

US EPA ARCHIVE DOCUMENT

INDOOR AIR SAMPLING WORK PLAN FOR PRR BUILDING

Prairie Ronde Realty Company
415 East Prairie Ronde Street
Dowagiac, Michigan
MID 005 068 507

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Figure

Figure 1 – Indoor Air Sample Location Map

Attachment

Attachment A – Canister Data Form

1.0 Introduction

Prairie Ronde Realty (PRR) prepared this Indoor Air Sampling Work Plan in response to a request from the U.S. Environmental Protection Agency (U.S. EPA) Region 5 for sampling indoor air at the former PRR manufacturing building (PRR building). The PRR building is located at 415 East Prairie Ronde Road in Dowagiac, Michigan. During a meeting on January 13, 2012, U.S. EPA Region 5 requested the following:

- Investigate the indoor air quality at the PRR building;
- Collect four indoor air samples to evaluate current indoor air quality; and
- Locate the indoor air samples in areas near likely human occupancy and existing vapor monitoring points.

PRR provided U.S. EPA Region 5 an *Indoor Air & Sub-Slab Sampling Work Plan* in February 2009. That work plan addressed sampling at nearby residences, but did not include sampling at the PRR building. This work plan for the PRR building specifies the same indoor air sampling techniques and analytical methods as the previously-approved February 2009 work plan.

1.1 Goals and Objectives

The goal for this work is to collect indoor air samples from the PRR building at locations biased toward occupied areas.

1.2 PRR Building

The PRR building is used for warehousing and manufacturing. Approximately 36 people currently work full-time in the building in a single 8-hour shift. Several additional people each work approximately 10 hours a month in warehousing operations.

The building occupies approximately 617,000 square feet, and has 6 to 8-inch thick concrete floors.

2.0 Site Mobilization

2.1 Health and Safety Plan (HASP)

A HASP will be prepared to provide specific guidelines and establish procedures to protect personnel during the investigation activities planned at the PRR building. HASP procedures will be updated if additional information is discovered which requires altering the plan (i.e., other health and safety concerns are identified within the PRR building). The HASP will be reviewed and signed by each sampling staff member prior to work on-site.

2.2 Field Documentation

All data concerning sample collection and contact with property manager and tenants will be documented in a field notebook. Examples of information which will be entered into the field notebook include:

- Project identification;
- Field activity subject;
- General work activity;
- Sampling staff on-site, including contractors;
- Weather conditions;
- Time and topics of tailgate safety meetings;
- Unusual events;
- Visitors on-site;
- Communication with co-workers, property owners, residents, laboratory contacts, clients or others;
- All sample numbers and corresponding chain-of-custody numbers;
- Results from required calibration and calibration checks;
- Any variance from project plans and procedures;
- Photographs taken and identification numbers; and
- Any problems encountered and their resolution.

3.0 Sampling Plan

3.1 Sampling Locations

Four sampling locations are proposed within the PRR building. The indoor air samples will be collected using Summa™ canisters co-located near four existing sub-slab vapor monitoring points. These are VMP-1, VMP-2, VMP-3 and VMP-10. VMP-1 and VMP-2 are in the southern portion of the building near historical plant degreasers and the former oil and solvent storage room. VMP-3 is near historical plant degreasers. VMP-10 is near former cooling water retention lagoons. (The existing VMP monitoring wells were installed to assess the prior soil vapor extraction (SVE) system's performance.)

The approximate locations for these sampling points are presented on **Figure 1**. The rooms in which these VMPs are located will be evaluated for worker occupancy. The samples will be collected from each room in the area with the highest occupancy that does not interfere with work and is not located near known potential sources of VOCs. Each location and the reasons for selecting the locations will be documented in the report of the results of this work.

The Summa™ canister indoor air samples will be collected approximately 5 feet above slab surface. All indoor air samples will be collected in accordance with the protocol outlined in the following sections.

3.2 Sampling Strategy

One indoor air sample will be collected from each of the four sample locations presented on **Figure 1**. The samples will be analyzed for the following Chlorinated Volatile Organic Compounds (CVOCs).

- Tetrachloroethylene
- Trichloroethylene
- Cis-1,2-Dichloroethylene
- Trans-1,2-Dichloroethylene
- Vinyl chloride
- 1,1,1-Trichloroethane
- 1,1-Dichloroethane
- Chloroethane

The sampling procedures and methods are detailed in the following sections.

3.2.1 Information Acquisition

Various types of information will be obtained and recorded for this sampling effort.

The *Canister Data Form* in **Attachment A** will be used to record data on the condition of the canisters, sampling times, vacuum, etc.

The room and general area where sampling will occur will also be surveyed for building conditions that could affect sample results. This survey will be documented on the *Vapor Intrusion Building Survey Form* in **Attachment A**.

