

COMPETITIVE FIXED-PRICE BID SOLICITATION

SUPPLEMENTAL SITE CHARACTERIZATION AND/OR REMEDIAL FEASIBILITY / PILOT TESTING, RAP DEVELOPMENT, SITE REMEDICATION, ATTAINMENT DEMONSTRATIONS, RACR PREPARATION AND SITE RESTORATION

**MILK TRANSPORT, INC.
99 CRANBERRY ROAD
PINE TOWNSHIP, MERCER COUNTY, PENNSYLVANIA 16127**

PADEP FACILITY ID #43-27468 PAUSTIF CLAIM #2010-0074(F)

January 15, 2013

This “Bid to Result”¹ Request for Bid (RFB) Solicitation has been issued by the Pennsylvania Underground Storage Tank Indemnification Fund (PAUSTIF or “Fund”) on behalf of the Claimant, Milk Transport, Inc. (“MTI facility” or “MTI property”), that hereafter is referred to as “Solicitor”.² The MTI facility is located at 99 Cranberry Road in Pine Township, Mercer County, Pennsylvania and formerly supported commercial trucking operations including fleet maintenance. The facility has been inoperative and vacant since December 2007. Figure 1 depicts the location of the MTI facility on a 7.5-minute USGS topographic quadrangle and Figure 2 presents a current site plan.³ In general, this RFB solicits a “to-closure” quote and scope of work (SOW) that involves activities leading up to, and including, a successful demonstration of attaining the Pennsylvania Department of Environmental Protection (PADEP) Statewide Health Standards (SHS) and securing a PADEP Relief of Liability (ROL) followed by site restoration.

More specifically, the Solicitor has elected to pursue site environmental closure under Pennsylvania’s storage tank rules and regulations based on attaining the current PADEP Act 2 SHS Medium Specific Concentrations (MSCs) for a used aquifer in a *non-residential* setting for soil and groundwater.⁴ The successful bidder will be expected to achieve these site closure objectives and secure a ROL under PADEP Act 2 regulations.

The Solicitor requests a written approach SOW, schedule and firm fixed-price bid for achieving the RFB Act 2 closure objective via the outlined work steps (Milestones A through H). All work shall be performed in accordance with applicable PADEP rules, regulations, directives, and guidance. Milestones A through H will be embodied in a Fixed-Price Agreement (see Attachment 3) to be executed by the Solicitor and the selected consultant. Although not a party to the Agreement, the Fund will reimburse 100 percent of the reasonable, necessary and appropriate costs, not to exceed claim limits, referenced in the Milestone Payment Schedule specified in Section 5 below and as incorporated into the signed Fixed-Price Agreement. The RFB milestones are listed below and are described in Section 4.

- Milestone A. Quarterly Groundwater Monitoring, Sampling and Reporting;
- Milestone B. Supplemental Site Characterization Activities and Reporting;

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 Scope of Work” RFBs).

² Solicitor contact shall be made through legal counsel as follows: Russell Warner, Attorney at Law, MacDonald, Illig, Jones & Britton LLP, 100 State Street, Suite 700, Erie, PA 16507.

³ Figures referenced in this RFB (1, 2 and 3) are provided in Attachment 4.

⁴ SHS to be attained for PADEP’s current short-list of diesel fuel parameters.

- Milestone C. Preparation and Submittal of a Draft and Final Remedial Action Plan;
- Milestone D. Implementation of Remedial Solution;
- Milestone E. Soil Attainment Demonstration;
- Milestone F. Groundwater Attainment Demonstration;
- Milestone G. Preparation and Submittal of a Draft and Final Remedial Action Completion Report;
and
- Milestone H. Site Restoration.

Please note that a bidder's response to this RFB Solicitation Package means **bidder has accepted all the contractual terms and work requirements** (for example, but not limited to, any report submittal deadlines) **unless explicitly stated to the contrary in the bid response**. However, each bidder is still **expected to describe its SOW and approach to fully accomplish the task and project objectives**.

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 Deb Cassel, Contracts Administrator. Bid responses will only be accepted from those firms who attended the mandatory pre-bid site meeting (see Section 7). The ground address for overnight/next-day deliveries is ***ICF International, 4000 Vine Street, Middletown, PA 17057, Attention: Deb Cassel***. The outside of the shipping package containing the bid response **must be clearly marked and labeled with "Bid – Claim #2010-0074 (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. Firms mailing bid responses should allow adequate delivery time to ensure timely receipt of their bid package.

The bid response **must be received by 3:00 PM, on Tuesday, February 19, 2013**. Bids will be opened immediately after the 3:00 PM deadline on the due date. Any bid packages 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 Fund's third party administrator, ICF's office is closed on the bid response 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 in a manner consistent with the evaluation process described in the PAUSTIF Competitive Bidding Fact Sheet, which can be downloaded from the PAUSTIF website (see <http://www.insurance.pa.gov>). Among other factors, the bid evaluation will consider total bid cost, schedule, discussion of technical approach, qualifications, and contract terms and conditions. Technical approach and total bid costs will be the most heavily weighted criteria in the evaluation. Key technical considerations for the bid evaluation are expected to include, but are not necessarily limited to, indications of how well the bidder has:

- Reviewed and understood the historical site documentation.
- Assessed the historical site documentation and has proposed a technically sound and justifiable SOW for completing the supplemental site characterization / remedial feasibility testing work.
- Considered, developed and proposed a reasonable, necessary and appropriate plan for site remediation that will achieve site closure under the SHS in an efficient and cost-effective manner.
- Instilled confidence that it will be able to demonstrate attainment of a SHS cleanup and obtain a PADEP ROL for this site.
- Addressed all requirements of Milestones A through H, including the requirement to prepare, submit and gain PADEP approval of a Remedial Action Completion Report (RACR).

- Designed a project approach and schedule that continually keeps the project goal in mind throughout.

While the Technical Contact will assist ICF, PAUSTIF, and the Solicitor in evaluating the bid responses, it is the Solicitor who will ultimately select the consultant with whom it will negotiate a mutually-agreeable remediation agreement. The Technical Contact will also assist the Solicitor in communicating its choice of the successful bidder. Notification of bid selection will likely occur within six (6) weeks after receiving the bids.

1. ICF, SOLICITOR, AND TECHNICAL CONTACT INFORMATION

<u>ICF International</u>	<u>Solicitor</u>	<u>Technical Contact</u>
Mr. Ronald Moore ICF International 4000 Vine Street Middletown, PA 17057	Milk Transport, Inc. c/o Russell Warner Attorney at Law MacDonald, Illig, Jones & Britton LLP 100 State Street, Suite 700 Erie, PA 16507	Mr. Robert D. Breakwell, P.G. Excalibur Group, LLC 1193 State Road Monessen, PA 15062 rbreakwell@excaliburpllc.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 be directed **in writing only** to the Technical Contact, not to the Solicitor or PAUSTIF. Bidder questions must be received no later than five (5) calendar days prior to the due date for the bid. Bidders shall not contact or discuss this RFB with the Solicitor, USTIF, ICF, or the PADEP unless approved by the Technical Contact. However, this RFB may be discussed with subcontractors and vendors to the extent required for preparing a responsive bid. If a bidder has specific questions for the PADEP, such questions shall be submitted only to the Technical Contact, who will forward the questions to PADEP. The PADEP may choose not to reply to questions it receives, or may not reply in time for its 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 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.

2. HISTORICAL AND BACKGROUND DOCUMENTS

Attachment 1 of this RFB contains several historical and background documents provided to familiarize the bidder with previous and current site conditions and with the methods and results from the site characterization efforts completed to date. These documents consist of the following:

- Attachment 1A – Phase I Environmental Site Assessment Report, Moody and Associates, Inc., March 19, 2010
- Attachment 1B – Phase II Environmental Site Assessment Report, Moody and Associates, Inc., May 10, 2010
- Attachment 1C – PADEP Notice of Violation, October 13, 2010

- Attachment 1D – Site Characterization Report (SCR), Moody and Associates, Inc., October 14, 2011
- Attachment 1E – Remedial Action Plan (RAP), Moody and Associates, Inc., December 2, 2011
- Attachment 1F – PADEP letter disapproving the SCR / RAP, February 3, 2012
- Attachment 1G – PADEP SCR / RAP disapproval clarification letter, March 1, 2012
- Attachment 1H – Site Characterization Report Addendum (SCRA), Moody and Associates, Inc., August 2, 2012
- Attachment 1I – PADEP September 25, 2012 letter approving the SCRA
- Attachment 1J – November 30, 2012 letter requesting a PADEP extension to submit the RAP
- Attachment 1K – PADEP December 4, 2012 letter approving the extension request for submitting the RAP

3. GENERAL SITE BACKGROUND AND DESCRIPTION

General Site History and Site Features

The MTI property is located at 99 Cranberry Road in Pine Township, Mercer County, Pennsylvania (Figure 1) and previously consisted of two parcels which collectively comprised an area of approximately 54.2 acres. However, in September 2010, MTI sold the majority of its property to CANNUTCO, LP (CANNUTCO), including a 50,400 ft² warehouse building. Consequently, the current MTI property consists of an area encompassing only about 4.86 acres which is denoted as “Proposed New Lot #2” in Figure 3 with CANNUTCO apparently occupying the remaining area. It is our understanding that the access easement to both properties is shared.⁵

Trucking operations, including fleet maintenance, reportedly began in 1955 and continued until December 2007 when MTI ceased operations and filed for bankruptcy. After December 2007, the property remained vacant until the September 2010 property transaction with CANNUTCO⁶, although we understand that the remaining MTI parcel is still vacant. Existing site features on the current MTI parcel consist of a 21,184 ft² truck garage with four vehicle maintenance bays, a wash bay, parts storage rooms and offices, and a fuel shed (pump building) formerly used for dispensing diesel fuel. The MTI property also supports a water supply well located along the northeast side of the truck garage with a total depth of approximately 87 feet below grade (ft-bg) and a reported static water level and yield of about 30 ft-bg and 30 gallons per minute, respectively. Apparently, the water supply well was used for facility operations (e.g., truck wash, restrooms) and never for consumption. Additionally, ten groundwater monitoring wells (MW-1, MW-2, MW-2D and MW-3 through MW-9) and two soil vapor monitoring points (SV-1 and SV-2) exist on the property and were installed during various phases of site characterization work completed by the current consultant of record, Moody and Associates, Inc. (Moody), in July and August, 2011 and in May and June 2012. Key on- and off-property features are depicted in Figures 2 and 3.

The former MTI facility is connected to the public sewer system via a lateral that extends from the main sewer line along Cranberry Road to a manhole at the northwest side of the truck garage building. The property is also supplied with natural gas and the lateral from the main piping along Cranberry Road enters the truck garage near the northern building corner. Historical documents indicate that the facility's

⁵ Subsurface impacts from the release of petroleum product on the MTI property are not expected to extend onto the recently formed and adjacent CANNUTCO parcel based on the location of the contaminant source and existing site characterization data as summarized later in this section.

⁶ The nature of CANNUTCO's operations is unknown.

natural gas needs may have once been provided, or supplemented, by an on-property natural gas well. Overhead electric (and probably telephone) lines appear to enter the MTI property from the northeast although it is unclear where they connect to the truck garage. Available information suggests that the facility never connected to the Pine Township municipal water supply that reportedly services this area.⁷ Storm drains at the northeast corner of the former MTI warehouse building (now owned by CANNUTCO) conveyed storm water to a retention pond located south of the warehouse. The retention pond discharged to a wooded portion of the property further to the south where an unnamed tributary to Wolf Creek is located.⁸ CANNUTCO may still manage storm water in this manner. The locations of buried and overhead utilities are depicted in Figures 2 and 3.

Parcels adjoining the MTI property consist of mixed commercial, agricultural and residential properties. More specifically, the MTI property is bordered to the west and north by CANNUTCO, to the east by private residences beyond Cranberry Road, and to the south by a pasture with a barn and wooded undeveloped land.

