



KELLY AFB
TEXAS

ADMINISTRATIVE RECORD
COVER SHEET

AR File Number 3278

Kelly Restoration Advisory Board

Technical Review Subcommittee

Meeting Agenda

June 11, 2002, 6:30 p.m.

Environmental Health & Wellness Center

911 Castroville Road

(previously Las Palmas Clinic)

- | | |
|--|----------------------------|
| I. Introduction | Dr. Gene Lené |
| a. Agenda Review | |
| b. Packet Review | |
| II. Zone 4 CMS Amendment Discussion | Mr. Doug Karas |
| III. Community Involvement Plan Update | Mr. Tim Sueltenfuss |
| IV. Response to TAPP Review of ATSDR Report | Mr. Scott Courtney |
| V. Administrative | Dr. Gene Lené |
| a. Spill Summary Report | |
| b. Documents to TRS/RAB | |
| c. Action Items | |
| VI. Agenda/Location/Date/Time of Next TRS Meeting | |
| a. Request for Agenda Items | |
| b. Environmental Health and Wellness Center/ August 13, 2002 / 6:30 p.m. | |
| VII. Adjournment | 9:00 p.m. |

June 2002

Draft
Meeting Minutes
Kelly AFB Technical Review Subcommittee (TRS)
Restoration Advisory Board (RAB)

11 June 2002
San Antonio Metropolitan Environmental Health and Wellness Center

Attendees

- Dr. Gene Lené, Community Co-Chair
- Ms. Esmeralda Galvan, Community RAB Member
- Mr. Robert Silvas, Community RAB Member
- Mr. Paul Person, Community RAB Member
- Mr. Scott Lampright, Bexar County Fire Marshall – Environmental Management
- Mr. Curt Pearson, San Antonio Metropolitan Health District (SAMHD)
- Ms. Linda Kaufman, SAMHD
- Ms. Kyle Cunningham, SAMHD
- Ms. Deborah Martinez, SAMHD
- Ms. Blanca Hernandez, SAMHD
- Mr. Doug Karas, Air Force Base Conversion Agency (AFBCA)
- Mr. William Ryan, AFBCA
- Mr. Don Buelter, AFBCA
- Ms. Leslie Brown, AFBCA
- Ms. Abigail Powers, Texas Natural Resource Conservation Commission (TNRCC)
- Mr. Mark Weegar, TNRCC
- Mr. Jerry Needham, San Antonio Express News
- Mr. Eddie Martinez, Booz Allen Hamilton (Booz Allen)
- Mr. Tim Sueltenfuss, Booz Allen
- Mr. Scott Courtney, Booz Allen
- Mr. Hugh Farr, Booz Allen
- Dr. David Smith, Smith and Associates (Facilitator)

The meeting began at 6:39 p.m.

Administrative

Dr. Smith introduced himself and outlined the agenda items for the evening's meeting. He asked the TRS to review the minutes with care given the fact that they were recently completed.

Mr. Karas began describing the news release that the AFBCA distributed the previous week. Some amendments were made to the Corrective Measures Study (CMS). The release stated that the CMS would be amended to provide the most current modeling data and correct an error on two charts in the CMS. He said the modeling actually showed that installing off-base cleanup systems would reduce the size of the groundwater plume by 70 percent in five years and by more than 99 percent in ten years. Mr. Karas stated that he had sent an amended news release to the members of the press who had received the initial news release. Ms. Galvan asked if the error reflected pumping and treating remedial systems. Mr. Karas characterized the error as a "typo" and said it was important for the AFBCA to get the revised modeling information out to the community. Mr. Karas continued his presentation with a brief discussion of the permeable

