KELLY AFB
TEXAS

ADMINISTRATIVE RECORD
COVER SHEET

AR File Number 3344

Kelly AFB
Restoration Advisory Board

Materials Package

For the
April 11, 2000
RAB Meeting

Kelly Air Force Base Restoration Advisory Board Meeting
11 April 2000 6:00 p.m.
Brentwood Middle School

Members/Alternates Present:

Community Members:

Dr. Gene Lené
RAB Community Co-Chair
Mr. Sam Murrah
Mrs. Dominga Adames
Mr. Paul Roberson
GKDA
Mr. Armando Quintanilla
Mr. Paul Person
Mr. Mark Puffer
Ms. Annalisa Peace
Mr. George Rice
Mr. Carl Mixon
Mr. Alfred Rocha

Public Members:

Mr. Pat McCullough
RAB Installation Co-Chair
Mr. Mark Weegar
TNRCC
Ms. Laura Stankosky
EPA
Mr. John A. Jacobi
TDH
Mr. Sam Sanchez
SAMHD
Mr. Edward Weinstein
SAWS

Members Absent Without Alternate:

Mr. Roy Botello
Mrs. Tanya Huerta
Brig. Gen. Robert M. Murdock
Mr. Kent Iglesias
Mr. Nicolas Rodriguez, Jr.

I. Call to Order

A. Mr. Pat McCullough, called the meeting to order at 6:10 p.m.

B. Mr. John Folk-Williams, RAB Facilitator, made a brief statement regarding the purpose of the meeting and the need to proceed according to the schedule, due to the full agenda. He also said neither the Air Force nor the Texas Natural Resource Conservation Commission (TNRCC) were prepared to discuss further the groundwater study results. He said discussion would occur at a later date after TNRCC has had adequate time to review the study.

1. Mr. Armando Quintanilla remarked the RAB should meet more often. He said more frequent meetings would allow the RAB to get to all the things it needs to address.

C. Mr. McCullough asked the RAB members to introduce themselves.

II. Administrative Topics

A. Action items from the last RAB meeting were reviewed.

1. Item 1. Mr. George Rice asked if there was a written report addressing the vinyl chloride gas study recently conducted in the neighborhoods. He was told the report was available in the public library and copies are currently being produced for distribution to regulators and RAB members.
2. Item 2. Mr. Rice stated he would like the Air Force to perform an analysis on his pump-treat-inject method equivalent to the analysis performed on the other alternatives in the *Zone 3 Groundwater Feasibility Study*. Mr. William Ryan, Kelly AFB, replied the alternative was evaluated for both Zones 2 and 3 and was screened out. Mr. Rice said it was a mistake to screen it out so early in the process.

3. Item 3. Mr. Rice asked for an update on what is known about fuel misting to date. Mr. McCullough, replied they did not know much about the particular phenomenon involved. The Air Force is currently seeking an expert to brief the RAB on what could have happened. Mr. Rice asked for this subject to be discussed at the next Technical Review Subcommittee meeting. Mr. McCullough agreed.
4. Items 4-7. No comments.

B. Member elections
1. Membership applications were voted on by the RAB. Current RAB member Mr. Paul Person requested to continue on the board. Mr. Názirite Pérez and Ms. Margaret Grybos were new applicants.
2. All applicants present were elected by acclamation.
3. Applicants Mr. Walter Martinez and Mr. Tony Martinez were not present. The RAB agreed to vote on their applications at the next meeting.

C. October Meeting Minutes
1. The minutes for the January 2000 RAB meeting were approved without change.
2. Ms. Grybos commented the questions should be phrased in the minutes exactly as stated and the answers should be provided immediately. She said it took too long for her questions to be answered.

III. Community Time

A. Ms. Grybos asked if Kelly AFB is part of Superfund.
1. Mr. McCullough, among others, told her no it wasn't a Superfund site.

B. She asked if other bases have problems similar to Kelly and if natural attenuation is being used at these bases.
1. Mr. McCullough replied many other bases have problems similar to, or worse than, Kelly AFB and natural attenuation is being used at some of those bases.

C. Ms. Grybos asked how long natural attenuation has been used, where it is being used, and is it being used in metropolitan areas, like Kelly AFB. She requested any associated health studies. She then asked if Kelly had applied a computer model to help them understand the contamination problem.
1. Mr. Ryan replied the Air Force is currently developing a model specific to Kelly AFB and it will be completed soon.

D. Mr. Nick Charles asked who is going to pay for the cleanup. He also expressed concern about the safety of children. He said test scores in the Edgewood School District are low and he and others believe it is because of the contamination. He asked if there was a study to determine if the contamination has caused low test scores.
1. Mr. McCullough said federal taxes will pay for the cleanup. Ms. Maria Teran-McIver, Agency for Toxic Substance and Disease Registry (ATSDR), said the health study has been completed for the off-base area and showed the contamination was not currently causing any health effects in the community.

E. Mr. Charles expressed concern the exhaust from increased jet traffic is polluting the air and causing cancer in residents.
1. Mr. McCullough replied the *Environmental Impact Statement*, currently underway, will cover all the effects of the increased jet traffic on air quality. Mr. Charles concluded by saying the government should tell the truth and not hide things from the citizens.

F. Ms. Christina Flores stated Kelly AFB should be responsible for cleaning up what it has caused. She said the contamination is more than an injustice, it is a crime. Excavations around Bldg. 171 were casing contaminated dirt and dust to fly. She asked what was being done to protect workers in Bldg. 171. She said people that work there are sick and

some are dying of cancer. Speaking on behalf of the Southwest Public Workers Union and the Committee for Environmental Justice Action (CEJA), they protest the Kelly RAB and Mayor Peak's economic development plan. She says the Mayor's plan does not allocate any money to clean up the contamination at Kelly AFB. Since the Mayor's plan did not take input from the community, it is an example of environmental racism, since 98 percent of the residents near Kelly AFB are Hispanic.

1. Mr. McCullough agreed that the Air Force should be, and is, responsible for cleaning up all the contamination it has caused. Ms. Annalisa Peace commented that the Union and CEJA should reconsider their stance on the city allocating money for the cleanup of Kelly. She said it the Air Force's responsibility, not the city's.

G. Mr. Ché Lopez suggested the RAB invest in translation equipment, so those who do not speak English can understand what's being said at the meeting. He said the Union was upset because a meeting was held without their knowledge with residents regarding the U.S. Environmental Protection Agency's (EPA) recent neighborhood sampling event. He asked the RAB to submit a formal complaint to EPA. He said EPA is not accountable to the citizens.

1. Ms. Laura Stankosky, EPA, said the meeting was held specifically for residents on whose property samples were taken. It was meant exclusively for them (some of whom did not wish their addresses to be made public), and provided an opportunity for those residents to ask questions in an informal setting. She said a presentation on the sampling effort was on the agenda following community comment period. (It was noted by Mr. Person that Mr. Lopez, along with several other attendees in his company, did not stay for EPA's presentation, and left the meeting immediately following the public comment period.)
2. Mr. Rice said the RAB should look at addressing the need for translators. Mr. Mark Puffer said it would be appropriate to seek a volunteer to provide translations for those who need it.
3. Ms. Dominga Adames, said there was a miscommunication between EPA and citizens regarding the time of the meeting. She said the meeting time was changed without sufficient notification to the invitees. Ms. Stankosky apologized for the miscommunication.

H. Mr. Frank Pena spoke at length about a number of issues, mostly to Greater Kelly Development Authority(GKDA) activities and policies. He expressed concern for the safety of the children in the neighborhoods affected by the contamination.

I. Ms. Rogela Galaviz presented her comments in Spanish through an interpreter. She said her daughter has sinus problems and nosebleeds she believes is due to the contamination, and it smells bad where she lives. She said her house has new pipes and the water has black specks in it, and the problem has gotten worse since a new water storage tank was installed near her home. She concluded by saying everyone needs to do their part to keep the environment clean.

IV. EPA Sampling Results

A. Contractors from EPA presented their report on the results of the community sampling event conducted in February 2000. The purpose of the sampling was to compare the results to past Air Force sampling results. They commented the sampling results were mostly similar to the Air Force's results. (See attachment 2.)

B. Discussion

1. Mr. Rice asked why lower detection limits weren't used. He said it would have been easy to ask the lab for lower detection limits. He said these detection limits are the type of limits you use when you don't want to find anything.

2. Mr. Mark Weegar, said the detection limits used in the test would not be acceptable to TNRCC for closing out a site.
3. Mr. Pena asked if inactive wells were tested.
   a) Ms. Stankosky said the RAB chose the 25 active wells to be sampled. (Note: No inactive wells were sampled. Inactive wells are permanently sealed and in order to sample inactive wells you have to redrill the well.)

V. Site S-4 Corrective Measures Study Technical Assistance for Public Participation(TAPP) Presentation

A. Mr. Patrick Lynch, Clearwater Revival Company, presented highlights from his report on the *Site S-4 Corrective Measures Study*. He reported all alternatives had similar clean-up times and so time was not an issue in selecting the best alternative. (See Attachment 3.)

B. Discussion

1. Mr. Rice asked if the Air Force intends to recalibrate the groundwater model, as was suggested.
   a) Mr. McCullough replied it has recalibrated the groundwater model.
2. Ms. Peace complimented Mr. Lynch for the presentation and expressed her appreciation to the Department of Defense for providing money for the TAPP program.

VI. Technical Review Subcommittee (TRS) Report

A. Dr. Lené reported on the TRS meetings held during February and March. The next meeting is set for 9 May 2000 at St. Mary's University. (See Attachment 4.)

B. Dr. Lené also reported the TRS decided to request a TAPP on the *Assessment of the Shallow Groundwater Zone in Southwest Bexar County*. The formal request for this and two other TAPP reviews will be accomplished at the May TRS meeting. (See Attachment 4.)

VII. Relative Risk Site Evaluation Briefing

A. Mr. Ryan gave a brief orientation on Relative Risk Evaluation to help the RAB understand the role this evaluation plays. The presentation emphasized that the evaluation's primary function is to help ensure that sites most needing cleanup are considered a priority when funds are short. It was pointed out that all Kelly AFB sites requiring cleanup have been fully funded and the cleanup is progressing. (See Attachment 5.)

B. Synopsis of each of site evaluation will be provided to each RAB member for their review and preparation for a discussion on the individual rankings. A discussion of the Relative Risk Ranking of the sites will occur at the next RAB meeting.

1. Mr. Quintanilla was upset he did not receive the relative risk information on all the sites as he requested. He was told that the information would be mailed to him and the rest of the RAB by the end of the week.

A 15 minute break was taken

VIII. Public Health Assessment TAPP Presentation

A. Dr. Squibb read her report. She reviewed what the ATSDR report covered and their findings. She had no significantly differences with their report. In summary she suggested more studies on: past and present air emission and its impact, and the health of on base workers. (See Attachment 6.)

B. Discussion

1. Mr. Rice asked if Dr. Squibb had discussed here findings with ATSDR. She responded she had and many of the comments are being incorporated into future studies.
2. Ms. Peace said this report should have been given earlier in the meeting. Mr. Puffer agreed, saying that the RAB needs to ensure the public is present to hear these presentations.
3. Mr. Person said it was the public's choice to leave or stay, and they chose to leave.

IX. ATSDR Briefing

A. Ms. Teran-McIver gave a presentation on ATSDR Community Assistance Panels (CAP) program. (See Attachment 7.) She concluded while a CAP may not be appropriate at this time, other more informal bodies could serve the people better, such as a working group or a RAB subcommittee. She said ATSDR is not authorized to organize a formal CAP until findings are brought upon Kelly. To date, this has not occurred.

B. Mr. Sam Sanchez said there are several initiatives going on right now that are addressing health concerns in the community. He said a community health forum sponsored by CEJA and San Antonio Metropolitan Health District (SAMHD) will be held in May to educate people on public health issues. He commented people are concerned about their health and have nowhere to go because many are without health insurance. He said the RAB should not divorce cleanup issues from health issues, because they are related. The RAB needs to address this. He said the RAB's decisions could affect thousands of people.

C. Mr. McCullough said the health issues are important and should be addressed. He said something should be set up that will be more long-term than the RAB will be. He said the RAB will be finished when the last remedy is in place (2004). He continued, health issues will need to be addressed long after the RAB is finished. Mr. McCullough said that he and Dr. Lené met earlier tin the day with SAMHD Director Dr. Guerra and discussed long-term plans. Mr. McCullough said the Air Force will support these plans.

D. Discussion

1. Ms. Teran-McIver was asked if ATSDR could fund a community forum. She said she did not know; however she would ask.
2. Ms. Teran-McIver was asked to restate the schedule for upcoming ATSDR reports. It was announced as follows:
   a) On-base Drinking Water: May 2000
   b) Soil Gas Off-Base at East Kelly: July 2000
   Past Air Emissions Off-Base: October 2000

X. Meeting Wrap Up

A. The next regular RAB Meeting is tentatively scheduled for July 18, 2000 at Dwight Middle School.

B. Meeting evaluation was conducted. See Attachment 8.

C. Suggested agenda items for the next RAB Meeting

1. Relative Risk Site Evaluation Review
2. Status of TNRCC review of the *Assessment of the Shallow Groundwater Report*
3. Community Action Plan Status
4. Presentation on how responsibility for spills are assigned by GKDA
5. Committee appointed to see how to appoint a sub-committee for health
6. Revisit meeting RAB frequency

D. Action Items for the next RAB Meeting (No Action Items were presented during the wrap up. The following were gleaned from the meeting notes and transcript.)

ITEM#	Requestor	Request
1	Mr. Quintanilla	He requested a copy of the executive summary of the *Vinyl Chloride Vapor Testing Report.*
2	Ms. Grybos	Are other bases in the country having basically the same problems as Kelly and are they using natural attenuation .
3	Ms. Grybos	Could I have list of the bases, how long they have been using natural attenuation, what are its steps and whether it is in a large metropolitan area and also the health assessments that went with these.
4	Ms. Grybos	Would like to see any study on monitored natural attenuation conducted on any area similar to San Antonio.
5	Ms. Grybos	Would like a report on the groundwater model.
6	Ms Flores	How are the employees being protected from the dirt that's out being captured, like the extra dirt from the digging going on *around building 171.*
7	Mr. Rice	What reference material show the possibility of stainless steel well screens causing high hits for Chromium. *For EPA contractors.*
8	Mr. Pena	Would like a cleanup timetable.
9	Mr. Quintanilla	Can ATSDR provide funding for forming a committee organization to look into health issues. *For ATSDR.*
10	Ms. Grybos	Are there any plans for a long term study of former and present employees of Kelly(AFB) to determine if they were exposed to contaminants and display any symptoms.

E. The meeting was adjourned at 10:35 p.m.

Motions/Resolutions

Motions

1. Motion was made to elect as RAB members by acclamation Mr. Person, Ms. Grybos, and Mr. Pérez.
   - Passed unanimously
2. Motion was made to approve the Jan 25, 2000 RAB minutes.
   - Passed unanimously

Attachments (* Items were provided at the meeting to all RAB members)
(# Items were provided in Meeting Materials Package)

1. Kelly AFB Restoration Advisory Board Materials Package *
   - Jan 25, 2000 RAB Meeting
2. EPA Sampling Briefing *
3. Site S-4 Corrective Measures Study TAPP Presentation *#
4. Technical Review Subcommittee Report Notes & TAPP Update
5. Relative Risk Site Evaluation Briefing *#
6. Public Health Assessment TAPP Presentation *#
7. ATSDR Briefing *
8. Meeting Evaluation Notes.

Kelly RAB Plusses & Wishes

April 200 RAB Meeting

Plusses	***Wishes***
– George cutting Peña off – Health discussion – TAPP – Citizen be able to speak in Spanish	– Stayed with agenda – Keep on time – Meeting 2x as often; shorter agenda – Separating public comments from business of meeting – Don't answer questions of community – comment only – Write questions – Use break to answer questions – Clarify purpose of meeting/RAB – Comment at end of meeting – Specific questions of presenter by community- pass to RAB member maybe – Interpreter – maybe volunteer from community – Definitions ahead of time – Stay on schedule – 9:30 exit – At beginning of each meeting – "this is who we are, what we do" – in both languages – Community Action Plan implementation – Telling people what they want to know – Treat them as people – respect – Put presentations at beginning – Handouts – separate

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KELLY AIR FORCE BASE

RESTORATION ADVISORY BOARD

Agenda

April 11, 2000

Brentwood Middle School, 1626 Thompson Place

Community Information Presentations:

Sampling Video — **5:00 - 5:50 p.m.**

I.	**RAB Meeting Convenes**	**6:00 p.m.**	**RAB Co-chairs:** Mr. McCullough, AFBCA; Dr. Lené, Community
	A. Welcome and Introductions		
	B. Meeting goals		
	C. Administrative Topics		
	1. RAB Member Packets		
	2. RAB Action Items/Responses		
	3. Election of new RAB members		
	D. Approval of Jan 25, 2000 Minutes		
II.	**Community Time**		**Facilitators** Ms. Linda Ximenes; Mr. John Folk-Williams
	A. Persons turning in a Speakers Card may have up to 3 minutes		
III.	**EPA Sampling Results**		**EPA Contractor**
IV.	**S-4 Corrective Measures Study TAPP Presentation**		**Mr. Lynch**
V.	**Subcommittee Reports**		**Dr. Lené**
	A. Technical Subcommittee Meeting Report		
VI.	**Relative Risk Site Evaluation Briefing**		**Mr. Ryan, AFBCA**
VII.	**Break**		
VIII.	**Public Health Assessment TAPP Presentation**		**Dr. Squibb**
IX.	**ATSDR Briefing**		**Ms. Teran-MacIver**
X.	**Citizens Comment Time**		**Facilitators** Ms. Ximenes; Mr. Folk-Williams
	A. Persons turning in a Speakers Card may have up to 3 minutes		
XI.	**Meeting Wrap Up**		**Facilitators** Ms. Ximenes; Mr. Folk-Williams
	A. Meeting evaluation		
	B. Collect Agenda Items for Next RAB Meeting		
	C. Review Action Items For Next RAB Meeting		
	D. Announce Date and Location for Next RAB Meeting		
	1. Date –18 July 2000		
	2. Dwight Middle School if available		
XII.	**Adjournment**	**9:30 p.m.**	

Action Item Index

1. **The health effects of exposure to vinyl chloride gas. And does the AF plan to address it and if so how The AF position on pump & inject at S-4.**
2. **The Air Force's position on pump, treat and injection at Site S-4.**
3. **Briefing request on aircraft jet engine fuel misting.**
4. **The Air Force answer on an on-base drinking water contamination incident from several years ago.**
5. **The Air Force answer on providing a study on monitored natural attenuation conducted an area similar to San Antonio.**
6. **The Air Force answer on testing the community for vinyl chloride exposure.**

25 January 00 RAB Action Item/Response

Item: 1

Description: Mr. Rice requested an explanation of Vinyl Chloride emanations from groundwater into homes.

