MINNESOTA POLLUTION CONTROL AGENCY
520 Lafayette Road North
St. Paul, MN 55155-4194

Example Workplan

Project Title: Scenario B: Petroleum Only Environmental Services

PROJECT SUMMARY:

The Site is an active fueling station with an attached 24-hr restaurant. The Site is located in a mixed commercial/residential area with a recreational lake approximately 250 feet to the east. The petroleum retail station has three underground storage tanks (USTs), two gasoline and one diesel, that are connected to four pump islands. There is also a fuel oil above ground storage tank (AST) that has been in operation since the fueling station opened in the 1950s. The attached restaurant addition was constructed in the late 1990s. The restaurant is slab-on-grade and was built directly over a former UST basin that contained two USTs, the contents of which are unknown. The conditions of the tanks upon removal is unknown, but strong petroleum odors were noted and elevated PID readings of up to 1,263 parts per million (ppm) were recorded, assumed to be during removal. There is currently significant staining near the pump islands and the station has noted a loss of product over the last few months.

There are no known environmental investigations completed at the Site. Based on the information provided, there is potential for soil, soil vapor, and groundwater impacts from both the active fueling station components and the former UST basin. There is physical (pump island staining) and mathematical (reported loss of product) evidence to support concern for a recent light non-aqueous phase liquid (LNAPL) release. There is also empirical evidence (nearby residence complaining of petroleum odors in drinking water) to suggest potential for dissolved phase groundwater impacts from a historical release, as it is reasonable to assume that if the domestic wells are impacted from a release at the Site, the groundwater contamination would be from a historical release because of the time necessary for petroleum contamination to migrate to the horizontal and vertical extent of the domestic wells.

The Site and surrounding area contain several potentially complete exposure pathways and potential for high risk conditions for public health (nearby domestic wells) and the environment (sensitive groundwater conditions and recreational lake). Subsurface investigations are necessary to determine the magnitude and extent of contamination at the Site.

The Site scenario given does not provide details on who supplied the information, why the information was provided, or how the information was obtained, and it does not state whether the work is being completed by the responsible party, under the MPCA Petroleum Remediation Program (PRP) multi-site contract, or under the MPCA Emergency Management Unit (EMU). Furthermore, there are no quantitative details as to the magnitude and extent of contamination. Therefore, the scenario response could go in a multitude of directions based on scenario responder's assumptions and results narrative. Bay West prepared the following release reporting narrative to identify the relationship between the station owner and the MPCA and setup the flow of the regulatory oversight process for the scope of work proposed and outlined in subsequent work plan sections.

Scenario Narrative

The station owner called the Minnesota Duty Officer to discuss a probable recent release based on significant staining observed near the pump islands and because purchased product volumes were not corresponding with remaining tank inventory for the last several months. During the discussion with the Duty Officer, the station owner also noted several of the nearby residents have been complaining about petroleum odors in their private drinking water.

Given the evidence of probable recent release and potential public health risk of the private drinking water, the Duty Officer contacted the MPCA EMU to take initial regulatory assessment and direct the appropriate response. The contacted EMU leader referenced the county well index to get an initial assessment of noted nearby domestic well receptors. Review of well logs revealed that bedrock was less than 50 feet below

ground surface (bgs), indicating the Site is above shallow bedrock with sensitive groundwater conditions per PRP Guidance Document (GD) 4-18 (Assessment of sensitive groundwater conditions). Because there was strong evidence of a **recent release**, potential for **sensitive groundwater conditions**, and potential for **emergency conditions** with the drinking water in nearby domestic wells, the EMU staff determined the site required immediate action. The initial investigation and imminent high-risk interim corrective action items detailed in the below work plan were completed under the EMU in accordance with the PRP general policy, Section II: Sites Requiring Immediate Action (c-prp1-01). Once the immediate public health risks were assessed and appropriate response actions completed, the remaining site investigation activities were transferred and completed under the MPCA-directed fund-financed PRP program due to the limited financial resources of the station property owner.

STATEMENT OF PROBLEMS, EXISTING CONDITIONS, AND OPPORTUNITIES

Problems:

Based on the information provided, the Site has the following identified or potential environmental problems that must be addressed:

Recent Release: The fueling station property owner reported loss of product over the last several months and significant staining near pump islands. The magnitude of recent release and impacts to pathway receptors is unknown.

Historical Release: Elevated PID readings were recorded during tank removal at the former UST basin. There is no analytical evidence provided to indicate groundwater impacts associated with the former UST basin; however, if the reported petroleum odors in the drinking water from nearby domestic wells is validated by analytical data, it is reasonable to assume the petroleum contamination is from a historical UST release. The domestic wells are installed in the bedrock to a depth of 80 feet bgs and it would require more time for the petroleum contamination plume to migrate to the horizontal and vertical extent of the well locations. If historical release impacts exist at the site, leaded fuel analytical tests should be run as the station began operation in the 1950s when leaded fuel was widely used.

Public Health Risk: There are two potential human health risks that need immediate assessment based on empirical evidence provided by station owner and theorized by Bay West based on probable recent release and known historical conditions:

1. Private Drinking Water: There are six known domestic water supply wells within 500 feet of the fueling station. Several residents have been complaining about petroleum odors in their drinking water. This provides potential for immediate risk to human health and requires immediate response to verify with analytical data whether private wells are impacted.
2. Vapor Intrusion at Site Building: A former UST basin is located directly underneath the restaurant footprint and PID readings during the tank removal were as high 1,263 ppm. The current UST basin and dispenser island are also near building structures. If the recent release is significant in extent, it is plausible that LNAPL is near and/or underneath parts of the building slab, indicating a high risk for vapor intrusion. Given the recent and historical risk potential for vapor intrusion, the Site building needs a vapor intrusion assessment completed. Petroleum vapor intrusion issues are typically localized near the source and adjacent building(s); therefore, the vapor intrusion assessment will concentrate near the source area and expand if/as necessary.

   Note: there is also potential public health risks associated with the nearby Lake, which is a surface water receptor from the storm water outfall, and dermal surface soil contact at the gravel parking lot near restaurant. However, there is no evidence provided to suggest these are immediate problems. Both items will be assessed during investigation.

Sensitive Groundwater Conditions: Nearby private well records indicate a consistent bedrock depth of 45 feet bgs. Per PRP GD 4-18, shallow bedrock and sensitive groundwater conditions apply if the overburden

thickness is 50 feet or less. Sensitive groundwater conditions exist at the Site and require additional risk assessment.

Contaminate Magnitude and Extent Unknown: There have been no subsurface investigations at the Site. The horizontal and vertical contamination is undefined and there is limited information on Site subsurface stratigraphy. The immediate risk to Site environmental and infrastructure receptors is unknown.

Site Receptors: The Site contains the following exposure pathway receptors: soil, shallow groundwater, shallow bedrock, surface water (via groundwater discharge and storm water outfall), unpaved surfaces (surface soil), utility corridors (water, storm sewer, sanitary sewer), domestic wells, municipal water supply (water line permeation), and building structures (vapor intrusion).

Existing Conditions:

Existing conditions at the Site:

1. Petroleum Sources:
    - Current UST basin: three USTs, (two gasoline and one diesel);
    - Former UST basin: two USTS, contents unknown;
    - Dispenser island containing four pumps; and,
    - Fuel Oil AST.
2. Site Infrastructure:
    - Fueling station constructed in 1950s. Assume slab-on grade.
    - 24-hr restaurant attached to eastern side of fueling station. The building addition was constructed in the 1990s. The building is slab on grade and constructed directly above former UST basin.
    - Facility water supplied by municipal services. The main water line runs through Main Street. Bay West assumes the Site water line connection runs directly perpendicular east of the dispenser islands to original fueling station building (*potential for water line permeation*) (**Figure 1**).
    - The Site is paved around the fueling station but the parking area for the restaurant is gravel.
3. Surrounding Infrastructure:
    - North: Two residential properties with domestic wells.
    - East: A scenic drive (Service Road), followed by four lakeside residential homes with domestic wells, followed by a recreational lake that is approximately 250 feet from the eastern limits of the Site property.
    - South: Main Street that contains the main utility corridor for municipal water, storm sewer, and sanitary sewer, followed by commercial area of unknown industry.
    - West: Residential/commercial street, followed by commercial area of unknown industry.
4. Geology/Hydrology:
    - Six private wells are located within 500 feet of the Site. Based on the well logs for the domestic wells, the soils in the area consist of interbedded sands and gravels to depths between 40 to 45 feet bgs, which overlay shallow bedrock at a depth 45 feet bgs. The nearest surface water is a recreational lake located approximately 250 feet east of the Site. Bay West assumes that groundwater flow is to the east, towards the lake. Elevation of the Site in comparison to surface water lake is unknown, Bay West assumes topographic relief is minimal and that the

unconsolidated aquifer is approximately 10 to 15 feet bgs.

- Sensitive groundwater conditions exist. Per PRP GD 4-18, shallow bedrock and sensitive groundwater conditions apply if the overburden thickness is 50 feet or less. Sensitive groundwater conditions exist at the Site and require additional risk assessment.

Opportunities:

The following opportunities exist at the Site:

1. The residences that currently have private wells downgradient of the Site are in an area with access to municipal water in the area.
2. Due to sensitive aquifer conditions, presence of LNAPL, vertical plume migration, and drinking water impacts to nearby wells, the use of alternative high-resolution technologies such as Laser Induced Fluorescence (LIF) and Membrane Interface Probe (MIP) could be used to rapidly define the extent and magnitude of contamination and provide a three-dimensional conceptual site model.

GOALS, OBJECTIVES, TASKS, AND SUBTASKS

Goal: Bay West's primary goal for this project is to protect human health and the environment from the petroleum release(s) identified at this Site.

To accomplish this goal, Bay West will initiate immediate response actions based on the emergency condition and recent release along with sensitive groundwater conditions, per the MPCAs PRP general policy. The MPCA's EMU will oversee the immediate response and recovery actions. Once the emergency conditions have been stabilized, the EMU will transfer oversight to the PRP Program. To ensure public health and safety concerns, Bay West recommends completing the following emergency actions:

- Sample the private wells and provide an alternative water supply (if necessary),
- Review the gas station records to verify a recent release,
- Perform integrity testing on the tanks and lines,
- Assess vapor intrusion risk and install a vapor mitigation system (if necessary),
- Complete test borings to verify the presence of LNAPL and/or historical contamination.

This information will allow us to develop an investigation and monitoring plan or select a corrective action that eliminates pathways linking contaminant sources to receptors, per PRP GD 4-01 (Soil and Groundwater Assessments Performed during Site Investigation).

The following objectives will be completed as part of this work plan:

- Coordinate property access & identify potential receptors;
- Private well sampling & receptor survey;
- Identify and repair leak source;
- Conduct subsurface investigation;
- Conduct interim corrective actions; and,
- Define magnitude and extent.

Objective 1: Coordinate Property Access & Identify Potential Receptors

Bay West will begin gathering receptor information and reviewing gas station records regarding the recent release and potential emergency conditions as early as possible. Identify possible receptors that could be impacted by the petroleum release, along with pathways that may link these receptors to the contamination.

Assumptions: the MPCA has not obtained property access from the current Site or private property owners.

Task A: Obtain Site Access

Bay West will immediately begin coordinating property access with the station owner with the contact information provided by the EMU project leader. (Bay West will either directly conduct these access activities or provide support to the MPCA, as directed by the project leader.) Bay West will attempt to locate contact information for the surrounding residential properties via online parcel resources and by contacting the city. If contact information is available, Bay West will reach out to parcel owners, communicate the need for access, and email and mail access agreement for signature or establish time for signature during initial Site mobilization. Bay West will prepare access agreements for all the nearby residential properties regardless of if initial contact attempt was successful. Bay West will bring prepared access agreements with to the Site during mobilization and will visit residential locations to request access to collect drinking water samples.

Subtask 1: Obtain contact information for the current Site owner and private property owners either from the MPCA or from County tax records via the internet.

Subtask 2: Contact the Site and private property owners by phone or in person (if possible) and explain who we are and the purpose of our request. We will also interview the Site owner for current information regarding record keeping and all owners for any other health or environmental concerns pertaining to the property including vapor concerns. *(The remainder of this work plan assumes no petroleum vapor odors have been reported at the gas station or restaurant or at the private properties located north and east of the Site.)*

Subtask 3: Send a letter and MPCA-approved property access agreement to the Site and private property owners. Because access and sampling are considered emergency actions, Bay West will also bring a hard copy of the access agreement to the Site and private properties to obtain signatures prior to sampling.

Task B: Prepare a Site-Specific Health and Safety Plan (SSHP)

Bay West will prepare a site-specific SSHP, as required by OSHA. The SSHP contains general site information, emergency procedures, map and directions to the nearest hospital, instructions for on-site meetings, a list of tasks to be performed, the potential hazards associated with the proposed tasks and other site conditions, and the contaminants that may be encountered. Personal protective and monitoring equipment requirements are also specified; safety data sheets (SDSs) for contaminants that may be encountered are attached to the plan. The plan is updated by the project manager and field staff as additional information is acquired and new activities are performed.

