Corpus Christi Air Monitoring and Surveillance Camera Installation and Operation Project

Quarterly Report for the Period

April 1, 2004 through June 30, 2004

Submitted to

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

Mr. Robert Todd
US Environmental Protection Agency, Region 6
Dallas, Texas

Mr. C. Buddy Stanley
Texas Commission on Environmental Quality, Region 14
Corpus Christi, Texas

Submitted by

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August 30, 2004

I. 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 to implement the court ordered condition of probation (COCP) project *Corpus Christi Air Monitoring and Surveillance Camera Installation and Operation* (Project). This quarterly 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).

II. Project Progress Report

The focus of work during the quarter ending June 30, 2004 has been directed to the following five activities.

A. Scheduled Meetings of the Volunteer Advisory Board

The second meeting of the Advisory Board was held on May 25, 2004 on the campus of Texas A&M University in Corpus Christi Texas. Notes from the May 25th meeting are attached hereto as Appendix A. As a result of decisions made during the May 25th meeting the following actions have been taken by the Advisory Board: 1) Gretchen Arnold and Ron Barnard will represent the Board at the annual report to the Court which will take place in October or November 2004; and 2) a neighborhood meeting will be scheduled to advised the residents of Solar Estate Park site of the Air Monitoring Project and to give them information about installation and operation of a surveillance camera at the Solar Estates Park site.

Appendix B is a copy of the Briefing Book Materials provided to the attendees of the Advisory Board meeting on May 25th.

The third meeting of the Advisory Board will be scheduled prior to the annual report to the Court on the campus of Texas A&M University in Corpus Christi Texas. It is anticipated that the next meeting will include visits to the monitoring sites that are operational and have been acceptance tested prior to the meeting date.

B. Phase I Site Installation

Site installation is proceeding on schedule. Equipment has been ordered and bids for site modifications for Oak Park (1.a), Dona Park (1.2) and Solar Estates (1.g) have been obtained. Modifications to these sites began in July.

C. Site Lease Agreements between TCEQ and Property Owners Signed

The lease agreements between TCEQ and the property owners for the seven (7) monitoring sites in the Corpus Christi area have been signed. Attorneys the Office of General Counsel with the University of Texas System and attorneys with TCEQ's Legal Division are continuing to addressing the requirements relating to the assignment of the leases to the University giving the University and URS access to the sites to begin the installation of the monitoring equipment.

D. Request for Bids for Phase II, the Operations and Maintenance Phase of the Project

The Request for Proposals (RFP) for the Operation and Maintenance Phase of the Project has been developed and approved by appropriate University and TCEQ officials. The RFP was posted for public response on June 10, 2004. The deadline to submit a response to the RFP was Monday July 12, 2004.

E. Project Management and Planning

Project management and planning focused on coordination of Items A, B, C and D above and communication of project activities with stakeholders and interested parties. A monthly report of activities is prepared by project staff and distributed electronically to the Advisory Board members, the TCEQ and the EPA to keep stakeholders apprised of the status of the project.

In addition to the monthly report of activities a website for the project is maintained at http://www.utexas.edu/research/ceer/ccaqp/

III. Financial Report

As required by the project proposal, the following financial summary information is provided. Details supporting this financial summary are included in Appendix C.

A. Total Amount of COCP Funds and Other Funds Received Under the Project

The COCP funds received totals $6,812,817.84. This total includes interest earned through June 30, 2004, after the initial distribution of project funds by the US District Court. No other funds were received by the project during this quarter.

B. Detailed List of the Actual Expenditures Paid by COCP Funds

Expenditures during this quarter totals $5,487.37. The detailed breakdown of the actual expenditures is included in Appendix C. The activities for which these expenditures were used are detailed in Section II of this report.

C. Total Interest Earned on COCP Funds During the Quarter

The interest earned during this quarter totals $18,096.73. A report providing detailed calculations of the interest earned on the COCP funds during each month of the quarter is included in Appendix C.

D. Balance as of June 30, 2004 in COCP Account, including Interest Earned During the Quarter

The balance in COCP account totals $6,706,799.19.

E. Expected Expenditures for the Funds Remaining in the COCP Account

The expected expenditures for the funds remaining totals $6,706,799.19.

Quarterly Report Distribution List:

U.S. District Court, Mr. Bill Cazalas, Assistant Deputy Chief

Texas Commission on Environmental Quality

Ms. Kate Hodgins, Litigation Division – Headquarters*

Mr. David Brymer, Laboratory and Mobile Monitoring – Headquarters*

Mr. C. Buddy Stanley, Director – Region 14*

Mr. David Kennebeck, Field Operations – Region 14*

Environmental Protection Agency

Mr. Robert Todd, Air Enforcement Officer – Dallas Regional Office*

* *Distributed without Appendix A and Appendix B*

Volunteer Advisory Board *(without Appendices)*

APPENDICES

APPENDIX A

Notes and Resulting Action Items from May 25, 2004 Advisory Board Meeting

ADVISORY BOARD MEETING

Corpus Christi Air Monitoring and Surveillance Camera Installation
and Operation Project
Texas A&M University - Corpus Christi
Room 113, NRC Building
Corpus Christi, Texas
May 25,2004
1:30 P.M. to 3:30 P.M.

Advisory Board Members Present:

Ms. Gretchen Arnold	Corpus Christi Pollution Prevention Partnership – TAMUCC
Mr. Ron Barnard	City of Corpus Christi
Dr. Eugene Billiot	Chemistry Department – TAMUCC
Dr. Glen Kost	Public Health Awareness
Dr. Ardys Boostrom,	Corpus Christi / Nueces County Public Health District
Mr. Vinay Dulip	Moody High School
Ms. Pat Suter	Coastal Bend Sierra Club
Ms. Lena Coleman	Community Advisory Council

Advisory Board Members Absent:

None

Project Personnel Present:

Dr. David Allen	Principal Investigator, UT Austin
Mr. Vince Torres	UT Austin
Mr. C. Buddy Stanley	TCEQ – Region 14
Mr. David Kennebeck	TCEQ – Region 14
Mr. James Martinez	US. Probation Officer- US District Court
Mr. David Brymer	TCEQ Headquarters – Austin
Mr. Ken Rozacky	TCEQ Headquarter – Austin

I. Call to Order:
   a. Meeting was called to order at 1:30 p.m. by Mr. Torres

II. Introductions: (approximately 10 minutes)
   a. Self introductions by all members present

III. Overview of Project Status:
   a. Rules of Operation of the Advisory Board:

Decisions

- Rules of operation were reviewed by Mr. Torres. Ms. Coleman, as recording Secretary, will document any decisions made or action items identified during the Advisory Board meetings. Meeting notes should be sent to UT for review and dissemination to attendees.
- All inquiries for information about the project should be referred to Ms. Arnold or Mr. Barnard as Co-Chairs and spokespersons for the Board. UT (Dr. Allen or Mr. Torres) should be informed of any inquires about the Project.
- Ron Barnard and Gretchen Arnold as Spokespersons for the Board will represent the Board at the annual report to the court which will take place in October or November, 2004.
- The next Advisory Board meeting will be scheduled prior to the report to the court and it is hoped that meeting will include a visit to three (3) of the monitoring sites, which are scheduled to be operational and acceptance tested by then. Judge Jack and representatives from the US District Court hope to participate in those site visits.
- All agenda items for future Advisory Board meetings must be submitted to Mr. Torres approximately one month in advance of each meeting.

Dr. Kost suggested that someone from the Texas Department of Health (TDH) could add expertise to the Board that could be helpful. Mr. Torres indicated he had feed back from TDH that he would share later in the meeting.

Concerns were stated in reference to the height of the placement of cameras at the sites. Mr. Torres responded that during recent site visits it was determined that all of the cameras will be placed on towers and be at least 33 feet off the ground.

Action Item

- Dr. Kost inquired about additional support from the Port Authority on placing cameras at the sites. Mr. Torees stated that we would find out more about the funding.

Decision

- **Board members may send substitutes to meetings in the event they are unable to attend. Substitutes will be non-participating charged with the responsibility of updating the absent member of meeting business.**
- **Dr. Allen indicated time would be set aside at future meetings for public comment. Time for comment limited to 3 to 5 minutes.**

Action Item

Mr. Torres will draft language that will establish the policy for absences at Advisory Board Meetings. Excused versus non-excused absences will be identified. A process for notifying the Board, in advance, of an inability to attend an Advisory Board Meeting will be established.

b. Status of Contracts For Phase I - Installation:

Site Locations and Monitoring Equipment - See Table #l. The locations of monitoring sites were visited in April. Met towers that are 33 feet tall are attached to the trailers at the camera sites. Cameras have a 360^0 field of view. The camera at Site 1.g. (Solar Estates Park) is immediately adjacent to a residential area. (See photos pages 8 – 11.) Pre- sets on cameras was suggested. Cameras (towers) can be installed with shields to restrict targeted viewing areas. It was suggested a 210^0 field of view would be sufficient.

Action Item

- **Mr. Torres will work with Dr. Kost to set up neighborhood meetings in the Solar Estate Park site area. Mr. Torres suggested that the cameras be set up so that a live feed can be shown to the neighborhood after sites are operational. Neighborhood meetings will be arranged before cameras are installed to brief the communities on the project.**
- Mr. Stanley suggested the Dona Park Site (1.d.) may also be of concern for the residential community. Mr. Torres will look into the need to hold neighborhood meetings for the communities in the Site 1.d. area.

c. Status of Contractor For Phase II – Site Operations and Maintenance:

The structure of the Request For Proposal (RFP) and the selection criteria for RFP were discussed. An overview of the responsibilities of the O&M contractor was given by Dr. Allen. Responsibilities include: operation of instrumentation, routine calibrations, keep equipment operational, QA data, delivery of event triggered data to a public access forum. Dr. Kost asked for turn-around time for equipment repairs and if the contractor can be evaluated accordingly. Per Dr. Allen, yes, they can. Comments on the type of contractor needed for the project were discussed. Per Mr. Torres point scoring must include: personnel with appropriate and sufficient expertise, minimized down time, quality assurance that would include training data. Auto G.C. analysis was discussed by Dr. Allen. Acceptable data returns are

established by using standard TCEQ guidelines as minimums. The contractor for Phase II of the project would be evaluated each year with the contract being renewed each year of operation.

Action Item

- TCEQ is not currently making Auto GC data available. The data will be available in November but not in real time. Lag time could be 25 to 30 minutes. David Brymer will try to provide a more accurate estimate of the lag time which is dependent on whether site access is inside or outside the firewall.

IV. Project Related Activities: Use of Supplemental Environmental Project (SEP) Funds
With a presentation to the Board Dr. Allen discussed the use of $870,000 in SEP funds awarded to UT to extend the life of the Corpus Christi Monitoring project and address the need for data integration and for systematic notification of events by the development of a trajectory and notification tool.

Action Item

- Discussion about the level of event that would trigger the trajectory and notification tool. The trajectory notification tool can be set to be different levels at different sites. Dr. Allen will bring suggestions for parameters to the next meeting.

Decision

- By a show of hands all members of the Advisory Board unanimously approved the use of the SEP funds to extend the life of the Corpus Christi Monitoring project to develop a trajectory and notification tool.

UT has had an inquiry from the Center for Disease Control (CDC) regarding this project and the elevated pollutant/contaminant levels in the Corpus Christi area. Dr. Allen anticipates a liaison between CDC and TDH. The Advisory Board will receive requests from CDC to discuss the purpose, make up and establishment of the Board. All such requests should be directed to the Co-Chairs. Dr. Allen mentioned the very specific language in UT's Order from the US District Court that the original source of funds shall not derive any benefit from the Corpus Christi Air Monitoring Project. The SEP funds carry the same restriction.

Action Item

- The next meeting of the Board will be held in late October or early November and will be coordinated with a visit to the sites that are operational and acceptance tested. Ron Barnard offered to arrange transportation for the group.

Meeting was adjourned at 3:38P.M.

APPENDIX B

Briefing Book from the May 25, 2004 Meeting of the Advisory Board

AGENDA
ADVISORY BOARD MEETING

Corpus Christi Air Monitoring and Surveillance Camera Installation and Operation Project

Room 1003, NRC Building
Texas A&M University – Corpus Christi
Corpus Christi, Texas
May 25, 2004 *1:30 pm – 3:30 pm*

I. Call to Order

II. Introductions

III. Project Overview and Status

a. Rules of Operation of the Advisory Board
   - Appointment of Co-Chairpersons
   - Appointment of Recording Secretary

b. Status of Contract for Phase I – Installation
c. Status Contractor for Phase II - Site Operation and Maintenance
d. Summary of Action Items

IV. Project Related Activities – Supplemental Environmental Project

a. Time Extension of Monitoring Network
b. Trajectory and Notification Tool
c. Discussion

V. Other Issues

a. Set next meeting date, time and site
b. Recommendations for agenda items for next meeting

VI. Adjourn

Agenda Item - III Project Overview and Status

a. Rules of Operation of the Board

[GENERAL PROJECT INFORMATION]
BRIEFING BOOK TAB 2

May 25, 2004

Advisory Board Operating Procedures

1. Spokespersons for the Board
   Ron Barnard
   Gretchen Arnold

2. Secretary
   Lena Coleman

3. Meeting Rules
   a. Review process for meeting notes
   b. Suggestions for agenda items should be submitted to UT a minimum of one month prior to the meeting
   c. Can members send substitutes to meetings?
   d. Meetings should be restricted to allow only Board members to ask questions at meetings
   e. Should members be allowed to bring one or two resource people to be available to assist with technical topics?

