1001 42nd Street, LLC

May 3, 2010

Mr. Mark E. Detterman, PG, CEG
Hazardous Materials Specialist
Alameda County Health Care Services Agency
County Environmental Health
1131 Harbor Bay Parkway, Suite 250
Alameda, CA 94502-6577

Subject: **Fuel Leak Case No. RO0000079 (Geotracker ID#T0600101659)**
One National Engravers (ONE)
1001 42nd Street, Oakland, CA 94608

Dear Mr. Detterman:

In response to the Alameda County Environmental Health (ACEH) directive letter dated March 4, 2010, for the subject property, attached please find the following document prepared by AMEC Geomatrix, Inc.

- Work Plan Addendum for Pilot Study, May 3, 2010

We look forward to implementing the pilot study and await your approval to proceed.

With respect to the document transmitted herewith I state the following:

"I declare, under penalty of perjury, that the information and recommendations contained in the attached documents are true and correct to the best of my knowledge."

Sincerely,

Deborah M. Castles
Vice President

Enclosures

cc: Catherine Johnson
Robert Cheung

130 WEBSTER ST. SUITE 200 | OAKLAND, CA 94607 | PHONE: 510.273.2010 | FAX: 510.251.0747

May 3, 2010

Project 13310.000

Mr. Mark E. Detterman, PG, CEG
Hazardous Materials Specialist
Alameda County Health Care Services Agency
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1131 Harbor Bay Parkway, Suite 250
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Subject: Work Plan Addendum for Pilot Study
Fuel Leak Case No. RO0000079 (Geotracker ID#T0600101659)
One National Engravers (ONE)
1001 42nd Street, Oakland, CA 94608

Dear Mr. Detterman:

On behalf of 1001 42nd Street, LLC, AMEC Geomatrix, Inc. ("AMEC"), is submitting this Work Plan Addendum for Pilot Study ("Addendum") in response to the Alameda County Department of Environmental Health (ACEH) letter dated March 4, 2010. In that letter, ACEH concurred that a pilot study is appropriate as an interim remedial measure, and it requested additional contingency vapor wells with appropriate screen intervals to evaluate the effective vacuum radius of influence. This Addendum discusses the proposed contingency vapor monitoring points, well construction procedures, and steps to relocate, repair, and redevelop groundwater monitoring well MW-B1.

CONTINGENCY VAPOR MONITORING POINTS AND EXTRACTION WELL

In response to ACEH technical comment #10, AMEC proposes to install three vapor monitoring points (VP1, VP2, and VP3) at distances of 15, 30, and 45 feet, respectively, from proposed new extraction well EX-1 (Figure 1). The purpose of the contingency vapor monitoring points will be to monitor observed vacuum at varying distances during the proposed pilot study; the vapor monitoring points will be supplemental to the existing monitoring wells.

The vapor monitoring points will be constructed using direct-push technology, advancing a 3.5-inch-diameter borehole to a depth of approximately 7.5 feet below ground surface (bgs), and installing 1-inch-diameter schedule 40 PVC with nominal 4-foot-long screens with 0.020-inch factory-cut slots. The anticipated screen interval was selected based on recent water levels from monitoring well MW-B2, which indicated that the depth to groundwater was approximately 5.5 feet bgs in February 2010. The sand filter pack will extend at least 6 inches above the screen and consist of #2/12 filter sand, and a 1-foot-thick dry-granular-bentonite transition seal will be placed directly above each filter pack. The remaining borehole annular space will be filled with neat cement grout or granular bentonite and hydrated in place using potable water, from the top of the bentonite seal to within 8 inches of the surface. The vapor monitoring point will be secured with a locking well cap. The surface completion for each vapor monitoring point will consist of a flush-mounted, watertight, traffic-rated well vault with a steel cover. However, the

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actual completion depth, screen interval length, filter pack, and sealing materials will be determined in the field based on the surface and water elevations encountered at each proposed vapor monitoring point. Figure 2 depicts construction details for a typical vapor monitoring point.