reactive barrier (PRB). Mr. Silvas asked if the PRB would be safe for children. Mr. Weegar replied that children would not be affected because the area will be sealed off as a construction site. Ms. Galvan stated that her concern was that the children not be affected adversely by breathing contaminated air from the barrier wall. Mr. Weegar replied that there should be no concern that for anyone would be harmed by breathing the air. Ms. Galvan, however, stated that she felt there was room for concern. She suggested the San Antonio Metropolitan Health Department perform a study prior to construction of the PRB. Mr. Paul Person then asserted that Mr. Sam Sanchez was no longer participating with the RAB. Mr. Pearson replied that Mr. Sanchez had in fact not resigned from the RAB, but that he was in Atlanta on official health department business. Mr. Silvas asked if Mr. Pearson was suggesting that Mr. Sanchez was not returning to the RAB. Mr. Pearson replied that he had not indicated that Mr. Sanchez would not return, rather that he could not speculate when Mr. Sanchez's business would be concluded. Mr. Weegar said that the PRB would be installed according to the preferential flow path. Ms. Galvan then asked if Mr. Weegar thought the PRB was an aggressive technology. Mr. Weegar stated his opinion that the PRB was an aggressive technology. Ms. Galvan later asked if any danger to the community existed due to the newness of PRB technology. She also asked if the PRB might be too aggressive a remedy for treating the contamination. Mr. Weegar said no. Ms. Galvan then asked if children would be safe in the area. Ms. Powers said that children would be safe. Ms. Powers added that a PRB could be thought of as similar to cheesecloth, but that in this case, it reacts with the groundwater contamination. Mr. Silvas asked if the PRB would be left in the ground or would be removed. Ms. Weegar said he saw no reason to remove the reactive wall. Ms. Silvas asked how everyone could be sure given that the technology is so new. Mr. Weegar replied that while PRBs are a new technology, they pose no danger because they are underground and no contaminants are released into the community. Ms. Galvan asked if the community would have air sampling to assure that there are no contaminants in the area. Mr. Weegar agreed and suggested that air sampling take place. Mr. Ryan said that long term air monitoring is being conducted in conjunction with the state. He added that during the construction of the PRB, there should be no reason for concern that vapors will come up through the ground because air-monitoring devices are installed during construction activities. Mr. Ryan cited Building 301 as an example. He said that while the health plan for the PRB had not yet been written, a large portion of that plan would be the protection of human health. Mr. Scott Lampright asked if there had been any air monitoring performed around the area. Mr. Ryan said air monitoring had been performed around the Quintana Road neighborhood. Ms. Galvan asked about the phytoremediation plan to plant Poplar trees. Mr. Weegar said that by the time the popular trees lay down their roots, any contamination they would encounter would have already diminished significantly. He added that given the extent of the cleanup thus far, planting Poplar trees would be superfluous.

Ms. Galvan said that she had been researching RABs, and that she understood that other RABs had been given Risk Communication Training and she questioned why this RAB had not been given the same opportunity. Mr. Person said the RAB had already been provided this training five years prior. Mr. Ryan offered to include the request as a TRS action item.

Community Involvement Plan Presentation

Mr. Sueltenfuss spoke briefly about the Community Involvement Plan (CIP) and characterized it and its function to the members of the TRS. He stated that the CIP was an evolving document comprised of comments from focus group sessions and interviews. Mr. Sueltenfuss added that the CIP was a public document that was scheduled for completion by the end of the year and that

it would serve as a roadmap for communicating the information regarding the environmental cleanup at Kelly.

AFBCA Response to Dr. Katherine Squibb's Review of ATSDR Report

Mr. Courtney gave a presentation, which described the AFBCA response to Dr. Squibbs report. Ms. Galvan asked if the AFBCA would be doing any further air monitoring. Mr. Courtney said the AFBCA was planning to conduct indoor air monitoring during the summer. Mr. Silvas asked if the modeling addressed single level housing. Mr. Courtney said the model assumes that houses are built on concrete blocks. He added that many of the homes were built using pier and beam. The space between a home built on a pier and beam style allows more air to circulate between the ground and the home above it, according to Mr. Courtney. Ms. Galvan asked if that was an assumption. She asked how that was known without first having studied the issue. Mr. Courtney said that studies exist on the relationship between home construction style and air circulation.

Mr. Silvas asked if there was any report or information regarding the fuel spill at Boeing on Kelly. Dr. Lené asked if Mr. Silvas was referring to the 1,500-gallon fire foam spill. Mr. Silvas replied that he meant a fuel spill. Mr. Silvas asked if the TNRCC was going to make the Boeing fuel spill report available to the TRS. Mr. Ryan said that the report was available in the information repository at the EHWC.