4. General
   a. How should meeting absences of Board members be handled?

Agenda Item - III Project Overview and Status

b. Status of Contracts for Phase I - Installation

SITE LOCATION AND MONITORING EQUIPMENT
BRIEFING BOOK TAB 3

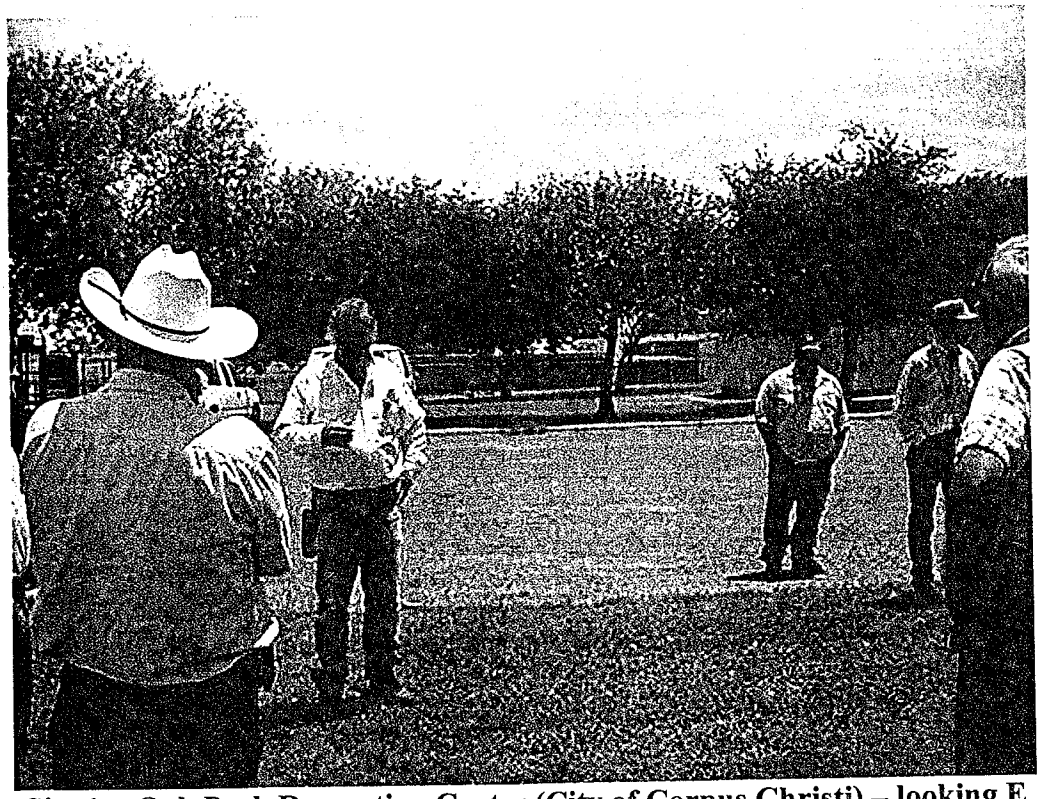
May 25, 2004

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

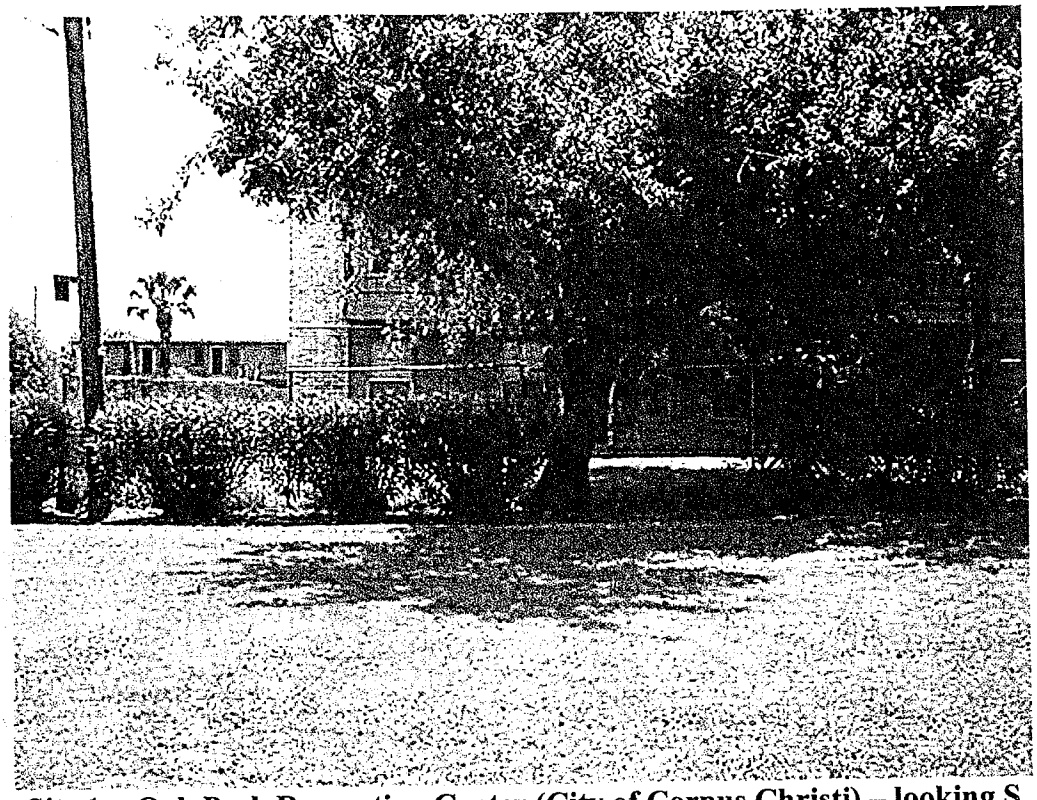
Site Contract Reference	Description of Site Location	Major Monitoring Equipment/Systems				
		Auto GC	Event Triggered Samplers	Sulphur Compound Monitors	Metrology Station	Surveillance Camera
1.a*	Oak Park Recreation Center	Yes	Yes		Yes	
1.b	Grain Elevator @ Port of Corpus Christi		Yes	Yes	Yes	
1.c	J. I. Hailey Site @ Port of Corpus Christi		Yes	Yes	Yes	
1.d*	TCEQ Monitoring Site C199 @ Dona Park		Yes	Yes		Yes
1.e	Port of Corpus Christi building on west end of CC Inner Harbor		Yes	Yes	Yes	
1.f	Off Up River Road on Flint Hills Resources easement		Yes	Yes	Yes	
1.g*	Solar Estates Park at end of Sunshine Road	Yes	Yes	Yes	Yes	Yes

* Indicates sites in Phase 1.A. of the Installation Contract that are due for completion on October 29, 2004. All other sites in Phase 1.B. of the Installation Contract are due for completion in January 31, 2005.

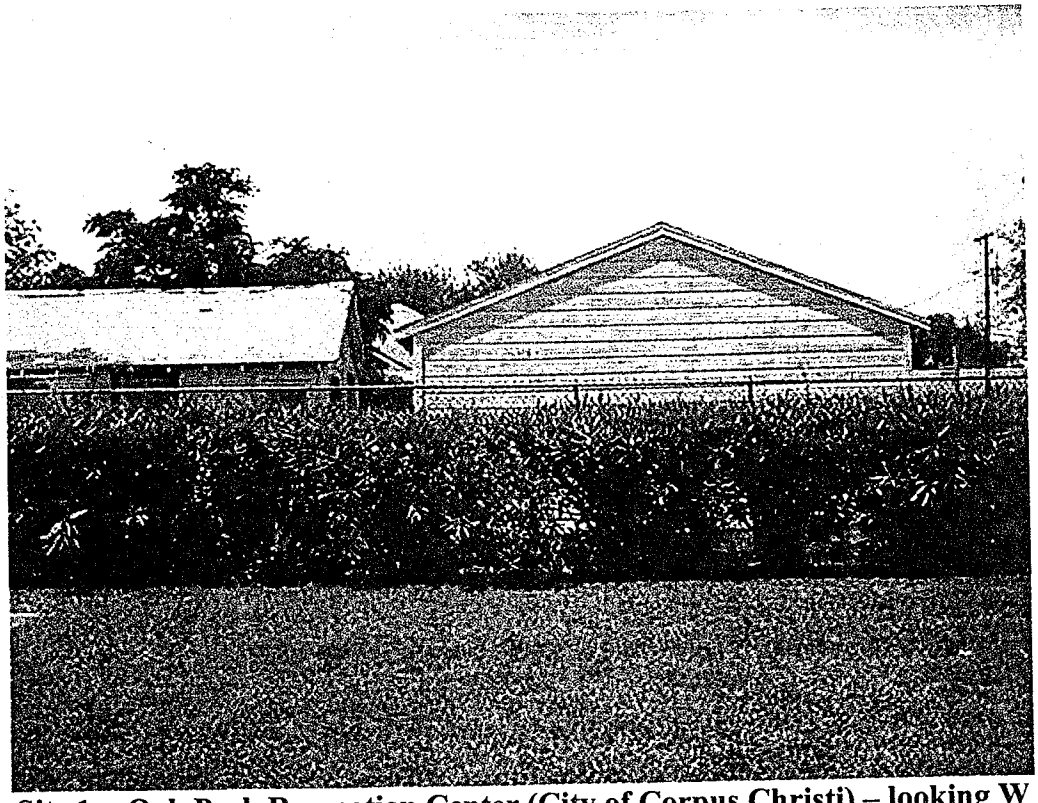
Site 1a: Oak Park Recreation Center (City of Corpus Christi) – looking N



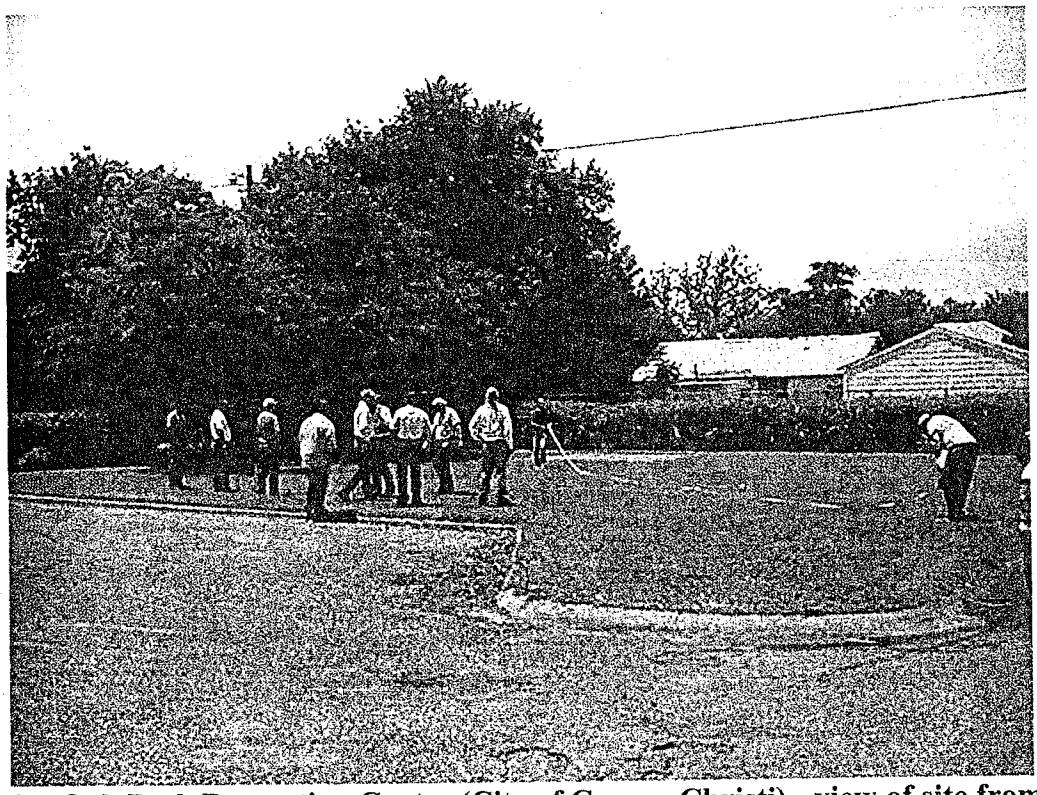
Site 1a: Oak Park Recreation Center (City of Corpus Christi) – looking E



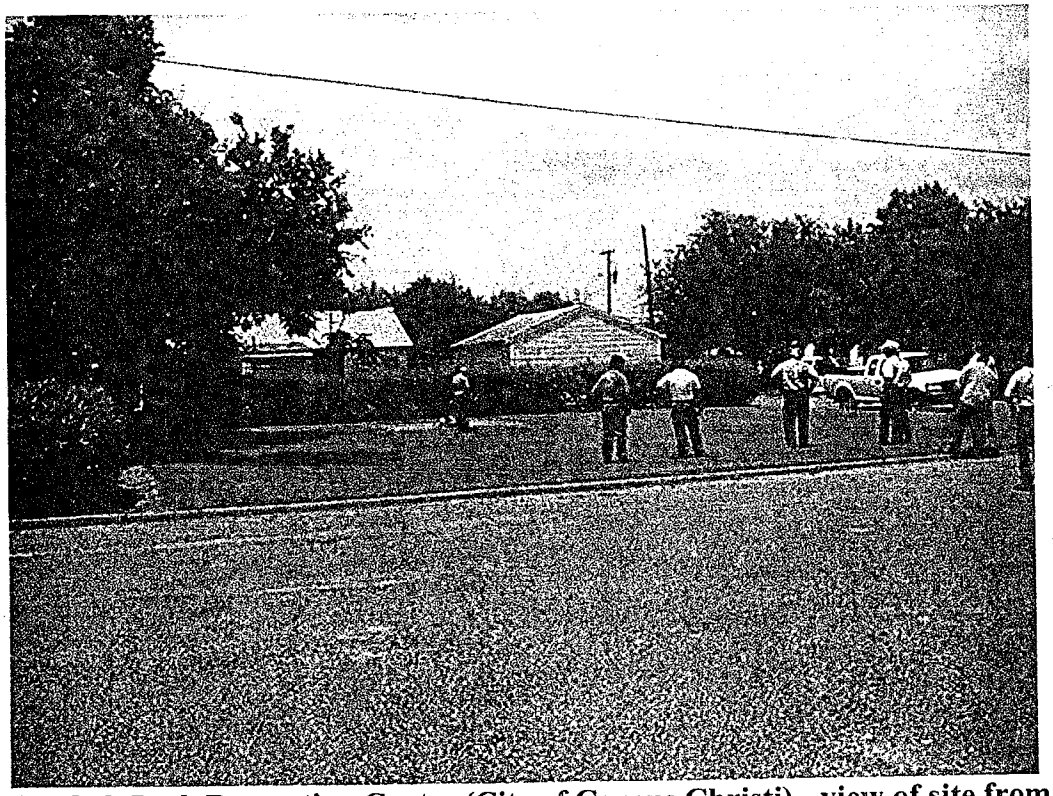
Site 1a: Oak Park Recreation Center (City of Corpus Christi) – looking S



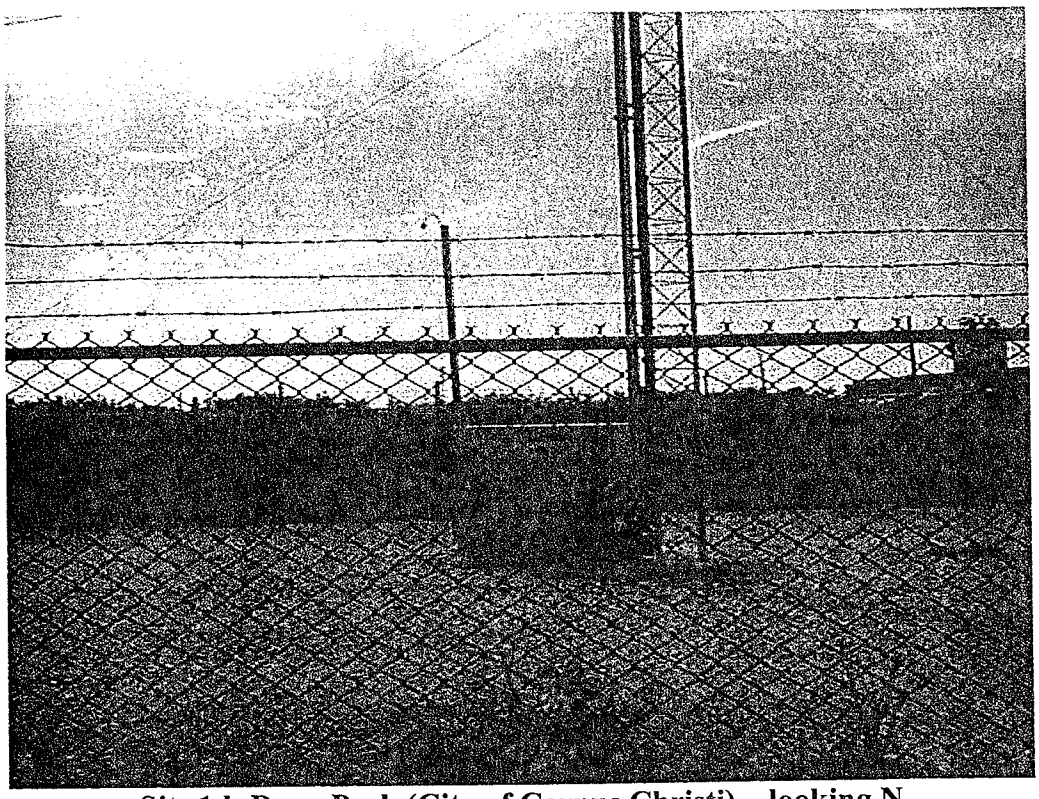
Site 1a: Oak Park Recreation Center (City of Corpus Christi) – looking W



