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TRANSMITTAL SHEET

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Date January 16, 2008

Job Omega Chemical Site
10500-37240.T2.OSS.REPORT
10500-5.2.1 (file)

To U.S. Environmental Protection Agency, Region 9
Superfund Division (SFD-7-4)
75 Hawthorne Street
San Francisco, California 94105-3901

Attn: Mr. Chris Lichens

We are sending: herewith X
under separate cover .....
by messenger .....

3 print(s) each of the following:

Final On-Site Soils Remedial Investigation Report (CDM, November 14, 2007) – replacement pages v, 5-3, 5-8, and Figures 5-1 through 5-7

which are: approved
approved as noted.....
for your review.....
for your files.....x

Hi Chris,

Attached are pre-punched hard copies of the replacement pages per my January 15th email to you (also attached). Copies are also being transmitted as indicated on the cc list below.

By: Sharon Wallin, R.G.
Project Manager

cc: Lori Parnass/DTSC (1 copy)
Tom Perina /CH2M Hill (1 copy)
Ed Modiano/de maximis (1 copy)

Wallin, Sharon

From: Wallin, Sharon
Sent: Tuesday, January 15, 2008 5:22 PM
To: lichens.christopher@epamail.epa.gov
Cc: LoriParnass (LParnass@dtsc.ca.gov); TomPerina (tperina@ch2m.com); 'Ed Modiano'; Chamberlin, David
Subject: Final RI Report Replacement Pages

Hi Chris - during preparation of Figures 7-2 through 7-4 of the Draft Feasibility Study (CDM, December 21, 2007), it became apparent that several of the Section 5 figures in the Final RI Report (CDM, November 14, 2007) had not been revised to incorporate final calculations presented in the final Human Health Risk Assessment Report (CDM, November 9, 2007).

The following changes have subsequently been made to 3 pages of the Final FI Report text, as follows:

- List of Figures (Table of Contents, page v)
  - Page v revised to delete two figures (Figures 5-3 and 5-4)
  - Page v revised to renumber Figures 5-5 to 5-9 to Figures 5-3 to 5-7

- Page 5-3 revised to delete references to former Figures 5-3 and 5-4, and renumber references to the Section 5 figures.
- Page 5-8 revised to renumber references to the Section 5 figures.

Figure Changes summarized as follows:

- Figures 5-1 and 5-2 have been revised (PCE PRG values changed and contours redrawn)
- Former Figures 5-3 and 5-4 have been deleted (per email correspondence from Stan Smucker on September 13th, TCE was deleted as a COPC since it was not detected in surface soils. Hence, a site-specific PRG for TCE in soil was not included in the final HHRA)
- Former Figures 5-5 through 5-9 have been relabeled as Figures 5-3 through 5-7

I have attached a pdf file with all the replacement pages, and will be mailing out hard copies to all report recipients. The hard copy replacement pages will be pre-punched, and should be inserted into the 3-ring binder at the appropriate locations.

My sincere apologies for the extra effort on your part and for any confusion this might cause. If you have any questions about these replacement pages, please feel free to call me at 949/930-9866.

Regards,

Sharon Wallin, P.G.

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Final_RI_Report_R eplacementPag...

List of Tables

5.2.1 Soil

PCE was detected above its residential and industrial/commercial PRGs in soils at the Site. PCE is the compound that is the most widespread, thus, it is used to define the area that has been impacted by releases at and emanating from the former Omega Chemical property. Figures 5-1 and 5-2 present the locations where soil samples had exceedances of the PRGs for PCE at depths less than 30 feet and greater than 30 feet, respectively.

As indicated on Figure 5-1, there were exceedances for residential and industrial/ commercial PRGs for PCE at the majority of the sample locations on the former Omega Chemical property. There were also PCE PRG exceedences at several other locations in the vicinity of the former Omega Chemical property, i.e., Terra Pave and adjacent areas. Location B-4, sampled in 1996, is anomalous and may represent an additional source area, since elevated concentrations are present at shallow depths. The extent of soil contamination in the area of B-4 has not been directly defined; however, soil vapor samples are available in this area that will be discussed in the next section.

Figures 5-3 and 5-4 illustrate total Freons (sum of Freon 113 and Freon 11) in soils at depths less than 30 feet and greater than 30 feet, respectively. PRGs do not exist for Freons.