In addition to the contingency vapor monitoring points, AMEC proposes to install a new extraction well (EX-1; Figure 1) in the vicinity of monitoring well MW-BES1. A new extraction well is proposed because the screen in existing well MW-BES1 is currently submerged based on recent groundwater-level measurements in February 2010 (depth to groundwater was approximately 8.48 feet bgs, and the screen interval in monitoring well MW-BES1 is 10 to 30 feet bgs). The new extraction well will be installed approximately 5 feet north of MW-BES1 and will be constructed using a hollow-stem-auger drilling method. A 10-inch outer-diameter hollow-stem auger will be advanced to a depth of 15 feet bgs. The well will be constructed using 10-foot-long, 4-inch-diameter schedule 40 PVC with a screen with 0.020-inch factory-cut slots. The depth interval of screen was selected to provide sufficient open screen for vacuum extraction, space for future skimmer installation, and groundwater table fluctuations. The annular space will be backfilled with #2/12 filter sand 1 foot above the screen, and a 1-foot-thick dry-granular-bentonite transition seal will be placed directly above each filter pack. The remaining borehole annular space will be filled with neat cement grout or granular bentonite, hydrated in place using potable water, from the top of the bentonite seal to within 12 inches of the surface. The well will be secured with a locking well cap. The surface completion for extraction well will consist of a flush-mounted, watertight, traffic-rated 12-inch well vault with a steel cover.

Once installed, the well will be developed by surging, bailing, and pumping. A minimum of 24 hours will pass between completion of grouting and development. Well development will proceed until the return water is visually clear, at least 10 well volumes have been removed, and water quality parameters (pH, conductivity, and temperature) have stabilized. The well construction and development procedures will be followed as presented in Attachment A.

RELOCATING/REPLACING MW-B1

Between April and July 2005, monitoring well MW-B1 was covered with a new concrete sidewalk installed by the developer of the property south of the site as part of that site's development as multifamily residential lofts. In an effort to locate monitoring well MW-B1, a geophysical survey will be conducted in the general vicinity of the well based on survey coordinates latitude 37° 49' 56.265", longitude –122° 16' 38.3226" provided by the surveyor. A portion of the sidewalk will be removed to expose the monitoring well for inspection and evaluation of the well's integrity. If the well is suitable for use, the top of the casing will be repaired and secured with a locking well cap. The surface completion will consist of a flush-mounted, watertight, traffic-rated well vault with a steel cover. This well will be redeveloped following the standard procedures presented in Attachment A, and groundwater will be sampled along with the other monitoring wells.

In the event that the well is determined not to be suitable for reuse, the well will be abandoned according to local and state regulations and a replacement monitoring well will be installed. Because the existing four on-site wells are constructed with 20-foot screens, two new replacement monitoring wells will be constructed using hollow-stem augers in order to (1) evaluate comparable data from all five wells, and (2) collect depth-discrete groundwater samples as recommended by ACEH. For the two borings, an 8-inch outer-diameter hollow-stem auger will be used to advance boreholes to depths of 11 and 25 feet bgs; the wells will be using a 5-foot and a 20-foot-long 2-inch-diameter schedule 40 PVC with 0.010-inch factory-cut slots for the screened intervals. The annular space will be backfilled with #2/16 filter sand 1 foot above the screen, and a 1-foot-thick dry-granular-bentonite transition seal will be placed directly above each filter pack. The bentonite will be hydrated with water and left for a minimum of five minutes; then Type I/II neat cement grout will be placed above the bentonite to approximately 8 inches bgs. The well will be secured with a locking expansion cap and a traffic-rated well box placed in concrete. The monitoring well construction and development procedures will be followed as presented in Attachment A.