Requester: Mr. Rice

OPR: Capt. Sassaman

ACTION: Provide written response.

Response: The results from field sample indicate that levels encountered just below the surface are substantially lower than the action levels previously calculated for chemicals of concern (COCs) and in fact, show no presence of vinyl chloride. The results of this sampling effort have been forwarded to the Agency for Toxic Substances and Disease Registry in order to determine health effects to residents.

The potential for residential indoor air inhalation risk due to vapors emanating from the Zone 4 and S-4 off-base plumes was evaluated using the Environmental Protection Agency approved Johnson and Ettinger (J&E) model along with focused field sampling.

Field sampling was completed accomplished on February 29 and March 1, 2000. The sampling wells were constructed to a depth of 5 feet below ground surface using 2 inch diameter stainless steel pipe and screen. Each well was located adjacent to an existing groundwater monitoring well, which was also sampled during this event, so that the results of the vapor sampling could be directly compared the concentration of groundwater at that location. The results at these locations were then used to fine tune the computer modeling used to generate area wide cumulative risk maps.

The J&E model (USEPA, 1991) was developed to perform a screening level risk assessment of the potential for indoor air inhalation from the volatilization of contaminants from soil or groundwater. The model simulates the volatilization and transport of the soil gas through the capillary and vadose zones, and finally through building foundations into indoor air. Concentrations in groundwater of chemicals of concern (COCs) within the plume that would yield a cancer risk greater than 1.0E-6 for indoor air inhalation were calculated using the J&E model. Subsequently, the cumulative risk at each monitoring well location within the plume was calculated, based on measured concentrations during the 1999 Basewide sampling event (i.e., BRA). The contours of incremental risk were plotted to show the areas of potential concern. The selection of the sample locations was based in part on the results from the Johnson & Ettinger Model.

Again, the presence of vinyl chloride concentrations was not detected in the residential areas. ATSDR will be sent the information as part of the Kelly Public Health Assessment.

25 January 00 RAB Action Item/Response

Item: 3

Description: Mr. Quintanilla requested a briefing on aircraft jet engine fuel misting.

Requester: Mr. Quintanilla

OPR: Mr. Ryan

ACTION: Provide a briefing .

Response: Mr. Quintanilla and Co-Chairman Dr. Lené agreed that this item would be tabled to a later date because of the following:

1. The number of pressing agenda items for the upcoming meeting
2. Fuel misting did not involve any cleanup action
3. Newer engines and aircraft have solved the issue for current operations
4. This subject was being looked at by ATSDR as a health concern,

25 January 00 RAB Action Item/Response

Item: 4

Description: The Air Force provide written information on an on-base drinking water contamination incident from several years ago.

Requester: Ms Grybos

OPR: Mr. Walters

ACTION: Provide written response.

Response: See the following letter.

DEPARTMENT OF THE AIR FORCE
HEADQUARTERS, SAN ANTONIO AIR LOGISTICS CENTER (AFMC)
KELLY AIR FORCE BASE, TEXAS

April 5, 2000

Ms. Peggy Grybos

Dear Ms. Grybos,

At the January 25, 2000 Restoration Advisory Board meeting, you asked the Air Force staff for information about a contaminated drinking water incident on Kelly AFB that you had heard about.

This incident occurred more than a decade ago. To the best of our knowledge after reviewing the incident, the drinking water reaching Kelly employees did not at any time exceed the maximum contaminant levels stated in the Safe Drinking Water Act.

The incident was repeatedly discussed in RAB meetings between January 1998 and January 1999. The main point of contention centered upon Mr. Rice's claim that, because some unknown but small amount of contamination went down the well, the base had contaminated the Edwards Aquifer. The Air Force continued to point out that water coming out of the Edwards Aquifer from that well and from another well only 50 feet away consistently met the appropriate standards in the months following the incident. Discussions are documented in the following minutes:

July 1998 RAB Minutes, Item VII B.
October 1998 RAB Minutes, Item VII.
January 1999 RAB Minutes, Item II D. 2.

We hope this information about previous RAB discussions of the Well No. 313 incident satisfies your concern regarding the issue.

Sincerely,

DICK WALTERS
Public Affairs Specialist

25 January 00 RAB Action Item/Response

Item: 5

Description: The Air Force provide any study on monitored natural attenuation conducted an area similar to San Antonio.

Requester: Ms Grybos

OPR: Mr. Walters

ACTION: Provide written response.

Response: See the following letter.

DEPARTMENT OF THE AIR FORCE
HEADQUARTERS, SAN ANTONIO AIR LOGISTICS CENTER (AFMC)
KELLY AIR FORCE BASE, TEXAS

April 5, 2000

Ms. Peggy Grybos

Dear Ms. Grybos,

At the January 26, 2000 Restoration Advisory Board meeting, you asked us to provide you any long term health studies associated with approved remedies that used Monitored Natural Attenuation, or MNA, in an urban area similar to South San Antonio. You were concerned that residents were facing a needless long term exposure to contamination for the duration of the remedy.

As we discussed by phone, a long term exposure to contamination and an approved MNA remedy are mutually exclusive. One of the basic requirements in any proposal for MNA is that no one is being exposed to the contaminants. If there is any pathway through which contamination could reach people and cause a risk to their health, some other remedy would be required. This is one of the many reasons why the Public Health Assessment by the Agency for Toxic Substances and Disease Registry is such an important project to both the Air Force and the community.

The regulatory agencies ensure that Monitored Natural Attenuation is only considered where human exposure to the contamination does not exist or would not create a health risk. For that reason, long term health studies that relate to an "exposed community" where the MNA process is being applied don't currently exist.

Although health risk is not associated with MNA, there may be other conditions surrounding use of MNA that you would want to research. I have enclosed EPA's list of sites where MNA remedies are in place and several documents that discuss particular sites where success has been measured. I hope these will be useful to you in evaluating the relative benefits and limitations of MNA as a possible final cleanup alternative.

Sincerely,

DICK WALTERS
Public Affairs Specialist

Atchs
1. Listing, Superfund Information System, 11/25/98.
2. Minutes, Cottage Grove, MN, City Council meeting, 0902/98.
3. EPA Region 5, NPL Fact Sheet, Bendix Corporation/Allied Automotive.
4. Natural Attenuation Study in Wisconsin and Illinois, Yang, Glasser, et al.

25 January 00 RAB Action Item/Response

Item: 6

Description: Would the Air Force provide testing for the community to determine if they were exposed to vinyl chloride.

Requester: Ms Grybos

OPR: Mr. Walters

ACTION: Provide written response.

Response: See the following letter.

DEPARTMENT OF THE AIR FORCE
HEADQUARTERS, SAN ANTONIO AIR LOGISTICS CENTER (AFMC)
KELLY AIR FORCE BASE, TEXAS

April 5, 2000

Ms. Peggy Grybos
Dwight Middle School
2454 W. Southcross
San Antonio, TX 78211

Dear Ms. Grybos,

At the January 25, 2000 Restoration Advisory Board meeting, you asked whether the Air Force would provide testing for residents and children to determine whether or not they had been exposed to vinyl chloride. More specifically, you were concerned that the natural breakdown of contamination in the shallow groundwater would release harmful amounts of vinyl chloride gas that could reach people living above this contamination.

At this point, none of the information we have compiled in our groundwater investigations led the Air Force or the local, state or national public health officials to consider human testing. However, the Agency for Toxic Substances and Disease Registry is performing further analysis on this issue. They had requested the Air Force perform additional sampling in certain areas to help ATSDR determine if vinyl chloride gas could impact people living in that area. Following the RAB meeting, ten test borings were completed in locations that the Air Force identified as the most likely points to find vinyl chloride gas. The results were provided to the Agency for Toxic Substances and Disease Registry. Our sampling resulted in readings of "non detect" for vinyl chloride at the eight sampling locations. An Air Force contractor had earlier predicted the amount of vinyl chloride present in the shallow groundwater. Their conclusion was the concentrations of vinyl chloride would be too small to reach the surface in quantities that would create a health risk to the residents.

Now, ATSDR will review and evaluate this information and provide their findings on whether harmful vinyl chloride gas poses a risk to humans. Therefore, ATSDR along with the local public health officials will determine whether local residents have been exposed to vinyl chloride gas. Testing of residents would be needed if the sampling data identifies the possibility of exposure.

We hope this information about our vinyl chloride sampling and the reasoning behind it satisfies your concern regarding the issue. Should you need information on the points of contact at the public health agencies, please let us know. We can provide you their names, addresses and telephone numbers.

Sincerely,

DICK WALTERS
Public Affairs Specialist

Kelly Air Force Base Restoration Advisory Board Meeting
25 January 2000 6:30 p.m.
Dwight Middle School

Members/Alternates Present:

Public Members:

Mr. Pat McCullough
RAB Installation Co-Chair
Mr. Mark Weegar
TNRCC
Ms. Laura Stankosky
EPA
Mr. John A. Jacobi
TDH
Mr. Sam Sanchez
Metropolitan Health District
Brig. Gen. Robert M. Murdock
SA-ALC/CV
Mr. Edward Weinstein
SAWS
Mr. Nicolas Rodriguez, Jr.
BMWD

Community Members:

Dr. Gene Lené
RAB Community Co-Chair
Mr. Sam Murrah
Mrs. Dominga Adames
Mr. Paul Roberson
Greater Kelly Development Authority.
Mr. Armando Quintanilla
Mr. John Herndon, Alt. for Mr. Iglesias
Ms. Tanya Huerta
Ms. Annalisa Peace
Mr. George Rice
Mr. Roy Huff, Alt. for Mr. Mixon
Mr. Roy Botello
Mr. Mark Puffer

Members Absent Without Alternate:

Mr. Juan Solis, Sr.
Mrs. Yolanda Johnson
Mr. Paul Person

I. Call to Order

A. Mr. Pat McCullough, called the meeting to order at 7:00 p.m.
B. Mr. McCullough asked the RAB members to introduce themselves.

II. Administrative Topics

A. Action items from the last RAB meeting were reviewed.
1. Mr. Armando Quintanilla said he did not receive an adequate response regarding his concerns about the relative risk rankings for Zones 4 and 5. He said he had asked for a presentation to the RAB regarding this subject. The letter he received from the Air Force on this matter did not answer his question.
a) A relative risk presentation will be added to the agenda for the April RAB meeting.
2. Mr. George Rice said the response to Action Item 5 did not answer his question regarding the Air Force's investigation into the possibility of vinyl chloride vapors seeping into people's homes.
a) The co-chairs agreed to address that question specifically at the next RAB meeting.
3. Regarding Action Item 6, Mr. Rice said he would like a specific answer to question, "What is the Air Force's position on using pump and treat and inject methods at site S-4?" He was assured an answer at the next meeting.

B. Election of New Community Co-chair
   1. Mr. John Jacobi, Parliamentarian, conducted the election of the new community co-chair and community members.
   2. The RAB community members nominated Dr. Gene Lené to another term as Community Co-Chair. As no other nominees were presented, Dr. Lené was named co-chair by acclamation.
   3. Member elections
      a) Membership applications were voted on by the RAB. Current RAB members requesting to continue on the board included Mr. Rice, Mr. Mark Puffer, and Ms. Annalisa Peace. Mr. Alfred Rocha was a new applicant.
      b) The applicants presented received unanimous approval by the board.
      c) Current member Mr. Paul Person, and new applicants Mr. Walter Martinez and Mr. Názirite Pérez were not present. The RAB agreed to vote on their applications at the next meeting.

C. October Meeting Minutes
   1. The minutes for the October 1999 RAB meeting were approved without change.

D. Mr. McCullough introduced the newly contracted facilitators who will assist with the RAB: Mr. John Folk-Williams, and Ms. Ruth Garcia. Ms. Linda Ximenes, a third member of the facilitation team, was introduced after the break.

III. Community Time

A. Mr. Chavel Lopez, Southwest Workers Union, read a prepared statement to the RAB. He stated the transition of Kelly AFB should take into account the community's interests and concerns. He called for a just transition, a timely cleanup and jobs for the people living in the area. Attachment 2 is the full text of his statement.

B. Ms. Christina Flores read a prepared statement indicating her concerns for the health of the people living in the area. She blamed the Air Force for health problems in her neighborhood, including her family. Attachment 3 is the full text of her statement..

C. Ms. Margaret Grybos, a teacher at Dwight Middle School, asked for a copy of any long term health study that showed where monitored natural attenuation worked in an area comparable to San Antonio. She also said she would like to see studies on hexavalent chromium. She also asked if the Air Force would provide a program to allow the people in the community to undergo the special tests required to determine exposure to vinyl chloride.

D. Mr. Frank Peña addressed property values in his comments. He asked if those leading the redevelopment of Kelly AFB had assessed the impact of the contamination to economic development. He commented the Air Force was not listening to the people's concerns, and therefore, not communicating. He said the RAB looks nice, but is doing little to solve the problems. He said he planned to sue the Air Force when the contamination reaches his property.

IV. ATSDR Update

A. Ms. Maria Teran-MacIver, Agency for Toxic Substances and Disease Registry (ATSDR), addressed the board regarding the status of the Public Health Assessment. (See Attachment 4.) She said ATSDR had not been able to find a relationship between current air emissions from Kelly AFB and illnesses in the area. They are still looking at past data to determine any relationship. She said they are also looking at any potential emissions from jet engines that could have exposed people to jet fuel. She encouraged the

RAB to seek out local researchers to aid them in their work.

B. Discussion

1. Mr. Quintanilla asked when the assessments would be completed.
   a) He was told the air assessment would ready in July, and soil/gas assessments by the end of the year.
2. Ms. Grybos asked why they didn't look the health records of workers on base.
   a) She was told that work was usually done by the Occupational Health and Safety Administration. However if workers were affected by contaminated drinking water on base then ATSDR may investigate.
3. Mr. Quintanilla asked if fuel misting from jets operated around the base would be considered.
   a) Yes. They did not have any information yet, but were expecting to get some.
4. Mr. Roy Huff suggested ATSDR expanded their comparisons to include other zip codes in the San Antonio area.

V. Redevelopment Update

A. Mr. Roberson summarized his presentation.

1. He said the vision of the Greater Kelly Development Authority (GKDA) is to develop Kelly into a world-class repair facility and logistics distribution center for the south-central U.S. He said KellyUSA is well on its way to that end, but there is still much to do.
2. He said the base needs to look more like an industrial park and less like a closing Air Force base. To achieve this and other goals will take a considerable investment from the community. But in the end, he said, there will be more jobs at KellyUSA by 2006 than there were in 1996.
3. He indicated that environmental cleanup was vital to the success of the redevelopment effort. GKDA is committed to ensuring the cleanup is completed and new tenants will adhere to environmental standards and regulations.
4. Once the transition is complete, all the land (with a few exceptions) will belong to the GKDA. He described the GKDA as a non-profit organization whose sole purpose is to redevelop Kelly AFB. Any revenues realized will be reinvested into the redevelopment effort, with the benefit being good-paying jobs for the people of San Antonio.
5. The runway will remain Air Force property. Zoning of any land adjacent to the runway would likely remain the same as long as the runway remains in use. He said zoning changes were beyond his control.

B. Discussion

1. A member of the audience asked about land use off the end of the runways.
   a) That is a zoning issue and as long as the runway is use it the zoning would not likely change.
2. Mr. Quintanilla asked about job growth.
   a) There are now 5,000 new jobs; well on the way to 9,000 by 2006. The Air Force is expected to keep 7,000 jobs at KellyUSA.

VI. RAB Workshop Results

A. Mr. Bob Ashcroft summarized the RAB workshops held November 18, 1999. (See Attachment 5.)

A short break was taken.

VII. Technical Review Subcommittee (TRS) Report

A. Dr. Lené presented the reports of the last three TRS meetings. (See Attachment 6.) He also presented a Technical Assistance for Public Participation (TAPP) Update. (See Attachment 7.)

B. Dr. Lené noted attendance of the TRS had failed to provide a community quorum at one meeting. He encouraged the members to attend the meetings.

C. Ms. Laura Stankosky, Environmental Protection Agency (EPA) Region 6, reported the soil and groundwater sampling events funded by the EPA are scheduled to occur February 8 and 9. She said the wells to be sampled were chosen by the TRS. Mr. Rice provided soil sampling locations in the North Kelly Gardens area. She said the RAB and the public were invited to observe the sampling events. She plans to notify the RAB of the exact details of the location and specific time the sampling will begin.

VIII. TAPP Contractor Presentation

A. Dr. Katherine Squibb's flight from the East Coast was cancel due inclement weather. Her presentation will be rescheduled.

IX. Zones Update

A. Mr. William Ryan was asked to give a brief explanation the Zone Update Posters on display. He presented the information and explained how each site was progressing along its regulatory schedule. He stated Kelly AFB has been provided sufficient funding to ensure all sites can be worked on simultaneously.