Phase I and Phase II Environmental Site Assessments

A Phase I Environmental Site Assessment (ESA) was completed by Moody in February and March 2010 for a potential property transaction. The scope of the Phase I ESA considered the entire 54.2 acres of property that MTI owned at that time on which the following environmental conditions / concerns were identified:

- Foundry sand and demolition debris were used as fill material for grading the developed portion of the property.
- A 12,000-gallon diesel fuel underground storage tank (UST) was present east of the truck garage (see Figure 2). The diesel fuel UST (tank #001) was reported as being temporarily out-of-service as of 11/18/08 and was subsequently removed as discussed later in this section.⁹
- A 1,000-gallon waste oil UST (tank #002) was present at the west side of the truck garage within a concrete vault. This tank was listed as exempt in 2003 and no information was found in the project record indicating that this tank has either been removed or closed in-place.¹⁰
- A 1,500-gallon motor oil UST formerly existed at the west side of the truck garage although the exact location of this tank is unknown. Apparently, this tank was unregistered and was removed with no documentation in 1992.
- A septic system exists on the property and received untreated waste water from the truck garage and water from the truck wash bay during the period from 1955 to 2002. The septic tank and leach bed were suspected of being impacted with petroleum products. The location of the septic tank and leach bed is reported to be somewhere near the northeast side of the truck garage.
- Nine 55-gallon steel drums were observed that were not properly labeled, staged or stored.
- The grease pits and floors in the garage had significant spills of oil and vehicle maintenance fluids.
- Stained soil with a petroleum odor was observed at the south side of the truck garage where interior floor drains reportedly discharged to the ground surface via two pipes.
- Stained concrete pavement and gravel was noted at the west side of the truck garage.

⁷ Because the facility water supply well was reportedly used only for facility operational needs, we suspect bottled water was purchased for consumption.

⁸ The MTI facility formerly had a PAG-03 permit for discharge of storm water that was not renewed and rescinded by the PADEP in December 2007.

⁹ There was an observation well located within this UST cavity.

¹⁰ There is, or was, an observation well located within, or near, this tank vault.

As warranted by the recognized environmental concerns identified during the Phase I ESA, Moody conducted a Phase II ESA for the MTI property on 3/31/10 and 4/1/10 to further assess potential environmental liabilities. In general, the Phase II ESA activities consisted of the following:

- Collection of soil samples from three borings (TMW-1, TMW-2 and TMW-3) located adjacent to and downgradient of the 12,000-gallon diesel fuel UST, near and in the suspected downgradient direction from the waste oil UST, and near the expected location of the previously removed motor oil UST. Soil samples were analyzed for the PADEP short-list of diesel fuel parameters with the addition of xylenes and total lead.
- Collection of groundwater samples from temporary monitoring wells installed within the three soil borings (TMW-1, TMW-2 and TMW-3) and analysis of the samples for the PADEP short list of diesel fuel parameters including xylenes and dissolved lead.
- Collection of groundwater samples from the on-property water supply well and analysis for an extensive list of over 60 hydrocarbon and chlorinated volatile organic compounds (VOCs) and the eight Resource Conservation and Recovery Act (RCRA) metals.
- Collection of groundwater samples from the observation well located within, or near, the vault for the 1,000-gallon waste oil UST and analyzed for VOCs and the eight RCRA metals.
- Collection of soil samples from six test pits (TP-1 through TP-6) and analyzed for VOCs, the eight RCRA metals and semi-volatile organic compounds (TP-3 and TP-4 only). The test pits were located near the southwest corner of the former MTI warehouse; in the field adjacent to the parking lot near the southeast side of the former MTI warehouse; in the gravel parking lot between the truck garage and warehouse buildings; within the asphalt parking lot behind the truck garage; along the northeast side of the truck garage near the old septic tank; and in the asphalt parking lot at the east side of the truck garage.
- Collection of groundwater samples from test pit TP-4 and analyzed for VOCs and RCRA metals. The water that accumulated within test pit TP-4, excavated within the asphalt parking lot behind the truck garage, reportedly had a sheen but no odor.¹¹
- Six surface soil samples (SS-1 through SS-6) were collected at a depth of 0 to 6-inches below ground surface and analyzed for VOCs and RCRA metals. The surface soil samples were obtained near the eastern floor drain discharge at the south side of the truck garage; near the western floor drain discharge at the south side of the truck garage; under an empty drum near the western edge of the developed facility property; under an empty drum beyond the west side of the truck garage; from a groundwater seep discharging onto the adjacent property to the south; and from an area where the septic line may have discharged along the northern property boundary.

In addition to the above, an attempt was made to collect a groundwater sample from the observation well located within the tank cavity of the 12,000-gallon diesel fuel UST. However, the well was dry at the time of sample collection.

The Phase II ESA found only contamination in the soil and groundwater samples collected from soil boring / temporary well TMW-1 positioned adjacent to and downgradient of the 12,000-gallon diesel fuel UST. Because of the elevated levels of benzene, 1,2,4-TMB and 1,3,5-TMB in soil, and benzene, ethylbenzene, naphthalene, 1,2,4-TMB and 1,3,5-TMB in groundwater at this location exceeding the applicable SHS MSCs, a release of diesel fuel from the tank and/or dispensing system and/or surface spills was characterized as “suspected”. Consequently, the Phase II ESA report recommended, in part, removal of the UST, further site characterization and clean-up of impacted soil and groundwater.

Additional information is provided in Moody’s 3/19/10 Phase I ESA Report and 5/10/10 Phase II ESA Report that are provided in Attachments 1A and 1B, respectively. The PADEP was subsequently notified

¹¹ Although not mentioned in the Phase II ESA report, the sheen is assumed to be petroleum-related.

of a reportable release and the Department issued a Notice of Violation (Attachment 1C) to MTI on 10/13/10 requesting site characterization and submittal of a SCR.

Interim Remedial Activities (UST System Removal)

On 7/15/11, Moody personnel provided oversight for the removal of the 12,000-gallon diesel fuel UST, the two diesel fuel dispensers, and associated product piping. Because no UST Closure Report, or reference to such a report, was found in the available project record, it is unclear whether a closure report was ever prepared and submitted to the PADEP. Consequently, information regarding closure of the diesel fuel UST system is limited to the brief description provided in Moody's 10/14/11 SCR. According to the SCR, approximately 1,100-gallons of residual product and water were evacuated from the tank and disposed off-property prior to its removal. The concrete pad covering the UST was subsequently removed and the pea gravel fill material surrounding the UST was excavated. The top and sides of the steel tank were then cut and the tank was cleaned of residual product. No groundwater, free product or bedrock was encountered during the UST removal work. The dimensions of the final excavation measured approximately 36 ft by 16 ft by 16 ft deep. All UST system components were disposed off-property. Although the SCR does not mention the condition of the UST or piping when removed and no release mechanism was identified, color photographs taken during the tank decommissioning work suggest diesel fuel staining of the soil beneath each of the two product dispensers. Aside from removing the pea gravel surrounding the diesel fuel tank, there is no indication that the over-excavation of impacted soil beyond the perimeter of the existing UST cavity, or beneath the product dispensers, was ever performed.

The SCR description indicates that five (5) confirmatory soil samples were collected after the diesel fuel UST was pulled from the excavation. One soil sample was obtained from each excavation sidewall and one sample was collected from beneath the diesel dispensers area and analyzed for the PADEP short list of diesel fuel parameters. Although the excavation sidewalls at the areas of the product piping and near the fuel shed reportedly indicated visual and olfactory evidence of petroleum impacts, the laboratory results for the confirmatory soil samples were "non-detect" for all diesel fuel parameters tested. Note, however, that the sample collection criteria and protocol are unclear and do not seem to adhere to the confirmatory sampling protocol specified by the PADEP UST closure requirements. For example, no soil samples were collected from the base of the excavation as required even though no bedrock or groundwater was encountered. Also, whether or not the samples were collected in a biased fashion is unknown.

Considering the limited information available for the removal of the 12,000-gallon diesel fuel UST system, it can only be surmised that the diesel spill currently being addressed under Claim #2010-074(F) may encompass undocumented release(s) from the dispensers, fuel shed pumping equipment and / or related piping. It is possible that residual source soil remains in-place surrounding this UST system considering the photographs indicating staining beneath the dispensers, other reported soil staining and odor, no indication of over-excavation activities, and given that the fuel shed apparently remains on the property.

Summary of Site Characterization Activities and Results

In response to the petroleum contamination discovered during the Phase II ESA activities, and as confirmed during the 7/15/11 removal of the diesel fuel UST system, Moody conducted site characterization activities from July through October 2011 to determine the magnitude and extent of subsurface impacts from the diesel fuel release. Moody's investigations were documented in a SCR (Attachment 1D) that was submitted to the PADEP for review and comment on 10/14/11. The PADEP subsequently disapproved the SCR in a letter dated 2/3/12 with follow-up clarifications provided to Moody in the Department's superseding 3/1/12 letter. Those letters are provided in Attachments 1F and 1G, respectively and generally cited the following site characterization deficiencies:

- The horizontal extent of contamination has not been fully delineated downgradient of the truck garage building.
- The potential for vapor intrusion in the truck garage building was not characterized.
- Groundwater samples were not collected from the downgradient off-property well identified as PA Well ID 132104 located on the adjacent Courtney property, and a technical explanation was not provided as to why this well was not sampled.
- Copies of plans relating to worker health and safety and quality assurance / quality control (QA/QC) were not provided.
- The SCR stated that a SHS site closure will be pursued for soil and groundwater but did not indicate whether closure will be for a residential or non-residential setting.

To address these deficiencies, Moody implemented additional site characterization activities in May, June and July 2012 and issued a SCRA (Attachment 1H) to the PADEP on 8/2/12. The SCRA was approved by the PADEP in a Letter dated 9/25/12 (Attachment 1I) that suggested the following issues be addressed:¹²

- Potential migration of groundwater contamination to the on-property water supply well. Although the facility water supply well has been sampled three times through July 2012 and no target diesel fuel analytes have been detected, the PADEP is concerned that should the now vacant facility be sold, resumed pumping may draw contaminants into the well.¹³
- Potential migration of groundwater contamination to the adjacent Courtney parcel south of the MTI property. The PADEP states, however, that because monitoring wells MW-4 and MW-6 are located between the former UST system source area and the Courtney property, and because no constituents of concern have been identified in these wells, MW-4 and MW-6 could serve as point of compliance (POC) / sentry wells.

The following subsections provide a brief overview of the site characterization activities, methods and results.

Site Remediation Goal

According to the SCRA, the Solicitor intends to pursue site closure for diesel fuel constituents in soil and groundwater under the PADEP Act 2 SHS MSCs for a used aquifer in a non-residential setting.

Sensitive Receptor Survey

As part of the site characterization activities, Moody conducted a limited receptor survey that included a search for local private water supplies utilizing the PADEP's PaGWIS groundwater supply database. According to the SCR, that research identified 10 off-property private water supply wells within a 2,500-ft radius of the MTI property. Of the water supply wells identified, the nearest well is located about 500-ft southeast (crossgradient) of the former diesel fuel UST source area on an adjacent parcel, two wells are present at a distance greater than 900-ft to the southeast (crossgradient), and the remaining wells are located approximately 1,200- to 2,500-ft north and east (upgradient to crossgradient) of the UST source area. Moody also visited the adjacent parcel to the southeast to determine water use on that property. According to Moody, the property currently supports a barn and pasture and the owner claimed that the well is used only for watering livestock.

¹² The Department noted that these are not conditions of SCR approval, but rather are provided for guidance related to remedial action planning.

¹³ Even though the water supply well was reportedly used only for facility operations and not consumption, Moody had contacted the Bankruptcy Administrator to secure permission to seal the well to eliminate this potentially complete exposure pathway. However, permission was denied because the well is the only source of water on the property. As previously mentioned, however, municipal water is available in the area of the MTI property.

The nearest surface water body to the MTI property is an unnamed tributary to Wolf Creek located about 1,500 feet to the west and south. The SCR indicates that no wetland areas have been identified on the site based on field investigations completed by Moody in 2010 and a review of the county soil survey. However, the Phase I ESA Report indicates obvious wetlands south and west of the MTI property.