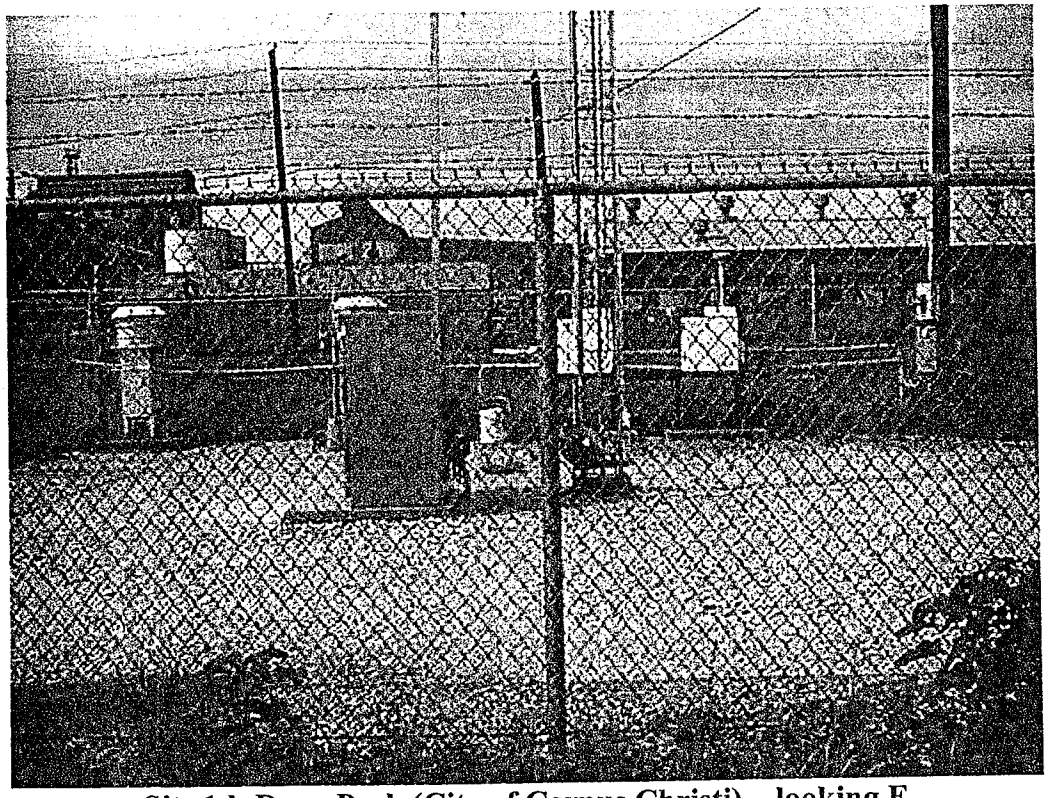
Site 1a: Oak Park Recreation Center (City of Corpus Christi) - view of site from NE



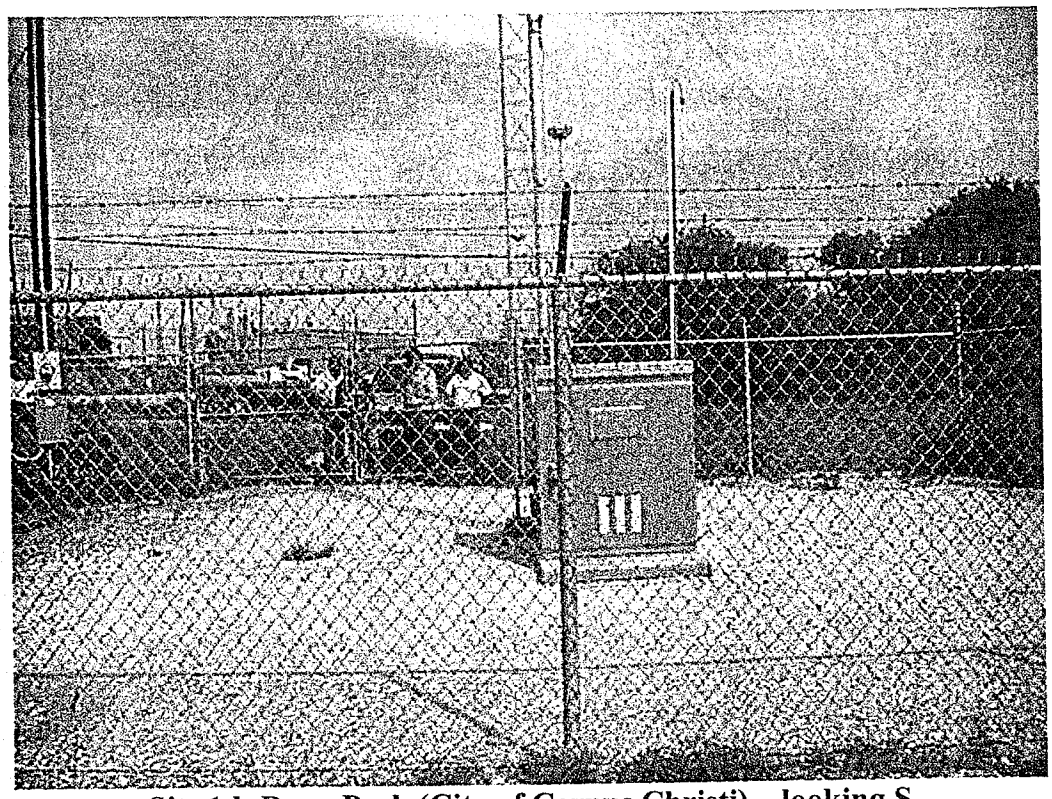
Site 1a: Oak Park Recreation Center (City of Corpus Christi) - view of site from SE



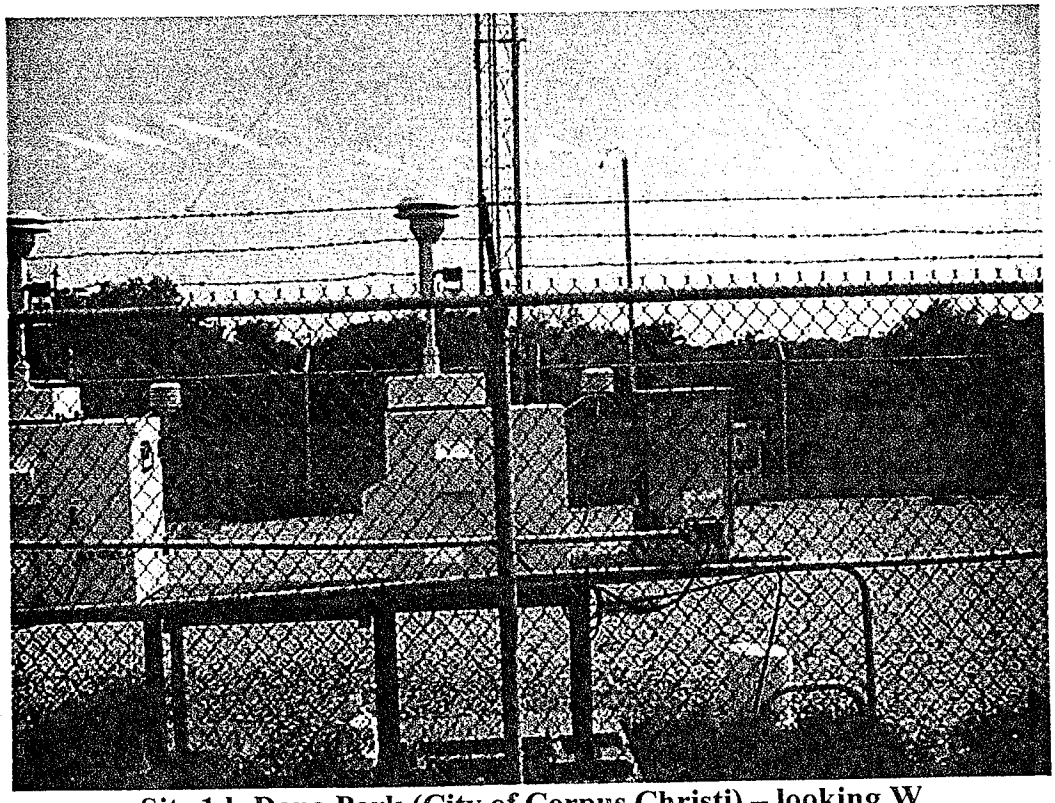
Site 1d: Dona Park (City of Corpus Christi) – looking N



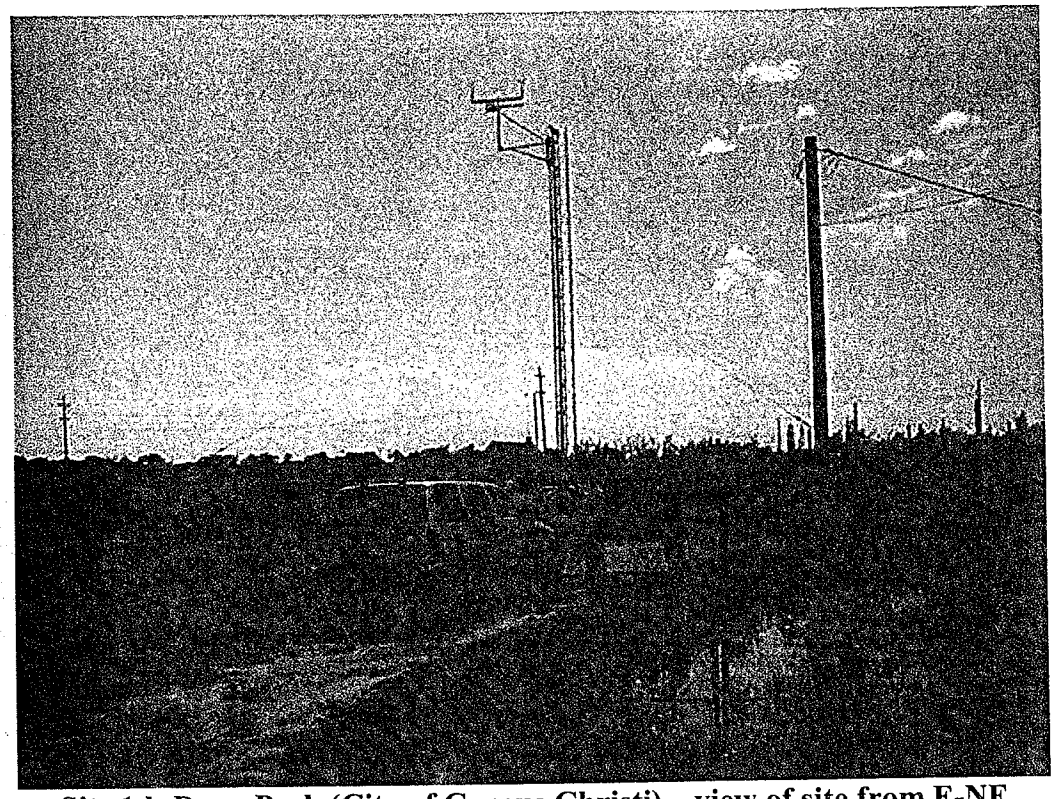
Site 1d: Dona Park (City of Corpus Christi) – looking E



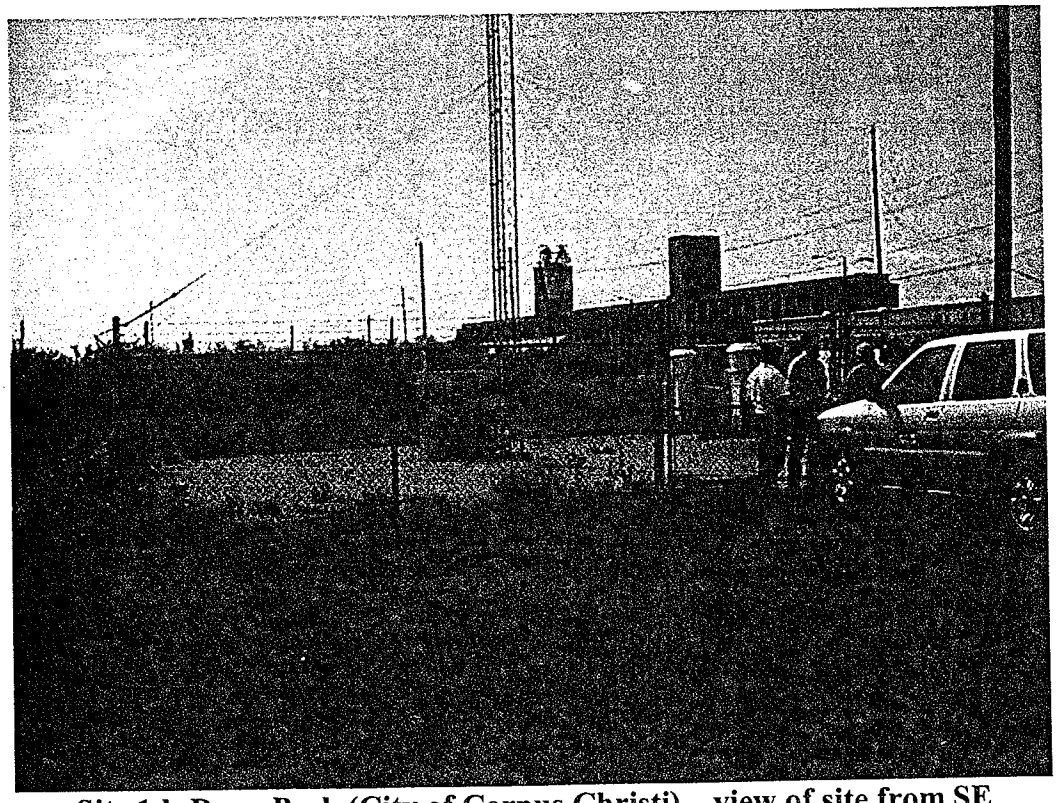
Site 1d: Dona Park (City of Corpus Christi) – looking S



