

**CITY OF FORT WORTH, TEXAS
AIR QUALITY STUDY COMMITTEE
WEDNESDAY, MARCH 31, 2010**

Present:

Gyna Bivens – Citizen (Arrived at 4:11 p.m.), Media and Corporate Communications
Jim Bradbury – Citizen (Arrived at 4:08 p.m.), Practicing Attorney in Business, Environmental & Water Areas
Glen Estes – Citizen, Pipeline Operations Experience
Rusty Fuller – Citizen, Electrical and Gas Distribution Experience
Ramon Romero – Citizen, Former City Plan Commission Member and Current City Zoning Commission Member
Ramon Alvarez – Environmental Defense Fund, Austin, TX
Chris Klaus – North Central Texas Council of Governments (Arrived at 4:20 p.m.), Senior Program Manager of Air Quality Planning and Operations
Nina Hutton – XTO Energy, Environmental Health and Safety Department
Darren Smith – Devon Energy, Environmental Health and Safety Manager, Oklahoma City, OK
John Satterfield – Chesapeake Energy, Director, Environmental Regulatory Affairs Division

Agency Liaison:

Ruben Casso – Environmental Protection Agency, Region 6 Office, Dallas, TX
Rob Lawrence – Environmental Protection Agency, Region 6 Office, Dallas, TX
Keith Sheedy – Texas Commission on Environmental Quality

Facilitator:

Richard Greene – University of Texas at Arlington

City staff:

Susan Alanis – Director of Planning and Development Department
Brian Boerner – Director of Environmental Management Department
Rick Trice – Assistant Director Planning and Development Department
Sarah Fullenwider – Senior Assistant City Attorney
Art Bashor – Assistant City Attorney
Ron Gonzales – Assistant City Secretary, Recorder

Presenters:

Doug Canter – Titan Engineering
Rich Haut – Houston Advanced Research Council
Alisa Rich – Wolf Eagle Environmental

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Introductions and Ground Rules

(Agenda Item 1)

Mr. Richard Greene, Facilitator, opened the meeting for the Air Quality Study Committee, at 4:02 p.m. on Wednesday, March 31, 2010, in the Oak Room of the Fort Worth Botanic Garden, 3220 Botanic Garden Boulevard.

Mr. Greene advised that he was not a member of the Committee but that he was privileged to be asked by the City of Fort Worth to facilitate the proceedings of the Committee to carry out the objectives of the Council. He requested that each Committee member provide a brief introduction of their experience. He then asked Ms. Susan Alanis, Director of the Planning and Development Department for the City of Fort Worth, to introduce members of the City staff who would be supporting the Committee.

Mr. Greene advised that speaker cards were available for citizens to provide comments to the Committee and then provided a summary of his background. He stated he was as a faculty member at the University of Texas at Arlington in the School of Urban Affairs teaching Environmental courses. He added that he gained those qualifications after six (6) years as Regional Administrator of the Environmental Protection Agency in Dallas, and prior to that time he served as the Mayor of Arlington for ten (10) years.

Mr. Green provided an opening comment that outlined the objective of the Committee meetings.

Anticipated Contracting Process/Schedule

(Agenda Item 2)

Ms. Susan Alanis, Director, Planning and Development Department, acknowledged the arrival of Ms. Gyna Bivens and Mr. Jim Bradbury and asked that they provide a brief introduction of their experience.

Ms. Alanis expressed appreciation to the Committee members for their willingness to serve in this capacity. She added that one of the biggest focuses of the Committee was to define the objectives of the study with the intent of finding common ground; making sure that good information was received; and to start working on solutions to improve how gas drilling was occurring in the City of Fort Worth. She further stated that today the Committee would hear was information on well sites, what point sources there may be for emissions, basic information on toxins versus other pollutants, in addition to speakers who would provide a synopsis of various studies underway or completed, to get an idea of what was going on Barnett Shale wide on this issue.

