Rec'd fr. Lee Dodge 1/24/01 meeting on site w/ Ravi & Tom Gray

The following is an explanation of the history of the 1997 LTMP for Powell St Plaza with an explanation of the current situation.

In July of 1997 Geomatrix proposed a Long Term Management Strategy for Petroleum Product for the Powell Street Plaza site[1]. The plan was submitted, reviewed, and conditionally accepted in an October 15, 1997 letter from the Alameda County Health Care Services Agency, ACHCSA[2]. That acceptance was conditioned upon three requirements in addition to those proposed in the Geomatrix document. The three conditions are listed below:

1. Assurance that the site management plan will be maintained in the future, including a letter from you outlining the process of deed notification and financial responsibilities.
2. Sealing of the existing subsurface vaults to prevent petroleum hydrocarbon intrusion on the Powell Street Plaza site and your plan to facilitate adequate sealing of vaults during future construction on the Shellmound III site. The vault integrity must also be maintained to prevent any future intrusion of petroleum product. Please provide this office with an acceptable plan to evaluate that the vaults are properly sealed.
3. A reasonable agreement between the property owners (of Powell Street Plaza and Shellmound III sites) and East Shore Partners concurring with the implementation of the long term management plan.

One of the objectives of the LTMP was "To present procedures to manage potential nuisance or explosion hazard issues associated with residual petroleum hydrocarbons entering existing or future subsurface utility vaults." [3] It is my understanding that the 1997 LTMP was developed without having recourse to the drawings showing the type, number, location of, and depth of these 'vaults'. Without this information one was prudent in assuming that whatever product may still be in the groundwater could find its

[1] Section 7.0; Risk Assessment and Long-Term Management Strategy for Petroleum Product; Geomatrix; July, 1997.
[2] ACHCSA letter to Eastshore Partners dated October 15, 1997; signed by S.L. Hugo
[3] Risk Assessment and Long-Term Management Strategy for Petroleum Product; Geomatrix; July, 1997; pg 43

way into a subsurface vault, potentially accumulate, and thereby create an explosion hazard or at least a nuisance. The LTMP was therefore conditioned upon a requirement, by the ACHCSA, to clean, seal, and monitor the existing subsurface vaults. Section 7.4 of the Geomatrix plan also made allowances for this possibility.
In the years that followed, the information that would have been most useful in formulating the proposed 1997 LTMP, was found and, when coupled to the November 1996 groundwater elevations, yields a picture that requires reconsideration of one of the LTMP assumptions and resultant requirement. This information consists of a utility map of the South end of the Powell Street Plaza site. This drawing shows that most of the subsurface appurtenances are surface drainage features-curb inlets and catch basins. There are other utility structures that generally meet the vault definition, which is a closed space with no significant connection to the atmosphere. Vaults are a reason to consider the possibility of an explosive atmosphere accumulating; the catch basins and curb inlets, which are at the surface and open to the atmosphere, are not. There are four utility vaults, PG&E and PacBell), plus two sanitary sewer manholes, SSMH, that are within the southern 350' of the site.

Additionally, the depth to which these subsurface features reach is directly relevant to there being a potential for petroleum hydrocarbons accumulating in them. For example, if the groundwater is below the bottom of the box there is no need to protect the box from petroleum from entering. To assess this situation a figure was created to show the relationship between the former groundwater depth, 11/96, and the utility features of interest. For clarity, only the utility appurtenances near the formerly contaminated area-the southernmost 350'- are highlighted. In order to better understand these relationships, the November 1996 water elevations have been superimposed on the 1987 utility plans. These groundwater elevations show a slight 'mound' that is the remnant of an assumed water leak; it is assumed since there is no other plausible reason for there to be a 'mound' to be in an otherwise nearly flat water table. The groundwater receded to the levels shown on Figure 1 in November of 1996 and should, by this time, have returned to normal elevations.

A review of the referenced information shows that there are only six subsurface 'appurtenances' over the area of residual petroleum contamination. All of them are at least 2' above the water level of November of 1996. The vaults are 5'to 7' above the 11/96 water level.

The sanitary sewer manholes, SSMH, deserve a separate discussion. Sanitary sewers are expected to generate methane, a combustible and potentially explosive gas. It is standard

procedure to test them for an explosive atmosphere before entering one. The explosion problem here would always be driven by the methane expectation. It is worthy to note that the manhole that **is** within the area of residual contamination has an invert elevation at least 3' above the water level and even if it were well into the groundwater the entry procedures would be governed by the fact it is a sewage line.

Summary & Conclusions

- Of the 19 catch basins or curb inlets, sanitary sewer manholes, or utility vaults in the southern 350' of the Plaza, only 6 are over the 'area of residual petroleum contamination' and of the 6 only 2 are vaults, 1 of which is a sanitary sewer manhole.
- None are within 2 feet of the 1996 groundwater plume.
- The vaults are 5'to 7' above the 11/96 water level.
- The hypothetical danger of nuisance petroleum or explosive gasses collecting in vaults is not likely or even possible in most cases.
- The above discussion leads to the conclusion that a revision of LTMP for the Powell Street Plaza property is appropriate. With one exception, we proposed that all the conditions in the original Geomatrix plan-Section 7.0- remain with the exception that section 7.4 is no longer a necessary requirement. The additional conditions required by the ACHCSA are to be retained with the exception of no. 2, the need for which no longer exists.

Powell St. Plaza - LTMP

Table of Subsurface Intrusions

Intrusion ID	Located Over '96 Plume?	Invert or bottomElev'n (ft msl)	'96 GW Elev'n (ft msl)	Difference in Ft between water elev'n and inverts
Utility Vault: East side; Telephone	Y	7.6	>3	4.0
Utility Vault: East side; Elect'l	Y	5.1	>3	2.0
Utility Vault: South side; Telephone	N	7.5	2.5 set	5.0
Utility Vault: South side; Elect'l	N	7.0	2.5 est.	4.5
Curb Inlets, CI, and Catch Basins, CB, West & So	N	7.8	< 2.0	>5.8
CI	Y	7.2	> 2.0	<5.2
CB	N	6.08	>2.0	<4.0
CI	N	5.03	>2.0	<3.0
CI	N	4.58	2.3 est	2.3 est
CI	N	3.98	2.8 est	1.0 est
Christy Drain Box Between Bldgs B & C	Y	8.5	>3.0	<5.5
"	N	8.1	> 3.0	<5.1
CBs in parking area	N	7.6	>2.0	<5.6
CB	Y	6.0	>3.0	<3.0

CB	Y	5.2	>3.0	<3.2
CB	N	4.86	2.4 est	2.2 est
Manholes, MH – West	N	7.8	< 2.0	>5.8
MH – So	N	6.76	3.+	>3.5
MH – East	N	5.15	2.15 est	3.0