X. Community Comments

A. No audience members made comments.

B. Mr. Mark Weegar, TNRCC, asked representatives from ATSDR if they were planning to organize a Community Assistance Panel (CAP) in the area.

1. Ms. Teran-MacIver said ATSDR would look into the possibility of organizing a CAP here. She was asked to make a presentation at a future RAB meeting. She agreed.

C. Mr. McCullough announced a special RAB meeting would be held in February or March to present the findings of two important reports (due to be released in February). These reports address the off-base groundwater contamination and the Zone 5 Corrective Measures Study. He said the date and location of the meeting will be announced when the Air Force has a better idea of when the reports will be completed.

XI. Agenda Items for the Next Meeting

A. The next regular RAB meeting was tentatively scheduled for April 11, 2000 at Brentwood Middle School.

B. Suggested agenda items for the next RAB meeting

1. Relative Risk Site Evaluation Briefing
2. Dr. Squibb's TAPP Presentation
3. Mr. Lynch's TAPP Presentation
4. Fuel Misting
5. ATSDR Briefing on CAP
6. Community Member election

C. Action Items for the next RAB Meeting

ITEM#	Requestor	Request
1	Mr. Rice	Explain vinyl chloride emanations from groundwater into homes.
2	Mr. Rice	Air Force's position on pump, treat and injection at Site S-4.
3	Mr. Quintanilla	Aircraft jet engine fuel misting.
4	Ms. Grybos	Written information on a on-base drinking water contamination incident from several years ago.
5	Ms. Grybos	Would like to see any study on monitored natural attenuation conducted on any area similar to San Antonio
6	Ms. Grybos	Would like to see studies on hexavalent chromium.
7	Ms. Grybos	Would Air Force would provide testing for the community to determine if they were exposed to vinyl chloride
8	Ms. Grybos	What are the materials that are being hauled in the trucks lined with plastic. She reported she was told material came out when the plastic flaps came off.

D. The meeting was adjourned at 9:39 p.m.

Motions/Resolutions

Motions

1. Motion was made to vote on membership for Mr. Person, Mr. Martinez, and Mr. Pérez at the April meeting.
    - Passed unanimously
2. Motion was made to waive the two week applicant filing requirement for Ms. Peace.
    - Passed unanimously
3. Motion was made to approve the October 5, 1999 RAB minutes.
    - Passed unanimously
4. Motion was made to have a Relative Risk Site Evaluation Briefing at the next meeting.
    - Passed unanimously

Attachments (* Items were provided at the meeting to all RAB members).

1. Kelly AFB Restoration Advisory Board Materials Package*
    - Jan 25, 2000 RAB Meeting
2. Mr. Lopez's prepared statement
3. Ms. Flores' prepared statement
4. ATSDR Briefing Sheet*
5. RAB Workshop Summary
6. Technical Review Subcommittee report notes
7. TAPP Update
8. Zone Status poster copies*

January 25, 2000

To: Restoration Advisory Board (RAB)-Kelly Air Force Base (KAFB)
Fr: Chavel Lopez, Executive Director, Southwest Public Workers Union (SPWU)

Re: Kelly Air Force Base privatization and the environmental contamination

As the date nears in 2001 for the final closing of Kelly Air Force Base (KAFB) and the changing of guard to the City of San Antonio's Greater Kelly Development Authority (GKDA) we are still without a concrete commitment to clean the environmental toxic contamination caused by KAFB.

The goal for KAFB seems to be to pay 'lip service' to the clean up by arguing for natural attenuation (leave it alone to take care of itself). We cannot accept natural attenuation as an environmental clean up and therefore it is an unjust transition that has put the burden of development at the cost of the residents' health and sustainable livelihoods.

The Greater Kelly Development Authority is not going to assume the liability of paying for the environmental clean up, nor are the companies that are being sited at KAFB as part of the privatization goal of making a manufacturing, distribution, and global port of entry. ***So who is going to pay for the environmental clean up?***

Southwest Public Workers Union and its members that live around KAFB, will launch a campaign for Just Transition in environmental and economic development. We aim to balance the scale that is now tilted against the community. RAB in its San Antonio existence has served to 'soften' the KAFB image and the public campaign led by the Office of the Environment seems to have a mission of dis-information in regards to a firm and concrete commitment for environmenatl justice.

The whole design for the base closure was focused on economic development by bringing jobs to fill the void left by KAFB laying off 16,000 civilian workers. The design was never intended to be inclusive of the communities needs and proposals for a just transition. The workers were never included in the design of the plan for the development of a privatized KAFB. So, the whole design has been flawed from the very beginning.

The City for example, has pumped a lot of political muscle and money behind the privatization of KAFB, and in the running of the Greater Kelly Development Corporation. However, the City and KAFB have missed the boat by not including in its original design framework the participation of the workers to design a 're-training' program. One similar to the one just started by the area community colleges and Boeing, Lockheed, and Fairchild. Those worker-trainees will earn a salary while they train and will have a chance at being employed at the end of the training period. This model is a just transition model, the model for an unjust transition promoted by the City and KAFB puts the burden of the closing on the individual worker and his or her family. This model is not an asset but a liability.

KAFB, The City of San Antonio, and the Greater Kelly development Authority could have designed a "Just Transition" by having gotten community participation and to have taken the community proposal into the design of the model for a just transition. The model for a Just Transition could have included a health study, testing for lead, community health education, the dismantling of the jet fuel tanks, develop a 'green' buffer zone between the KAFB and the residents' homes. A Just Transition should include bottled drinking water for elderly and young people, and it should coordination with and between agencies to make them needed services accessible to community people. A Just Transition should include land for community centers, schools, and non-profit organizations. A Just Transition calls for buying out some of the resident homes that are high on the contamination list or proximity to sources of high contamination. A Just Transition should include medical attention and clinics at the service of the community.

Instead the community is left to bear the cost of the contamination and there is no environmental clean up plan in sight. The program pushed by RAB and KAFB is an Unjust Transition that unfairly puts the social, health and economic cost of the base closure on the backs of working poor.

We demand a Just Transition. We demand an environmental clean up now. We demand economic justice. We demand sustainable jobs, environmentally friendly and that incorporates the present civilian workforce at KAFB. ***We demand action now***.

Submitted By: Ms Florez **January 25, 2000**
To: Restoration Advisory Board (RAB)
Fr: Committee for Environmental Justice Action-SPWU

Hi,

I am here to tell you that as a community resident that living around Kelly Air Force Base (KAFB) has been a 'living hell'. What I am saying is that my family, particularly my young children all suffer from chronic health problems that I clearly associate with the chemical and toxic contamination coming from KAFB.

Our organization Committee for Environmental Justice Action (CEJA) a part of Southwest Public Workers Union has been fighting for over five years to make this contamination known to the public and to pressure KAFB and the City of San Antonio for a real clean up not a cover up. A couple of years ago we did a health symptom's survey that pointed out that people in North Kelly Gardens are very sick because of the environmental injustice that has been dumped on us unknowingly.

The air in our homes is poisoned with polluted air coming from the jet fuel storage tanks that has given me and my family and overdose of benzene-a known cancer causing agent. It is then **not** a mystery that even as 'light-duty' as the ATSDR health impact report was it ***pointed out several zip codes with high cancer cluster***.

Our soil is contaminated with higher levels of lead and other heavy metals, solvents and hydrocarbons. We all recall that a few years ago, a pool of black ooze was found by city workers while digging Quintana road to install a drainage system. That was an important incident because the lit was blown off the cover up of the contamination and how far it had traveled.

Now we know that the shallow underground aquifer is totally polluted with solvents whose name initials sound like an alphabet soup-PCE,TCE, DCE,Vinyal chloride. And what is the KAFB proposal for the clean up? **None**-they say that if they leave the contamination alone it will take care of itself. **This is not an environmental clean up plan**!.

What we need and what we want is a firm written commitment from the Air Force General in charge of KAFB and the Mayor of the City of San Antonio to sign an environmental clean up contract. A contact is a guarantee that the clean up will happen. Anything short of a concrete contractual commitment amounts to playing with words to win time and 'abandon' the base with all its toxic contamination.

The in-action of the Air Force and the City of San Antonio regarding the contamination is clearly a case of environmental racism. We demand environmental justice, clean water, air and soil and healthy families.

DRAFT
KELLY AIR FORCE BASE
RESTORATION ADVISORY BOARD
COMMUNICATION ACTION PLAN

OUTLINE

INTRODUCTION

This Draft RAB Communication Action Plan Outline is an outgrowth of a series of Workshops and Workgroup sessions held during late 1999 to discuss Kelly AFB activities relating to off-base contamination and to determine the most effective methods for sharing information about those activities.

While the original charter of the Workshop series included finding ways for Kelly to leverage its ongoing Community Involvement activities and existing outreach mechanisms, participants have to a degree enlarged the scope of their considerations. For this reason, it was considered necessary to perform a "reality check" and set out some of the perceived barriers to execution of the plan they envisioned. Some of these include:

No Leadership
Lack of Information
No Money
No Time
Other Priorities
Can't Agree

It was clear that the whole RAB must buy in on the plan, with a clear consensus on both the plan and on how to execute it. It was suggested a special session of the RAB or a RAB retreat might help in this regard.

Members of the Workgroup recognized that the key partner in the execution of the plan – the Air Force – has to see the value of the plan. It was also suggested that the existing Air Force community outreach plan must be changed to incorporate the RAB Action Plan. As expressed by the Workgroup, there must not be two plans, but one plan that everyone supports, which will bring the resources necessary to execute the RAB plan.

Once "completed," the RAB Communication Action Plan is intended to be a living document that grows and changes as needed.

MESSAGE ELEMENTS

What are the essential elements or key points of a message which should be communicated to area residents?

- Air Force takes and accepts responsibility
  - Air Force must admit and take responsibility for all of the contamination that it caused
    NOTE: Did Kelly contribute to or cause this problem?
  - A map/graphic which clearly shows those areas where the AF admits and accepts responsibility for contamination and those areas where it doesn't accept

  - Describe the magnitude of the contamination problems
- Address health concerns:
  - Protect human health and the environment
- Address the issue of property values
  - Will there be a buyout?
- Address the fears which residents have
- Communicators must agree on the message and be consistent in conveying that message:
  - Decide how do we deal with honest disagreements

MESSAGE ISSUES TO BE RESOLVED

HEALTH CONCERNS

- Only a few people are currently using the aquifer and only one family is drinking from it
- Vinyl chloride off gas that is a potential problem that is yet to be studied
- The Agency for Toxic Substances and Disease Registry (ATSDR) concluded that shallow groundwater is not a threat to health but they yet have to study groundwater east of the base
- Continue to support ATSDR efforts to identify community or regional health issues and work toward solutions
- Help citizens in the surrounding communities identify personal health problems and get medical treatment
- To protect human health and the environment, the contamination must be cleaned up as soon as possible
- We must tell people that there are some health concerns and we must use the results of the health assessment to tell people what the report says and what it doesn't say

PROPERTY VALUES

- Determine how and why property values have changed
- Inform property owners of their rights (e.g., class action lawsuit) and responsibilities (e.g., inform potential buyers of contamination) and their benefits under the Homeowners Assistance Program (e.g. how property values will be protected in the future as Kelly redevelops)

ADDRESS THE FEARS OF RESIDENTS

- Provide accurate information about water, soil, and air contamination
- Do a better job of understanding people's fears and the causes of those fears
- Address questions such as: Is it safe? Do I need to be afraid? Should I be concerned? How can I protect myself? How will this be monitored? What does the future hold for this area?

CLEAN-UP PLANS

- The contamination must be cleaned up as soon as possible to protect human health
- What are the specific cleanup plans and when will the cleanup be completed
- Can the contaminated off-base area be a NPL site?
- Where have cleanup efforts been focused and why?

DRAFT

COMMUNICATION TOOLS AND TECHNIQUES

What are the best methods/techniques we can use to ensure effective communication with area residents?

- Communication must be:
  - Clear
  - Three-way (up, down, and across)
  - Factual and accurate
  - Honest, to build credibility
- Be specific and clear about what the clean-up plans are and timelines for action
- Use plain and simple language
- Provide pictures, diagrams, models, etc.
- Talk with small groups
- Door-to-door contact:
  - Personal contact
- Literature:
  - Newsletter
  - Flyers
  - Church bulletins
  - Grocery store bulletin boards
  - Neighborhood newspaper inserts
- Consistent and timely communication
  - Must be accurate
  - Listen and prove that you are listening
  - Say what you mean; be sincere
- Elected Officials:
  - Educate and activate

ACTION STEPS

1. Identify elected officials to educate and activate. The workgroup suggested the following tentative list:

   U.S. Rep. Henry Bonilla – grew up in the neighborhood
   State Sen. Frank Madla
   U.S. Rep. Charlie González
   U.S. Rep. Ciro Rodríguez
   State Sen. Leticia Van de Putte
   County Judge Cindi Crier
   Commissioner Robert Tejeda
   Mayor Howard Peak
   City Councilman Raul Prado
   Former Councilman José Menéndez
   Councilman Rick Vasquez
   (The last three already involved in health aspects at Kelly)
   San Antonio River Authority Board
   Edwards Aquifer Authority Board
   (But what's the hook for recruitment?)

INVOLVING AREA RESIDENTS

What are the best techniques to ensure that area residents have the opportunity to become involved with the remediation process?

Priorities:

- Open up the BRAC Cleanup Team (BCT) to the public
- Go to the small neighborhood groups (such as churches). Instead of using OUR forum, use theirs.
- Re-think the public participation portion of the RAB meetings
- Rethink the physical set-up of the meeting
- Create atmosphere that encourages participation
- RAB should commission a community survey or poll to ask what would make area residents become involved
- Tours on and off base

Other techniques:

- Have RAB Members bring guests (personal invitation)
- Invite leaders to participate:
  - Neighborhood, civic, athletic, church, etc.
- Be attentive and respectful of opinions:
  - Respect agendas
  - Be responsive to inquiries

ACTION STEPS

1. Develop information about small neighborhood groups (Appendix A – Preliminary List of Community Churches)
2. Identify key community leaders
   - Get the Air Force letter (to area school administrators), video and mailing list.
   - COPS or existing community organizations or networks to tap into
   - Maverick Alliance
   - Mayor Peak's list of community leaders (for the affected area)
   - Boy Scouts
   - Little League
   - Get beyond the usual list of leaders and organizations
   - Get creative – Veterans, youth and fraternal organizations
3. Improve RAB Meetings
   - Designate a specific "Community Time"
     - There needs to be more of it.
     - Do it First.
   - Agendas are too long. We may have to have more meetings with shorter agendas.
   - Two-hour meetings with focused agendas:
     - Agenda with fixed times – and stick to it
     - Advance Agenda to public
     - Have RAB more involved with the Poster Session at the meeting.
     - A community hour – RAB with the public
     - Figure out how to accommodate those who want to speak (on the record).
     - Have clear rules of people speaking – like at City Council.
     - How to address questions from the audience which come up during the meeting?
       - Cards
       - Opportunity at the end

  - Citizen Comments (but save the answers until later) (Questions are to be answered in a timely manner, but not then.)
  - Consider "Citizens to be Heard" at end of meetings
  - RAB member name tags
  - Room set-up – so we can all see each other.
  - Clearer roles
  - Control (so the meeting works well)
  - Role of co-chairs – Facilitation of meeting with citizens
  - More information regarding timelines and progress
  - Look at different locations in the surrounding area. Look at ways to interact with specific areas e.g., poster contests.
  - Consider "themes" that address fears and placate theme.
  - More space at meeting for handouts and flyers from public groups.

4. Identify possible survey or poll questions or topics (Ask, rather than assume)
   - What might be some topics? (Directed toward finding out what would motivate people to become involved)
   - What is the best way to communicate with you?
   - List or identify information sources – which do you use?
   - What are your concerns or priorities?
   - What is their level or awareness (What do you know about ...?)
   - Where did you find out what you know?
   - Identify areas for educational efforts.
   - Neighborhood specific polls asking what people think the Air Force has done.

THE RAB

*What specific **ROLE(S)** should the RAB play to assist the efforts to communicate with and to involve area residents in the remediation process?*

- Be a community advocate and educator
- Be helpful
- Provide a forum to debate and discuss
- Assist and advise staff on how to communicate with and involve area residents

*What should be the specific **RESPONSIBILITIES** of individual RAB members to assist the efforts to communicate with and to involve area residents in the remediation process?*

- Commitment of time:
  - Attend meetings
  - Assist staff
  - Speak about the RAB and it's function in public settings/meetings
  - Be prepared
- Disseminate information
- Be open and honest about your personal and professional agenda
- Meet and greet attendees at public meetings, including at RAB Meetings
- Help/assist/get people involved

RESOURCE DEVELOPMENT

Available resources must be identified to help the RAB execute the plan and communicate with the community)

- Free Media
- Legislators' money for mailings
- HEB Community Involvement Bulletin Board
- AFBCA money/BRAC Funds
- Neighborhood newsletters
- Libraries and other institutions
- Ask the Air Force for money in addition to what it is already spending.
- Walmart and Sam's for specific in-kind needs
- Money collected in fines
- Kelly commercial tenants

TIMELINE DEVELOPMENT

Develop timelines: what needs to be done, and by when. The Workshop group suggested the following timeline:

First Quarter 2000

1) Train the messengers.
2) Finalize and deliver the message. Part of this is to define the outcome of successful delivery. What does success look like? That has to be measurable for the eventual year-end evaluation.
3) New RAB meeting – work on changing it.
4) Initial blitz to contact elected officials
5) Recruit more community members on the RAB. Better define what a community member is. Have the RAB think this issue through before implementing it.

Second Quarter 2000

1) Obtain resources.
2) Conduct the survey or poll.
3) Initiate outreach effort
4) Themes: Property values and Health Factor in the ATSDR report.

Third Quarter 2000

1) Deliver Literature
2) Educational efforts with the community, using the results of the survey or poll.
3) Themes: Property values and Health Factor in the ATSDR report.

