Weiss Associates Environmental and Geologic Services

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March 26, 1996

Mr. Scott O. Seery
Alameda County Health Care Services Agency
Department of Environmental Health
1131 Harbor Bay Parkway, Suite 250
Alameda, California 94502

RE: **Workplan Addendum**
Shell Service Station
WIC #204-6852-1404
1784 150th Avenue
San Leandro, California
WA Job #81-0422-80

Dear Mr. Seery:

On behalf of Shell Oil Products Company, Weiss Associates submitted to you a workplan addendum dated March 14, 1996 for the site referenced above. We have recently revised the two attachments in the workplan addendum (Attachment A, SVS sampling protocol; and Attachment B, QA/QC Plan). Please replace the attachments submitted to you on March 14, 1996 with the revised ones.

We apologize for any inconvenience this may cause. Please call us if you have any questions.

Sincerely,
Weiss Associates

Yi-Ran Wu
Staff Engineer

Enclosures: Attachment A - SVS sampling protocol
Attachment B - QA/QC Plan

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ATTACHMENT A

SVS SAMPLING PROTOCOL

I. Probe Placement

A) A clean soil gas probe is removed from the "clean" storage tube.

B) The soil gas probe is placed in the jaws of a hydraulic pusher/puller mechanism.

C) A sampling drive point is inserted into the bottom of the probe.

D) The hydraulic pushing mechanism is used to push the probe into the ground.

E) If the pusher mechanism will not push the probe into the ground to a sufficient depth for sampling, a hydraulic hammer is used to pound the probe into the ground.

II. Soil Gas Sample Extraction

A) An adapter is attached to the top of the soil gas probe.

B) A vacuum pump is attached to the adapter via polyethylene tubing.

C) The vacuum pump is turned on and used to purge the sampling equipment with soil gas.

D) Approximately three probe volumes are purged before a sample is collected. Since the flow rate is dependent on resistance to flow, the evacuation time is adjusted to ensure the proper volume is extracted.

E) The probe purge flow rate is monitored using a rotometer at the vacuum pump and the flow rate is maintained between 5 and 10 liters per minute.

III. Soil Gas Sample Collection

A) With the vacuum pump running, a stainless steel hypodermic syringe needle attached Teflon tubing to a SUMMA canister is inserted through the silicone rubber, which acts as a seal, and down into the metal tubing of the sample probe. This technique eliminates the possibility of exposing the sample stream to any part of the adapter and associated tubing. Soil gas samples only contact clean decontaminated surfaces and never contact potentially sorbing materials (i.e., tubing, hose, pump diaphragm). Clean stainless steel hypodermic syringe needles and Teflon sample tubing are used for each sample.

B) The syringe needle and Teflon sample tubing is purged with soil gas. Then, without removing the syringe needle from the adapter, a soil gas sample is collected slowly (1 to 3 liters per minute) using a SUMMA canister.

C) The syringe needle is removed from the adapter and the syringe needle and Teflon sample tubing is set aside for later decontamination.

D) If necessary, a second SUMMA canister sample is collected using the same procedure.

IV. Deactivation of Sampling Apparatus

A) The vacuum pump is turned off and unhooked from the adapter.

B) The adapter is removed and stored.

C) Using the hydraulic puller mechanism, the probe is removed from the ground.

D) The probe is stored in the "dirty" probe tube.

E) The probe hole is backfilled and capped, if required.

V. Logbook and U.S. EPA Field Sheet Notations for Sampling

A) Time (military notation)

B) Sample number

C) Location (approximate description - i.e., street names)

D) Sampling depth

E) Purge flow rate and time before sampling

F) Probe number

G) Observations (i.e., ground conditions, concrete, asphalt, soil appearance, surface water, odors, vegetation, etc.)

H) Backfill procedure and materials, if used

VI. Other Record Keeping

A) Chain of Custody data sheets are filled out for the SUMMA canisters.

B) Sample location is marked on the site map.

ATTACHMENT B

QA/QC PLAN

The following are QA/QC procedures for soil vapor survey:

I. Sampling Equipment

1. Each SUMMA canister is cleaned by Air Toxics LTD before use using a combination of dilution, heat and high vacuum. They are usually cleaned in batches, with one in ten samples certified by filling them with ultra high purity air, which is subsequently analyzed using GC/MS. If target analyte concentrations are below 0.2 ppbv, the "batch" of canisters is considered clean.

2. A clean syringe needle, Teflon sample tubing and SUMMA canister is used to collect each soil gas sample to prevent cross-contamination.

II. Laboratory Analysis

1. Duplicate samples are analyzed at a frequency of at least 10% by Air Toxics LTD.

2. Laboratory spikes are analyzed at a frequency of at least 10% by Air Toxics LTD.

3. Lab blanks are analyzed at a frequency of at least 10% by Air Toxics LTD.

4. For TO-14 analyses Air Toxics LTD will provide surrogates with every sample.