

Texas Commission on Environmental Quality

INTEROFFICE MEMORANDUM

To: Jed Barker, Regional Director, R7
Alice Cone, Air Section Manager, R7
Brent Wade, West Texas Area Director

Date: June 15, 2007

From: Neeraja K. Erraguntla, Ph.D.
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Subject: Health Effects Review of the 2006 Ambient Air Network Monitoring Sites in Region 7-Midland

Conclusions

All reported one-hour concentrations of monitored volatile organic compounds (VOCs) at the Odessa-Gonzales and Odessa-Hays monitoring sites were less than their respective short-term Effects Screening Levels (ESLs) except for one hourly t-2 pentene concentration which exceeded the odor-based ESL at the Odessa-Hays site. Toxicology Section (TS) believes that exposures to all the 46 reported VOC concentrations including t-2 pentene will not be expected to cause adverse health effects or nuisance odor conditions.

Reported annual concentrations of all 46 VOCs at the Odessa-Gonzales and Odessa-Hays monitoring sites were monitored at levels below their respective long-term ESLs and would not be expected to cause adverse health effects.

Background

This memorandum conveys TS's evaluation of ambient air sampling conducted at two monitoring network sites in Region 7-Midland during 2006. TS reviewed air monitoring summary results for 46 VOCs from 40 minute samples collected each hour by automated gas chromatographs (autoGCs) at the Odessa-Gonzales and Odessa-Hays sites from January 1- December 31, 2006. Table 1 contains information regarding the two autoGC sites in Region 7-Midland. Table 2 contains a list of the target analytes that were evaluated in this review. Figures 1 and 2 are street level maps indicating the specific locations of each of the two monitoring sites in Region 7-Midland.

The TCEQ Monitoring Operations Division reported the data for all chemicals evaluated. The majority of the VOC data collected at both the monitoring sites in Region 7 met TCEQ's data completeness objective of 75 percent. TS evaluated the reported VOCs for their potential to cause short-term and long-term adverse health effects, odorous conditions, and vegetative damage. The measured chemical concentrations were compared to their respective short-term and long-term ESLs. Information on the ESLs can be obtained by contacting the TS at 512-239-1795 or visiting the following website:

<http://www.tceq.state.tx.us/implementation/tox/esl/ESLMain.html>

Table 1: Monitoring Site Information for TCEQ Region 7-Midland

County	City and Site Location	EPA Site ID	Monitored Compounds
Ector	Odessa-Hays, Barrett and Monahans Streets	48-135-0003	VOCs
Ector	Odessa-Gonzales, 2700 Disney	48-135-1014	VOCs

Evaluation

One-Hour Data (Odessa-Gonzales and Odessa Hays)

Reported one-hour concentrations of all monitored VOCs at the Odessa-Gonzales and Odessa-Hays monitoring sites were less than their respective ESLs except for one hourly t-2 pentene concentration which exceeded the odor-based ESL at the Odessa-Hays site. TS believes that exposures to the reported one-hour concentrations of all the monitored VOCs would not be expected to cause adverse human health effects or nuisance odor conditions.

Annual Average Data

Annual average concentrations of all 46 monitored VOCs were below their respective long-term ESLs. Exposure to all the annual average VOC concentrations reported at these two locations would not be expected to cause adverse health effects.

If you have any questions regarding this evaluation, please do not hesitate to contact me at (512)-239-2492 or email me at nerragun@tceq.state.tx.us.

Table 2: List of Monitored VOCs (autoGC)

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

Figure 1: Location of the VOC Monitoring on Disney Street (Odessa-Gonzales)



Figure 2: Location of the VOC Monitoring at Barrett and Monahans Street (Odessa-Hays)



cc: (via email)
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