**Anticipated Contracting Process/Schedule
(cont'd)**

(Agenda Item 2)

She reiterated that one of the objectives of the Committee was to define the objectives of the study and referred to a Brainstorming Sheet that was sent to the Committee in advance of the meeting that identified some of the questions from staff and from the community. She advised that the Committee should look at the questions critically and come up with what the Committee deemed would be the objectives of the study. She added that as the next step, staff would ask the Committee to review the Request for Qualifications (RFQs) that would be issued as the staff asked firms to demonstrate their qualifications to do the study developed. She further stated that the Committee would basically establish the criteria by which the firms would be evaluated and then work on selecting the firms available. She pointed out that once the top two firms were identified, staff would ask those firms to make a presentation to the Committee to explain in their professional judgments as Scientists how they would go about answering the questions in the objectives of the study.

Ms. Alanis assured the Committee that as much time as needed would be taken along the way to discuss the issues but that today's meeting was on a very tight agenda. She stated that any item not addressed would be carried over to the next meeting on April 14, 2010. She added that the real pressure for a decision was that drilling was going on today and the sooner this issue was worked through, the sooner the options could be considered. She advised that in addition, staff would like the sample collection to occur in the hottest months of the year to have a contract in place and the study underway in July or early August 2010.

**Point Sources on Typical Gas Well
Sites/Compressors**

(Agenda Item 3)

Mr. Rick Trice, Assistant Director, Planning and Development Department, provided aerial views and pictures that depicted several phases of drilling production, processing, disposal and facilities that were expected to be present during gas production. Below is a summary and brief description of the images presented:

- Drilling Operations with open tanks and generator/fuel storage.
- Fracture Stimulation Operations with water supply water tanks, truck pumps. Image also reflected a plume coming from the compressors located on the side.
- Completion Operations that depicted flaring in the background. Advised that flaring could be done in two ways; flare emitted gases or vent directly into the atmosphere (flaring environmentally superior method).

- Production Operations that depicted disposal well head with leakage from the well head; completed well head facility with tanks for erosion protection; tank batteries. Provided explanation of types of vents.

**Point Sources on Typical Gas Well
Sites/Compressors (cont'd)**

(Agenda Item 3)

Ms. Bivens requested that she be provided with copies of the pictures and agreed with Mr. Trice that a visit to one of these facilities would be appropriate.

- Production Operations/Lift Compression: Waste Oil tank; Lube Oil tank; Vents; and Exhaust pipes from compressor. Production Operations that reflected a different type of vent that vented into the atmosphere.
- Vapor Recovery Stack at XTO site in West Fort Worth. Explained that vapor recovery was being used off the condensate tanks. Added that vapors were recovered from the top of the condensate tanks and went through the piping and flared to the facility.
- Location Map of potential site (Havener Unit) for the Committee to visit that was located in West Fort Worth outside of South Loop of IH820W. Advised that staff had looked at issue of wet gas versus dry gas. It appears that condensate production primarily falls west of a line that is west of IH 820 in Fort Worth.
- Pipeline Operations with construction equipment to install pipeline; Lift Compressors with Pressure Relief Vents for Exhaust.
- Dehydration Unit. Explained that gas needed to be dried out before sending down the pipeline – prevented erosion and freezing. Explained that Glycol tank removed water vapor from gas prior to sending down pipeline.
- Disposal Operations. Reflected open water tank; salt water disposal truck; open Waste Collection Tank; Waste Collection Tank with oil or condensate on surface. Explained that this image depicted almost a pre-treatment the operator went through to remove sludge from bottom of tank and skim oil off the surface and then sending the produced water down the disposal well.
- Pipeline Operations reflecting waste tank with some piping open to atmosphere and not hard plumbed. Reflected overflow spillage which was potential source for emissions. (Site ran by the Railroad Commission.)

Ms. Antram, a citizen in the audience, requested the name of the chemical that spilled from the tank. Ms. Alanis met with Ms. Antram separately relative to her request.

- Salt Water Evaporation Operations. Explained that this was part of a pilot being done by the City on the East side of Fort Worth for water re-use. Added that these were basically heaters that heated the grime and discharged the water vapor to the atmosphere and then disposed of the concentrated grime.

