ENVIRONMENTAL PARTNERS INC 295 NE Gilman Boulevard, Suite 201 Issaquah, Washington 98027 ph 425.395.0010 fax 425.395.0011

TECHNICAL MEMORANDUM

DATE: March 19, 2013

TO: David B. Church, Assistant Vice President for Facility Management
Seattle Pacific University

CC: Kim Maree Johannessen
Johannessen & Associates, P.S.

FROM: Tena Seeds, P.E.
Environmental Partners, Inc.

RE: Completion Documentation for Vapor Mitigation System
Former Clean-M-Rite Property
3308/3310 Third Avenue West, Seattle, Washington

EPI Project Number 53403.1

Environmental Partners, Inc. (EPI) is pleased to present this Technical Memorandum documenting the installation of a vapor mitigation system in the crawl space of the commercial duplex located on the Former Clean-M-Rite Property (also formerly referred to as the "Olsen/Hirji Property") located at 3308/3310 Third Avenue West in Seattle, Washington (Property).

BACKGROUND

Since the mid-1950s, dry cleaning activities were conducted in the northern half of the duplex (the 3310 portion) and a barbershop operated in the southern half (the 3308 portion). The dry cleaning operations ceased in 2006 when the northern portion of the duplex was leased to a new tenant for use as a burger shop. Since approximately 1980, the Property was owned by Shirazali Hirji, who occupied and later leased the northern portion, and Lyle Olsen, who occupied the southern portion. In December 2011, Mr. Hirji transferred his undivided one-half interest in the Property to Mr. Olsen as part of a settlement resolving certain Model Toxics Control Act, Revised Code of Washington (RCW) 70.105D (MTCA) and other common law claims that had been asserted against Mr. Hirji by Mr. Olsen and by Seattle Pacific University (SPU). Mr. Olsen sold the Property to SPU, which also owns the adjoining Ross Parking Lot, in April 2012.

The southern half of the duplex continues to be used as a hair salon by Mr. Olsen. The northern half of the building is being remodeled for use as a restaurant. The building is located above subsurface soils and ground water known to be contaminated with perchlorethylene (PCE or dry cleaning solvent) at concentrations that exceed cleanup levels established under MTCA and its implementing regulations (Washington Administrative Code 173-340). The detected PCE concentrations in ground water also exceed screening levels provided under *Guidance for Evaluating Soil Vapor Intrusion in Washington State; Investigation and Remedial Action* [Washington State Department of Ecology (Ecology) Publication No. 09-09-047, October 2009; VI Guidance].

The environmental conditions documented in the pending Remedial Investigation Report for the Property indicate the potential for vapor intrusion (VI) into the building. Remedial actions for the Property and adjoining Ross Parking Lot are currently being investigated, but are unlikely to be implemented until after a Feasibility Study and Cleanup Action Plan are prepared and approved by Ecology. Further assessment of VI is typically not cost-effective and generally provides ambiguous results regarding actual exposures. VI assessment can be complicated by atmospheric effects, false "negatives" or false "positives," area-wide background conditions, and issues of repeatability. Given the known Property conditions and the potential threats to human health or the environment that might be posed by those conditions, the most protective and cost-effective method for addressing VI was to install a vapor mitigation system consistent with the recommendations of the VI Guidance, Chapter 5.0 – Mitigation. Such a system qualifies as a "remedial action" under RCW 70.105D.020(20) because it is an action consistent with the purposes of MTCA to identify, eliminate, or minimize any threat or potential threat posed by hazardous substances to human health or the environment.

SPU retained EPI to coordinate and oversee the installation of the vapor mitigation system and to prepare this Technical Memorandum documenting those activities and the completed system.

EPI coordinated with Russell Howard of SPU's Office of Facility Management to schedule installation of the vapor mitigation system concurrent with upgrades to the building. EPI understands that building upgrades included an interior remodel of the building's northern half for operation as a restaurant; subfloor, plumbing, and electrical improvements within the crawl space; mitigation of mold and moisture conditions resulting from water leaks that had occurred during the previous tenant's occupancy; and removal of non-hazardous debris that had accumulated in the crawl space area. The vapor mitigation system was installed following SPU's completion of the crawl space and interior improvements.

