Corpus Christi Air Monitoring and Surveillance Camera Installation and Operation Project

Annual Progress Report for the Period

October 2, 2007 through October 1, 2008

Submitted to

The Honorable Janis Graham Jack
US District Court for the Southern District of Texas
Corpus Christi, Texas

Ms. Kathleen Aisling
US Environmental Protection Agency, Region 6
Dallas, Texas

Ms. Susan Clewis
Texas Commission on Environmental Quality, Region 14
Corpus Christi, Texas

Submitted by

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ANNUAL PROGRESS REPORT

TO THE U.S. DISTRICT COURT
FOR THE
CORPUS CHRISTI AIR MONITORING AND SURVEILLANCE CAMERA PROJECT

Activity Summary for the period from
October 2, 2007 through October 1, 2008

INTRODUCTION

On October 1, 2003, the US District Court for the Southern District of Texas issued an order to the Clerk of the Court to distribute funds in the amount of $6,700,000, plus interest accrued, to The University of Texas at Austin (University) to implement the court ordered condition of probation (COCP) project *Corpus Christi Air Monitoring and Surveillance Camera Installation and Operation* (Project). This annual report has been prepared pursuant to the requirements of the project proposal and is being submitted to the US District Court, the US Environmental Protection Agency (EPA), and the Texas Commission on Environmental Quality (TCEQ).

A. MONITORING SITES AND EQUIPMENT INSTALLED

The COCP consists of a network of seven (7) air monitoring stations as shown in the map below with air monitoring instruments and surveillance camera equipment as shown in Table 1, page 3.

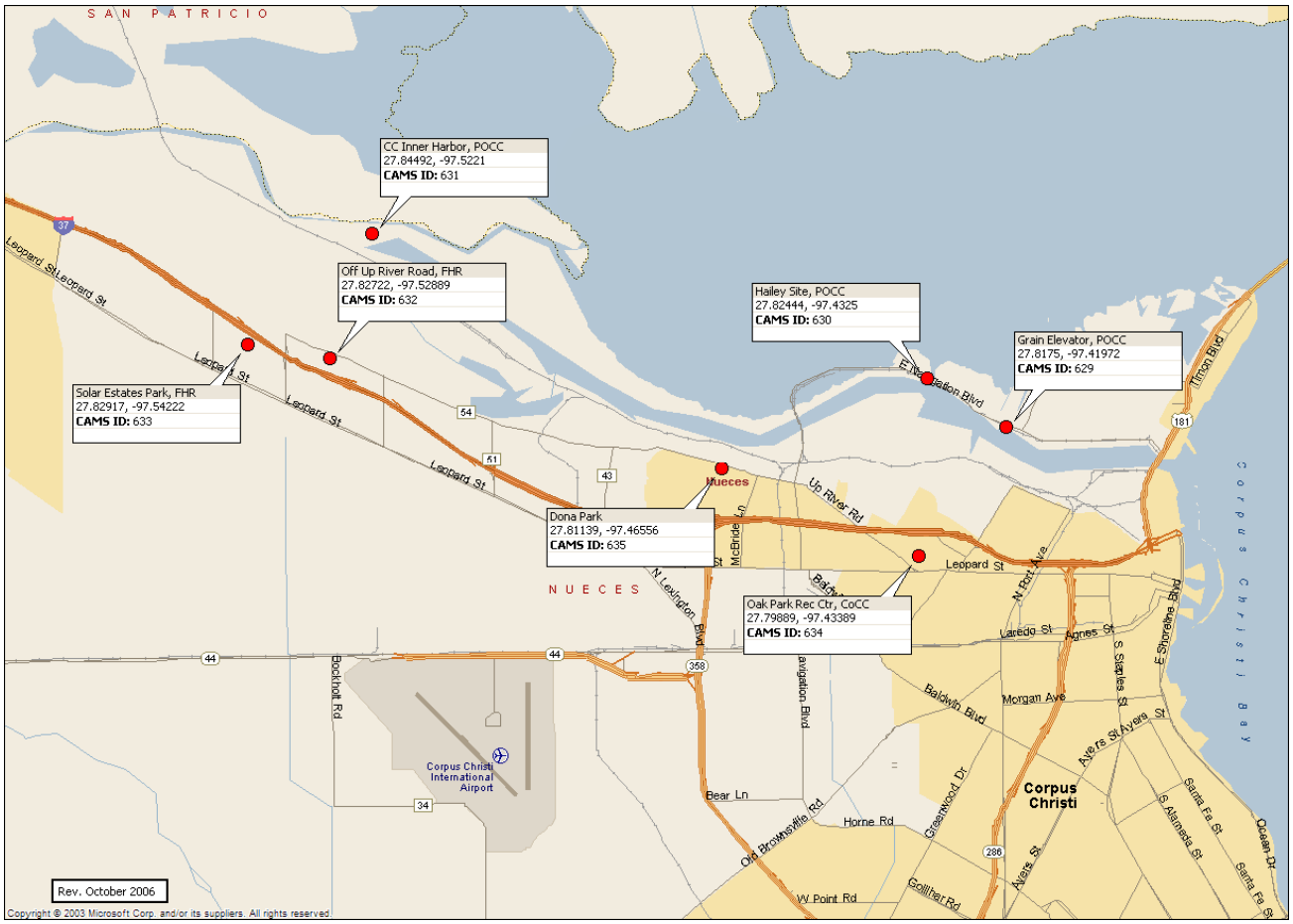

Table 1. Schedule of Air Monitoring Sites, Locations and Major Instrumentation

TCEQ CAMS NOs.	Latitude	Longitude	Description of Site Location	Monitoring Equipment				
				Auto GC	TNMHC	H2S & SO2	Met Station	Camera
634	27.798889 º North	97.433889 º West	Oak Park Recreation Center	Yes	Yes		Yes	
629	27.817500 º North	97.419722 º West	Grain Elevator @ Port of Corpus Christi		Yes	Yes	Yes	
630	27.824444 º North	97.432500 º West	J. I. Hailey Site @ Port of Corpus Christi		Yes	Yes	Yes	
635	27.811389 º North	97.465556 º West	TCEQ Monitoring Site C199 @ Dona Park		Yes	Yes	Yes	Yes
631	27.845278 º North	97.525556 º West	Port of Corpus Christi on West End of CC Inner Harbor		Yes	Yes	Yes	
632	27.827222 º North	97.528889 º West	Off Up River Road on Flint Hills Resources Easement		Yes	Yes	Yes	
633	27.908333 º North	97.542222 º West	Solar Estates Park at end of Sunshine Road	Yes	Yes	Yes	Yes	Yes

Legend

Auto GC	automated gas chromatograph
TNMHC	total non-methane hydrocarbon analyzer
H_2S	hydrogen sulfide analyzer
SO_2	sulfur dioxide analyzer
Met Station	meteorology station consisting of measurement instruments for wind speed, wind direction, ambient air temperature and relative humidity
Camera	surveillance camera

B. DATA ANALYSIS

Summary of Data Findings from Monitoring Sites

As noted in Table 1, page 3, the monitoring network provides measurements of a variety of air pollutants, including hydrocarbons, sulfur dioxide and hydrogen sulfide. Provided below are brief findings from the monitoring network. More details are available in Appendix A, pages 7 through 25.

Results of Canister Sampling

At five of the seven monitoring sites, an ambient air sample may be collected in a canister in the field for subsequent laboratory analysis if a sustained level of elevated concentrations of total nonmethane hydrocarbons has been measured. During the period from October 1, 2007 through September 30, 2008, a total of 52 canister samples were triggered in the Corpus Christi network. Because the TCEQ has revised the health reference level for benzene, no measured benzene concentrations were higher than the TCEQ's health reference value. However, several samples contained odorous concentrations of species.

Summary of Sulfur Species Monitoring

No exceedances of the State of Texas standards for sulfur dioxide and hydrogen sulfide were measured this fiscal year.

Trends in Hydrocarbon Concentrations in Residential Areas

The two automated gas chromatograph instruments in residential areas continued to measure annual average concentrations below the TCEQ's long-term effects screening levels.

Over the four years of data collection, one can now see changes in concentrations since 2005. Every species measured has a lower annual average in FY 2008 than in the previous two years.

Trends in Benzene Concentrations in Residential Areas

Because of a high level of concern with benzene, a known carcinogen, this compound is given special attention. An analysis of the benzene data coupled with the wind data allows estimation of the directions associated with the higher and lower than average concentrations. It has been shown repeatedly that at Solar Estates the principal direction for higher than average concentrations points to the refinery to the northeast, and at Oak Park two key directions emerge – one pointing to a refinery to the northwest, one pointing to a refinery to the northeast. Now, factoring in both wind speed and direction, it appears concentrations may be declining owing to upwind emissions reductions.

C. ADVISORY BOARD

The Advisory Board for the Corpus Christi Air Monitoring and Surveillance Camera Project is a voluntary Board that consists of eight members. The members and their representation on the Board follow:

Ms. Gretchen Arnold	Local Air Quality Issues and Board Spokesperson
Mr. Ron Barnard	Near Non-Attainment Area Liaison - Instrumentation Local Air Quality Issues and Board Spokesperson
Dr. Eugene Billiot	Technical Support to the Board - Instrumentation
Dr. William Burgin	Local Public Health - Local Air Quality Issues
Ms. Joyce Jarmon	Community Representation
Ms. Charlotte Knesek	Community Representation
Dr. Glen Kost	Community Representation
Ms. Pat Suter	Local Advocacy Group

Two meetings of the Advisory Board were held during the fifth year of the Project. Both meetings were held on the campus of Texas A&M University in Corpus Christi, Texas. Highlights from these meetings follow:

a. November 1, 2007Meeting

- Six Board members and representatives from the US District Court, EPA Region 6, The University of Texas at Austin, the Texas Commission on Environmental Quality, and Air Quality Solutions, Inc. attended.
- Renewal of membership for 4 additional years to the board were signed and returned with the exception of Ron Barnard, who will be retiring in December 2008; Joyce Jarmon and Charlotte Knesek, who were not present at the meeting.
- Dr. David Sullivan gave a summary of the early findings resulting from the analysis of data collected at the monitoring stations. Dr. Sullivan summarized an H2S Case Study

involving data from May 3, 2007, July 27 and 28 during which H2S and TNMHC concentrations rose significantly due to loading and unloading of ships. TCEQ did investigate these incidents. Dr. Sullivan maintains that UT's monitoring continues to provide assistance to TCEQ in diagnosing sources of pollution.

