 2010
 - c. Additional Site Characterization Report/Remedial Action Completion Report, dated November 2009
 - d. 1st & 3rd Qtrs 2008 Quarterly Monitoring Reports
 - e. 1st, 2nd, 3rd, & 4th Qtrs 2007 Quarterly Monitoring Reports
 - f. Supplemental Site Characterization Workplan, dated January 26, 2007
 - g. 1st, 2nd, 3rd, & 4th Qtrs 2006 Quarterly Monitoring Reports
 - h. 2nd, 3rd, & 4th Qtrs 2005 Quarter Monitoring Reports
 - i. 4th Quarter 2004 Quarterly Monitoring Report, dated January 31, 2005
 - j. Site Characterization Report, dated September 24, 2004
 - k. UST Closure Report Form, dated January 16, 2004
 - l. Limited Phase II Environmental Site Assessment, dated August 1995
 - m. Miscellaneous
 - n. Site Characterization Report and Remedial Action Completion Report, dated December 6, 2012, and PADEP Disapproval Letter dated February, 4, 2013