Task C: Obtain underground utility information

Contact the City Engineer or Director of Public Works and/or Utility Department and request maps of local utilities.

Subtask 1: Obtain sewer maps and information regarding sanitary and storm sewer construction, depths, and the direction of sewer flow.

Subtask 2: Obtain municipal water line maps and information regarding water main construction and depths.

Subtask 3: Request access permission to enter city right-of-way (ROW) for investigation activities, if necessary.

Task D: Complete preliminary receptor survey assessment

To make the upcoming walking receptor survey easier, Bay West will obtain and print an aerial photo of the surrounding area to easily map and number identified receptors, then prepare stamped and addressed post cards in advance that contain the purpose of the receptor information request, a list of receptor questions,

and a statement of assumptions if no response.

Subtask 1: Prepare aerial photo and receptor tables.

Subtask 2: Prepare stamped and addressed post.

Task E: Complete well receptor and private water risk assessments

Review the Minnesota County Well Index (CWI) well log database, along with information from the Minnesota Geologic Survey (MGS), for the location of registered private, municipal and industrial drinking water wells within a ½ mile of the Site to verify local geology and obtain location and ownership information for available wells. All well logs (or logs for the nearest 25 wells if there are more than 25 wells within ½ mile) will be included in the Investigation Report Form. The city will be asked about current wells and future groundwater development around the Site. Bay West will also ask about a wellhead protection area sensitive condition associated with a Community or Nontransient Noncommunity public water system. If identified, Bay West will request the latest MDH VOC sampling results and a copy of the Wellhead Protection Plan, if available, prior to submitting the Investigation Report.

Bay West will also complete a public water risk assessment for the local water supply per PRP GD 4-18.

Subtask 1: Review CWI and MGS well log information.

Subtask 2: Use the well logs, especially that of the nearby water wells, to the aquifer's sensitivity to help determine if this site is a "High Priority" or a "High Risk Aquifer Scenario". Nearby private well records indicate a consistent bedrock depth of 45 feet bgs. *(The remainder of this work plan assumes that the aquifer's sensitivity is "High". Sensitive groundwater conditions also exist at the Site because of shallow bedrock, which applies if overburden thickness is 50 feet or less).*

Subtask 3: We will review the MPCA's PRP Maps Online website at http://pca-gis02.pca.state.mn.us/prp/index.html to find out whether the Site is within a Drinking Water Supply Management Area (DWSMA), a Wellhead Protection Area (WPA) or a Source Water Assessment (SWA) area.

Objective 1 Timeline: Bay West will complete the proposed tasks associated with Objective 1 in approximately 24 to 48 hours, depending upon the cooperation of the property owners.

Objective 1 Deliverables: Work products associated with Objective 1 involve copies or digital files of utility and receptor survey maps, a SSHP, and signed access agreements with property owner(s).

Objective 2: Private Well Sampling & Receptor Survey

Conduct Site visit to interview gas station owner, coordinate private well sampling, and identify possible receptors that could be impacted by the petroleum release, along with pathways that may link these receptors to the contamination.

Task A: Complete fieldwork notification

Use the MPCA's online e-Services Remediation Field Work Notification Service to provide the MPCA with a schedule of the field work prior to mobilizing to the Site. Complete online notification to MPCA for proposed schedule, activities, staff and contact information.

Task B: Coordinate laboratory subcontractor

Bay West will select, procure, and coordinate laboratory analysis services with a laboratory listed on the Minnesota Department of Administration Sampling and Laboratory Analysis Services – Environmental Contract S-792(5), in accordance with the current MPCA Contractor and Subcontracting Purchasing Manual.

> Subtask 1: Complete State Contract Order Form (SCOFs) with selected laboratory prior to scheduling the field work. Upon receiving the signed SCOF from the laboratory, Bay West will submit a copy of the signed SCOF to the MPCA Project Leader.

Task C: Coordinate alternative water supply

Bay West will coordinate (in accordance with MPCA purchasing manual) cases of bottled drinking water to provide each private resident during sampling visit, to use for drinking during the interim of the analytical results. The State Contract W-120(5) Bottled Water and Water Cooler Rental will be utilized.

Task D: Conduct private well sampling

Collect private well samples from each of the six domestic wells for rush services (1 business day) laboratory analysis of VOCs by EPA Method 524.2, GRO, DRO, low-level 1,2-dibromoethane (EDB), and lead. Because leaded fuel was commonly used during the 1950s, the MCPA approved adding analytical analysis for leaded fuel and recalcitrant petroleum compounds EDB, 1,2-dichloroethane (DCA), and methyl tertiary-butyl ether (MTBE).

To expediate results, all sample should be rushed or marked as priority on the chain of custody to ensure that the laboratory analyzes these samples immediately.

Bay West will collect the private well samples from the cold water tap prior to any type of water treatment (softener, etc.). Bay West will run the water for 12 to 15 minutes to purge the lines and well. Bay West will then collect and prepare the water sample for laboratory analysis. Samples will be delivered to the laboratory with chain-of-custody (CoC) documentation. (*Due to the depths of the domestic water wells and the fact the groundwater flow is influenced by the lake, Bay West will assume that domestic wells RW4 and RW5 (Figure 1) are impacted at concentrations exceeding MDH HRLs. Bay West would immediately notify the MPCA and the well owners, then arrange for short-term treatment or an alternative water supply (such as bottled water or GAC filters) for the remainder of the investigation, until a long-term decision can be reached. MPCA EMU retains state subcontractor to install GAC systems at RW4 and RW5. Bay West also assumes the remaining four domestic wells RW1, 2, 3, and 6 are not impacted for the remainder of this work plan.)*

Task E: Conduct records review

Review gas station inventory control and equipment testing records. *(The remainder of this work plan assumes discrepancies in the UST "Monthly Inventory Worksheet" used to record tank contents and amount of fuel pumped versus fuel delivery records. Records indicate a loss of product has been occurring the past two months. No discrepancies were noted in the AST record review.)*

Task F: Evaluate water line permeation risk

Conduct a water line permeation receptor survey and risk evaluation in accordance with PRP GD 4-02 (Risk Evaluation and Site Management Decision at Petroleum Release Sites). *Facility water supplied by municipal services. The main water line runs through Main Street. The Site water line connection runs directly perpendicular east of the dispenser islands to original fueling station building.*

Task G: Evaluate private property risk

Conduct a walking survey of properties located within a 500-foot radius of the Site in accordance with PRP GD 4-02. This survey is conducted to identify if these properties have water wells, sumps, basements or other subsurface structures, possible sources of contamination, and have any reported vapor problems.

Subtask 1: Contact all residents, business owners, and building occupants within 500 feet of the Site to determine if a water supply well, basements, or sumps exist on each property. Contact will involve either personal contact, telephone conversation, or leaving a postcard, as described previously.

Subtask 2: Document visual observations, noting obvious water wells on the properties within the survey area. *(No other water wells other than those shown on Figure 1 were observed within a 500-foot radius of the Site, and recalcitrant petroleum compounds are not present.)*

Subtask 3: Document visual observations of subsurface structures, such as basements, utility markers, and manholes within the survey area.

Subtask 4: Document visual observations of surface water features such as creeks, rivers, wetlands, ponds, and lakes within the survey area. *(Due to the proximity of the recreational lake to the Site, Bay West inspected the perimeter of the lakeshore for indications of petroleum and sheen. Bay West also observed a storm sewer outfall north of RW6. No sheen or indication or petroleum contamination was observed along the shoreline or the outfall. Storm sewer outfall location is provided on Figure 1)*

Subtask 5: Document visual observations of other possible off-Site sources of contamination such as USTs, ASTs, drums, and/or burn pits within the survey area.

Task H: Evaluate Vapor Intrusion Risk

Bay West will perform a vapor receptor survey and risk evaluation within the structures on and adjacent to the Site. The vapor receptor survey will address all requirements of the PRP GD 4-02 and PRP GD 4-06 (Investigation Report Form).

Subtask 1: Prepare a map showing the locations and potential vapor receptors and vapor migration pathways within 500 feet of the Site. The base map will include basements, sumps, manways, sanitary and storm sewers, fiber optic conduits, utility lines, and other subsurface structures where petroleum vapors could migrate or accumulate.

Subtask 2: Conduct vapor monitoring of underground municipal utilities including the sanitary sewer and storm sewer on Main Street. Bay West used a four gas PID combo meter to collect vapor readings from sanitary sewer manholes and storm sewer catch basins on Main Street. The meter measures PID readings along with oxygen, carbon monoxide, hydrogen sulfide, and percent of the lower explosive limit (LEL). *(The remainder of this work plan assumes that no elevated vapor readings were recorded.)*

Subtask 3: Ask occupants of potentially impacted buildings whether they have smelled petroleum odors. *(The remainder of this work plan assumes no occupants reported petroleum odors.)*

Objective 2 Timeline: Tasks associated with Objective 2 will begin as soon as necessary property access agreements are obtained. They will likely take one week to complete.

Objective 2 Deliverables: Reports will not be generated by Bay West during the tasks associated with the receptor surveys; however, we will have generated information regarding possible receptors, including

laboratory reports, that show if the surrounding water supply wells are impacted at concentrations exceeding drinking water standards. Information will be communicated to MPCA EMU and an agreement will be reached to determine the course of action.

Objective 3: Identify Recent Leak Source

Complete storage tank integrity assessment, which will include tank and line tightness testing, along with a leak inspection of the dispensers and spill buckets.

Task A: Coordinate subcontractor for storage tank integrity assessment

Bay West will solicit bids in accordance with the MPCA Contractor and Subcontracting Purchasing Manual from contractor(s) listed on the MPCA UST Program Certified Contractors List with the Installer, Closure and Repair discipline *(It is assumed the subcontracted work is under $5,000; therefore, a minimum of one price quote is required.)*

Subtask 1: Bay West will submit required forms (MPCA Request for Quotation Form, Specification for Construction Form, Pricing Bid Sheet, Certificate of Insurance Form, along with prevailing wage information for the region in which the Site's county is located to the MPCA Project Leader.

Subtask 2: Complete Purchase Order Form (POF) with selected contractor prior to scheduling the field work. Bay West will submit a copy of the signed POF to the MPCA Project Leader. Bay West will also provide the contractor with prevailing wage information for the region in which the Site's county is located

Task B: Direct and oversee storage tank integrity assessment

Bay West will provide a site supervisor to direct and oversee the tank tightness and line tests. We would also have them conduct a leak inspection of the dispensers and spill buckets. *(Due to the age of the USTs, which is assumed to be less than 25 years old, Bay West will assume all three USTs passed tank integrity testing. Additionally, the fuel dispensers showed no indication of failure and the reports indicated they were accurately reporting. The pipe integrity testing indicated failing results. Bay West assumes the recent release was due to a failure in the UST piping system. Bay West would immediately notify the MPCA and station owner and provide a summary of findings.)*

Objective 3 Timeline: Tasks associated with Objective 3 will likely take one week to complete. Bay West will provide station owner with a summary of findings. It is assumed the repair work will be completed by the station owner.

Objective 3 Deliverables: Integrity testing reports, verbal results discussion to provide the MPCA with enough information to determine who will paying for UST piping system repairs and if the system can continue to operate. The most likely response will be that the MPCA will ask the site owner to immediately repair the leaking lines if they want to continue operating.

Objective 4: Conduct subsurface investigation

The purpose of the subsurface investigation is twofold: first to assess the potential for LNAPL because of the recent release; and second, to determine the extent and magnitude of contamination and assess the current site conditions, which will include potential historical contamination associated with the former USTs. Bay West will advance soil borings in or immediately adjacent to all current and historic tank basins and components and collect soil, groundwater, and soil gas samples. One sub-slab monitoring point in the previous UST basin will be installed and sampled (*Bay West discussed and received approval from the MPCA to install a sub-slab point in the Site building in conjunction with the initial soil gas investigation, given the Site conditions and high vapor intrusion risk of the building).*

Task A: Coordinate state contracted services for drilling and laboratory analysis

Subtask 1: Bay West will coordinate soil drilling services with a driller listed on the Minnesota

Department of Administration Drilling Contract D-203(5), in accordance with the current MPCA Contractor and Subcontracting Purchasing Manual, then supply the selected driller with information required for utility clearance, permitting, and contracting. *(It is assumed the drilling work is over $10,000; therefore, a minimum of three price quotes were provided to the MPCA Project Leader and the lowest bidder was selected.)*

Subtask 2: Bay West will select, procure, and coordinate laboratory analysis services with a laboratory listed on the Minnesota Department of Administration Sampling and Laboratory Analysis Services – Environmental Contract S-792(5), in accordance with the current MPCA Contractor and Subcontracting Purchasing Manual.

