Cadet Manufacturing
Groundwater
Contamination Evaluation

WASHINGTON STATE DEPARTMENT OF ECOLOGY

You Are Invited to Attend

The Department of Ecology invites you to attend a public meeting on October 27, from 7-9:00 pm at the Fruit Valley Neighborhood (FVN) Community Center. Come see and hear about recent indoor air sampling results. Representatives from Ecology, Cadet, and Cadet's consultant AMEC Earth and Environmental, Inc., will be there to answer questions.

What you can do to Reduce your Chances of Exposure

Keep residence foundation vents open and clear from obstructions. This allows natural ventilation in your crawlspace. Also, be aware that time around construction-depth soil excavations (greater than 4 feet deep) may increase your chances for solvent vapor exposure.

For health information, call or email Barbara Trejo, Department of Health, at 1-877-485-7613 or Barbara.Trejo@doh.wa.gov.

Site Background

This is an update about the cleanup of ground water and solvent vapors in soil and the status of efforts to improve ground water and indoor air quality in the Fruit Valley Neighborhood.

The organizations listed above, and the Washington Department of Health (DOH), are working together to assess environmental and public health effects from solvents. Trichloroethylene (TCE), a solvent, entered the groundwater from the Cadet Manufacturing site at 2500 W. Fourth Plain Boulevard in Vancouver.

Solvent-contaminated groundwater has been detected under the Cadet property and has migrated below the nearby FVN. This groundwater is not a source of drinking water for the area. Solvent vapors from the groundwater move into soil and, in some cases, up through the soil and into indoor air of residences in the FVN or into open soil excavations. Based on current data, the DOH has determined there is no immediate threat to human health. We continue to evaluate possible human exposures to contaminants beneath the Cadet property and the Fruit Valley Neighborhood. This Fact Sheet is a summary of the remedy activity through October 2004.

Drilling Work

We are continuing to define the extent of groundwater contamination and where and how solvent vapors move. Areas where solvent concentrations in groundwater are highest have been defined. Six additional monitoring wells have been installed in the FVN to evaluate the extent of ground water contamination to the north and northeast of the Cadet facility. (See attached map) The extent of ground water contamination has been defined to the south, east and west. These wells will be sampled on a quarterly schedule with other wells in the ground water monitoring network.

Recirculating Wells

Three "recirculating groundwater remediation wells" have been installed and are operating presently. These wells are located at the

Ecology Publication Number 04-09-143

October 2004

FACT SHEET

PUBLIC MEETING:
October 27, 2004, 7-9:00 pm
Fruit Valley Neighborhood Community Center
3203 Unander Ave., Vancouver, WA 98662

Location of Documents
WA State Department of Ecology
Southwest Regional Office
Toxics Cleanup Program
300 Desmond Dr.
PO Box 47775
Olympia, WA 98504-7775
(360) 407-6256
swal461@ecy.wa.gov

Questions and Written Comments, contact:
Craig Rankine, Site Manager, at 2108 Grand Blvd. Vancouver or by e-mail cran461@ecy.wa.gov, or call (360)690-4795.

Documents are available for public review at:
Vancouver Regional Library
1007 E. Mill Plain Blvd.
Vancouver, WA. 98663
360-695-1566

Ecology website:
http://www.ecy.wa.gov/programs/tcp/sites/cadet/cadet_hp.htm

Cadet website: go to
http://www.cadetco.com/environment/

Public Events Calendar"
www.ecy.wa.gov, then click on "Public Events Calendar"

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intersection of Weigel Avenue and West 28th Street, on West 28th Street and just north of the Unander Avenue and West 28th Street intersection. The well heads are located in locked concrete vaults constructed in the street flush with the roadway surface. Control shacks are located in nearby residence yards. *Large scale figures of the system described below will be shown at the upcoming Public Meeting, October 27.*

This "pump and treat" system works by drawing ground water through a screen on the well bottom typically 75 to 95 feet below ground surface, and then pumping water up to the surface where an oxidizing compound (sodium permanganate) will be injected into the pumped water. The water and oxidant are then pumped back into the well pipe where they re-enter the formation through a screen at typically 32 to 47 feet below ground surface, which is just below the depth of the water table. The oxidant begins to break down the dissolved solvent upon contact with the solvent. The oxidizing compound eventually breaks down the solvent into carbon dioxide, water, and dissolved chloride anions (as found in sodium chloride or table salt). The reaction is steady and will not generate harmful gases or solvent related by-products. The ground water recirculates and stays under the ground during its treatment. The system is controlled manually at the site and remotely by AMEC via a telephone modem connection.

Groundwater sampling results from the neighborhood indicate operation of these wells is successful in removing solvents from the ground water. Breaking down or destruction of the solvents means the source for solvent vapors is also removed.

Treatment Solution

Delivery of the oxidizing compound used in the recirculating wells, sodium permanganate ($NaMnO_4$), occurs weekly (now each Thursday morning) by West Coast Marine Cleaning based in Vancouver. Delivery is done directly into a tank located in the underground vault. The delivery is done each time by two individuals trained in hazardous materials and chemical handling procedures and oversight of each delivery is provided by AMEC staff that also has hazardous materials training. AMEC remains on site a few hours after each delivery. Because the concentrated sodium permanganate solution can be damaging to the skin and eyes, delivery personnel wear protective gear consisting of boots, Tyvek splash resistant suits, chemical resistant gloves, and a hard hat with a face shield. Sodium permanganate is a non-flammable solution, odorless, with a dark purple color and is mixed with water and does not readily evaporate. Great care is taken to make sure there is no release to the ground, and no human exposure takes place. Deliveries of sodium permanganate have been taking place since March 2004 with no releases or mishaps.