PRE-FIELD ACTIVITIES

Prior to initiating field work for the above-described vapor and groundwater monitoring well installations, AMEC will obtain the necessary drilling permits and City Encroachment permits; notify Underground Service Alert (USA) for utility clearance; and subcontract with a private utility locator to assess the well locations for the presence of underground utilities. AMEC also will prepare a site-specific health and safety plan.

Please contact the undersigned if you have any question or comments. We look forward to implementing the scope of work and await your approval.

Sincerely yours,
AMEC Geomatrix, Inc.

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Figure 1: Locations of Vapor Monitoring Points and Extraction Wells
Figure 2: Typical Vapor Monitoring Point Construction
Attachment A – Standard Monitoring Well Construction and Development Procedures

cc: Deborah Castles, 1001 42nd Street, LLC

FIGURES

LOCATIONS OF VAPOR MONITORING POINTS AND EXTRACTION WELL
1001 42nd Street
Oakland, California

By: _	Date: 04/29/2010	Project No. 13310.000
AMEC Geomatrix	Figure **1**	

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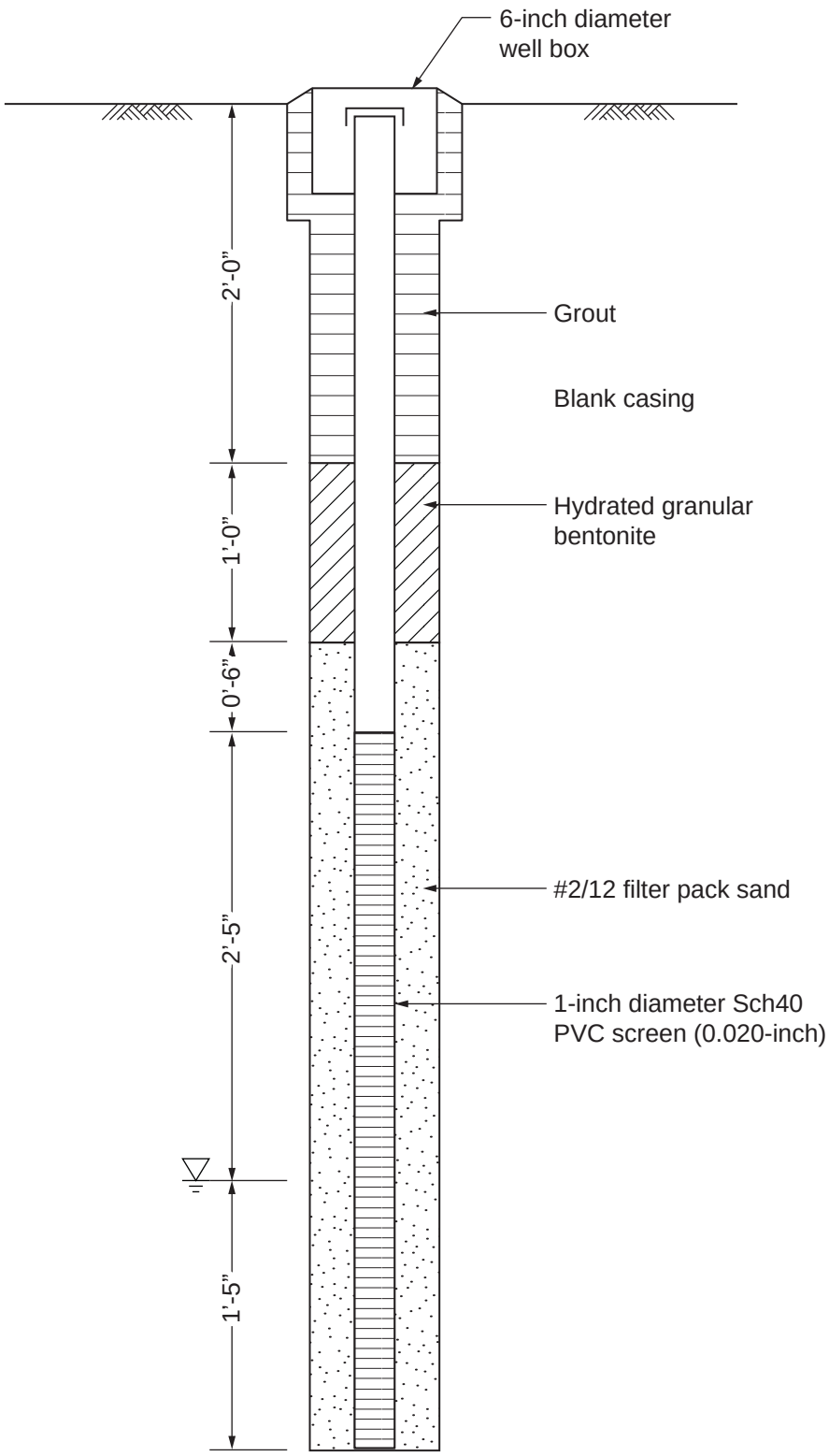