5.2.2 Soil Vapor and Indoor Air

As previously shown on Table 4-5, a total of 44 VOCs were detected at least once in the soil vapor samples. PCE is the most widespread compound at the Site, thus, it is used to define the extent of contamination at the Site. Other compounds are present at high concentrations and are widely distributed, but not to the extent of PCE.

Shallow Vadose Zone. The total VOC dot plot for shallow soil vapor samples (Figure 4-7) indicates that the areas with highest VOC concentrations in the vadose zone above the 30-foot unit are primarily located at the former Omega Chemical property. In general, VOC concentrations above the clay unit decrease to the south and southwest of this location. Soil vapor VOCs to the east, along Whittier Blvd., were relatively very low in shallow soil vapor samples.

Figures 5-5 and 5-6 show the extent of PCE and TCE compared with their respective CHHSLs. Because CHHSLs represent screening levels at the 10^{-6} risk threshold, these two figures also display the 10^{-4} risk levels (CHHSL x 100) to account for USEPA's defined risk range. Additional 10 x CHHSL and 1000 x CHHSL contours are also provided on the figure.

The preliminary results from the SVE pilot test in the 3 Kings parking lot indicate that the VOC mass removal rates are higher from wells screened from 26 to 36 feet bgs compared to wells screened from 12 to 22 feet bgs. This supports the conclusion that

Biological Transformation

The principal contaminants in soils are chloroethanes (e.g,. 1,1,1-TCA) and chloroethenes (e.g., PCE and TCE) and their respective family of metabolic products and Freons. Petroleum hydrocarbons are also found in Site soils. In general terms, the biodegradation of petroleum hydrocarbons and other organic compounds (e.g., naturally-occurring organic materials such as humic substances) serve as the carbon and energy sources (i.e., electron donors) for microorganisms. The metabolism of these compounds can employ chlorinated VOCs as electron acceptors. In the process of acting as electron acceptors, the chlorinated VOCs are reductively dechlorinated (reduced). The sequential reduction of chlorinated VOCs eventually leads to the production of innocuous end-products such as ethene/ethane.

A schematic pathway for the primary contaminants and their degradation products is shown in Figure 5-7. For PCE and TCE, reductive dechlorination could eventually result in the formation of ethene and ethane. However, incomplete reductive dechlorination could lead to the accumulation of intermediate toxic products (e.g., VC), although the lower chlorinated contaminants may subsequently degrade to innocuous carbon dioxide through oxidation processes.

The presence of cis-1,2-DCE and vinyl chloride in some soil vapor samples suggests that there are at least limited locations where subsurface conditions favor anaerobic degradation of PCE and/or TCE.