- Compression Facility with Vents, Exhaust Stacks, Separators and Glycol units.

**Point Sources on Typical Gas Well
Sites/Compressors (cont'd)**

(Agenda Item 3)

Ms. Bivens noted that there has been some concern from the public about the composition of the Committee and stated that whenever there was a question raised similar to the one she asked previously, that there needed to be a method to respond. She added that she knew that whenever there was any type of spill it was public information and disclosure of the information was not a secret; the information just may have not been readily available

Mr. Trice mentioned that any comments or questions that are received from citizens, staff would endeavor to respond to those requests.

Mr. Greene asked if there were still plans to provide e-mail addresses for all Committee members to a separate e-mail box to which Mr. Trice responded affirmatively. Mr. Trice stated that an e-mail account had been established that would be published for all citizens' knowledge. He added that the purpose of the e-mail address was to receive all the information for distribution to the Committee.

Mr. Greene reiterated that the goal of the Committee was to move through its agenda as expeditiously and carefully as necessary in order to reach the conclusion. He added that it would be heavily focused on the Committee's input, but that Committee members were welcomed to engage any member of the public they would like to. However, the plan was to hold the discussions at Committee meetings among the Committee members.

Ms. Alanis stated that the e-mail address to receive comments was: airqualitystudy@fortworthgov.org. She added that there would also be links on the City's main webpage and questions or comments would be shared with the Committee members. She also advised that there were also comment cards available that would also be handed out during the break in the meeting.

Mr. Trice concluded his presentation as follows:

- Compression Facilities that depicted various types of Vents.
- Gas Processing Plant with very similar technology on gas well side; Blow Down Vent, Separation Towers.

Mr. Trice reminded that if Committee members were interested in site tours that staff would arrange the visits to the sites.

Mr. Ramon Alvarez asked if it was known at this point how many of the facilities in the briefing were within the City limits.

**Point Sources on Typical Gas Well
Sites/Compressors (cont'd)**

(Agenda Item 3)

Mr. Trice responded by stating that staff was actually in the process of preparing all that data through GIS mapping analysis. He added that staff knew the locations of all compressor sites.

Mr. Ramon Ramero referred to the pictures presented in the presentation and asked Mr. Trice if he could provide information on the use of the equipment, specifically a Separation Tank and if that was separating the oils that were mixed with the sand the companies were using.

Mr. Trice explained that the Separators were separating sand and produced water that was coming up from the well head. He added that the goal was to move dry gas free from other components, e.g., water, soil, dirt, down the pipeline to make it dry as possible.

As a result of questions posed to Mr. Trice regarding equipment and operations at different well sites, Mr. Greene stated that it might become easier to identify with some of the facilities operations by having staff members arrange a site visit for Committee members, either as a group or individually.

Mr. John Satterfield, Chesapeake Energy, volunteered to arrange a visit with a site that Chesapeake operated that had compressors, equipment and facilities reflected in Mr. Trice's presentation. Mr. Trice proposed that staff could comprise a listing of several different sites for Committee members to visit.

Mr. Bradbury asked if there was information on waste disposal pits and Mr. Trice responded negatively.

Mr. Greene asked staff to prepare a listing of potential sites to visit at various times and dates and to provide the listing to the Committee for consideration.

Mr. Darren Smith stated that the site visits would be most convenient on the days Committee meetings are held as many of the Committee members traveled for business.

Mr. Trice stated that staff would come back to the Committee with options for the site visits in the near future.

Overview of Air Pollutants

(Agenda Item 4)

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Mr. Brian Boerner, Director of the Environmental Management Department, stated that his presentation would be a high-level review of the air pollution process. He added that what he wanted to accomplish with his briefing was to give the Committee an appreciation for what the rules and regulations were and legally how some of the air pollution process worked. He acknowledged the arrival of Mr. Chris Klaus and asked him to provide a brief introduction of his experience.

Mr. Boerner began his presentation with the response to the question, “What is Air Pollution”?