- Dr. Sullivan discussed the features of the online Trajectory Tool to the board members.
- The Board was updated on the status of the tasks funded under TCEQ Supplemental Environmental Projects (SEPs).
- The Board was updated on the prospect of funding from Class Action Suit in Houston.
- Preparation of an outline detailing the content and presentation of the annual report to the US District Court was discussed.

b. April 8, 2008 Meeting

- Four Board members and representatives from the US District Court, University of Texas at Austin, the Texas Commission on Environmental Quality and the Port of Corpus Christi attended.
- The Board was updated on the presentation of the Project's Annual Report to the US District Court, which occurred in January 2007. During the presentation of the Annual Report mention was made of a case from the Houston area, which may result in additional funding for another air quality project in the Houston/Corpus Christi area.
- Dr. David Sullivan gave a summary of the early findings resulting from the analysis of data collected at the monitoring stations.
- The Board was updated on work that was in progress of trying to debug the Enhanced Automated Trajectory Tool to prevent it from sending out false alert messages.
- Dr Allen introduced Dr. Elena McDonald-Buller and Mr. Gary McGaughey from UT as lead modelers on the new Neighborhood Air Toxics Modeling Project, which was a result of the Class Action Suit from Houston before the Honorable Judge Jack.
- The Board was asked to start thinking of replacements for 2 board members who will be leaving. Ron Barnard will be retiring in January 2009 and Charlotte Knesek, who has asked to be removed due to medical concerns.

D. PROJECT MANAGEMENT AND PLANNING

Project Management and Planning during this period has focused on five (5) major activities.

1. Site Operations and Maintenance and Quality Assurance
   Routine operations, maintenance and quality assurance activities have become the norm at each site. These activities help to maintain high data capture and quality of data.

2. Data Analysis
   The Project now has more than three years worth of data. The focus of data analysis has been to examine the frequency, level and direction of sources when measurements exceed

trigger or warning levels and to analyze data for trends and other patterns indicated in the data collected.

3. Communication
   Information about the status of the Project has been communicated through:
   a. Advisory Board Meetings,
   b. Project Website (website statistics are included in Appendix B, page 26),
   c. Presentations to local community organizations and industry groups and
   d. Quarterly Technical and Financial Reports to the Court and Advisory Board.

4. Budget Monitoring
   Budget monitoring during this period has focused on:
   a. Project costs for Phase II-Sites Operation and Maintenance,
   b. Administration and oversight costs incurred by the University, and
   c. Financial reports are included in Appendix C, pages 28 through 33.

5. Other Contributions
   The University of Texas at Austin has been awarded funding for five (5) Supplemental Environmental Projects (SEPs) through the Texas Commission on Environmental Quality since the Project began totaling $1,089,379 with interest earned totaling $35,351.62 through September 30, 2008. These SEPs are listed in Appendix D, page 34.

   Of the five SEPs awarded to UT Austin, two were awarded during the year ending September 30, 2008. The first of these SEPs was awarded October 2007 in the amount of $10,244. The funds from this SEP will be used to buy another surveillance camera for use at the JI Hailey (CAMS 630) site. The second SEP was awarded April 2008 in the amount of $67,900. All approvals for the use of these SEP funds had not been obtained prior to the close of the project year.

APPENDIX A

Data Analysis for Corpus Christi Annual Report
October 2007 – September 2008

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Data Analysis for Corpus Christi Annual Report

This technical report describes results of monitoring and analysis of data under the Corpus Christi Air Quality Project for the period from October 1, 2007 through September 30, 2008. The monitoring network is described in Table 1 below and shown in Figure 1, page 9. Figure 2, page 9, and Figure 3, page 10, show some of the pollution sources within the area covered by the monitoring network. A number of additional smaller sources are in the area and are known to affect the measurements taken by the monitors.

This report contains the following elements:

- an update on canister sampling and analysis of results;
- a summary of hourly speciated hydrocarbon concentrations measured by automated gas chromatographs (auto-GCs) compared with health effects screening levels;
- a summary of benzene data measured in residential areas.

Table 1. Schedule of Air Monitoring Sites, Locations and Major Instrumentation

TCEQ CAMS#	Description of Site Location	Monitoring Equipment				
		Auto GC	TNMHC (T) / Canister (C)	H_2S & SO_2	Met Station	Camera
634	Oak Park Recreation Center (**OAK**)	Yes	T		Yes	
629	Grain Elevator @ Port of Corpus Christi (**CCG**)		T&C	Yes	Yes	
630	J. I. Hailey Site @ Port of Corpus Christi (**JIH**)		T&C	Yes	Yes	
635	TCEQ Monitoring Site C199 @ Dona Park (**DPK**)		T&C	Yes	Yes	Yes
631	Port of Corpus Christi on West End of CC Inner Harbor (**WEH**)		T&C	Yes	Yes	
632	Off Up River Road on Flint Hills Resources Easement (**FHR**)		T&C	Yes	Yes	
633	Solar Estates Park at end of Sunshine Road (**SOE**)	Yes	T	Yes	Yes	Yes

Legend

Auto GC	automated gas chromatograph
TNMHC	total non-methane hydrocarbon analyzer (all except 634 & 633 also have canister hydrocarbon samplers)
H_2S	hydrogen sulfide analyzer
SO_2	sulfur dioxide analyzer
Met Station	meteorology station consisting of measurement instruments for wind speed, wind direction, ambient air temperature and relative humidity
Camera	surveillance camera