Ms. Galvan expressed concern that the Environmental Health and Wellness Center (EHWC) was not being publicized sufficiently among the community. She suggested a graduation reunion or a town hall meeting be held to inform the communities around the center. Ms. Kaufman stated that community members needed to come into the center and have assessments performed so that accurate determinations could be made. She added that if people do not come in, no disease cluster could be established. Ms. Galvan said she felt the center was not advertising itself well enough in the community. She suggested the center contact area churches. Ms. Kaufman said she and her staff had contacted 200 local community churches. Ms. Hernandez added that she had personally contacted numerous community members and followed up with fliers. Ms. Galvan said that many of the affected community members no longer lived in the neighborhood and that she would personally follow up on the issue of health assessments. Ms. Galvan also asked about the status of the health department's homegrown produce study. Mr. Pearson said that a briefing on the report would be available on the first of July. Dr. Lené said that at the August 13th TRS meeting there would be a TAPP report on the Zone 4 and 5 CMSs. Ms. Galvan also stated she thought that it was important that the tax value of homes be considered. She added that the board of realtors needed to be aware of the issue. Mr. Eddie Martinez said that these public meetings were being planned on Zone 4 and Zone 5 and that Bexar Appraisal District would be present to answer questions.

Action Items:

Risk Communication Training for RAB Community Members

Meeting adjourned at 8:34 p.m.

Community Involvement Plan Update



Air Force Base Conversion Agency -
Division Kelly



OVERVIEW

- Purpose
- Key Milestones/Schedule
- How will the information be used?
- Public Comment

Purpose

- To ensure that information about the cleanup is presented to the public in the most effective manner possible
- The CIP represents an opportunity for the Air Force to respond to community concerns while meeting regulatory requirements

Key Milestones Completed

- Prepared a Draft CIP Outline
- Developed a Focus Group Questionnaire
- Recruited Focus Group Participants
- Coordinated Logistical Arrangements
- Conducted Focus Groups
- Developed an Interview Questionnaire

Key Milestones In Progress

- Recruit Interviewees
- Conduct one-on-one interviews
- Prepare the Focus Group/Interview Report
- Conduct Debrief Session
- Research census and demographic information, background, history, and other topics
- Finalize CIP and present to the RAB

How will the information be used?

- A: The information will be incorporated into several sections of the CIP
 - Community Profile
 - Community Concerns (historical and present)
 - Communications Methods
- A: Several actions have already taken place
 - St. Mary's Library moved to Environmental Health and Wellness Clinic
 - Question & Answer debrief session scheduled

Public Comment

- Upon completion, the CIP will be presented to the RAB
- Opportunity for public comment was “front loaded” by soliciting, receiving, and analyzing comments from focus group and interview participants

Questions?

Headquarters U.S. Air Force

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Off-base Cleanup and the Media

Briefing to the TRS
11 June 2002



U.S. AIR FORCE

**U.S. AIR FORCE***In the News...*

- **“The crux of the Air Force plan involves letting nature take its course in cleaning up most of the plume.”**

- **“Air Force officials chose one of the least expensive options...”**

The Rest of the Story...

- **In some areas, walls filled with iron filings known as reactive barriers will be installed, which will turn the contaminants into carbon dioxide, water and salt. In other areas, the Air force will use wells to pump the water to a treatment plant. Once installed, these remedies will have cleaned up the contamination to 70% in 5 years, and 99% in 10 years.**
- **The proposed option will cost \$19.4 million and can be in place by 2004. Estimates on design and construction time for the most expensive plan have been up to 8 years.**

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U.S. AIR FORCE

In the News...

- **“Seventeen years after pollutants were discovered, the Air Force is proposing cleanup of the plume”**

- **“The community learned about the pollution in 1988. They’ve waited 14 years to do anything about the off-base pollution.”**

The Rest of the Story...

- **Off-base contamination was discovered in 1988 after which an investigation was begun to determine the plume size. The first system was installed in 1990.**

- **The Air Force has installed 14 systems on-base to keep the contamination from moving off-base. Data shows that already the plume has decreased in size.**

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U.S. AIR FORCE

In the News...

- "...the Air Force is proposing a \$19.4 million cleanup of the plume..."

The Rest of the Story....

- So far, the Air Force has spent close to a quarter billion dollars on the cleanup, and by the time the cleanup is complete, we will have spent a total of around half a billion dollars.

