

**General TCEQ Response:**

TCEQ appreciates all the feedback it has received regarding the Hillcrest Community Environmental Investigation (HCEI) Field Sampling Plan (FSP). TCEQ has considered all comments received as of March 12, 2010. Please find TCEQ's response below each comment in bold italics. In addition, TCEQ welcomes any input that citizens will have on March 25, 2010 during the next meeting in Corpus Christi.

**Comments from Ms. Canales, Citizens for Environmental Justice (CFEJ) Followed by TCEQ's Response:**

I have not yet read the entire draft you sent; however, I've already encountered a major error -

Under Introduction 1.1 Background, paragraph 1, you correctly stated the fact that it was the CFEJ's work with Texas A&M and the results of the bio-monitoring study that resulted in TCEQ's proposed environmental study

However, in the second paragraph (copied below) you state, "TCEQ, in cooperation with the Hillcrest Community, shall direct and oversee...."

I would appreciate that you change that immediately to read, "TCEQ, in cooperation with the Citizens for Environmental Justice and the Hillcrest Community, shall..."

TCEQ's environmental study, as well as the CDC/ATSDR study would have never happened had it not been for the work of CFEJ. It is only right to make the change I've suggested immediately. Please make this correction in all your copies, including your website and any place else in your document that this omission has occurred.

***TCEQ very much appreciates CFEJ's work towards bringing attention to the concerns of the community. The TCEQ will amend the statement in the HCEI FSP to reflect as follows:***

***TCEQ is undertaking a soil gas survey in the Hillcrest Community in cooperation with the citizens of the Hillcrest community and the CFEJ.***

**Comments from Mr. Landress Followed by TCEQ's Response:**

\*I did receive your draft plan and figure 1. There are a number of corrections to be made and I just want to list those before I began a redline redraft of your proposal.

\*

\*1.1 TCEQ is undertaking a Soil gas Survey in the Hillcrest Community in Cooperation with the CFEJ and the citizens of the Hillcrest Community *(Please see TCEQ's response to Ms. Canales's comments above)*

Table 1. Project Organization Chart shall include the category box CFEJ community supervision\*  
*(Please see TCEQ's response to Ms. Canales's comments above)*

\*2.2 The Hillcrest Community is bounded by refinery sector to the west north and east. (Old Kerr McGee Site)\*.

***This comment will be adopted.***

\*3.1 Step 7 With the aid of a GIS resisted Map showing the hydrocarbon intensity per the Rosegarten Smith and Associates Inc., Oct. 1st 2009 the Flint hills hydrocarbon intensity map requested Oct. 6 2009 requesting isopleths of all COC's. ... the number and location of gas samples...

***HCEI will incorporate existing data and known hydrocarbon releases to optimize the design of Phase I. A fine grid has been selected for the areas adjacent to the refinery sector where a higher likelihood of VOC impacts to groundwater exists.***

3.9 Independent quality assurance by a CFEJ representative shall be required .

***Independent data review shall be performed as described in Section 3.9.***

4. Oversight : Instead of on request say as requested. Video monitoring shall be installed to record all activity. As per industry standards permanent video surveillance shall be positioned in the vicinity of the permanent monitor well to insure the sanctity of the wells. Future testing of all wells will be announced by the TCEQ giving CFEJ representatives 48 hour notice prior to testing.

***The change will be made to state "as requested". TCEQ is unaware of any industry standards requiring permanent video surveillance over monitor wells. Indeed, all sampling events will be announced ahead of time with a minimum 7 day notice. Note: monitor well installation and sampling are activities for Phase II.***

\*\*As you know it is imperative that all monitor wells be secured to prevent tapering and disturbance and the surface equipment shall be above normal grade to prevent contamination from heavy rainfall accumulations\*\*. I can't stress too strongly the need for a comprehensive GIS registered map be prepared and provided to the CFEJ prior to the beginning of the project.

This has been a consistent request first voiced in the Dec. 1st meeting and repeated at the last meeting. \*

***All permanent monitor wells installed by TCEQ will have protective metal casings and locks. Some permanent monitor wells may be fenced in to provide additional security as appropriate. Note: these are activities for Phase II.***

I forgot one element. Some of the permanent monitor wells should be full hole cored. After ywe lay out your grid I will tell you which ones.