Overview of Site Geology and Hydrogeology

Data provided from site soil borings and monitoring well borings indicate that unconsolidated deposits beneath the study area consist of surficial fill materials ranging in depth from approximately 1.0 foot (GP-6) to 13.0 feet (GP-8 – former diesel fuel UST cavity) with an average thickness of roughly 2.3 feet. According to drilling logs, the fill materials are comprised of brick fragments, gravel, sand and silt. Also, according to the Phase II ESA Report, test pits completed beneath the MTI property also encountered clay, sandy clay, sandstone boulders, concrete, ceramic tile, wood and other building materials, automobile parts including oil filters, terra cotta pipe, foundry sand, tires, and unspecified trash. Below the fill materials are Pleistocene Age glacial sediments consisting primarily of clay, sand and gravel deposits with some silt and various hybrid mixtures. Bedrock was not encountered within any of the environmental borings that were advanced to a maximum depth of approximately 60 ft-bg (MW-2), although as previously mentioned, the property water supply well is reportedly completed within bedrock at a depth of about 87 ft-bg. According to the SCR, bedrock beneath the MTI property and vicinity consists of interbedded shale and sandstone belonging to the Pennsylvanian Age Pottsville Group. The SCR provided no structural information for local bedrock.

Hydrogeologic data for the investigation area was produced from on-property shallow monitoring wells MW-1 through MW-9 and from deeper well MW-2D. The shallow wells range in depth from about 22.5 to 26.0 ft-bg, were installed using 10-feet of well screen, and intersect the near-surface water table aquifer. Well MW-2D attains a total depth of approximately 55.0 ft-bg and was also installed using 10-feet of well screen to isolate a deeper zone of the water table aquifer. The depth to groundwater in the nine shallow wells has ranged from approximately 15.6 (MW-1) to 19.6 (MW-5) feet below top of casing (ft-toc) based on the limited gauging data available. The depth to groundwater in deeper well MW-2D ranged from approximately 19.2 to 20.1 ft-toc which is only slightly lower than adjacent shallow well MW-2 suggesting that MW-2D also intercepts the water table aquifer with a possible slight downward vertical hydraulic gradient.

The shallow water table aquifer occurs within the unconsolidated glacial deposits and groundwater movement beneath the study area is toward the southwest to south-southwest in the general direction of the unnamed tributary to Wolf Creek. The average horizontal hydraulic gradient for the water table aquifer was calculated by Moody to be approximately 0.01 ft/ft. There is no evidence in the SCR or subsequent SCRA that aquifer testing, either via slug testing or a pumping test, was ever performed to provide a site-specific estimate for hydraulic conductivity, or other aquifer parameters, and a default value of hydraulic conductivity was apparently used for contaminant fate and transport modeling as discussed below.

Soil Investigations

Moody advanced and sampled seventeen (17) soil borings located adjacent to, and in the vicinity of, the diesel fuel UST including SB-1 and SB-2, the borings for wells MW-1 through MW-7, and GP-1 through GP-8. The soil borings were completed at depths ranging from 16 to 26 ft-bg and samples were obtained from depth intervals ranging from 7-8 to 22-24 ft-bg.¹⁴ Based on depth to groundwater measurement

¹⁴ One soil sample per boring was apparently collected for laboratory analysis based on the highest organic vapor level measured with a photoionization device (PID) or, if there were no organic vapors or staining / odor, the sample was collected slightly above the estimated groundwater surface or bottom of boring.

data, all of the soil samples appear to have been obtained from unsaturated to periodically saturated (smear zone) soils with the exception of the sample from well boring MW-1 which was likely retrieved from the zone of permanently saturated soil (22-24 ft-bg). Also note that the samples collected from soil borings GP-3 and GP-4 could represent either smear zone or permanently saturated soil. All soil samples were analyzed for the PADEP short list of diesel fuel parameters. Historical soil sampling locations, soil and monitoring well boring logs, soil sample analytical data, and related information are summarized in Moody's 10/14/11 SCR and 8/2/12 SCRA.

Laboratory analytical results for the soil samples indicate that only four of the seventeen samples, those collected from soil borings GP-6 and GP-7 and from well borings MW-2 and MW-5, contained target diesel fuel compounds that exceeded the applicable SHS MSCs. These four borings are positioned hydraulically downgradient of the former diesel fuel UST cavity. The following list provides more specific information regarding these four soil samples:

- *Well Boring MW-2* - This probable smear zone sample was collected from approximately 17 to 18 ft-bg and contained concentrations of benzene (0.991 mg/kg), naphthalene (11.17 mg/kg), 1,2,4-TMB (56.68 mg/kg) and 1,3,5-TMB (17.44 mg/kg) that exceed the selected standard referenced above. Field screening using a PID indicates that the highest organic vapor level was measured along the 17 to 18 ft-bg depth interval from which the sample was collected (1,817 parts per million [ppm] vapor). Soil samples retrieved from the MW-2 location also exhibited a slight to strong diesel fuel odor along the entire length of the boring.
- *Well Boring MW-5* - This sample collected from approximately 18 to 20 ft-bg probably represents smear zone soil and contained levels of 1,2,4-TMB (60.05 mg/kg) and 1,3,5-TMB (23.95 mg/kg) that exceed the selected standard. PID field screening indicates that the highest organic vapor level was measured within the 18 to 20 ft-bg sample depth interval (1,268 ppm vapor) and dark staining with a slight to strong diesel fuel odor were observed from 18.5 to 22.5 ft-bg.
- *Soil Boring GP-6* - This sample collected from approximately 18 to 19 ft-bg most likely represents smear zone soil and contained levels of benzene (7.58 mg/kg), naphthalene (27.80 mg/kg), 1,2,4-TMB (191.7 mg/kg) and 1,3,5-TMB (49.99 mg/kg) that exceed the selected standard. PID field screening indicates that the highest organic vapor level was measured within the 18 to 19 ft-bg sample depth interval (1,491 ppm vapor) with a slight petroleum odor beginning at 10 ft-bg that became stronger with depth.
- *Soil Boring GP-7* - This probable unsaturated zone sample was collected from approximately 7 to 8 ft-bg and contained concentrations of benzene (5.14 mg/kg), 1,2,4-TMB (126.00 mg/kg) and 1,3,5-TMB (32.44 mg/kg) that exceed the selected standard. PID field screening indicates that the highest organic vapor level was measured within the 7 to 8 ft-bg sample depth interval (3,430 ppm vapor) with a strong petroleum odor beginning at about 6 ft-bg to the bottom of the boring.

Analytical results provided for soil samples collected from the remaining thirteen boring locations were mostly non-detect or contained target diesel fuel constituents below the selected standard.

In general, the primary constituents of concern in smear zone and unsaturated soil appear to be benzene and TMBs which exceed the selected SHS MSCS for unsaturated and saturated soil by an order of approximately 3x to 31x. The extent of excessive unsaturated and smear zone soil impacts downgradient of the former diesel fuel UST source area appears to have been adequately delineated both horizontally and vertically should a bidder wish to consider soil excavation in its site remedial strategy. According to field screening and soil analytical data produced from borings GP-1 and GP-4 adjacent to the northeast side of the truck garage building, excessively impacted soil requiring remediation likely does not extend beneath the building footprint. Also, because of questionable / uncertain confirmatory sample collection methods following removal of the diesel tank, it is possible that soil impacts exceeding the applicable SHS MSCs could also remain in the UST system source area despite the sampling results from adjacent well boring MW-7, which showed only a low level of 1,2,4-TMB (0.499 mg/kg), and from boring GP-8 advanced near the center of the former UST cavity which was non-detect for all target analytes.

Groundwater Characterization

During the site characterization work conducted by Moody, groundwater samples were collected from the ten site monitoring wells and from the facility water supply well and analyzed for the PADEP short list of diesel fuel parameters. Beginning either in July or August 2011 through July 2012 (most recent sampling event), monitoring wells MW-1, MW-2, MW-2D and MW-3 through MW-7 have each been sampled five times. Additionally, the facility water supply well was sampled on three occasions during the period from August 2011 through July 2012, and three sampling events have been completed for new point-of-compliance (POC) wells MW-8 and MW-9 in May, June and July 2012.

A review of the historical groundwater analytical database reveals that no target diesel fuel analytes have been identified at or above the laboratory method detection limits in monitoring wells MW-1, MW-2D, MW-3, MW-4, MW-6 through MW-9, or in the facility water supply well. During the five sampling events for Well MW-2 located immediately downgradient of the former diesel fuel UST cavity, dissolved levels of 1,2,4-TMB and/or benzene slightly above the used aquifer, non-residential SHS MSCs were identified only during the initial July and August 2011 sampling events. During the subsequent three sampling events for MW-2, no target diesel fuel compounds have exceeded the non-residential SHS MSCs with most results reported as non-detect, and no diesel fuel compounds were detected during the most recent July 2012 sampling event. Well MW-5, located further downgradient of the former diesel fuel UST, is the most impacted site well that has consistently contained dissolved levels of TMBs moderately to substantially exceeding the non-residential SHS MSCS during all five sampling events. Historical concentration trends for both 1,2,4-TMB and 1,3,5-TMB in well MW-5 exhibit an overall increasing trend through the July 2012 sampling event. Additionally, well MW-5 has sporadically contained concentrations of ethylbenzene and/or naphthalene slightly exceeding the non-residential standards. Consistent with the soil analytical results, TMBs appear to be the primary constituents of concern in groundwater. Based on the available site record, free-phase hydrocarbons have not been observed within any of the site monitoring wells.

Based on groundwater analytical results for delineation / potential POC wells MW-4, MW-6, MW-8 and MW-9, it appears the PADEP is satisfied that the horizontal extent of the dissolved-phase contaminant plume has been sufficiently defined and appears to be limited to the MTI property. Also, the analytical results provided for deeper well MW-2D indicate that the vertical extent of dissolved-phase contaminants has been delineated. Because dissolved-phase impacts appear to be limited to the MTI property and should not reach the downgradient property boundary at levels exceeding the SHS (as demonstrated through the contaminant fate and transport model discussed below), dissolved contaminants do not appear to be an issue for the SHS site closure. Consequently, it is possible that the PADEP could require only that a groundwater attainment demonstration be recommended in the RAP to be developed under Milestone C. However, as mentioned above, possible future impacts to the facility water supply well located in the site interior will still need to be considered and sealing of this well may need to occur under Milestone H. **Bidders shall propose how they will handle the supply well in their bids for this site closure.**

Vapor Intrusion Assessment

A soil gas study was completed by Moody that included installing two nested soil gas monitoring points, SV-1A / SV-1B and SV-2A / SV-2B, adjacent to the northeast side of the truck garage building where underground utilities are located and between the building and the contaminant source area.¹⁵ Soil gas sampling events were completed in May 2012 and again in June 2012 and the samples were analyzed for the PADEP short-list of diesel fuel parameters. Soil gas analytical results produced from these two

¹⁵ Subsurface sampling intervals in ft-bg for the soil gas monitoring points are approximately 15 to 15.7 (SV-1A and SV-2A), 4.7 to 5.3 (SV-1B), and 6.5 to 7.2 (SV-2B).

events indicate that various target compounds were present in the samples.¹⁶ However, each vapor-phase constituent identified was substantially below its respective PADEP non-residential soil gas screening value.

Conceptual Site Model

Moody completed a revised “conceptual site model” (CSM) for inclusion in the SCRA which essentially represents a contaminant migration / exposure pathway assessment through which Moody qualitatively evaluated current and future potentially complete routes of receptor exposure to the site soil and groundwater petroleum impacts. In general, Moody identified the following potentially complete exposure pathways for soil:

- Direct Contact – Workers who remove the asphalt or gravel and excavate the residually impacted soil could potentially come into contact with contaminants.
- Leaching from Soil to Groundwater – Unsaturated and smear zone soil impacts exceeding applicable SHS MSCs were identified and the depth to groundwater beneath the site has generally been measured within the range of 15 to 20 ft-bg.

The following potential exposure pathways for groundwater were identified and evaluated:

- Potential users of groundwater on-property and downgradient of the property could become exposed through drinking or inhalation - Modeling using Quick Domenico predicted that dissolved petroleum constituents will achieve their respective MSC before leaving the property. Based on these results and the apparent absence of downgradient groundwater users, this pathway is likely incomplete [if the on-property water supply well is sealed].
- Groundwater to surface water – Users of the unnamed tributary to Wolf Creek could potentially become exposed to impacted groundwater through direct contact, consumption of surface water, and ingestion of affected fish. However, contaminant fate and transport modeling predicts that all constituents will be below the SHS MSCs before reaching Wolf Creek which is located about 1,500 ft west to south of the MTI property. Therefore, this pathway is likely incomplete.