Figure 1. Corpus Christi Monitoring Sites

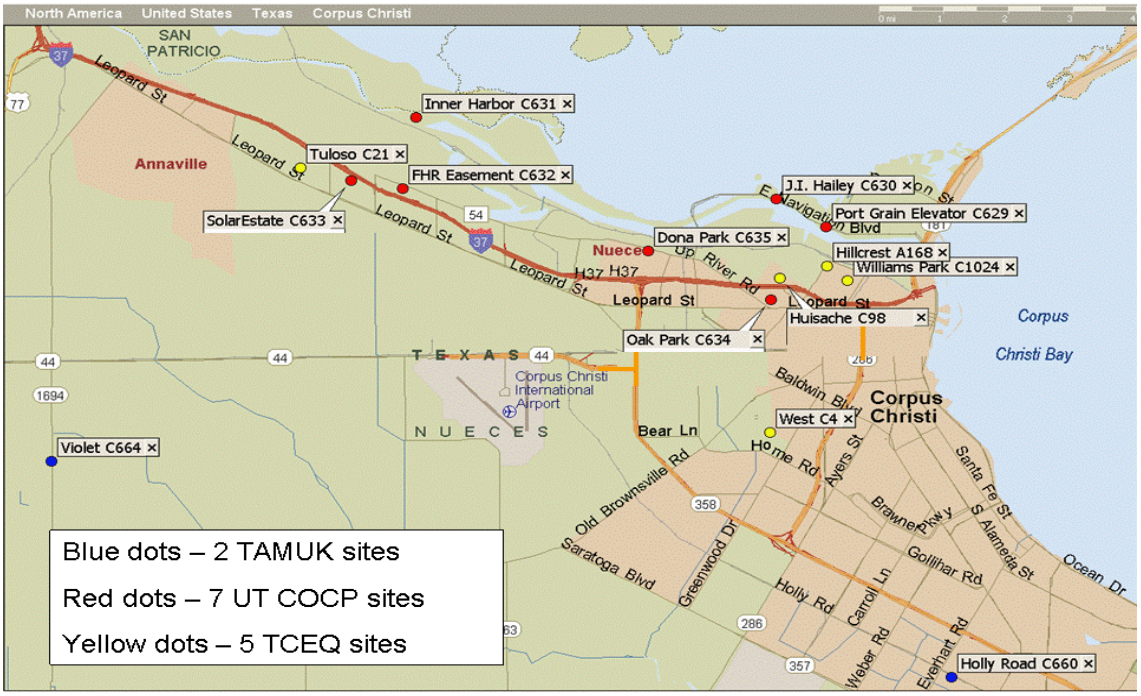


Figure 2. Major Industrial Facilities in the Corpus Christi Area

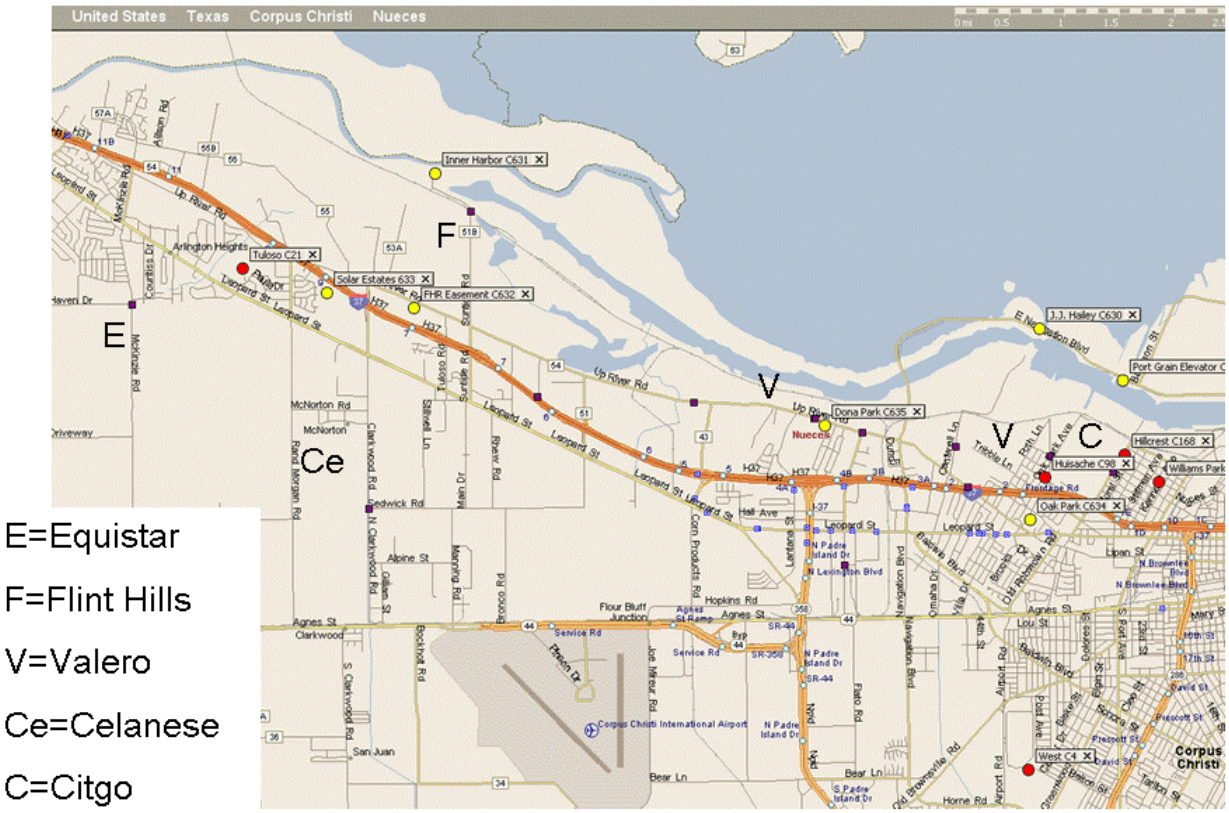
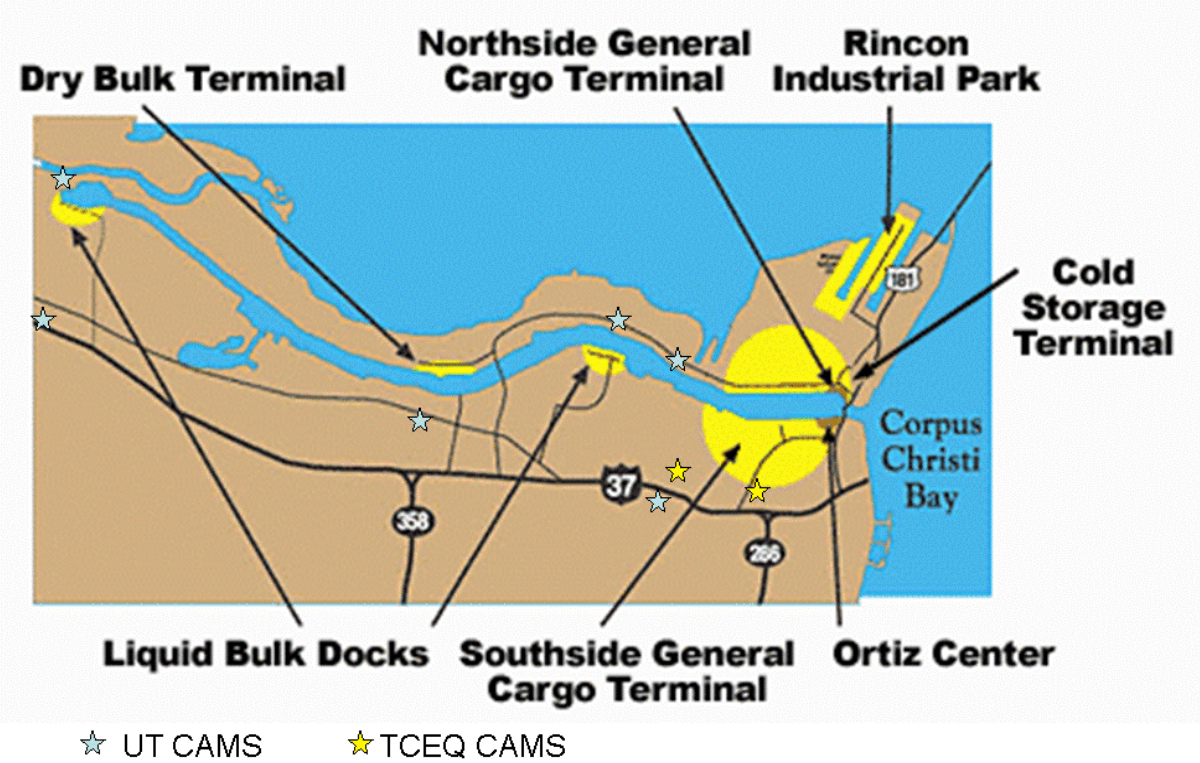


Figure 3. Shipping Facilities in the Corpus Christi Area



Glossary

Glossary of terms

- **Pollutant concentrations** – Concentrations of most gaseous pollutants are expressed in units denoting their "mixing ratio" in air; i.e., the ratio of the number molecules of the pollutant to the total number of molecules per unit volume of air. Because concentrations for all gases other than molecular oxygen, nitrogen, and argon are very low, the mixing ratios are usually scaled to express a concentration in terms of "parts per million" (ppm) or "parts per billion" (ppb). Sometimes the units are explicitly expressed as ppm-volume (ppmV) or ppb-volume (ppbV) where 1 ppmV indicates that one molecule in one million molecules of ambient air is the compound of interest and 1 ppbV indicates that one molecule in one billion molecules of ambient air is the compound of interest. In general, air pollution standards and health effects screening levels are expressed in ppmV or ppbV units. Because hydrocarbon species may have a chemical reactivity related to the number of carbon atoms in the molecule, mixing ratios for these species are often expressed in ppb-carbon (ppbV times the number of carbon atoms in the molecule), to reflect the ratio of carbon atoms in that species to the total number of molecules in the volume. This is relevant to our measurement of auto-GC species and TNMHC, which are reported in ppbC units. For the purpose of relating hydrocarbons to health effects, this report notes hydrocarbon concentrations in converted ppbV units. However, because TNMHC is a composite of all species with different numbers of carbons, it cannot be converted to ppbV. Pollutant concentration measurements are time-stamped based on the start time of the sample, in Central Standard Time (CST), with sample duration noted.

- **Auto-GC** - The automated gas chromatograph collects a sample for 40 minutes, and then automatically analyzes it for some 47 hydrocarbon species. These include benzene and 1,3-butadiene, which are air toxics, various butene species that have relatively low odor thresholds, and a range of gasoline and vehicle exhaust components. Auto-GCs operate at Solar Estates CAMS 633 and Oak Park CAMS 634.

- **Total non-methane hydrocarbons** (TNMHC) – TNMHC represent a large fraction of the total volatile organic compounds released into the air by human and natural processes. TNMHC is an unspeciated total of all hydrocarbons, and individual species must be resolved by other means, such as with canisters or auto-GCs. However, the time resolution of the TNMHC instrument is much shorter than the auto-GC, and results are available much faster than with canisters. TNMHC analyzers operate at all seven UT/CEER sites.

- **Canister** – Stainless steel canisters are filled with air samples when an independent sensor detects that elevated (see below) levels of hydrocarbons (TNMHC) are present. Samples are taken for various lengths of time (generally 20 minutes) to try to capture the chemical make-up of the air. In most cases, the first time on any day that the monitored TNMHC concentration exceeds 2000 ppbC at a site for a continuous period of 15 minutes or more, the system will trigger and a sample will be collected. Samples are sent to UT Austin and are analyzed in a lab to resolve some 60 hydrocarbon and 12 chlorinated species. Canister samplers have operated at all seven UT/CEER sites, but currently only at five (CAMS 629, 630, 631, 632, and 635).

- **Effects Screening Levels (ESLs) and Reference Values (ReVs) –** The definitions and details about the use of ESLs and ReVs appear in the "RG-442" regulations guidance document *Guidelines to Develop Effects Screening Levels, Reference Values, and Unit Risk Factors*, found at http://www.tceq.state.tx.us/files/rg-442.pdf_4237940.pdf (Accessed November, 2008). Extracts from this document appear below:

  > *1.1 Legal Authority and Regulatory Use:* The Texas Clean Air Act (Chapter 382 of the Texas Health and Safety Code (THSC)) authorizes the TCEQ to prevent and remedy conditions of air pollution. Section 382.003 of the THSC defines air pollution as
  >
  > *the presence in the atmosphere of one or more air contaminants or combination of air contaminants in such concentration and of such duration that:*
  >
  > - *are or may tend to be injurious to or to adversely affect human health or welfare, animal life, vegetation, or property; or*
  > - *interfere with the normal use and enjoyment of animal life, vegetation, or property.*
  >
  > Sections 382.0518 and 382.085 of the THSC specifically mandate the TCEQ to conduct air permit reviews of all new and modified facilities to ensure that the operation of a proposed facility will not cause or contribute to a condition of air pollution. Air permit reviews typically involve evaluations of best available control technology and predicted air concentrations related to proposed emissions from the new or modified facility. In the review of proposed emissions, federal/state standards and chemical-specific **Effects Screening Levels** (ESLs)

are used, respectively, for criteria and non-criteria pollutants. Because of the comprehensiveness of the language in the THSC, ESLs are developed for as many air contaminants as possible, even for chemicals with limited toxicity data.

Air contaminants may cause both direct and indirect effects. Direct effects are those that result from direct inhalation and dermal exposures to chemicals in air. Deposition of contaminants on soil and water—and subsequent uptake by plants and animals—may cause indirect effects in humans who consume those plants and animals. However, the THSC authorizes the prevention and remedy of air pollution based on effects and interference from contaminants *present in the atmosphere*, i.e., direct effects. Therefore, during the air permitting process, the TCEQ does not set air emission limits to restrict, or perform analysis to determine, the impacts emissions may have, by themselves or in combination with other contaminants or pathways, after being deposited on land or water or incorporated into the food chain. However, indirect effects are assessed during cleanup efforts under the Risk Reduction and Texas Risk Reduction Program Rules, described below.

The TCEQ also relies upon this authority to evaluate air monitoring data. Texas has the largest ambient air toxics monitoring network in the country, receiving monitoring data for up to 186 air toxics at approximately 57 different locations throughout the state. **Reference Values** (ReVs) and **Unit Risk Factors** (URFs) are used to evaluate measured air toxics concentrations for their potential to cause health and welfare effects, as well as to help the agency prioritize its resources in the areas of permitting, compliance, and enforcement.

Sec. 1.7 Use of ESLs, ReVs, and URFs in TCEQ Program Areas: The TS [Toxicology Section] develops ESLs, ReVs, and URFs to provide toxicological support to multiple program areas within the TCEQ… In the air permit review process, the TS utilizes short- and long-term ESLs to evaluate proposed emissions for their potential to adversely affect human health and welfare. For evaluation of ambient air monitoring results, acute and chronic ReVs and URFs are used to assess the potential for exposure to the measured concentrations to cause human health effects. To assess potential welfare effects for monitoring results, the TS uses odor- and vegetation-based ESLs.

The TCEQ Toxicology Section is continuing long-term analysis of these thresholds and persons may subscribe to an e-mail listserv for updates at the Web site http://www.tceq.state.tx.us/implementation/tox/esl/ESLMain.html (accessed November 2008). The current ESLs for benzene are 55.5 ppbV for short term and 1.4 ppbV for long term exposure. TCEQ recommendeds using the ReV for short term assessments of benzene concentrations. This number is 180 ppbV. Thus, only when individual auto-GC one-hour values or canister 20-minute values for benzene exceed 180 ppbV will a short-term "exceedance" for benzene be noted.