Subtask 3: Complete SCOFs with the selected driller and laboratory prior to scheduling the field work. Upon receiving the signed SCOFs from the driller and laboratory, Bay West will submit copies of the signed SCOFs to the MPCA Project Leader. Bay West will also provide the driller with prevailing wage information for the region in which the Site's county is located.

Subtask 4: Provide the driller with information required to clear utilities with Gopher State One Call and obtain temporary well permits from the MDH. This information includes the site location, nearest cross-street, property owner, MPCA Project Leader, and a map depicting the proposed locations. The driller, as the actual "excavator", must make the utility clearance notification.

Task B: Complete soil boring investigation

Advance 10 soil borings and four soil gas monitoring points in accordance with PRP GD 4-01. Proposed locations of the soil borings are illustrated on Figure 1; the locations of these soil borings will be based upon available access, Site observations, utilities, and the UST piping system. Bay West has assumed that the shallow groundwater flow direction is east, towards the nearby lake and depth to groundwater is approximately 15 feet bgs. Soil borings will be completed to depths following the vertical extent requirements outlined in PRP GD 4-01. If mobile LNAPL is detected in a soil boring, it will only be advanced to the groundwater table.

The soil boing locations are as follows:

Soil Boring ID	Location Rationale	Soil Boring ID	Location Rationale
SB1	Near current UST basin, western extent definition.	SB6	Between pump island and underground municipal utilities, southern extent definition.
SB2	Near fuel oil AST	SB7	Southern extent of previous UST basin
SB3	Between current UST and pump island, adjacent to piping system	SB8	Judgement call in the field and added because of soil contamination and LNAPL observed in SB5
SB4	Between pump island and gas station	SB9	Assumed downgradient direction towards impacted domestic wells RW4 and RW5, eastern extent definition.
SB5	East of pump island on opposite side of water service line	SB10	North of previous UST basin, northern extent definition.

Subtask 1: Locate all soil probes and borings with a hand-held GPS unit to obtain spatial coordinates for sampling locations and survey the ground elevations relative to a permanent benchmark.

Subtask 2: Collect soil samples from the soil borings on a continuous basis using a 2-inch diameter, 4-foot-long MacroCore sampler. The samples will be screened for organic vapors using a PID and ambient temperature soil headspace analysis in general accordance with PRP GD 4-04. The PID will be calibrated prior to drilling activities using an appropriate standard; calibration records will be

kept with the instrument in a bound book available to the MPCA upon request. It is anticipated that headspace analysis will be conducted at 2-foot sampling intervals; however, field observations and/or changes in lithology may alter the sampling interval. PID readings will be recorded 5 feet into the water table, per the Interstate Technology & Regulatory Council (ITRC) LNAPL guidance. A Bay West geologist will record information such as approximate depth, location, headspace results, and visual characterization of soil on a Bay West Boring Log in the field. Soil used for headspace readings will not also be used for laboratory analysis. *(Field results indicated PID readings greater than 10 ppm in SB3, SB4, SB5, SB5, SB7, SB8, and SB9.)*

Subtask 3: Collect soil samples from each soil boring for laboratory analyses of petroleum VOCs (PVOCs), GRO, DRO and lead, per PRP GD 4-04. Full VOC analysis will not be conducted on the soil samples because groundwater samples from each soil boring will be analyzed for VOCs. *(For the purpose of this work plan, we have assumed that analysis for PAHs will not be requested by the MPCA.)* One or two soil samples, depending on whether organic vapors are detected, will be submitted to a laboratory for chemical analysis. Soil samples that will be analyzed for PVOCs and GRO will be prepared per EPA Method 5035 using a soil-sampling syringe, capped, and immediately placed on ice. Selected soil intervals will then be immediately prepared for laboratory analysis. After each sample is collected, the soil core sampling equipment will be washed by the state-contracted driller in an alconox/water mixture and rinsed with water.

Subtask 4: Inspect the soil samples for evidence of LNAPL, including conducting sheen testing, when appropriate. *(Field results indicated petroleum saturated soils in SB3, SB4, and SB5.)*

Subtask 5: Collect QA/QC soil samples as follows: one soil duplicate per 10 soil samples for the same analytes, one methanol field blank will be submitted for PVOC and GRO analysis only, per the UST and Petroleum Remediation Quality Assurance Program Plan and PRP GD 4-04.

Subtask 6: Collect three soil samples from three different push-probe soil borings from the saturated zone for laboratory grain size analyses by ASTM method D422 using a hydrometer.

Task C: Complete groundwater sampling

Install temporary wells in each of the ten soil boring locations, check each temporary well for the presence of mobile LNAPL, and collect groundwater elevations and samples from each.

Subtask 1: Collect one groundwater sample from each of the seven soil borings in accordance with PRP GD 4-05 (Ground Water Sample Collection and Analysis Procedures) and submit them to the laboratory for analysis of VOCs, GRO, and DRO. *(For the purpose of this work plan, we have assumed that analysis for polycyclic aromatic hydrocarbons (PAHs) will not be requested by the MPCA.)* Groundwater samples will be collected through the push-probe sampling rods using a peristaltic pump or stainless-steel foot valve (ball-and-seat assembly) attached to the end of new polyethylene tubing placed into the temporary well. The water samples will be immediately transferred to the appropriate glassware and preserved in accordance with method-specific requirements. The temporary wells will then be immediately abandoned, per MDH well code.

Subtask 2: Collect and submit quality assurance/quality control (QA/QC) water samples per the UST and Petroleum Remediation Quality Assurance Program Plan and PRP GD 4-05 as follows: one trip blank for VOC and GRO analysis; one temperature blank for each cooler; one duplicate water sample per 10 groundwater samples (collected from a presumably contaminated temporary well) for all project parameters; one matrix spike (MS) and one matrix duplicate (MSD) will be submitted for DRO analysis (from a presumably non-impacted temporary well). For this WP/CP, MS/MSD samples are analyzed at no charge, per the State Laboratory Contract. Because non-reusable sampling equipment will be used during groundwater sampling, no equipment blanks will be collected or analyzed.

Subtask 3: Inspect the water samples for evidence of LNAPL. *(The remainder of this work plan assumes evidence of LNAPL was observed in SB3, SB4 and SB5. Groundwater samples were not collected from these borings.)*

Subtask 4: Thin-spread the cuttings generated during the soil probe process in a gravel area located somewhere on the Site, if approved by the property owner.

Task D: Collect water sample from Site Building

During the soil boring investigation, Bay West observed LNAPL in borings SB3, SB4 and SB5. The gas station's water service line which connects to the municipal water line on Main Street, is located between these borings increasing the risk for water line permeation. *(For the purpose of this WP, it is assumed that the service line is in contact with highly contaminated water or LNAPL. Per PRP GD 4-02, Bay West will collect and analyze a water sample from the line at the nearest point of use, most likely a restroom faucet. The water sample will be submitted for laboratory analysis of VOC by EPA Method 524.2, GRO, DRO, low-level EDB, and lead. For the remainder of this work plan, Bay West assumes the water sample collected from the gas station bathroom faucet is not impacted and contaminant concentrations are less than MDH HRLs.)* Bay West will follow PRP GD 4-05 to collect the sample after water has sat in the water line for at least 8 hours. Bay West will calculate the volume of water standing in the supply system between the sampling point and the potentially impacted section of water line. This calculation will include the water in the lines and any appurtenances (if samples cannot be collected prior to the appurtenances). Bay West will open the sampling tap and collect the water sample immediately after the volume of water calculated has been purged from the system.

Task E: Conduct vapor intrusion assessment

Conduct a vapor intrusion assessment in accordance with PRP GD 4-01a (Vapor Intrusion Assessments Performed during Site Investigations). The purpose of the vapor intrusion assessment is to evaluate the potential risk associated with petroleum vapors migrating into the Site building and surrounding receptors. Sample collection depth requirements will follow Table 1 of GD 4-01a. Based on the field screening data collected from the soil borings, it is Bay West's professional judgement that impacted groundwater and/or LNAPL extends beyond the 100 feet from the "worst case sample" SG-1, therefore SG-2, SG-3 and SG-4 were advanced at distances greater than 100 feet away. Proposed locations of the soil gas monitoring points are illustrated on **Figure 1.**

The soil gas monitoring points location are as follows:

Soil Gas ID	Location Rationale	Soil Gas ID	Location Rationale
SG1	"Worst case" soil gas sample.	SG3	Receptor specific soil gas sample to evaluate vapor concentrations along the property line and potential vapor risk to residential home RW4.
SG2	Receptor specific soil gas sample to evaluate commercial building	SG4	Receptor specific soil gas sample to evaluate vapor concentrations along the property line and potential vapor risk to residential home RW5.

Subtask 1: Bay West will advance four soil-gas points to various depths ranging from 5 to 8 feet bgs, collect an organic vapor reading with a PID from the bottom of each soil-gas point, and collect soil-gas samples from each of these soil probes using a summa canister and 200-mL flow controllers.

Subtask 2: Submit one soil-gas sample from each of the four soil-gas points to the laboratory for analysis of VOCs, per EPA Method TO-15 with the modified MN Soil Gas List. *(The remainder of this work plan assumes soil gas concentrations greater than the MPCA 33X intrusion screening value (ISV) in SG1.)*

Task F: Sub-slab sample point installation and sampling

Pre-approval from the MPCA Project Leader was obtained by Bay West to install one sub-slab vapor sample in the restaurant to assess the potential vapor risk associated with the recent release and the previous UST basin, which is directly beneath the building. Limited information has been provided on the condition of the tanks, but records show PID readings of 1,263 ppm were recorded. The restaurant is constructed slab-on grade. The location of the sub-slab sample SS1 is shown on Figure 1.

Subtask 1: The sub-slab point will be installed using the Vapor Pin™ sampling system developed by Cox Colvin & Associates, Inc. The Vapor Pin consists of a stainless steel fitted with a silicone sleeve. The Vapor Pin is inserted in a hole drilled through the floor slab and pounded in to place using a dead blow hammer. This sampling installation creates a tight seal between the sampling point and the hole drilled through the floor to ensure sample integrity and reduce the likelihood of leaks. Prior to sub-slab sample collection, a minimum of three volumes (volume of sample point and tubing) will be purged using a graduated syringe. Sampling will be conducted by connecting ¼-inch OD Teflon® tubing to an individually certified summa canister fitted with a 200-mL/min flow controller, vacuum gauge and in-line moisture trap. The initial and final summa canister vacuum readings will be recorded on the sample chain-of-custody and/or the field notes. After sampling, the pressure differential reading between the indoor building air and air beneath the building at each sub-slab sampling point will be measured and recorded using a micro-manometer. The vapor sampling point will also be field screened using a calibrated PID and finally resealed using the Vapor Pin fitted rubber cap. The VI building survey will be completed to determine if building conditions warrant the use of 33X intrusion screening values (ISVs) when evaluating sub-slab sample results. The floor plan diagram, location of the vapor sampling points, and pressure differential and PID readings will be documented in the field sampling notebook.

Subtask2: Submit one sub-slab sample for laboratory analysis of MPCA soil gas list VOCs using EPA Method TO-15. *(The remainder of this work plan assumes sub-slab sample concentrations greater than the MPCA 33X ISVs in SS1.)*

Objective 4 Timeline: Tasks associated with Objective 4 will begin as soon as utility clearance and MDH permits are obtained and the initial Site visit is completed. It will likely take four weeks to complete these activities and receive the laboratory reports.

Objective 4 Deliverables: Bay West will complete boring logs and other sampling sheets while in the field. We will also receive laboratory reports for the soil, groundwater, soil-gas and grain-size sampling analysis. Bay West will present information that would typically be provided using PRP GD 4-06 (Investigation Report) to reach an agreement with the regulators on interim corrective actions. An interim corrective action is initiated as soon as the MPCA is notified and may be approved and implemented under the MPCA EMU before the site is transferred to the PRP. *(For the purpose of this work plan, the MPCA EMU approved the installation of four monitoring wells for the following purposes: 1) collect additional groundwater contaminant information; 2) determine presence of LNAPL; and 3) serve as vapor extraction points. It is assumed that the MPCA has decided to forgo Soil Vapor Extraction (SVE) pilot testing, skipping the pilot test work plan, pilot test, and pilot test report guidance documents to expedite building vapor mitigation.)*

Objective 5: Conduct interim corrective actions

As previously discussed, the off-site residences were immediately placed on bottled water in the emergency response section. These actions will involve the installation of four permanent monitoring wells, installation of temporary SVE system, and system operation and monitoring.

The primary goal of the temporary SVE system is to mitigate vapor intrusion risks to the site building, with a secondary goal of beginning to target the LNAPL body. This simple corrective action is intended to eliminate high risks in a straightforward matter. Additional or more aggressive corrective actions may be necessary. A final corrective action will be proposed upon completion of the Site investigation and risk evaluation. The final corrective actions will be initiated by completing a Conceptual Corrective Action Design Report (CCAD).