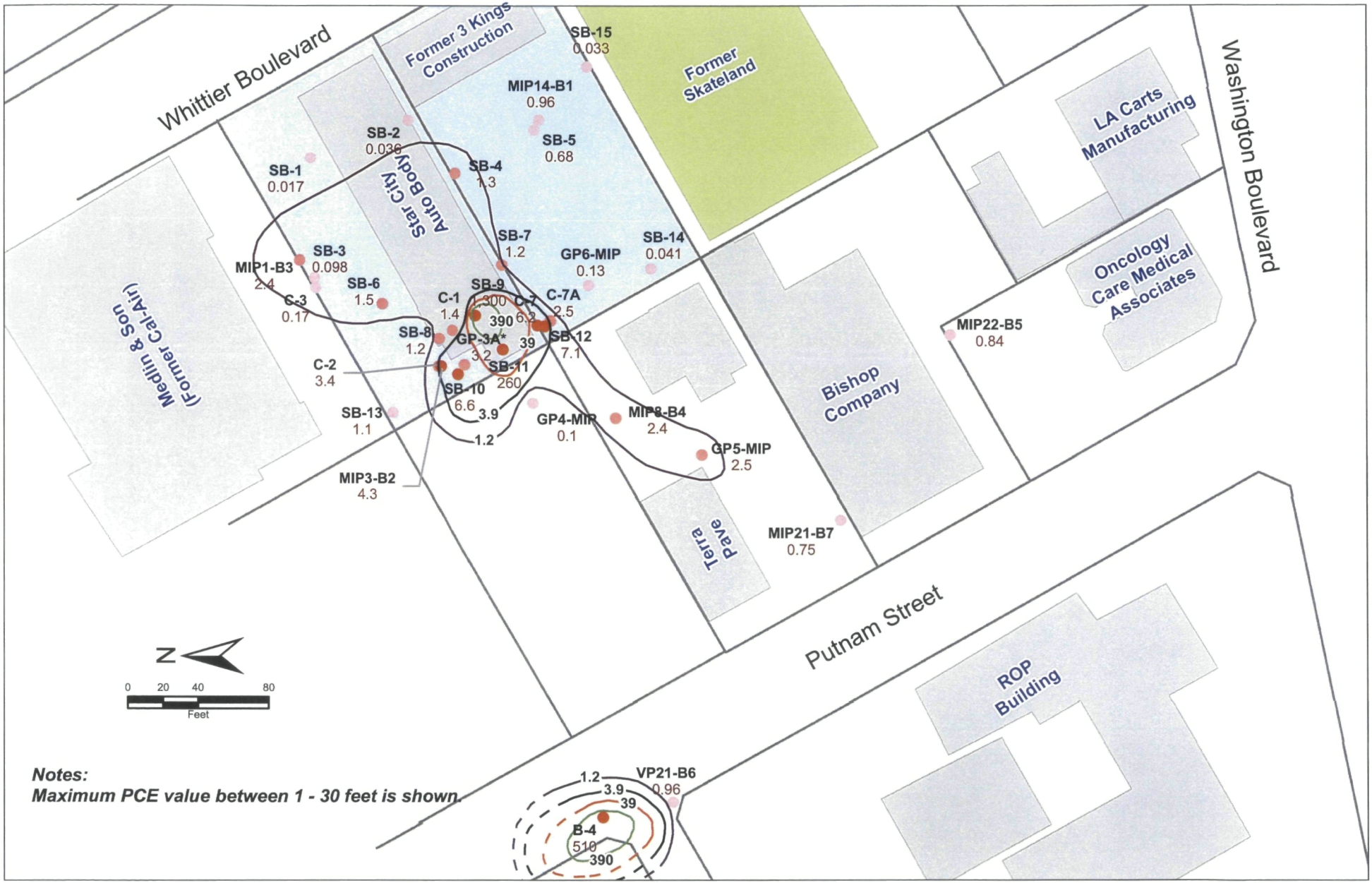
TCA, an additional source contaminant present at the Site, is subject to abiotic transformations under aerobic and anaerobic conditions, and biological transformations under anaerobic conditions. TCA transformations and breakdown products are also summarized in Figure 5-7. The abiotic and biotic pathways are important to the ultimate fate of chloroethanes. In particular, 1,1,1-TCA may be transformed abiotically to form 1,1-DCE that can then undergo reductive dechlorination to form VC, and ultimately over time ethene and ethane. The frequent presence of 1,1-DCE in the subsurface is likely due, at least in part, to the abiotic degradation of 1,1,1-TCA.

Under anaerobic conditions, 1,1,1-TCA may also be rapidly transformed by biotic processes into 1,1-DCA, which may be further reduced to CA. CA is relatively stable biologically under anaerobic conditions, but is transformed rapidly to ethanol and chloride by an abiotic hydrolysis reaction.

In general, biodegradation of Freons is expected to be a minor contributor to the fate of this class of compounds in the subsurface.

5.4 Summary of the Human Health Risk Assessment

The Human Health Risk Assessment (HHRA) was finalized and submitted to USEPA on November 9, 2007. A summary of the final HHRA as presented in the Executive Summary of the November 9, 2007 document (HHRA Sections ES.1 through ES.6) is



Notes:
Maximum PCE value between 1 - 30 feet is shown.

Legend

- Property Boundary
- Former Omega Chemical Property
- Existing Building
- Former Building
- Not Detected
- < 1.2 mg/kg
- 1.2 - 3.9 mg/kg
- > 3.9 mg/kg

PCE (mg/kg)