Forth Quarter 2000

1) Evaluate: Are things working, or not?
2) Plan for 2001
3) Bring more community members onto the RAB.

January 25, 2000
Gene W. Lené, Chairman
Technical Review Subcommittee

TRS ACTIVITY REPORT

October 12, 1999

Ms. Beth Gentry of the SAIC presented a discussion of the Bioaugmentation Microcosm Study and Pilot Test being conducted at a site near Bldg. 360 in conjunction with the Remediation Technologies Development Forum.

No business conducted due to lack of quorum.

November 16, 1999

Mr. Darwin Ockerman of the USGS discussed the Provisional Interim Report of the "Gain-Loss Study of Lower San Pedro Creek and the San Antionio River from Mitchell Street to Loop 410, San Antonio, TX, May-September 1999," prepared by the USGS for Kelly AFB.

Mr. Mike Gonzales , Chief, Environmental Services Division, San Antonio River Authority, discussed the "Documentation Survey of the San Antonio River Aquatic Ecosystem from Alamo Street to Loop 410," an Informal Technical Information Report, Spring-Summer 1999, prepared by SARA for Kelly AFB.

No business conducted due to lack of quorum.

December 14, 1999

Dr. Katherine Squibb from the University of Maryland presented her preliminary review of the "Public Health Assessment, Phase I for Kelly AFB, San Antonio, Bexar County, TX ," a study conducted by the Agency for Toxic Substances and Disease Registry (ATSDR). Dr. Squibb's final report will be presented at the January 25, 2000 RAB meeting.

Mr. Russell Rohne from Kelly AFB Environmental Management provided an update on the status of the interim remedial action activities at Site S-1. Excavation of the contaminated soil had been completed, and a soil vapor and groundwater extraction system was being installed.

January 11, 2000

Mr. James Dwyer of CH2M Hill presented a report on the BRA Groundwater Recovery System Performance.

January 25, 2000

Gene W. Lené, Chairman
Technical Review Subcommittee

TAPP UPDATE

The TRS has been charged with oversight of the TAPP program, and our progress is summarized below.

Dr. Katherine Squibb of the University of Maryland with present her final review of the "Public Health Assessment, Phase I for Kelly AFB, San Antonio, Bexar County, TX ," a study conducted by the Agency for Toxic Substances and Disease Registry (ATSDR) at the January 25, 2000, RAB meeting.

On December 14, 1999, a pre-performance meeting was held with Mr. Patrick Lynch of the Clearwater Revival Co. to discuss his review of the "Zone 3 Groundwater Site S-4 Corrective Measures Study Addendum Draft Final" report. Mr. Lynch's review was due on January 24, 2000. Mr. Lynch will present his draft review to the TRS on February 8, 2000, and his final review to the RAB in April of 2000.

Pre-performance meetings are to be held with:

Mr. Jeffrey Neathery of Neathery Environmental Services in regard to a review of the "Remedial Investigation Addendum, IRP Zone 4, OU-2" report.

Geomatrix Consultants, Inc. in regard to a review of the "Zone 5 Corrective Measures Study, Final" report.

Dates for these meetings have not been set.

The following reports have been selected for future review.

"Site MP Draft RFI"
"Site S-8 Draft Final CMI"
"ATSDR Phase II Report (air emissions)"

Relative Risk Rankings

Applying Relative Risk at
Kelly AFB

What is Relative Risk?

A methodology used by DoD to evaluate the relative risk posed by a site in comparison to other sites

- Evaluates three separate factors
- Uses quantitative and qualitative criteria
- Includes stakeholder involvement

Background

- Developed to help DoD prioritize cleanup of contaminated sites.
- Original framework published in 1994 and revised in 1996.
- Applies to all DoD sites (with a few exceptions), including BRAC installations.

What Relative Risk is *not*.

- Not an assessment of risk at the site.
- Not the only factor used in setting cleanup priorities.
- Not a tool to determine an appropriate remedial action at the site.

Applying Relative Risk

- Used at HQ as a budgetary and evaluation tool.
- Used at base level as a budgetary and programming tool.

Setting Priorities

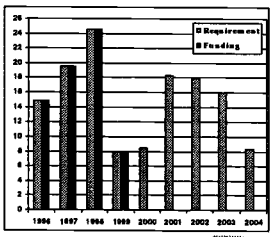
- Funding shortfalls drive the need to prioritize sites.
- Relative Risk an important factor, but not the only factor.
- Stakeholders and regulators involved in setting priorities.

Relative Risk at Kelly

- In 1995, Kelly selected by BRAC for closure.
  - 52 Sites Identified.
    - 35 Sites on property to be conveyed to GKDA.
    - 17 Sites conveyed to Lackland AFB.
  - Closure Date: July 2001
    - All remedies in place by 2004.

Kelly AFB Funding

- Since 1996, all Kelly restoration projects 100% funded.
- Expect similar funding levels for projects through 2004.



Next steps

- RAB to review data provided.
- Discuss details at a future time.
- Make recommendations to Air Force.

6

CRC's Evaluation

- Alternative Design
- Computer Modeling Assumptions
- Accelerated Biodegradation
- Verifying Model Results

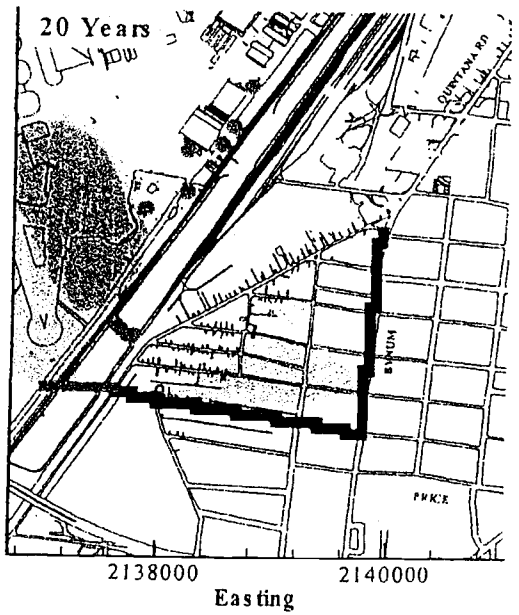
Alternative Analysis

1.	Pump and Treat (on-base)	28.5	25.7	$4,789,031
2.	Pump and Treat (500 ppb)	28.4	26.4	$5,843,214
3.	Off-base Bioaugmentation	28.4	25.4	$9,451,031
4.	Pump and Treat (MCL)	28.4	26.4	$6,722,460
5.	Off-base Reactive Wall	28.4	25.6	$12,740,331

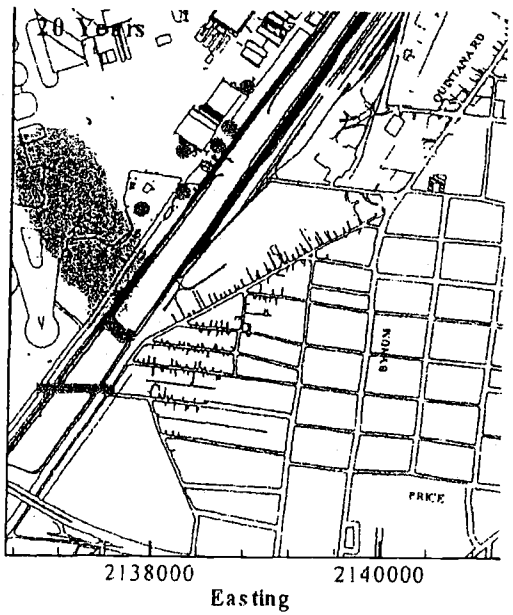
Selected Alternative

- Six on-base extraction wells
- Existing extraction trench
- Quintana Road Barrier
- New Horizontal Well