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AFBCA Response to Comments

**Review of ATSDR Petitioned Public Health Assessment
Kelly Air Force Base**

(a/k/a East Kelly Air Force Base)

Conducted by
Katherine S. Squibb, PhD
Program in Toxicology
University of Maryland, Baltimore

June 11, 2002



Presentation Overview

- Objectives
- Summary of ATSDR Report
- Summary of Dr. Squibb's Findings
- Summary of AFBCA Efforts to Date



Objectives

- Clarify the objectives, methodology, and conclusions of the ATSDR Public Health Assessment (PHA)
- Discuss Dr. Squibb and community concerns from the PHA
- Present AFBCA response and inform community of additional information and efforts



Summary of ATSDR PHA

- Purpose
 - Potential human exposure to substances related to East Kelly - using risk based screening levels
 - Community Health concerns
 - Recommend appropriate public health follow up
- Evaluated exposure to substances in soil, groundwater, and vapors
- Conclusions
 - Levels of contaminants detected are not likely to cause adverse health effects
 - Current site conditions do not pose a public health threat
- Recommendations - Continue monitoring



Summary of ATSDR PHA

Exposure Pathway Assessment

- Ingestion of groundwater from private wells used for drinking
- Inhalation of volatile organic compounds during use of shallow water for watering, washing, or showering
- Ingestion of contaminated soils
 - Storm Runoff
 - Airborne particles
- Inhalation of Vapors



Summary of ATSDR PHA

Direct Exposure to Shallow Groundwater

- Ingestion pathway was incomplete or insignificant
 - Not used for drinking
 - Contaminants not detected above health based levels
- Inhalation pathway from irrigation insignificant
 - Showering scenario evaluated as most conservative
 - VOCs not easily uptaken by plants



Summary of Dr. Squibb Concerns

Direct Exposure to Shallow Groundwater

- Need to evaluate additive effects of all VOCs present in groundwater
 - ATSDR did evaluate additive effects of contaminants
 - Not all VOCs detected in shallow groundwater are present at all locations at maximum concentrations
- Need to evaluate metals accumulation in soils from irrigation
 - Concentrations of metals would have to be well above MCLs to accumulate in soils
 - Not wide spread



Summary of ATSDR PHA

Ingestion of Contaminated Surface Soil (PAHs)

- Incidental ingestion pathway was unlikely to cause adverse health effects
 - Maximum on-site concentration used for evaluation
 - Concentrations above risk based comparison value
 - Below levels shown to cause adverse health effects in scientific literature



Summary of Dr. Squibb Concerns

Ingestion of Contaminated Surface Soil (PAHs)

- Additive effects result in overall risk of 1.2×10^{-4}
"Low increased risk"
 - Maximum "on-site" concentration used
- Inhalation of dust pathway not evaluated
 - Calculations using standard USEPA exposure assumptions indicates that inhalation exposures from windblown dust are only a small fraction (less than 1 %) of ingestion exposures
 - Inhalation pathway evaluated in Yard 13 closure report indicated risk to off site adult were well below ELCR and HI for non-carcinogen



Summary of ATSDR PHA

Storm Runoff

- No visible evidence of stormwater runoff is affecting the residential neighborhood



Summary of Dr. Squibb Concerns

Stormwater Runoff

- ATSDR calculations of health risk based on current concentrations
- Pre-remediation concentrations of metals, dioxins, and furans above background
 - Only arsenic detected above RRS No. 2 Ind
 - Metals and Dioxin/Furans below RRS No. 2 Ind
- Contaminants from runoff could have built up in Six Mile Creek
 - Assumes sediments in runoff
 - Storm Drain frequently flooded/scoured
 - Not frequented by public
- Site only cleaned to Industrial criteria
 - Arsenic cleaned to 20 mg/kg (current residential standard)



Summary of ATSDR PHA

Groundwater to Indoor Air Pathway

- No adverse health effects from exposures to VOCs detected or estimated in indoor air
 - Concentrations above risk based comparison value
 - Levels detected in soil gas not expected to cause adverse health effects even if inhaled directly
 - Predicted indoor air concentrations 60,000 times lower than concentrations detected in soil gas



Summary of Dr. Squibb Concerns

Groundwater to indoor air

- **Uncertainties in prediction of indoor air concentrations using Johnson and Ettinger model**
 - single versus multiple measurements at each location
 - under prediction of chlorinated volatile organics
 - sensitivity analyses of input parameters
- **Lack of carcinogenicity data for 1,2 DCE**
- **Lack of an assessment of Non-carcinogenic effects**
- **Limited number of soil gas wells**



Summary of Dr. Squibb Concerns

Groundwater to indoor air

- **Single measurements**
 - AFBCA has re-sampled and vapor concentrations lower
- **J & E Model under predicts Chlorinated VOC**
 - Fitzpatrick and Fitzgerald referenced
 - Study only states J & E over predicts for petroleum hydrocarbons
 - Does not claim J & E is not suitable for chlorinated VOCs
 - Does not evaluate cumulative risk