Task A: Coordinate state contractor for drilling and laboratory services

Bay West will coordinate well installation services with a driller listed on the Minnesota Department of Administration Drilling Contract D-203(5), in accordance with the current MPCA Contractor and Subcontracting Purchasing Manual, then supply the selected driller with information required for utility clearance, permitting, and contracting. *(It is assumed the drilling work is over $10,000; therefore, a minimum of three price quotes were provided to the MPCA Project Leader and the lowest bidder was selected.)*

Bay West will select, procure, and coordinate laboratory analysis services with a laboratory listed on the Minnesota Department of Administration Sampling and Laboratory Analysis Services – Environmental Contract S-792(5), in accordance with the current MPCA Contractor and Subcontracting Purchasing Manual.

Subtask 1: Complete SCOFs with the selected driller prior to scheduling the field work. Upon receiving the signed SCOFs from the contractors, Bay West will submit copies of the signed SCOFs to the MPCA Project Leader. Bay West will also provide the contractors with prevailing wage information for the region in which the Site's county is located.

Subtask 2: Complete SCOFs with selected laboratory prior to scheduling the field work. Upon receiving the signed SCOF from the laboratory, Bay West will submit a copy of the signed SCOF to the MPCA Project Leader.

Subtask 3: Provide the driller with information required to clear utilities with Gopher State One Call and obtain well permits from the MDH. This information includes the site location, nearest cross-street, property owner, MPCA Project Leader, and a map depicting the proposed locations. The driller, as the actual "excavator", must make the utility clearance notification.

Task B: Install monitoring wells/soil vapor extraction wells

Install four permanent monitoring wells utilizing hollow stem auger drilling technology in accordance with PRP GD 4-01 and MDH well construction code to further evaluate the LNAPL body. Proposed well locations are shown on Figure 1. MW1, MW2, and MW3 are located along the south side of the gas station and restaurant. MW 1 will be completed in asphalt, MW2 and MW3 will be completed in gravel. The wells will be constructed of 4-inch PVC with a 15-foot 0.010 PVC screen set at 5 to 20 feet bgs. MW4 is located east of the pump island and will be completed in asphalt. The well will be constructed of 4-inch PVC with a 10-foot 0.010 PVC screen set at 10 to 20 feet bgs. All four wells will be completed at-grade with a protective manhole cover or vault installed in a concrete pad at least four inches in thickness and four feet square or four feet in diameter. The wells will be installed as 4-inch diameter and permitted as recovery wells in case the corrective action involves groundwater extraction. This also allows for more effective LNAPL recovery and SVE effectiveness. Monitoring wells MW1, MW2, and MW3 are being installed adjacent to the on-Site building to act as a sub-slab depressurization system. These wells will be converted to soil vapor extraction points.

Subtask 1: Following well installation, the wells will be developed by alternating surging and purging the well until the water is free of sediment and water quality parameters have stabilized. Development procedures and the amount of water removed will be documented.

Subtask 2: Soil cuttings and development water from the monitoring well installation will be containerized and disposed of in accordance with DOT and EPA regulations.

Subtask 3: Determine presence of LNAPL. *(Due to the proximity to the pump island and recent release, mobile LNAPL was observed in MW1 and MW4.)*

Task C: Conduct groundwater sampling event

Approximately 48 hours after installation and development of the new wells, Bay West will purge and sample the wells PRP GD 4-05. Because LNAPL is suspected in the wells near the pump island, Bay West

will attempt to measure LNAPL thickness using an interface probe or bailer lowered slowly into the well. Wells containing LNAPL are not normally sampled. *(Bay West assumes that mobile LNAPL was observed in MW1 and MW4; therefore, no groundwater samples were collected.)*

Subtask 1: The sampling will be completed using a peristaltic pump. Field stabilization parameters (temperature, conductivity, pH, turbidity, and dissolved oxygen) will be monitored prior to sample collection. Bay West will collect the groundwater sample when field parameters have stabilized or after purging a minimum of three well volumes.

Subtask 2: Collect groundwater samples from MW2 and MW3 per PRP GD 4-05 and submit for VOC, GRO, and DRO analysis. In addition, one water trip blank will be analyzed for VOCs and GRO.

Subtask 3: Purge water generated during well development and sampling will be containerized and disposed of in accordance with DOT and EPA regulations.

Task D: LNAPL recovery activities

Initiate LNAPL recovery in wells per PRP GD 2-02 (LNAPL Management Strategy). LNAPL recovery activities include not only physical removal, but also measuring pre- and post-recovery LNAPL thicknesses and groundwater levels and evaluating LNAPL recharge rates and recovery trends.

Subtask 1: Manually recover LNAPL from MW1 and MW4 using hand bailing recovery method. Manual event frequency will be evaluated based on LNAPL recharge rates and method specific removal rates. *(It is assumed manual LNAPL measurement and recovery will be completed in conjunction with the SVE system installation and maintenance schedule).*

Task E: Coordinate non-state subcontractor for temporary SVE system installation

Coordinate subcontractor services for SVE system installation. *(It is assumed the subcontracted work is between $10,000 and $50,000; therefore, a solicitation advertisement will be entered on the Department of Administration website for at least eight calendar days from the posted date.)*

Subtask 1: Bay West will submit required forms in accordance with the MPCA Contractor and Subcontracting Purchasing Manual (MPCA Request for Quotation Form, Specification for Construction Form, Pricing Bid Sheet, Solicitation Posting Form, and Certificate of Insurance Form, along with prevailing wage information for the region in which the Site's county is located to the MPCA Project Leader. The MPCA Project Leader will provide MPCA Contracts Unit Purchasing Specialist, 6th floor, the entire bid packet and posting.

Subtask 2: Complete POF with selected contractor prior to scheduling the field work. Bay West will submit a copy of the signed POF to the MPCA Project Leader. Bay West will also provide the contractor with prevailing wage information for the region in which the Site's county is located

Subtask 3: Provide the contractor with information required to clear utilities with Gopher State One Call and obtain well permits from the MDH. This information includes the site location, nearest cross-street, property owner, MPCA Project Leader, and a map depicting the proposed locations. The contractor, as the actual "excavator", must make the utility clearance notification.

Task F: Install SVE system

Determine the placement of the temporary SVE system and necessary components, install SVE system, and conduct SVE system monitoring.

Subtask 1: Placement of the blower, electrical lines, location of protective bollards, and pipe trench lines between monitoring well MW1, MW2, MW3, and the building were agreed upon. MW1, MW2, and MW3 were converted to SVE points and necessary trench lines to install piping were excavated. The piping was installed in the trenches and tied into MW1, MW2, and MW3. Pressure fittings were used at 90-degree elbows. New concrete was poured, and the system was turned on. *(PID readings*

collected from the system effluent were 500 ppm, indicating the system is effectively removing vapors from the soil.)

Subtask 2: Install five pressure field extension (PFE) points to measure the pressure differential after the system installation to evaluate system effectiveness. *(It is assumed that all five PFE points meet the minimum pressure differential criteria.)*

Subtask 3: Bay West will conduct daily SVE system inspections for the first week, making initial adjustment as needed to optimize system performance, and then reduced to weekly

Subtask 4: Bay West will prepare PRP GD 7-08 Remediation System Operation Monitoring Report (RSOM) to document the installation and startup of the SVE system.

Objective 5 Timeline: Tasks associated with Objective 5 will begin as soon as Bay West receives approval for the proposed interim corrective actions from the MPCA Project Leader. It will likely take six weeks to complete these activities.

Objective 5 Deliverables: Bay West will complete well boring logs, groundwater sampling documentation, LNAPL recovery reports, system installation documentation (RSOM), and other sampling sheets while in the field. We will also receive laboratory reports for the groundwater sampling analysis. Bay West will present a summary report of interim corrective actions to reach an agreement with the regulators on alternative investigation technologies considering the sensitive aquifer conditions.

Objective 6: Define Magnitude and Extent of Contamination

The interim corrective actions have been completed and emergency conditions are stabilized; however, the magnitude and extent of both the LNAPL body and dissolved phase plume are not defined. The petroleum releases occurred above a sensitive aquifer. There are several domestic wells nearby, two of which had petroleum detections exceeding compound HRLs (RW4 and RW5). There is also a nearby surface water body downgradient from the Site. The contaminant plume is not stable, there are sensitive environmental and human health receptors, and there is evidence to suggest a complex dissolved phase contamination plume given the petroleum impacts are detected in downgradient domestic wells that are screened in the bedrock at 80 feet bgs. This vertical migration is not typically found at petroleum release sites.

Given the unique conditions and the potential hydrogeologic complexity of the dissolved phase plume, Bay West will meet with the MPCA PRP project team to discuss whether to proceed with standard remedial investigation procedures (installing monitoring well network) per the PRP GD 4-01 or whether an alternative approach could be used to define the magnitude and extent of the LNAPL and dissolved phase contamination before installing a nested monitoring well network.

Based on the Site conditions, Bay West recommends completing a LIF/MIP drilling focused investigation to get a high-resolution three-dimensional understanding of the subsurface conditions. A LIF/MIP investigation would provide critical information needed to develop a detailed conceptual Site model. Bay West will be able to use the three-dimensional plume, geologic, and hydrogeologic data generated by the LIF/MIP investigation to target ideal well screen placements and position monitoring well nests to maximize groundwater monitoring for the project. The focused investigation would also assist in making critical remediation decisions. (*Assume the MPCA agrees that given the complexity of the petroleum contamination plume and high-risk aquifer conditions, the investigation to define the magnitude and extent of groundwater contamination can diverge from standard PRP guidance remedial investigation steps outlined in PRP GD 4-01. Bay West will proceed with completing a focused LIF/MIP investigation work plan prior to installation of additional monitoring well network).*

Task A: Test LNAPL LIF Response

Bay West will collect mobile LNAPL sample from MW1 and will send sample to a LIF vendor prior to

development and design of the focused investigation, to verify positive waveform response on the Site LNAPL. The LIF vendor performs this preliminary testing service free of charge so there is no need for state procurement procedures during this task. This preliminary step will provide evidence that the technology will work on the Site release and will allow awarded LIF contractor the information needed to calibrate their equipment to the Site LNAPL waveform "fingerprint" for enhanced LIF investigation performance (*Assume pre-mobilization LNAPL sample had waveform response*).

Task B: Prepare a Focused Investigation Work Plan

Bay West will meet with the MPCA project team to discuss the need to prepare a Focused Investigation Work Plan (PRP GD 7-03) to detail the LIF and MIP proposed locations, grid spacing, expansion decision rationale, costs, and schedule. Bay West recommends having a detailed plan and decision matrix set to avoid making costly impromptu decisions in the field. It also provides the MPCA and LIF/MIP contractor the opportunity to review and comment on the proposed investigation process (*assume the MPCA project team agrees with recommendation*). Bay West will prepare Focused Investigation Work Plan and submit for MPCA approval. Bay West will utilize Appendix B - Laser-induced fluorescence and electrical conductivity probes of MPCA GD c-prp7-01 Corrective Action Design and Implementation.

Task C: Procure LIF/MIP Contractor

Bay West will coordinate LIF/MIP drilling services with a drilling state subcontractor listed on the Minnesota Department of Administration Drilling Contract D-203(5), in accordance with the current MPCA Contractor and Subcontracting Purchasing Manual, then supply the selected driller with information required for utility clearance, permitting, and contracting. Per the MPCA purchasing manual, three bid responses would be required given the estimated value of the request for bid. However, there is currently only one drilling contractor on the state contract that performs LIF services. Bay West will document with an email to the MPCA project leader for their records, that Bay West was only able to get one bid due to no other state contractor vendors providing that service.

Subtask 1: Complete SCOF with the selected driller prior to scheduling the field work. Upon receiving the signed SCOF from the contractor, Bay West will submit a copy of the signed SCOF to the MPCA Project Leader. Bay West will also provide the contractors with prevailing wage information for the region in which the Site's county is located.

Subtask 2: Provide the driller with information required to clear utilities with Gopher State One Call and obtain well permits from the MDH. This information includes the site location, nearest cross-street, property owner, MPCA Project Leader, and a map depicting the proposed locations. The driller, as the actual "excavator", must make the utility clearance notification.

Task D: Coordinate focused investigation

Bay West will complete the following subtasks prior to mobilization of the LIF/MIP focused investigation.

Subtask 1: Bay West will update project SSHP, to include LIF/MIP drilling activities.

Subtask 2: Bay West will communicate with station owner, City ROW, and any commercial or residential property owner that may be impacted by drilling activities, what to expect, hours of operation, schedule duration, and health and safety issues (*assume access agreements and/or permits with the Site owner, city ROW, and commercial/residential properties include drilling investigation activities).*

Subtask 3: Bay West will have a kick-off meeting with LIF/MIP drilling contractor to discuss the plan, identify any potential logistical concerns, and develop solutions to any problems addressed.

Subtask 4: Use the MPCA's online E-services field notification system to provide the MPCA with a schedule of the field work prior to mobilizing to the Site. Complete online notification to MPCA for proposed schedule, activities, staff and contact information.