EPI subcontracted with Advanced Radon Technologies (ART) of Spokane, Washington, to install the system. ART is experienced with designing and installing similar systems within the Seattle area. The scope of ART's work included installation of:

- A plastic membrane within the crawlspace of the building;
- Perforated high-density polyethylene (HDPE) piping underneath the plastic membrane for collection of vapors;

- A vent stack that connects to the perforated piping and extends above the roof of the building for discharge of emissions; and

- An in-line ventilation fan within the stack to induce a negative pressure beneath the membrane.

Electrical connections to the system were performed by Balkan Electric, LLC of Edmonds, Washington in coordination with ART.

SYSTEM INSTALLATION AND STARTUP

On February 6, 2013, Eric Caddey of EPI met with Dave Gerard of ART at the Property to review and implement the planned scope of work. ART installed the system on February 6 and 7, 2013, and subcontracted with Balkan Electric, LLC for the electrical connections associated with the vent stack fan. Figure 1 shows the approximate layout of the system. Photographs of the system and installation are included as Attachment A to this Technical Memorandum. ART used the access hatch on the east side of the building to access the crawl space (Photo 1).

Vapor Collection Piping

Approximately 105 linear feet of 4-inch-diameter, flexible corrugated HDPE piping was installed beneath the northern half of the building (see Figure 1) in the area where PCE impacts were identified in shallow subsurface soils. This area generally corresponds with the area of former dry cleaning operations and overlies the area of highest PCE concentrations in ground water. Prior to installation, ART perforated the piping by drilling three to four small (i.e., 1/8-inch or slightly larger) holes in the piping approximately every 2 to 3 feet (Photo 2).

Vapor Barrier/Membrane

ART installed a plastic membrane over the perforated piping (Photo 3). Approximately 1,800 square feet of 6-millimeter (6-mil) polyethylene plastic sheeting was used to construct the membrane. The seams overlapped approximately 4 to 5 feet and were sealed with OSI® QB-300 multi-purpose construction adhesive. The membrane was also sealed at each of the building's structural support posts and around vertical pipes beneath the building (Photo 4), and at the north, east, and south walls using the construction adhesive. Due to very low overhead clearance (i.e., approximately 4 to 6 inches) beneath the westernmost portion of the building, that area was physically inaccessible for ART to install the membrane. Therefore, the membrane does not fully extend to the west wall of the building, as shown on Figure 1. Where the western edge of the membrane could not be sealed, ART secured the plastic sheeting to the dirt floor with brick weights. Mr. Howard was informed of the final layout of the membrane and acknowledged that the west portion of the crawlspace could not be fully covered.

Vent Stack

The vent stack was constructed of 4-inch-diameter, Schedule 40 polyvinyl chloride (PVC) piping, and was installed at the northeast corner of the building exterior in the location shown on Figure 1 and in Photo 5. The bottom of the stack transitions through the building wall into the interior crawl space with an elbow fitting, and connects to the header of the perforated HDPE piping. The top of the stack is fitted around the eave and gutter at the roof of the building and extends approximately 2 feet above the roof line. Aluminum brackets were used to secure the stack piping to the exterior building wall.

Ventilation Fan

ART installed the in-line ventilation fan near the bottom of the stack on the exterior of the building (Photo 5). The fan is a 90-watt AMG Hawk manufactured by Festa Manufacturing Enterprises, LLC. The AMG Hawk operates on 120 volt 60 Hz power and can achieve a maximum rated flow of up to 295 cubic feet per minute (CFM) at a static pressure of 0 inches of water column (w.c.). Performance specifications for the fan indicate that it can achieve 122 CFM at a static pressure of 1.0 inch w.c., which is the approximate operating flow rate expected for the system based on communications with ART. A copy of the fan specifications sheet from the manufacturer is included as Attachment B.

Electrical and Startup

After ART completed installation of the system components, a representative from Balkan Electric, LLC completed the electrical connections to the fan in a manner consistent with local electrical codes. The electrical installation was completed on February 7, 2013, at which time ART started up the system. Upon final inspection of the system and its operation, ART left the Property with the system operating (Photo 6).

STACK VAPOR SAMPLING

EPI personnel visited the Property on February 19, 2013 to measure stack emissions from the vapor mitigation system. An air sampling port was installed on the vent stack approximately 2 feet from the discharge side of the fan. Effluent from the stack was measured for volatile organic compounds (VOCs) using a photoionization detector (PID) calibrated to 100 parts per million by volume (ppmV) of isobutylene. The PID indicated a total VOC concentration of 0.3 ppmV. Using a peristaltic pump and clean polyethylene tubing, a vapor sample was collected from the sampling port into a Tedlar® gas sampling bag. The sample was collected after first purging air from the tubing so that representative vapors from the stack could be collected for analysis. The vapor sample was submitted to ALS Laboratory Group of Everett, Washington, for analysis of halogenated VOCs by U.S. Environmental Protection Agency (EPA) Method 8260.