Indoor Air Sampling Results

Tabulated results of the indoor air sampling will be released in November or December 2004 to residents where samples were collected and to those requesting results.

Next Steps

Four additional recirculating wells are planned for installation throughout the FVN. These new well locations include the Cadet Manufacturing property, on West 27th Street and Thompson Avenue. Drilling is scheduled to start on October 23, 2004 on the fourth recirculating well. This well will be located on the Cadet Facility property.

Groundwater, soil gas, and indoor air sampling continue on a quarterly schedule.

Ecology Publication Number 04-09-143

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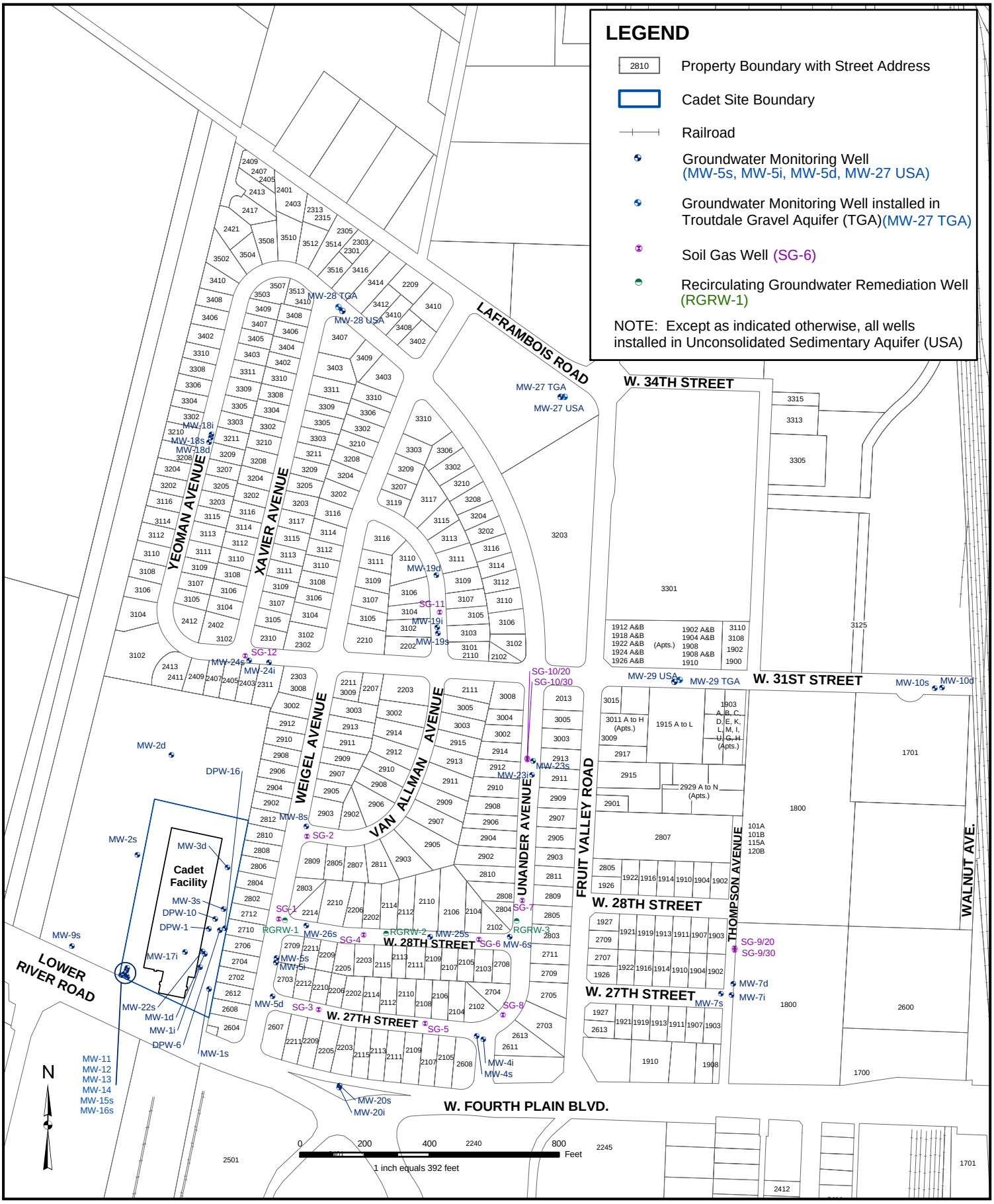

PRELIMINARY

amec

7376 SW Durham Road
Portland, OR, U.S.A. 97224

W.O.	4-61M-10135
DESIGN	RRJ
DRAWN	LEM
DATE	OCTOBER 2004

CADET MANUFACTURING CO.
2500 W. FOURTH PLAIN BOULEVARD
VANCOUVER, WASHINGTON

FRUIT VALLEY NEIGHBORHOOD WELL LOCATIONS (SEPTEMBER 2004)

TAXLOTS AND RAILROAD THEMES FROM CLARK COUNTY GIS DATABASE.

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