Subtask 5: Bay West will visit the Site to pre-mark proposed LIF/MIP boring locations. Bay West will

meet drilling subcontractor for the private and public utility locate. Bay West will notify the MPCA project leader if any of the locations require significant adjustments due to access and/or utility issues. Bay West will document utility locations on a field map and update the online web map.

Task E: Define LNAPL Body with LIF

Saturated soils were observed in soil borings SB3, SB4, and SB5 and mobile LNAPL is recovered in wells MW1 and MW4. Evidence of LNAPL was not observed in SB1, SB2, or SB6-SB10. Based on the previous investigation borings, the Site has a limited understanding of the LNAPL extent. Bay West used observational and analytical data collected from soil borings to place a grid pattern of 25 proposed LIF boring locations (**Figure 2**). The proposed LIF borings are spaced approximately 25 feet apart, with exception of locations near existing Site infrastructure. Bay West will evaluate the real-time data and adjust proposed boring locations if/as necessary. Bay West will direct LIF subcontractor to advance borings 10 feet below the last instrument response detection. Bay West will provide oversight of the LIF drilling activities in accordance with the approved Focused Investigation Work Plan to define the full extent of the Site LNAPL body.

Subtask1: Bay West will document total depth, observations, and conditions of each LIF boring location and will retain hard copies of the LIF and electrical conductivity (EC) data logs upon completion. Bay West will keep detailed field notes of daily progress and will monitoring all subcontractor activities and resources used.

Subtask2: Locate all LIF borings with a hand-held sub-meter GPS unit to obtain spatial coordinates. Bay West will also collect photographs of each location for visual reference.

Subtask3: Bay West will observe and verify all borings are sealed in accordance MDH well code.

Subtask4: Bay West will observe and verify that surface conditions are restored to match existing conditions.

Subtask6: Determine completion of LIF drilling technology based on field evaluation of LIF logs, direct subcontractor to switch technology direct push tooling to advance MIP technology.

Task F: Define Dissolved Phase Plume with MIP

Once the magnitude and extent of the LNAPL body is defined, Bay West will direct the drilling subcontractor to switch to MIP technologies. The MIP investigation will focus at defining the horizontal and vertical extent of the dissolved phase plume. Bay West anticipates the dissolved phase plume extends to domestic wells (RW4 and RW5) as both these well locations had petroleum detections above the HRLs. Bay West positioned 12 proposed Tier 1 MIP locations (**Figure 2**). The proposed Tier 1 MIP locations were either positioned between the source area and the impacted domestic wells, with the goal of identifying how the dissolved phase plume is migrating through the unconsolidated aquifer at depth or positioned near the estimated outer edges of the dissolved phase plume, with the goal of delineating the extent. Bay West also included nine Tier 2 proposed MIP locations. The Tier 2 locations will only be completed if adjacent Tier 1 location results warrant it. Bay West does not anticipate all the Tier 2 MIP locations will be required. Bay West will evaluate the real-time data and adjust proposed boring locations if/as necessary. Bay West will direct MIP subcontractor to advance borings 10 feet below the last instrument response detection. Bay West anticipates several MIP locations will be advanced to bedrock at approximately 45 feet bgs. Bay west will provide oversight of the MIP drilling activities in accordance with the approved Focused Investigation Work Plan to define the full extent of the Site dissolved phase plume.

Subtask1: Bay West will document total depth, observations, and issues of each MIP boring location and will retain hard copies of the MIP, EC, and hydraulic profiling tool (HPT) logs upon completion. Bay West will keep detailed field notes of daily progress and will monitoring all subcontractor activities and resources used.

Subtask2: Locate all MIP borings with a hand-held sub-meter GPS unit to obtain spatial coordinates. Bay West will also collect photographs of each location for visual reference.

Subtask3: Bay West will observe and verify all borings are sealed in accordance MDH well code.

Subtask4: Bay West will observe and verify that surface conditions are restored to match existing conditions.

Subtask6: Determine completion of MIP drilling technology based on field evaluation of real-time data logs.

Task G: Prepare Focused Investigation Report

Bay West will complete a Focused Investigation Report (PRP GD 7-04) to document the results of the focused investigation, including any high-resolution Site Characterization reports produced by the LIF/MIP drilling subcontractor.

Objective 6 Timeline: Tasks associated with Objective 6 will begin as soon as Bay West receives approval to proceed with a focused LIF/MIP investigation from the MPCA Project Leader. Bay West estimates it will take up to one month to prepare the Focused Investigation Work Plan and complete the coordination activities and up to two weeks to complete the LIF/MIP drilling investigation once a drilling subcontractor is procured. Bay West estimates it will take up to two months to tabulate the investigation data and prepare a Focused Investigation Report.

Objective 6 Deliverables: Bay West will prepare and submit Focused Investigation Work Plan (PRP GD 7-03) for MPCA approval. Upon completion of LIF/MIP drilling, Bay West will complete a Focused Investigation Report (PRP GD 7-04).

Information presented in the FI Report would be used to reach an agreement with regulators on additional monitoring well placement and construction. A monitoring well network including nested shallow and deep wells will be installed and sampled for two quarters before submitting a Remedial Investigation Report (PRP GD 4-06). The nested monitoring well locations will be selected based upon the LIF/MIP results. Groundwater monitoring for up to three years may be necessary due to the sensitive groundwater conditions.

The Remedial Investigation Report will provide recommendations for additional Site investigation, Site monitoring, private well monitoring, and final corrective actions alternatives. The Investigation Report will include a CCAD and the FI report as appendices. The CCAD will discuss the final corrective action approach listing two or three feasible corrective action alternatives to support the remediation strategies for the Site. The focused investigation results will support the proposed corrective action, propose a schedule for submitting Guidance Document 7-05 Pilot Test Work Plan, or Guidance Document 7-07a Remediation System Detailed Corrective Action Design Report (SDCAD).

Figures

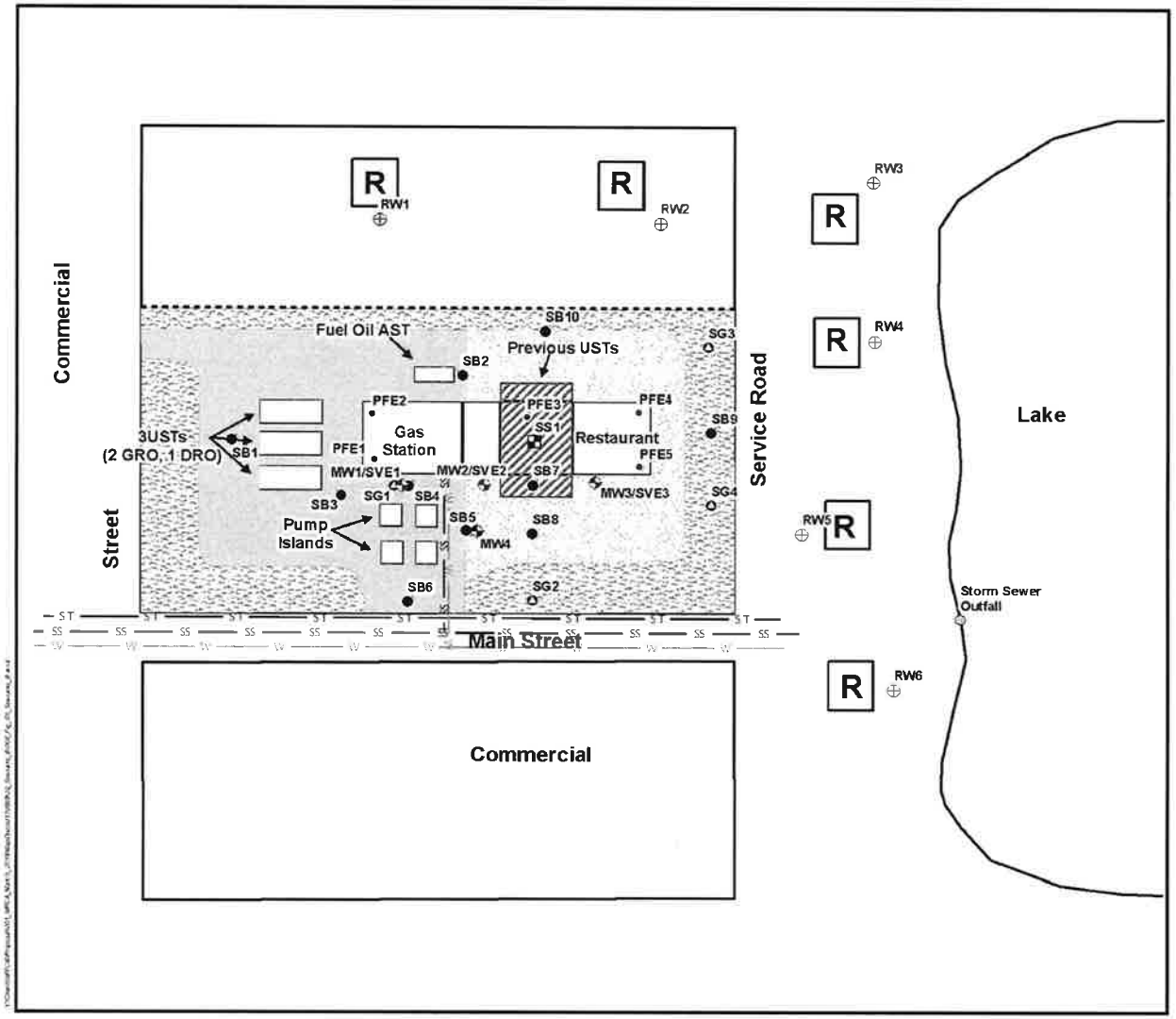
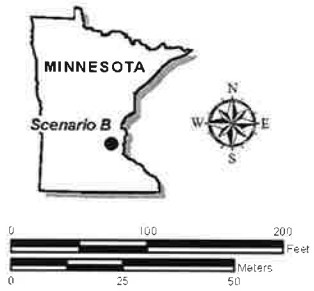


Figure 1

Scenario B Site Map



- R Residence
- PFE Point
- Monitoring Well
- Monitoring Well/SVE Point
- Soil Gas Sample
- Soil Boring
- Sub-Slab Sample
- Storm Sewer Outfall
- Domestic Well
- Property Line
- W Municipal Water
- SS Sanitary Sewer
- ST Storm Sewer
- Previous USTs
- Asphalt Paring Lot
- Gravel Parking Lot
- Grass

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Date Drawn: 4/5/2018 Project #: J170589

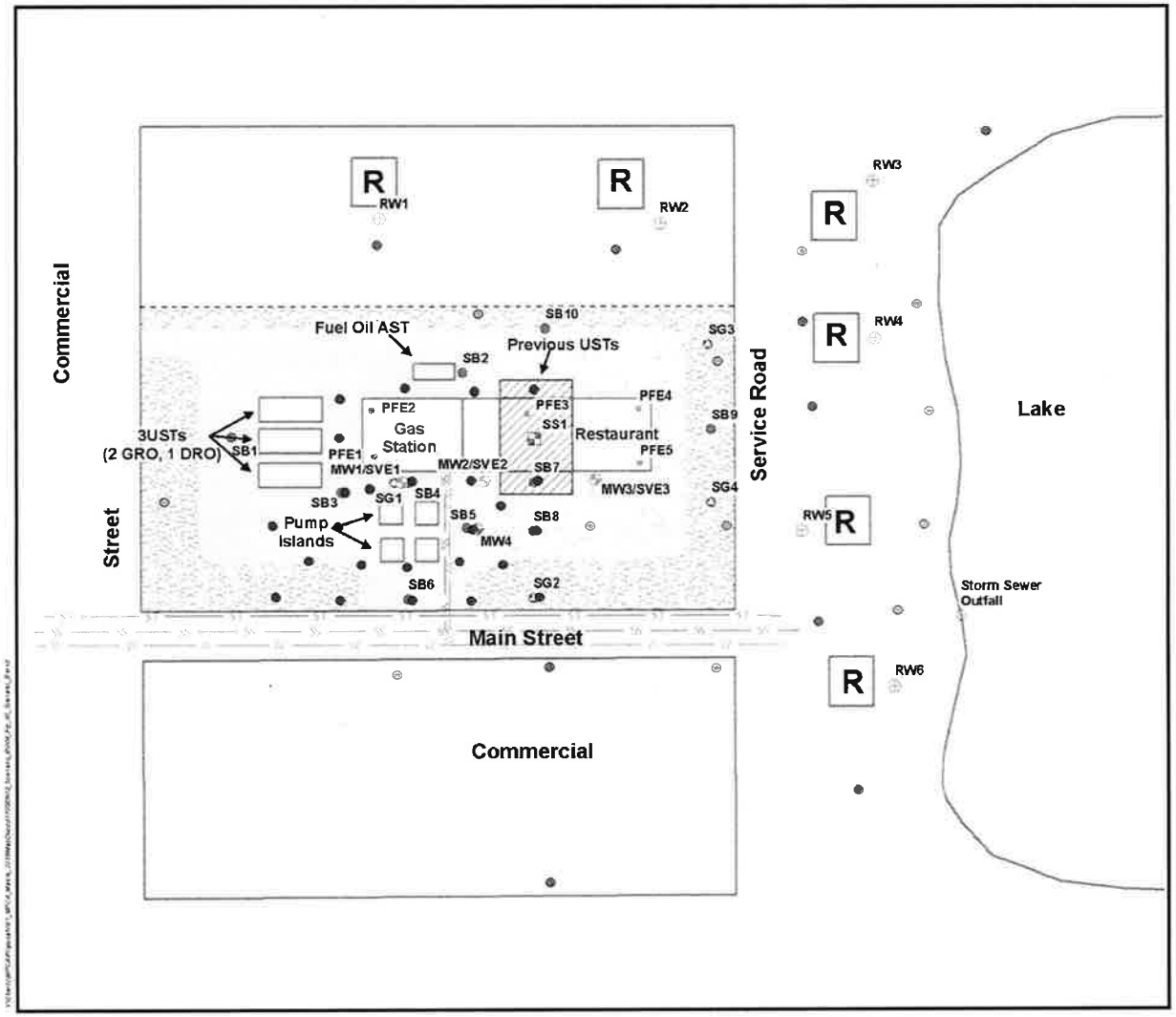
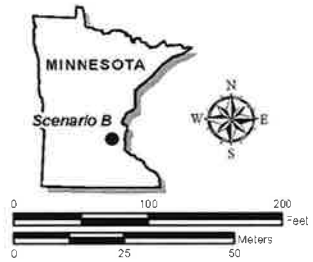