Fate and Transport Analysis

Moody completed quantitative contaminant fate and transport modeling using the PADEP’s new Quick Domenico (QD) spreadsheet application which appears appropriate for the sand and gravel water table aquifer. Fate and transport modeling was performed to address all dissolved-phase constituents whose concentrations have exceeded the PADEP SHS MSCs for groundwater including benzene, ethylbenzene, naphthalene, 1,2,4-TMB and 1,3,5-TMB. The QD modeling runs were generated using only the most recent set of July 2012 groundwater analytical results that do not reflect the historical high concentrations for any of the analytes modeled. Therefore, the model predictions should not be viewed as being the most conservative (worst case) that could have been developed had the entire groundwater analytical database been considered. Regarding model input parameters, it appears that the only site-specific data used, or available, were values for hydraulic gradient and source width / thickness measurements. Based on reviews of the SCR and subsequent SCRA, it does not appear that aquifer testing, either via slug testing or a pumping test, was ever performed to provide a site-specific estimate for hydraulic conductivity and a default value was substituted. Also, it appears that the QD modeling relies on default values for fraction organic carbon, porosity and soil bulk density. It should also be noted that for each model run, the K_{OC} value for benzene was used which is much lower than the K_{OC} values for the other

¹⁶ Target compounds detected in the samples included benzene, toluene, ethylbenzene, naphthalene, 1,2,4-TMB and 1,3,5-TMB.

analytes modeled which would be expected to produce a more conservative model (i.e., predict a larger plume for these analytes than likely to actually occur).

Based on the results provided from the contaminant fate and transport modeling, Moody generally predicted that all parameters will attenuate to less than their respective MSC within approximately 350 feet downgradient of the source area and before reaching POC wells MW-8 and MW-9 located near the southwest property boundary.

Recommendations

The 10/14/11 SCR recommended that residual source soil be remediated via excavation and that either a dual phase extraction system or chemical oxidation be used to remediate groundwater impacts. However, after completing additional site characterization activities, **the plan was changed as reported in the 8/2/12 SCRA which simply recommended that residual soil impacts be excavated to enhance the natural attenuation process.**

Remedial Action Plan

In order to address the soil and groundwater impacts identified during the site characterization work, Moody developed a RAP that was submitted to the PADEP on 12/2/11 (Attachment 1E). The PADEP disapproved the RAP (and SCR) in the Department's 2/3/12 letter and follow-up 3/1/12 clarifications letter (Attachments 1F and 1G, respectively). Because the RAP was disapproved, and because additional post-RAP site characterization data is now available as documented in the SCRA, this RFB solicitation contains a task for preparing and submitting a new RAP (i.e., not a RAP Addendum or Revised RAP). As such, this section will only highlight the PADEP's concerns with the existing disapproved RAP along with a brief description of the site remedial strategy that was proposed in that document.

Bidder's should note that to accommodate the PAUSTIF competitive bid process, an extension request to submit the new RAP was filed with the PADEP on 11/30/12 (Attachment J) which was approved by the Department in a letter dated 12/4/12 (Attachment K). The approval letter indicates that the RAP to be prepared by the selected consultant is due to the PADEP on or before 6/30/13.

In general, Moody's 12/2/11 RAP was disapproved by the PADEP for the following key reasons:

- The RAP failed to specify whether the residential or non-residential SHS MSCs would be applied to soil and groundwater. Consequently, the Department noted that it cannot determine if the remedial alternatives considered for this site are appropriate. **Note: this has since been corrected in the subsequent SCRA which identifies the non-residential SHS MSCs for soil and groundwater.**
- Results of treatability, pilot scale studies or other data were not collected to support the proposed site remedy. The PADEP requested performance of a preliminary pilot well test to determine radius of influence, monitoring well size and spacing, and pump size for the proposed remedial system. (To date, no remedial feasibility pilot testing has been performed at the site).
- Analytical methods to be used were not defined.
- Details of the design and construction for the remedial action including operation and maintenance provisions were not fully defined and the engineering design should be reviewed and endorsed by a Professional Engineer licensed in the state of Pennsylvania.

Additional information on the site and surrounding area is included in the background documents provided as Attachments 1A through 1K which are posted with this RFB solicitation on the PAUSTIF web

site.¹⁷ Each bidder should review this historical information carefully along with the information contained in this section. If there is any conflict between the information provided in this RFB and the source documents, the bidder should defer to the source documents. The Solicitor does not represent nor provide any warranty that the information provided with and in this RFB Solicitation is necessarily complete or sufficient for completing the identified scope of work. Therefore, **each bidder should rely and base its bid upon its own evaluation of the information provided.** Each bid must include and describe the bidder's conceptual site model as it pertains and applies to the proposed scope of work.

4. SCOPE OF WORK OBJECTIVES

The Solicitor seeks competitive, fixed-price bids and SOW to complete the eight (8) milestones outlined below 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 ROL from the PADEP. Because this is a results-oriented remediation bid solicitation, each bid response must detail the approach and specific methods for achieving the task/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 task/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 this results-oriented bid solicitation as compared to bids submitted in response to solicitations that define the work scope with greater specificity (referred to as "Defined SOW" RFBs). Conversely, while cost remains a significant factor in the evaluation of 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 USTIF recognize that each bidder may propose a unique path forward for a given site. 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.**

Subsequent to bid award, any modification of the selected consultant's SOW for Milestones A through H will require prior written approval by the Solicitor **and PAUSTIF** through its third-party administrator, and may require PADEP pre-approval. Bidders should also note that this RFB was provided to the PADEP-Northwest Regional Office (NWRO) case manager for review and comment.

The selected consultant's approach to completing its SOW shall be in accordance with generally accepted industry standards / practices and all applicable federal, state, and local rules, guidance, directives, and regulations, including (but not limited to) satisfying 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*

¹⁷ The best scanned-in version of each document available has been provided.

- Pennsylvania's Engineer, Land Surveyor and Geologist Registration Law, P.L. 913, No. 367 Cl. 63.

Each bid must provide the Solicitor and USTIF with a schedule that begins with execution of the Fixed-Price Agreement and ends with site closure under Pennsylvania Act 2 (and the associated ROL 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. The project schedule must also specify no less than two (2) weeks for the Solicitor and USTIF to review and comment on the Supplement to the SCRA and the RAP to be generated under Milestones B and C, respectively. As noted earlier in Section 3, an extension request to submit the RAP was filed with the PADEP on 11/30/12. The Department approved the extension request in its 12/4/12 letter indicating that the RAP is due to the PADEP on or before 6/30/13. The Solicitor and USTIF will also require a minimum of two (2) weeks to review and comment on the RACR to be produced under Milestone G. As appropriate, bid schedules must also include time to address any comments received from the PADEP on the Supplement to the SCRA, RAP and RACR.

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

- Conduct necessary, reasonable, and appropriate project planning and management activities until the project (i.e., 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.¹⁸ 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. Project management costs shall be included in each bidder's pricing to complete all the milestones specified below, as appropriate.
- 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 and purge water shall be disposed in accordance with standard industry practices and applicable laws, regulations, guidance and PADEP NWRO directives (the NWRO shall be consulted for current requirements). Waste characterization and disposal documentation (e.g., manifests) shall be maintained and provided to the Solicitor upon request.
- Be responsible for providing the Solicitor, facility operator and any third parties, as appropriate, with adequate advance notice prior to each visit to the site. The purpose of this notification is to coordinate with these entities to ensure that appropriate areas of the MTI property and relevant adjacent properties are accessible. Return visits to the site prompted by a failure to make the necessary logistical arrangements in advance will **not** constitute a change in the selected consultant's SOW or compensation under the Fixed-Price Agreement.

¹⁸ For the purpose of this bid solicitation, bidders shall assume that negotiations to secure one off-property access agreement will be required. Should an additional access agreement, or agreements, become necessary, such additional work would be considered out-of-scope and subject to the changed conditions clause of the Fixed-Price Agreement.

- Be responsible for keeping all site monitoring wells 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 – Quarterly Groundwater Monitoring, Sampling and Reporting. Under this milestone, the ongoing program of quarterly groundwater monitoring, sampling and reporting for the former MTI facility shall be continued. This milestone shall commence immediately following execution of the associated Fixed-Price Agreement and shall be discontinued with the initiation of the bidder's site remedy (Milestone D).¹⁹ For the purpose of this RFB solicitation, bidders shall assume and provide a firm fixed-price to complete three (3) quarterly groundwater monitoring, sampling and reporting events under Milestone A. Each bidder shall provide an all-inclusive fixed unit rate per quarterly event should more or fewer than three (3) events be needed prior to initiation of the quarterly groundwater monitoring, sampling and reporting program to be conducted under Milestone D during implementation of the site remedy.

For the purpose of this bid solicitation, and consistent with the established quarterly groundwater monitoring / sampling program, bidders shall assume the fixed-price cost for this milestone shall include collecting and analyzing groundwater samples from the ten (10) on-property monitoring wells including MW-1 through MW-9 and MW-2D. For the initial quarterly sampling event only, groundwater samples shall also be collected from the facility water supply well and from the Courtney private well and submitted for laboratory analysis. However, bidders shall provide an all-inclusive fixed unit rate to sample the facility water supply well and an all-inclusive fixed unit rate to sample the Courtney private well should additional samples need to be collected from one or both of these wells during subsequent quarterly events.

During each quarterly groundwater monitoring and sampling event, the depth to groundwater and any potential separate-phase hydrocarbons (SPH) shall be gauged in each of the ten existing monitoring wells (and the facility water supply well if possible) and prior to purging any of the wells for sample collection. Groundwater level measurements obtained from the site monitoring wells shall be converted to groundwater elevations for assessing groundwater flow direction and hydraulic gradient for the shallow water table aquifer. Each of the ten site wells shall then be purged and sampled in accordance with the PADEP Groundwater Monitoring Guidance Manual, any other applicable PADEP guidance, and standard industry practices. For consistency with the techniques previously employed by Moody at the former MTI facility, bidders may propose that all site monitoring wells be purged by removing a minimum of three well volumes of groundwater (ASTM D-4448) and collecting samples using dedicated, disposable polyethylene bailers. Bidders may also propose alternative well purging / sampling methods that are acceptable to the PADEP and consistent with industry standards (e.g., low-flow techniques). Any well exhibiting a measurable thickness of SPH shall not be purged and sampled. During the initial quarterly sampling event, the facility water supply well and Courtney private well shall also be purged and sampled in accordance with PADEP guidance and industry standards / precautions. Bidders shall manage equipment decontamination fluids, groundwater generated by the well purging and sampling activities, and other wastes in accordance with PADEP NWRO guidance as discussed earlier in this RFB.

Groundwater samples collected during each of the quarterly events shall be analyzed for the **post**-March 2008 PADEP short-list of diesel fuel parameters by a PADEP-accredited laboratory using appropriate analytical methods and detection levels. Appropriate quality assurance / quality control (QA/QC) samples shall also be collected during each quarterly event and analyzed for the same diesel fuel constituents. For the purpose of this RFB solicitation, bidders shall assume collecting one trip blank sample and one blind duplicate sample (from a known impacted well) per quarterly event. In addition, each event shall include

¹⁹ The first quarterly event conducted under Milestone A shall be timed to continue the pre-existing sequence of quarterly groundwater monitoring events without disruption.

measurements for the following field parameters during the well purging and sampling process: pH, temperature, specific conductance, dissolved oxygen (measured in-situ), total dissolved solids and oxidation/reduction potential.²⁰

The conduct and results for each groundwater monitoring and sampling event shall be documented in a Remedial Action Progress Report (RAPR) that shall be provided to the PADEP on a quarterly basis consistent with the Department's timetable for RAPR submittals.²¹ At a minimum, each RAPR shall contain 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.
- Tabulated groundwater gauging data collected from the monitored wells, including the depth to groundwater, groundwater elevation and thickness of any free product encountered.
- A groundwater elevation contour map developed for the shallow water table aquifer that depicts a licensed professional's interpretation of groundwater movement.
- 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 isoconcentration contour map for each compound detected in groundwater at a concentration exceeding its SHS during the quarter.²²
- For each well that has exhibited a SHS exceedance 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/precipitation events and contaminant concentrations. This assessment should specifically address whether observed dissolved-phase constituent concentration fluctuations may be related to changing hydrogeologic conditions or whether these fluctuations may be potentially indicative of changed conditions requiring further investigation and/or a possible change in the site closure strategy.
- For each well that has exhibited an SHS exceedance during the reporting period or previously, a graphical depiction of recent key contaminant concentration trends. Each quarter, contaminant concentration trend lines shall be calculated using the previous two-years of analytical data (as available) 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.
- A discussion of the data to offer an updated assessment whether these data are consistent with a stable, contracting, 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.
- Post-remediation soil data (if applicable).
- Treatment and disposal documentation for waste generated during the reporting period.