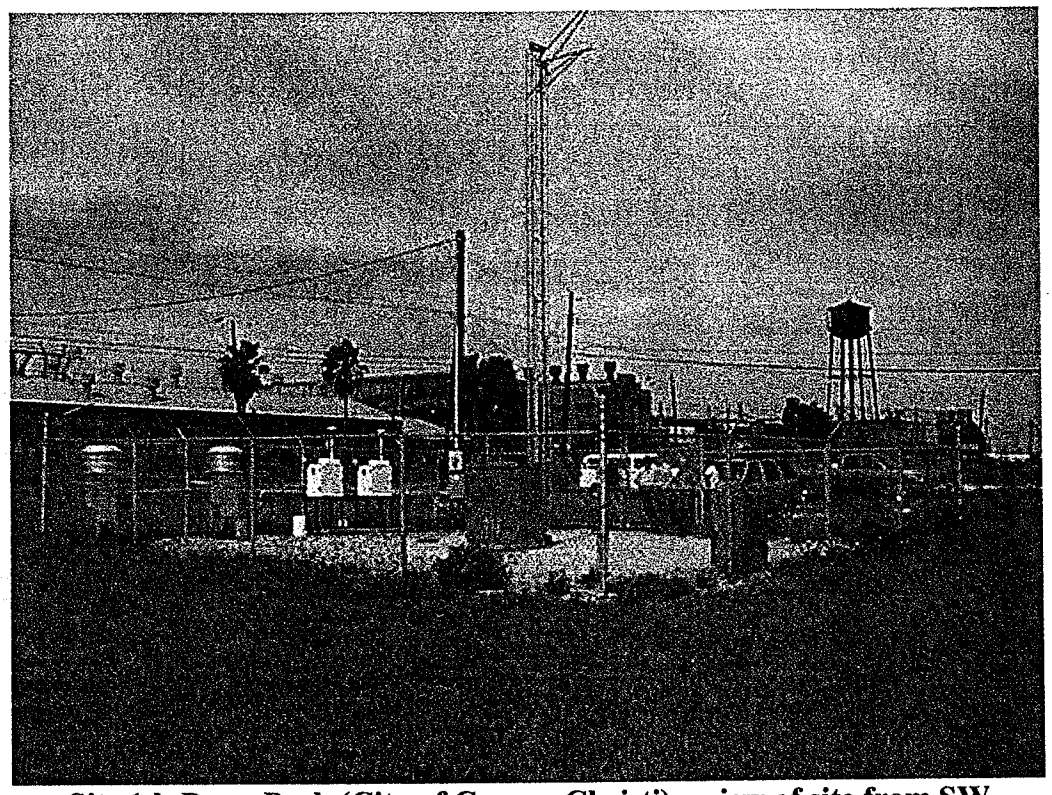
Site 1d: Dona Park (City of Corpus Christi) – looking W



Site 1d: Dona Park (City of Corpus Christi) – view of site from E-NE

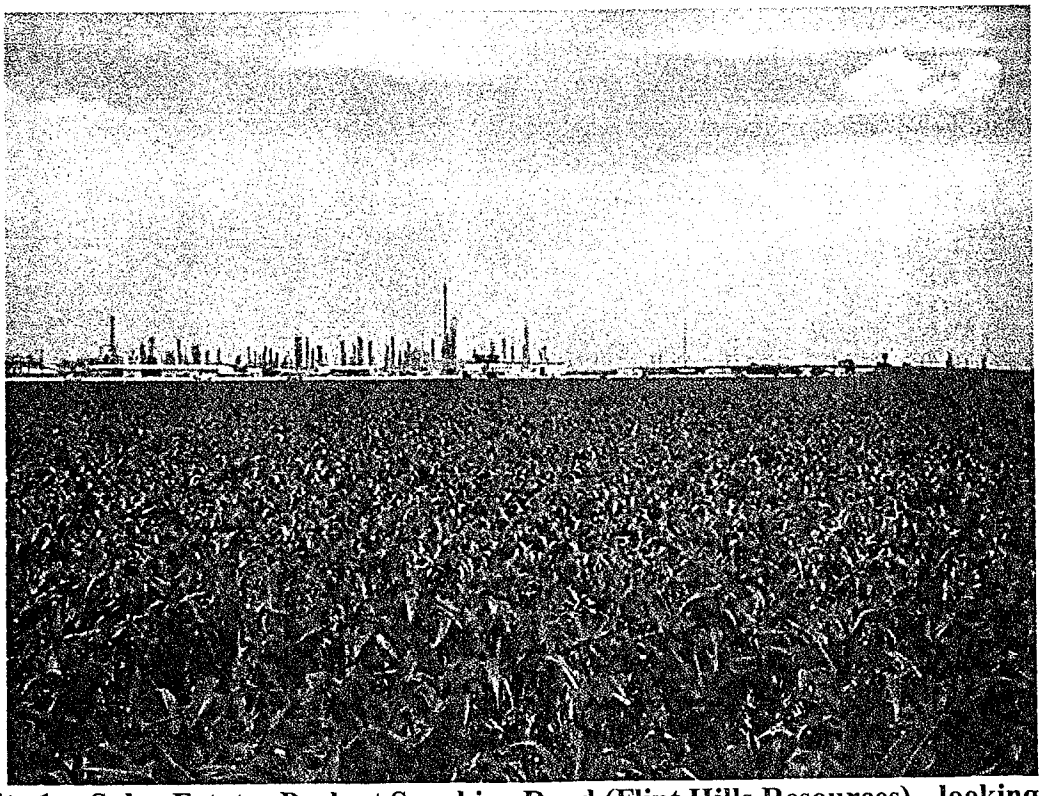


Site 1d: Dona Park (City of Corpus Christi) – view of site from SE

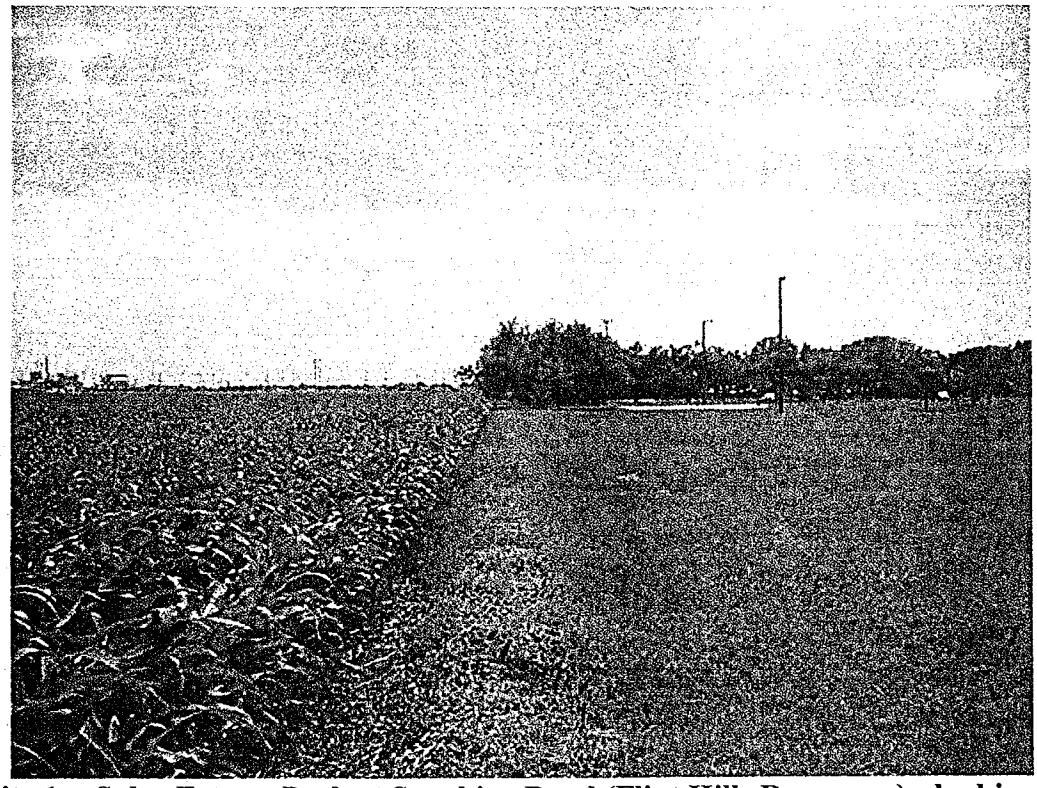


Site 1d: Dona Park (City of Corpus Christi) – view of site from SW

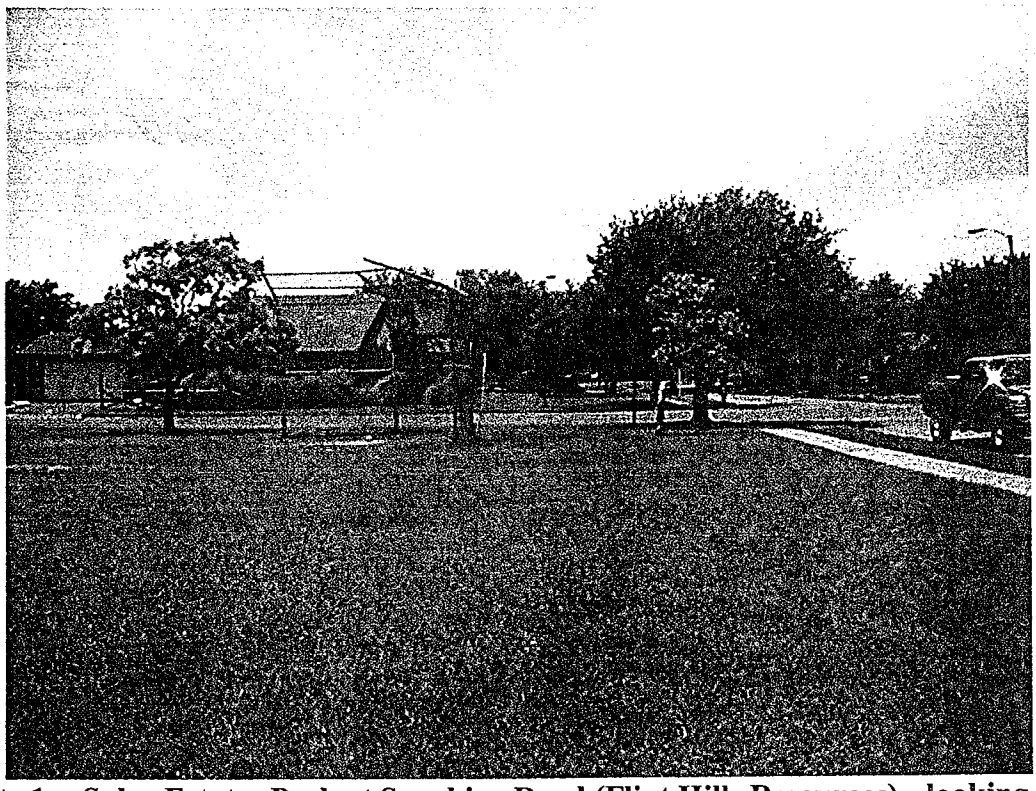
Site 1g: Solar Estates Park at Sunshine Road (Flint Hills Resources) - looking N



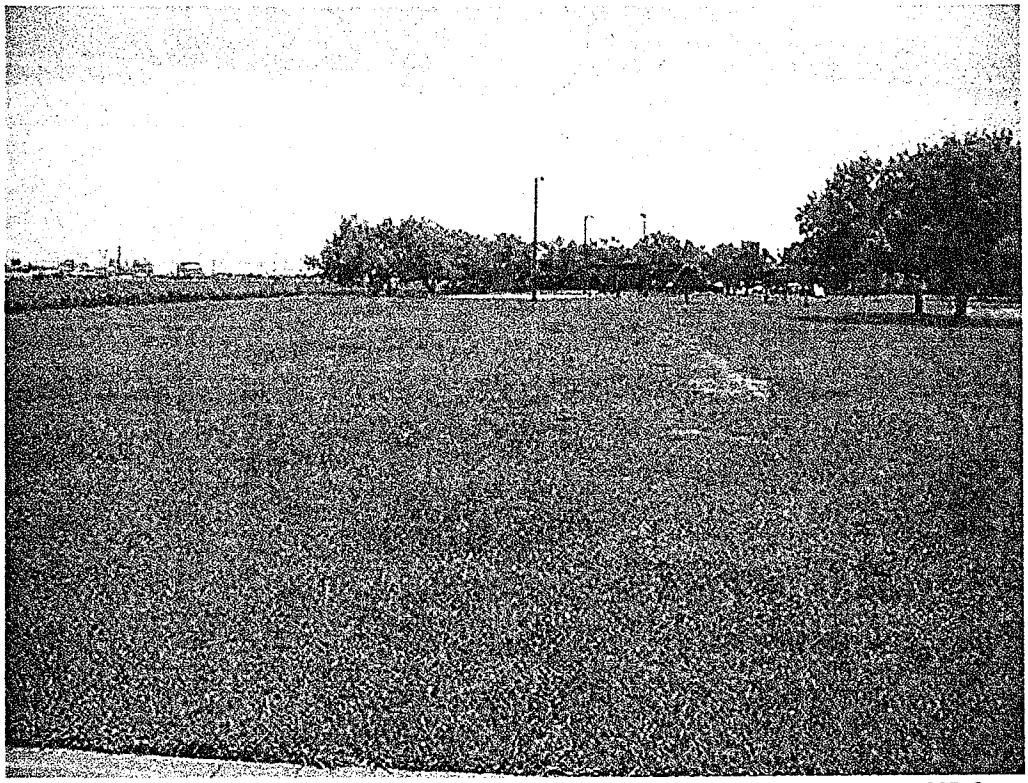
Site 1g: Solar Estates Park at Sunshine Road (Flint Hills Resources) - looking E



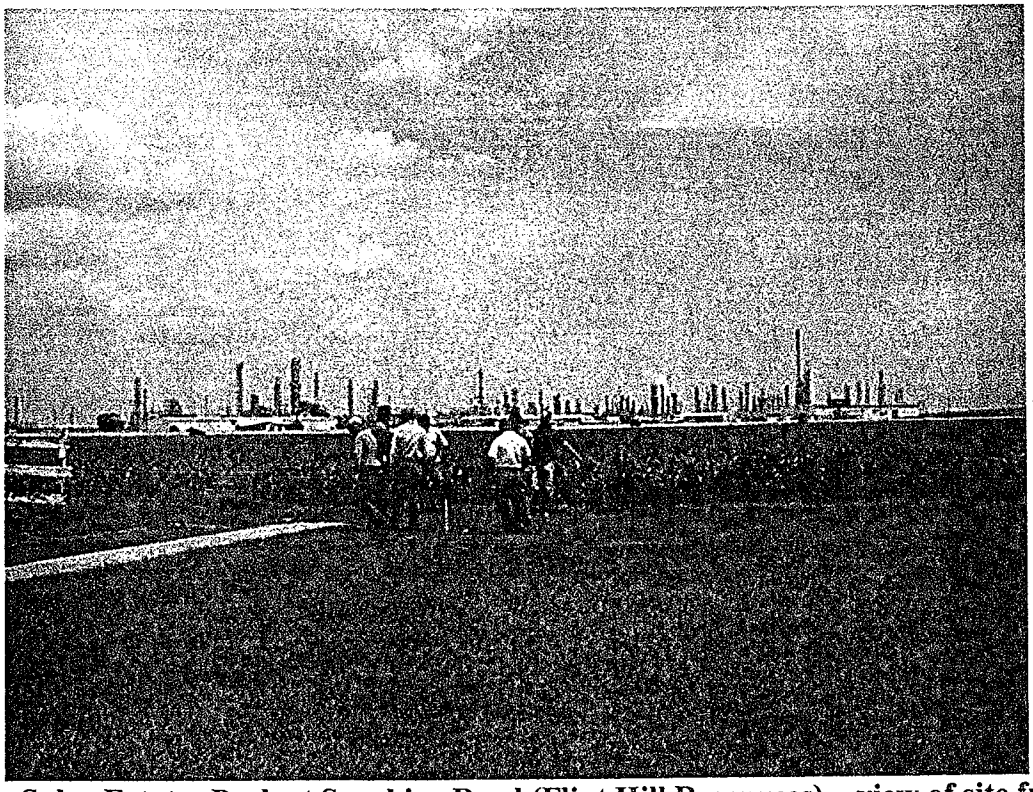
Site 1g: Solar Estates Park at Sunshine Road (Flint Hills Resources) - looking S