Alternative No. 1

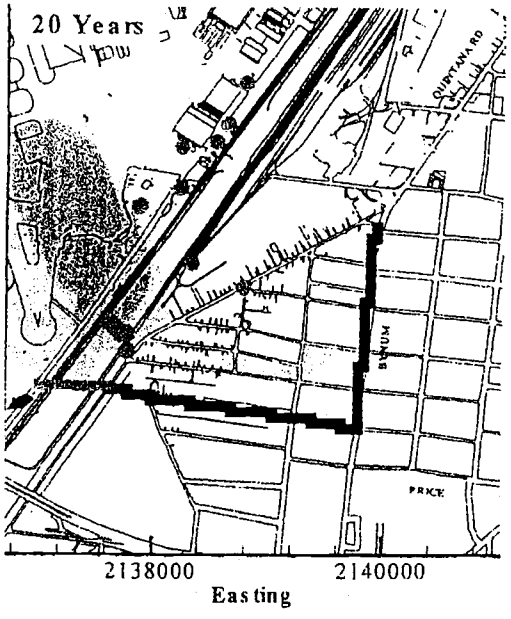


No Barrier

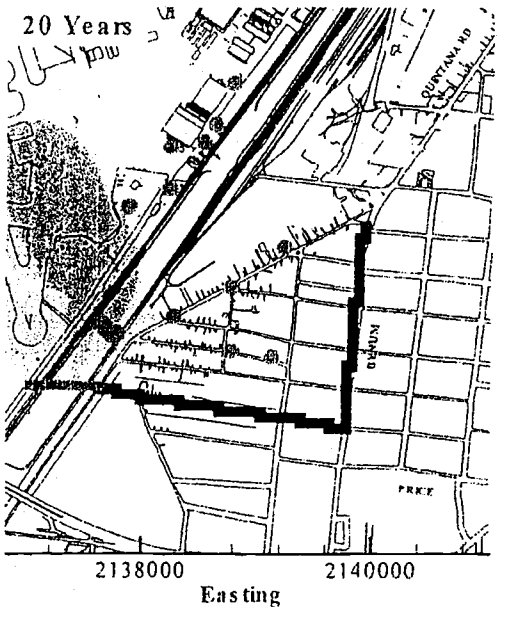


Vinyl Chloride Plume at 20 Years

Alternative No. 2

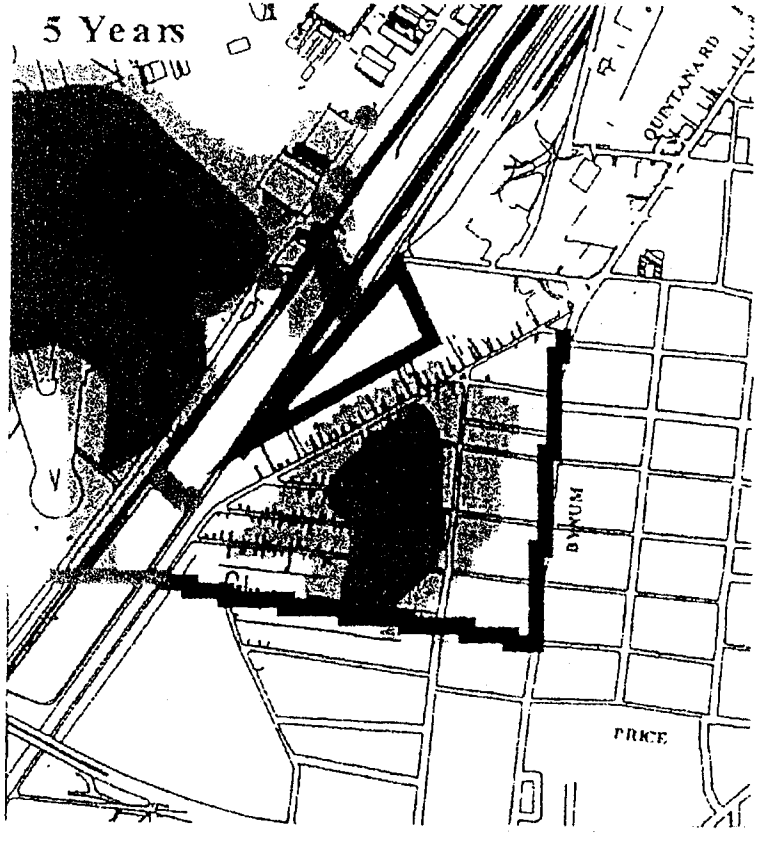


Alternative No. 4

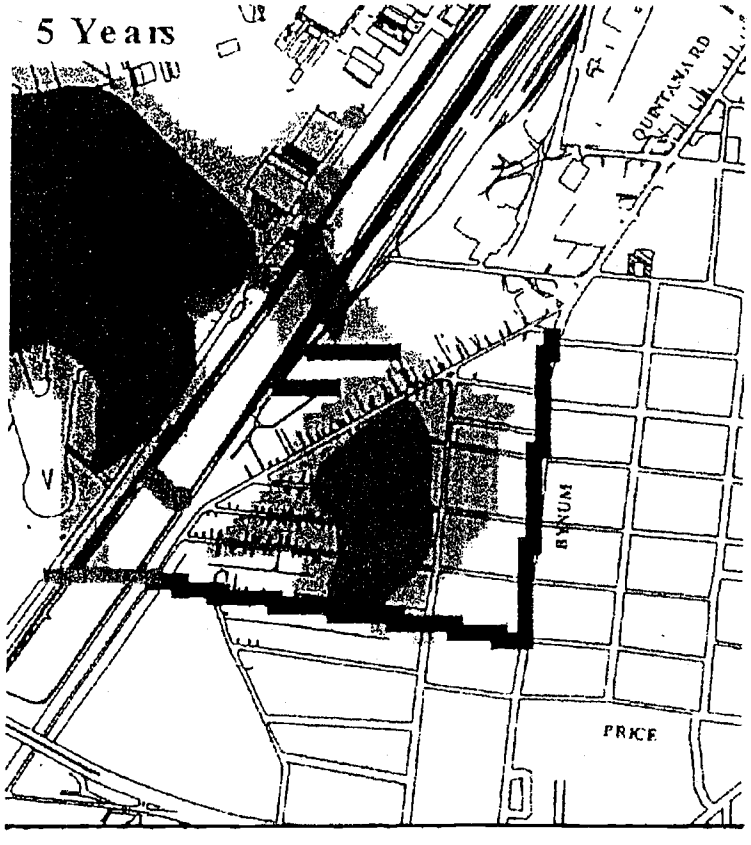


Vinyl Chloride Plume at 20 Years

Alternative No. 3

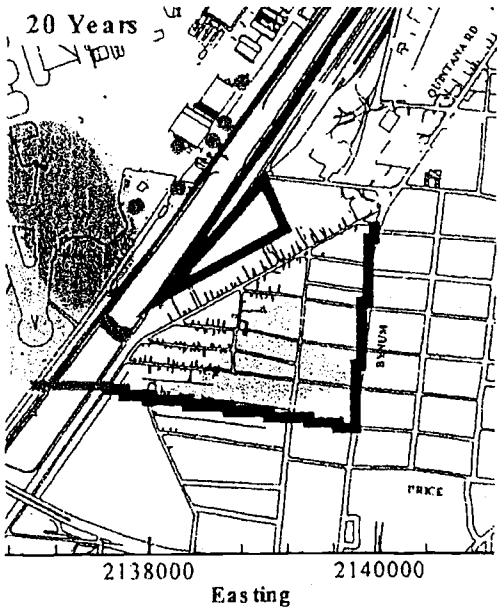


Alternative No. 5

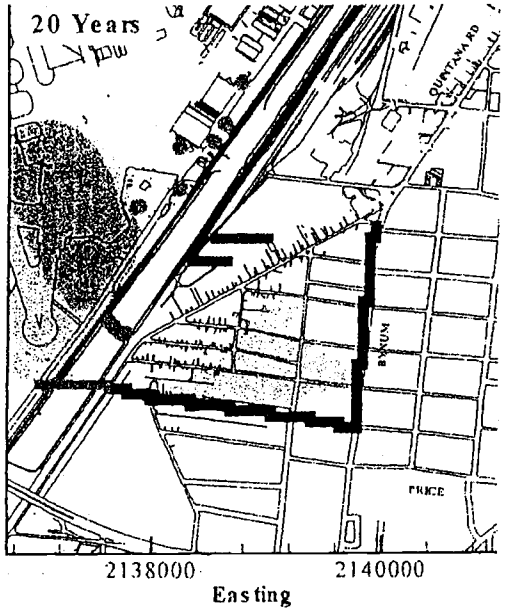


Tetrachloroethylene (PCE) at 5 years

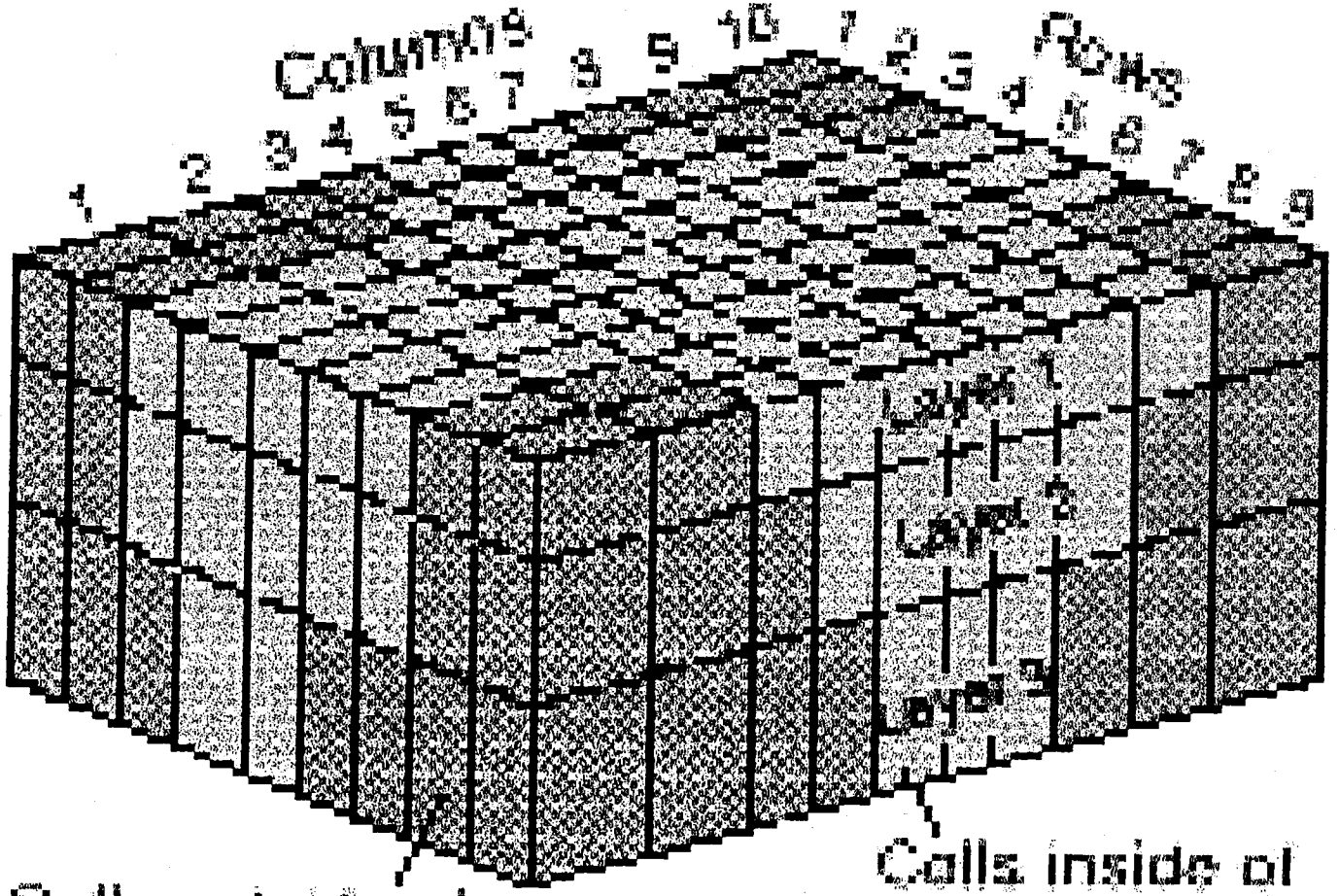
Alternative No. 3

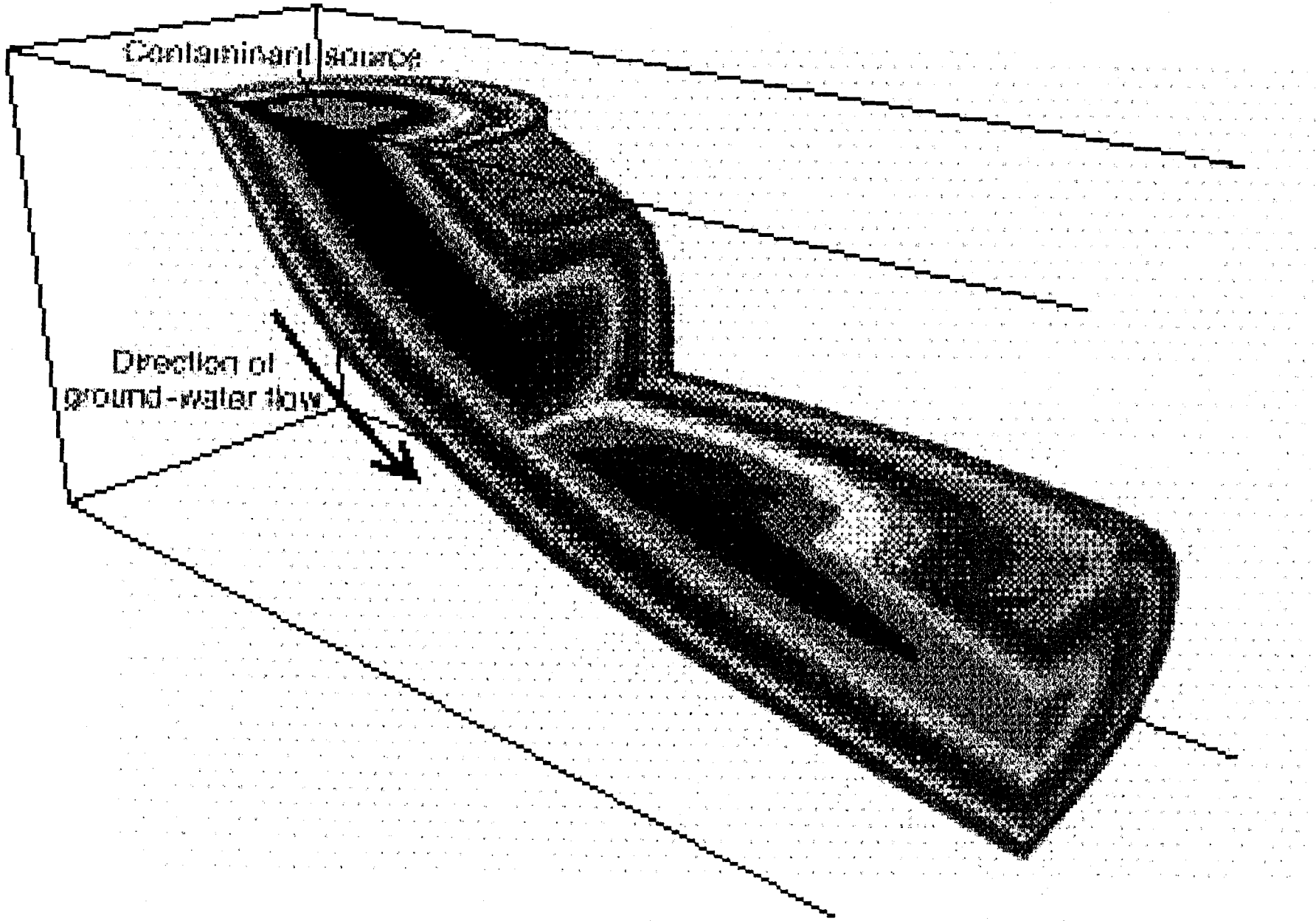


Alternative No. 5



Vinyl Chloride Plume at 20 Years


Columns
1 2 3 4 5 6 7 8 9 10
Rows
1 2 3 4 5 6 7 8 9
Layer 1
Layer 2
Layer 3
Cells outside of aquifer system
Cells inside of aquifer system


Contaminant source
Direction of
ground-water flow

Groundwater Flow Balance

	In	Out
Rainfall/Irrigation	445	0
Leon Creek	12	34
Extraction Wells	0	120
Model Boundaries	1,227	1,530
Total	1,685	1,684

Well Pumping Rates

(gallons per minute)

	Alt. #1	Sustain	Dewater
RW116	14.4	>40	40-70
RW117	6.8	>15	15-25
RW118	4.1	2-3	<4
RW153	26.4	10-15	<27
RW163	2.2	>40	40-50
RW1_1	5.7	not installed	
Trench (RW112)	2.4		
Horizontal Well	23.9		

Contaminant Mass Balance

(@ five years in kilograms)

	Pump	Decay	Other	Total
Initial Condition				385
Alternative No. 1	224	36	0	259
Alternative No. 2	227	32	0	260
Alternative No. 3	221	31	13	265
Alternative No. 4	229	32	0	261
Alternative No. 5	221	33	8	262
No Barrier	204	36	0	240

Retardation Factor

- Soil-water Equilibrium

$$K_d = C_{soil} / C_{water}$$

- Fraction Organic Carbon

$$K_d = f_{oc} \times K_{oc}$$

SW
NE
A'
A
Feet Above Mean Sea Level
Navarro Clay
Navarro Clay

Verifying Model Results

- Upgradient Sources Removed
- Significant Cleanup in 5 years
- Flow rates from individual wells
- Monitor Elevations across Barrier

Technical Review Report

ATSDR
Public Health Assessment, Phase 1
for
Kelly Air Force Base, San Antonio
Bexar County, Texas

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

Organization of Technical Review Report

- Summary of ATSDR's Objectives and Methodology
- Critical Review of ATSDR's Conclusions and Recommendations
- Recommendations for Additional Investigations

Objectives of ATSDR Phase 1 Health Assessment

- Perform a public health assessment of neighborhoods north and southeast of Kelly Air Force Base

- Evaluate citizen concerns regarding health effects of hazardous substances released from the base

What is Risk Assessment?

Risk Assessment is the procedure used to estimate the probability that adverse health effects will occur from exposure to a toxic chemical. This involves evaluation of:

- Route of exposure to the chemical
- Dose of the exposure (concentration and time)
- Relative toxicity of the chemical for the most sensitive effect in most the sensitive population (Dose/response curves)
- Characteristics of the exposed population

ATSDR Approach

- **Exposure Pathways**

  Are/have people been exposed to hazardous chemicals?

  If so, were they exposed to enough to make them sick?

- **Health Outcome Data**

  Is there evidence from local health data that diseases known to be caused by chemicals are present in higher than expected rates?

ATSDR Health Hazard Categories

Category	Definition
Urgent public health hazard	Short term exposures (<1 yr) that could result in adverse health effects
Public health hazard	Long term exposures (> 1 yr) that could results in adverse health effects
Indeterminant public health hazard	Level of health hazard cannot be determined because critical information is not available
No apparent public health hazard	Past, present or future exposures may occur but exposures are not expected to cause adverse health effects
No public health hazard	No evidence of past, present of future exposures, so no adverse health effects are expected

ATSDR Cancer Risk Categories

Category	Fraction	Exponential
No increased risk	Less than 1 in 100,000	$< 10^{-5}$
No apparent increased risk	1 in 100,000	10^{-5}
Low increased risk	1 in 10,000	10^{-4}
Moderate increased risk	1 in 1,000	10^{-3}
High increased risk	1 in 100	10^{-2}
Very high increased risk	Greater than 1 in 10	$> 10^{-2}$

Twelve Exposure Pathways

No Health Hazard

- Radioactive waste in landfills in Zone 1

No Apparent Health Hazard

- Thallium in drinking water
- Garden produce
- Fuel jettisoning
- Aircraft noise
- Soil gas
- Drinking water from surficial aquifer
- Leon Creek
- Current air emissions

Indeterminant Health Hazard

- Past air emissions
- Non-occupational on-base employees
- Soil migration

Exposure to Radioactive Waste in Landfill

ATSDR

Conclusion: No health hazard

Justification: No evidence that radioactive compounds are leaching from landfills

Comments: Should monitor sediments and fish tissue in Leon Creek for radioactivity

Exposure to Thallium in Drinking Water

ATSDR

Conclusion: No apparent health hazard

Justification: Well closed in 1993

Exposure for 3.25 years well below reference dose

Comments: Conclusion reasonable
Can be considered low priority concern

Garden Produce

ATSDR

Conclusion: No apparent health hazard

Justification: Exposure concentrations too low to cause health effects

Comments: Insufficient evidence that all garden vegetables would not contain concentrations of VOCs above levels of concern

No discussion of research on uptake of solvents associated with fuel (e.g. benzene) by plants.

Fuel Jettisoning

ATSDR

Conclusion: No apparent health hazard

Justification: No knowledge of emergency fuel Jettisoning near Kelly AFB

Comments: Possible past exposure since records not kept Until after 1973.

Fuel jettisoning no longer allowed; no ongoing exposures

Aircraft Noise

ATSDR

Conclusion: No apparent health hazard

Justification: Modeling indicates noise levels are below those expected to cause hearing loss.

Noise levels can be annoying, but should not be causing disturbances in learning at schools.

Comments: Recommend efforts continue to be lower noise levels, especially from site specific maintenance operations.

Should consider effects of current noise levels on learning and language development in preschool aged children.

Need to be concerned about noise levels on base.

Soil Gas

ATSDR

Conclusion: No apparent health hazard

Justification: Limited monitoring of homes in Quintana Road area indicating concentrations of VOCs and fuel components are below levels expected to cause health effects

Comments: Concentrations of volatile compounds in homes might be very site specific depending upon past JP-4 fuel spills.

Need soil gas monitoring in all neighborhoods around base to better characterize this potential pathway.

Drinking Water from Surficial Aquifer

ATSDR

Conclusion: No apparent health hazard

Justification: No contaminants migrated off base prior to time when all residents were provided drinking water from a non-contaminated aquifer.

Comments: Evidence to support time at which contamination moved off base is weak.

Need to monitor and protect public water systems in South Bexar County.

Leon Creek

ATSDR

Conclusion: No apparent health hazard

Justification: Swimming, wading and eating fish from off-base segments of creek not expected to cause health problems.

Concentrations of PAHs and VOCs in surface water, fish and sediments below levels of concern.

Comments: Need to continue monitoring for metals and VOCs in surface water since evidence of groundwater discharge to creek.

Concentrations of PAHs and PCBs in fish tissue a low level concern for occasional fisherman. Verify no subsistence fishermen in the area.

Current Air Emissions

ATSDR

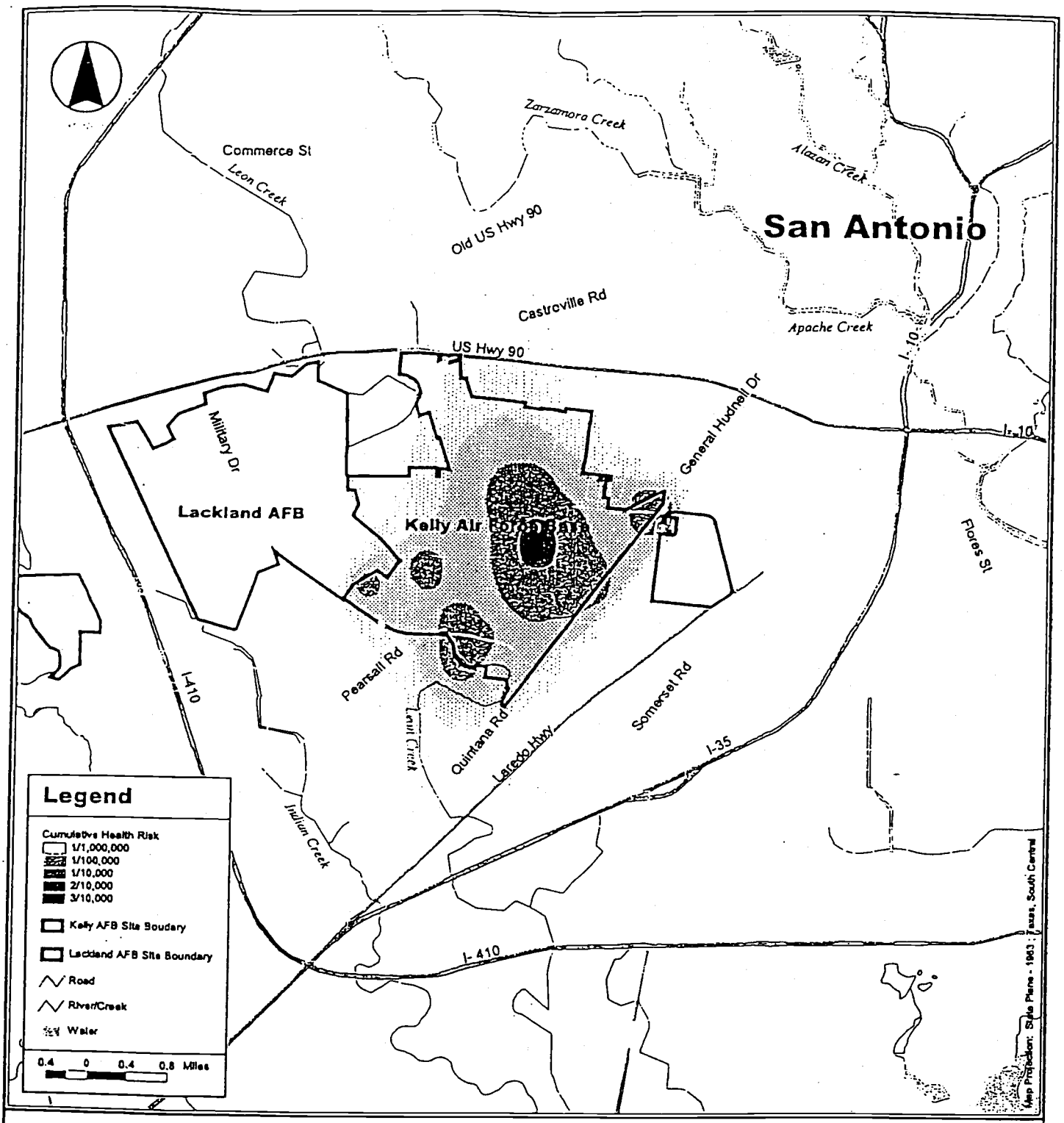
Conclusion: No apparent health hazard

Justification: Modeling studies indicate exposure concentrations too low to cause health effects.

Comments: Comprehensiveness of exposure modeling is not clear. Should include activities not requiring permits as well as permitted emissions.

Risk from hexavalent chromium should be examined further.

Were all chemicals present in air emissions included in final risk assessment? How were unknown or untested chemicals dealt with?

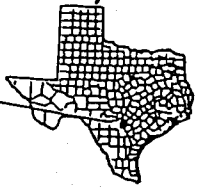


Cumulative Health Risk (Based on present exposure)

Kelly Air Force Base

San Antonio, Texas

CERCLIS No. TX2571724333



CUMULATIVE RISK MAP

Bexar County, Texas

SAMGIS

Base Map Source: 1996 TIGER/Line Files, Site Boundary Source: Kelly AFB, Emissions Location and Amount Source: Kelly AFB, Health Risk Source: ATSDR (DHAC). Emissions were modeled with EPA's ISCST3 model and inhalation slope factors were applied to output to arrive at health risk.