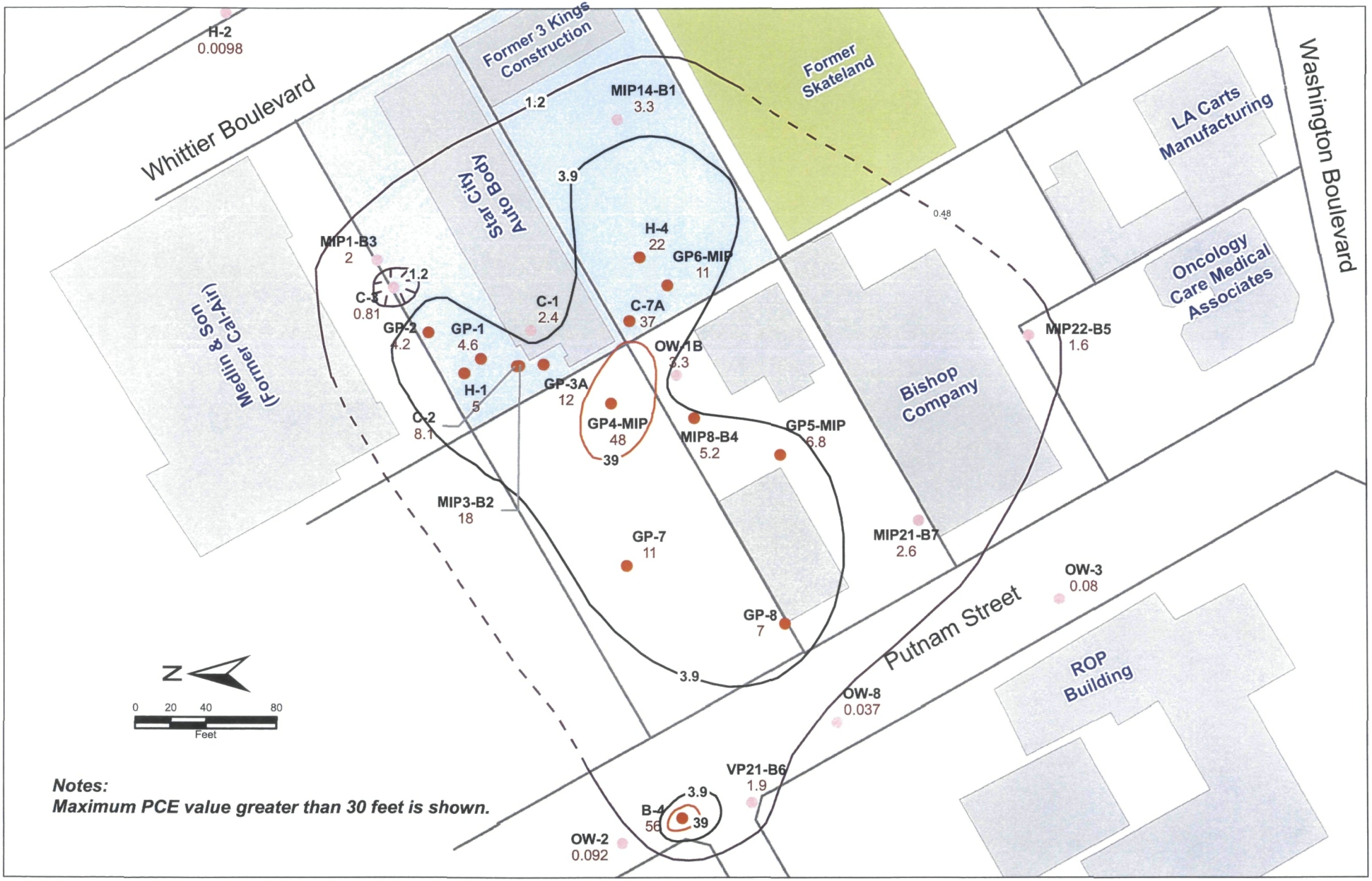
- Residential PRG (1.2 mg/kg)
- Industrial / Commercial PRG (3.9 mg/kg)
- Industrial / Commercial PRG x 10 (39 mg/kg)
- Industrial / Commercial PRG x 100 (390 mg/kg)

(Dashed where inferred.)
*This location not used to determine contours.

CDM

Omega Chemical
Locations with Soil PCE
PRG Exceedances from 1 to 30 Feet

Figure 5-1



Notes:
Maximum PCE value greater than 30 feet is shown.

Legend

- Property Boundary
- Former Omega Chemical Property
- Existing Building
- Former Building