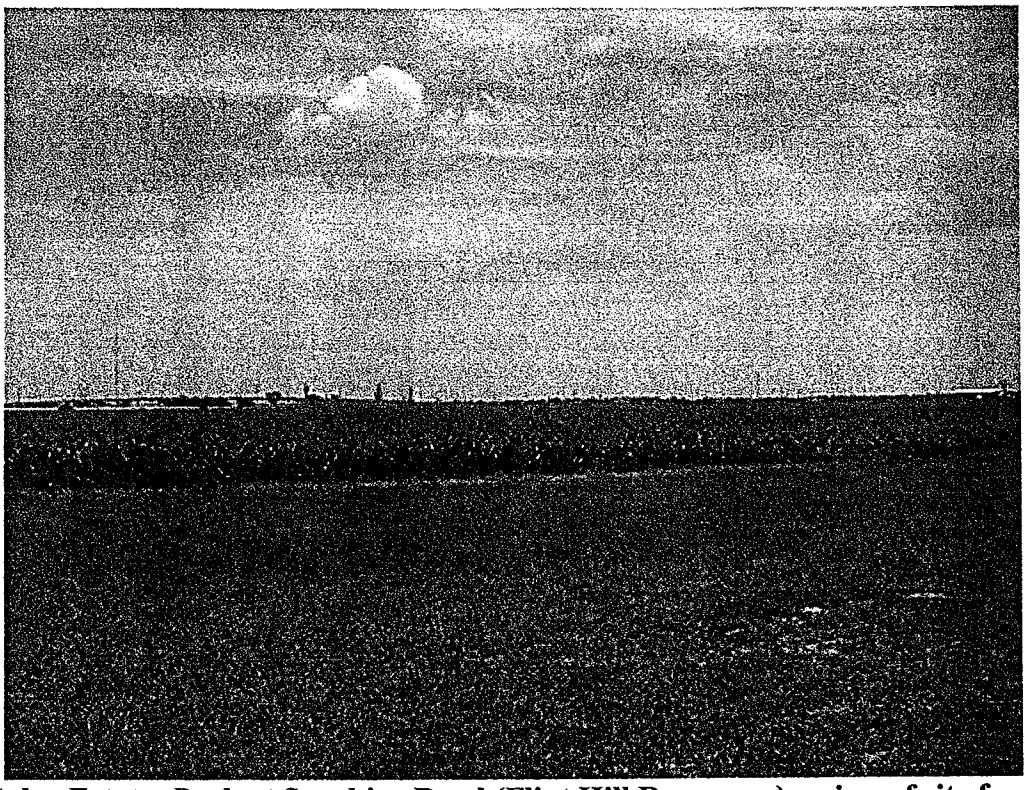
Site 1g: Solar Estates Park at Sunshine Road (Flint Hills Resources) - looking W



Site 1g: Solar Estates Park at Sunshine Road (Flint Hills Resources) – view to SE from backstop

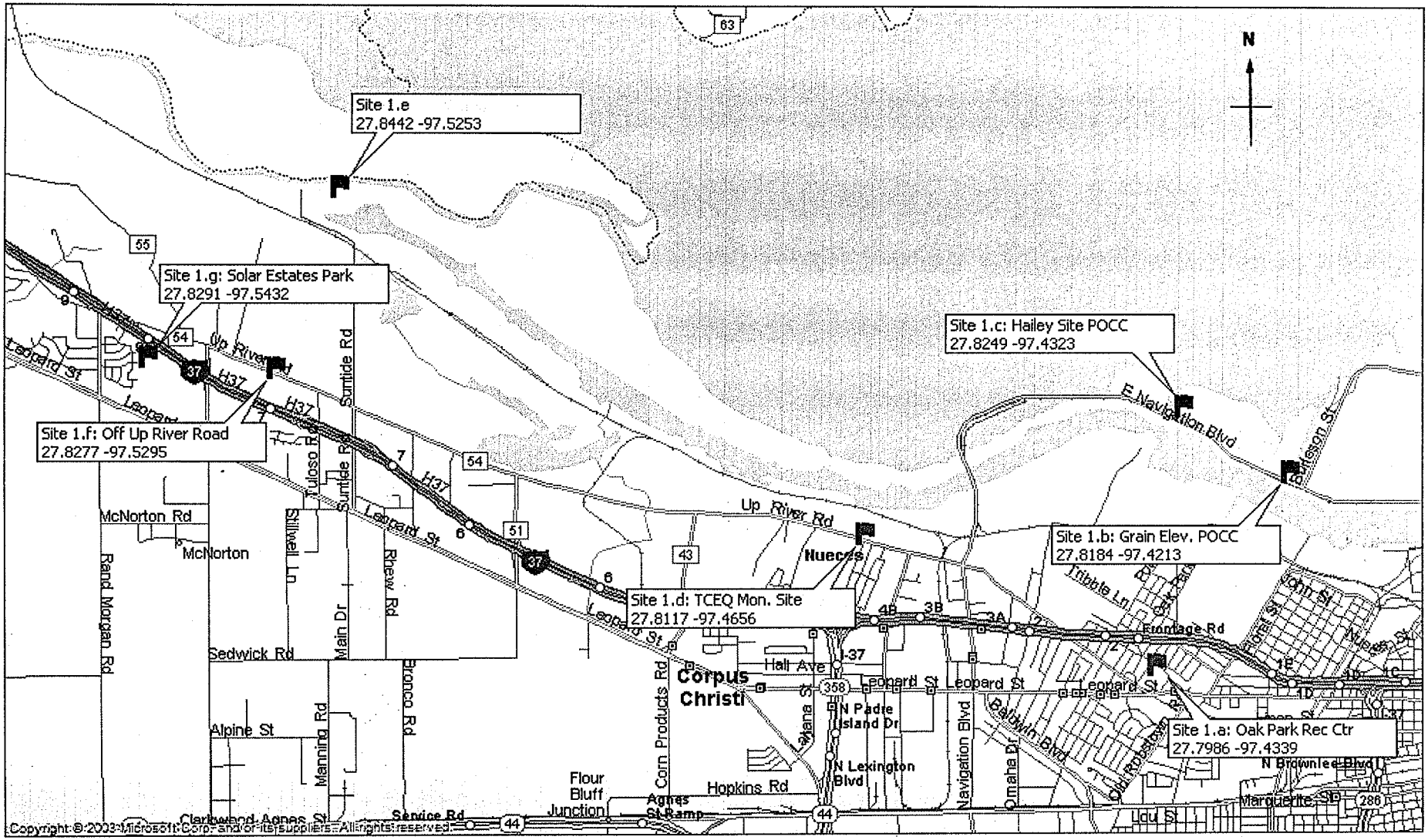


Site 1g: Solar Estates Park at Sunshine Road (Flint Hill Resources) – view of site from W



Site 1g: Solar Estates Park at Sunshine Road (Flint Hill Resources) – view of site from NW-W

Air Monitoring and Surveillance Camera Site Locations



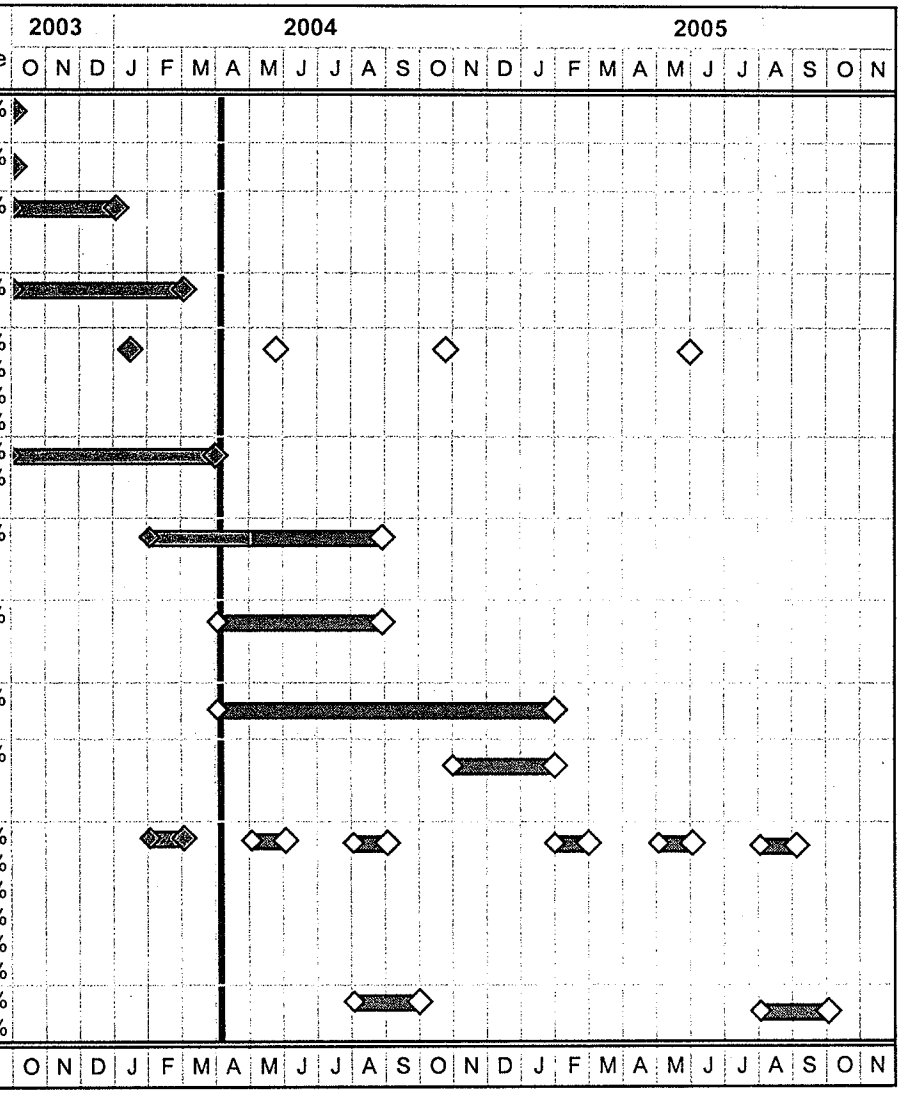
Agenda Item - III Project Overview and Status

b. Status of Contracts for Phase I - Installation
c. Status of Contracts for Phase II – Site Operation and Maintenance

GENERAL PROJECT INFORMATION
BRIEFING BOOK TAB 2

May 25, 2004

Activity Name	Contract Ref	Start Date	Finish Date	% Complete
Receipt of Project Funds		10/2/03	10/2/03	100%
Project Implementation	IV.B, p. 5	10/2/03	10/2/03	100%
Advisory Board Formed (w/in 3 months of receipt of funding, ROF)	I.A.1, p. 2	10/2/03	1/2/04	100%
Execute Site Access Agreements (TCEQ responsibility)	1.0	10/2/03	3/2/04	100%
Advisory Board Meetings (Minimum 2 per year)	I.A.1, p. 2	1/16/04 5/25/04 10/25/04 6/1/05	1/16/04 5/25/04 10/25/04 6/1/05	100% 0% 0% 0%
Execute Contract w/ Contractor for Site Installation, 7 AMS & 2 SC, (w/in 6 months ROF)	I.A, p. 1 IV.C, p. 5	10/1/03 10/1/03	4/1/04 4/1/04	100% 100%
Execute Contract w/ Contractor for Operations & Maintenance (w/in 6 months ROF)	IV.D, p. 5	2/2/04	8/30/04	43%
Preparation & Approval of QAPP (Must be approved prior to commencement of sampling)	IV.E, p. 5	4/2/04	8/30/04	0%
Site Installations Complete and Operational (w/in 18 months ROF)	IV.D, p. 5	4/2/04	2/1/05	0%
Cameras Installed & Operational and Sampling Coimmences & Continues @ AMS	IV.D, p. 5	11/1/04	2/1/05	0%
Quarterly Reports	IV.F, p. 6	2/2/04 5/2/04 8/3/04 2/1/05 5/3/05 8/3/05	3/2/04 6/3/04 9/3/04 3/1/05 6/3/05 9/5/05	100% 0% 0% 0% 0% 0%
Annual Reports	IV.A, p. 5	8/2/04 8/2/05	10/2/04 10/2/05	0% 0%



The blue line represents the date of this report. The red bars indicate the percent of progress on each task.

Criteria for Selection

The successful Proposer will be the Proposer that submits a proposal in response to this RFP on or before the Submittal Deadline that is the most advantageous to University.

Proposer is encouraged to propose terms and conditions offering the maximum benefit to University in terms of (1) services to University, (2) total overall cost to University, and (3) project management expertise. Proposers should describe all educational, state and local government discounts, as well as any other applicable discounts that may be available to University in a contract for the Services.

The University will evaluate proposals. The evaluation of proposals and the selection of the successful Proposer will be based on the information provided by Proposer in its proposal.

Proposals received will be evaluated for the best value to the University. The criteria for evaluation of proposals and selection of the successful vendor(s) for this award, will be based on the factors listed below. Submission of proposal indicates proposer's acceptance of the evaluation technique and proposer's recognition that some subjective judgment may be made by the University during the assigning of points. In reviewing responses to this RFP, The University will consider the following evaluation criteria:

40 Points Organization of project team and qualifications and experience of personnel that will be assigned to operate and maintain these sites.

40 Points Cost of option(s)

20 Points References, qualifications and past experience of the proposer.

University may give consideration to additional information if University deems such information relevant.