TYPICAL VAPOR MONITORING POINT CONSTRUCTION
1001 42nd Street
Oakland, California

By: _	Date: 04/29/2010	Project No. 13310.000
AMEC Geomatrix		Figure **2**

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ATTACHMENT

Standard Monitoring Well Construction and Development Procedures

ATTACHMENT A

MONITORING WELL INSTALLATION AND DEVELOPMENT PROCEDURES

1001 42nd Street, LLC
Oakland, California

A1.0 MONITORING WELL INSTALLATION

Monitoring well will be installed in accordance with applicable state and local requirements. Prior to drilling, well construction permits will be obtained from the Alameda County Public Works Agency. Field personnel will notify the Underground Service Alert –North Notification Center, at least two business days before any planned drilling activities. If required, relevant private, city, and county utility agencies also will be notified. In addition, field personnel may retain a private underground utility locator and/or licensed surveyor to verify that no public or private utilities are located at proposed drilling locations.

A2.0 DRILLING METHODS AND EQUIPMENT

Based on anticipated subsurface conditions and local drilling practices, the hollow-stem auger (HSA) drilling method will be used to construct the monitoring wells.

A field geologist will observe drilling and well construction activities. The observations of the field geologist will be recorded on a boring log or well log at the time of drilling. A lithologic description will be recorded on the log using the visual-manual procedures of ASTM Standard D 2488 for guidance, which is based on the Unified Soil Classification System (USCS), as described in ASTM D 2488-00. The description of soil samples will include the USCS soil type, grain sizes and estimated percentages of each, moisture content, color according to the Munsell color charts (Kollmorgen Instruments Corp.), plasticity for fine-grained materials, consistency, and other pertinent information, such as degree of cementation, calcareous content, and presence of fossils or other distinctive materials.

Upon completion of drilling of the pilot boring at the location, the boring will be sounded with a weighted tape to verify the total depth, and the well casing will be assembled and lowered into the boring. Well casing materials will be measured to the nearest 0.10 foot and decontaminated before being lowered into the boring through the augers. The polyvinyl chloride (PVC) casing and well screen will be flush threaded. The tops of all well casings will be covered with a PVC slip-joint cap or an expansion cap.

A3.0 MONITORING WELL INSTALLATION

The actual completion depth, screen interval length, filter pack, and sealing materials will be determined in the field based on the lithology and water level encountered at each proposed monitoring well location. The anticipated screen length in the monitoring well is discussed in the main text. The screen interval will be positioned to accommodate seasonal variations in the water level elevation. Details of the anticipated well construction materials are included below and a typical monitoring well construction diagram is attached as Figure A1.

A3.1 WELL CASING AND SCREEN

Well casing will consist of 2- or 4-inch-diameter Schedule 40 PVC as specified in the text. Well screens will be commercially fabricated, factory slotted or continuous slot, and have an inside diameter (ID) equal to or greater than the ID of the well casing. The slot sizes will be compatible in size with the selected filter material. The screen types tentatively selected for the monitoring well design are 2- and 4-inch-diameter Schedule 40 PVC, that is 0.010-inch and 0.020-inch factory slotted.