Figure 2

Scenario B Proposed LIF/MIP Boring Locations



- R Residence
- Proposed LIF Boring Location
- Proposed MIP Boring Location (Tier 1)
- Proposed MIP Boring Location (Tier 2)
- PFE Point
- Monitoring Well
- Monitoring Well/SVE Point
- Soil Gas Sample
- Soil Boring
- Sub-Slab Sample
- Storm Sewer Outfall
- Domestic Well
- Property Line
- W Municipal Water
- SS Sanitary Sewer
- ST Storm Sewer
- Previous USTs
- Asphalt Paring Lot
- Gravel Parking Lot
- Grass

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Date Drawn 4/5/2016 Project # J170589

Schedule

Scenario B Schedule
Bay West LLC

Today's Date: 4/2/2018 Monday

Project Lead: Bay West Project Manager
Start Date: 8/6/2018 (Monday)

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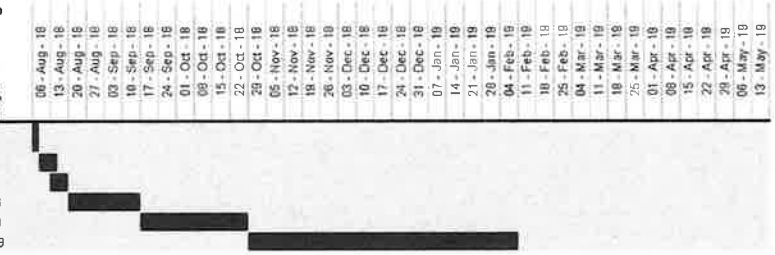
WBS	Tasks	Task Lead	Start	End	Duration (Days)	% Complete	Working Days	Days Complete	Days Remaining
1	Objective 1 - Coordinate Property Access & Identify Potential Receptors		Mon 8/06/18	Tue 8/07/18	2	0%	2	0	2
2	Objective 2 - Private Well Sampling & Receptor Survey		Wed 8/08/18	Tue 8/14/18	7	0%	5	0	7
3	Objective 3 - Identify and Repair Leak Source		Mon 8/13/18	Fri 8/17/18	5	0%	5	0	5
4	Objective 4 - Conduct Subsurface Investigation		Mon 8/20/18	Fri 9/14/18	26	0%	20	0	26
5	Objective 5 - Conduct Interim Corrective Actions		Mon 9/17/18	Fri 10/26/18	40	0%	30	0	40
6	Objective 6 - Define Magnitude and Extent of Contamination		Mon 10/29/18	Fri 2/08/19	103	0%	75	0	103



MINNESOTA POLLUTION CONTROL AGENCY
520 Lafayette Road North
St. Paul, MN 55155-4194

Attachment B
*Example Scenario Project

Project title: Category B: Petroleum Only Environmental Scenario

Project Budget	Engineer 1	Engineer 2	Engineer 3	Engineer 4	Field Technician	GIS/CADD Specialist	On-Site Inspector	Project Manager	QA/QC Officer	Scientist 1	Scientist 2	Total hours (Extended)	2. Subcontracting						3. Equipment		4. Other Expenses	
													Drilling	Bottled Water	Lab Fees	Lab Fees	Tank Assessment Contractor	SVE System Installation Contractor	Owned/Fee Schedule Equipment	Vehicle Mileage	Per Diem	Hotel
													State Contractor	State Contractor	State Contractor	Purchasing Manual	Purchasing Manual	Purchasing Manual				
Objective 1 - Coordinate Property Access & Identify Potential Receptors																						
Task A - Obtain Site Access								2.00			6.00	8.0										
Task B - Prepare SSHP								1.00			2.00	3.0										
Task C - Obtain underground utility information						1.00		2.00				3.0										
Task D - Complete preliminary receptor survey assessment					2.00	2.00					2.00	6.0										
Task E - Complete well receptor and private water risk assessment						1.00					2.00	3.0										
Total for Objective 1 Hrs	**0.0**	**0.0**	**0.0**	**0.0**	**2.0**	**4.0**	**0.0**	**5.0**	**0.0**	**0.0**	**12.0**	**23.0**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**
Objective 2 - Private Well Sampling & Receptor Survey Evaluation																						
Task A - Complete fieldwork notification					1.00							1.0										
Task B - Coordinate Laboratory Subcontractor								1.00			2.00	3.0			$ 1,412.00	$ 1,540.00						
Task C - Coordinate alternative water supply					4.00			2.00				6.0		$ 180.00								
Task D - Conduct private well sampling					5.00	1.00		2.00		5.00		13.0								$ 53.50	$ 22.00	
Task E - Conduct records review										3.00		3.0										
Task F - Evaluate water line permeation risk										1.00		1.0										
Task G - Evaluate private property risk					4.00	1.00						5.0										
Task H - Evaluate vapor intrusion risk					2.00	1.00				2.00		5.0							$ 344.00			
Total for Objective 2 Hrs	**0.0**	**0.0**	**0.0**	**0.0**	**16.0**	**3.0**	**0.0**	**5.0**	**0.0**	**11.0**	**2.0**	**37.00**	**$ -**	**$ 180.00**	**$ 1,412.00**	**$ 1,540.00**	**$ -**	**$ -**	**$ 344.00**	**$ 53.50**	**$ 22.00**	**$ -**
Objective 3 - Identify and Repair Leak Source																						
Task A - Coordinate subcontractor								2.00			2.00	4.00					$ 3,000.00					
Task B - Direct and oversee tank integrity assessment					8.00			4.00				12.00							$ 99.00	$ 53.50	$ 11.00	
Total for Objective 3 Hrs	**0.0**	**0.0**	**0.0**	**0.0**	**8.0**	**0.0**	**0.0**	**6.0**	**0.0**	**0.0**	**2.0**	**16.00**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 3,000.00**	**$ -**	**$ 99.00**	**$ 53.50**	**$ 11.00**	**$ -**
Objective 4 - Conduct subsurface investigation																						
Task A - Coordinate drilling and laboratory subcontractors					1.00			2.00			6.00	9.00	$ 8,000.00		$ 3,616.00	$ 380.00						
Task B - Complete soil boring investigation					20.00	2.00		4.00			6.00	32.00							$ 762.00	$ 53.50	$ 155.00	$ 500.00
Task C - Complete groundwater sampling					10.00							10.00							$ 204.00			
Task D - Collect water sample from Site					1.00							1.00										
Task E - Conduct vapor intrusion assessment					6.00	2.00					2.00	10.00							$ 425.00			
Task F - Sub-slab sample point installation and sampling					2.00	2.00					1.00	5.00							$ 212.00			
Total for Objective 4 Hrs	**0.0**	**0.0**	**0.0**	**0.0**	**40.0**	**6.0**	**0.0**	**6.0**	**0.0**	**0.0**	**15.0**	**67.00**	**$ 8,000.00**	**$ -**	**$ 3,616.00**	**$ 380.00**	**$ -**	**$ -**	**$ 1,503.00**	**$ 53.50**	**$ 166.00**	**$ 500.00**
Objective 5 - Conduct interim corrective actions																						
Task A - Coordinate drilling and laboratory subcontractors					1.00			2.00			6.00	9.00	$ 10,000.00		$ 543.00			$ 50,000.00				
Task B - Install monitoring wells					30.00	2.00		4.00			2.00	38.00							$ 1,510.00	$ 53.50	$ 83.00	$ 250.00
Task C - Conduct groundwater sampling event					10.00			4.00			4.00	18.00							$ 670.00	$ 53.50	$ 11.00	
Task D- LNAPL recovery activities					18.00			2.00			4.00	24.00							$ 510.00			
Task E - Coordinate SVE system installation subcontractor					1.00			4.00			12.00	17.00										$ 500.00
Task F - Install SVE system					52.00	5.00		8.00			32.00	97.00							$ 1,919.00	$ 214.00	$ 155.00	
Total for Objective 5 Hrs	**0.0**	**0.0**	**0.0**	**0.0**	**112.0**	**7.0**	**0.0**	**24.0**	**0.0**	**0.0**	**60.0**	**203.00**	**$ 10,000.00**	**$ -**	**$ 543.00**	**$ -**	**$ -**	**$ 50,000.00**	**$ 4,609.00**	**$ 321.00**	**$ 249.00**	**$ 750.00**

MINNESOTA POLLUTION CONTROL AGENCY
520 Lafayette Road North
St. Paul, MN 55155-4194

Attachment B
*Example Scenario Project

Project title: Category B: Petroleum Only Environmental Scenario

												Total hours (Extended)	2. Subcontracting						3. Equipment		4. Other Expenses	
Project Budget	Engineer 1	Engineer 2	Engineer 3	Engineer 4	Field Technician	GIS/CADD Specialist	On-Site Inspector	Project Manager	QA/QC Officer	Scientist 1	Scientist 2		Drilling	Bottled Water	Lab Fees	Lab Fees	Tank Assessment Contractor	SVE System Installation Contractor	Owned/Fee Schedule Equipment	Vehicle Mileage	Per Diem	Hotel
													State Contractor	State Contractor	State Contractor	Purchasing Manual	Purchasing Manual	Purchasing Manual				
Objective 5 - Define magnitude and extent of contamination																						
Task A - Analyze LNAPL sample					2.00						2.00	4.00										
Task B - Prepare a Focused Investigation Work Plan						6.00		6.00			20.00	32.00										
Task C - Coordinate LIF/MIP subcontractor								2.00			4.00	6.00	$ 40,000.00									
Task D - Coordinate Focused Investigation					2.00			4.00			4.00	10.00										
Task E - Define LNAPL Body with LIF					40.00	2.00		4.00			4.00	50.00							$ 610.00	$ 107.00	$ 119.00	$ 375.00
Task F - Define dissolved phase with MIP					55.00	2.00		5.00			4.00	66.00							$ 610.00	$ 53.50	$ 155.00	$ 500.00
Task G - Prepare Focused Investigation Report					10.00	12.00		15.00			60.00	97.00										
Total for Objective 5 Hrs	**0.0**	**0.0**	**0.0**	**0.0**	**109.0**	**22.0**	**0.0**	**36.0**	**0.0**	**0.0**	**98.0**	**265.00**	**$ 40,000.00**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 1,220.00**	**$ 160.50**	**$ 274.00**	**$ 875.00**
Total Project Hours	**0.0**	**0.0**	**0.0**	**0.0**	**287.0**	**42.0**	**0.0**	**82.0**	**0.0**	**11.0**	**189.0**	**611.00**										
Total Project Expenses													**$ 58,000.00**	**$ 160.00**	**$ 5,571.00**	**$ 1,920.00**	**$ 3,000.00**	**$ 50,000.00**	**$ 7,875.00**	**$ 642.00**	**$ 711.00**	**$ 2,125.00**

Bay West
Customer-Focused Environmental & Industrial Solutions

Attachment C -Sample Contract

Bay West has no exceptions to the Sample State of Minnesota Professional and Technical Services Remediation Master Contract attached in the Remediation Master Contract RFP.