Summary of Dr. Squibb Concerns

Groundwater to indoor air

■ Sensitivity Analyses

- ATSDR did not discuss the input parameters
- If same as those used in Kelly J & E Model, not overly conservative
- If decrease depth to GW 15 to 10 feet, increase vinyl chloride concentration by 7%
- If porosity increased from 30 to 40 %, increase concentration by 85%
- Customized model using site specific parameters should be used
- Validate results with indoor air sampling



Summary of Dr. Squibb Concerns

Groundwater to indoor air

■ Sensitivity Analyses

- AFBCA used site specific data in the 1999 model, evaluated cumulative risk
- AFBCA conducted sensitivity analyses and used 2000 J&E
 - EPA lower toxicity values for Vinyl Chloride
- Sand (2 Order of Magnitude higher permeability) Vinyl chloride target concentrations rose from 1000 to 3400 ppb
- Measured soil gas concentrations all well below revised target concentrations
- No locations exceed risk of one in a million based on groundwater concentrations



Summary of Dr. Squibb Concerns

Groundwater to indoor air

- Risk from 1,2 DCE not included "absence of data"
 - Assessment of 1,2 DCE carcinogenicity not in scope of PHA
- Absence of assessment of non-carcinogenic health effect for 15 chemical in soil gas
 - "Non-carcinogen hazard quotients were tabulated for each chemical exceedence. The accumulative hazard quotient did not exceed 1." Appendix D J & E Model Assumptions
- Predicted indoor air concentration of 0.23ug/m³ for PCE exceeded ambient air guidelines for some states (0.01ug/m³)
 - Texas ambient air concentration guideline = 34ug/m³



Summary of Dr. Squibb Concerns

Groundwater to indoor air

- Siting of wells
 - Soil gas monitoring should occur at locations where maximum concentration of each VOC is detected
 - Soil gas monitoring was conducted at locations that exhibited the highest potential "cumulative" risk
- Absence of Vinyl Chloride
 - Occurrence of vinyl chloride is highly localized, sporadic, and often not present
- Child Health Initiative
 - Need to adequately evaluate child health
 - ATSDR claims they consider health impacts to children first



AFBCA Initiatives

- **Inhalation Pathway - PAHs**
 - Re-evaluation of exposure to off site receptors
 - More up to date exposure model
- **Storm Drain Pathway - Metals, Dioxin/Furans**
 - Conduct a focused risk assessment - recreational youth
- **Groundwater to Indoor Air**
 - Additional rounds of soil vapor sampling to evaluate seasonal variations
 - Sub-slab sampling recommended by COSA/Health/Zephyr





Air Force Base Conversion Agency

NEWS RELEASE

AIR FORCE TO AMEND KELLY OFF-BASE CLEANUP PROPOSAL

San Antonio, Texas – The Air Force Base Conversion Agency will amend the “Draft Final Zone 4 Corrective Measures Study,” which was sent to the Texas Natural Resources Conservation Commission on April 4, this year.

This study outlines the Air Force concept for cleaning up the shallow groundwater contamination that has moved from East Kelly to the south and east of the former base.

The amendments will be a supplement showing modeling data that more accurately predicts the ground water cleanup timeline, and a correction of two tables in the study.

New modeling, based on the most recent sampling data, indicates that installing the proposed off-base cleanup systems will reduce the size of the groundwater plume by 70 percent in five years and by more than 99 percent in ten years.

“This new information is based on what we actually know is happening with the off-base plume,” said William Ryan, the Base Realignment and Closure environmental coordinator for the AFBCA at Kelly. “The modeling in the corrective measures study was done on information we had in 1999 and 2000. The new modeling was done with the plume information we got in last year’s groundwater sampling.”

According to Ryan, the latest information allows for a more accurate prediction of cleanup times because it incorporates information on rates of reduction in the plume since the installation of two interim systems put in place to prevent contamination from moving off-base.

The first is a system of vertical and horizontal extraction wells inside the perimeter of East Kelly. The second of these systems combines a containment wall with several vertical extraction wells at the southern edge of main Kelly.

The supplement should be ready for submission to the TNRCC within a month.

The Air Force will also make an immediate correction to two tables in the corrective measures study.