***Note: These are activities for Phase II.***

**Comments from Mr. Rice, Representative for CFEJ Followed by TCEQ's Response:**

March 9, 2010  
Toxicology Division, MC 168  
Texas Commission on Environmental Quality  
P.O. Box 13087  
Austin, TX 78711-3087

Dear Sir or Madam,

The following comments are based on a review of the Draft Field Sampling Plan, Hillcrest Community Environmental Investigation, Phase I: Soil Gas Survey, Corpus Christi, Texas .

In general, the plan appears to be good. The following recommendations are intended to improve it.

1. Passive samplers should also be installed in areas of known contamination (e.g., next to IH-37 wells known to be contaminated). The purpose of this would be to:

- Determine whether the samplers can detect vapors coming from groundwater contaminated with petroleum products.

- Aid in interpreting results from samplers placed in the neighborhood.

***The proposed sampling grids will be installed adjacent to I-37. A fine grid has been selected for the areas adjacent to the refinery sector where a higher likelihood of VOC impacts to groundwater exists. A courser grid has been selected for areas in the interior of the Hillcrest Community.***

2. If possible as part of this effort, TCEQ should collect soil gas samples from other potentially contaminated sites near the Hillcrest neighborhood (e.g., the old Southwestern/Kerr-McGee tank farm, Leather Place). This would help to determine whether other sources of contamination exist near the Hillcrest neighborhood.

***The proposed sampling grids will be installed adjacent to the industrial sector bordering the Hillcrest community to the east. Although the chemicals of concern***

*from the tank farm and Leathers Place would not be captured by Phase I, TCEQ is committed to installing permanent monitor wells in this sector regardless of Phase I data.*

3. Add a section to the plan stating that community representatives will 1) participate in the design of the sampling effort, 2) be notified prior to the commencement of all field work and will be permitted to observe all field work, and 3) be provided will all data and reports generated as a result of the plan.

***The community representatives will be permitted to oversee all field work, within the constraints of the Health and Safety Plan and OSHA regulations. All data and reports generated will be accessible to the public.***

4. Add an acronym list to this and future documents. This will make the documents easier to read.

***An acronym list will be added to this and future documents.***

5. Question: why is TCEQ not planning to install samplers between Broadway and the western portion of Summers Street?

***The final sampling grids will cover this area.***

#### **Comments from the US Environmental Protection Agency (US EPA) Followed by TCEQ's Response:**

1. For clarification add VOC to the list of Acronyms and Abbreviations.

***This comment will be adopted.***

2. Sampling locations: Since the overall focus is to determine if a soil vapor plume exist, I would suggest using the streets as a grid and use the right-of-way for sampling.

***Definite interval grids will be used.***

3. Sampling locations: I would include the area along Broadway where there are residences across the street from industrial property.

***The final sampling grids will cover this area.***

4. Sampling locations: The grid spacing seems too large. However, I will defer to others who have more experience with these types of passive samplers.

***Mindful of the large area under investigation and the limited resources available, a fine grid has been selected for the areas adjacent to the refinery sector where a higher likelihood of VOC impacts to groundwater exists. A courser grid has been selected for areas in the interior of the Hillcrest Community.***

5. In Section 5.5 Sampling Procedures, the plan is to drill a 3 foot deep hole (This is for the Gore Modules). I would suggest you include information on obtaining a utility clearance prior to installing the samplers.

***The Draft FSP discussed using Gore or Beacon modules. We are proposing using Beacon Modules that will only require placement of the sample module about 18 inches below the ground surface.***

6. Sampling locations: Concerned that changing the grid in the center of the neighborhood will miss any old plumes that may have been cut off now that the facilities have recovery systems in place.

***Resources are being focused in the areas with a higher likelihood of release. Nonetheless, in an abundance of caution, samplers will still be installed in the center of the neighborhood.***

7. If Gore samplers are the preferred method the plan should be updated to remove references to Beacon.

***The Draft FSP discussed using both Gore and Beacon modules. We are however proposing to use Beacon Modules.***

**Comments from the Agency for Toxic Diseases and Registry (ATSDR) Followed by TCEQ's Response:**

Thank you for providing the Agency for Toxic Substances and Disease Registry (ATSDR) the opportunity to comment on the report titled, "Draft Field Sampling Plan, Hillcrest Community Environmental Investigation, Phase I: Soil Gas Survey, Corpus Christi, Texas", dated February 2010.