A3.2 FILTER PACK

Filter pack sand will be poorly graded with less than 2 percent by weight passing a No. 200 sieve and less than 5 percent by weight of calcareous material. Based on anticipated subsurface conditions, Lonestar Lapis Lustre #2/16 filter pack has been tentatively selected for monitoring well and #2/12 for the extraction well.

The filter pack sand will be placed by one of the following methods: 1) through a PVC or steel tremie pipe in a slurry of filter pack sand and potable water, or, 2) free fall through the augers as the augers are raised incrementally. The depth to the top of the filter pack will be measured after each increment to detect possible bridging. If bridging occurs, it will be broken by washing with potable water, or by raising and lowering the drill casing slightly. The filter pack sand will be placed in a calculated quantity sufficient to fill the annular space to a level approximately one foot above the top of the well screen. The depth to the top of the filter pack will be measured using a weighted tape. The monitoring wells will be surged before placement of the transition seal to promote filter pack settlement.

A3.3 TRANSITION SEAL

Once the depth to the top of the filter pack has been verified, bentonite or fine sand will be placed in the annular space as a transition seal between the filter sand and the grout. The preferred transition seal for wells installed in fresh groundwater will be commercially available bentonite chips.

The bentonite chips will be poured through the augers in 6-inch lifts. If the bentonite seal is placed above standing water, each 6-inch lift will hydrated using approximately 2 gallons of potable water. A sufficient quantity of bentonite will be placed to fill the annular space to a level approximately one foot above the top of the filter pack. The depth to the top of the bentonite seal will be measured immediately after placement with a weighted tape. The completed bentonite transition seal will be allowed to hydrate for at least 30 minutes prior to placing grout.

A3.4 GROUT SEAL

A neat cement or cement/bentonite grout seal will be placed through the augers using a tremie pipe from the top of the transition seal to ground surface. The grout mix used for neat cement grout will consist of one sack (94 pounds) of Type I/II Portland cement and approximately 5 to 6 gallons of water. The grout mix used for cement/bentonite grout will consist of one sack (94 pounds) of Type I/II Portland cement, approximately 2 to 5 percent by weight (of cement) of powdered bentonite, and approximately 6 to 7 gallons of water. Only potable water will be used to prepare the grout.

A3.5 SURFACE COMPLETION

If an aboveground surface completion is required, a steel protective cover will be installed immediately upon completion of the monitoring well. If the monitoring well is to be completed in the street or other location requiring a flush mounted surface completion, a traffic-rated well vault will be used.