- **Elevated Concentrations –** In the event that measured pollutant concentrations are above a set threshold they are referred to as "elevated concentrations." The values for

these thresholds are summarized by pollutant below. As a precursor to reviewing the data, the reader should understand the term "*statistical significance*". In the event that a concentration is higher than one would typically measure over, say, the course of a week, then one might conclude that a specific transient assignable cause may have been the pollution source, because experience shows the probability of such a measurement occurring under normal operating conditions is small. Such an event may be labeled "statistically significant" at level 0.01, meaning the observed event is rare enough that it is not expected to happen more often than once in 100 trials. This does not necessarily imply the occurrence of a violation of a health-based standard. A discussion of "elevated concentrations" and "statistical significance by pollutant type follows:

- For H_2S or SO_2, any measured concentration greater than the level of the state residential standards, which are 80 ppb for H_2S and 400 ppb for SO_2, is considered "elevated." Note that the concentrations need not persist long enough to constitute an exceedance of the standard to be so regarded. In addition, any closely spaced values that are statistically significantly (at 0.01 level) greater than the long-run average concentration for a period of one hour or more will be considered "elevated" because of their unusual appearance, as opposed to possible health consequence. The rationale for doing so is that unusually high concentrations at a monitor may suggest the existence of unmonitored concentrations closer to the source area that are potentially above the state's standards.
- For TNMHC, any measured concentration greater then the canister triggering threshold of 2000 ppbC is considered "elevated." Note that the concentrations need not persist long enough to trigger a canister (900 seconds).
- For benzene and other air toxics in canister samples or auto-GC measurements, any concentration above the ReV is considered "elevated." Note that 20-minute canister samples and 40-minute auto-GC measurements are both compared with the ReV or ESL, whichever is deemed appropriate by the TCEQ.
- Some hydrocarbon species measured in canister samples or by the auto-GC generally appear in the air in very low concentrations close to the method detection level. Similar to the case above with H_2S and SO_2, any values that are statistically significantly (at 0.01 level) greater than the long-run average concentration will be considered "elevated" because of their unusual appearance, as opposed to possible health consequence. The rationale for doing so is that unusually high concentrations at a monitor may suggest an unusual emission event in the area upwind of the monitoring site.

Results of Canister Sampling

In FY 2008 a total of 52 canister samples were taken. This is very similar to FY 2007, when 53 canister samples were taken. A summary of the benzene concentrations appears in Table 2, page 14. No benzene concentration exceeded the TCEQ's health reference value of 180 ppbV.

Table 2. Summary of canister sample counts and benzene concentrations FY 2008

Site name	Count of cans	Average benzene ppbV	Max benzene ppbV
CCG CAMS 629	11	8.34	20.10
DPK CAMS 635	15	1.56	2.80
FHR CAMS 632	6	10.12	31.19
JIH CAMS 630	16	9.43	35.69
WEH CAMS 631	4	2.53	3.86
Grand Total	52	6.48	35.69

In the previous fiscal year, three benzene concentrations (407, 393, 196 ppbV) were greater than the TCEQ's reference value, with another sample close at 133 ppbV. It is not specifically known why no levels that high were measured this FY, however, as discussed below, mean benzene concentrations and the frequency of elevated concentrations have also declined in continuous auto-GC monitoring, and this may be related to better emission controls at nearby sources.

Sulfur Species H_2S and SO_2

No exceedances of the State of Texas standards for sulfur dioxide (SO_2) and hydrogen sulfide (H_2S) were measured this fiscal year. An examination of trends fails to show any significant recent changes within the UT monitoring network.

Trends in Hydrocarbon Concentrations in Residential Areas

In Table 3, page 15, the average concentrations for 27 hydrocarbon species tracked by the Corpus Christi Long Term Health Work Group are listed for the Oak Park auto-GC for the three most recent fiscal years (October 1 – September 30). Units are parts per billion volume (ppbV). All values are below the TCEQ's long-term health effects screening levels and health reference values. The rightmost column compares the most recent year (Oct. 2007-Sept. 2008) values to the average of the two prior fiscal years (Oct. 2005 – Sept. 2007). Every species listed shows a decline.

Table 3. Auto-GC Summary Statistics for Oak Park C634. three FYs

Species -ppbV	Oct 2005-Sep 2006	Oct 2006-Sep 2007	Oct 2007-Sep 2008	Delta FY06-07 vs FY08
Ethane	8.06	8.54	7.72	-7%
Ethylene	0.96	0.99	0.77	-21%
Propane	6.48	6.15	5.01	-21%
Propylene	1.03	0.83	0.51	-45%
Isobutane	2.60	2.55	2.20	-15%
n-Butane	3.50	3.71	3.51	-3%
t-2-Butene	0.17	0.20	0.15	-19%
1-Butene	0.15	0.14	0.08	-45%
c-2-Butene	0.13	0.13	0.10	-23%
Isopentane	2.67	3.06	2.80	-2%
n-Pentane	1.72	2.04	1.69	-10%
1,3-Butadiene	0.04	0.08	0.05	-17%
t-2-Pentene	0.09	0.12	0.08	-24%
1-Pentene	0.05	0.07	0.04	-33%
c-2-Pentene	0.05	0.06	0.03	-45%
n-Hexane	0.62	0.62	0.43	-31%
Benzene	**0.74**	**0.73**	**0.37**	**-50%**
Cyclohexane	0.27	0.22	0.19	-22%
Toluene	0.75	0.78	0.56	-27%
Ethyl Benzene	0.07	0.07	0.05	-29%
p-Xylene + m-Xylene	0.25	0.22	0.17	-28%
o-Xylene	0.10	0.08	0.06	-33%
Isopropyl Benzene - Cumene	0.04	0.03	0.03	-14%
1,3,5-Trimethylbenzene	0.04	0.03	0.02	-43%
1,2,4-Trimethylbenzene	0.09	0.08	0.06	-29%
n-Decane	0.04	0.03	0.02	-43%
1,2,3-Trimethylbenzene	0.03	0.03	0.02	-33%

Similarly, Table 4, page 16, holds the average concentrations for the Solar Estates auto-GC. Again, all values are below the TCEQ's long-term health effects screening levels and reference values, and every species listed shows a decline from the FY 2006-2007 two year mean to the FY 2008 mean.

Table 4. Auto-GC Summary Statistics for Solar Estates C633, three FYs

Species -ppbV	Oct 2005-Sep 2006	Oct 2006-Sep 2007	Oct 2007-Sep 2008	Delta FY06-07 vs FY08
Ethane	8.44	8.63	6.75	-21%
Ethylene	0.41	0.53	0.37	-21%
Propane	5.39	5.35	3.92	-27%
Propylene	0.32	0.42	0.17	-54%
Isobutane	2.22	1.97	1.38	-34%
n-Butane	2.76	2.91	2.14	-25%
t-2-Butene	0.16	0.12	0.07	-50%
1-Butene	0.05	0.06	0.04	-27%
c-2-Butene	0.07	0.07	0.04	-43%
Isopentane	1.84	1.82	1.25	-32%
n-Pentane	1.07	1.14	0.76	-31%
1,3-Butadiene	0.08	0.08	0.03	-63%
t-2-Pentene	0.04	0.06	0.03	-40%
1-Pentene	0.02	0.04	0.01	-67%
c-2-Pentene	0.02	0.03	0.01	-60%
n-Hexane	0.4	0.43	0.28	-33%
Benzene	**0.32**	**0.39**	**0.23**	**-35%**
Cyclohexane	0.25	0.29	0.19	-30%
Toluene	0.37	0.44	0.29	-28%
Ethyl Benzene	0.05	0.06	0.03	-45%
p-Xylene + m-Xylene	0.32	0.36	0.2	-41%
o-Xylene	0.06	0.07	0.05	-23%
Isopropyl Benzene - Cumene	0.01	0.03	0.01	-50%
1,3,5-Trimethylbenzene	0.02	0.03	0.02	-20%
1,2,4-Trimethylbenzene	0.05	0.07	0.05	-17%
n-Decane	0.03	0.05	0.05	25%
1,2,3-Trimethylbenzene	0.02	0.03	0.02	-20%

One possible explanation for a decrease in concentrations is that local emissions have declined. A second possible explanation is that regional emissions have declined, say, owing to regional economic changes, statewide motor vehicle fuel changes, or long-range transport coupled with upwind emissions changes. A third possible explanation could be owing to inter-annual variations in winds and other meteorology. Lastly, data quality could be an issue if, say, age of the instruments led to poorer sample recovery or errors in species identification.

From the preceding paragraph, the second possible explanation of regional changes can be tested by studying data in other cities. The third possible explanation is discussed in the next section of this report in a discussion limited to benzene at Oak Park. The last factor is rigorously controlled for by the project's the quality assurance program.

Tables 5, 6, and 7, pages 17, 18, and 19, respectively, contain three year summaries similar to the previous two tables of auto-GC sites in Deer Park (Houston suburb), Dallas (Hinton Street), and

Fort Worth (northwest, by Meacham Field). Examination of these data may help show whether a regional trend exists or not.

Table 5. Auto-GC Summary Statistics for Deer Park (Houston) CAMS 35

Species -ppbV	Oct 2005-Sep 2006	Oct 2006-Sep 2007	Oct 2007-Sep 2008	Delta FY06-07 vs FY08
Ethane	7.81	8.97	9.79	17%
Ethylene	2.32	2.93	2.44	-7%
Propane	5.11	6.00	6.19	11%
Propylene	2.35	2.74	2.91	14%
Isobutane	2.10	2.44	2.54	12%
n-Butane	2.24	2.89	3.41	33%
t-2-Butene	0.08	0.10	0.19	111%
1-Butene	0.14	0.18	0.21	31%
c-2-Butene	0.06	0.08	0.11	57%
Isopentane	1.48	1.80	1.96	20%
n-Pentane	0.88	1.03	1.14	19%
1,3-Butadiene	0.12	0.20	0.22	38%
t-2-Pentene	0.04	0.08	0.09	50%
1-Pentene	0.03	0.05	0.06	50%
c-2-Pentene	0.02	0.03	0.04	60%
n-Hexane	0.74	0.72	0.59	-19%
Benzene	**0.41**	**0.46**	**0.54**	24%
Cyclohexane	0.21	0.24	0.21	-7%
Toluene	0.58	0.74	0.71	8%
Ethyl Benzene	0.06	0.09	0.09	20%
p-Xylene + m-Xylene	0.17	0.23	0.24	20%
o-Xylene	0.06	0.08	0.09	29%
Isopropyl Benzene - Cumene	0.01	0.02	0.02	33%
1,3,5-Trimethylbenzene	0.02	0.03	0.03	20%
1,2,4-Trimethylbenzene	0.07	0.08	0.09	20%
n-Decane	0.03	0.04	0.04	14%
1,2,3-Trimethylbenzene	0.04	0.05	0.06	33%

Table 5, above, shows that there is no clear pattern in concentration changes at this Houston-area site. Deer Park is a residential area east of Central Houston, south of the heavily-industrialized Houston ship channel, and north of the Texas City industrial area. Benzene concentrations at this site were lower than Oak Park's and higher than Solar Estate's until this year. Now, Deer Park benzene is higher than both Corpus Christi sites.