- The presence of substances that interfere with human health or welfare, or produce harmful environmental effects.
 - Chemicals
 - Particulate matter
 - Biological materials (Volatile Organic Chemicals (VOCs), dust smoke, man made chemicals).
- The Federal Clean Air Act Amendments (1990) – Explained that the 1990 version was the current iteration and added that the Clean Air Act and Clean Water Act were the first landmark pieces of legislation that helped define the Environmental Protection Agency.
 - State Delegation

Mr. Boerner explained his next slide relative to the Federal Clean Air Act that contained two independently related circles entitled “NAAQS” (National Ambient Air Quality Standards) and “Air Toxics”. He advised that from a nationwide aspect, PM_{2.5}, Ozone, Lead, CO, NO₂ and sO₂, were of concern. However, from a health-based standpoint Benzene, Dust, Carbon Disulfide and Nuisance Odor had to be contended with and were regulated under the Clean Air Act. He pointed out that there was an issue where the two overlapped and explained that Benzene was a (VOC) and VOCs helped make ozones. Mr. Boerner then provided background on the National Ambient Air Quality Standards as reflected below:

- Set standards for pollutants considered harmful to public health and the environment.
 - **Primary standards** protect public health, including the health of “sensitive” populations such as asthmatics, children and the elderly.
 - **Secondary standards** protect public welfare, including protection against decreased visibility, damage to animals, crops, vegetation and buildings.
- Standards set for six principal pollutants.
 - Carbon Monoxide
 - Lead
 - Nitrogen Dioxide

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- Ozone
- Particulate Matter

Overview of Air Pollutants (cont'd)

(Agenda Item 4)

- 10um
- 2.5um
- Sulfur Dioxide

Mr. Boerner continued his presentation with the following information on the NAAQS that pertained to the Dallas/Fort Worth MSA:

- In non-attainment for Ozone Standard.
 - 0.085 ppm (parts per million) (8-hour concentration) – Explained that the current concentration was actually .75 that that the EPA proposed a rule to decrease that to less than .75.
- Sources of Ozone.
 - None – there is no industry that emits ozone as a waste or by product.
- Atmospheric Chemical Reaction.
 - Oxides of Nitrogen (NOx).
 - Limiting factor.
 - Volatile Organic Chemicals (VOCs) (Come from environment).
 - Non-methane.
 - Background concentrations enough to support reaction.

Mr. Boerner pointed out that heat was a primary factor and that from the end of March through the end of October was the period that ozone occurred. He explained the pie chart on his next slide by stating that the North Central Texas Council of Governments in conjunction with the Texas Commission on Environmental Quality (TCEQ) developed an Emissions Inventory for the state of Texas. He stated that 73 percent of NOx emissions in the state of Texas come from mobile sources, e.g., cars, trucks, bulldozers, etc., and the remaining 15 percent came from point sources, e.g., cement kilns, energy power plants, etc. He added that then there were area sources, small stationary engines, small boilers and other things that were in small quantity but when they were all aggregated together became a large problem.

Mr. Boerner then presented a line graph that depicted Ozone Design Values for the DFW Area. He advised that over the past 20 years, the City was trying to comply with the one (1) hour NAAQS standard 125 ppb (parts per billion) or .125 ppm and pointed out that the City had exceeded that measurement at that time. He added that in approximately 2005, it came to the point where the City started to come into compliance and the City had continued to comply with the requirement annually. However, the monitoring time shifted from a one (1) hour standard to

an eight (8) hour standard and that is when the City was found to be in non-compliance; however, in 2009 the City was rapidly approaching to be in compliance.

Overview of Air Pollutants (cont'd)

(Agenda Item 4)

Mr. Boerner presented information on Toxicological Evaluations below:

- Ambient Air Monitoring Data conducted annual by TCEQ Toxicologist.
 - Permanent Monitor at Meacham Airport.
 - Automated Gas Chromatograph (evaluates air samples).
 - Canister samples.
 - Particulate monitors.
- 2008 Health Effects Review.
 - Completed by TCEQ.
 - Concentrations below both short and long term, health-based comparison values and odor thresholds.
 - No adverse effects anticipated.