The analytical results indicate that PCE was detected in the vapor sample at a concentration of 0.35 micrograms/liter of air (µg/L). This concentration is equivalent to a volumetric concentration of 0.0479 ppmV. No other compounds were detected in the sample. A copy of the laboratory analytical report is included as Attachment C.

EMISSIONS EVALUATION AND PERMIT EXEMPTION

The measured vapor concentration was used to estimate mass emissions of PCE to the atmosphere at the stack. The performance curve of the vent fan was used to determine the discharge flow. A flow rate of 125 CFM was used based on an operational vacuum of 1 inch w.c. As a conservative (i.e., high) estimate of total stack emissions, the maximum rated flow for the vent fan (i.e., 295 CFM) was also applied to the detected PCE concentration in vapor.

Daily PCE emissions at the stack were calculated using standard conversion rates[1] for mass, volume, and time, and the conservative assumption that the vapor concentration and flow rate remain constant. On this basis, the system is estimated to discharge approximately 0.00393 pound of PCE per day at the assumed operational flow rate of 125 CFM. This equates to a total PCE loading to the atmosphere of approximately 1.4 pounds per year. At the maximum rated flow of 295 CFM, the system has the potential to discharge approximately 0.00928 pound of PCE per day, or a total PCE loading to the atmosphere of 3.4 pounds per year.

The estimated annual loading rates for PCE are several orders of magnitude lower than the 500 pounds per year that triggers the need for an operating permit under the Puget Sound Clean Air Agency (PSCAA) regulations. Because the actual emissions are significantly less than the PSCAA threshold, the vapor mitigation system meets the criterion for a permit exemption under PSCAA Regulation I, Article 6, Section 6.03(c)(94). However, sufficient records must be kept to document the exemption. Therefore, it is recommended that the stack emissions from the system be periodically monitored to document continued compliance with the regulation. Emissions monitoring can easily be performed during planned routine ground water monitoring.

The conditions observed after installation of the vapor mitigation system confirm that PCE vapors were present in subsurface soils beneath the building and had the potential to migrate into the occupied building space. The vapor mitigation system therefore serves the purpose of minimizing or eliminating, to the extent reasonably practicable, the potential threats posed by the intrusion of PCE vapors into the building. Please contact Ms. Tena Seeds at (425) 395-0042 if you have any questions regarding the vapor mitigation system.

ENCLOSURES

Figure

Figure 1 Crawl Space Vapor Mitigation System Layout

Attachments

Attachment A Vapor Mitigation System Photographs
Attachment B Vent Fan Technical Specification Sheet
Attachment C Laboratory Analytical Report

[1] Conversion rates for calculating daily emissions of PCE under standard temperature and pressure included: 1,000,000,000 micrograms per kilogram, 2.205 pounds per kilogram, 28.316 liters per cubic foot, and 1,440 minutes per day. Annual loading rates based on 365 days per year.

Figure

KEY:

APPROXIMATE LOCATION OF 4-INCH HDPE PERFORATED PIPING; CAPPED AT THE ENDS

AREA COVERED WITH 6 MIL POLYETHYLENE PLASTIC SHEETING; SEAMS OVERLAP 4 TO 5 FEET AND SEALED WITH MULTI-PURPOSE CONSTRUCTION ADHESIVE

0 5 10 20

SCALE: 1" = 20'

ENVIRONMENTAL PARTNERS INC
295 NE Gilman Boulevard, Suite 201
Issaquah, Washington 98027

FIGURE 1
CRAWL SPACE VAPOR MITIGATION SYSTEM
LAYOUT

PROJECT	53403.1 CRAWL SPACE VAPOR MITIGATION		
PREPARED FOR	SEATTLE PACIFIC UNIVERSITY		
LOCATION	FORMER CLEAN-M-RITE PROPERTY 3308/3310 THIRD AVENUE WEST SEATTLE, WASHINGTON		
SHEET	**DRAWN BY**	**REVIEWED BY**	**DATE**
1 OF 1	ALW	ELC/TSS	3/19/13