A4.0 WELL DEVELOPMENT

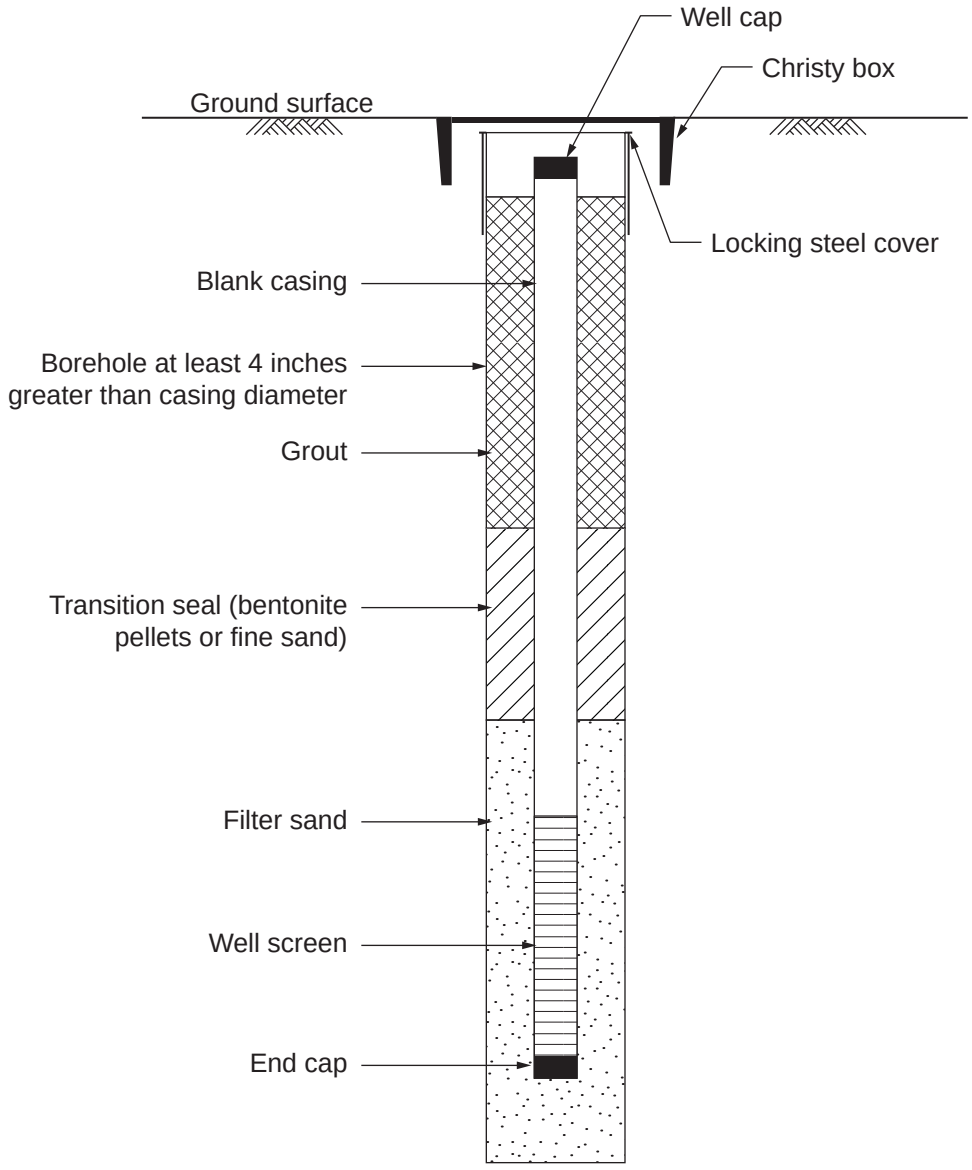
Once the monitoring well is installed, the well will be developed by surging, bailing, and pumping. A minimum of 24 hours will pass between completion of grouting and development. Well development will proceed until the return water is visually clear, at least ten well volumes have been removed, and water quality parameter measurements (pH, conductivity, and temperature) have stabilized.

A5.0 WELL SURVEY

Monitoring well will be surveyed by a licensed land surveyor. The survey will be conducted using either a differential GPS or traditional methods. The horizontal coordinates will be accurate to +/- 0.25 feet in the Zone 3 California State Plan Coordinate System, NAD 1983. The vertical coordinates will be accurate to +/- 0.01 feet in NAVD88.

A6.0 MANAGEMENT OF INVESTIGATION-DERIVED WASTE

Investigation-derived waste will be placed into Department of Transportation (DOT)-approved 55-gallon drums or five-gallon buckets. Purge water, equipment rinseate fluid, personal protective equipment, and soil will be segregated appropriately and placed into separate 55-gallon drums or 5-gallon buckets. Each drum will be labeled with contents and date, and transported to an on-site temporary storage location as designated. Investigation-derived wastes will be tested and managed by the Client for disposal in accordance with applicable laws and regulations.



Not to Scale

TYPICAL MONITORING WELL
CONSTRUCTION DIAGRAM
1001 42nd Street
Oakland, California

By: _	Date: 04/29/2010	Project No. 13310.000
AMEC Geomatrix		Figure **A-1**

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