Mr. Boerner noted that as ambient Benzene levels became more of a concern, it would be important to evaluate these levels in the form of emissions from the well heads, vents, etc. He pointed out that since previously to 2009, the level of benzene continued to decrease in the area.

A short discussion relative to this topic occurred between various Committee members and staff with explanations or clarification provided where appropriate. Mr. Boerner advised that staff would attempt to develop data on the impact of emissions from various sources and provide that information to the Committee. Mr. Greene advised that it might be helpful to include information on regulations of these operations as they pertained to a non-attainment area versus an attainment area.

Ms. Bivens stated that she would like to make sure that information was captured relative to the different levels of reportable incidents throughout the state and globally, how these activities tied into toxic materials and what materials were considered to be more toxic and what materials were considered to be less toxic.

Overview of Air Toxins

(Agenda Item 5)

Prior to the presentation by Dr. Honeycutt, Mr. Greene provided background information on the North Central Texas Council of Governments as a matter of information for the Committee members.

Dr. Michael Honeycutt, Director of the Toxicology Division, Texas Commission on Environmental Quality, provided a presentation entitled "O&G Toxicology Issues". A synopsis of the presentation is provided as follows:

Overview of Air Toxins

(Agenda Item 5)

- Effects Screening Levels (ESLs)
 - Chemical-specific level in air set to prevent short-term and long-term health effects and nuisance odor conditions.
 - New guidelines November 2006.
 - External scientific peer review.
 - Two (2) rounds of public comment.
 - Used in air permitting and for evaluating air monitoring data.
- ESL Averaging Time
 - ◆ Short-Term
 - 1 Hour
 - Health, odors, vegetation
 - Compare 1 hour air and monitoring samples; instantaneous 24-hour air monitoring samples with caution.
 - Ethanol = CNS effects
 - ◆ Long-Term
 - Lifetime
 - Health, vegetation
 - Cancer, Non-cancer
 - Compare at least annual averages of air monitoring data; longer time periods more appropriate.
 - Ethanol – Liver, reproductive, cancer.
- Monitoring vs Permitting
 - Health-based value (ReV) = AMCV
 - Health-based value x 0.3 = Permitting ESL
 - Noncarcinogens adjusted for cumulative (aggregate exposure).
- Carcinogens
 - No cumulative adjustment.
 - Rarely permit more than one (1) known human carcinogen.
 - Set at one (1) in 100,000 theoretical cancer risk level.
 - One (1) in 10,000 is upper bound of acceptable range.

Dr. Honeycutt then explained the measurement graph on his next slide entitled "Risk Perspective (Range of Lifetime Risk of Fatality Compared with AMOS [Ample Margin of Safety]). In summary, the slide revealed the risk of a fatality caused by air toxics ranged in the value from one (1) chance in 10,000 to one (1) chance in 1,000,000. The range measurement also applied to a fatality caused by natural radiation, lightning and a meteor.

Dr. Honeycutt's next slide provided information on Carcinogens and he explained how the information related to the previous slide. Information reflected on the slide was as follows:

- "Acceptable" = 1 in 10,000 to 1 in 1 million
- Set at 1 in 100,000 cancer risk level

Overview of Air Toxins (cont'd)

(Agenda Item 5)

- In toxicology, an order of magnitude is a big jump

Benzene Annual ESL	Risk Level
14 ppb	10^{-4}
1.4 ppb	10^{-5}
0.14 ppb	10^{-6}

Dr. Honeycutt provided a short definition on benzene as detailed below:

- Clear, sweet-smelling liquid at room temperature.
- Highly flammable.
- Evaporates into the air very quickly.
- Very common – in the top 20 chemicals produced in the United States.
- Rapidly degraded in the atmosphere.
- Known human carcinogen.