²⁰ Each bidder's approach to implementing Milestone A shall clearly identify the number of sampling events, number of wells / samples per event, well purging and sampling method(s), QA/QC measures, analytes, and other key assumptions affecting the bid price.

²¹ PADEP suggests that Groundwater Monitoring Reports (GMR) be referred to as Remedial Action Progress Reports (RAPR) which are due to the PADEP on January 30, April 30, July 30, and October 30.

²² All figures included in each quarterly report (e.g., Site plan, groundwater elevation maps, dissolved plume maps, etc.) shall be made available in electronic format from the current consultant of record (Moody) upon request.

Each RAPR shall be signed and sealed by a Professional Geologist or Professional Engineer registered in the Commonwealth of Pennsylvania. Methods and results from these quarterly groundwater monitoring and sampling events shall also be summarized in a Supplement to the existing SCRA and in the RAP to be generated under Milestones B and C, respectively, and in the RACR to be prepared under Milestone G.

Milestone B – Supplemental Site Characterization Activities and Reporting. 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 B 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, as applicable; and 4) assist with refining the cleanup timeframe estimate and / or other reasons related to validating the bidder's remedial approach and design.

Supplemental work under this task may include additional environmental media sampling and analyses and / or remedial pilot testing.

For example, a bidder may wish to:

- Further delineate soil contamination if the proposed site remedial strategy includes the excavation of impacted soil;
- Complete pilot testing if an in-situ site remedy is proposed;
- Conduct hydraulic testing to evaluate continuity between the idled production well and the shallow groundwater; and/ or
- Other

Milestone B activities shall be conducted as soon as possible following execution of the Fixed-Price Agreement and completed concurrent with Milestone A.

Each bidder shall describe in detail its scope of work for additional site characterization activities along with corresponding technical justification to support the need for each additional activity. When considering what additional site characterization activities may or may not be necessary, bidders are strongly encouraged to review Moody's 10/14/11 SCR and 8/2/12 SCRA (Attachments 1D and 1H, respectively) and the other documents provided in Attachment 1, rather than relying solely on the summary information presented in Section 3 of this RFB. As mentioned above, supplemental site characterization activities shall be initiated upon execution of the Fixed-Price Agreement and conducted concurrently with Milestone A.

Potential considerations regarding the need for Milestone B activities include: determination of site-specific remedial design data, confirmation that the proposed technology is technically feasible, confirmation that the proposed technology is cost-effective, and confirmation that the proposed technology will provide a timely closure of the site under PADEP Act 2.

Any and all Milestone B activities that are proposed with your firm's bid shall be accompanied by the following:

- The purpose and need for each Milestone B activity and an appropriate breakdown (Milestones B1, B2, etc.).
- A detailed scope description of each activity including the use and incorporation of any pre-existing site data.
- The timing and schedule of each activity relative to the overall project schedule.
- 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 B activity (Milestones B1, B2, etc.) within each bidder's completed Bid Cost Tabulation Spreadsheet (Attachment 2).

The additional site characterization work and / or remedial feasibility pilot testing completed under Milestone B shall be documented in a Supplement to the existing SCRA.²³ The project schedule shall allow two (2) weeks for Solicitor and PAUSTIF review of the draft report before a final version is submitted to the PADEP. Following Solicitor / PAUSTIF review of the draft document, the selected consultant shall address any comments and submit the final report to the PADEP. The report shall be consistent (with regard to approach and level of effort) with the conceptual plan for remedial action provided in the selected consultant's bid and shall be signed and sealed by a Professional Geologist **and** a Professional Engineer registered in the Commonwealth of Pennsylvania. The fixed-price cost for this **milestone must also account for addressing potential PADEP comments on the supplemental report.**

Pilot Study "Off-Ramp" / Changed Condition

The selected consultant and the Solicitor are protected from being obligated to move forward with a remedial action under Milestone D if new **pilot testing data** is inconsistent with the Milestone D proposed remedial approach or the proposed remedial approach could be expected to fail based on new pilot study data from Milestone B. While the selected bidder will be under no obligation to cancel the Fixed-Price 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:**

1. With advanced Solicitor and USTIF approval, the selected bidder may elect to modify the Milestone D remediation plan to accommodate the new pilot testing information and continue with the cleanup **at no additional cost**; that is, for 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.
2. Or if the Solicitor or USTIF do not accept the selected bidder's revised plan adjusting to the new Milestone B pilot testing data, the Remediation Agreement for the project will terminate.
3. Or if the selected bidder adequately demonstrates the site conditions revealed by Milestone B pilot testing activities are significant and could not have reasonably been

²³ In order to receive reimbursement under this task, thorough documentation of any additional site characterization or remedial pilot testing activities must be provided to PAUSTIF.

expected prior to conducting the Milestone B activities, the selected bidder may elect to not 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 B activities.

Bidders shall, therefore, specify within their bids the critical criteria (if any) that will be used by Solicitor, USTIF and the selected bidder to evaluate the significance of pilot testing data obtained through Milestone B activities. These critical criteria shall be used to assess if the new pilot testing data change the feasibility of the Milestone D proposed remedial approach. As such, and as applicable, bids shall list critical criterion that will define the range of acceptable results (i.e., feasibility study or pilot testing results) relevant to the proposed Milestone D remedial approach. These criteria must be measurements or calculations that could be independently measured or verified by others during testing. Based on these criteria, Exhibit A of the Fixed-Price Agreement (Attachment 3) will contain a provision allowing cancellation of the Agreement should pilot test results (i.e., the pilot testing data obtained during the implementation of Milestone B) not meet certain bidder-defined criteria. Each bidder, therefore, shall explicitly specify any and all critical criteria for key design elements on which the Milestone D proposed remedy depends (i.e., the critical criteria and quantified limits of values that will make the proposed conceptual remedial action plan technically feasible, cost-effective, and timely).

For example, bids shall include language like, “For our Milestone D proposed remedial action approach to be successful and for the technology(ies) used thereby to operate as planned and meet our proposed cleanup schedule, the Milestone B testing must show:

1. Impacted soil can be accessed and excavated;
2. A hydraulic conductivity greater than X;
3. A pumping rate exceeding XX gpm at the end of YY hours of vacuum enhanced pumping;
4. The capacity to generate a soil vapor extraction vacuum of at least Y in the native soil while not exceeding a soil flow rate of Z; and
5. Dissolved iron and manganese hardness within groundwater at or below XX milligrams per liter (mg/L).”

End of example bid language. Actual bid language, if any, and the associated critical criteria will vary by bidder. Pilot study off-ramp assumptions must be specific to evaluating the feasibility of the technology relative to the consultant’s bid approach. Identifying assumptions regarding the bidder’s remedial system design is not acceptable. Some examples of inappropriate assumptions for this “Bid to Result” include: length of remedial system trenching, number of extraction points, type of remediation equipment, duration of remediation, etc.

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

Milestone C – Preparation and Submittal of a Draft and Final Remedial Action Plan.

Under this milestone, bidders shall provide a firm fixed-price for preparing and submitting a RAP to the PADEP and for securing subsequent PADEP approval of the RAP. As previously discussed in Section 3, Moody had submitted a RAP to the PADEP on 12/2/11 (Attachment 1E) that was disapproved in the Department’s 2/3/12 letter and follow-up 3/1/12 clarifications letter contained in Attachments 1F and 1G, respectively. Because the RAP prepared by Moody was disapproved, and considering the availability of post-RAP site characterization data contained in Moody’s SCRA (Attachment 1H), the RAP to be produced under Milestone C shall be a new document and not a RAP Addendum or Revised RAP.

Milestone C shall be conducted immediately upon the completion of Milestone B. The selected consultant shall prepare a RAP that is consistent with the conceptual remedial action plan proposed in their bid and consistent with any new data obtained via work conducted under Milestones A and B. The RAP shall contain all information required under 25 PA Code 245.311 and other applicable statutes, regulations, and guidance including being signed and sealed by a Professional Geologist and a Professional Engineer registered in the Commonwealth of Pennsylvania. The RAP shall be of sufficient quality and content to reasonably expect PADEP approval.

The RAP shall detail the methodology and incorporate relevant historical data and results provided from any new groundwater monitoring / sampling events (Milestone A) and any new site characterization data and / or pilot test results (Milestone B)²⁴ conducted to assess site-specific conditions. The RAP shall present a clear discussion to PADEP as to what activities and testing have been completed, their associated results, and a structured argument as to why the selected remedial strategy is reasonable, necessary and appropriate for application at the MTI site. As appropriate, tables, site plans depicting available environmental data, the proposed soil excavation footprint or remediation system layout, a P&ID, calculations, photographs, equipment requirements, material specifications, and other relevant attachments shall be incorporated into the RAP to support narrative discussions.

Bid responses, as well as the RAP, shall identify and substantiate the site monitoring wells to be listed in the RAP as POC wells during implementation of the groundwater attainment demonstration (Milestone F).²⁵

Bids, as well as the RAP, shall provide the conceptual design that clearly identifies how the selected technology(ies) will achieve Site closure under Act 2 via SHS (e.g., areas/zones of remedial focus and the expected timeframe required to achieve SHS). As applicable, bids that specify excavation or other remedial approaches in the RAP shall clearly describe: 1) the proposed limits and depth of impacted soil excavation and related excavation activities and methods (e.g., soil screening, segregation, staging, sampling for re-use, groundwater management, soil T&D, backfilling / compaction, etc.); and / or 2) the proposed remedial system, including (as appropriate): the number, depth and 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. The conceptual design within the bid and the RAP shall also identify all applicable construction permits and operational permits.

The SCRA indicates that the dissolved-phase plume is limited to the MTI property and, based on contaminant fate and transport modeling completed by Moody, should never expand to reach the downgradient property boundary at levels exceeding the SHS. As such, the PADEP may require only attainment sampling for groundwater. However, each bidder will be expected to include in the RAP the evaluation of the site data and regulatory requirements which leads to the bidder's determination of what (if any) groundwater remediation is necessary and appropriate.

Based on the SCR and SCRA, on-property residual soil impacts appear to exceed the non-residential SHS and will, therefore, need to be addressed in the RAP. The RAP-described soil cleanup approach shall be consistent with that specified in the successful bidder's bid whether it be *ex-situ* (e.g., soil excavation) or *in-situ* (e.g., SVE), whichever is shown to more efficient and economical through this competitive bidding.

²⁴ As applicable, this may in part be accomplished by incorporating the Supplement to the SCRA (if appropriate) prepared for Milestone B into the RAP.

²⁵ According to the PADEP, wells MW-4, MW-6, MW-8 and MW-9 may be suitable for POC monitoring although it is up to the bidder to identify the wells that will be used for demonstrating groundwater attainment. PADEP concurrence with the proposed POC monitoring wells will need to be secured via RAP approval.

The RAP shall be signed and sealed by a Professional Geologist and a Professional Engineer registered in the Commonwealth of Pennsylvania.

The RAP shall be submitted to both the Solicitor and PAUSTIF for review and comment. Each bidder's project schedule shall provide at least two weeks for Solicitor and PAUSTIF review of the draft document. The final RAP shall address any comments received from the Solicitor and PAUSTIF before it is submitted to PADEP for review. The quoted cost to complete this milestone shall also include addressing any comments received from PADEP on the final RAP.