Information on the size of the tetrachloroethylene (PCE) plume was incorrectly used to define the size of the trichloroethylene (TCE) plume. As a result, the cleanup times for the Air Force’s preferred plan were incorrectly summarized as reducing the TCE plume by 65 percent in five years, 94 percent in ten years, and by 99 percent in 15 years. The reductions predicted from this modeling, based on the 1999-2000 data, were actually 39 percent in five years, 78 percent in ten years, and 99 percent in 15 years.

“The error was in the creation of these two tables,” explained Ryan. “All the rest of the figures and data in the report are correct.”

The Air Force’s preferred option calls for installation of two permeable reactive barriers to the east of Zone 4, or East Kelly, and vertical groundwater extraction wells south of East Kelly.

June 4, 2002

No. DK1/2002-06-02

The permeable reactive barriers will be underground trenches filled with iron filings placed to intercept the groundwater flows. As water passes through the trenches, the iron filings convert the contaminants to carbon dioxide, water and minerals. This process takes advantage of the natural flow of the groundwater and treats it completely underground.

"Although we're amending the study, the preferred option doesn't change," said Ryan. "We feel this option is still the best one because it can be installed relatively quickly, with less disruption to the neighborhoods."

The Air Force will hold a 45-day public comment period this summer on the Zone 4 plan and on the Zone 5 cleanup plan, which outlines cleanup for off-base contamination north of Kelly along Growden Road.

This comment period will include three public meetings. The first meeting will be Saturday, June 15 from 11 a.m. to 2 p.m. at Dwight Middle School, 2454 West Southcross. The other two meetings will be held at Kennedy High School, 1922 South Gen. McMullen, from 6 to 9 p.m. on June 18 and July 25.

The Zone 4 and Zone 5 corrective measures studies are available at the San Antonio Central Library in the government documents section. In addition, community members who want more information on these proposals can call the Kelly public information line at 925-0956.

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Kelly-area cleanup is finally due

By Jerry Needham

San Antonio Express-News

Web Posted : 06/09/2002 12:00 AM

Seventeen years after pollutants were discovered in a shallow aquifer at Kelly AFB, the Air Force is proposing a \$19.4 million cleanup of the plume of contamination that has seeped under 20,000 homes south and east of the former base.

The long-awaited plan comes 11 months after Kelly closed, leaving many nearby residents fearful of the possible health effects of the 5-mile-long plume composed of degreasing agents and paint-removing solvents.

Air Force officials chose one of the least expensive options for cleanup of the neighborhoods affected by the decades of industrial work done at the former air logistics center.

The chlorinated solvents were spilled, leaked or dumped during aircraft maintenance activities.

The Air Force in late 2000 unveiled 10 options for cleaning up groundwater beneath the homes. They ranged from complex methods costing up to \$300 million to less aggressive strategies costing about \$15 million.

"We feel the preferred option is the best one because it can be installed relatively quickly, with less disruption to the neighborhoods," said William Ryan, environmental coordinator at Kelly for the Air Force Base Conversion Agency.

The crux of the Air Force plan involves letting nature take its course in cleaning up most of the plume.

The strategy, known as natural attenuation, eventually would result in the dilution, biodegradation and dispersal of the lower concentrations of chemicals farthest from the base, officials said.

Another part of the plan calls for two flow-through, underground walls made of iron filings 4 feet thick across the groundwater flowpaths of the highest concentrations of off-base pollution.

Chemical reactions within the approximately 750-yard-long walls would strip chlorine atoms from the solvents, creating carbon dioxide, water and chloride salts.

The final component would be the installation of four pump-and-treat wells south of the former East Kelly AFB. The wells would pipe pollutants to an East Kelly water treatment plant.

Many neighbors have been concerned that the Air Force solution for the entire off-base plume would be natural attenuation, what they call a "do-nothing" approach.

Armando Quintanilla, a former neighborhood resident who sits on the advisory board over Kelly's cleanup, said he believes the Air Force "could do much, much more" than it proposes.

Quintanilla said he'd like to see construction of more off-base flow-through walls. He'd also prefer that clean water from on-base treatment plants be reinjected into the shallow aquifer to help dilute pollutants.

"The community learned about the pollution in 1988," he said. "They've waited 14 years to do anything about the off-base pollution.

"Natural attenuation already is doing its job. The longer the Air Force waits, the less it has to do."

The Air Force has scheduled three public meetings on its proposed off-base cleanup plan.