Attachments

Attachment A

Vapor Mitigation System Photographs

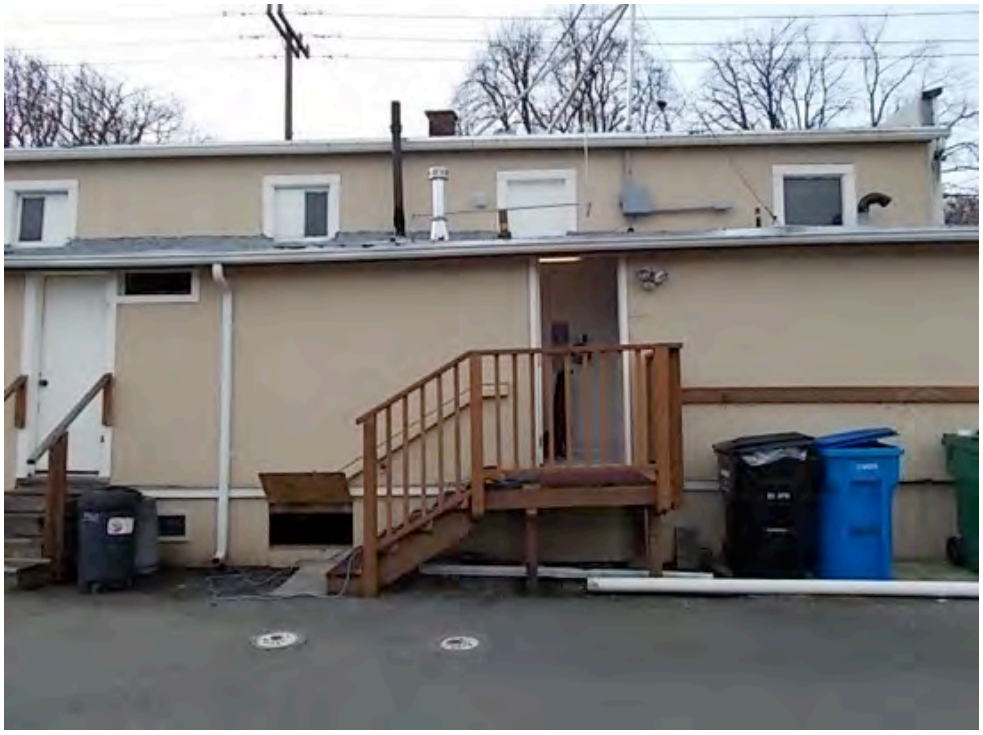


PHOTO 1
Back of building (east side) with crawl space access hatch next to stairs.

PHOTO 2
Mr. Dave Gerard of Advanced Radon Technologies drills holes in vapor collection piping.

PHOTO 3
Inside crawl space, membrane installed over vapor collection piping.

PHOTO 4
Inside crawl space, membrane sealed around piping under building.

PHOTO 5
Northeast corner of building, location of vent stack and in-line fan.

PHOTO 6
Building with vapor mitigation system installed and operating.

Attachment B

Vent Fan Technical Specification Sheet

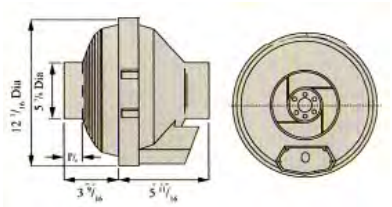
Festa Manufacturing Enterprises, LLC.

Festa International Radon Supply Technologies, Co.

Bringing Honesty, Integrity and Ethics to America's Radon Industry

Festa Manufacturing Enterprises, LLC. is proud to offer our customers products with the ENERGY STAR label.

AMG Hawk



AMG Hawk, Radon Extract Fan Performance Figures

				CFM at STATIC PRESSURE in. w.g.							
Model	*Volts*	*Watts*	*Max. Amps*	*0"*	*0.25"*	*0.5"*	*0.75"*	*1.0"*	*1.25"*	*1.5"*	*1.6"*
AMG Hawk	120V 60Hz	90	0.71	295	252	203	163	122	74	36	0
Weight: 8 lb 3oz Fan Speed: 2200 rpm											

Performance shown is for installation type D - Ducted inlet, Ducted outlet. Speed (rpm) shown is nominal. Performance is based on actual speed of test. Performance ratings do not include the effects of appurtenances in the airstream. The performance figures shown have been corrected to standard air density.