ATSDR is aware that the Texas Commission on Environmental Quality (TCEQ) is planning the Hillcrest Community Environmental Investigation (HCEI) to determine whether there are environmental impacts from volatile organic compounds (VOCs) to soil, groundwater, or ambient air in the Hillcrest neighborhood. According to the February 2010 draft Field Sampling Plan (FSP), the primary goal of Phase I of the HCEI project is to perform a passive soil gas survey in the Hillcrest Community to screen for VOC impacts to groundwater and use soil gas data to select the optimal locations for permanent monitor wells [TCEQ 2010].

Of note, ATSDR staff are not technical experts with regard to passive soil gas sampling. Although ATSDR reviewed the draft FSP, the comments provided in this email are from a general knowledge standpoint.

Overall, ATSDR finds the draft FSP has a number of strong points.

1. The proposed grid pattern appears to adequately cover all portions of the Hillcrest neighborhood.

***Acknowledged.***

2. Quality control measures to limit field error have been established as part of the proposed plan (ex., field duplicates, split samples, and trip blanks).

***Acknowledged.***

3. Analyzing the passive soil gas samples for all VOCs as “Target Analytes” using the U.S. Environmental Protection Agency (EPA) 8260B method will capture information on benzene and other petroleum related chemicals of concern.

***Acknowledged.***

4. Following EPA-approved analytical methods will ensure that TCEQ is capable of detecting and reporting the masses of VOCs present in the samples.

***Acknowledged.***

5. In general, field studies to calibrate the passive method where chemicals are typically measured as a mass (like micrograms (µg)) to actual soil gas concentrations (like µg/cubic meter) are still too limited to validate the use of the passive method for quantitative soil gas concentrations. Therefore, ATSDR agrees with the proposed plan in that it will not include comparisons to health-based benchmarks.

***Acknowledged.***

6. The FSP includes photographic documentation of the sample collection process.

***Acknowledged.***

ATSDR also offers several comments and questions for your consideration based on our general review of the information contained in the draft FSP.

1. The use of passive soil gas sampling is a relatively promising approach because it offers a quick and relatively inexpensive method to find vapor migration pathways. Has TCEQ used passive soil gas samples to determine VOC impacts to groundwater and permanent monitor well placement at other sites in Texas? If so, after collection of the groundwater samples, was an evaluation done to determine how successful the passive soil gas samples were in determining the placement of permanent monitor wells and groundwater plume boundaries?

***Yes. TCEQ has overseen work at several sites where soil-gas screening of groundwater assisted in the placement of permanent monitor wells and facilitated source attribution.***

2. Based on a preliminary review of the potential uses for passive soil gas sampling, it appears that other lines of evidence are typically considered in addition to the passive soil gas samples. Can the proposed plan include the collection of some active soil gas samples?

***The primary objective of Phase I is to select optimal permanent monitor well locations by screening a large area for soil vapors arising from potentially contaminated groundwater. Other methods such as active soil gas sampling may be reserved for future phases, as required.***

3. Soil gas can vary considerably from season to season. The depth to the groundwater table also can vary considerably. Can these potential influences be considered in the design of the proposed plan?

***It is acknowledged that there are factors that affect soil gas as described above. Accounting for such factors is more significant for the purposes of establishing vapor intrusion. Being that the primary objective of this Phase I soil gas screening is to select optimal permanent monitor well locations, any detection, regardless of high or low bias based on the factors cited, will be considered for Phase II.***

4. Has there been an evaluation of the soil properties (ex., particle size distribution, porosity and moisture content) in Hillcrest to determine the extent to which soil properties will influence soil vapor migration?

***Additional methods, such as establishing soil parameters and determining soil properties may be reserved for future phases, as required.***

5. Has there been an evaluation of the soil characteristics to know whether there is a confining unit that may block VOC vapor migration from a potential groundwater source?

***The lithology in the area of investigation is reasonably understood and there does not appear to be such a confining unit in the vadose zone.***

6. The locations of underground utilities can impact groundwater flow. Can the proposed plan incorporate additional passive soil gas samples near any major underground utility lines in Hillcrest, or will the location of underground utilities be considered during another phase of the HCEI?

***Since Phase I is only designed to screen a large area, preferential pathways such as underground utility lines will not be considered for this phase of the HCEI.***

7. The FSP did not specify the Method Quantitation Limits (MQLs) that will serve as the baseline for establishing the presence of VOCs in the passive soil gas samples. Therefore, ATSDR cannot comment on the MQLs for each VOC. Will the MQLs be added to the final FSP?