- Not Detected
- < 1.2 mg/kg
- 1.2 - 3.9 mg/kg
- > 3.9 mg/kg

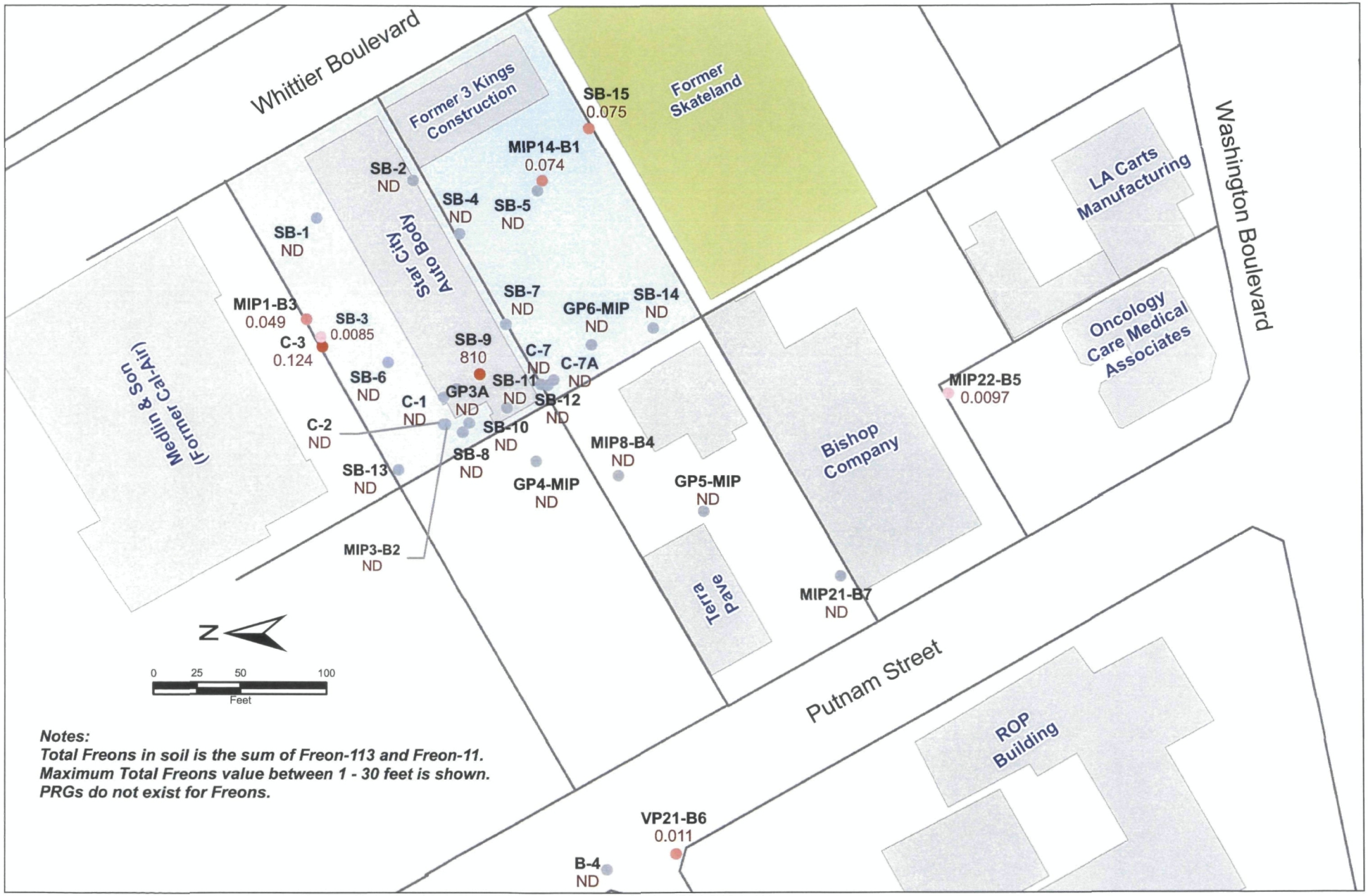
PCE (mg/kg)

- Residential PRG (1.2 mg/kg)
- Industrial / Commercial PRG (3.9 mg/kg)
- Industrial / Commercial PRG x 10 (39 mg/kg)

(Dashed where inferred.)

CDM

Omega Chemical
Locations with Soil PCE PRG Exceedances from Greater Than 30 Feet
Figure 5-2



Notes:
Total Freons in soil is the sum of Freon-113 and Freon-11.
Maximum Total Freons value between 1 - 30 feet is shown.
PRGs do not exist for Freons.