We have brackets too.

Place your order ...

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Print Order Form ... (Call one of the numbers below for current pricing.)

47A Progress Avenue, Cranberry Twp., PA 16066 1 (800) 806-7866 1 (877) 264-3267

Attachment C
Laboratory Analytical Report

February 22, 2013

Ms. Tena Seeds
Environmental Partners, Inc.
295 NE Gilman Blvd., Suite 201
Issaquah, WA 98027

Dear Ms. Seeds,

On February 20th, 1 sample was received by our laboratory and assigned our laboratory project number EV13020105. The project was identified as your SPU - Ross Parking Lot. The sample identification and requested analyses are outlined on the attached chain of custody record.

No abnormalities or nonconformances were observed during the analyses of the project samples.

Please do not hesitate to call me if you have any questions or if I can be of further assistance.

Sincerely,

ALS Laboratory Group

Rick Bagan
Laboratory Director

ADDRESS 8620 Holly Drive, Suite 100, Everett, WA 98208 | PHONE 425-356-2600 | FAX 425-356-2626
ALS Laboratory Group A Campbell Brothers Limited Company

ALS Environmental

CERTIFICATE OF ANALYSIS

CLIENT:	Environmental Partners, Inc. 295 NE Gilman Blvd., Suite 201 Issaquah, WA 98027	DATE:	2/22/2013
		ALS JOB#:	EV13020105
		ALS SAMPLE#:	-01
CLIENT CONTACT:	Tena Seeds	DATE RECEIVED:	2/20/2013
CLIENT PROJECT:	SPU - Ross Parking Lot	COLLECTION DATE:	2/19/2013 10:40:00 AM
CLIENT SAMPLE ID	SPU-Stack-02-14-13	WDOE ACCREDITATION:	C601

DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Dichlorodifluoromethane	EPA-8260	U	0.20	1	UG/L	02/21/2013	GAP
Chloromethane	EPA-8260	U	0.20	1	UG/L	02/21/2013	GAP
Vinyl Chloride	EPA-8260	U	0.020	1	UG/L	02/21/2013	GAP
Bromomethane	EPA-8260	U	0.20	1	UG/L	02/21/2013	GAP
Chloroethane	EPA-8260	U	0.20	1	UG/L	02/21/2013	GAP
Carbon Tetrachloride	EPA-8260	U	0.20	1	UG/L	02/21/2013	GAP
Trichlorofluoromethane	EPA-8260	U	0.20	1	UG/L	02/21/2013	GAP
1,1-Dichloroethene	EPA-8260	U	0.20	1	UG/L	02/21/2013	GAP
Methylene Chloride	EPA-8260	U	0.50	1	UG/L	02/21/2013	GAP
Trans-1,2-Dichloroethene	EPA-8260	U	0.20	1	UG/L	02/21/2013	GAP
1,1-Dichloroethane	EPA-8260	U	0.20	1	UG/L	02/21/2013	GAP
Cis-1,2-Dichloroethene	EPA-8260	U	0.20	1	UG/L	02/21/2013	GAP
2,2-Dichloropropane	EPA-8260	U	0.20	1	UG/L	02/21/2013	GAP
Bromochloromethane	EPA-8260	U	0.20	1	UG/L	02/21/2013	GAP
Chloroform	EPA-8260	U	0.20	1	UG/L	02/21/2013	GAP
1,1,1-Trichloroethane	EPA-8260	U	0.20	1	UG/L	02/21/2013	GAP
1,1-Dichloropropene	EPA-8260	U	0.20	1	UG/L	02/21/2013	GAP
1,2-Dichloroethane	EPA-8260	U	0.20	1	UG/L	02/21/2013	GAP
Trichloroethene	EPA-8260	U	0.20	1	UG/L	02/21/2013	GAP
1,2-Dichloropropane	EPA-8260	U	0.20	1	UG/L	02/21/2013	GAP
Dibromomethane	EPA-8260	U	0.20	1	UG/L	02/21/2013	GAP
Bromodichloromethane	EPA-8260	U	0.20	1	UG/L	02/21/2013	GAP
Trans-1,3-Dichloropropene	EPA-8260	U	0.20	1	UG/L	02/21/2013	GAP
Cis-1,3-Dichloropropene	EPA-8260	U	0.20	1	UG/L	02/21/2013	GAP
1,1,2-Trichloroethane	EPA-8260	U	0.20	1	UG/L	02/21/2013	GAP
1,3-Dichloropropane	EPA-8260	U	0.20	1	UG/L	02/21/2013	GAP
Tetrachloroethylene	EPA-8260	**0.35**	0.20	1	UG/L	02/21/2013	GAP
Dibromochloromethane	EPA-8260	U	0.20	1	UG/L	02/21/2013	GAP
1,2-Dibromoethane	EPA-8260	U	0.20	1	UG/L	02/21/2013	GAP
Chlorobenzene	EPA-8260	U	0.20	1	UG/L	02/21/2013	GAP
1,1,1,2-Tetrachloroethane	EPA-8260	U	0.20	1	UG/L	02/21/2013	GAP
Bromoform	EPA-8260	U	0.20	1	UG/L	02/21/2013	GAP
1,1,2,2-Tetrachloroethane	EPA-8260	U	0.20	1	UG/L	02/21/2013	GAP
1,2,3-Trichloropropane	EPA-8260	U	0.20	1	UG/L	02/21/2013	GAP
Bromobenzene	EPA-8260	U	0.20	1	UG/L	02/21/2013	GAP
2-Chlorotoluene	EPA-8260	U	0.20	1	UG/L	02/21/2013	GAP
4-Chlorotoluene	EPA-8260	U	0.20	1	UG/L	02/21/2013	GAP
1,3 Dichlorobenzene	EPA-8260	U	0.20	1	UG/L	02/21/2013	GAP