Agenda Item - IV Project Related Activities
Supplemental Environmental Projects

a. **Time Extension of Monitoring Network**
b. **Trajectory Notification Tool**

TCEQ – SUPPLEMENTAL ENVIRONMENTAL PROJECTS
BRIEFING BOOK TAB 8

May 25, 2004

SUPPLEMENTAL ENVIRONMENTAL PROJECT AGREEMENT

between

THE UNIVERSITY OF TEXAS AT AUSTIN

and

THE TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

WHEREAS, pursuant to TEXAS WATER CODE SECTION 5.051, the Texas Commission on Environmental Quality ("TCEQ") is created as an agency of the State, with the authority under TEXAS WATER CODE SECTION 5.229 to enter into contracts and with the authority under TEXAS WATER CODE SECTION 5.102 to perform acts specifically authorized or necessary and convenient to the exercise of its jurisdiction and powers; and

WHEREAS, pursuant to TEXAS WATER CODE SECTION 7.067, the Texas Commission on Environmental Quality may consider the willingness of a respondent in an administrative enforcement matter to contribute to supplemental environmental projects that are approved by the Commission; therefore, a contributing respondent ("Contributing Respondent") is defined as a person/legal entity against whom the TCEQ executive director is seeking an enforcement order, which includes a provision requiring the person/legal entity to make a cash contribution to a supplemental environmental project; and

WHEREAS, The University of Texas at Austin ("University") is a public, degree-granting institution of higher education whose mission is to conduct research, education, and public service, and is a part of The University of Texas System, which is exempt from federal income taxation as an agency of the State of Texas; and

WHEREAS, the University's projects described in the Project Descriptions found in (Attachment A) meet the definition of a supplemental environmental project ("SEP"), pursuant to TEXAS WATER CODE SECTION 7.067 and the TCEQ Regulatory Guidance regarding the Use of Supplemental Environmental Projects dated October 11, 2002; and

WHEREAS, the Director of the Office of Sponsored Projects has been authorized to enter into agreements and to execute contracts in furtherance of the mission of the University;

NOW, THEREFORE, the parties agree as follows:

1. **Approvable SEP:** The TCEQ agrees the projects described in Attachment A constitute approvable supplemental environmental projects in compliance with the TCEQ Regulatory Guidance regarding the Use of Supplemental Environmental Projects and that funds voluntarily contributed as part of a settlement of a TCEQ enforcement action may be used to fund TCEQ/SEP Projects.

2. **Maintenance of SEP Monies:** The University agrees to maintain funds, which are approved by the TCEQ and contributed by respondents in enforcement actions brought by the TCEQ in an interest-bearing account used exclusively for TCEQ/SEP related Projects. Such contributions shall be referred to in this Agreement as "SEP monies." Those SEP monies required to be deposited in an interest bearing account must be paid to the University in advance.

3. **Use of SEP Monies:** The University agrees to expend SEP monies, which it receives solely for the projects approved by TCEQ and described in the attached project descriptions (Attachment A). The University agrees that it shall not use any SEP monies, nor interest from such monies, for educational materials or administrative expenses.

The University shall maintain all SEP monies in a separate University account and shall expend such monies for salaries and associated fringe benefits for student and staff whose efforts will be necessary to meet the objective of the SEP projects and allocable as a direct cost to the SEP projects. Depending on the specific SEP project, student task efforts will include, but are not limited to collecting samples, analyzing samples, analyzing data, modeling data, and writing reports. University staff and student efforts carried out under any funded SEP project will be defined in a scope of work and designed to be essential to the performance of the SEP project. The expenditure of SEP funds received by the University pursuant to the various project tasks will be limited to the scope of the SEP project described in the project descriptions found in Attachment A. SEP monies may be used for the tuition and fees of students working on the SEP projects, and for supplies, equipment, travel, and other operational expenses, which are necessary to meet the objective of the project and allocable as a direct cost to the project.

4. **Accounting:** The University shall specifically account for the receipt and expenditure of SEP monies, including all interest earned on such funds in accordance with the University's accounting standards and practices.

5. **Timely Expenditure:** The University agrees to ensure the expenditure of such monies results in adequate and timely work performed or purchases made in accordance with this Agreement. In accordance with the reporting requirements found in Section 9 of this Agreement, the University agrees to provide the TCEQ with timely notice and justification for the inability to spend SEP monies within the time authorized for the individual projects funded under this Agreement.

6. **Other Contributors:** Nothing in this Agreement shall be construed to prevent the University from accepting funds from charitable contributors or other sources to the extent permitted by law and consistent with the policies of the University.

7. **TCEQ Enforcement Actions:** This Agreement does not create any rights on behalf of the University or contributing respondents in TCEQ enforcement actions. The University shall

have no role in the TCEQ enforcement process other than to receive approved, voluntary SEP contributions from respondents according to the terms of this Agreement.

8. **Project Performance:** The University agrees that the research project described in Attachment A funded with SEP monies shall be performed on a best efforts basis in accordance with this Agreement and all applicable State and Federal laws and SEP policies found in the Texas Water Code Section 7.067 and the TCEQ Regulatory Guidance regarding the Use of Supplemental Environmental Projects dated October 11, 2002.

9. **Reporting:** The University agrees to provide the TCEQ SEP coordinator with reports according to the requirements in Attachment A. The timely submittal of complete reports shall be considered an essential element of performance under this Agreement.

10. **Right to Audit:** To the extent permitted by law, the parties mutually agree to provide to each other any further documentation required that is directly pertinent to performance under this Agreement. The parties do not waive any rights they may have under the Texas Public Information Act, VERNON'S TEX. GOV. CODE § 552, or other law; the University agrees to provide to a representative of the TCEQ, upon prior written request, access to all financial records, grant documents, invoices and contracts related to the receipt of SEP monies, the expenditure of those monies, and performance of the project under this Agreement. The University shall require that such contractors, subcontractors and grantees provide the University or to a representative of the TCEQ, upon prior written request, access to the site of any work being financed in whole or in part by SEP monies.

11. **Publicity:** Neither party shall make reference to the other in a press release or any other written statement in connection with work performed under this agreement, without the written consent of the other party, if it is intended for use in the public media, except as required by the Texas Public Information Act or other law or regulation. The University will not publicize the name of any contributing respondent.

12. **Agreement Term:** This Agreement is effective on February 11, 2004 and remains in effect for five years, unless renewed in writing by mutual agreement of the parties. Within sixty (60) days after the effective date of termination, the University shall make a written accounting to the TCEQ of all SEP monies received, interest accrued, and expenditures made under this Agreement, and shall pay to the General Revenue Fund of the State of Texas any such monies that will not be spent in accordance with this Agreement, including any interest earned on such monies.

13. **Early Termination:** Either party may terminate this Agreement at any time by giving sixty (60) days written notice to the non-terminating party. Termination of this Agreement shall not affect the rights and obligations of the parties accrued prior to the date of termination. Upon termination of this Agreement University shall recover all expenses incurred and non-cancelable commitments that TCEQ has previously approved within a task, as of the effective date of

termination, including salaries for appointees for the remainder of their appointment, not to exceed one year.

14. **Refund of SEP Monies:** If at any time the TCEQ determines that SEP monies have been spent in a manner that has not resulted in adequate and timely work performed or purchases made in accordance with this Agreement, and the University has failed to adequately demonstrate that the terms of this Agreement have not been met, the TCEQ shall be entitled to terminate this Agreement in accordance with the terms of section 13, and require payment from the University of the total remaining amount of contributions, including any interest earned on those contributions, and require payment from the University of any monies spent on expenses identified as not in accordance with the terms of this Agreement, to the General Revenue Fund of the State of Texas.

15. **Effective Delivery:** Any notice or other written communication shall be considered delivered: (1) when postmarked, provided it is sent by certified mail, return receipt requested; or (2) when delivered, if delivered in person to the TCEQ SEP Coordinator, the TCEQ Executive Director, or the responsible official of the University.

16. **Addresses:** The initial addresses of the parties, which one party may change by giving written notice to the other party, are as follows:

The University of Texas at Austin
David Allen, Principal Investigator
Center for Energy and Environmental Resources
J.J. Pickle Research Campus
10100 Burnet Road, Building 133 MC R7100
Austin, Texas 78758

Texas Commission on Environmental Quality
Litigation Division
Attention: SEP Coordinator, MC 175
Texas Commission on Environmental Quality
P.O. Box 13087
Austin, Texas 78711-3087

17. **Point of Contact for Respondents:** University's designated point of contact to receive SEP monies from contributing respondents shall be:

The University of Texas at Austin
Mr. Bobby McQuiston, Director
Office of Sponsored Projects
P.O. Box 7726, MC A9000
Austin, TX 78712-7726

18. **Amendments:** Any amendments, modifications, or supplements shall be in writing, signed and executed on behalf of the University and the TCEQ.

19. **Several Provisions:** The provisions of this Agreement are declared to be severable such that if any part of this Agreement is for any reason found to be unenforceable, all other parts remain enforceable.

20. **Governing Law:** This Agreement shall be subject to and governed by the laws of the State of Texas.

21. **Authorities Incorporated by Reference:** Incorporated by reference, the same as if specifically written herein, are the rules, regulations, and all other requirements imposed by law; including but not limited to compliance with the pertinent rules and regulations of the State of Texas and those of federal agencies providing funds to the State of Texas for the SEP projects, all of which shall apply to performance hereunder.

22. **Full Integration:** This Agreement, the attachments, and laws incorporated by reference merge the prior negotiations and understandings of the parties and embody the entire agreement of the parties.

I, the undersigned, have read and understand this Supplemental Environmental Project Agreement. I am authorized to execute this Supplemental Environmental Project Agreement on behalf of the entity indicated below my signature, and I do hereby agree to the terms and conditions specified herein. This Agreement is binding only after all parties listed below have signed this Agreement.

Lydia González Gromatzky
Deputy Director, Legal Services
Texas Commission on Environmental Quality

Date 2/6/04

Bobby McQuiston, Director
Office of Sponsored Projects
The University of Texas at Austin

Date FEB 04 2004

Attachment A

Supplemental Environmental Project

I. Project Title: Corpus Christi Air Monitoring and Surveillance Camera Installation and Operation Project ("Project").

Background: This project was developed as a response to a court ordered condition of probation in U.S. v. Koch Petroleum Group, L.P. (S.D. Tex) CR-C-00-325. Koch Petroleum Group was ordered by the Federal Court of the Southern District of Texas to pay penalty dollars to fund and to develop in coordination with the TCEQ and EPA, air and water quality remediation projects in and around Corpus Christi. Tasks related to this air remediation project are also being funded through the State of Texas SEP program pursuant to this Agreement. The following paragraph describes tasks related to this air remediation project, which will be funded through this Agreement as supplemental environmental projects. Subsection B describes the basic project funded with COCP funds and approved by the federal court as the air remediation project and the sections following Subsection B describe other requirements of this Agreement or the federal court. The federal court ordered penalty dollars are referred to as "COCP funds". The state ordered penalty dollars or contributions are referred to as "SEP monies".

A. Related tasks to be funded, after TCEQ approval, under this SEP Agreement:

1. Extension of Project monitoring – The existing monitoring network could be operated for a longer period of time (approximately $680,000 per additional year of operation)
2. Addition of monitoring sites to the network – Additional monitoring sites could be added to the 7-site monitoring network (cost dependent on monitoring equipment deployed – minimum cost for installation and operation of site for 7 year period approximately $500,000). The TCEQ will assist the University, upon request, to obtain necessary and appropriate lease agreements, but is not responsible for associated costs of obtaining the lease and/or license agreement and is not responsible for any costs associated with the lease or license after it is obtained, including utility costs.

3. Development of air quality modeling capability for network – The current network will provide the Corpus Christi community with near real time data on air pollutant concentrations at the monitoring sites. Addition of air quality modeling capability at the web site would allow the community to interpolate concentrations between monitors and track the trajectories of plumes (approximately $300,000).

4. Addition of monitoring equipment to monitoring sites – Additional measurement capabilities could be added to the existing sampling sites (cost dependent on equipment to be deployed)

B. Basic Project Description: The University will install, maintain and operate an air monitoring and surveillance camera network in Nueces County, along the Corpus Christi ship channel to record the concentrations of specific air pollutants along the industrial area. The University will install at least seven air-monitoring stations and two surveillance cameras along the ship channel. The air monitoring stations will record concentrations of hydrogen sulfide (total reduced sulfur), sulfur dioxide and volatile organic compounds, including benzene, and meteorological data. Data obtained from the monitors will be made available to the public via the TCEQ website (Internet) as soon as possible after it becomes available electronically, depending on the type of monitor. Additionally, access to view the images captured by the surveillance cameras will be made available to the public via the Internet. The University will not identify emission sources, investigate and remediate air quality concerns and/or initiate enforcement actions. These functions are outside the scope of this Project.

1. Monitoring Equipment

Monitoring equipment will include (1) automatic gas chromatographs, which provide semi-continuous monitoring of volatile organic compounds; (2) event-triggered monitors, which measure volatile organic compounds during emission release events; and (3) instruments to provide continuous measurements of sulfur dioxide and hydrogen sulfide. The surveillance cameras will be high-resolution digital cameras with zoom, pan/tilt and web-based remote control access capabilities.

Subject to the TCEQ obtaining the necessary and appropriate lease and/ or license agreements, including payment by TCEQ of all associated costs of obtaining the lease and/or license agreements, the monitors and cameras will be located initially at the following sites:

a. An Auto GC, event-triggered monitor and meteorology station will be located at Oak Park Recreation Center.
b. Instruments to measure sulfur dioxide and hydrogen sulfide, an event-triggered monitor and a meteorology station will be located at the grain elevator at the Port of Corpus Christi.
c. Instruments to measure sulfur dioxide and hydrogen sulfide, an event-triggered monitor, and a meteorology station will be located at the J.I. Hailey site at the Port of Corpus Christi.
d. Instruments to measure sulfur dioxide and hydrogen sulfide, and an event-triggered monitor will be located at a current TCEQ monitoring site at Dona Park.

e. Instruments to measure sulfur dioxide and hydrogen sulfide, an event-triggered monitor, and a meteorology station will be located near the Port of Corpus Christi building on the west end of the Corpus Christi Inner Harbor.

f. Instruments to measure sulfur dioxide and hydrogen sulfide, an event-triggered monitor, and a meteorology station will be located off of Up River Road on property on which Flint Hills Resources, LP has a pipeline easement.

g. An Auto GC, instruments to measure sulfur dioxide and hydrogen sulfide, an event-triggered monitor, and a meteorology station, located at Solar Estates Park at the end of Sunshine Road.

A camera will be installed at two of the three following locations Dona Park, Up River Road or the Sunshine Road sites. Exact locations of the equipment at the above-referenced monitoring sites, as well as the specific equipment to be used at each site, will have the approval of the University and TCEQ. As monitoring equipment is installed on a rolling basis, the types of equipment may change to reflect technological advances. Because this Project is the result of the above cited federal case, TCEQ in coordination with the EPA shall approve any proposed changes in the type of equipment to be used.

Within three (3) months of the effective date of this Project Proposal the University shall form a volunteer Advisory Board comprised of an EPA representative, experts in instrumentation and local air quality issues, community representatives, and other key stakeholders to review Project plans and to consult on Project implementation, including the selection of the exact monitoring locations, types of equipment, and implementation schedules. Although, appointment of the Advisory Board members is subject to the approval of TCEQ, the Advisory Board is not created under the authority provided by the Texas Water Code 5.107 or Texas Government Code, Chapter 2110. The Advisory Board shall meet at least semi-annually and as frequently as quarterly, at the discretion of the Advisory Board during the term of this Project. No employee, officer, or director of Flint Hills Resources, L.P. or other refinery, shall be a member of the Advisory Board.