Legend

- Property Boundary
- Former Omega Chemical Property
- Existing Building
- Former Building

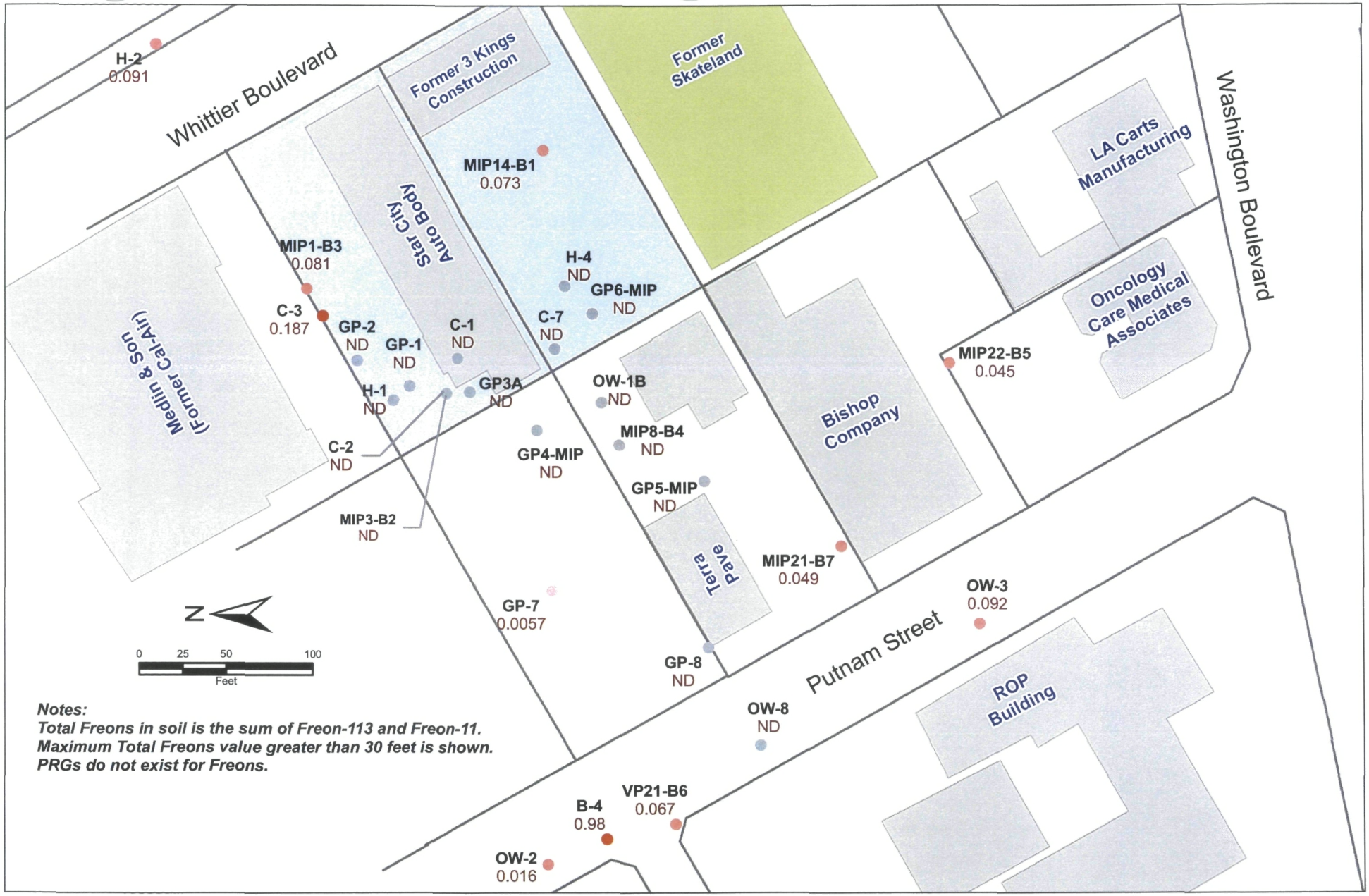
Total Freons (mg/kg)

- Not Detected
- < 0.01
- 0.01 - 0.1
- > 0.1

CDM

Omega Chemical

Locations with Soil Total Freons from 1 to 30 Feet
Figure 5-3



Notes:
Total Freons in soil is the sum of Freon-113 and Freon-11.
Maximum Total Freons value greater than 30 feet is shown.
PRGs do not exist for Freons.