Dr. Honeycutt stated that benzene was ubiquitous and that it was very difficult to go anywhere in the continental United States and not find benzene. He advised of the following:

- Stricter air regulations have led to significant decreases in benzene levels over the last several decades.
- Major sources are:
 - Petrochemical industry
 - Motor vehicles
 - Cigarettes
- Indoor concentrations are around twice as high as outdoor concentrations.

Dr. Honeycutt then displayed a slide that contained a table entitled "Derivation of the Acute ReV and ^{Acute} ESL" and provided a short explanation of the information. He transitioned to the next slide that contained information on Carcinogenic Evaluation as reflected below:

- Pliofilm Cohort (3 factories in Ohio) from Rinsky, et al (1981, 1987) with Crump (1994) exposure estimates.
- Acute myelogenous and monocytic leukemia (AMML).

- Linear multiplicative risk model and life-table analyses using the BEIR IV approach (NRC 1988).
- Weighted cumulative exposure metric with U.S. background mortality rates (95% UCL on β).
- 1.4 ppb at 10^{-5} risk.

Overview of Air Toxins (cont'd)

(Agenda Item 5)

Dr. Honeycutt provided several slides that relayed his experience with monitoring benzene concentrations at the Lynchburg Ferry Monitoring Site in Houston, Texas in 2008 using an Auto-GC method of sampling. He categorized the area as being heavily industrial and explained how the analysis of the data was achieved. He also explained the procedure for Canister sampling that was performed for 24-hours every six (6) days to attain an average of benzene levels. He advised that the that data from the one (1) hour Auto-GC sampling and the data from the 24-hour Canister sampling were very close together and he stated that although the canister method was labor intensive it was a lot less costly. He then explained the value of Auto-GC data by advising that a lot more information was attainable from this method.

Dr. Honeycutt's last slide pertained to Carbon Disulfide Comparison Values by parts per billion, and he provided a brief explanation of the information.

A short discussion ensued between Mr. Darren Smith and Dr. Honeycutt with clarification of information contained in the presentation provided as necessary.

Mr. Rusty Fuller expressed concern with the statistical information presented and suggested that the information be explained in a format that was easily understood by everyone. Ms. Bivens concurred and suggested the information be more tangible, human experiences.

Mr. Ramon Alvarez suggested that perhaps a more appropriate question would be "What is the contribution of natural gas drilling and production inside Fort Worth to air quality?", and referred to some information contained in Mr. Boerner's presentation on air pollutants that compared the Dallas monitor to the Fort Worth monitor. He stated those numbers were around .2 and asked if there was an elevation above that number that could be attributed to natural gas activity and that detracted from a number being significant rather than the contributing factors.

Mr. Alvarez asked Dr. Honeycutt if other sulphur containing organic compounds should also be explored. Dr. Honeycutt stated that benzene was presently the main concern and added that he had not seen supporting data that revealed those compounds as being a health problem.

Mr. Jim Bradbury asked if there was a way to go about the testing to quantify what was out there in terms of the level of emissions without folding it into the rhetoric of "Short Term ESL" or "Long Term ESL". He stated that the information had to be presented in simpler way to

understand if there was a problem or not. He pointed out that he was also concerned about not focusing on compounds other than benzene as mentioned by Mr. Alvarez and asked if there was a method of testing that would reveal all forms of matter present.

Overview of Air Toxins (cont'd)

(Agenda Item 5)

Dr. Honeycutt responded by stated that that type of testing really was not available. He pointed out that air was a very different medium, very different from water and very different from soil as they were not as dynamic and were constant. He explained that air quality was very dynamic as when wind changed or shifted, the air quality was different. He added that it would be very hard to take a laser-beam approach to this and be able to confidently say that the information was reliable because of the different geography and the differences of operations at the sites.

Mr. Greene called for a recess of the proceedings at 5:55 p.m. and reconvened the proceedings at 6:12 p.m. and proceeded with Item 6 on the agenda.

Overview of Past and Current Studies

(Agenda Item 6)

Prior to Mr. Canter's presentation, Mr. Chris Klaus inquired what dollar amount had been established for this study. Ms. Alanis responded by stating a cost had not been established as yet as the idea was to figure out what was needed to be known and then a cost assigned to that criterion.