***Indeed, once the laboratories are selected, the MQL's for each analyte will be incorporated into the final FSP.***

8. There was no mention of taking "background" samples. Can background samples be collected in an area not expected to be impacted by groundwater VOC contamination (i.e., outside of the refinery row area) for comparison purposes?

***This methodology will not require background samples as there is no background concentration for the chemicals of concern captured by this analysis. The total mass detected for each sample will be relative to each other and all detections above the Method Detection Limits will be reported.***

9. What will happen if the passive samples indicate high VOC soil gas mass detected, or the adsorbent becomes saturated for most samples? Will the determination be made

that an extensive VOC groundwater plume exists under Hillcrest, thereby increasing the number of permanent monitor wells that are installed?

***Should high VOC soil gas be measured, it could be indicative of groundwater contamination. High mass concentrations alone, however, would not be indicative of an extensive plume. High mass sample results across a large area could be indicative of a plume. Extensive plumes do not necessarily require a larger number of monitor wells as the optimal location of wells can cover large areas. It is important to note that only actual groundwater data can establish if there is groundwater contamination. Phase I is only a screening method and no groundwater will be sampled and analyzed until Phase II.***

10. What will happen if the passive samples indicate little or no VOC soil gas mass detected? Will the determination be made that little or no groundwater contamination exists in the Hillcrest neighborhood, thereby limiting the number of permanent monitor wells that are installed? Overall, ATSDR does not believe the passive soil gas sampling results should be the only line of evidence used to determine whether the groundwater under the Hillcrest neighborhood is contaminated with VOCs.

***The HCEI is committed to installing and sampling permanent monitor wells in the Hillcrest neighborhood regardless of the Phase I data. The only definitive data that can be used to determine if there is groundwater contamination is the sampling and analysis of groundwater, which will take place in Phase II.***

ATSDR understands there are potentially other factors considered in the design of the draft FSP that may not have been discussed in detail in the current proposal. Given those other factors, please consider the comments and questions listed previously, as appropriate.

#### References:

[TCEQ] Texas Commission on Environmental Quality. 2010. Draft Field Sampling Plan, Hillcrest Community Environmental Investigation, Phase I: Soil Gas Survey, Corpus Christi, Texas. Available at:  
<http://www.tceq.state.tx.us/implementation/tox/research/hillcrest.html>.

**Comments from Ms. Gardiner Followed by TCEQ's Response:**

Thanks so much for the website and all the information. Appreciate the answers to the regulatory questions and remediation issues as well as the local area maps. Hope to be back in Texas soon for the continuing events on Hillcrest and the surrounding area.

*Acknowledged.*

**Comments from Ms. Schatz Followed by TCEQ's Response:**

I know there is something going on and feel that the Hillside neighborhood should be moved for the sake of their health.

In 1997 I managed an office building downtown Corpus Christi. Newly installed (deep, rich color) carpeting was installed in the corridors. Within 6 months the carpet bleached out completely white next to the stairwells (which are filled with fresh air). We sent the carpet to the factory to be tested and the report came back stating the bleaching was due to chemicals in the air.

In 1988, my daughter came down with A Plastic Anemia caused by Benzene. Within a month, another girl who lived 2 blocks from us developed the same disease. We were living in Portland. I feel that breeze from the South blew these chemicals in the air across the bay to Portland.

I realize these events were many years ago but the problem has not gone away and I think a full investigation is warranted.

*TCEQ very much appreciates you bringing to attention your concerns. The Hillcrest Community Environmental Investigation (HCEI) that TCEQ is planning will determine whether potential environmental sources of volatile organic chemicals (VOCs) exist within the Hillcrest community, and whether any identified sources require further evaluation. The initial phase of the HCEI will focus on adjacent areas to the Hillcrest community with known refinery sector subsurface releases in Corpus Christi, in addition to sampling at locations within the Hillcrest community. The TCEQ will investigate soil, groundwater, soil-gas, and ambient air samples for potential environmental sources of VOCs.*

*Phase 1 of the HCEI will consist of screening for VOCs by investigating soil-gas vapors. The method of sampling for soil-gas vapors will be a passive sampling method, which is ideal for screening large areas for volatile emissions from soils in environmental investigations.*