Milestone D – Implementation of Remedial Solution. Under this milestone, each bidder shall provide a firm fixed-price to finalize the design and implement the site remedial strategy proposed in its RAP (Milestone C) for achieving an efficient and economical SHS site closure. Should an *ex-situ* site remedy be proposed, the selected consultant shall be responsible for developing a comprehensive soil excavation plan beginning with estimating the excavation dimensions / volume of soil to be removed through backfilling and surface restoration. Alternatively, should an *in-situ* remedy be identified, the selected consultant shall be responsible for developing the remedial system final design, selection and procurement of remedial system equipment and materials, remedial system permitting, remedial system installation, remedial system start-up and troubleshooting, and remedial system operation and maintenance (including quarterly groundwater monitoring, sampling and reporting consistent with the requirements of Milestone A but during system operation).

Each bidder shall submit with its bid response a description of its plan for remedial action at the MTI site that shall be based entirely on the remedial approach specified in the bidder's RAP to be developed under Milestone C. This conceptual plan shall provide narrative and graphic information sufficient for both the Technical Contact and USTIF to fully understand the bidder's intentions.

The intent of Milestone D is for the bidder to provide an all-inclusive "turnkey" design scope of work and the associated pricing to implement its RAP following PADEP approval. To assist the bid evaluation process, all bids shall incorporate and conform to the following general breakdown of Milestone D activities (both in the bid narrative and on the Bid Cost Tabulation Spreadsheet in Attachment 2).

Milestone D1 – Soil Excavation (if applicable)

Each bidder proposing a RAP solution that includes a soil excavation component shall provide a firm fixed-price cost to complete the excavation of residual source soil within the area and downgradient of the former diesel fuel UST along with associated backfilling and surface restoration per original. Should a consultant not propose soil excavation in its bid response, then a value of \$0.00 shall be entered into the Bid Cost Tabulation Spreadsheet.

As previously discussed, excessively impacted smear zone and unsaturated soils were identified at depths ranging from approximately 7 to 20 ft-bg in soil and monitoring well borings GP-6, GP-7, MW-2 and MW-5 located near and downgradient of the former diesel fuel UST cavity. These soil impacts occur in glacial sediments consisting mostly of clay, sand and gravel deposits that are overlain by surficial fill materials. It is also possible that soil impacts exceeding the applicable SHS MSCs could remain in the former UST system source area. Note, however, that available soil delineation data suggest that soil impacts exceeding the non-residential SHS do not extend beneath the truck garage building. Each bid response proposing soil excavation shall provide a depiction of the bidder's estimated lateral excavation dimensions on the Site Plan (Figure 2 in Attachment 4) and shall note the expected excavation depth(s) with the understanding that these dimensions could vary slightly based on possible additional soil delineation efforts that a bidder may choose to conduct under Milestone B. Essentially, each bidder proposing work under this task shall independently develop its estimate of and clearly identify with rationale the excavation dimensions and the volume of excessively impacted soil to be removed and transported off-property for disposal.

The SOW and fixed-price cost for Milestone D1 shall state / provide the following:

- Only excessively impacted soil shall be transported and disposed off-site;
- Any existing monitoring well that may be destroyed during the excavation work shall be replaced at its original location or, based on post-excavation site conditions, at a suitable alternate location as approved by the PADEP;
- A depiction of the approximate location and volume of the excavation relative to site features and soil sample results;
- A detailed discussion regarding the excavation approach; groundwater management; soil screening and segregation techniques; clean fill sampling and plans for reuse; waste management and profiling; plans for soil staging; the possibility for direct loading of excessively impacted soil; type of backfill; backfilling / compaction methods; plans for surface restoration; records keeping, etc. (Note that post-excavation soil attainment sampling is addressed under Milestone E).
- **A comprehensive and complete fixed-price bid for Milestone D1 that shall only exclude the costs for (1) contaminated soil transportation and disposal; and (2) clean fill importation.** Bids must include unit-price rates (\$/ton) on the Bid Cost Tabulation Spreadsheet for: (1) **contaminated soil transportation and disposal;** and (2) **clean fill importation.**
- A schedule for implementing and completing the excavation work.

Each bid proposing the soil excavation task shall indicate that the Solicitor, PADEP and PAUSTIF shall be provided the opportunity to observe the soil excavation activities.

The methods and results for Milestone D1 shall be described in the RACR (Milestone G).

NOTE: as discussed under Milestone D3 below, if soil excavation is NOT part of the successful bidder's SOW, then there will be an added performance requirement in the contract governing the work.

Milestone D2 – Finalizing Remedial Design, Permitting and Installation (if applicable)

Should an *in-situ* site remedy be proposed, then under this milestone bidders shall provide a detailed SOW and firm fixed-price bid for finalizing the design details for the Milestone D proposed in-situ remedial approach, securing all necessary permits required for system installation and operation, and installing the remediation system including system start-up. Specifically, activities under this milestone shall include, but not necessarily be limited to, developing a system final design; equipment and materials selection and procurement; preparation of associated work plans (e.g., Construction QA Plan); securing required permits for system construction and operation (e.g., zoning permit, system discharge permit(s), etc.); remedial system installation; and remedial system startup and troubleshooting.

Each bid proposing in-situ remediation shall indicate that the Solicitor and PAUSTIF shall be provided the opportunity to observe and/or inspect and confirm that the new remedial system has been installed and is being operated and maintained as described in the associated Fixed-Price Agreement.

Milestone D3 – Quarterly Remedial System Operation and Maintenance and Groundwater Monitoring, Sampling and Reporting (if applicable)

Under Milestone D3, bidders who propose an *in-situ* site remedy shall provide a firm fixed-price cost to conduct remedial system operation, maintenance, and system monitoring (e.g., sampling and analyses of extracted groundwater and vapor). Additionally, the selected consultant shall evaluate system data to assess remedial progress and make system adjustments, as necessary, to optimize performance. Also under milestone D3, the selected consultant shall conduct quarterly groundwater monitoring, sampling and reporting during remedial system operation. The quarterly events shall be an uninterrupted continuation of the requirements specified in Milestone A that begins with implementation of the remedial action under this milestone and ends with the commencement of Milestone F (Groundwater Attainment Demonstration).²⁶ Bidders shall detail the O&M activities that will be required for the bidder's proposed remedial system (methods, frequency of site visits, etc.).

Milestone D1 shall be presented within bids and on the associated Bid Cost Tabulation Spreadsheet with a single firm fixed-price (if completed); Milestone D2 shall be presented within bids and on the associated Bid Cost Tabulation Spreadsheet with a single firm fixed-price (if completed) with only two separate unit prices for (i) contaminated soil transportation and disposal; and (ii) clean fill importation; and Milestone D3 shall be presented within bids and on the Standardized Bid Form as a quarterly unit price (if completed). Bids shall also identify the number of quarters the bidder's *in-situ* remedial approach (if proposed) will require to attain the cleanup standard and the basis of this duration. The number of quarters shall be noted in the body of the bid response and on the Bid Cost Tabulation Spreadsheet in Attachment 2. Bidders will note that the Bid Cost Tabulation Spreadsheet in Attachment 2 automatically defaults to extrapolating out the costs for six (6) consecutive quarters of remedial system O&M and groundwater monitoring, sampling and reporting (Milestone D3) irrespective of the bid remedial O&M duration. If the required number of quarters of O&M to complete the cleanup is greater than 6, the number should be changed by the bidder from default value of 6 to the required number of quarters. **No value less than 6 quarters shall be placed in this cell of the Bid Cost Tabulation Spreadsheet.** If a bidder believes that the required duration of O&M for its proposed remediation system is less than 6 quarters, the bidder shall provide a detailed, technically sound and convincing explanation in the body of the bid response for consideration. **Inadequate explanation for the specified duration of remediation will affect the bid's technical evaluation.**

Bids proposing an in-situ site remedy shall describe the specific remedial system monitoring, permit compliance tests/reporting, operation protocols, and maintenance procedures that will be used to monitor and evaluate its performance. Bids shall also describe how their proposed remediation system may be adjusted to address changing Site conditions as the on-site remedial effort proceeds.

Soil Remediation Performance. If the residual soil impacts are to be addressed via *in-situ* remediation, there will be a performance requirement in the contract. In this case, to provide added incentive to the successful bidder for implementing an in-situ remedy that achieves the soil cleanup as expeditiously and cost effectively as possible, 10% of each Milestone D3 incremental payment will be withheld and accumulated pending a successful demonstration of soil attainment of the standards under Milestone E. When soil attainment has been successfully demonstrated, the accumulation of 10% holdback payments will be reimbursed in one lump sum to the successful bidder. If soil excavation occurs per the bidder's RAP, there will be no performance incentive holdback of quarterly D3 in-situ remediation costs.

Milestone E – Soil Attainment Demonstration. Under this milestone, bidders shall provide a firm fixed-price for developing and implementing a soil sample collection and analysis program to

²⁶ In addition to quarterly monitoring / sampling of the ten site groundwater monitoring wells, groundwater samples shall also be collected annually from the facility water supply well and Courtney private well and submitted for laboratory analysis.

demonstrate compliance with 25 PA Code 250.703 (General Attainment Requirements for Soil). As described previously under Section 3, the soil investigations completed by Moody during site characterization activities indicate that concentrations of adsorbed-phase diesel fuel compounds exceeding the applicable SHS MSCs exist primarily in smear zone soil downgradient of the former diesel fuel UST system.

Should a bidder propose to implement source soil excavation as part of its site remedy under Milestone D1, then the soil attainment sampling shall be conducted as part of that milestone and post-excavation soil samples for laboratory analysis shall be collected from the floor and sidewalls of the excavation prior to backfilling. If soil excavation is not a component of a bidder's proposed site remedy, then soil samples shall be collected from soil borings generally positioned within and adjacent to the excavation footprint under Milestone E.²⁷

The location, depth and number of soil samples shall be determined using PADEP's systematic random sampling procedures and other relevant guidance, assuming that one soil sample per excavation sampling point (or per boring) shall be submitted for laboratory analysis. Bids shall clearly identify the estimated number of soil borings (if any) and number of attainment soil samples.

Soil samples shall be analyzed for the post-March 2008 PADEP short list of diesel fuel parameters using proper analytical methods and detection limits. Appropriate QA/QC samples shall also be obtained for laboratory analysis of the same parameters. The soil sampling results shall be evaluated based on PADEP's 75% / 10x Ad Hoc Rule. Results from the soil attainment demonstration shall be incorporated into the RACR (Milestone G).

Milestone F – Groundwater Attainment Demonstration. As discussed earlier, the SCRA indicates that groundwater quality may currently meet the SHS requirements based on the contaminant fate and transport modeling completed by Moody and diesel fuel constituents exceeding the SHS in only one interior site monitoring well (MW-5) for the most recent July 2012 sampling event.

Bidders shall provide a firm fixed-price for completing eight (8) consecutive quarters of groundwater monitoring, sampling and reporting (two years) to demonstrate attainment of the SHS MSCs for groundwater. Each groundwater monitoring and sampling event shall include only the monitoring locations designated in the RAP as point-of-compliance (POC) wells. For bidding purposes, bidders shall assume that the PADEP will approve wells MW-4, MW-6, MW-8 and MW-9 for POC monitoring (four wells total per quarterly event). Bidders shall provide an all-inclusive fixed unit-cost per well for gauging, purging, sample collection, sample management and analysis should more or less wells ultimately be designated for POC monitoring.

Each bid shall include petitioning the PADEP to request using prior quarterly groundwater data (e.g., produced under Milestone A, and possibly under Milestones D1 and D3), to be applied to the groundwater attainment demonstration in order to reduce the number of required attainment sampling events.

The groundwater attainment demonstration shall be initiated following the successful completion of Milestone D whereas dissolved concentrations will continue to be below, or will have achieved the SHS MSCs at the POC monitoring locations and shall continue as required for a total of eight (8) consecutive quarterly events. If warranted by favorable groundwater analytical data from the POC wells, the selected consultant shall petition the PADEP for conducting less than eight (8) quarters of groundwater attainment

²⁷ Soil boring locations shall be cleared through contacting PA One Call and sampling the initial five (5) feet of each boring location using an acceptable method of hand clearing. Below five feet, each soil boring shall be advanced using direct-push sampling methods. Additionally, each soil boring shall be properly sealed and finished at the surface following sample collection and soil boring locations shall be field measured for inclusion on the site plan. Investigation-derived wastes shall be managed as described earlier in Section 4.

monitoring, sampling and reporting. All work under Milestone F shall be conducted in accordance with 25 PA Code §250.702, §250.704, and §250.707. Bidders shall provide an all-inclusive fixed unit rate per quarterly attainment monitoring, sampling and reporting event should fewer than eight (8) events need to be conducted under this task based on the PADEP's reaction to the petition noted above.