3.2.2 Sampling Methodology

Sampling methods used will be consistent with U.S. EPA protocols for collecting air samples using TO-15 Summa™ canister sampling and analysis methods (*Compendium of Methods for the Determination of Compounds in Ambient Air, Second Edition, Compendium Method TO-15, Determination of Volatile Organic Compounds (VOCs) in Air Collected in Specially-prepared Canisters and Analyzed by Gas Chromatography/Mass Spectrometry (GCMS)*). EPA/625/R96/01b, 1999). Each canister will be certified clean by the selected laboratory according to U.S. EPA Method TO-15. TO-15 SIM will be used for the indoor air samples to obtain a lower detection limit for VOCs. TestAmerica in Los Angeles, California will conduct the analytical work for the project. Turnaround time will be approximately 14 calendar days (standard turnaround times).

The indoor air samples will be collected using a Summa™ canister (6-Liter capacity) equipped with a critical orifice flow regulation device sized to allow an air sample to be collected over a 24-hour sampling period. Care will be taken to deploy the canisters away from the direct influence of any forced air emanating from air conditioning units, central air conditioning vents, furnaces or heaters.

The indoor air sampling procedure is described as follows.

- Building spaces will be examined to determine a location for deploying the sample. An attempt will be made to deploy the canister in areas not subject to disturbances and which will not interfere with the occupant's normal activities.
- Air sample canisters will be labeled with a unique sample designation number. The sample number and location will be recorded in the field log book.
- The canister vacuum will be measured using an integrated vacuum gauge immediately prior to canister deployment, and recorded in the field log book. The critical orifice flow controller will be installed, as supplied by the laboratory, on the canister, the canister will be opened fully at the beginning of sample collection period, and the start time will be recorded.
- Other data recorded will include: outside and interior temperatures at the start and end of the sample period, equipment serial numbers, sampler name, and any comments.
- The canister valve will be closed fully at the end of the sample period (after 24-hours) and the end time recorded. If there is evidence of canister disturbance during the sample collection, this will also be recorded.
- The canister vacuum will be measured and recorded immediately after canister retrieval at the end of the sample period. Any samples where the canister reached atmospheric pressure will be rejected, and the canisters returned for cleaning. Once the vacuum is measured, the safety cap will be securely tightened on the canister inlet. Field data will be verified as correctly entered into