The first is scheduled for next Saturday from 11 a.m. to 2 p.m. at Dwight Middle School at 2454 W. Southcross Blvd.

The other two will be from 6 p.m. to 9 p.m. on June 18 and July 25 at Kennedy High School at 1922 S. Gen. McMullen.

Air Force officials plan minor amendments to the proposal next month and hope to get the plan approved by the Texas Natural Resource Conservation Commission by year's end.

Scientific modeling done for the Air Force by independent contractors indicates that its remediation proposal would in 10 years reduce by more than 99 percent the size of the area where contamination exceeds drinking water standards, said Ryan.

"This is a pretty aggressive approach," he said. "Ten years for a plume this size, if we're successful, will be quite an achievement."

The models also show that 95 percent of the water would be of drinking quality after 15 years by doing nothing other than keeping existing source control measures in place, he said.

"Plans are to start construction in early 2003," Ryan said. "Sometime in 2004, we should have it all in place."

Half of the former base has been transferred to the city for reuse as KellyUSA, an industrial park. The other half was annexed to Lackland AFB.

The contamination is in a 25-to-40-foot-deep, unnamed aquifer. Community surveys show no one within the 12-square-mile area affected by the plume drinks from the aquifer.

Houses there are connected to the San Antonio Water System, which draws most of its supply from the Edwards Aquifer.

Natural attenuation has been used before as a cleanup measure at Kelly. In two much smaller off-base plumes, the Air Force is relying on the process.

Federal regulators since 1985 have sanctioned natural attenuation as a potential cleanup element, and it's being used at more than a dozen other U.S. military bases.

Its use is approved only if the contamination's source is controlled and the chemicals are expected to naturally break down within a reasonable time frame compared to other alternatives.

A corrective measures study conducted by Air Force contractors concludes that natural attenuation is working. But some community watchdogs say they want to analyze the proposal before signing off on it.

Both Quintanilla and George Rice, a hydrogeologist who also sits on the advisory board, said they haven't seen the Air Force's latest plan.

Rice said he would need "to look at the assumptions they used to come up with the cleanup times to determine if they are reasonable."

The goal, Ryan said, is to clean the groundwater to drinking water standards.

The four chemicals of concern in the off-base plume are trichloroethene (TCE), perchloroethene (PCE), dichloroethene (DCE) and vinyl chloride. The first two are solvents that were used at Kelly, and the others are breakdown products of the solvents.

Human exposure to any of the four can cause serious health effects, including cancer.

Those living over the contamination fear it's harming their health and property values. And residents have reported a variety of health problems ranging from headaches to joint pains to cancer. Federal and local health studies on the complaints still are under way.

Studies by the federal Agency for Toxic Substances and Disease Registry showed higher levels of certain diseases or conditions, such as liver cancer and birth defects, in areas around Kelly, but could not link the base to the ailments.

The environmental cleanup study supports officials' longtime claims that there's no threat to public health because there's no pathway for exposure to the chemicals. Air and soil samples taken over the plume show no chemicals in concentrations that could be harmful.

Assessments by the Bexar Appraisal District show that homes over the plume have steadily gained in value in recent years.

Cleanup plans for most of the remainder of the base have been and are being proposed separately from the off-base plan. Previous proposals resulted in the installation of 14 pollution-control systems involving more than 100 wells that pump up polluted water, which is treated to remove contaminants and then released into nearby creeks.

The already-in-place remedies to control and eliminate contamination sources on the eastern side of the base and on East Kelly will remain.

Among those are a 300-by-300-foot, nearly impermeable underground wall to contain a pool of solvents at the site of a former metal plating facility.

A well inside the wall has removed more than 2,000 gallons of pure solvents since March 1999 and two wells located "downstream" of the wall also are capturing and treating solvents, documents show.

The cost of the latest proposed remedy is estimated to be \$14.3 million for design, construction and management. The cost of operations and maintenance for 15 years, including sampling of 250 monitoring wells, is estimated at \$5.1 million.

The Air Force since 1986 has spent \$228 million on environmental cleanup at Kelly, and officials are projecting another \$277 million will be spent before the remaining pollution is cleaned up, around 2020.

The contamination does not threaten the Edwards Aquifer, which in that area lies below more than 1,000 feet of dense clay and rock.

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06/09/2002

FINAL PAGE

ADMINISTRATIVE RECORD

FINAL PAGE