Mr. Ed Ireland, Executive Director of the Barnett Shale Energy Education Council, provided background on the selection of Titan Engineering to conduct this study. He introduced Mr. Doug Canter, Titan Engineering, who stated that the Barnett Shale Energy Education Council contracted with Titan Engineering to come up with a plan to assess the ambient air quality in and around natural gas sites throughout the City of Fort Worth and part of the City of Arlington. He advised what Titan was going to look for was VOCs in general, specifically benzene, but also sulphur compounds and that no discrimination would be made on the basis of wet gas production or dry gas production. He added that Titan's study was designed to specifically bias to look for sites that they expect the highest emissions to come from; a worst case analysis. He provided information on their approach to site selection and stated that at the goal at the end of the study was to have ten (10) natural gas sites roughly in one of each City districts in Fort Worth and one in Arlington where the testing would be performed. He further stated that two sites would have compressor stations and eight (8) would be production well sites with at least one being a wet gas production and outlined the process of how Titan would achieve their data for the study. He pointed out that there was no guarantee that Titan would find the site with the highest level of benzene but that the information would be detailed in the sampling plan.

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Mr. Canter stated that the sampling could occur in the next two weeks should Titan receive the water data from the producers.

Mr. Klaus stated that an e-mail sent by Ms. Alanis contained a few pages of reports and summaries and asked if a summary of Mr. Canter's presentation could be provided to the Committee members. Ms. Alanis responded affirmatively.

Overview of Past and Current Studies (cont'd)

(Agenda Item 6)

Mr. Rich Haut, Houston Advanced Research Council (HARC), provided background on the agency. He distributed an informational pamphlet on HARC to the Committee and introduced Mr. Jay Olaguer, who would present information on air quality studies, past projects and some current laws.

Mr. Olaguer, Director of Air Quality Research at HARC, summarized some of the technical capabilities HARC would like to deploy to estimate oil and gas industry emissions. He advised of field studies conducted in the Houston area and for the first time detected huge amounts of formaldehyde emissions that no one said would be present. He added that the same state of the art technology had been offered to the City of Fort Worth by proposal and explained that their service was a three (3) year study for \$2M that provided continuous monitoring over periods of one month for three years. He summarized the phases of the study and stated that more detailed information would be provided if needed at a later time.

Mr. Greene advised the Committee that Ms. Alanis had contact information for HARC representatives. He introduced Ms. Alisa Rich from Wolf Eagle Environmental.

Ms. Rich provided background on her qualifications and advised of the many variables of the gas industry she had discovered during her studies. She provided information on natural gas liquid, VOCs, affects of benzene on the body, and description of an Aermod study. She added that her agency discovered that people were most often sick in areas where plumes are consistently seen. She advised of a small facility in Flower Mound, Texas, known as the Williams Production Site that contained approximately six (6) wells, but had emissions of 40 ppm, an indicator for benzene and other chemicals. She pointed out that in the neighborhood where the Williams site was located seven (7) children had a form of leukemia. She advised that a lot of this could be contained and that rural drilling could not be in urban areas.

Mr. Boerner raised awareness to the reserved room time allotted and requested Ms. Rich conclude her comments to allow time for the final presentation and comments by Committee members.

Mr. Keith Sheedy, Texas Commission on Environmental Quality (TCEQ), began his presentation by stating TCEQ had a webpage with information on the Barnett Shale which was updated regularly. He advised of current TCEQ sampling projects that were on-going. He

advised that in August through November 2009, TCEQ conducted a mobile lab trip in Fort Worth and had concerns with 19 monitoring sites where sampling was performed. He added that TCEQ was awaiting a data report before sending the information to Dr. Honeycutt's office for review and that a report should be available by mid-April 2010. He further stated that in January 2010, the Department of Health Services, conducted blood and urine studies in the town of Dish,

Overview of Past and Current Studies (cont'd)