ATTACHMENT D

STATE OF MINNESOTA
AFFIDAVIT OF NONCOLLUSION

I swear (or affirm) under the penalty of perjury:

1. That I am the Responder (if the Responder is an individual), a partner in the company (if the Responder is a partnership), or an officer or employee of the responding corporation having authority to sign on its behalf (if the Responder is a corporation);

2. That the attached proposal submitted in response to the Minnesota Pollution Control Agency Request for Proposals has been arrived at by the Responder independently and has been submitted without collusion with and without any agreement, understanding or planned common course of action with, any other Responder of materials, supplies, equipment or services described in the Request for Proposal, designed to limit fair and open competition;

3. That the contents of the proposal have not been communicated by the Responder or its employees or agents to any person not an employee or agent of the Responder and will not be communicated to any such persons prior to the official opening of the proposals; and

4. That I am fully informed regarding the accuracy of the statements made in this affidavit.

Responder's Firm Name: Bay West, LLC.

Authorized Representative (Please Print) Ed Bacig

Authorized Signature: Ed Bacig

Date: 3/14/18

Subscribed and sworn to me this 14th day of March, 2018

JULIE RAE TSCHIDA
Notary Public
Minnesota
My Commission Expires
Jan 31, 2023

Notary Public Signature:

My commission expires: January 31, 2023

ATTACHMENT E
STATE OF MINNESOTA – WORKFORCE CERTIFICATE INFORMATION

Required by state law for ALL bids or proposals that could exceed $100,000

Complete this form and return it with your bid or proposal. The State of Minnesota is under no obligation to delay proceeding with a contract until a company becomes compliant with the Workforce Certification requirements in Minn. Stat. §363A.36.

BOX A – MINNESOTA COMPANIES that have employed more than 40 full-time employees within this state on any single working day during the previous 12 months, check one option below:

☒ Attached is our current Workforce Certificate issued by the Minnesota Department of Human Rights (MDHR).

☐ Attached is confirmation that MDHR received our application for a Minnesota Workforce Certificate on _____ (date).

BOX B – NON-MINNESOTA COMPANIES that have employed more than 40 full-time employees on a single working day during the previous 12 months in the state where it has its primary place of business, check one option below:

☐ Attached is our current Workforce Certificate issued by MDHR.

☐ We certify we are in compliance with federal affirmative action requirements. Upon notification of contract award, you must send your federal or municipal certificate to MDHR at compliance.MDHR@state.mn.us. If you are unable to send either certificate, MDHR may contact you to request evidence of federal compliance. The inability to provide sufficient documentation may prohibit contract execution.

BOX C – EXEMPT COMPANIES that have not employed more than 40 full-time employees on a single working day in any state during the previous 12 months, check option below if applicable:

☐ We attest we are exempt. If our company is awarded a contract, we will submit to MDHR within 5 business days after the contract is fully signed, the names of our employees during the previous 12 months, the date of separation, if applicable, and the state in which the persons were employed. Send to compliance.MDHR@state.mn.us.

By signing this statement, you certify that the information provided is accurate and that you are authorized to sign on behalf of your company.

Name of Company: Bay West LLC Date 3/14/18

Authorized Signature: Ed Bacig Telephone number: (651) 291-3414

Printed Name: Ed Bacig Title: Vice President

For assistance with this form, contact:

Minnesota Department of Human Rights, Compliance Services

Web: http://mn.gov/mdhr/ TC Metro: 651-539-1095 Toll Free: 800-657-3704

Email: compliance.mdhr@state.mn.us TTY: 651-296-1283

Minnesota Department of
HUMAN RIGHTS

CERTIFICATE OF COMPLIANCE

BAY WEST LLC is hereby certified as a contractor by the Minnesota Department of Human Rights. This certificate is valid from 6/11/2014 to 6/10/2018.

This certification is subject to revocation or suspension prior to its expiration if the department issues a finding of noncompliance or if your organization fails to make a good faith effort to implement its affirmative action plan.

Minnesota Department of Human Rights

FOR THE DEPARTMENT BY:

Kevin M. Lindsey, Commissioner

ATTACHMENT F

CERTIFICATION REGARDING LOBBYING

For State of Minnesota Contracts and Grants over $100,000

The undersigned certifies, to the best of his or her knowledge and belief that:

(1) No Federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of any agency, a member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.

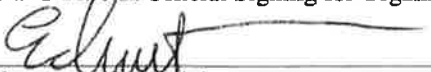
(2) If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, A Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this Federal contract, grant, loan, or cooperative agreement, the undersigned shall complete and submit Standard Form-LLL, Disclosure Form to Report Lobbying in accordance with its instructions.

(3) The undersigned shall require that the language of this certification be included in the award documents for all subawards at all tiers (including subcontracts, subgrants, and contracts under grants, loans and cooperative agreements) and that all subrecipients shall certify and disclose accordingly.

This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by 31 U.S.C. 1352. Any person who fails to file the required certification shall be subject to a civil penalty of not less than $10,000 and not more than $100,000 for each such failure.

Bay West, LLC.
Organization Name

Ed Bacig, Vice President
Name and Title of Official Signing for Organization

By: 
Signature of Official

3/14/18
Date

ATTACHMENT G

State of Minnesota – Equal Pay Certificate

If your response could be in excess of $500,000, please complete and submit this form with your submission. **It is your sole responsibility to provide the information requested and when necessary to obtain an Equal Pay Certificate (Equal Pay Certificate) from the Minnesota Department of Human Rights (MDHR) prior to contract execution. You must supply this document with your submission.** Please contact MDHR with questions at: 651-539-1095 (metro), 1-800-657-3704 (toll free), 711 or 1-800-627-3529 (MN Relay) or at compliance.MDHR@state.mn.us.

Option A – If you have employed 40 or more full-time employees on any single working day during the previous 12 months in Minnesota or the state where you have your primary place of business, please check the applicable box below:

☒ Attached is our current MDHR Equal Pay Certificate.

☐ Attached is MDHR's confirmation of our Equal Pay Certificate application.

Option B – If you have not employed 40 or more full-time employees on any single working day during the previous 12 months in Minnesota or the state where you have your primary place of business, please check the box below.

☐ We are exempt. We agree that if we are selected we will submit to MDHR within five (5) business days of final contract execution, the names of our employees during the previous 12 months, date of separation if applicable, and the state in which the persons were employed. Documentation should be sent to compliance.MDHR@state.mn.us.

The State of Minnesota reserves the right to request additional information from you. **If you are unable to check any of the preceding boxes, please contact MDHR to avoid a determination that a contract with your organization cannot be executed.**

Your signature certifies that you are authorized to make the representations, the information provided is accurate, the State of Minnesota can rely upon the information provided, and the State of Minnesota may take action to suspend or revoke any agreement with you for any false information provided.

Authorized Signature	Ed Bacig Printed Name	Vice President Title
Bay West, LLC.	41-1234511	3/14/18
Organization	MN/FED Tax ID#	Date

Minnesota Department of Human Rights

Issuing Entity | Project # or Lease Address

CERTIFICATE OF EQUAL PAY

BAY WEST LLC is hereby awarded a Certificate of Equal Pay by the Minnesota Department of Human Rights. This certificate is valid from August 26, 2014 to August 25, 2018.

This certification is subject to revocation or suspension prior to its expiration if the Department issues a finding of noncompliance.

Minnesota Department of Human Rights

FOR THE DEPARTMENT BY:

Kevin M. Lindsey, Commissioner

ATTACHMENT H
STATE OF MINNESOTA
RESIDENT VENDOR FORM

In accordance with Laws of Minnesota 2013, Chapter 142, Article 3, Section 16, amending Minn. Stat. § 16C.02, subd. 13, a "Resident Vendor" means a person, firm, or corporation that:

(1) is authorized to conduct business in the state of Minnesota on the date a solicitation for a contract is first advertised or announced. It includes a foreign corporation duly authorized to engage in business in Minnesota;
(2) has paid unemployment taxes or income taxes in this state during the 12 calendar months immediately preceding submission of the bid or proposal for which any preference is sought;
(3) has a business address in the state; and
(4) has affirmatively claimed that status in the bid or proposal submission.

To receive recognition as a Minnesota Resident Vendor ("Resident Vendor"), your company must meet each element of the statutory definition above by the solicitation opening date and time. If you wish to affirmatively claim Resident Vendor status, you should do so by submitting this form with your bid or proposal.

Resident Vendor status may be considered for purposes of resolving tied low bids or the application of a reciprocal preference.

I HEREBY CERTIFY THAT THE COMPANY LISTED BELOW:

1. Is authorized to conduct business in the State of Minnesota on the date a solicitation for a contract is first advertised or announced. *(This includes a foreign corporation duly authorized to engage in business in Minnesota.)*
   X **Yes** ___ **No (must check yes or no)**

2. Has paid unemployment taxes or income taxes in the State of Minnesota during the 12 calendar months immediately preceding submission of the bid or proposal for which any preference is sought.
   X **Yes** ___ **No (must check yes or no)**

3. Has a business address in the State of Minnesota.
   X **Yes** ___ **No (must check yes or no)**

4. Agrees to submit documentation, if requested, as part of the bid or proposal process, to verify compliance with the above statutory requirements.
   X **Yes** ___ **No (must check yes or no)**

BY SIGNING BELOW, you are certifying your compliance with the requirements set forth herein and claiming Resident Vendor status in your bid or proposal submission.

Name of Company: Bay West, LLC. Date: 3/14/18

Authorized Signature: [signature] Telephone: (651) 291-3414

Printed Name: Ed Bacig Title: Vice President

IF YOU ARE CLAIMING RESIDENT VENDOR STATUS, SIGN AND RETURN THIS FORM WITH YOUR BID OR PROPOSA SUBMISSION.

MINNESOTA POLLUTION CONTROL AGENCY
520 Lafayette Road North
St. Paul, MN 55155-4194

REQUEST FOR PROPOSAL (RFP) ADDENDUM

Addendum No.: 1 Date of Addendum: March 19, 2018

Due Date, Time: April 11, 2018, 2:00 PM

Title: MPCA PT RFP – REMEDIATION MASTER

SCOPE OF ADDENDUM

The Request For Proposal (RFP) is revised as follows with additions underlined, and deletions are ~~struck out~~:

Revision 1. RFP Section 2: Project Goals, Page 3, is amended as follows:

The total amount of money available for work under this Master Contract is approximately ~~$120,000,000.00 (One Hundred Twenty Million Dollars)~~ $420,000,000.00 (Four Hundred Twenty Million Dollars) for five years between all Master Contracts issued under this RFP. No payments will be made except for work authorized by a Work Order that is issued from the State. No minimum payment is guaranteed by the State.

Revision 2. RFP Attachment C. Sample Contract, Page 2, Clause 4.1 Consideration. is amended as follows:

4.1 Consideration. The State will pay for all services satisfactorily performed by the Contractor for all Work Order Contracts issued under this Master Contract. The total compensation of all Work Orders may not exceed ~~$120,000,000.00 (One Hundred Twenty Million Dollars)~~ $420,000,000.00 (Four Hundred Twenty Million Dollars) for five (5) years between all Master Contracts

Revision 3. RFP Section 7. Proposal Content, Category A: Petroleum, Superfund, MDA, and Closed Landfill Program Environmental Services, A.3, Page 31, is amended as follows:

Provide a detailed description of the company's experience as it relates to the scope of services outlined in this RFP; specifically, describe the company's experience with each of the bullets listed in **Section 4 3** of this RFP. The Proposal shall contain the following additional details specific to Category A services:

- A summary of Proposer's experience with agricultural chemical investigation and cleanups.
- A list of remediation technologies with which the Proposer has experience.
- Provide a detailed description of the company's experience as it relates to the scope of services outlined in this RFP for Category A.

Revision 4. RFP Section 3: Scope of Services, Page 3, is amended as follows:

The Contractor shall submit a separate proposal for each Category of Service for which the Contactor would like to be considered. Proposals will be evaluated individually for each Category of Service for which they were submitted. Category B is a subset of Category A. If the Contractor submits Proposals for both Category A and Category B, Category A will be evaluated first for qualification. If the Contractor

is not approved for Category A, they will then be evaluated for Category B. Category C will be evaluated individually. Contractors can submit Proposals for all three Categories if desired.

Should a Contractor be approved and selected for more than one Categories, the Contractor will receive only one Master Contract containing all the approved and selected Categories.

Joint ventures and teaming among groups of Contractors is not allowed.