Except for the number of wells to be gauged and sampled on a quarterly basis, all protocols and requirements for groundwater sample collection, sample analysis and management of investigation derived wastes specified under Milestone A shall apply to the program of groundwater attainment monitoring conducted under Milestone F.²⁸ The quarterly reporting requirements (i.e., quarterly RAPRs) for the groundwater attainment demonstration shall also be consistent with those referenced under Milestone A with the exception that the RAPRs generated under Milestone F shall provide an assessment of the progress made toward successful demonstration of attainment, invoking the 75% / 10x Ad Hoc statistical rule as necessary.

Milestone G – Preparation and Submittal of a Draft and Final Remedial Action Completion Report. Under this Milestone, bidders shall provide a firm fixed-price for preparing a draft and final RACR following the successful completion of both Milestones E and F. The RACR shall contain all information required under 25 PA Code 245.313 and other applicable statutes, regulations, and guidance and shall be signed and sealed by a Professional Geologist **and** Professional Engineer registered in the Commonwealth of Pennsylvania. The RACR shall request a ROL relative to soil and groundwater for the petroleum release identified in PAUSTIF Claim #2010-0074(F) by demonstrating compliance with the PADEP Act 2 SHS MSCs for a used aquifer in a non-residential setting (excluding the need for any activity or use limitations or institutional / engineering controls). The RACR shall be of sufficient quality and content to reasonably expect PADEP approval and issuance of a ROL.

The project schedule shall allow two (2) weeks for Solicitor **and** PAUSTIF review of the draft RACR before a final version is submitted to the PADEP. Following Solicitor / PAUSTIF review of the draft document, the selected consultant shall address any comments and submit the final RACR to the PADEP. As mentioned earlier, bids shall include time to address any PADEP comments received on the RACR since Milestone H (Site Restoration) will be performed following PADEP approval of the report.

Milestone H – Site Restoration. Under this milestone, bidders shall provide a firm fixed-price for: i) proper abandonment of all site groundwater monitoring wells and piezometers (as applicable); ii) proper abandonment of all site extraction wells or injection wells (if applicable); iii) proper abandonment of all site vapor monitoring points; iv) removal and proper disposal of all remedial equipment and materials including proper abandonment of below grade piping (if applicable); v) removal and proper disposal of the remediation building / compound (if applicable); vi) as-needed grading of all ground surface areas that have been disturbed by site characterization or remedial action activities; and vii) in-kind restoration (pavement or vegetation) of all ground surface areas that have been disturbed by site characterization or remedial action activities.

Depending on groundwater analytical results reported for the site monitoring wells and facility water supply well produced under this RFB SOW, and results from hydraulic testing of the supply well to determine possible communication with shallow groundwater that could possibly be completed under Milestone B, it may or may not be necessary to seal the facility water supply well during site restoration activities to eliminate this potential exposure pathway and address the PADEP's concern. Regardless of a bidder's approach to handling the facility supply well, bidders shall provide on the bid form a separate comprehensive fixed-unit price for sealing the facility water supply well and connecting the property to the public water. This contingency may need to be implemented if the well is found to contain one or more

²⁸ This includes, but is not limited to, groundwater depth / SPH gauging, monitoring well purging / sampling methods, groundwater sample management, purge water management, QA/QC protocols, etc.

target diesel fuel compounds that are either below or exceed the applicable SHS and/or, should one or more interior site monitoring well locations continue to exhibit diesel fuel compounds in excess of the SHS which might reasonably have the potential to be drawn into this well should it be reactivated in the future

Work under Milestone H shall be completed within 60 days of RACR approval by the PADEP and shall be conducted in accordance with standard industry practices and applicable laws, regulations, guidance, and PADEP directives including abandonment of all wells, piezometers, and vapor monitoring points (as applicable) consistent with the PADEP's 2001 Groundwater Monitoring Guidance Manual. Well abandonment and site restoration activities shall be coordinated with the Solicitor.

Work and bid pricing for this milestone shall include all associated documentation required by PADEP, PAUSTIF or the Solicitor. This includes, but is not limited to, daily photo-documentation of all site restoration and well abandonment activities and submitting copies of the completed Groundwater Monitoring Abandonment Forms to the PADEP so that the Department may close its files on this facility. Copies of these photographs and well abandonment forms shall also be provided to the Solicitor and PAUSTIF.

If applicable, the selected consultant shall determine whether the Solicitor wishes to maintain any components of the remedial system (e.g. treatment building) before removing them from the Site. All debris and waste materials generated during well abandonment and site restoration activities shall be properly disposed as directed earlier in Section 4.

5. TYPE OF CONTRACT / PRICING

The Solicitor wishes to execute a mutually agreeable, fixed-price, not-to-exceed contract to implement the bidder's SOW to accomplish Milestones A through H. A sample Fixed-Price Agreement is included as Attachment 3.²⁹ The Fund will facilitate negotiations between the Solicitor and the selected consultant toward executing this Fixed-Price Agreement. Note that the selected consultant has no more than ten (10) business days to return its draft of the Fixed-Price Agreement for USTIF review.

As noted earlier, by submitting a bid in response to this RFB, each bidder indicates its acceptance of the milestone requirements and contractual terms of this project (Attachments 2 and 3), including any stated schedule deadlines, unless explicitly stated to the contrary in its bid. Therefore, any requested changes to the Fixed-Price Agreement must be specified in the bid response. Please note that these changes will need to be reviewed and agreed upon by both the Solicitor and the Fund.

Each bid is to clearly 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 all Milestones A through H. The by-milestone and by-submilestone quotes are to be entered into the Cost Tabulation Spreadsheet / Standardized Bid Format included as Table 1 in Attachment 2 to this RFB. Bid costs will be evaluated based solely **on the cost information as provided on Table 1 in Attachment 2.** 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. Finally, please note that referencing extremely narrow or unreasonable assumptions, special conditions, and exemptions may

²⁹ The selected consultant will be provided an electronic copy of the sample contract in Word format to allow contract-specific information to be added.

make the bid response too difficult to evaluate and may result in the bid response being deemed “unresponsive.”

Payment Milestones: Table 2 below illustrates the approximate timing expected for completion of respective milestone tasks and milestone payouts. Actual milestone payments will occur only after successful and documented completion of the work defined for each milestone. Payment milestones under the Fixed-Price Agreement shall be broken out as follows:

- Milestones A1 through A3 – Quarterly Groundwater Monitoring, Sampling and Reporting. Note that the schedule assumes three (3) Milestone A payments;
- Milestone B – Supplemental Site Characterization Activities and Reporting;
- Milestone C – Preparation and Submittal of a Draft and Final Remedial Action Plan;
- Milestone D1 – Implementation of Remedial Solution - Soil Excavation (if applicable);
- Milestone D2 – Implementation of Remedial Solution - Finalizing Remedial Design, Permitting and Installation (if applicable);
- Milestone D3 – Implementation of Remedial Solution - Quarterly Remedial System Operation and Maintenance and Groundwater Monitoring, Sampling and Reporting (if applicable). Note that the schedule and bid form default to six (6) quarterly Milestone D3 payments (the actual number of required payments, if greater than 6, should be inserted);
- Milestone E – Soil Attainment Demonstration;
- Milestones F1 through F8 – Groundwater Attainment Demonstration. Note that the schedule assumes eight (8) Milestone F payments;
- Milestone G – Preparation and Submittal of a Draft and Final Remedial Action Completion Report; and
- Milestone H – Site Restoration.

TABLE 2 – SAMPLE MILESTONE COMPLETION / PAYMENT SCHEDULE

Estimated Milestone Timing Month After Contract Award	SOW Activities Anticipated / Completed for that Month	Milestone ¹
1	Quarterly Groundwater Monitoring, Sampling and Reporting	A1
3	Supplemental Site Characterization Activities and Reporting	B
4	Quarterly Groundwater Monitoring, Sampling and Reporting	A2
5	Preparation and Submittal of a Draft and Final Remedial Action Plan	C
7	Quarterly Groundwater Monitoring, Sampling and Reporting	A3
8	Soil Excavation (if applicable)	D1
9	Finalizing Remedial Design, Permitting and Installation (if applicable)	D2

Estimated Milestone Timing Month After Contract Award	SOW Activities Anticipated / Completed for that Month	Milestone ¹
10	Quarterly Remedial System Operation and Maintenance and Groundwater Monitoring, Sampling and Reporting (if applicable)	D3
13	Quarterly Remedial System Operation and Maintenance and Groundwater Monitoring, Sampling and Reporting (if applicable)	D3
16	Quarterly Remedial System Operation and Maintenance and Groundwater Monitoring, Sampling and Reporting (if applicable)	D3
19	Quarterly Remedial System Operation and Maintenance and Groundwater Monitoring, Sampling and Reporting (if applicable)	D3
22	Quarterly Remedial System Operation and Maintenance and Groundwater Monitoring, Sampling and Reporting (if applicable)	D3
25	Quarterly Remedial System Operation and Maintenance and Groundwater Monitoring, Sampling and Reporting (if applicable)	D3
26	Soil Attainment Demonstration	E
28	Groundwater Attainment Demonstration	F1
31	Groundwater Attainment Demonstration	F2
34	Groundwater Attainment Demonstration	F3
37	Groundwater Attainment Demonstration	F4
40	Groundwater Attainment Demonstration	F5
43	Groundwater Attainment Demonstration	F6
46	Groundwater Attainment Demonstration	F7
49	Groundwater Attainment Demonstration	F8
51	Preparation and Submittal of a Draft and Final Remedial Action Completion Report	G
54	Site Restoration	H

1. Each bidder should modify this sample Milestone Completion / Payment Schedule for Milestones A through H to reflect its proposed task schedule, as long as the proposed schedule meets the criteria specified in Section 4 of this RFB.

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 task structure specified in the selected bidder's bid response. Tracking incremental and cumulative costs by task will also be required to facilitate invoice review.

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 quoted unit prices) shall be good for the duration of the period of performance cited in the associated Fixed-Price Agreement.

6. ADDITIONAL BID PACKAGE REQUIREMENTS

Each submitted bid response 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 Solicitation Package.
- Provide an answer 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 Release of Liability under Act 2) in Pennsylvania (*do not include UST removals / closures*)?
 - 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 the PADEP) under either the SHS and/or the Site Specific Standard (*do not include UST removals / closures*)? [*NOTE: The Solicitor requires the work described herein to be completed under the responsible care and directly supervised by a P.G. and / or P.E. consistent with applicable regulations and licensing standards.*]
 - Whether there were or 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 cost bid for Milestones A through H by completing the bid cost tabulation spreadsheet provided in Attachment 2 (included among the accompanying electronic files) following the SOW task structure specified herein.
- A description and discussion of all level-of-effort and costing assumptions.
- Indicate whether the bidder accepts the proposed contract / terms and conditions (see Attachment 3) or has provided a list of requested changes to the Fixed-Price 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 milestone-by-milestone description of the proposed technical approach. **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 a detailed schedule complete with specific by-month dates for completing the proposed SOW (Milestones A through H), inclusive of reasonable assumptions regarding the timing and duration of client, PAUSTIF, and PADEP reviews needed to complete the SOW. 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 the PADEP from project inception to submittal of the RACR. Describe how the PADEP would be involved proactively in the resolution of technical issues and how the PADEP case team will be kept informed as to project status.
- Describe how the Solicitor and ICF / PAUSTIF 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 SOW.

7. MANDATORY PRE-BID SITE VISIT

On Thursday, January 31, 2013, THERE WILL BE A MANDATORY PRE-BID SITE MEETING facilitated by the Technical Contact. The Technical Contact will be present at the site between 11:00 AM and 12:00 PM to answer general questions and conduct a site tour for no more than two 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 header "MILK TRANSPORT, INC., PAUSTIF CLAIM #2010-0074, 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 during the pre-bid site meeting 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 non-proprietary 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.³⁰ Questions will be accepted by the Technical Contact up to five (5) calendar days prior to the date when bids are due.

8. CRITICAL BID PROCESS DATES

Throughout the bid process, bidding consultants must remain cognizant of key dates for this RFB solicitation. The following list provides a general recap of important bid process events and dates.