Legend

- Property Boundary
- Former Omega Chemical Property
- Building

Total Freons (mg/kg)

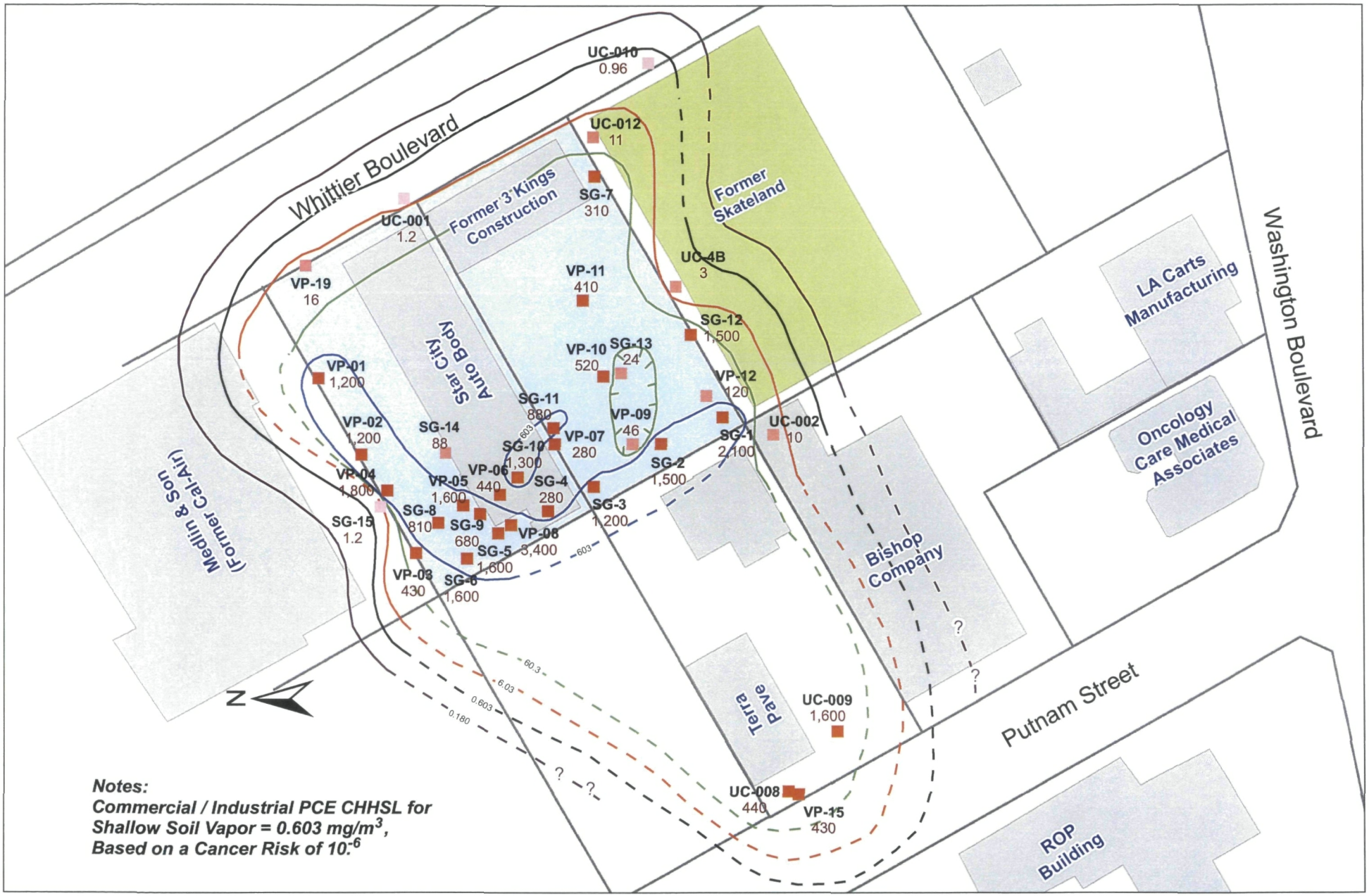
- Not Detected
- 0.01 - 0.1
- < 0.01
- > 0.1