Revision 5. RFP, Attachment C Sample Contract, Clause 38. C. Additional Insurance Conditions, Bullet #5, Page 21, is amended as follows:

- Contractor's policy(ies) shall include legal defense fees in addition to its liability policy limits, with the exception of ~~B.4~~ Professional/Technical, Errors and Omissions, and/or Miscellaneous Liability Insurance above;

Revision 6. RFP, Section 4. Personnel Classifications and Qualifications, Category C: Closed Landfill Program, Project Manager Qualifications,Second Bullet, Page 23, is amended as follows:

- Minimum of three years experience working with landfill, investigation and closure. ~~Minnesota Guidance and Policy with the Superfund/ Petroleum programs. https://www.pca.state.mn.us/waste/cleanup-guidance~~

Revision 7. RFP, Section 6. Supplies and Equipment Pricing, EQUIPMENT RATES, Pages 28 and 29, and RFP, Attachment C, Sample Contract, EQUIPMENT RATES, Pages 5,6,7, is amended as follows:

Equipment	Cost (per day)
Turbidity Meter	$52.00
Oxidation-reduction potential (ORP) Meter	$39.00
~~Hydrolab Quanta~~	~~$80.00~~
Dissolved Oxygen Meter	$46.00
Temperature, pH, conductivity, ORP meter	$68.00
Temperature, pH, conductivity	$35.00
~~YSI Multi Meter w/ Flow Cell~~	~~$117.00~~
Flow Cell	$77.00
Water Quality Meter (6 parameters)	$102.00
2" Trash Pump	~~$189~~75..00
Bladder pump	$118.00
Submersible Pump	$52.00
Peristaltic Pump	$43.00
Diaphram Pump	$53.00
Mechanical Pump Puller	$44.00
Water Level Indicator	$27.00
Hydrocarbon/Water Interface Probe	$55.00
Pump/Slug Testing Equipment	$110.00
Manual direct-push probe equip.	$165.00

X-ray Fluorescent (XRF) for Soil and Lead Paint	$468.00
Nuclear Density Gauge	$69.00
Multi Gas Meter (02/CO/LEL/Methane)	$123.00
O2/Combustible Gas Detector	$110.00
LEL/O2/CO2 Gas Meter	$66.00
LEL/O2Gas Meter	$55.00
Explosimeter	$52.00
Photoionization Detector (PID) 10.6	$99.00
Photoionization Detector (PID) 11.7	$138.00
Flame Ionization Detector (OVA)	$135.00
Velometer / Anemometer	$34.00
Micro Manometer	$64.00
Sound Level Meter	$53.00
Dust Meter	$70.00
Air Compressor	$54.00
Metal/Cable Detector	$47.00
Generator	$65.00
Sump Pump	$33.00
Pressure Washer	$69.00
Magnetometer	$151.00
Coreing Machine with Drill Bits	$110.00
Surveying Equipment - Rotary Laser	$104.00
GPS (Submeter)	$122.00
Laser Level/Lenker Rod	$127.00
Ground Penetrating Radar (GPR)	$426.00
EM-31 Ground Conductivity Meter	$440.00
EM-61 Ground Conductivity Meter	$688.00
55 gal Drums	$70.00
Sub-Slab Soil Gas Sampling Point Insert	$88.00
Screen for Soil Gas Monitoring Points	$51.00
Vapor Pin Installation Kit (per point)	$60.00
Lumex Mercury Monitoring	$187.00
Mercury Analyzer	$179.00
Canoe	$15.68
Boat (includes motor and trailer)	$58.24
ATV **(Hourly Rate)**	$16.80

Revision 8. RFP, Section 7. Proposal Content, Category B. Petroleum Only Remdiation Environmental Services B.5., Scenario 1: Petroleum Only Environmental Services, Page 39, is amended as follows:

5. **Scenario ~~1~~ B: Petroleum Only Environmental Services**

Scenario ~~1~~B:

Revision 9. RFP, Section 6. Supplies and Equipment Pricing, Item cc., Page 27 and RFP, Attachment C, Sample Contract, Clause 8, Page 5, is amended as follows:

cc. Tubing less than $100.00

Revision 10. RFP, Section 7. Proposal Content, 5. Scenario A., Page 33, is amended as follows:

The property owner conducted a limited investigation consisting of several push probes throughout the facility and adjacent property. This investigation identified chlorinated ethenes (most notably trichloroethylene [TCE]) and agricultural chemicals (nitrogen, dicamba, metolachlor, metribuzin, pendimethalin, and triclopyr) in soils and groundwater above agency-regulated cleanup goals. General geology was noted to generally consist of coarse grained sands with thin lenses of silt and clay. The investigation encountered shallow groundwater approximately 6-10 feet bgs, with an assumed flow direction heading into town. All groundwater samples (blue GW samples) were collected at 30 feet for domestic wells, and 15 feet for investigation borings. The investigation did not evaluate the stream.

A single round of vapor points were also advanced off-site as part of the property owner's investigation, with some of the detections exceeding the 33X ISV for TCE (Figure 1). Vapor samples (orange vapor samples) were collected above the water table. MPCA is aware there is a pregnant person at the property with the sub-slab point. A passive soil-gas sample collected in the vehicle/equipment maintenance garage was several orders of magnitude above screening criteria; however, additional characterization nor remediation occurred in the building by the property owner.

Revision 11. RFP, Section 7., Proposal Content, Category A..; Scenario A, 2nd Paragraph, Page 32, is amended as follows:

The site topography is mostly flat, however the elevation does dip downward toward a small stream running through the northern portion of the property. This stream continues into the town which is located in the west adjoining property (see Figure 1). Older portions of the town (situated closer to the former ag-chem plant) are on private well drinking water (blocks 3, 5, and 7) that are 30 feet deep. Newer portions of the town (farther from the former plant) are on community water from the local municipality (blocks 1, 2, 4, and 6).

Revision 12. RFP, Section 7., Proposal Content, Category B. #5. Scenario 1: Petroleum Only Environmental Sercices, 5th Paragraph , Page 39, is amended as follows:

Municipal services are available in the area; however, the lakeside homes are all on private wells. The wells are 80 feet deep. The fueling station is hooked up to municipal water and other utilities at the site include storm sewer, sanitary sewer, and water that run along main street.

This addendum shall become part of the RFP and MUST be returned with the RFP Response.

RESPONDER NAME: Edward

TITLE: Vice President

DATE: 3/26/18

Event Details

Event ID	Format	Type	Page
R3201-2000008034	Sell	RFx	1
Event Round	**Version**		
1	1		
Event Name			
MPCA PT RFP Remediation Master Contract			
Start Time	**Finish Time**		
02/28/2018 08:00:00	04/11/2018 14:00:00		

Event Currency: US Dollar
Bids allowed in other currency: No

Bid Number: 1
Bid Date: 04/10/2018 10:36:07
Total Bid Amount: 0.00

BAY WEST LLC
5 EMPIRE DR
ST PAUL MN 55103-1867
United States

Submit To:

520 LAFAYETTE RD N
ST PAUL MN 55155-4194
United States

Contact: Heininger,Mary
Phone: 651/757-2418

Email: Contracts.pca@state.mn.us

Event Description

Questions and Answers - MPCA PT RFP Remediation Master Contract - March 19, 2018

Addendum 1 - MPCA PT RFP Remediation Master Contract - March 19, 2018

The Minnesota Pollution Control Agency ("MPCA" or "State") and the Minnesota Department of Agriculture ("MDA" or "State") request proposals from qualified experienced environmental contractors (Contractors) to perform environmental investigations and other response actions at sites throughout Minnesota. The State seeks multiple Contractors to provide environmental services, including risk assessments, sampling, investigations, feasibility studies, removal and response actions, remedial design, response action oversight, and long-term operation and maintenance activities statewide. The Scope of Services is divided into three Categories of Service:

- Category A – Petroleum, Superfund, MDA, Closed Landfill Program Environmental Services
- Category B - Petroleum Environmental Services
- Category C - Closed Landfill Program Environmental Services

Refer to attached RFP for additional information.

Proposals due: April 11, 2018
Questions due: March 12, 2018

The RFP and attachments are at the header level. Cost attachment not applicable.

Please note that the link to add or view comments throughout the solicitation is called ' Click here to add or view comments and/or documents related to this line.

VENDORS - DO NOT CLICK THE "NO BID" BOX.

General Comments

- Questions and Answers - Uploaded March 19, 2018

  Addendum 1 - Uploaded March 19, 2018

  See attached RFP and attachments for further details and application instructions.

  ATTENTION PROPOSERS - Attach your proposal and attachments in the Event Header location.

Event Details (cont.)

Event ID	Format	Type	Page
R3201-2000008034	Sell	RFx	2
Event Round	**Version**		
1	1		
Event Name			
MPCA PT RFP Remediation Master Contract			
Start Time	**Finish Time**		
02/28/2018 08:00:00	04/11/2018 14:00:00		

Event Currency: US Dollar
Bids allowed in other currency: No

Bid Number: 1
Bid Date: 04/10/2018 10:36:07
Total Bid Amount: 0.00

BAY WEST LLC
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Submit To:
520 LAFAYETTE RD N
ST PAUL MN 55155-4194
United States

Contact: Heininger,Mary
Phone: 651/757-2418

Email: Contracts.pca@state.mn.us

Line Details

N

Line: 1 **Item ID:** **Line Qty:** 1.00 **UOM:** EACH **Bid Qty:** 1

Reserve Price: No

Description: not applicable - costs included in RFP
Comments:
- Attention Proposers: Your proposal and all attachments should be submitted in the Event Header location

Question	Response
What is the price per unit?	0

Response Comments

Event Details (cont.)

Event ID	Format	Type	Page
R3201-2000008034	Sell	RFx	3
Event Round	**Version**		
1	1		
Event Name			
MPCA PT RFP Remediation Master Contract			
Start Time	**Finish Time**		
02/28/2018 08:00:00	04/11/2018 14:00:00		

Event Currency: US Dollar
Bids allowed in other currency: No

Bid Number: 1
Bid Date: 04/10/2018 10:36:07
Total Bid Amount: 0.00

BAY WEST LLC
5 EMPIRE DR
ST PAUL MN 55103-1867
United States

Submit To:

520 LAFAYETTE RD N
ST PAUL MN 55155-4194
United States

Contact: Heininger,Mary
Phone: 651/757-2418

Email: Contracts.pca@state.mn.us

Bidder Information

Firm Name:		
Name:	**Signature:**	**Date:**
Phone #:	**Fax #:**	
Street Address:		
City & State:	**Zip Code:**	
Email:		

Event Details (cont.)

Event ID	Format	Type	Page
R3201-2000008034	Sell	RFx	4
Event Round	**Version**		
1	1		
Event Name			
MPCA PT RFP Remediation Master Contract			
Start Time		**Finish Time**	
02/28/2018 08:00:00		04/11/2018 14:00:00	

BAY WEST LLC
5 EMPIRE DR
ST PAUL MN 55103-1867
United States

Submit To:

520 LAFAYETTE RD N
ST PAUL MN 55155-4194
United States

Event Currency: US Dollar
Bids allowed in other currency: No

Contact: Heininger,Mary
Phone: 651/757-2418

Email: Contracts.pca@state.mn.us

Bid Number: 1
Bid Date: 04/10/2018 10:36:07
Total Bid Amount: 0.00

Appendix A - Line Specifications

Line: 1 **Item ID:** **Line Qty:** 1 **UOM:** EACH
Description: not applicable - costs included in RFP

Item Specifications

Manufacturer:
Mfg Item ID:
Item Length: 0
Item Width: 0
Item Volume: 0
Item Weight: 0
Item Size:
Item Height: 0
Dimension UOM:
Volume UOM:
Weight UOM:
Item Color:

Shipping Information

Schedule: 1
Quantity: 1
Due Date: 04/11/2018
Freight Terms:
Ship Via:

Ship To: MPCA REMEDIATION DIVISION
520 LAFAYETTE RD N
ST PAUL MN 55155-4194
United States

Event Details (cont.)

Event ID	Format	Type	Page
R3201-2000008034	Sell	RFx	5
Event Round	**Version**		
1	1		
Event Name			
MPCA PT RFP Remediation Master Contract			
Start Time		**Finish Time**	
02/28/2018 08:00:00		04/11/2018 14:00:00	

Event Currency: US Dollar
Bids allowed in other currency: No

Bid Number: 1
Bid Date: 04/10/2018 10:36:07
Total Bid Amount: 0.00

BAY WEST LLC
5 EMPIRE DR
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United States

Submit To:

520 LAFAYETTE RD N
ST PAUL MN 55155-4194
United States

Contact: Heininger,Mary
Phone: 651/757-2418

Email: Contracts.pca@state.mn.us

Appendix B - General Terms & Conditions

1. Please see attached RFP for General Terms and Conditions.

Last Updated: 11/06/2012

Event Details (cont.)

Event ID	Format	Type	Page
R3201-2000008034	Sell	RFx	6
Event Round	**Version**		
1	1		
Event Name			
MPCA PT RFP Remediation Master Contract			
Start Time	**Finish Time**		
02/28/2018 08:00:00	04/11/2018 14:00:00		

BAY WEST LLC
5 EMPIRE DR
ST PAUL MN 55103-1867
United States

Submit To:

520 LAFAYETTE RD N
ST PAUL MN 55155-4194
United States

Event Currency: US Dollar
Bids allowed in other currency: No

Contact: Heininger,Mary
Phone: 651/757-2418

Email: Contracts.pca@state.mn.us

Bid Number: 1
Bid Date: 04/10/2018 10:36:07
Total Bid Amount: 0.00

Appendix C - Bid Responses

Bid Comment

Bay West

Line Items

Line: 1 **Item ID:** **Line Qty:** 1 **UOM:** EACH **Bid Qty:** 1
Total Line Bid Amount: 0
Description: not applicable - costs included in RFP

Question	Response
What is the price per unit?	0