ALD 05131999 FINAL1 CUMRISK(B C P)1YR SITE MAP (8.5X11)

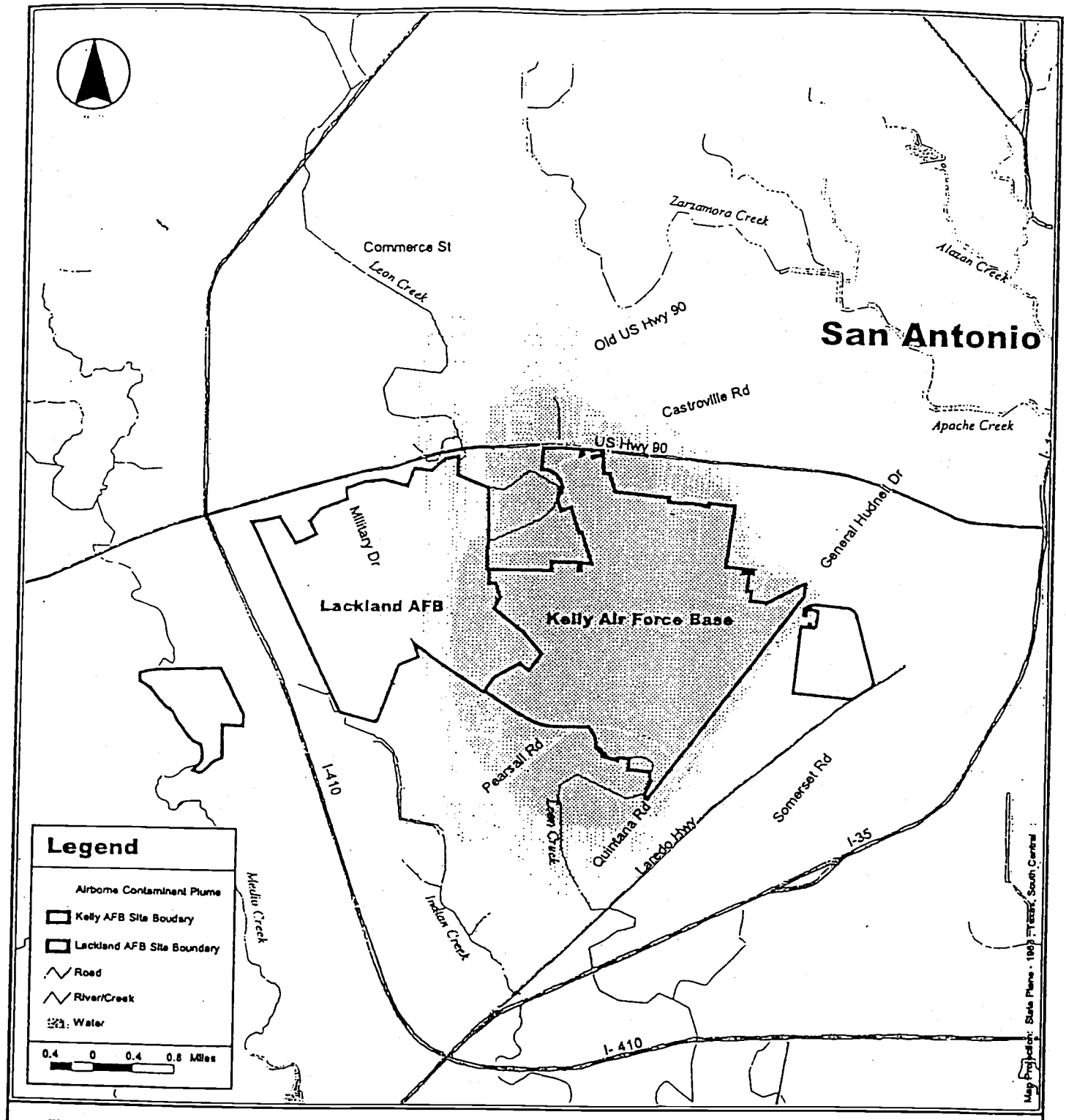
Past Air Emissions

ATSDR

Conclusion: Indeterminant health hazard

Justification: Data not available on past emissions in time for this report. Will complete this assessment and report results in Phase II.

Comments: Should raise questions similar to those for posed for current air emission assessment



Airborne Contaminant Plume (Estimated)
Kelly Air Force Base

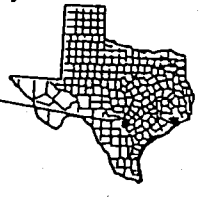
San Antonio, Texas

CERCLIS No. TX2571724333

CONTAMINANT PLUME MAP

Base Map Source: 1995 TIGER/Line Files, Site Boundary Source: Kelly AFB, Emissions Location and Amount Source: Kelly AFB, Health Risk Source: ATSDR (DHAC). Emissions were modeled with EPA's ISCST3 model and inhalation slope factors were applied to output to arrive at health risk.

Site Location



Bexar County, Texas

SAMAGIS

ALD 06131998 FINAL1 GENERAL AIR PLUME SITE MAP (8.5X11)

Non-Occupational On-Base Employees

ATSDR

Conclusion: Indeterminant health hazard

Justification: A more refined modeling study is needed to better characterize air concentrations of chemicals on-base.

Comments: Decision to conduct further assessments of exposures on base is well warranted based data presented in Phase I report.

Suggest air monitoring studies should be conducted on base to validate model and strengthen risk calculations.

Soil Migration

ATSDR

Conclusion: Indeterminant health hazard

Justification: Kelly AFB not likely to be a source of lead causing low test scores, however lead exposure may be a problem in the area so recommend follow-up by health department.

Comments: Could analyze for PCBs in soil in North Kelly Gardens neighborhood to determine whether contaminants migrated with soil from S1 area.

Monitor homes for VOCs and fuel components and assess potential for effects on learning.

Health Outcome Data

ATSDR Conclusions:

Further investigation of elevated cancers (liver, kidney and leukemia) and birth defects in zipcode areas near Kelly AFB is needed.

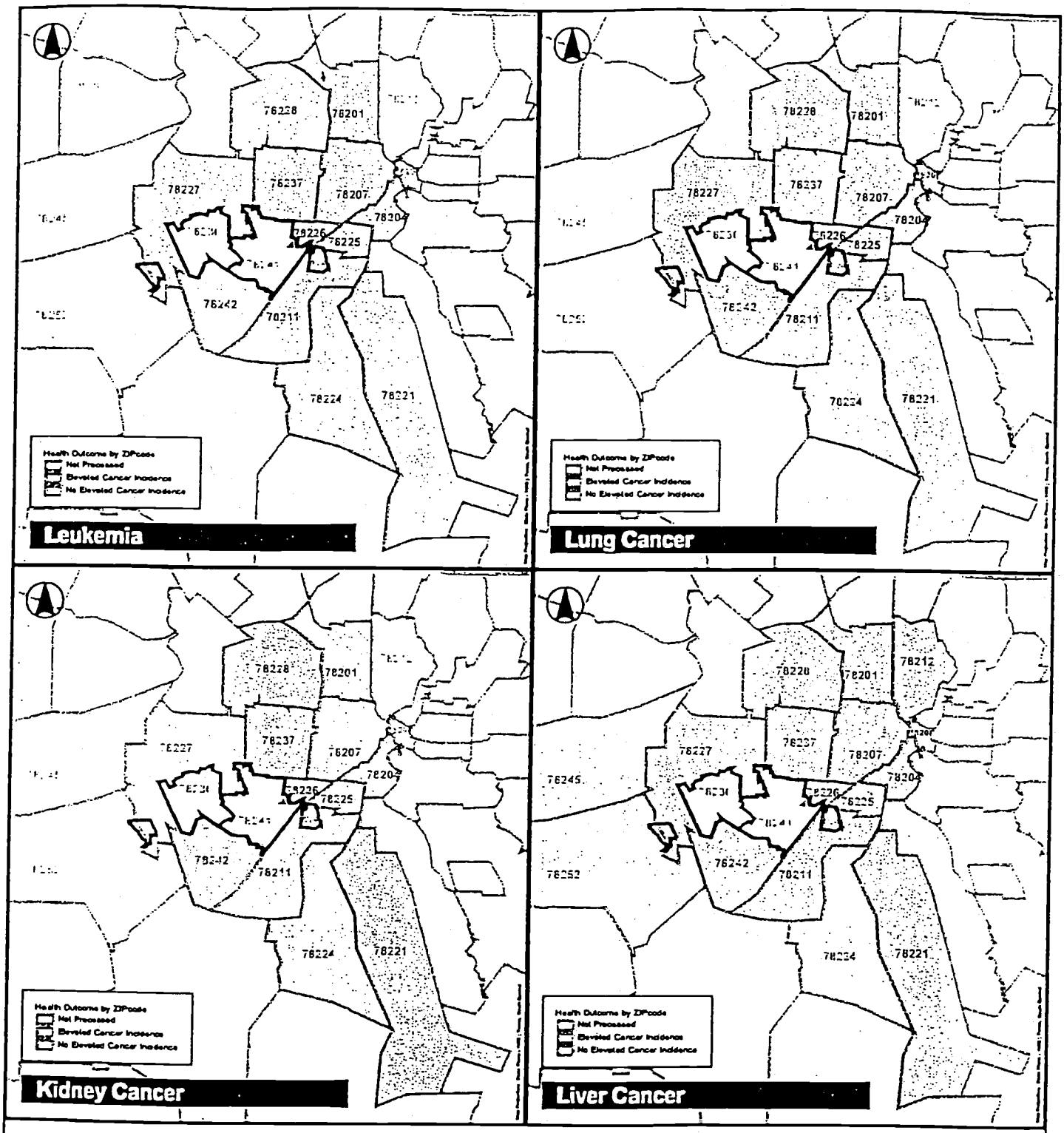
Results of follow-up will be presented in Phase II

Comments:

Follow-up investigations should include analysis of specific types of liver, kidney and leukemia cancers and association with specific populations within the zipcode areas.

Population distribution of concomitant risk factors such as chronic hepatitis C infections and genetic polymorphisms known to increase susceptibility to chemical carcinogens and birth defects caused by solvents should also be identified.

Figure 4



Cancer Health Outcome Data
Kelly Air Force Base

San Antonio, Texas

CERCLIS No. TX2571724333

HEALTH OUTCOME DATA MAP

Site Location

Bexar County, Texas

Base Map Source: 1996 TIGER/Line Files, Site Boundary Source: Kelly AFB; ZIP Code Boundary Source: ESRI, 1997;
Health Outcome Data Source: Cancer Registry of the Texas Department of Health, Incidence (statistically significant at 5% level)(1990 - 94)

ALD 07/13/1998

SAAGIS

Summary

- Past exposures from air emissions need to be determined to support evaluation of health studies in the communities.
- Calculations of present exposures from air emissions need to be tailored for specific communities around the base.
- People at increased risk of cancers and birth defects from chemical exposure due to genetic polymorphisms or other risk factors such as chronic hepatitis C infections need to be identified.

Summary (continued)

- Studies should be conducted to determine the relative impact of air emissions from Kelly AFB now and in the past on air quality in San Antonio relative to other emission sources.
- Chemical exposures and health assessments need to be conducted for on-base personnel. Noise exposure and auditory effects also need to be addressed.
- Off-base exposure to volatile chemicals from groundwater contamination needs to be better characterized, with special attention to identifying local fuel spills.

San Antonio ExpressNews
Jan 26, 2000 Page 1B

Study of Kelly toxins criticized

By Nicole Foy
EXPRESS-NEWS MEDICAL WRITER

A Boston toxicologist who reviewed a recent study of Kelly AFB contamination has found several weaknesses in the report.

In her findings, Dr. Katherine Squibb of the University of Maryland program in toxicology is suggesting further examination into key questions — including whether contaminants from the base played a role in sickening nearby residents.

Squibb's report was released Tuesday night at a regular meeting of the Restoration Advisory Board.

The board, which provides community input into the environmental cleanup of Kelly, is made up of local residents and activists, environmental regulators and local government officials.

Also during the meeting, residents voiced anger over the cleanup efforts and reports of clusters of disease around the base.

A group of about 10 people who live near Kelly held protest signs during most of the meeting at South San Antonio High School.

"Kelly AFB makes me sick!" one sign said. "Stop the cancer in our community!" another read.

Air Force officials in the past two years have discovered a plume of chemical contamination extending up to five miles south and east of the base in an unused, 20-foot-deep aquifer. One plan includes letting the pollution clean itself up through natural decay — a process projected to take 25.7 years.

Squibb was expected to explain her findings at the meeting, but severe weather in the East prevented her from attending.

In a written report submitted to the Restoration Advisory Board, which contracted the study, Squibb noted that the Agency for Toxic Substances and Disease Registry did a good job in its public health assessment of examining possible routes by which off-base residents could be exposed to chemicals from the base.

But she said more data, especially in the area of neighborhood health studies, need to be collected.

In studying areas around Kelly, the registry found significantly higher than average rates of leukemia, birth defects, low birth weight and cancers of the liver, lungs and kidneys after adjusting for race, ethnicity and age.

However, the toxic substances agency stopped short of saying pollutants from the base are to blame, noting many other factors could be involved.

The report is the first of three expected from the three-year study.

■ See EXPERT/8B

San Antonio ExpressNews
Jan 26, 2000 Page 8B

Expert sees weaknesses in Kelly study

■ Continued from 1B

Squibb was careful to note that the jury still is out on whether Kelly contaminants are to blame for clusters of disease around the base.

"The results presented in the Phase II and Phase III will be critical in establishing whether chemicals from Kelly AFB are playing a role in making people sick," Squibb concluded.

The second part of the toxic substance agency's work, focused on looking at the effect of past air emissions from Kelly activities, originally was to be concluded in March. But a delay in information on emissions from the Air Force has pushed that date to sometime in July, the agency said.

Another phase is focused on examining past soil and groundwater contamination in the East Kelly area. The toxic substance agency also is conducting a health study on potential past on-base drinking water contamination.

Maria Teran-MacIver, a community involvement specialist with the agency, said Squibb's report contained some sound recommendations.

"She has some good questions and our health assessor who did this study is going to be responding to those in writing," she said.

Also during the meeting, San Antonio Metropolitan Health District officials discussed local data that expounded on the toxic substance agency's findings regarding disease clusters around Kelly.

Dr. Fernando Guerra, director of the health district, pointed to statistics compiled by his agency that show conditions such as low birth weight and deaths due to leukemia and cancers of the liver, kidney and lungs are not restricted to the areas around Kelly AFB.

In some cases, the Northwest sectors of the city rank higher in such categories than the Kelly plume area, he said.

"The point is that these are conditions that are found in many sectors of the community," he noted.

Of particular concern, however, to local health officials are the high rates of deaths due to liver cancer among Hispanics around Kelly and within Bexar County, Guerra said. When compared with the rest of Texas, only Webb County, along the border, has higher liver cancer death rates among Hispanic males.

Sam Sanchez, director of the health district's environmental health division, agreed with Squibb's recommendations that further, long-term studies with real data gathering need to be conducted on Kelly contamination.

Some of Squibb's other findings include:

- The toxic substance agency's finding that air emissions from Kelly are not causing health effects is "not well-founded."
- The agency's conclusion that groundwater contamination did not migrate off base before all residents were provided public water from the Edwards Aquifer was based on "very minimal information."
- The toxic substance agency's conclusion that there were no apparent health hazards due to exposure to contaminated compounds in fruits and vegetables growing around Kelly was based on a single, limited scientific study that looked at only one chemical contaminant compound.
- The agency reported there was no knowledge of past or present emergency jettisoning of fuel near Kelly. But Squibb said it is, in fact, "difficult to establish" whether the practice took place in the late 1960s and '70s, since records were not kept until 1973.
- Squibb recommended a complete soil vapor study of the neighborhoods surrounding Kelly as a good idea to effectively screen the area for off-site contamination.

nfoy@express-news.net

Air Force unveils Kelly cleanup plan

■ Continued from 1A

released into Leon Creek.

Although about 80 percent of the contaminants would be removed within 10 years, it could take up to 30 years to attain drinking water standards, said William Ryan, chief of environmental restoration at Kelly.

The Air Force has acted on a recommendation for a polluted soil site near the northern base boundary. It disposed of 1,700 cubic yards of contaminated soil and installed wells to extract soil vapors.

The service has spent $159 million since 1986 on cleanup at Kelly and projects a total of $346 million will be needed to complete the effort.

Despite the Air Force's actions, the president of a group representing tainted Kelly-area neighborhoods said many residents believe their health has suffered from the pollution and that the service's claim it's not responsible is unacceptable.

"We've waited for years for them to tell us what's there and to clean it up," said Yolanda Johnson, president of Community Health and Environmental Justice. "Now they say it's not theirs. It makes me very upset. Somebody's responsible, and we want it cleaned up."

A spokesman for the Texas Natural Resource Conservation Commission, which oversees base cleanup, said the agency has not yet received or reviewed the plan.

"The agency's position is that Kelly is responsible for all the contamination in that area, and we're going to have to be convinced otherwise and the evidence is going to have to be compelling," agency

detailing why the Air Force is not responsible for the North Kelly Gardens plume.

"If further study indicates that the Air Force caused the problem, we will expand our plans and address it," he said.

McCullough said local officials and residents must decide if the shallow aquifer should be managed as a source of drinking water.

No one now drinks from that aquifer. Preliminary results from a continuing health assessment by the federal Agency for Toxic Substances and Disease Registry indicate that health woes in the area, including liver cancer and birth defects, are not linked to Kelly.

The latest plan is the fourth of five that will address cleanup of polluted groundwater, and the plumes addressed in this study do not tackle a massive plume stretching up to five miles from the east side of the base.

The cleanup plan for that plume, which lies under thousands of homes, won't be completed until year's end, officials said.

The shallow groundwater — up to 40 feet below ground level — is separated from the Edwards Aquifer, the city's drinking water supply, by 1,000 feet of clay and is not threatened by the pollution, officials say.

The primary pollutants in the water are solvents and heavy metals.

Mayor Howard Peak, who recently was briefed on the issue by the Air Force, said officials — working with the community and experts — need to address several questions.