ADDRESS 8620 Holly Drive, Suite 100, Everett, WA 98208 | PHONE 425-356-2600 | FAX 425-356-2626
ALS Laboratory Group A Campbell Brothers Limited Company

ALS Environmental

CERTIFICATE OF ANALYSIS

CLIENT:	Environmental Partners, Inc. 295 NE Gilman Blvd., Suite 201 Issaquah, WA 98027	DATE: ALS JOB#: ALS SAMPLE#:	2/22/2013 EV13020105 -01
CLIENT CONTACT:	Tena Seeds	DATE RECEIVED:	2/20/2013
CLIENT PROJECT:	SPU - Ross Parking Lot	COLLECTION DATE:	2/19/2013 10:40:00 AM
CLIENT SAMPLE ID	SPU-Stack-02-14-13	WDOE ACCREDITATION:	C601

DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
1,4-Dichlorobenzene	EPA-8260	U	0.20	1	UG/L	02/21/2013	GAP
1,2-Dichlorobenzene	EPA-8260	U	0.20	1	UG/L	02/21/2013	GAP
1,2-Dibromo 3-Chloropropane	EPA-8260	U	1.0	1	UG/L	02/21/2013	GAP
1,2,4-Trichlorobenzene	EPA-8260	U	0.20	1	UG/L	02/21/2013	GAP
Hexachlorobutadiene	EPA-8260	U	0.20	1	UG/L	02/21/2013	GAP
1,2,3-Trichlorobenzene	EPA-8260	U	0.20	1	UG/L	02/21/2013	GAP

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
1,2-Dichloroethane-d4	EPA-8260	**107**	02/21/2013	GAP
4-Bromofluorobenzene	EPA-8260	**102**	02/21/2013	GAP

U - Analyte analyzed for but not detected at level above reporting limit.

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CLIENT: Environmental Partners, Inc.
295 NE Gilman Blvd., Suite 201
Issaquah, WA 98027