(Agenda Item 6)

Texas, looking for benzene and a lot of other compounds and advised should be issued sometime in April 2010. He continued that the agency would be conducting another infrared flyover over of various wells and production sites sometime next week. He then advised of a follow-up sampling in Fort Worth in either late Spring or early Summer

Mr. Sheedy stated that a question that had surfaced was why sampling was not done at the source and added that TCEQ had done that in the past. He added that it would be done in the Fort Worth at 10 to 15 sites and explained the process that would be followed. He stated that long-term stationary monitors were located at Meacham International Airport and at Dallas Hinton and others were being considered to be placed at Eagle Mountain and in the town of Dish and that the TCEQ was looking at installing two more Auto-GCs in the Barnett Shale area.

(Ms. Bivens left her place at the table.)

Mr. Sheedy continued his presentation by stating the agency was having a stakeholder meeting concerning PBRs for oil and gas on April 8, 2010, at 9:00 a.m. in Building E, Room 201S at the central office in Austin and that the Fort Worth Regional Office would have the capability to video conference the meeting should anyone want to attend. He also presented information on the Emissions Inventory that would be conducted in two phases. The first phase would be to gather a count of leases, wells, tanks, compressors, etc., each operator had and that second phase would ask for more detailed information on each piece of equipment.

(Ms. Bivens returned to her place at the table.)

Mr. Sheedy advised of the agency's outreach efforts and gave notice to the Environmental Trade Fair that would be held in May 2010. He also stated that the TCEQ was working with the Railroad Commission on developing a guidance document to add to drilling permits.

Mr. John Satterfield brought attention to some investigative studies the TCEQ had performed and asked if copies of those reports could be provided to the Committee as they pertained to Fort Worth. Mr. Sheedy stated that a summary of the findings could be provided.

Mr. Bradbury requested that Mr. Sheedy provide information on what the TCEQ staff was doing up north outside Fort Worth and asked if he could also provide some infrared images that could be shown at the next meeting. Mr. Sheedy stated the images would be furnished.

Overview of Past and Current Studies (cont'd)

(Agenda Item 6)

Mr. Greene summarized the proceedings of the first meeting of the Air Quality Study Committee and asked Ms. Alanis to include information of the specific charge of the Committee from the Council on the next meeting agenda. He asked for final comments or questions from Committee members.

Mr. Ramon Alvarez asked what was required from the Committee in defining the scope of the study.

Ms. Alanis stated that what she envisioned was trying to harness the creative efforts of the people that respond to the RFQ and ultimately how they would come up with a scientifically sound assessment to answer the questions that are still unknown. She suggested that as the RFQ was developed if the Committee wanted to have a discussion of what the Committee was being asked to do, then the discussion could take place. She added that she had intended to leave it fairly open-ended for the respondents how they would handle the questions.

Mr. Greene stated that Mr. Alvarez's point was well taken and what he thought that what the objective was to be sure that the universe of questions and concerns from the community are built into this endeavor and to make sure that everything was considered.

Further discussion surrounding the RFQ process occurred and Ms. Alanis stated that the staff could provide examples of other professional services agreements and how they had been weighted, but what the Committee would be doing was evaluating their experience, past clients, etc., to figure out if they were qualified to perform requirements of the job. She assured the Committee that the next meeting agenda would contain items relative to this matter.

Next Meeting

(Agenda Item 9)

Mr. Greene advised that because the meeting had exceeded the time the room had been reserved for that the following agenda items would have to be moved to the next meeting agenda:

Item 7: Discuss Objectives of Study

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Item 8: Distribute Draft Request for Qualifications

Mr. Richard Greene informed the Committee that the next meeting would be held on April 14, 2010, at 4:00 p.m., at a location TBD.

Adjourn

With no further discussion, Mr. Greene adjourned the meeting for the Air Quality Study Committee, at 7:28 p.m. on Wednesday, March 31, 2010.

ATTEST:

Prepared and respectfully submitted by:

Ronald P. Gonzales, TRMC/CMC
Assistant City Secretary