


TCEQ Interoffice Memorandum

To: Jeff Bertl, Regional Director
Jared Basurto, Air Section Manager
Randy Ammons, North Central and West Texas Area Director

From: Lindsey Jones, M.S. 
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Date: July 6, 2011

Subject: Health Effects Review of 2010 Ambient Air Network Monitoring Data in
Region 7, Midland

Conclusions

- Exposure to monitored levels of volatile organic compounds (VOCs) at the Odessa-Hays monitoring location would not be expected to cause acute or chronic adverse health effects, odor conditions, or vegetation effects.

Background

The Toxicology Division (TD) has reviewed ambient air sampling data collected from the one network monitoring site in TCEQ Region 7, Midland. The data collected at the Odessa-Hays monitoring site from January 1 through December 31, 2010, was evaluated from both a short-term and long-term health and welfare perspective. Monitoring site information is presented in Table 1, along with hyperlinks to the monitoring site map and more detailed information. The TCEQ Field Operations Support Division (FOSD) reported the data for all chemicals evaluated in this memorandum and a complete list of all chemicals examined is provided in List 1 in Attachment A.

TD reviewed air monitoring summary results for 46 VOCs from samples collected every hour by the Odessa-Hays automated gas chromatograph (autoGC). All VOC data evaluated from the Odessa-Hays monitoring site exceeded TCEQ's 75 percent annual data completeness objective, except for 2,4-dimethylpentane. Therefore, annual average data for 2,4-dimethylpentane at the Odessa-Hays site were not evaluated. The available data for the 45 VOCs at the Odessa-Hays site are expected to provide representative annual average VOC concentrations.

TD compared the measured hourly concentrations for 46 VOCs from the autoGC monitoring site and annual averages for the 45 VOCs that met the annual data completeness objective at the Odessa-Hays site to their respective short-term and long-term air monitoring comparison values (AMCVs). More information about AMCVs is available online at:
<http://www.tceq.state.tx.us/implementation/tox/AirToxics.html#amcv>.

Table 1. Monitoring Sites Located in TCEQ Region 7

City and Site Location	County	EPA Site ID	Monitored Compounds
Odessa-Hays , Barrett and Monahans Streets	Ector	48-135-0003	VOCs (hourly autoGC)

Evaluation

Short-Term Data

All but one of the measured hourly concentrations of each of the 46 VOCs reviewed from both monitoring sites were below their respective short-term AMCVs. Therefore, acute adverse health effects, odors, or vegetation effects are not expected to occur as a result of exposure to the reported levels of these chemicals at the Odessa-Hays monitoring site.

One hourly sample detected a concentration of 5.06 parts per billion by volume (ppb_v) of isoprene, which is just over the odor AMCV of 5 ppb_v. The sample was well below the health AMCV of 20 ppb_v and is not of any potential health concern. Because the detected concentration of isoprene was not of high intensity, the duration of the slightly elevated concentration was small (only one hourly sample), and historical monitoring at the site indicates only one other hourly exceedance of the isoprene odor AMCV in the last three years, this concentration was not determined to be of any welfare concern nor indicative of a potential issue.

Long-Term Data

The 2010 annual average concentrations of the 45 VOCs evaluated at the Odessa-Hays monitoring site were well below their respective long-term AMCVs. Therefore, adverse health effects would not be expected to occur as a result of long-term exposure to the reported levels of these chemicals.

If you have any questions regarding the contents of this review, please do not hesitate to contact me at (512) 239-1784 or via email at lindsey.jones@tceq.texas.gov.

cc (via email):

Casso, Ruben- EPA Region 6, Dallas

Prosperie, Susan- Department of State Health Services

Attachment A

List 1. Target VOC Analytes for AutoGC

1-Butene	Benzene	n-Heptane
1-Pentene	c-2-Butene	n-Hexane
1,2,3-Trimethylbenzene	c-2-Pentene	n-Nonane
1,2,4-Trimethylbenzene	Cyclohexane	n-Octane
1,3-Butadiene	Cyclopentane	n-Pentane
1,3,5-Trimethylbenzene	Ethane	n-Propylbenzene
2-Methylheptane	Ethyl Benzene	o-Xylene
2-Methylhexane	Ethylene	p-Xylene + m-Xylene
2,2-Dimethylbutane	Isobutane	Propane
2,2,4-Trimethylpentane	Isopentane	Propylene
2,3-Dimethylpentane	Isoprene	Styrene
2,3,4-Trimethylpentane	Isopropyl Benzene (Cumene)	t-2-Butene
2,4-Dimethylpentane	Methylcyclohexane	t-2-Pentene
3-Methylheptane	Methylcyclopentane	Toluene
3-Methylhexane	n-Butane	
Acetylene	n-Decane	