Table 6. Auto-GC Summary Statistics for Dallas (Hinton St.) C401

Species -ppbV	Oct 2005-Sep 2006	Oct 2006-Sep 2007	Oct 2007-Sep 2008	Delta FY06-07 vs FY08
Ethane	6.35	5.85	5.90	-3%
Ethylene	0.99	0.75	0.70	-20%
Propane	3.82	3.58	3.39	-8%
Propylene	0.43	0.38	0.31	-23%
Isobutane	0.74	0.69	0.62	-13%
n-Butane	1.83	1.45	1.39	-15%
t-2-Butene	0.10	0.06	0.07	-13%
1-Butene	0.07	0.06	0.05	-23%
c-2-Butene	0.05	0.03	0.03	-25%
Isopentane	1.05	0.92	0.79	-20%
n-Pentane	0.63	0.59	0.55	-10%
1,3-Butadiene	0.08	0.07	0.06	-20%
t-2-Pentene	0.06	0.04	0.03	-40%
1-Pentene	0.04	0.03	0.02	-43%
c-2-Pentene	0.03	0.02	0.02	-20%
n-Hexane	0.24	0.26	0.22	-12%
Benzene	**0.17**	**0.19**	**0.17**	-6%
Cyclohexane	0.05	0.06	0.05	-9%
Toluene	0.63	0.67	0.47	-28%
Ethyl Benzene	0.07	0.07	0.05	-29%
p-Xylene + m-Xylene	0.22	0.22	0.17	-23%
o-Xylene	0.08	0.08	0.06	-25%
Isopropyl Benzene - Cumene	0.00	0.01	0.01	
1,3,5-Trimethylbenzene	0.04	0.05	0.05	11%
1,2,4-Trimethylbenzene	0.10	0.09	0.08	-16%
n-Decane	0.06	0.08	0.07	0%
1,2,3-Trimethylbenzene	0.06	0.10	0.06	-25%

Like the two Corpus Christ sites, there is a general decline in FY 2008 in hydrocarbons at the Dallas Hinton Street site shown in Table 6, above. This site is located in a light-industrial area north of Central Dallas and close to major freeways.

Table 7. Auto-GC Summary Statistics for Fort Worth (NW) CAMS 13

Species -ppbV	Oct 2005-Sep 2006	Oct 2006-Sep 2007	Oct 2007-Sep 2008	Delta FY06-07 vs FY08
Ethane	14.24	12.50	11.61	-13%
Ethylene	0.82	1.04	0.99	6%
Propane	5.00	5.12	4.66	-8%
Propylene	0.34	0.41	0.28	-25%
Isobutane	0.96	1.01	0.96	-3%
n-Butane	2.03	2.24	2.34	10%
t-2-Butene	0.08	0.15	0.10	-13%
1-Butene	0.05	0.07	0.07	17%
c-2-Butene	0.04	0.07	0.05	-9%
Isopentane	1.14	1.39	1.40	11%
n-Pentane	0.88	1.02	1.01	6%
1,3-Butadiene	0.05	0.06	0.05	-9%
t-2-Pentene	0.04	0.06	0.06	20%
1-Pentene	0.03	0.03	0.04	33%
c-2-Pentene	0.02	0.03	0.03	20%
n-Hexane	0.30	0.35	0.33	2%
Benzene	**0.15**	**0.20**	**0.19**	9%
Cyclohexane	0.06	0.08	0.08	14%
Toluene	0.43	0.50	0.46	-1%
Ethyl Benzene	0.04	0.05	0.04	-11%
p-Xylene + m-Xylene	0.13	0.15	0.13	-7%
o-Xylene	0.05	0.06	0.05	-9%
Isopropyl Benzene - Cumene	0.00	0.00	0.00	
1,3,5-Trimethylbenzene	0.02	0.02	0.02	0%
1,2,4-Trimethylbenzene	0.04	0.05	0.04	-11%
n-Decane	0.02	0.02	0.02	0%
1,2,3-Trimethylbenzene	0.04	0.03	0.02	-43%

Unlike the Dallas site and two Corpus Christ sites, there is no clear pattern in changes in Table 7, above, between FY 2008 and past years at Forth Worth NW. This site is located at the south edge of a regional airport adjacent to a residential area north of Central Fort Worth.

In comparing these five monitoring sites, no consistent pattern is found in year-to-year changes. Thus, it would appear that the decline in concentrations at Oak Park and Solar Estate appears to be local and not regional. In the next section, an analysis is performed on the benzene data and meteorological data at Oak Park to assess the effects of winds on concentrations.

Trends in Benzene Concentrations in Residential Areas

In Tables 3 through 7, pages 15 through 19, the rows for benzene are highlighted. Benzene is a known carcinogen and average concentrations at the two Corpus Christi auto-GCs are a larger fraction (ranging from 16 – 53 percent) of the annual ESL (1.4 ppbV) than are other species to their respective ESLs.

Benzene concentrations dropped 49 percent from FY 2007 to FY 2008 and 50 percent from the two year average FY 2006 / 2007 to FY 2008 at Oak Park. Benzene concentrations dropped 41 percent from FY 2007 to FY 2008 and 35 percent from the two year average FY 2006 / 2007 to FY 2008 at Solar Estates. Figure 4, page 21 shows the time series for benzene at the Oak Park site. A red line is drawn to show the value for which 99 percent of the observations are lower (7.9 ppbV). One outlier of 120 ppbV from January 27, 2007 is omitted. Since June 2007, only 29 values out of 10,662 (0.27 percent) exceed the "historic" 99th percentile from the plot to allow more resolution of low concentration data.

To assess the effects of winds on pollutant concentrations, a typical approach is to merge pollutant values with coincident collocated wind direction measurements, and then graph concentration versus direction. With thousands of data points, this approach can produce a figure that is difficult to interpret. A common modification is to create a bar chart of the average concentration as a function of wind direction bin, where, say, concentrations are grouped by 10 degree wind direction bins. A further refinement is to use statistical methods to smooth the bar chart to present a curved graph from which one can estimate a direction associated with the highest average concentrations. Graphs of this nature have been presented in earlier reports showing that the highest average benzene concentrations at Solar Estate are associated with northeast winds pointing back to the Flint Hills West Refinery, and highest average benzene concentrations at Oak Park are associated with both northwest winds pointing back to Valero East and Magellan and with northeast winds pointing back to CITGO and Flint Hills East.

A relatively new approach has been to try to take advantage of the relationship between wind speed and pollutant concentrations. Assume that a pollution source emits at a constant rate. Under a light wind, the pollutants mix into surrounding air very slowly, and pollutant concentrations tend to build up. Alternatively, under a strong wind, pollutants are quickly dispersed and diluted into surrounding air. The standard Gaussian model for relating emissions having emission rate Q to concentration C downwind a distance D and at height equal to the source, under constant wind speed U, is given as follows:

$$C(D) = (Q / 2\pi U) \cdot f(D,\omega)$$

Here, ω is a parameter representing the stability class of the air and $f(D, \omega)$ represents the horizontal and vertical mixing of the air as a function of downwind distance (approximately by the inverse of distance squared) and stability class. A "first order correction" to concentrations to better relate them to the emission rate is to multiply through by the coincident collocated wind speed value, and assume that the stability is constant. Under this last assumption, we have that emissions Q from a fixed distance D upwind are linearly related to the product $U \cdot C$ (wind speed times concentration) by the constant $2\pi\ f(\omega)/D^2$. In order to keep concentrations in the same units, a simplification on this is to further scale the $U \cdot C$ by the average wind speed at the location of interest. The results of these approaches are shown in the Figures 5, page 22 where the "adjusted benzene" concentrations are graphed as a function of wind direction of arrival.

Figure 4. Oak Park benzene time series 2005-2008 (one outlier omitted); red line represents 99th percentile of all observations (7.9 ppbV)