- **Mandatory Site Walk: Thursday, January 31, 2013**
- **Question and Answer Period: Thursday, January 31, 2013 through Thursday, February 14, 2013**
- **Bid Responses Due: Tuesday, February 19, 2013**

³⁰ 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

Relevant Project Documents

<u>Filename:</u>	<u>Document:</u>
Attachment 1A	Phase I Environmental Site Assessment Report, Moody and Associates, Inc., March 19, 2010
Attachment 1B	Phase II Environmental Site Assessment Report, Moody and Associates, Inc., May 10, 2010
Attachment 1C	PADEP Notice of Violation, October 13, 2010
Attachment 1D	Site Characterization Report, Moody and Associates, Inc., October 14, 2011
Attachment 1E	Remedial Action Plan, Moody and Associates, Inc., December 2, 2011
Attachment 1F	PADEP letter disapproving the SCR / RAP, February 3, 2012
Attachment 1G	PADEP SCR / RAP disapproval clarification letter, March 1, 2012
Attachment 1H	Site Characterization Report Addendum, Moody and Associates, Inc., August 2, 2012
Attachment 1I	PADEP September 25, 2012 letter approving the SCRA
Attachment 1J	November 30, 2012 letter requesting a PADEP extension to submit the RAP
Attachment 1K	PADEP December 4, 2012 letter approving the extension request for submitting the RAP.

ATTACHMENT 2

Bid Cost Tabulation Spreadsheet

ATTACHMENT 3

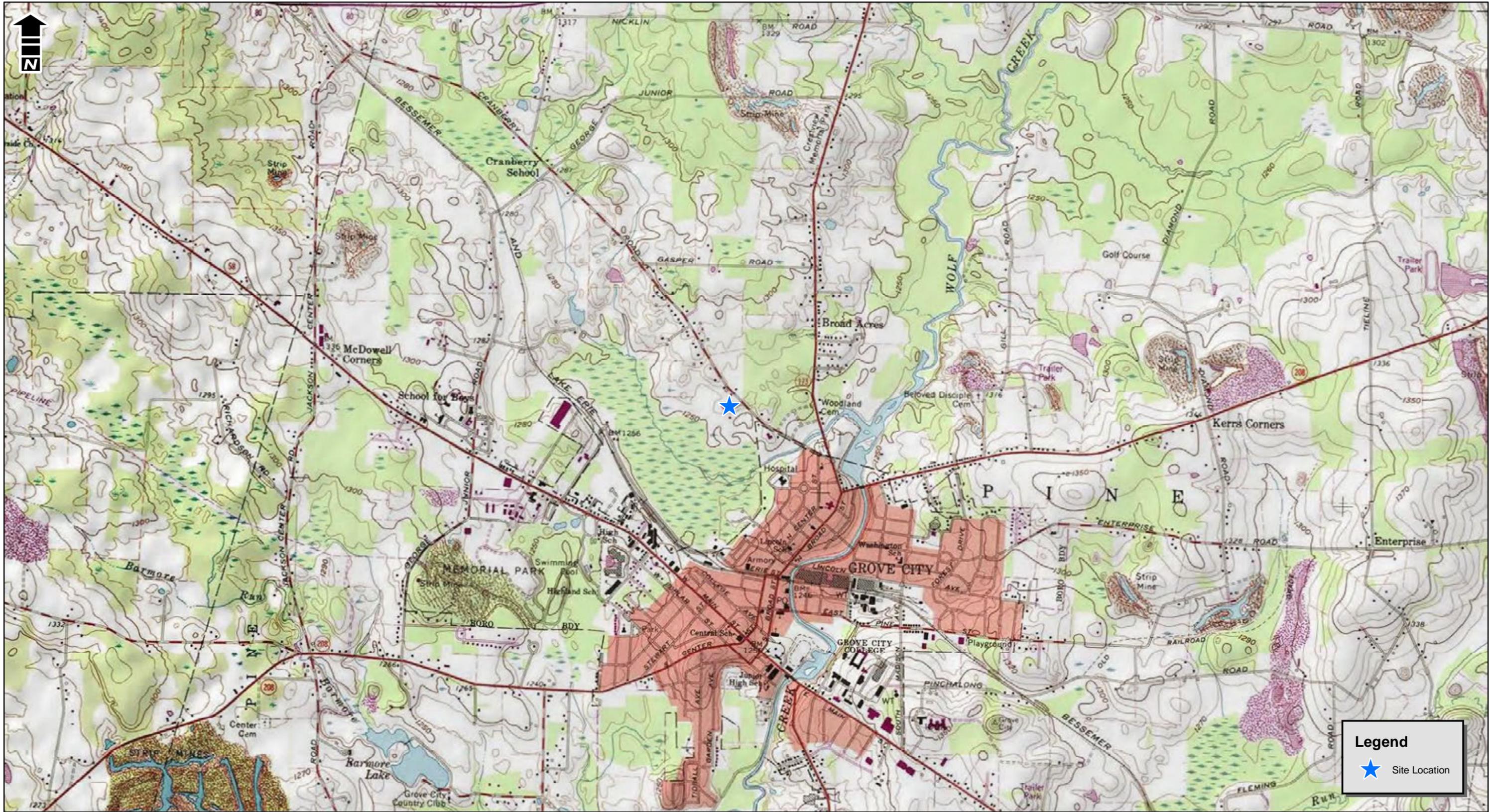
Standard Sample / Template Fixed-Price Remediation Agreement

(This agreement has been provided in an electronic form that does not permit modification because only the selected consultant will need to complete the agreement. An electronic version of the agreement that will allow for tracking modifications to the agreement will be provided to the selected consultant at the appropriate time.)

ATTACHMENT 4

Figures

FIGURE 1
SITE LOCATION MAP



0 1,000 2,000 4,000
Feet

1 inch = 2,000 feet

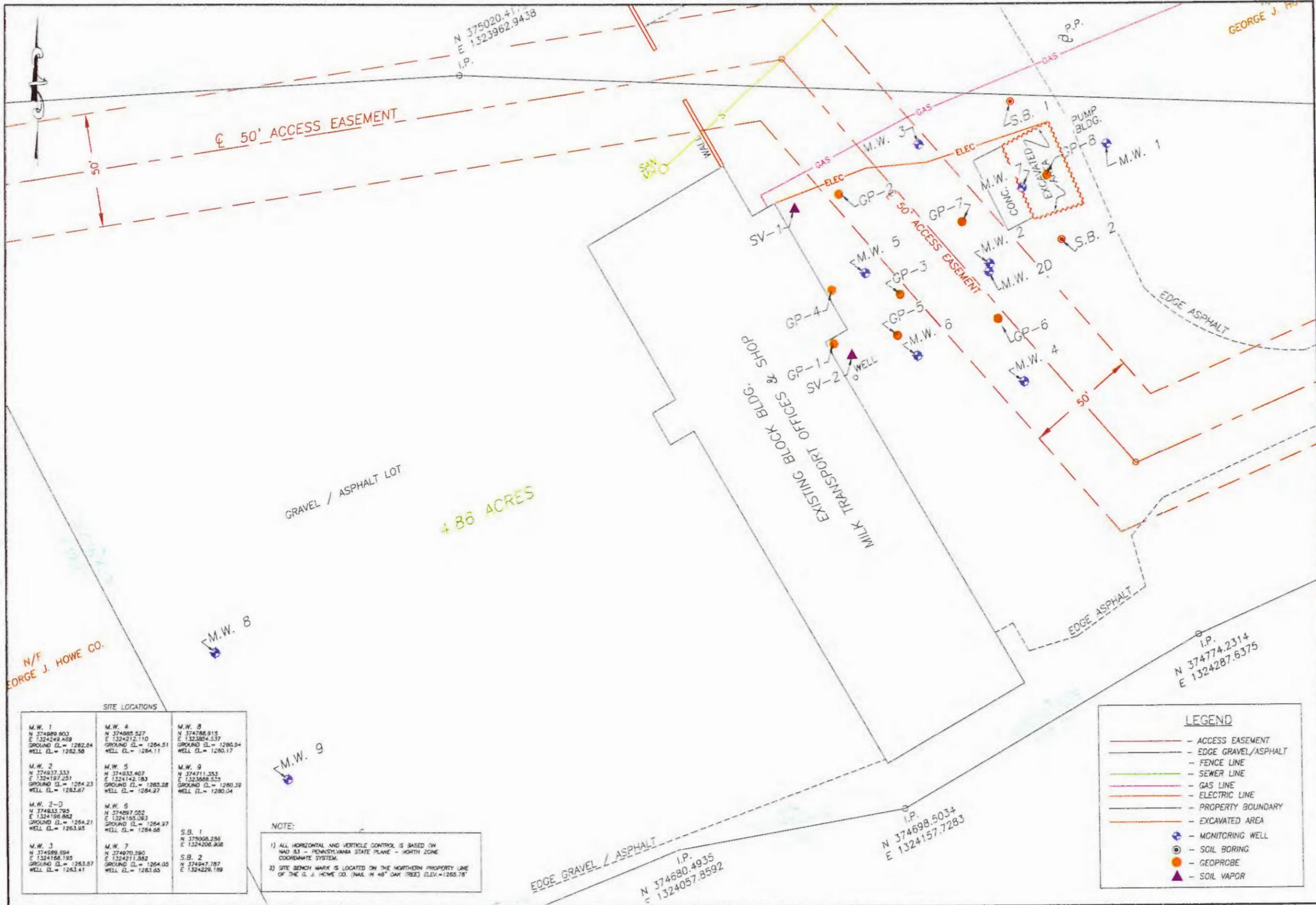
Base Map: Grove City, PA 7.5 Minute 1996 USGS Quadrangle
<http://services.arcgisonline.com/v92>

Site Location Map

Milk Transport, Inc.
99 Cranberry Road
Pine Township, Mercer County, Pennsylvania

FIGURE 2
SITE PLAN

FIGURE 1



SITE LAYOUT MAP

MILK TRANSPORT, INC.
PINE TOWNSHIP, MERCER COUNTY, PA

SITE LOCATIONS

M.W. 1 N 374889.603 E 1324249.409 GROUND EL. = 1262.64 WELL EL. = 1262.50	M.W. 4 N 374885.527 E 1324212.110 GROUND EL. = 1264.51 WELL EL. = 1264.11	M.W. 8 N 374788.915 E 1323854.537 GROUND EL. = 1280.54 WELL EL. = 1280.17
M.W. 2 N 374937.333 E 1324197.251 GROUND EL. = 1264.23 WELL EL. = 1263.67	M.W. 5 N 374933.407 E 1324142.783 GROUND EL. = 1263.28 WELL EL. = 1264.27	M.W. 9 N 374711.353 E 1323688.325 GROUND EL. = 1280.39 WELL EL. = 1280.04
M.W. 2-D N 374833.795 E 1324196.882 GROUND EL. = 1264.21 WELL EL. = 1263.95	M.W. 6 N 374897.082 E 1324155.083 GROUND EL. = 1264.97 WELL EL. = 1264.66	S.B. 1 N 375008.236 E 1324208.908
M.W. 3 N 374689.594 E 1324166.195 GROUND EL. = 1263.87 WELL EL. = 1263.41	M.W. 7 N 374970.580 E 1324211.882 GROUND EL. = 1264.05 WELL EL. = 1263.65	S.B. 2 N 374947.787 E 1324229.199

NOTE:
1) ALL HORIZONTAL AND VERTICAL CONTROL IS BASED ON NAD 83 - PENNSYLVANIA STATE PLANE - NORTH ZONE COORDINATE SYSTEM.
2) SITE BENCH MARK IS LOCATED ON THE NORTHERN PROPERTY LINE OF THE G. J. HOWE CO. (NAK IN #8' OAK TREE) ELEV. = 1265.78'

LEGEND

- ACCESS EASEMENT
- EDGE GRAVEL/ASPHALT
- FENCE LINE
- SEWER LINE
- GAS LINE
- ELECTRIC LINE
- PROPERTY BOUNDARY
- EXCAVATED AREA
- ⊕ - MONITORING WELL
- ⊙ - SOIL BORING
- - GEOPROBE
- ▲ - SOIL VAPOR



FIGURE 3

REVISED PARCEL MAP