CDM

Omega Chemical

Locations with Soil Total Freons Greater Than 30 Feet

Figure 5-4



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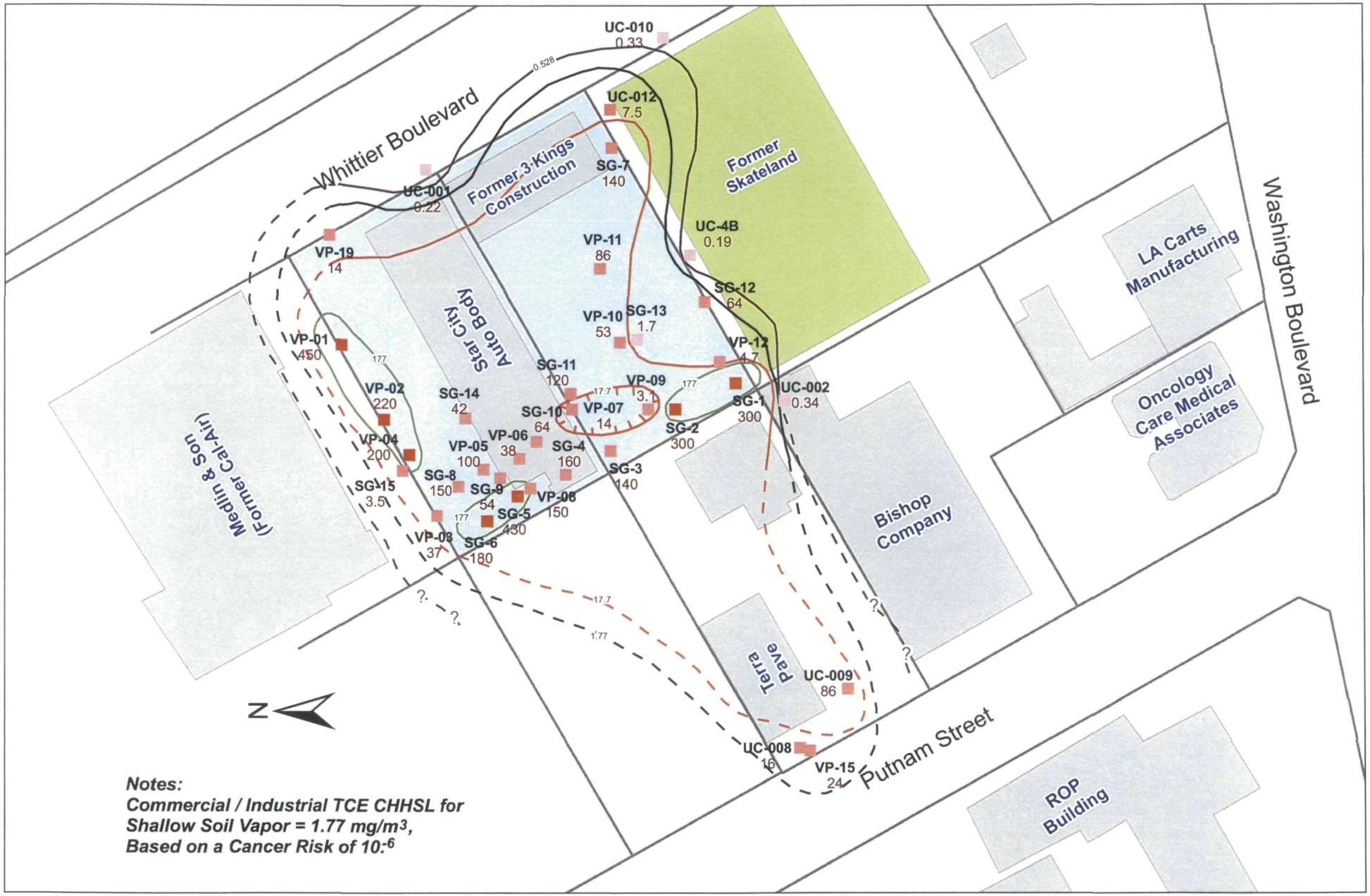
Omega Chemical
Locations with Soil Vapor PCE CHHSL Exceedances From 0 - 6 Feet
Figure 5-5



Notes:
Commercial / Industrial TCE CHHSL for Shallow Soil Vapor = 1.77 mg/m^3, Based on a Cancer Risk of 10^{-6}

Legend

- Property Boundary
- Former Omega Chemical Property
- Building

- Not Detected
- < 1.77 mg/m^3
- 1.77 - 177 mg/m^3
- > 177 mg/m^3

TCE (mg/m^3)

- Residential CHHSL (0.528 mg/m^3)
- Industrial / Commercial CHHSL (1.77 mg/m^3)
- Industrial / Commercial CHHSL x 10 (17.7 mg/m^3)
- Industrial / Commercial CHHSL x 100 (177 mg/m^3)

Dashed where inferred.

CDM

Omega Chemical
Locations with Soil Vapor TCE CHHSL Exceedances From 0 - 6 Feet
Figure 5-6

Figure 5-7 - Biotransformation Pathways for Chlorinated Compounds