The monitors and cameras will not be moved or disabled without approval from the TCEQ in coordination with the EPA. The TCEQ in coordination with the EPA will provide the specifications for the monitoring instrumentation and video cameras to the University. Additionally, the list of VOCs to be monitored will be agreed upon by the University and the TCEQ in coordination with the EPA prior to the contract bid preparation. For the duration of this Project TCEQ will negotiate leases and/or obtain licenses as necessary to use the above-referenced sites for the monitoring network. TCEQ will assume any costs associated with obtaining said licenses and/or leases for only the above listed sites and will assign such agreements to the University at no cost to the Project. The University will be responsible for the

utilities costs associated with said licenses and/or leases. TCEQ will not assume any such utilities costs. For any additional sites that require the negotiation of leases and/or the obtaining of licenses, the TCEQ will assist UT, upon request, to obtain necessary and appropriate lease agreements and/or licenses, but is not responsible for associated costs of obtaining the lease and/or license agreement and is not responsible for any costs associated with the lease or license after it is obtained, including utility costs.

The University will provide a mechanism whereby TCEQ will be able to contact equipment operators during normal working hours to address data quality or communication issues. All monitoring conducted pursuant to this Project will be covered by a quality assurance projects planned and prepared by the University in consultation with its contractor, written in accordance with EPA QA-R5 document format and approved by the TCEQ prior to the commencement of sampling activities. The quality assurance projects plan will contain statements on data quality and completeness necessary to meet Project needs. It will include statements that staff responsible for auto-GC set-up, operation, and trouble-shooting have experience performing those tasks using the equipment specified and that site operators responsible for total non-methane hydrocarbons, sulfur dioxide, and hydrogen sulfide and meteorological equipment have experience operating and calibrating ambient air continuous emission monitors. Such quality assurance projects plan shall be provided to the Federal Court of the Southern District of Texas, with copies to TCEQ and EPA, in quarterly reports as described below.

2. Public Access to Data

Data from these monitoring sites will be made available to the public via the Internet as soon as possible after it becomes available electronically, dependant on the type of monitor. The data displayed on the Internet will be reviewed periodically for quality assurance by the University and will be subject to change pending final validation by the University. All continuous monitors and Auto GCs at these sites will be connected to the TCEQ's real-time data system. Specifically, the data will be transmitted to the TCEQ's Corpus Christi regional office hub computer and then transmitted to the TCEQ's central office in Austin for near real-time display on the TCEQ's web site. The University, through its contractor, will work with the TCEQ's Monitoring Operations Division staff to obtain the necessary hardware, firmware, software, and licenses for uploading continuous monitoring data and Auto GC data to the TCEQ's MeteoStar system and for validating the data behind the TCEQ's firewall.

Data from the event-triggered monitors will be available to the public on the TCEQ's web site or the University's web site within 30 days. Canister samples from the event-triggered monitors will be capable of being triggered automatically when a pre-set level of total non-methane hydrocarbons is exceeded. Canister analysis data will be provided to the TCEQ in a format mutually agreed upon by the University, the Advisory Board, and the TCEQ in coordination with the EPA.

Images from the surveillance cameras will be made available to the public on the University's website. The University will operate the cameras and archive data from the cameras. The University will make the data from the cameras available to the TCEQ. Upon completion of this Project, the University will maintain ownership of the monitoring and camera surveillance instrumentation, and any web servers installed at the University.

II. Environmental Benefits

This Project will provide significant and discernible environmental benefits to the Corpus Christi area by providing measurements of concentrations of certain air pollutants and an evaluation of those air pollutants being emitted. The information obtained from this network will provide the community with more knowledge of the types and quantities of pollutants emitted from the industries along the Corpus Christi ship channel. The raw data generated through the Project may be used to aid the University's research, teaching, and service missions through the implementation of additional projects. The University shall be solely responsible for, and shall not use any SEP monies to pay for, any such additional Project cost increases resulting from any such research, teaching, or service activities. In addition, data obtained from the monitoring sites, and made available to the public, may be used by the TCEQ and the EPA to initiate enforcement actions.

Because an air quality concern in the Corpus Christi area is health impacts from emissions in and around highly industrialized areas, this Project is focused on providing air quality data that may be used by the TCEQ and the EPA to investigate and remediate this air quality concern. Data from the Project may be used by the TCEQ and the EPA to detect and track air emissions in near real-time to determine air pollution source locations for enforcement actions, permitting and regulatory decisions, and potential future health effects studies. The data also can be used by the TCEQ and the EPA to help determine if additional air quality problems that have not yet been detected exist in the Corpus Christi area.

III Project Period

By directive of the Federal Court of the Southern District of Texas, this Project will continue for at least 7 years, or up to 10 years depending on the availability of COCP funds and interest earned on the COCP funds until at least $6.760 million in COCP funds has been expended on the Project. Once the University receives bids for this Project from vendors and has completed their detailed engineering and budgetary review, if it is clear that the COCP funds and interest projected to be earned on those funds will not be sufficient to install, maintain and operate this network for seven years, the University will notify the TCEQ and the EPA, and the TCEQ, in consultation with the University and the Advisory Board, will scale back the Project so that the network will be operational for at least seven years. COCP funds and interest earned thereon will be spent on monitoring and camera surveillance instrumentation, installation, maintenance and operation of instrumentation, laboratory analysis, data validation, and web server costs. Upon completion of the term of the Project, the University will maintain ownership of the

monitoring and camera surveillance instrumentation and any web servers installed at The University. If the Project is terminated early, as provided for in Article 13 of this Agreement, the monitoring and camera surveillance instrumentation paid for with the COCP funds shall be given to the registry of the U.S. District Court in Corpus Christi, Texas.

IV. Project Costs including minimum acceptable contribution of SEP monies to fund related tasks.

Costs: $6,760,000.00 to $10,000,000.00
Minimum contribution: $10,000.00

V. Records and Reporting

A. University shall maintain records of the SEP program and shall submit reports regarding the SEP program quarterly after receiving SEP monies. The reports shall contain the following information:

1. The total amount of contributions received under the SEP program during the quarter, itemized by respondent's name and contribution amount;
2. A description of the Project to which SEP monies were allocated and progress made to date;
3. A detailed list (in University's standard format and documentation) of actual expenditures paid by SEP monies for the quarter;
4. The balance of the SEP Account, including interest earned to date;
5. Projected expenditures of SEP monies remaining in the account; and,
6. Any additional information University believes will demonstrate compliance with this SEP Agreement.

The quarterly reports are due within sixty (60) days of the end of each quarter.

The University agrees to provide additional information concerning the Project as is required under the terms of this SEP Agreement. All SEP reports and information shall be submitted to the following address:

Litigation Division
Attention: SEP Coordinator, MC 175
Texas Commission on Environmental Quality
P.O. Box 13087
Austin, Texas 78711-3087

B. Absent circumstances beyond the control of the University, the network described in this agreement shall be installed and fully operational within eighteen months of receipt of the COPC funds.

VI. Process for funding tasks under this SEP Agreement.

For those tasks selected by TCEQ for funding under this Agreement TCEQ shall issue a written notice to the University identifying the SEP task selected for funding and the amount of funding available for that task. Within thirty (30) days of receipt of such notice, or a time mutually agreed to by the parties, the University will respond with a written statement of work detailing the effort to be completed, an estimated time line for completion of the task and budget detailing the expenses for the task.

Within fifteen (15) days of receipt of the University's written response, or a time mutually agreed to by the parties, TCEQ will either approve the University's plan for completion of the task to be funded or disapprove it and request modifications. When agreement between the parties has been reached about the statement of work, time line and budget for the task to be funded, TCEQ will issue a written notice to the University telling them to proceed in accordance with Articles 1 and 2 of this Agreement.

DRAFT AIR MONITORING AND TRAJECTORY ASSESSMENT PROJECT PROPOSAL

Submitted By

THE UNIVERSITY OF TEXAS AT AUSTIN,
Center for Energy and Environmental Resources

The University of Texas at Austin: The University of Texas at Austin (the "University") is a public, degree-granting institution of higher education and a component of The University of Texas System, an agency of the State of Texas. The University's core missions entail research, teaching, and service.

Cause:

Project: The University will implement the following project: *Corpus Christi Air Monitoring and Trajectory Assessment* (Project). The Project will consist of two components. One component is an extension of the monitoring program for the Corpus Christi Air Monitoring and Surveillance Camera Installation and Operation Project, described in Attachment A (Monitoring Program Extension). The second component of the project is the development of a web-based tool for forecasting and retrospectively analyzing the trajectories of hydrocarbon releases detected through the Monitoring Program (Trajectory Assessment).

The Project constitutes an acceptable supplemental environmental project in compliance with the Texas Commission on Environmental Quality's Regulatory Guidance regarding the use of Supplemental Environmental Projects. The Project is funded by a voluntarily contributed settlement as a result of a TCEQ enforcement action and in accordance with the Supplemental Environmental Project Agreement between The University of Texas at Austin and the Texas Commission on Environmental Quality.

I. Project Description

A. Project Scope

Monitoring Program Extension
As described in Attachment A, the University will, through a separate agreement, install, maintain and operate an air monitoring and surveillance camera network along the Corpus Christi ship channel to record the concentrations of specific air pollutants along the industrial area. This separate agreement is a Court Ordered Condition of Probation ("COCP") under *U.S. v. Koch Petroleum Group, L.P.* (S.D. Tex.) CR-C-00-325. Through the contract issued under the COCP, the University will install seven air monitoring stations, which will record concentrations of hydrogen sulfide (total reduced sulfur), sulfur dioxide and volatile organic compounds, including benzene, and meteorological data. Data obtained from the monitors will be made available to the public via the TCEQ website (Internet) as soon as possible after it becomes available

electronically. Additionally, access to view the images captured by the surveillance cameras will be made available to the public via the Internet

Under the COCP agreement (Attachment A) the University is scheduled to perform the installation and operation of the sites continuously for a minimum of 7 years (through October, 2010) and until at least $6.760 million has been expended on the Project. The air quality monitoring portion of this agreement will be used to extend the period of operation of the COCP monitoring network described in attachment A. By allocating $570,000 of the funds available under this agreement to the Monitoring Program, the University of Texas anticipates that the operation of the monitoring network will be extended for a period of one (1) year.

Trajectory Assessment
The objectives of the Trajectory Assessment portion of this project are to integrate publicly available air quality data collected in the Corpus Christi area into a single data archive, and to design, develop, and implement an interactive web-based application (Trajectory Analysis tool) to generate and display both forward and backward trajectories of air parcels in the Corpus Christi area. The combination of the Monitoring Program Extension and the Trajectory Assessment components of this project will provide the public access to detailed information about the spatial distribution of air pollutants in the Corpus Christi area.

Air parcel trajectories will be calculated, on demand, for historical events; in addition, forecast trajectories for 8-24 hours will be available. Trajectories for historical events (any day prior to the current date at the time of the request) will be calculated from observations collected by the Corpus Christi surface monitoring network. Forecast trajectories will be calculated from data provided by daily runs of the Fifth Generation Pennsylvania State University/National Center for Atmospheric Research (PSU/NCAR) Mesoscale Model (MM5). The MM5 is a non-hydrostatic, terrain-following sigma coordinate model used to simulate or predict regional-scale meteorology. The MM5 has been used in support of numerous air quality studies in Texas, including most air quality planning activities in the State's urban areas.

The steps in the development of the Trajectory Analysis tool will be:

1. Develop a data archiving system to allow access to analyzed wind field data
2. Develop trajectory calculation software
3. Develop web site and notification tool

Subtask A: Database Archive The wind field data from the monitoring network and the MM5 forecast data must be readily accessible for the trajectory calculations. The University will develop and maintain the wind field database using a web-based system. Scripting languages will be used to automate the download of data collected by the Corpus Christi monitoring network on a routine basis. The system will be designed to incorporate data from as many sites as possible within the Corpus Christi area, but to be included in the data assimilation system, the data from the sites must be publicly available and there must be a commitment to continued data collection for a period of at least five years.

Subtask B: Trajectory Calculation Software A registered PC version of the HYSPLIT 4 (Hybrid Single-Particle Lagrangian Integrated Trajectory version 4) model will be installed at the University for the calculation of three-dimensional trajectories based on forecasts from the MM5 model. The HYSPLIT 4 model requires that input meteorological data conform to a specific format. New software will be written to post-process the MM5 forecasts for input to the HYSPLIT 4 model.

For retrospective (historical) analyses, three-dimensional (3-D) gridded wind fields will be estimated from observations. Because the observations are only available at discrete, irregularly spaced points, observed values need to be interpolated onto the grid points used by the trajectory model. A combination of the optimal interpolation (OI) and the simple interpolation (SI) scheme will be used. OI is a statistical technique for providing a best estimate wind field, starting with background (i.e., initial guess) winds and blending it with information from observations. SI does not use the background wind field. Literally, it relies on simple interpolation methods without attempting to minimize the differences between the analyzed and observed inputs. If a grid point has no nearby observations, the simple interpolation scheme has difficulty estimating wind fields. Which of these two methods should be chosen depends on the spatial density of observed data and whether or not a background field exists. Therefore, an extensive review of available real-time meteorological datasets for Texas and the Corpus Christi area will be conducted to assess data quality and availability. Previous experience at the University of Houston IMAQS for the near real time trajectory analysis system for the Houston Galveston area demonstrated the need to combine both the OI and SI schemes to generate more realistic 3-D wind fields for the trajectory analysis.

The MM5 model will provide the forecast data for the calculation of current day trajectories. While the development of the MM5 application for the Corpus Christi area will be a labor-intensive effort, the forecast model will be automated, so that it that requires minimal routine maintenance once it is constructed. Building the forecast model will require several steps.

First, a computing network capable of performing the calculations will be acquired. For a 36-hour forecast, 8-node, 16-processor Beowulf-style LINUX PC clusters will be purchased to provide sufficient run-time speed. These computer resources will be dedicated to the MM5 application. The latest version of MM5 will be configured and installed on the new LINUX system. Parallelization of the MM5 source code will be required.

Next, the model's spatial configuration and boundary conditions will be established. The model will include 28 vertical levels, and 3 horizontal spatial scales (at 36, 12 and 4 km resolution). This configuration will be the same as the meteorological configuration currently being used in modeling of ozone formation in Corpus Christi. Initial and boundary conditions for each forecast run will be based on the 00Z NCEP ETA operational analysis and forecast model. The NCEP Meso ETA Model is a hydrostatic model with a horizontal grid spacing of 29 km and 50 vertical levels, with layer depths that range from 20 meters near the surface to 2 km at upper levels.
Once initial forecast models are run, they will be tuned with current data from the Monitoring Program. The MM5 36-hour forecast runs will be automated

Subtask C: Public Access Website and notification tool An Internet site will be developed using HyperText Markup Language (HTML) and Flash software. The web-interface will open with an interactive map centered on the Corpus Christi area; a mock-up based on similar work in the Houston area is shown in Figure 1. It will allow users to zoom in and out, and to pan interactively at any particular location on the Corpus Christi map. It will also contain searchable information (e.g., main freeway, main facilities etc...) so that users can select preset points instead of panning the map. As user moves the mouse around on the map, the interface will automatically show and update instantly the latitude-longitude information at the mouse selected map locations.