CLIENT CONTACT: Tena Seeds

CLIENT PROJECT: SPU - Ross Parking Lot

DATE: 2/22/2013

ALS SDG#: EV13020105

WDOE ACCREDITATION: C601

LABORATORY BLANK RESULTS

MB-022113A - Batch 3493 - Air by EPA-8260

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Dichlorodifluoromethane	EPA-8260	U	0.20	1	UG/L	02/21/2013	GAP
Chloromethane	EPA-8260	U	0.20	1	UG/L	02/21/2013	GAP
Vinyl Chloride	EPA-8260	U	0.020	1	UG/L	02/21/2013	GAP
Bromomethane	EPA-8260	U	0.20	1	UG/L	02/21/2013	GAP
Chloroethane	EPA-8260	U	0.20	1	UG/L	02/21/2013	GAP
Carbon Tetrachloride	EPA-8260	U	0.20	1	UG/L	02/21/2013	GAP
Trichlorofluoromethane	EPA-8260	U	0.20	1	UG/L	02/21/2013	GAP
1,1-Dichloroethene	EPA-8260	U	0.20	1	UG/L	02/21/2013	GAP
Methylene Chloride	EPA-8260	U	0.50	1	UG/L	02/21/2013	GAP
Trans-1,2-Dichloroethene	EPA-8260	U	0.20	1	UG/L	02/21/2013	GAP
1,1-Dichloroethane	EPA-8260	U	0.20	1	UG/L	02/21/2013	GAP
Cis-1,2-Dichloroethene	EPA-8260	U	0.20	1	UG/L	02/21/2013	GAP
2,2-Dichloropropane	EPA-8260	U	0.20	1	UG/L	02/21/2013	GAP
Bromochloromethane	EPA-8260	U	0.20	1	UG/L	02/21/2013	GAP
Chloroform	EPA-8260	U	0.20	1	UG/L	02/21/2013	GAP
1,1,1-Trichloroethane	EPA-8260	U	0.20	1	UG/L	02/21/2013	GAP
1,1-Dichloropropene	EPA-8260	U	0.20	1	UG/L	02/21/2013	GAP
1,2-Dichloroethane	EPA-8260	U	0.20	1	UG/L	02/21/2013	GAP
Trichloroethene	EPA-8260	U	0.20	1	UG/L	02/21/2013	GAP
1,2-Dichloropropane	EPA-8260	U	0.20	1	UG/L	02/21/2013	GAP
Dibromomethane	EPA-8260	U	0.20	1	UG/L	02/21/2013	GAP
Bromodichloromethane	EPA-8260	U	0.20	1	UG/L	02/21/2013	GAP
Trans-1,3-Dichloropropene	EPA-8260	U	0.20	1	UG/L	02/21/2013	GAP
Toluene	EPA-8260	U	0.20	1	UG/L	02/21/2013	GAP
Cis-1,3-Dichloropropene	EPA-8260	U	0.20	1	UG/L	02/21/2013	GAP
1,1,2-Trichloroethane	EPA-8260	U	0.20	1	UG/L	02/21/2013	GAP
1,3-Dichloropropane	EPA-8260	U	0.20	1	UG/L	02/21/2013	GAP
Tetrachloroethylene	EPA-8260	U	0.20	1	UG/L	02/21/2013	GAP
Dibromochloromethane	EPA-8260	U	0.20	1	UG/L	02/21/2013	GAP
1,2-Dibromoethane	EPA-8260	U	0.20	1	UG/L	02/21/2013	GAP
Chlorobenzene	EPA-8260	U	0.20	1	UG/L	02/21/2013	GAP
1,1,1,2-Tetrachloroethane	EPA-8260	U	0.20	1	UG/L	02/21/2013	GAP
Bromoform	EPA-8260	U	0.20	1	UG/L	02/21/2013	GAP
1,1,2,2-Tetrachloroethane	EPA-8260	U	0.20	1	UG/L	02/21/2013	GAP
1,2,3-Trichloropropane	EPA-8260	U	0.20	1	UG/L	02/21/2013	GAP
Bromobenzene	EPA-8260	U	0.20	1	UG/L	02/21/2013	GAP
2-Chlorotoluene	EPA-8260	U	0.20	1	UG/L	02/21/2013	GAP
4-Chlorotoluene	EPA-8260	U	0.20	1	UG/L	02/21/2013	GAP

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		WDOE ACCREDITATION:	C601
CLIENT CONTACT:	Tena Seeds		
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LABORATORY BLANK RESULTS

MB-022113A - Batch 3493 - Air by EPA-8260

1,3 Dichlorobenzene	EPA-8260	U	0.20	1	UG/L	02/21/2013	GAP
1,4-Dichlorobenzene	EPA-8260	U	0.20	1	UG/L	02/21/2013	GAP
1,2-Dichlorobenzene	EPA-8260	U	0.20	1	UG/L	02/21/2013	GAP
1,2-Dibromo 3-Chloropropane	EPA-8260	U	1.0	1	UG/L	02/21/2013	GAP
1,2,4-Trichlorobenzene	EPA-8260	U	0.20	1	UG/L	02/21/2013	GAP
Hexachlorobutadiene	EPA-8260	U	0.20	1	UG/L	02/21/2013	GAP
1,2,3-Trichlorobenzene	EPA-8260	U	0.20	1	UG/L	02/21/2013	GAP