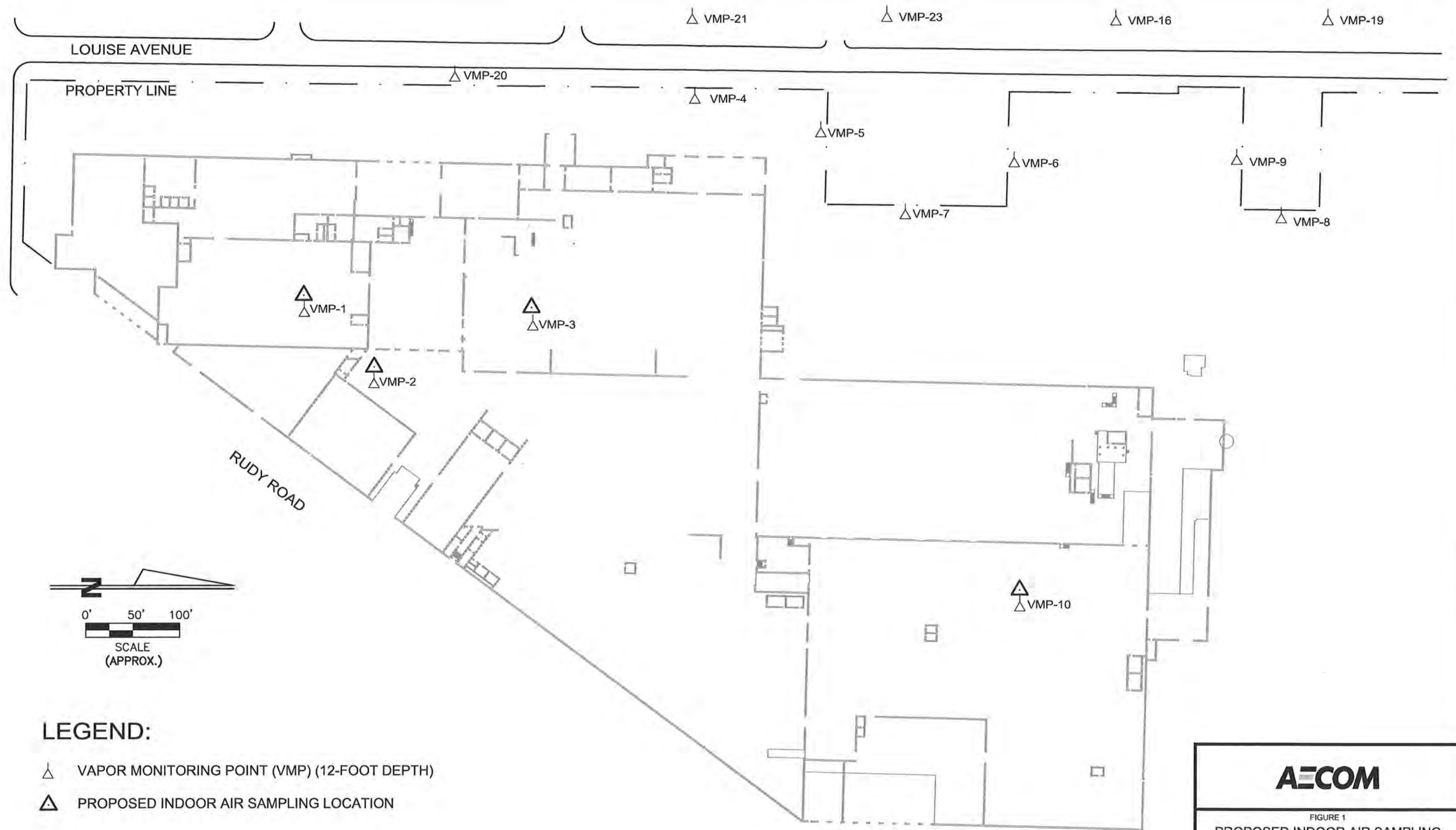
4.0 Analytical Findings

The sampling will be completed in late February or March, predicated on U.S. EPA approval of this work plan. PRR will prepare a sampling and data summary report after the analyses are completed and will provide this report to the U.S. EPA and the Michigan Department of Environmental Quality.

Figure

Plotted By: eggerdingd
Layout-Sheet Name: FIGURE-1A
Plot File Date: Created: Feb/13/2012 1:23 PM

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LEGEND:

- △ VAPOR MONITORING POINT (VMP) (12-FOOT DEPTH)
- △ PROPOSED INDOOR AIR SAMPLING LOCATION

AECOM

FIGURE 1
PROPOSED INDOOR AIR SAMPLING
LOCATIONS

NATIONAL COPPER PRODUCTS, INC
415 EAST PRAIRIE RONDE, DOWAGIAC, MICHIGAN 49047

ORIGINAL BASEMAP PREPARED BY R. DAVID MURSCH, PE.

FILE NAME: 60143510_Fig1a.DWG	DRN DPE	PROJECT NO. 60143510	DATE 2/2012	FIGURE NO. 1
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Attachment A

FORM A-1
CANISTER DATA FORM

I. GENERAL INFORMATION

Company Name: _____
Canister ID No.: _____

Company Contact: _____
Sampler ID No.: _____

Company Address: _____
Vacuum Controller ID No.: _____

Flow Controller ID No.: _____

Telephone No.: _____
Canister Leak Check Date: _____

Facsimile No.: _____
Shipping Date: _____

II. SAMPLING INFORMATION

Sampling Date: _____

Sampling Address: _____

Location of Canister is Place: _____

Use of Room Where Canister is Place: _____

Room Furnishings: _____

Materials Stored in Room: _____

Weather Conditions During Test: _____

TEMPERATURE:
BAROMETRIC PRESSURE

INTERIOR	AMBIENT	MAXIMUM	MINIMUM
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START _____

STOP _____

Canister VACUUM on OPENING Valve: _____

DATE Canister Valve OPENED: _____ TIME Canister Valve OPENED: _____

DATE Canister Valve CLOSED: _____ TIME Canister Valve CLOSED: _____

Signature

Date

FORM A-2
Vapor Intrusion Building Survey Form

Date:
Time:
Name:

Pictures Allowed:

Sample No:

Address:
Facility Contact Name:
Years at this Address:
Square Footage of Building:
Square Footage of Sampling Area (if less than Building):

BUILDING TYPE:

One story: _____ Multi-story _____ Brick _____ Siding _____ Stucco _____

WEATHER SEALS:

General Condition: Good _____ Fair _____ Poor _____

BASEMENT:

None _____ Finished _____ Unfinished _____ Depth below grade _____
Partial _____ Full _____
Crawl space? _____

Foundation construction: Poured concrete _____ Cinder block _____

Condition at floor/wall joint (if visible)

Floor drains, sump _____
Vents, fans, windows _____

_____ Floor condition (type, cracks, drains)

_____ Wall openings, utility pipe penetrations

_____ Moisture Condition (dry, damp, wet)

FURNACE: Location:

Type: Gas _____ Forced air _____ Oil Burning _____ Hot Water _____
Electric _____ Other _____

Blower Capacity (if applicable) _____

Does furnace have outside combustion air vent? _____

Winter temperature setting: day _____ night _____

AIR CONDITIONER: None _____ Central _____ (if yes, capacity?) _____
(If yes, which rooms and capacities?) _____

RADON SYSTEM: Yes _____ No _____ If yes, floor scaled? _____

Floor drain/sump vent? _____

Other ventilation? _____

Work or Manufacturing Activities:

Pictures Taken:

- 1.
- 2.
- 3.
- 4.
- 5.
- 6.
- 7.
- 8.
- 9.
- 10.
- 11.
- 12.
- 13.
- 14.
- 15.
- 16.
- 17.
- 18.
- 19.
- 20.