To run the trajectory model, the user will be requested to input additional information. Upon selection of an initial geographic location from the interface, the user will be prompted for additional information (e.g., date, starting time, total runtime, meteorological dataset, initial height above ground, etc.) required for the calculation of the requested forward or backward trajectory. The user-provided information will be transferred to the database server, where the trajectory calculation software and necessary observational or forecast data are accessed. A graphic will then be generated using HTML and Flash to display the trajectory over a geographic map of the Corpus Christi area.

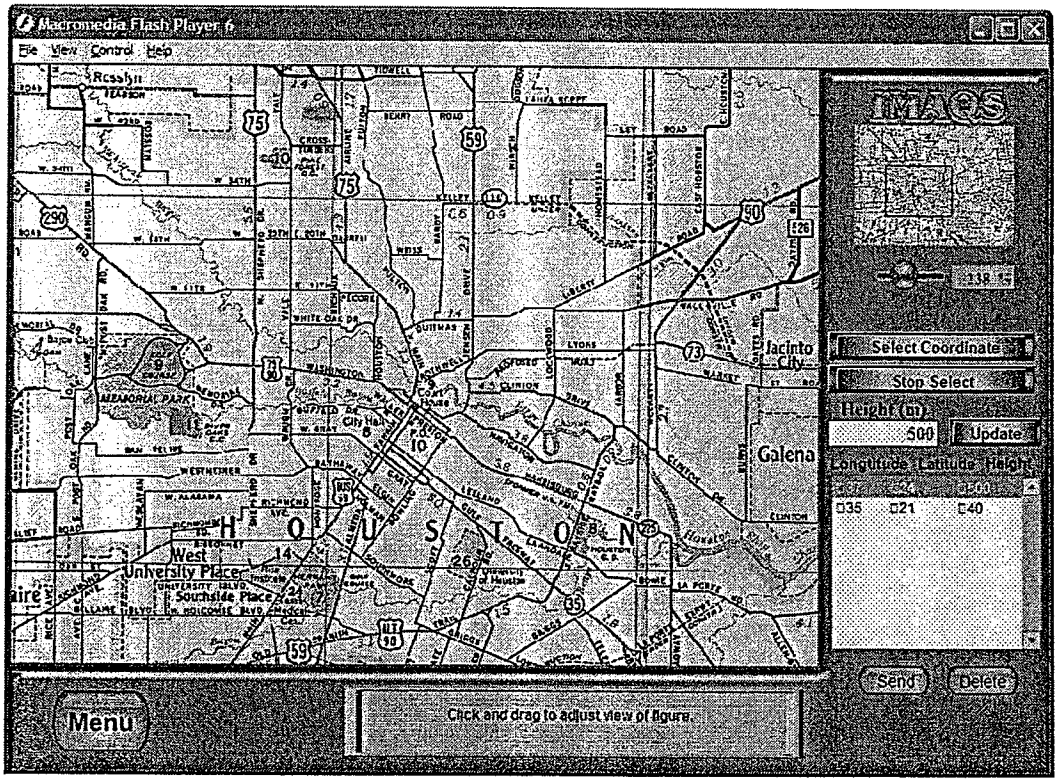


Figure 1. Mock-up of map based web interface for trajectory tool, based on similar model developed for Houston.

An additional feature of the website will be the automatic calculation of back and forward trajectories whenever the monitoring network instruments measure concentrations that exceed thresholds selected by the Corpus Christi Air Monitoring and Surveillance Camera Installation and Operation Advisory Board, in consultation with the TCEQ. An automated email or fax notification will be sent to facilities that lie along the back trajectory. Notifications will also be sent to facilities or organizations identified by the Advisory Board.

B. Project Period

The period of performance for the Project is June 1, 2004 through May 31, 2006. The schedules for each of the Project components are as follows:

Monitoring Program

The University will maintain and operate the air monitoring network and cameras continuously for a twelve (12) month period using the funds available through this agreement during the project period. By allocating $570,000 of the funds available under this agreement to the Monitoring Program, the University of Texas anticipates that the operation of the monitoring network will be extended for a period of one (1) year beyond the initial seven (7) year period.

Trajectory Assessment

The schedule for developing the Trajectory Analysis tool is given below.

Trajectory Assessment work schedule and deliverables.

Proposed Tasks	2004		2005				2006	
	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2
Assemble model components								
Real-time data collection tool								
Database archive system								
Objective analysis tool								
Meteorological modeling (MM5)								
Trajectory tool								
Web-based user interface								
Interface software								
Statistical analysis & visualization of supporting information								
Project repots								

C. Public Access to Data

Monitoring Program

Data from the monitoring sites will be made available to the public via the Internet as soon as possible after it becomes available electronically, dependant on the type of monitor. The data displayed on the Internet will be reviewed periodically for quality assurance by the University and will be subject to change pending final validation by the University. All continuous monitors and Auto GCs at the sites will be connected to the TCEQ's real-time data system. Specifically, the data will be transmitted to the TCEQ's Corpus Christi regional office hub computer and then transmitted to the TCEQ's central office in Austin for near real-time display on the TCEQ's web site. The University, through its contractor will work with the TCEQ's Monitoring Operations Division staff to obtain the necessary hardware, firmware, software, and licenses for uploading continuous monitoring data and Auto GC data to the TCEQ's MeteoStar system and for validating the data behind the TCEQ's firewall.

Data from the event-triggered monitors will be available to the public on the TCEQ's web site or the University's web site within 30 days. Canister samples from the event-triggered monitors will be capable of being triggered automatically when a pre-set level of total non-methane hydrocarbons is exceeded. Canister analysis data will be provided to the TCEQ in a format mutually agreed upon by the University and the Corpus Christi Air Monitoring and Surveillance Camera Installation and Operation Advisory Board, in consultation with the TCEQ.

Images from the surveillance cameras will be made available to the public on the University's web site. The University will operate the cameras and archive data from the cameras. The University will make the data from the cameras available to the TCEQ.

Transport Assessment

The transport assessment tool will be accessible to the public through the internet.

II. Project Benefits

This Project will provide significant and discernible environmental benefits to the Corpus Christi area by providing measurements of community exposure to pollutants, and providing post-event evaluation of pollutants emitted during a release. The information obtained from this network will provide the community with more knowledge of the types and quantities of pollutants emitted from the industries along the Corpus Christi ship channel. The raw data generated through the Project may be used to aid the University's research, teaching, and service missions through the implementation of additional projects.

Because the primary air quality concern in the Corpus Christi area is health impacts from industrial emissions, this Project is focused on providing air quality data that may be used by the TCEQ and the EPA to investigate and remediate this air quality concern. To improve air quality, emissions of air pollutants must be discovered, the sources must be identified, and the emissions must be reduced to acceptable levels through additional regulations, voluntary activities promoted through public awareness, permitting activities, or enforcement. To achieve these

objectives, data from the Project may be used by the TCEQ and the EPA to detect and track hazardous air pollution releases in near real-time to determine air pollution source locations for enforcement actions, permitting and regulatory decisions, and potential future health effects studies. The data also can be used by the TCEQ and the EPA to help determine if additional air quality problems that have not yet been detected exist in the Corpus Christi area.

III. Project Cost

This Project Proposal anticipates $870,000, plus certain accumulated interest, in funds to conduct this program. The budget for the Monitoring Program Extension is $570,000 and the budget for the Trajectory Assessment is $300,000.

New activities: Draft work plan for additional SEP funds

Additional SEP funds

- $870,000 made available through a TCEQ SEP
- Two major work elements proposed
  - Extend the duration of monitoring with the COCP network
  - Build an infrastructure for data integration, notification of events and trajectory assessment

Extend COCP monitoring

- Propose to allocate $570,000 of SEP funds to operations costs of the COCP network
- Anticipate that this will cover costs for one year of operation
- Expend these funds for the first year of operation; this will allow deferred withdrawl of COCP funds

Data integration, notification and trajectory assessment

- Advisory Council suggested need for data integration
- Advisory Council suggested need for systematic notification

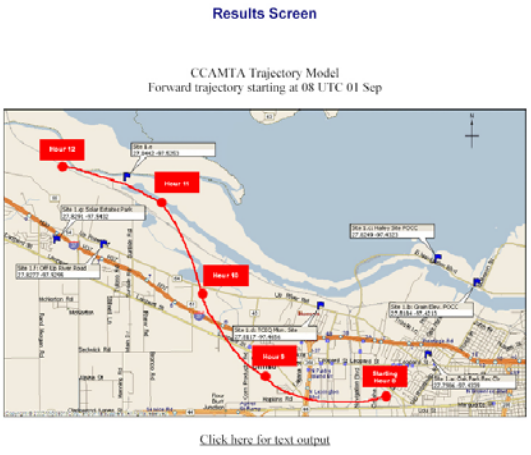
Data integration, notification and trajectory assessment

- Compile data from multiple stations and make those data available at one internet site (Both retrospective data collection and near real time)

Notification Scenario

- Monitoring network detects a high concentration of a monitored pollutant
- Immediately determine likely point of origin by calculating a back trajectory and notify likely source facilities (email or fax)
- Immediately notify interested parties in path of forward trajectory (email or fax)

Sample forward trajectory



Notification scenario

- For notification, need back trajectory and forward trajectory tools
- Back trajectory tool simple to build
- Forward trajectory tool requires wind forecasts
- Building trajectory tool also allows for retrospective analyses – will build tool for these retrospective analyses

Corpus Christi Air Monitoring & Trajectory Assessment

Project Objective | HYSPLIT 4 Trajectory Model | Model Features | Monitoring Sites | Project Status | TCEQ Website | CCAMTA Contacts | CCAQP Site | Press Releases

Introduction Here...

Before using the trajectory model you are required to register. Registration will help us track the usage of the tool and will also allow us to contact you when updates and modifications are made. Thank you.

Registered Users [ ] Submit

Login using registered E-mail address

New Users Please Register

Data Input Screen

The blue flags on the map below represent monitoring sites. Please select any point on the map that represents your location of interest or input your longitude and latitude settings in the fields below:

Longitude [ ] Latitude [ ]

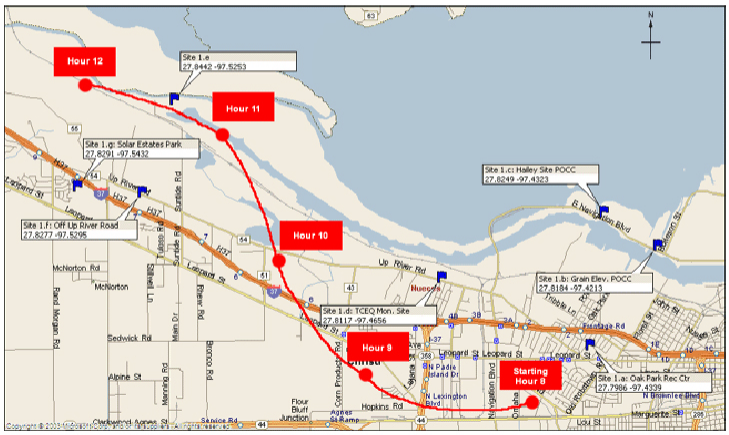
To start the model please provide the basic required user input below:

DATE:	Select the date that the calculation is to start.	Sep 1 2003
TIME:	Select the time (UTC) that the calculation is to start	8
RUN TYPE:	Select the direction of the run	Forward Backward
TOTAL RUN TIME:	Specify the duration of the calculation in hours (use negative numbers for Backward calculations)	4 hrs

Submit

Results Screen

CCAMTA Trajectory Model
Forward trajectory starting at 08 UTC 01 Sep



Click here for text output

Data integration, notification and trajectory assessment

- Begin building tool immediately
- Planned initial roll-out at the same time monitoring network is fully operational
- Automate process so that tool will continue to operate for lifetime of network

Additional SEP funds

- $870,000 made available through a TCEQ SEP
- Two major work elements proposed
  - Extend the duration of monitoring with the COCP network ($570,000)
  - Build an infrastructure for data integration, notification of events and trajectory assessment ($300,000)
- Other ideas considered – adding network sites, adding equipment to existing sites

APPENDIX C

Financial Report of Expenditures
Financial Report of Interest Earned

Corpus Christi Air Monitoring and Surveillance Camera Installation and Operation Project

Accounting Report for the Quarter 04/01/04-06/30/04

A. Total Amount of COCP Funds and Other Funds Received Under This Proposal

Total Grant Amount:	$6,761,718.02
Total Interest Earned:	$51,099.82
Total Funds Received:	$6,812,817.84

B. Summary of Expenditures Paid by COCP Funds

	Prior Yr. Carryover	Yr. 1 Budget	Yr. 1 Adjustments	Prior Activity <10/2/03	Current Activity 04/01/04-06/30/04	Remaining Balance 12/31/2003
Salaries	$0.00	$76,374.00	-$4,800.00	-$69,949.40	($1,263.50)	$361.10
Fringe	$0.00	$19,094.00	$0.00	-$15,723.34	$63.17	$3,433.83
Ceer Admin.	$0.00	$0.00	$4,800.00	-$1,708.79	($976.20)	$2,115.01
Supplies	$0.00	$90,000.00	$0.00	$0.00	$0.00	$90,000.00
Other	$0.00	$7,532.00	$0.00	-$1,197.77	($573.11)	$5,761.12
Subcontract	$0.00	$1,800,000.00	$0.00	$0.00	$0.00	$1,800,000.00
Travel	$0.00	$2,000.00	$0.00	-$445.99	($415.19)	$1,138.82
Equipment	$0.00	$5,000.00	$0.00	$0.00	$0.00	$5,000.00
Indirect Costs	$0.00	$300,000.00	$0.00	-$11,505.99	($2,322.54)	$286,171.47
TOTALS	$0.00	$2,300,000.00	$0.00	($100,531.28)	($5,487.37)	$2,193,981.35

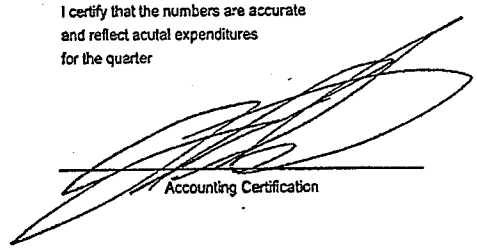
C. Interest Earned by COCP Funds as of 06/30/04

Prior Interest Earned:	$33,003.09
Interest Earned This Quarter:	$18,096.73
Total Interest Earned to Date:	$51,099.82

D. Balance of COCP Funds as of 06/30/04

Total Grant Amount:	$6,761,718.02
Total Interest Earned:	$51,099.82
Total Expenditures:	($106,018.65)
Remaining Balance:	$6,706,799.19

I certify that the numbers are accurate and reflect acutal expenditures for the quarter



Accounting Certification