

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION III
841 Chestnut Building
Philadelphia, Pennsylvania 19107

SUBJECT: Phase II RI/FS Workplan for NASJRB - **DATE:** 7/29/96
Willow Grove

FROM: Kathy Davies, Hydrologist
AD

TO: Drew Lausch, RPM

I have reviewed the subject document and have the following comments:

General Comment. It is extremely difficult to review proposed monitoring well locations when maps depicting flow direction and wells with measured values have not been included.

2.9.2. To determine borehole flow, will brine testing or a flowmeter be used in the geophysical studies?

It is not clear why standard well construction techniques are not being proposed for use here. It is typical to use a bentonite pellet seal overlying the filter pack with a bentonite-cement grout as an annular seal.

Development criteria should also include dissolved oxygen and redox potential. Additionally, two hours may be insufficient time for proper development of the well.

2.10. Purging criteria should include turbidity, redox potential and dissolved oxygen. Wells should never be purged to dryness prior to sampling. Additionally, the use of bailers is not recommended; low-stress pumping with a pump capable of a flow rate similar to natural conditions is recommended.

3.1. Site 1 is identified as the Privet Road Compound in the heading for this section and is described as 0.5 acres, yet the suspected waste area is 2 acres. Please clarify the site boundaries and size.

3.5. Please identify the depths of the shallower and deeper portions of the aquifer. Additionally, the pumping rates and schedules and construction details for the supply wells should be mentioned here.

Figure 3-4. Please identify what the slashes and the values in the parentheses represent in the legend. Additionally, the full names for TCE, carbon tet and TCA need to replace the question marks.

3.10.5. Please clarify if VOCs are the principal or only contaminants detected in groundwater.

4.7.2. It is not clear how wells can be interpreted to be downgradient when the shallow groundwater flow is to the west and there are no wells installed west of the landfill.

4.8.1. Based upon the comment to 4.7.2, it is inappropriate to determine that the migration of compounds in solution via groundwater does not appear to be significant give the low concentrations or lack of identified contamination in this media. A statement in section 4.9 corroborates this comment by noting that the two "downgradient" wells may be, at best, sidegradient.

4.10.4. It is stated on page 4-9 that subsurface soil samples will be collected below the cap to determine the nature of the disposed waste material. Yet here it is proposed to install temporary well points if saturated soils are encountered. Is the term soil or waste?

Furthermore, it is stated that the well points will collect groundwater samples to test the hypothesis that a seasonal high water table may rise into the fill and affect groundwater quality. It is not clear how it will be ascertained that groundwater is actually being sampled and not pockets of infiltration or perched water within the landfill. Neither the description of the soil borings nor the installation of the well points discusses how any less permeable material underlying the waste and above the fractured bedrock will not be breached thereby causing contamination to move into the aquifer.

I see no need to put wells or well points into the landfill which may compromise the integrity of any material which may prevent or reduce accumulated infiltration and the subsequent contamination to move into groundwater. If indeed, the goal is to determine if a seasonal high water table is within the landfill and if the landfill is impacting the quality of groundwater, wells at the perimeter of the landfill will suffice.

4.10.5. Please provide the rationale for installing another well at the ALW-3 location.

Please clarify why the borehole geophysical data to be conducted on the wells will not be used to determine the actual depth and interval to be monitored.

5.9. It is stated here that the groundwater contamination extends downdip to the wells located along the property boundary. Please clarify if this is downdip, downgradient or both.

5.10.1. Please clarify if soil samples will be collected from the surface to a subsurface depth of 2 feet at each location, as stated in the text or from 0 to 6 inches, as stated in Table 5-1. Additionally, clarify if 11 samples, per the text, or 14 samples, per the table, will be taken.

5.10.3. Proposed well cluster 7 is not downgradient of the landfill if groundwater flows either to the northwest or to the northeast as stated on page 5-3.

The statement on page 5-15 beginning with "A two-well cluster..." is incomplete. The following statements then do not appear to be related to monitoring well installation.

5.10.5. Please explain how a day-long water level study will provide sufficient information to determine the cause of fluctuations in heads in three different zones of the aquifer.

6.5. As previously stated, it is difficult to evaluate horizontal and vertical gradients without the appropriate information being provided. Please explain how two zones which are not separated by any confining conditions have opposite flow directions.

6.10.3. It is difficult to review the proposed well locations because Figure 6-2 provides no chemical data for wells FTAW-3,4,5, or 6. As stated above, it is difficult to understand what is "downgradient" of well cluster FTAW.

Furthermore, the distribution of contamination in the existing FTAW1 cluster would indicate that if there were DNAPL it would most likely have migrated downdip at a depth less than the interval intercepted by FTAW-1B. Thus, any well "downdip" should be monitoring an equivalent zone. A deeper well at the FTAW1 location would thereby also be questioned.

7.1. Background soil sample locations should be specified to be upwind and topographically higher than any potential source area.

Appendix D. Please amend as necessary to be consistent with the above comments.