ADDRESS 8620 Holly Drive, Suite 100, Everett, WA 98208 | PHONE 425-356-2600 | FAX 425-356-2626
ALS Laboratory Group A Campbell Brothers Limited Company

CERTIFICATE OF ANALYSIS

CLIENT:	Environmental Partners, Inc. 295 NE Gilman Blvd., Suite 201 Issaquah, WA 98027	DATE:	2/22/2013
		ALS SDG#:	EV13020105
		WDOE ACCREDITATION:	C601
CLIENT CONTACT:	Tena Seeds		
CLIENT PROJECT:	SPU - Ross Parking Lot		

LABORATORY CONTROL SAMPLE RESULTS

ALS Test Batch ID: 3493 - Air by EPA-8260

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	ANALYSIS DATE	ANALYSIS BY
1,1-Dichloroethene - BS	EPA-8260	**96.0**			02/21/2013	GAP
1,1-Dichloroethene - BSD	EPA-8260	**94.1**	**2**		02/21/2013	GAP
Trichloroethene - BS	EPA-8260	**98.1**			02/21/2013	GAP
Trichloroethene - BSD	EPA-8260	**96.5**	**2**		02/21/2013	GAP
Toluene - BS	EPA-8260	**93.8**			02/21/2013	GAP
Toluene - BSD	EPA-8260	**93.3**	**1**		02/21/2013	GAP
Chlorobenzene - BS	EPA-8260	**94.5**			02/21/2013	GAP
Chlorobenzene - BSD	EPA-8260	**95.0**	**1**		02/21/2013	GAP

APPROVED BY

Laboratory Director

ADDRESS 8620 Holly Drive, Suite 100, Everett, WA 98208 | PHONE 425-356-2600 | FAX 425-356-2626
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ALS Environmental
8620 Holly Drive, Suite 100
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http://www.alsglobal.com

Chain Of Custody/ Laboratory Analysis Request

ALS Job# (Laboratory Use Only): EV1302005

Date 2/20/13 Page 1 Of 1

PROJECT ID: SPU - Ross Parking lot
REPORT TO COMPANY: Environmental Partners, Inc.
PROJECT MANAGER: Tena Seeds
ADDRESS: 295 NE Gilman Blvd, ST 201
Issaquah, WA 98027
PHONE: 425-395-0010 FAX:
P.O. #: 53403.1 E-MAIL: Tseeds@epi-wa.com
INVOICE TO COMPANY: EPI
ATTENTION: Tom Elsemore
ADDRESS: same

ANALYSIS REQUESTED

SAMPLE I.D.	DATE	TIME	TYPE	LAB#	NWTPH-HCID	NWTPH-DX	NWTPH-GX	BTEX by EPA-8021	MTBE by EPA-8021 ☐ EPA-8260 ☐	Halogenated Volatiles by EPA 8260	Volatile Organic Compounds by EPA 8260	EDB / EDC by EPA 8260 SIM (water)	EDB / EDC by EPA 8260 (soil)	Semivolatile Organic Compounds by EPA 8270	Polycyclic Aromatic Hydrocarbons (PAH) by EPA-8270 SIM ☐	PCB ☐ Pesticides ☐ by EPA 8081/8082	Metals-MTCA-5 ☐ RCRA-8 ☐ Pri Pol ☐ TAL ☐	Metals Other (Specify)	TCLP-Metals ☐ VOA ☐ Semi-Vol ☐ Pest ☐ Herbs ☐	OTHER (Specify)	NUMBER OF CONTAINERS	RECEIVED IN GOOD CONDITION?
1. SPU-Stack-02-1913	2/19/13	10:40	air	1						X										1	
2.																					
3.																					
4.																					
5.																					
6.																					
7.																					
8.																					
9.																					
10.																					

LABORATORY COPY

SPECIAL INSTRUCTIONS

SIGNATURES (Name, Company, Date, Time):

1. Relinquished By: EPI, 2/20/13
Received By: ALS 2/20/13 1:30
2. Relinquished By:
Received By:

TURNAROUND REQUESTED in Business Days*

Organic, Metals & Inorganic Analysis: [10] Standard [5] [3] [2] [1] [SAME DAY]

Fuels & Hydrocarbon Analysis: [5] Standard [3] [1] [SAME DAY]

OTHER:
Specify:

* Turnaround request less than standard may incur Rush Charges