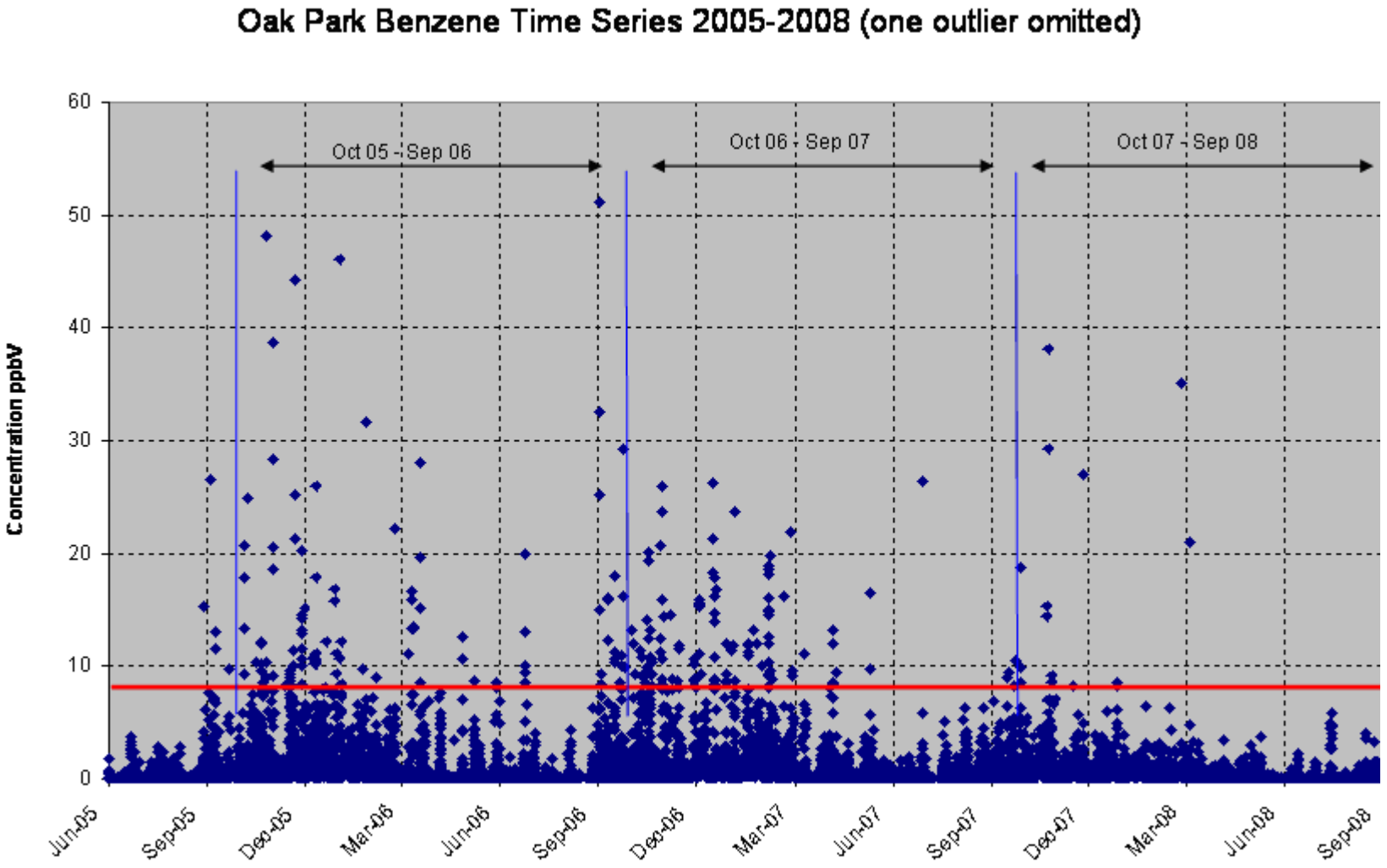
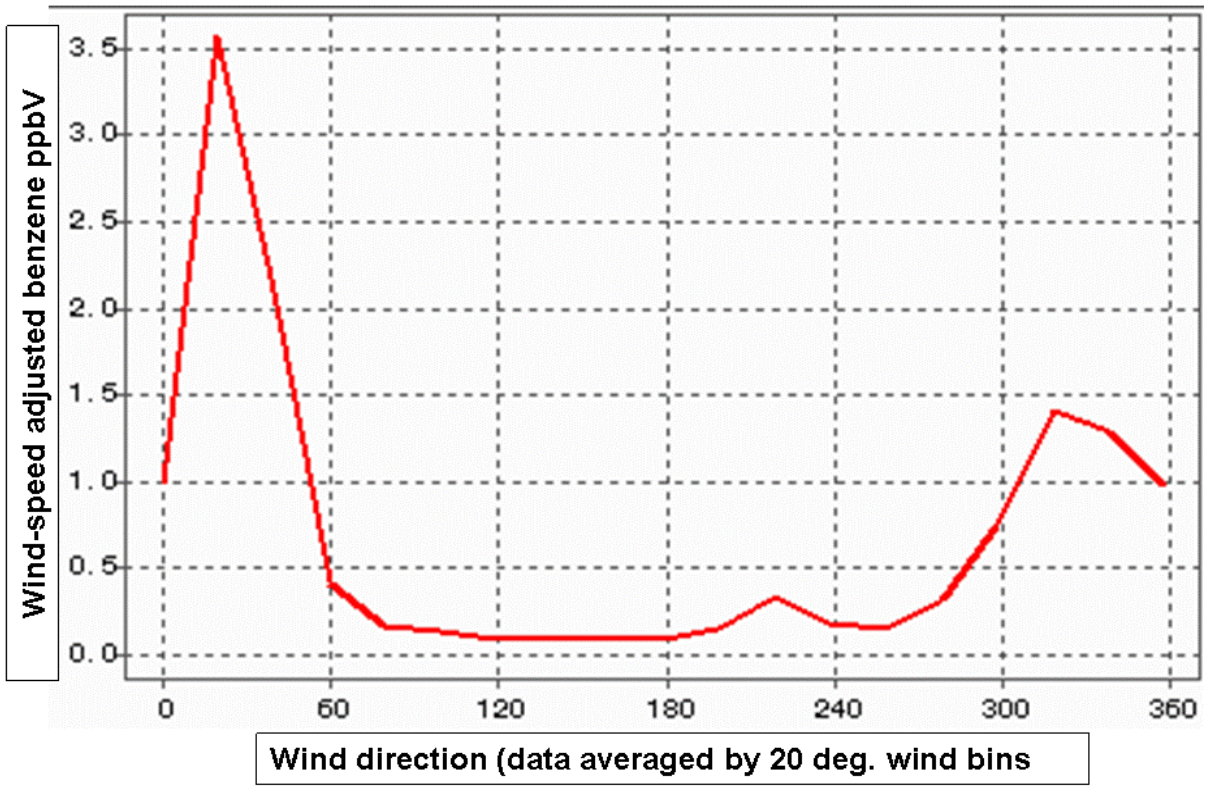


Figure 5. Wind-speed adjusted benzene at Oak Park CAMS 633, June 2005-October 2008 data



In Figure 5, above, the peak average concentration is associated with a wind direction bin from 15 degrees to 25 degrees centered at 20 degrees. A broader second peak appears from 315 degrees to 325 degrees centered at 320 degrees.

Realizing that concentrations shown in Figure 4, page 21 represent changes over time and Figure 5, above, represents changes by wind direction, an obvious question is "are particular directions associated with the change over time?" A statistical analysis of the data by both 20 degree wind bin and annual quarter shows there is an association. Figures 6 – 9, pages 23 and 24 show the time series for quarterly mean benzene at Oak Park for 0 degrees (north, Figure 6), 20 degrees (north-northeast, Figure 7), 40 degrees (northeast, Figure 8), and 320 degrees (northwest, Figure 9). Table 8, below, summarizes the results. As a contrast, Figure 10, page 25 shows the time series for quarterly mean benzene at Oak Park for 100 degrees (south-southeast), pointing back towards the downtown. When plotted on the same scale as Figures 6 – 9, no changes in concentrations are visible. A similar flat pattern exists from 60 degrees through 260 degrees (excepting two outlier points associated with 220 bin that cause a "bump" the first quarter of 2008).

Table 8. Summary of when ambient concentrations changed, suggesting upwind emissions changed

Direction	Quarter change occurs	Magnitude of change	Upwind Sources
0	3rd Q 2006	2 ppbV to 0.5 ppbV	Magellan, Citgo
20	3rd Q 2006	8 ppbV to 1 ppbV	Citgo
40	1st Q 2007	5 ppbV to 1 ppbV	Citgo, Flint Hills East
320	1st Q 2006	3 ppbV to 1.5 ppbV	Valero

Figure 6. Oak Park mean adjusted-benzene ppbV by quarter, 0 degree wind direction bin

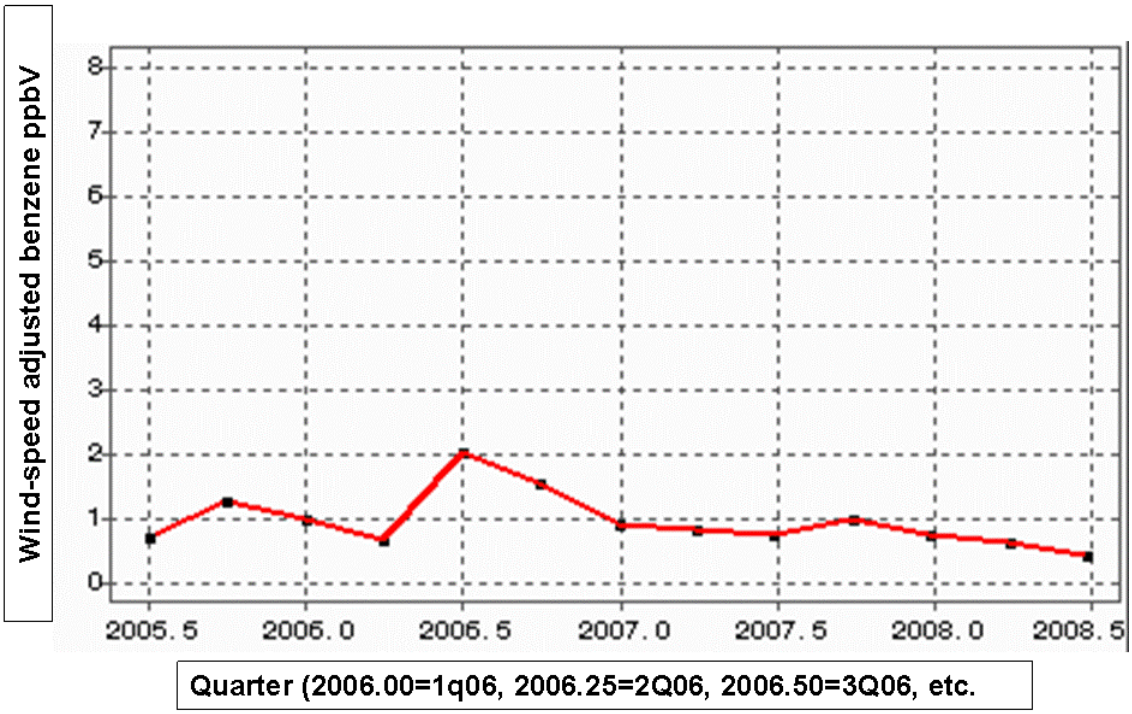


Figure 7. Oak Park mean adjusted-benzene ppbV by quarter, 20 degree wind direction bin

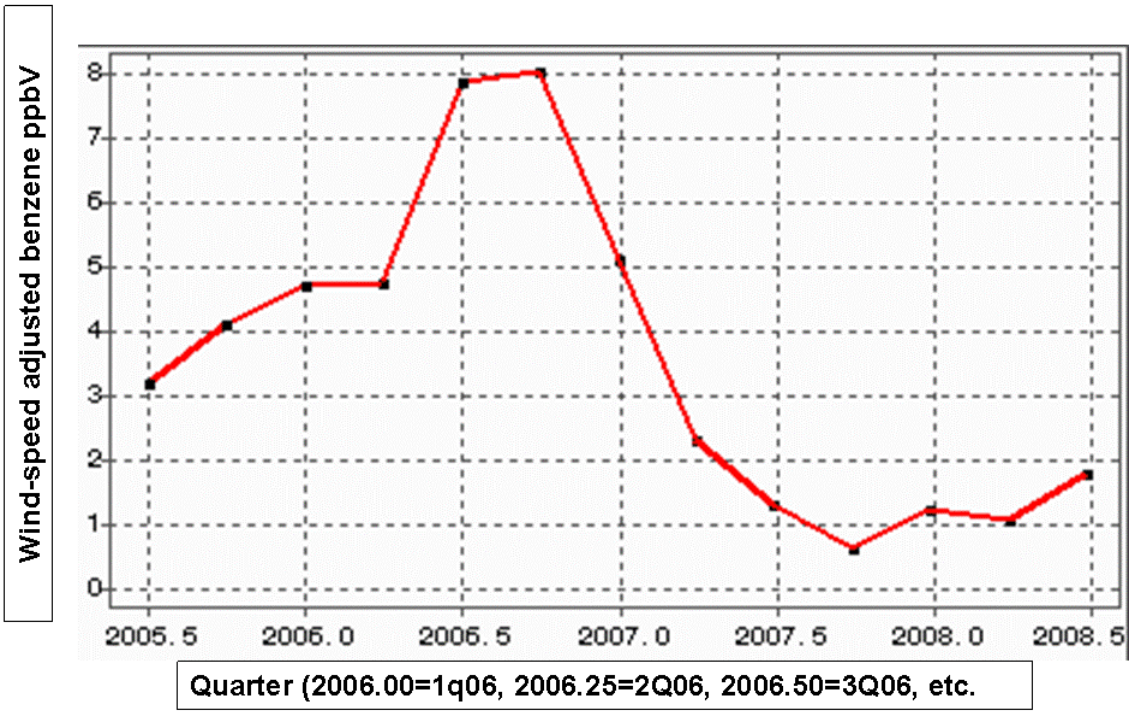


Figure 8. Oak Park mean adjusted-benzene ppbV by quarter, 40 degree wind direction bin