The first, he said, is if the water is a health threat or a potential drinking water source. The second

Base plan targets pollution

By Jerry Needham
EXPRESS-NEWS STAFF WRITER

The Air Force is proposing a $7.8 million plan to clean up a pocket of soil pollution and 10 mostly on-base plumes of groundwater pollution in an area covering more than half of Kelly AFB's 4,600 acres.

But officials said they don't plan to clean up an 11th plume, which lies under the North Kelly Gardens neighborhood north of the base, because the source of that pollution appears to originate elsewhere.

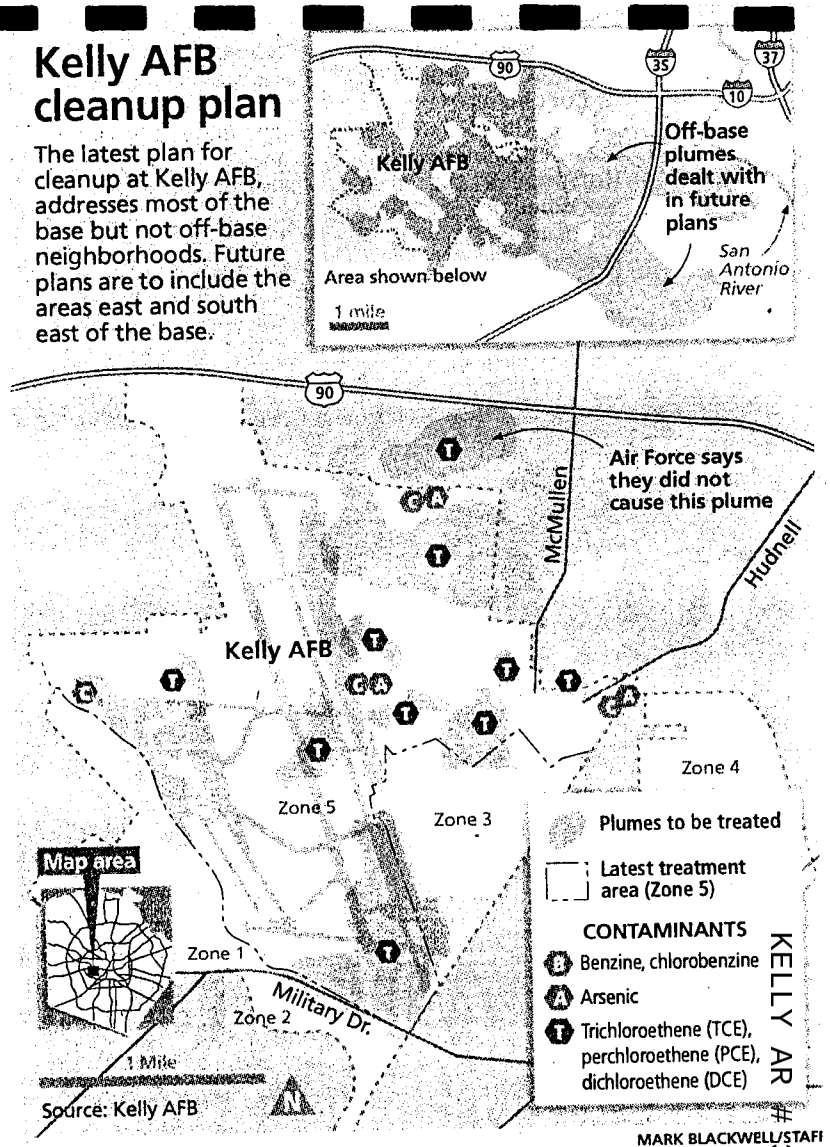
"The Air Force, by law, is not allowed to clean up pollution caused by others," said Pat McCullough, senior representative at Kelly for the Air Force Base Conversion Agency, which has been in charge of cleanup at the installation since Dec. 3.

A 1,138-page study released this week recommends the installation of wells to pump out the water and treating it at a new $4.5 million plant. The clean water would be

■ See AIR FORCE/12A

Kelly AFB cleanup plan

The latest plan for cleanup at Kelly AFB, addresses most of the base but not off-base neighborhoods. Future plans are to include the areas east and south east of the base.



MARK BLACKWELL/STAFF

TODAY'S WEATHER

Sunny
High 74, Low 58
Full weather report, Page 12C

Kelly wells seeking signs of gas

Contractors to check for vinyl chloride

By Jerry Needham
EXPRESS-NEWS STAFF WRITER

A Kelly AFB contractor is drilling 10 wells to determine if there's a health hazard from gases that may be seeping to the surface from contaminated groundwater beneath thousands of South Side homes.

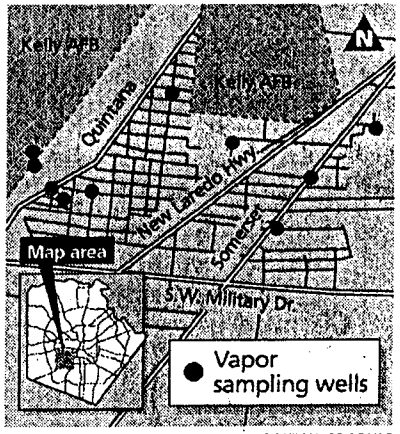
Vapor samples from the wells, eight of them in neighborhoods east of the base, will be taken next week by another contractor — CH2MHill — and sent out for analysis, said Capt. Brian Sassaman, cleanup team chief for East Kelly.

The base frequently measures groundwater levels of vinyl chloride, but since 1990 has not measured levels of vinyl chloride gas that might be escaping into homes, he said.

Samples taken inside Quintana Road homes in 1990 did not show vapor concentrations that would pose an unacceptable risk by federal standards, Sassaman said.

Test results will address concerns about potential health effects of air exposure to the gas, a cancer-causing agent that's a byproduct of the breakdown of solvents.

Solvents that have leaked or been spilled from decades of industrial activity at Kelly have seeped into the 30-foot-deep layer of groundwater and flowed up to five miles



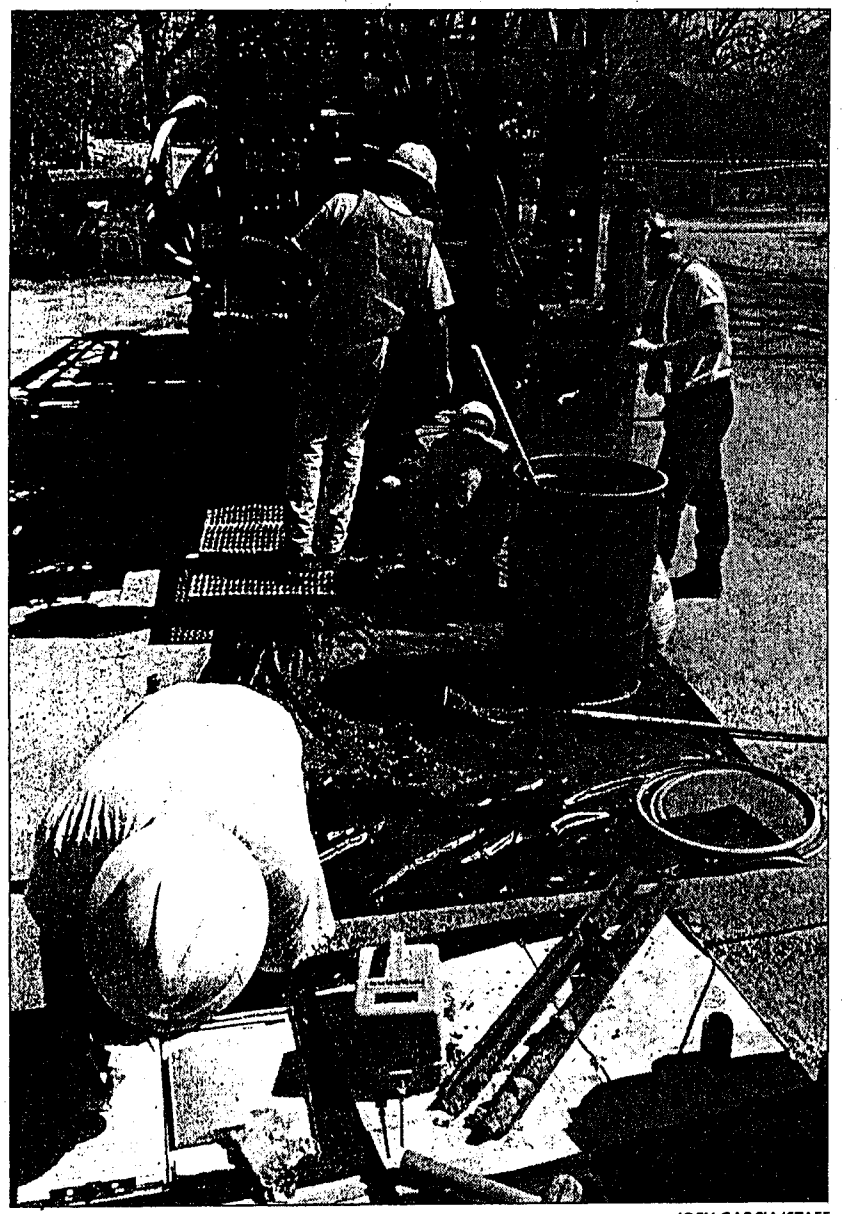
EXPRESS-NEWS GRAPHIC

pling, because we need to know," said Yolanda Johnson, president of a Kelly-area group called Community Health and Environmental Justice. "People are moving out and not able to sell their homes because of the uncertainty."

"The Air Force has heard community concerns about this," said Sassaman. "This study, part of our ongoing off-base evaluation of chemicals, will address those concerns, and we'll also provide the results to the federal Agency for Toxic Substances and Disease Registry, which wants additional data to evaluate whether or not there is a health concern with vinyl chloride in the neighborhoods east of Kelly."

Kelly has identified areas where groundwater concentrations of the gas are highest and is having the contractor drill 5-foot-deep wells in those areas, he said. Another part of the study will involve direct measurement of air inside homes.

The data from the sampling will be sent to the federal health agency



JOEY GARCIA/STAFF

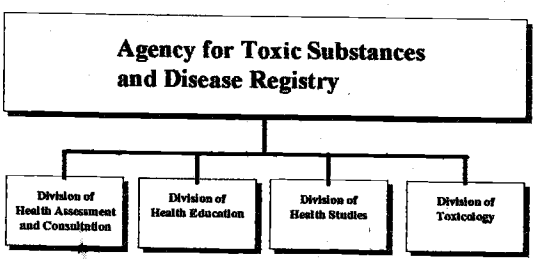
Agency for Toxic Substances and Disease Registry (ATSDR)

Presentation to the Kelly AFB
Restoration Advisory Board (RAB)
April 11, 2000

Purpose
(*Proposito*)

- Request from the RAB to describe possible community forums for health issues
- Solicitud de parte del RAB para informarlos sobre posible procedimientos para discutir cuestiones de la salud

ATSDR Organizational Chart



Mission

- To prevent exposure and adverse human health effects associated with exposure to hazardous substances in the environment
- Prevenir la exposicion a sustancias peligrosas en el medio ambiente y los malos efectos sobre la salud de la comunidad asociados con esas sustancias

Community Participation

- ATSDR involves the community in public health activities by means of various forums.
- ATSDR incluye a la comunidad en sus actividades de salud publica por medio de varios procedimientos

Public Forums

- 1. Public Meetings / *Reuniones o Juntas Publicas*
- 2. Public Availability Sessions/ *Sesiones Publicas de Desponibilidad y Intercambio*
- 3. Personal Meetings / *Entrevistas Personales or Individuales*
- 4. Community Assistance Panels / *Grupo o Panel Comunitaria de Asistencia*

Public Interaction

- Media Releases/ *Medios de Comunicacion Publica (Periodicos, Radio, Television)*
- State and Local Governments/ *Oficiales Publicos*
- State and Local health departments/ *Departamentos de Salud estatales y locales*
- Other Agencies or Organizations / *Otras Agencias o Organizaciones*

Community Assistance Panel (CAP), Purpose and Scope

- Obtain health concerns of the community/ *Obtener las preocupaciones sobre la salud de la comunidad*
- Establish open and ongoing communication /*Establecer y desarollar comunicacion libre y franca y continua*

CAP Purpose and Scope

- Convey ATSDR activities, progress *Comunicar las actividades y progreso de ATSDR*
- Assist in discussion of ATSDR scientific process/
- *Asistir en la discusion del proceso cientifico*

CAP Limitations

- 1. ATSDR has NO enforcement capability/ *ATSDR NO tiene derecho legal para enforzar o obligar que algo se haga*
- 2. Influence with other agencies is advisory/ *La influencia con otras agencias es una de aconsejar o advertir que algo se haga*

CAP Limitations

- ATSDR does not administer direct medical care/ *ATSDR no administra ni dispensa atencion medica*
- Individual expectations may NOT be realized/ *Algunas de las esperanzas individuales de miembros no se realizaran*

CAP Meeting Process

- Open to general public/ *Las juntas son abiertas para el publico general*
- Constructive comments accepted and agreed upon/ *Se acepta el comentario constructivo del publico al tiempo indicado*
- Media notification of each meeting announced/ *Se anuncia con tiempo cada junta (por medio del periodico)*

CAP Meeting Process

- Minutes recorded and placed in local repositories/ *Notas de la junta se recuerdan y se ponen disponibles en algun lugar publico para que se revisen*
- 90 day updates if CAP meeting not scheduled/ *A los miembros se les notifica el progreso cada 90 dias (si no hay junta)*
- Expectation for goal oriented behavior and mutual respect/ *Comportamiento de acuerdo con el objetivo del panel y con respeto para cada miembro*

CAP Meeting Process

- Agenda for each meeting /*Agenda para cada reunion*
- Meetings begin and conclude as scheduled/ *Cada reunion empieza y concluye a tiempo*

CAP Selection Process

- Nomination requested/ *Candidatos son propuestos*
- Ample time to respond/ *Amplo tiempo para responder*
- 12-15 people selected/ *12-15 personas selectionadas*
- Minimum age of 18/ *minima edad de 18*
- Level of interest/ *interes en servir*
- Geographic location/ *domicilio en relacion al sitio*
- Viewpoint, gender/ other considerations /Punto de vista, otras consideraciones

Conclusions

- The goal is communication and involvement in the scientific effort
  El objectivo es la comunicacion y participacion en la obra cientifica
- A CAP is a formal and time-consuming effort
  El CAP es un proceso formal que toma tiempo para realizarse

Conclusions

- Community involvement is important to ATSDR
  La participacion comunitaria es muy importante para ATSDR
- Avenues other than the formal CAP are just as productive in a community-- work groups, already established groups, small community groups are just as effective
  Se puede realizar participacion en otras maneras no tan formales como el CAP --grupos ya establecidos tambien pueden ser efectivos

Comparison of Analytical Results for Groundwater Samples - Volatile Organic Compounds*
Kelly Air Force Base

Compound	Reference[a]		Sample Location, Result, and Date Sampled					
	EPA MCL[b]	EPA MSSL[c]	SS003MW011		SS004MW009		SS025MW007	
			EPA	KAFB	EPA	KAFB	EPA	KAFB
Chloromethane		1.5	<5	<1	<5	<1	<5	<1
Vinyl Chloride	2		<5	<1	<5	<1	<5	<1
Bromomethane		8.7	<5	<1	<5	<1	<5	<1
Chloroethane			<5	<1	<5	<1	<5	<1
1,1-Dichloroethene	7		<5	<1	<5	<1	<5	<1
Acetone		610	<5	<5	<5	59 J	<5	<5
Carbon Disulfide		1000	<5	<1	<5	<1	<5	<1
Methylene Chloride		4.3	<5	<2	<5	<2	<5	<2
1,1-Dichloroethane		810	<5	<1	<5	<1	<5	<1
Vinyl Acetate		410	<5	<5	<5	<5	<5	<5
1,2-Dichloroethene	7		<5	<1	<5	1	7	11
2-Butanone		1900	<5	<5	<5	<5	<5	<5
Chloroform		0.16	<5	<1	<5	<1	<5	<1
1,1,1-Trichloroethane	200		<5	<1	<5	<1	<5	<1
Carbon Tetrachloride	5		<5	<1	<5	<1	<5	<1
Benzene	5		<5	<1	<5	<1	<5	<1
1,2-Dichloroethane	5		<5	<1	<5	<1	<5	<1
Trichloroethene	5		<5	<1	48	6	30	42
1,2-Dichloropropane	5		<5	<1	<5	<1	<5	<1
Bromodichloromethane		0.18	<5	<1	<5	<1	<5	<1
cis-1,3-Dichloropropene		0.081	<5	<1	<5	<1	<5	<1
4-Methyl-2-Pentanone		160	<5	<5	<5	<5	<5	<5
Toluene	1000		<5	<1	<5	<1	<5	<1
trans-1,3-Dichloropropene		0.081	<5	<1	<5	<1	<5	<1
1,1,2-Trichoroethane	5		<5	<1	<5	<1	<5	<1
Tetrachloroethene	5		<5	<1	7	2	6	3

Comparison of Analytical Results for Groundwater Samples - Volatile Organic Compounds (continued)

Compound	Reference[a]		Sample Location, Result, and Date Sampled					
	EPA MCL[b]	EPA MSSL[c]	SS003MW011		SS004MW009		SS025MW007	
			EPA	KAFB	EPA	KAFB	EPA	KAFB
2-Hexanone			<5	<5	<5	<5	<5	<5
Dibromochloromethane		0.13	<5	<1	<5	<1	<5	<1
Chlorobenzene	100		<5	<1	<5	<1	<5	<1
Ethylbenzene	700		<5	<1	<5	<1	<5	<1
Xylene (total)	10000		<5	<1	<5	<1	<5	<1
Styrene	100		<5	<1	<5	<1	<5	<1
Bromoform		8.5	<5	<1	<5	<1	<5	<1
1,1,2,2-Tetrachloroethane		0.055	<5	<1	<5	<1	<5	<1

