

ATTACHMENT 1
DETAILED COMMENTS ON DRAFT TUTU WELLS SITE
REMEDIAL INVESTIGATION

- **Section 5.1, Page 5-5, Paragraph 2**

This paragraph discusses one of the criteria used for evaluating whether specific soil data indicate that impacts to soil exist at a property. This criterion discounts data from excavated soil piles for three reasons (1) the excavated soil was assumed to be removed from the site, (2) the in-situ location is unknown and (3) excavated soils might have been impacted by the surface disposal of wastes. The only item of relevance in this criterion is reason 1, in which it is assumed that soils are excavated and removed from the property. This reasoning applies equally to soils that are sampled in-situ or in soil piles, as long as the impacted soils have been removed from the site. Therefore, this criterion should eliminate reasons 2 and 3 and be modified to encompass all cases in which soils (whether from soil piles or in-situ soils) are removed from the site.

- **Section 5.1.8, Page 5-18, Paragraph 1, Lines 4-5**

It is stated that W.L.Gore and Associates performed Gore-Sorber surveys in November 1993 and July 1994. As a point of clarification, ENSR performed the surveys. W.L.Gore performed chemical analysis of the sorbers, plotted the study results on color figures, and prepared reports on the analytical results.

- **Section 5.1.8, Page 5-18, Paragraph 1, Last Sentence**

This is the first time in the report that the 4-inch cistern pipe is mentioned. It should be clearly stated that this pipe is not associated with either the diesel or waste oil USTs.

- **Section 5.1.8.1, Page 5-19, Paragraph 3**

It is stated that during the Target surveys low concentrations (less than 10ppb) of total VOCs were measured "...in the vicinity of the USTs, with the exception of in the vicinity of the waste oil UST". In fact, the Target survey results indicate non-detect (less than 1 ppb) in the vicinity of the waste oil UST. The only location behind the Western Auto building that total VOC values above 10 ppb were measured is directly adjacent to the Four Winds building (away from either of the two USTs behind the Western Auto store).

- **Section 5.1.8.2, Page 5-20, Paragraph 3**

The samples mentioned in this paragraph were outside of quality control limits for BNA data because they were non-compliant with their internal standard areas, not because of MS/MSD exceedances. Non-compliance with internal standard areas is a serious, sample specific, quality control exceedance. (See Attachment 4).

- **Section 5.1.8.2, Page 5-21, Paragraph 2, Sentence 2**

This sentence states that samples in the vicinity of SS-1 had elevated detection limits (for PCE). This is an incorrect generalization. Most of the samples did not have elevated limits, as demonstrated in the table below.

ENSR Sample ID	Detection Limit (ppb)	BB&L Sample ID	Detection Limit (ppb)
T2-SN	25	SS-2	57
T2-1S	61	SS-4	25
T2-2S	61	SS-5	25
T2-4S	58	SS-3	25

- **Section 5.1.8.2, Page 5-21, Paragraph 2**

This paragraph correctly discounts the detection of PCE in Blasland, Bouck, and Lee (BBL) sample SS-1 as indicative of soil impacts by chlorinated hydrocarbons. This conclusion was reached even without consideration of the significant quality control concerns with respect to sample SS-1. The quantification of PCE in sample SS-1 is uncertain because the matrix spike/matrix spike duplicate analyses associated with that sample did not meet quality control criteria. Furthermore, the Laboratory Control Sample (LCS) run to check on that deficiency was not run until two weeks later, after the instrument had been calibrated. (See Attachment 4). If these quality control concerns were considered, the conclusion that there is no soil impact associated with chlorinated hydrocarbons behind the Western Auto Store would be even more definitive. This information should be included in this section and considered as part of the analysis.

- **Section 5.1.8.2, Page 5-21, Paragraph 3**

It should be clarified that the ruptured pipe mentioned in this paragraph is the 4-inch PVC pipe and is not associated with any of the USTs.

- **Section 5.1.8.2, Page 5-22, Paragraph 1, Sentence 2**

It is stated that ENSR's analysis indicated that the diesel UST contained heavy and mid-range petroleum product. However, ENSR's analysis indicated that the diesel samples exhibited only mid-range, not heavy range product (ENSR Closure Report, June 1994, Section 3.4).

- **Section 5.1.8.2, Page 5-22, Paragraph 3**

This paragraph refers to a portion of the Gore-Sorber survey behind the Western Auto store which indicates that the presence of diesel fuel was detected in the vicinity of the former diesel UST and heavy oil components were detected in the vicinity of the former waste oil UST. However, as depicted in the attached report, the levels of these parameters measured in the vicinity of the USTs were very low, and much closer to background levels than results from other sorber module locations, particularly upgradient, under the Four Winds building.

- **Section 5.1.8.2, Page 5-22, Paragraph 4**

Based on the soils data collected during the excavation of the waste oil UST, diesel UST, and soil performed in October 1993, the RI concluded that the property area attributed to Western Auto "...has soils impacted by BTEX and BNAs". However, this conclusion is based on data for soils collected on October 19-21, 1993. Subsequent to that sampling, and prior to additional sampling, the tank graves were deepened and widened under the supervision of John Bierschenk of ENSR, resulting in the excavation and removal from the site of the previously sampled soils. Using the revised criterion discussed above, data from soils that have been excavated and removed from the site should not be used as indicative of impacts to soils. The post-excavation data indicate that there are relatively insignificant concentrations of petroleum hydrocarbons remaining in soils in the vicinity of the former UST locations. The absence of petroleum hydrocarbon constituents measured in groundwater in MW-24 and the presence of low conductivity clay soils in the former tank area indicates that the remaining low hydrocarbon levels pose an inconsequential potential for environmental impacts. Based on this information and the excavation of soil from the site, it should be concluded that there is no remaining soil impacted with BTEX and BNAs in the vicinity of the former UST locations behind the Western Auto store. However, it should be noted that the results of the Gore-Sorber surveys indicate that there is a significant source of petroleum hydrocarbons located under the Four Winds Building, particularly in the vicinity of the old Barker's store.

- **Figure 4-1**

This figure is a revision of Figure 4-6 in the previous draft version of the report. In the current Figure 4-1 it is difficult to see the relationship of the fracture lineaments and other major geologic features to various locations and major features in Tutu valley (e.g. the Four Winds building). The problem is that the new base map used for this figure is too light and the topographic lines confuse the location of the major features, such as the Four Winds building. This issue was not a problem with Figure 4-6 in the previous draft of the report which used a different base map.

- **Figure 5-9**

This figure fails to adequately identify the location of certain samples. Also, it is not noted on Figure 5-9 that samples SS-2, SS-3, SS-4, SS-5, SS-6, SS-9 and SS-11, collected by Blasland, Bouck and Lee, were found to be outside quality assurance limits for the GC/MS semivolatile interval standard areas, as noted in the report from Lancaster Laboratories, and should therefore be rejected.

- **RA Section 2.1.2, Page 2-4**

This section again specifically refers to sampling data as if the sampled soils still remain at the site. However, as stated above, these soils have removed from the site and properly disposed of. As a result, there is no practical significance to the inclusion of these sample results in the RA. Also, this section is supposed to simply summarize the information and analysis presented in the RI. However, the Western Auto paragraph presents an original analysis of data not discussed in the text of the RI.