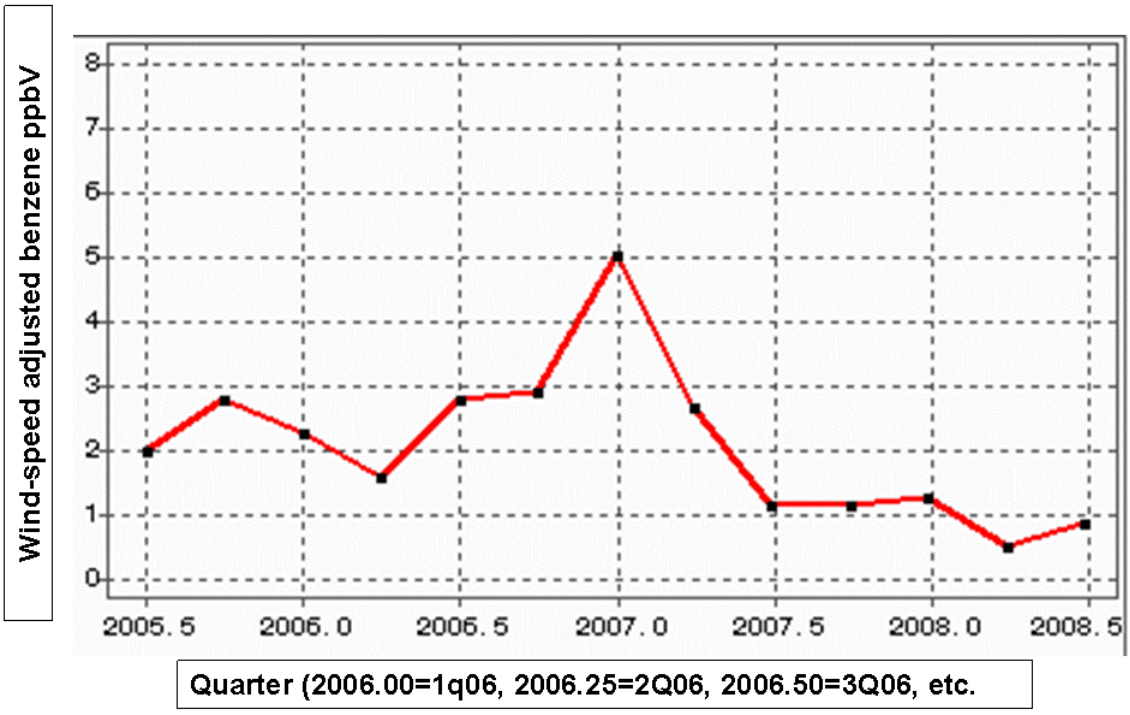


Figure 9. Oak Park mean adjusted-benzene ppbV by quarter, 320 degree wind direction bin

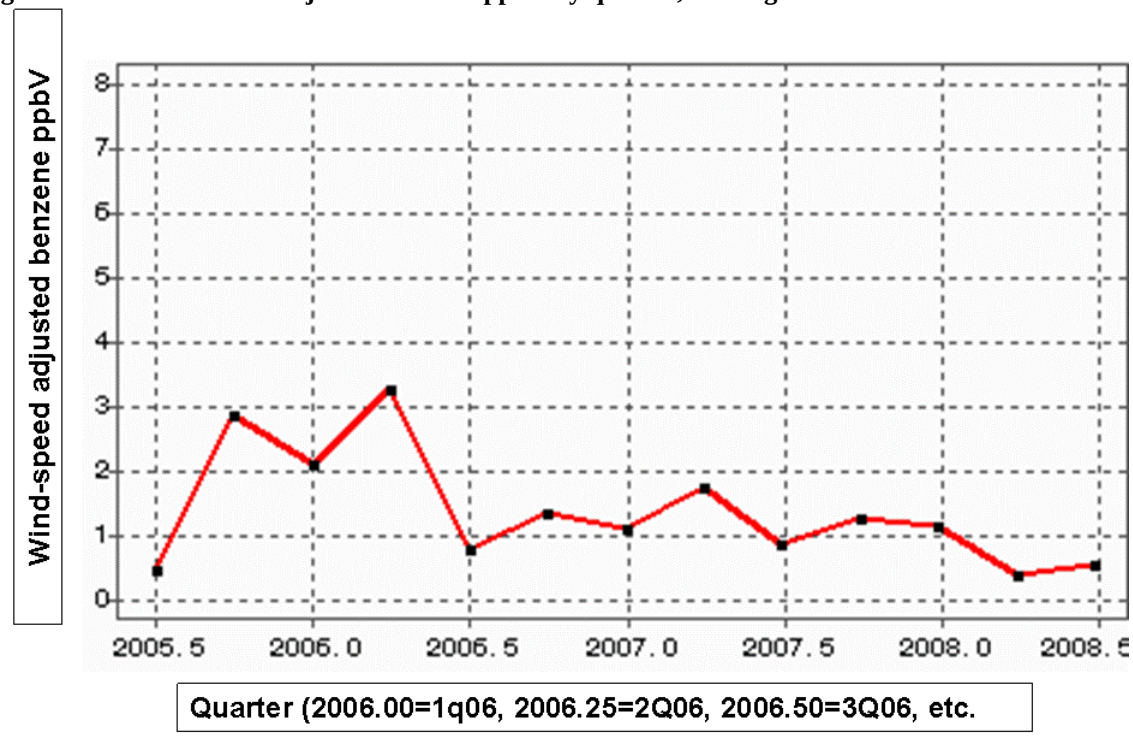
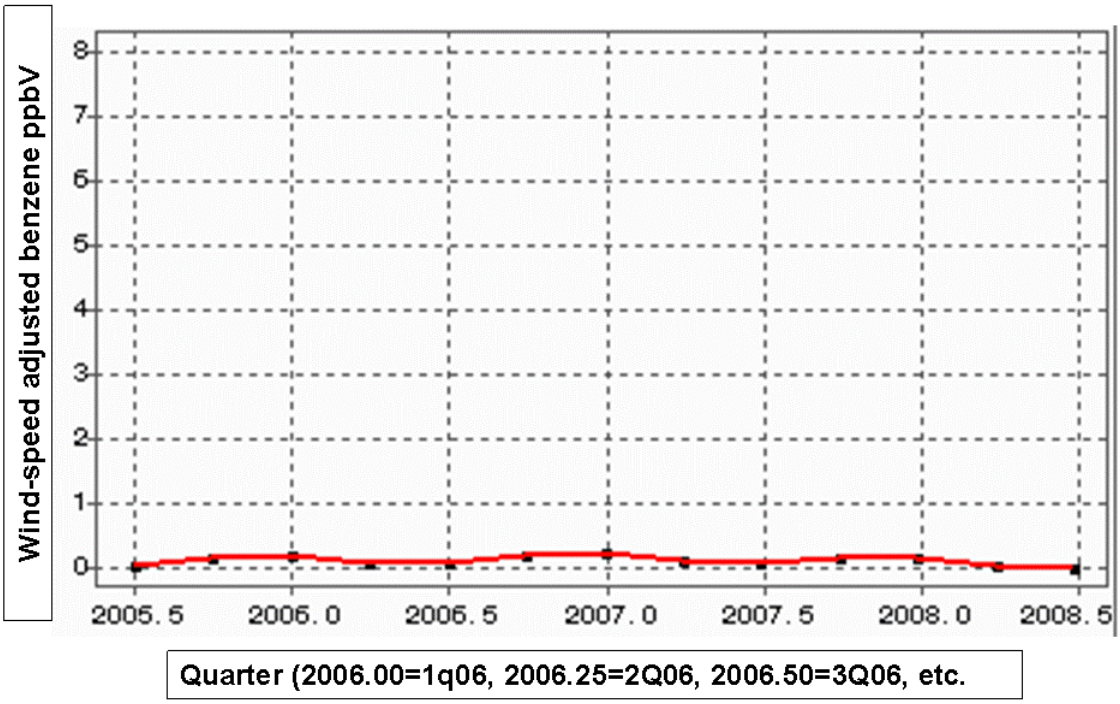


Figure 10. Oak Park mean adjusted-benzene ppbV by quarter, 100 degree wind direction bin



It has been shown in this section that benzene concentrations have declined over the course of the Corpus Christi project in the Oak Park area, and that this appears to be as a result of lower contributions from northerly directions, and that variation in winds alone is an insufficient explanation. To study the hypothesis that upwind emissions reductions at refineries and chemical plants could be the explanation, one can look at emissions reported to regulatory agencies. The emissions reported to the U.S. EPA under the Toxics Release Inventory Program (see http://www.epa.gov/triexplorer/, accessed December 2008), for the 78407 zip code (the area in which four large facilities north of Oak Park sit) show declines from 67.5 tons of benzene released to the air in 2004 to 58 tons in 2005 to 41 tons in 2006. CITGO Refining & Chemical Co LP East Plant at 1802 Nueces Bay Blvd. northeast of Oak Park reported a 54 percent reduction in emissions from 22 tons in 2005 to 10 tons in 2006. The large changes noted in Table 8, page 22 in the ambient data also occurred in late 2006 into early 2007. Thus, it is reasonable to assume that the reduced concentrations support the reports of reductions in industrial emissions. The relationship between reported emissions and ambient concentrations will continue to be tracked over the course of this project.

APPENDIX B

Web Site Statistics

APPENDIX B

Corpus Christi Air Monitoring and Surveillance Camera Installation and Operation Project
Web Site Statistics

	Calendar Year 2005			Calendar Year 2006			Calendar Year 2007			1-01-08 thru 9-30-08		
	Hits	Views	Visits	Hits	Views	Visits	Hits	Views	Visits	Hits	Views	Visits
The University of Texas at Austin Corpus Christi Web Sites:												
Main Web Site (All Pages)	44,572	16,122		50,623	25,903		45,492	25,223		41,888	28,231	
Trajectory Tool Web Site ("ceer_trajectory" directory)	288		21	367		230	39,425		4,385	40,091		7,133
SubTotal - UT Web Sites	**44,860**	**16,122**	**21**	**50,990**	**25,903**	**230**	**84,917**	**25,223**	**4,385**	**81,979**	**28,231**	**7,133**
TCEQ Web Sites:												
Monitoring Operations Corpus Christi AutoGC Page								342			532	
SubTotal - TCEQ Web Sites	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**342**	**0**	**0**	**532**	**0**
Total - Both Institutions	**44,860**	**16,122**	**21**	**50,990**	**25,903**	**230**	**84,917**	**25,565**	**4,385**	**81,979**	**28,763**	**7,133**

Denotes this count not collected

Definition of Terms:

Hit - A request for a file from the web server. Available only in log analysis. The number of hits received by a website is frequently cited to assert its popularity, but this number is extremely misleading and dramatically over-estimates popularity. A single web-page typically consists of multiple (often dozens) of discrete files, each of which is counted as a hit as the page is downloaded, so the number of hits is really an arbitrary number more reflective of the complexity of individual pages on the website than the website's actual popularity. The total number of visitors or page views provides a more realistic and accurate assessment of popularity.

Page View - A request for a file whose type is defined as a page in log analysis. An occurrence of the script being run in page tagging. In log analysis, a single page view may generate multiple hits as all the resources required to view the page (images, .js and .css files) are also requested from the web server.

Visit / Session - A series of requests from the same uniquely identified client with a set timeout. A visit is expected to contain multiple hits (in log analysis) and page views.

APPENDIX C

Financial Reports

TO THE U.S. DISTRICT COURT
FOR THE
CORPUS CHRISTI AIR MONITORING AND SURVEILLANCE CAMERA PROJECT

Financial Summary

A. PROJECT EXPENDITURES

First Year Paid Expenditures	(10/2/03 - 9/30/04)	$ 663,448.81
Second Year Paid Expenditures	(10/1/04 - 9/30/05)	$ 1,291,272.21
Third Year Paid Expenditures	(10/1/05 - 9/30/06)	$ 461,868.36
Fourth Year Paid Expenditures	(10/1/06 – 9/30/07)	$ 688,645.02
Current Year Expenditures	(10/1/07 - 9/30/08)	$ 997,731.32
Current Year Encumbrances*	(10/1/07 - 9/30/08)	$ 118,316.54

Total Project Expenditures (including Current Year Encumbrances)	(10/2/03 - 9/30/08)	$4,221,282.26

Note: Summary of Expenditures found in *Exhibit A*, page 30.

B COCP FUNDS REMAINING

Initial deposit on 10/2/03	$ 6,761,718.02
Less expenditures through 9/30/08	($ 4,102,965.72)
Less encumbrances through 9/30/08*	($ 118,316.54)
Plus interest earned as of 9/30/08	$ 651,313.34
Total	$ 3,191,749.10

COCP FUNDS REMAINING AS OF 9/30/08 $ 3,191,749.10

* Some expenses incurred during Year 5 of the Project have not been billed by University vendors or subcontractors and/or approved for payment so those charges were not posted to the general ledger as of 9/30/08. Those encumbered charges are estimated to be $118,316.54.

EXHIBIT A

Corpus Christi Air Monitoring and Surveillance Camera Installation and Operation Project

Expenditure Summary for the Project Period 10/2/03 through 9/30/08

DESCRIPTION	Budget Allocation through Year 4	Prior Year paid Expenditures	Current Year paid Expenditures	*TOTAL EXPENDITURES	*BALANCE AVAILABLE
SALARIES & WAGES	663,060.03	(337,654.90)	(309,410.15)	(647,065.05)	*15,994.98*
CEER ADMIN SALARIES	68,365.37	(35,108.76)	(33,158.13)	(68,266.89)	*98.48*
FRINGE BENEFITS	145,100.00	(74,007.47)	(68,520.72)	(142,528.19)	*2,571.81*
Canister Anal. and Other	125,317.60	(30,310.00)	(1,900.00)	(32,210.00)	*93,107.60*
Supplies and Utilities	217,320.00	(125,155.89)	(86,312.28)	(211,468.17)	*5,851.83*
SUBCONTRACT	2,576,449.00	(2,123,513.19)	(359,650.95)	(2,483,164.14)	*93,284.86*
TRAVEL	12,019.00	(4,677.39)	(9,801.58)	(14,478.97)	(2,459.97)
EQUIPMENT	0.00	0.00	0.00	0.00	0.00
TOTAL DIRECT COSTS	3,807,631.00	(2,730,427.60)	(868,753.81)	(3,599,181.41)	208,449.59
INDIRECT COSTS **/15% TDC**	571,145.00	(374,806.80)	(128,977.51)	(503,784.31)	*67,360.69*
TOTAL EXPENDITURES	**$4,378,776.00**	**($3,105,234.40)**	**($997,731.32)**	**($4,102,965.72)**	**$275,810.28**

* Some expenses incurred during Year 5 of the Project have not been billed by University vendors or subcontractors and/or approved for payment so those charges were not posted to the general ledger as of 9/30/08. Those encumbered charges are estimated to be $118,316.54. When received and approved, those charges will be paid from the available balance.

CORPUS CHRISTI AIR MONITORING AND SURVEILLANCE CAMERA PROJECT

University of Texas at Austin
Annual Audit Report Results

The University's Annual Reports and Audit Statements are made available for public review at the following website:

http://www.sao.state.tx.us/reports/2004/04-316.pdf

Attached is a copy of The University of Texas at Austin's Certification Statement for the Office of Management and Budget (OMB) Circular A-133 Audit conducted during the 2006/2007 fiscal year. The OMB Circular A-133 Audit for the 2007/2008 fiscal year is currently being conducted. The results of the 2007/2008 Audit will be made available at the above website. It is anticipated the audit results will be posted in late Spring 2009.

SUBRECIPIENT AUDIT FORM

(including financial reports and internal controls)

FOR FISCAL YEAR ENDING AUGUST 31, 2007

SUBRECIPIENT'S LEGAL ENTITY NAME AND ADDRESS

The University of Texas at Austin
Office of the Controller
The University of Texas at Austin
P.O. Box 7159
Austin, TX 78713-7159

☒ Our audit report for the subject fiscal year has been completed. Findings at The University of Texas at Austin were noted.

Attached is a listing of the finding and current course of action by the University to address the noted concern for the Research and Development Cluster. Additional findings related to Federal financial aid were also noted during the audit. A complete listing of the non-Research and Development related findings is available in the Federal portion of the report; a link is provided below.

A complete copy of the State of Texas Federal Portion of the Statewide Single Audit Report For the Fiscal Year Ended August 31, 2007 (Report Number 08-343) can be viewed at

http://www.sao.state.tx.us/reports/main/08-343.pdf Federal Portion

Or at http://www.sao.state.tx.us/reports/; select the Statewide Reports link.

Authorizing Signature: _____ **Date:** 3/12/08

Fred Friedrich
Associate Vice President and Controller

Research and Development Cluster

Reference No. 08-78
Allowable Cost/Cost Principles
Significant Deficiency and Non-Compliance

The auditor questioned the University's monitoring for compliance with the NIH salary cap. The University has developed monthly monitoring process whereby current and future appointments to NIH awards are reviewed for salary cap issues. When it is determined that an employee is close of has exceeded the cap threshold, a standard notification memorandum is submitted to the individual with information to assist them in managing the appointments against the cap. This process has been in place early February 2008.

Reference No. 08-79
Equipment and Real Property Management
Significant Deficiency and Non-Compliance

The auditor questioned the accuracy of the University's inventory records. Conditions identified during the audit were corrected and confirmed by the auditor. The University has modified its process for logging inventory records at year end, has updated training material and will begin spot audits of assets by Inventory Services to ensure compliance with policies and procedures.

Reference No. 08-80
Matching, Level of Effort, Earmarking
Prior Audit Issues 07-69, 06-63, 05-57, 04-53, 03-09, and 02-48
Significant Deficiency

The auditor stated the University did not have an adequate system for monitoring its obligations for matching contributions. While they cited the adequacy of existing processes and system, they confirm that the University was able to provide sufficient evidence that it complied with applicable matching requirements and award terms. The auditor recommended the development of a monitoring system. The University is working towards development of a system with possible solution to include, clearing accounts and activity coding of specific expenditures.

APPENDIX D

Supplemental Environmental Projects

SEP Project List

APPENDIX D

Supplemental Environmental Projects (SEP) awarded to The University of Texas at Austin

No.	SEP (Name	Docket No.	Period of Performance	Award Amount	Interest Earned as of 12/31/08	UT Account Number	Project Description - Notes
1	CITGO Regfining and Chemicals Company, L.P.	2001-1469-AIR-E	7/2004-7/2006	$680,000.00	$19,978.03	26-7690-94	Task 1 - Extend the operation of the air monitoring network in Corpus Christi for an additiona year.
				$190,000.00	$7,956.39	26-7690-95	Task 2 - Development of the Trajectory Tool
2	Duke Energy Field Services	2003-1122-AIR-E	2/2005-8/2005	$5,187.00	$100.11	26-4254-75	Purchase additional canisters for the Corpus Christi monitoring sites.
3	El Paso Merchant Energy Petroleum Company	2001-1023-AIR-E	2/2006-6/2008	$46,004.00	$1,274.45	26-7693-36	Task 1 - Enchancement to the Automated Trajectory Tool.
				$90,044.00	$5,717.23	26-7692-88	Task 2 - Additional Canister Analysis, Power Loss Hardware and Software and Wind Direction Filter.
4	Sherwin Aluminia	2004-1982-IR-E	10/2007-2/2009	$10,244.00	$325.41	26-7695-56	Purchase and install a Panasonic WV-CW964 Outdoor Color Surveillance Camera System at a monitoring site to be determined.
5	Texas Moleculer Corpus Christi Services, Limited	D1-GV-07-001054	*See Note below	$67,900.00	$0.00	To Be Assigned	Purchase and install an additional Panasonic WV-CW964 Outdoor Color Surveillance Camera System similar to one purchased under Sherwin Aluminia SEP; operation of 2 cameras for approx 2 yrs. With report summarizing results.
	TOTAL			**$1,089,379.00**	**$35,351.62**		

A check in the amount of $67,900 was received by UT Austin and is being held in a holding account pending the submission by UT Austin of a SEP Proposal to TCEQ. Once TCEQ accepts the SEP proposal and approval to start work is granted the TM SEP funds will be reflected in this SEP Financial Report. To date those funds have not been reflected in the quarterly reports submitted to TCEQ