Comparison of Analytical Results for Groundwater Samples - Volatile Organic Compounds (continued)

Compound	Reference		Sample Location, Result, and Date Sampled					
	EPA MCL	EPA MSSL	SS037MW119		SS050MW047		SS050MW156	
			EPA	KAFB	EPA	KAFB	EPA	KAFB
Chloromethane		1.5	<5	<1	<5	<1	<5	<1
Vinyl Chloride	2		<5	<1	<5	<1	<5	<1
Bromomethane		8.7	<5	<1	<5	<1	<5	<1
Chloroethane			<5	<1	<5	<1	<5	<1
1,1-Dichloroethene	7		<5	<1	<5	0.3 J	<5	<1
Acetone		610	<5	<5	<5	<5	<5	<5
Carbon Disulfide		1000	<5	<1	<5	<1	<5	<1
Methylene Chloride		4.3	<5	<2	<5	<2	<5	<2
1,1-Dichloroethane		810	<5	<1	<5	<1	<5	<1
Vinyl Acetate		410	<5	<5	<5	<5	<5	<5
1,2-Dichloroethene	7		<5	2	15	16	<5	0.2 J
2-Butanone		1900	<5	<5	<5	<5	<5	<5
Chloroform		0.16	<5	<1	<5	<1	<5	<1
1,1,1-Trichloroethane	200		<5	<1	<5	<1	<5	<1
Carbon Tetrachloride	5		<5	<1	<5	<1	<5	<1
Benzene	5		<5	<1	<5	<1	<5	<1
1,2-Dichloroethane	5		<5	<1	<5	<1	<5	<1
Trichloroethene	5		<5	0.4 J	42	51	38	16
1,2-Dichloropropane	5		<5	<1	<5	<1	<5	<1
Bromodichloromethane		0.18	<5	<1	<5	<1	<5	<1
cis-1,3-Dichloropropene		0.081	<5	<1	<5	<1	<5	<1
4-Methyl-2-Pentanone		160	<5	<5	<5	<5	<5	<5
Toluene	1000		<5	<1	<5	<1	<5	<1
trans-1,3-Dichloropropene		0.081	<5	<1	<5	<1	<5	<1
1,1,2-Trichoroethane	5		<5	<1	<5	<1	<5	<1
Tetrachloroethene	5		<5	0.8 J	<5	0.2 J	1100	1100

Comparison of Analytical Results for Groundwater Samples - Volatile Organic Compounds (continued)

Compound	Reference		Sample Location, Result, and Date Sampled					
	EPA MCL	EPA MSSL	SS037MW119		SS050MW047		SS050MW156	
			EPA	KAFB	EPA	KAFB	EPA	KAFB
2-Hexanone			<5	<5	<5	<5	<5	<5
Dibromochloromethane		0.13	<5	<1	<5	<1	<5	<1
Chlorobenzene	100		<5	<1	<5	<1	<5	<1
Ethylbenzene	700		<5	<1	<5	<1	<5	<1
Xylene (total)	10000		<5	0.1 J	<5	<1	<5	<1
Styrene	100		<5	<1	<5	<1	<5	<1
Bromoform		8.5	<5	<1	<5	<1	<5	<1
1,1,2,2-Tetrachloroethane		0.055	<5	<1	<5	<1	<5	<1

Comparison of Analytical Results for Groundwater Samples - Volatile Organic Compounds (continued)

Compound	Reference		Sample Location, Result, and Date Sampled					
	EPA MCL	EPA MSSL	SS050MW167		SS050MW183		SS052MW197	
			EPA	KAFB	EPA	KAFB	EPA	KAFB
Chloromethane		1.5	<5		<5	<1	<5	<1
Vinyl Chloride	2		<5		<5	<1	<5	<1
Bromomethane		8.7	<5		<5	<1	<5	<1
Chloroethane			<5		<5	<1	<5	<1
1,1-Dichloroethene	7		<5		<5	<1	<5	2
Acetone		610	<5		<5	<5	<5	<13
Carbon Disulfide		1000	<5		<5	<1	<5	<1
Methylene Chloride		4.3	<5		<5	<2	5	<2
1,1-Dichloroethane		810	<5		<5	<1	<5	<1
Vinyl Acetate		410	<5		<5	<5	<5	<5
1,2-Dichloroethene	7		<5		<5	<1	1 J	1
2-Butanone		1900	<5		<5	<5	<5	<5
Chloroform		0.16	<5		<5	<1	<5	<1
1,1,1-Trichloroethane	200		<5		<5	<1	<5	<1
Carbon Tetrachloride	5		<5		<5	<1	<5	<1
Benzene	5		<5		<5	<1	<5	0.5 J
1,2-Dichloroethane	5		<5		<5	<1	<5	<1
Trichloroethene	5		<5		<5	0.2 J	5	3
1,2-Dichloropropane	5		<5		<5	<1	<5	<1
Bromodichloromethane		0.18	<5		<5	<1	<5	<1
cis-1,3-Dichloropropene		0.081	<5		<5	<1	<5	<1
4-Methyl-2-Pentanone		160	<5		<5	<5	<5	<5
Toluene	1000		<5		3 J	<1	2 J	<1
trans-1,3-Dichloropropene		0.081	<5		<5	<1	<5	<1
1,1,2-Trichoroethane	5		<5		<5	<1	<5	<1
Tetrachloroethene	5		<5		14	0.3 J	23	12

Comparison of Analytical Results for Groundwater Samples - Volatile Organic Compounds (continued)

Compound	Reference		Sample Location, Result, and Date Sampled					
	EPA MCL	EPA MSSL	SS050MW167		SS050MW183		SS052MW197	
			EPA	KAFB	EPA	KAFB	EPA	KAFB
2-Hexanone			<5		<5	<5	<5	<5
Dibromochloromethane		0.13	<5		<5	<1	<5	<1
Chlorobenzene	100		<5		<5	<1	<5	<1
Ethylbenzene	700		<5		<5	<1	<5	<1
Xylene (total)	10000		<5		<5	<1	<5	<1
Styrene	100		<5		<5	<1	<5	<1
Bromoform		8.5	<5		<5	<1	<5	<1
1,1,2,2-Tetrachloroethane		0.055	<5		<5	<1	<5	<1

Comparison of Analytical Results for Groundwater Samples - Volatile Organic Compounds (continued)

Compound	Reference		Sample Location, Result, and Date Sampled					
	EPA MCL	EPA MSSL	SS052MW212		SS052MW214		SS052MW273	
			EPA	KAFB	EPA	KAFB	EPA	KAFB
Chloromethane		1.5	<5	<1	<5	<1	<5	<1
Vinyl Chloride	2		<5	<1	<5	13	<5	<1
Bromomethane		8.7	<5	<1	<5	<1	<5	<1
Chloroethane			<5	<1	<5	<!	<5	<1
1,1-Dichloroethene	7		<5	<1	<5	<1	<5	1
Acetone		610	<5	<5	<5	<5	<5	<5
Carbon Disulfide		1000	<5	0.1 J	<5	<!	<5	<1
Methylene Chloride		4.3	<5	<2	16	<2	13	<2
1,1-Dichloroethane		810	<5	<1	<5	<1	<5	0.5 J
Vinyl Acetate		410	<5	<5	<5	<5	<5	<5
1,2-Dichloroethene	7		<5	<1	160	94	4 J	5
2-Butanone		1900	<5	<5	<5	<5	<5	<5
Chloroform		0.16	<5	<1	<5	<1	<5	0.6 J
1,1,1-Trichloroethane	200		<5	<1	<5	<1	<5	<1
Carbon Tetrachloride	5		<5	<1	<5	<1	<5	<!
Benzene	5		<5	<1	<5	<1	<5	<1
1,2-Dichloroethane	5		<5	<1	<5	<1	<5	<1
Trichloroethene	5		<5	0.8 J	45	18	24	25
1,2-Dichloropropane	5		<5	<1	<5	<1	<5	<1
Bromodichloromethane		0.18	<5	<1	<5	<1	<5	<1
cis-1,3-Dichloropropene		0.081	<5	<1	<5	<!	<5	<1
4-Methyl-2-Pentanone		160	<5	<5	<5	<5	<5	<5
Toluene	1000		<5	<1	5 J	<1	<5	0.2 J
trans-1,3-Dichloropropene		0.081	<5	<1	<5	<1	<5	<1
1,1,2-Trichoroethane	5		<5	<1	<5	<1	<5	<1
Tetrachloroethene	5		<5	<1	43	18	6	7

Comparison of Analytical Results for Groundwater Samples - Volatile Organic Compounds (continued)

Compound	Reference		Sample Location, Result, and Date Sampled					
	EPA MCL	EPA MSSL	SS052MW212		SS052MW214		SS052MW273	
			EPA	KAFB	EPA	KAFB	EPA	KAFB
2-Hexanone			<5	<5	<5	<5	<5	<5
Dibromochloromethane		0.13	<5	<1	<5	<1	<5	<1
Chlorobenzene	100		<5	<1	<5	1 J	<5	<1
Ethylbenzene	700		<5	<1	<5	<1	<5	<1
Xylene (total)	10000		<5	<1	<5	<1	<5	<1
Styrene	100		<5	<1	<5	<1	<5	<1
Bromoform		8.5	<5	<1	<5	<1	<5	<1
1,1,2,2-Tetrachloroethane		0.055	<5	<1	<5	<1	<5	<1

Comparison of Analytical Results for Groundwater Samples - Volatile Organic Compounds (continued)

Compound	Reference		Sample Location, Result, and Date Sampled					
	EPA MCL	EPA MSSL	SS052MW308		SS052MW313		SS052MW314	
			EPA	KAFB	EPA	KAFB	EPA	KAFB
Chloromethane		1.5	<5	<1	<5	<1	<5	<1
Vinyl Chloride	2		<5	<1	<5	<1	<5	0.4 J
Bromomethane		8.7	<5	<1	<5	<1	<5	<1
Chloroethane			<5	<1	<5	<1	<5	<1
1,1-Dichloroethene	7		<5	<1	<5	<1	<5	5
Acetone		610	<5	<5	<5	<5	<5	<11
Carbon Disulfide		1000	<5	<1	<5	<1	<5	<1
Methylene Chloride		4.3	16	<2	<5	<2	<5	<2
1,1-Dichloroethane		810	<5	<1	<5	<1	<5	1
Vinyl Acetate		410	<5	<5	<5	<5	<5	<5
1,2-Dichloroethene	7		<5	<1	<5	<1	19	17
2-Butanone		1900	<5	<5	<5	<5	<5	<5
Chloroform		0.16	<5	<1	<5	<1	<5	0.5 J
1,1,1-Trichloroethane	200		<5	<1	<5	<1	<5	<1
Carbon Tetrachloride	5		<5	<1	<5	<1	<5	<1
Benzene	5		<5	<1	<5	<1	<5	0.3 J
1,2-Dichloroethane	5		<5	<1	<5	<1	<5	<1
Trichloroethene	5		<5	<1	<5	<1	87	54
1,2-Dichloropropane	5		<5	<1	<5	<1	<5	<1
Bromodichloromethane		0.18	<5	<1	<5	<1	<5	<1
cis-1,3-Dichloropropene		0.081	<5	<1	<5	<1	<5	<1
4-Methyl-2-Pentanone		160	<5	<5	<5	<5	<5	<5
Toluene	1000		2 J	<1	2 J	<1	<5	<1
trans-1,3-Dichloropropene		0.081	<5	<1	<5	<1	<5	<1
1,1,2-Trichoroethane	5		<5	<1	<5	<1	<5	2
Tetrachloroethene	5		<5	<1	<5	<1	22	15

Comparison of Analytical Results for Groundwater Samples - Volatile Organic Compounds (continued)

Compound	Reference		Sample Location, Result, and Date Sampled					
	EPA MCL	EPA MSSL	SS052MW308		SS052MW313		SS052MW314	
			EPA	KAFB	EPA	KAFB	EPA	KAFB
2-Hexanone			<5	<5	<5	<5	<5	<5
Dibromochloromethane		0.13	<5	<1	<5	<1	<5	<1
Chlorobenzene	100		<5	<1	<5	<1	<5	<1
Ethylbenzene	700		<5	<1	<5	<1	<5	<1
Xylene (total)	10000		<5	<1	<5	<1	<5	<1
Styrene	100		<5	<1	<5	<1	<5	<1
Bromoform		8.5	<5	<1	<5	<1	<5	<1
1,1,2,2-Tetrachloroethane		0.055	<5	<1	<5	<1	<5	<1

Comparison of Analytical Results for Groundwater Samples - Volatile Organic Compounds (continued)

Compound	Reference		Sample Location, Result, and Date Sampled					
	EPA MCL	EPA MSSL	SS052MW319		SS052MW322		SS052MW329	
			EPA	KAFB	EPA	KAFB	EPA	KAFB
Chloromethane		1.5	<5	<1	<5	<1	<5	<1
Vinyl Chloride	2		<5	<1	<5	<1	<5	<1
Bromomethane		8.7	<5	<1	<5	<1	<5	<1
Chloroethane			<5	<1	<5	<1	<5	<1
1,1-Dichloroethene	7		<5	4	<5	<1	<5	<1
Acetone		610	<5	<5	<5	<5	<5	<22
Carbon Disulfide		1000	<5	0.2 J	<5	<1	<5	<1
Methylene Chloride		4.3	<5	<2	<5	<2	<5	<2
1,1-Dichloroethane		810	<5	0.5 J	<5	<1	<5	<1
Vinyl Acetate		410	<5	<5	<5	<5	<5	<5
1,2-Dichloroethene	7		2 J	4	<5	<1	<5	0.6 J
2-Butanone		1900	<5	<5	<5	<5	<5	<5
Chloroform		0.16	<5	0.5 J	<5	<1	<5	<1
1,1,1-Trichloroethane	200		<5	<1	<5	<1	<5	<1
Carbon Tetrachloride	5		<5	<1	<5	<1	<5	<1
Benzene	5		<5	<1	<5	<1	<5	<1
1,2-Dichloroethane	5		<5	0.4 J	<5	<1	<5	<1
Trichloroethene	5		9	16	<5	<1	<5	2
1,2-Dichloropropane	5		<5	<1	<5	<1	<5	<1
Bromodichloromethane		0.18	<5	<1	<5	<1	<5	<1
cis-1,3-Dichloropropene		0.081	<5	<1	<5	<1	<5	<1
4-Methyl-2-Pentanone		160	<5	<5	<5	<5	<5	<5
Toluene	1000		2 J	<1	2 J	<1	1 J	<1
trans-1,3-Dichloropropene		0.081	<5	<1	<5	<1	<5	<1
1,1,2-Trichoroethane	5		<5	<1	<5	<1	<5	<1
Tetrachloroethene	5		8	14	<5	<1	<5	5

Comparison of Analytical Results for Groundwater Samples - Volatile Organic Compounds (continued)

Compound	Reference		Sample Location, Result, and Date Sampled					
	EPA MCL	EPA MSSL	SS052MW319		SS052MW322		SS052MW329	
			EPA	KAFB	EPA	KAFB	EPA	KAFB
2-Hexanone			<5	<5	<5	<5	<5	<5
Dibromochloromethane		0.13	<5	<1	<5	<1	<5	<1
Chlorobenzene	100		<5	<1	<5	<1	<5	<1
Ethylbenzene	700		<5	<1	<5	<1	<5	<1
Xylene (total)	10000		<5	<1	<5	<1	<5	<1
Styrene	100		<5	<1	<5	<1	<5	<1
Bromoform		8.5	<5	<1	<5	<1	<5	<1
1,1,2,2-Tetrachloroethane		0.055	<5	<1	<5	<1	<5	<1

Comparison of Analytical Results for Groundwater Samples - Volatile Organic Compounds (continued)

Compound	Reference		Sample Location, Result, and Date Sampled			
	EPA MCL	EPA MSSL	SS052MW331		SS052MW332	
			EPA	KAFB	EPA	KAFB
Chloromethane		1.5	<5	<1	<5	<1
Vinyl Chloride	2		<5	<1	<5	<1
Bromomethane		8.7	<5	<1	<5	<1
Chloroethane			<5	<1	<5	<1
1,1-Dichloroethene	7		<5	<1	<5	<1
Acetone		610	<5	<5	<5	<11
Carbon Disulfide		1000	6	<1	<5	0.6 J
Methylene Chloride		4.3	<5	<2	<5	<2
1,1-Dichloroethane		810	<5	<1	<5	<1
Vinyl Acetate		410	<5	<5	<5	<5
1,2-Dichloroethene	7		<5	3	<5	<1
2-Butanone		1900	<5	<5	<5	<5
Chloroform		0.16	<5	<1	<5	<1
1,1,1-Trichloroethane	200		<5	<1	<5	<1
Carbon Tetrachloride	5		<5	<1	<5	<1
Benzene	5		<5	<1	<5	<1
1,2-Dichloroethane	5		<5	<1	<5	<1
Trichloroethene	5		<5	3	<5	<1
1,2-Dichloropropane	5		<5	<1	<5	<1
Bromodichloromethane		0.18	<5	<1	<5	<1
cis-1,3-Dichloropropene		0.081	<5	<1	<5	<1
4-Methyl-2-Pentanone		160	<5	<5	<5	<5
Toluene	1000		4 J	<1	<5	<1
trans-1,3-Dichloropropene		0.081	<5	<1	<5	<1
1,1,2-Trichoroethane	5		<5	<1	<5	<1
Tetrachloroethene	5		<5	3	<5	0.3 J

Comparison of Analytical Results for Groundwater Samples - Volatile Organic Compounds (continued)

Compound	Reference		Sample Location, Result, and Date Sampled			
	EPA MCL	EPA MSSL	SS052MW331		SS052MW332	
			EPA	KAFB	EPA	KAFB
2-Hexanone			<5	<5	<5	<5
Dibromochloromethane		0.13	<5	<1	<5	<1
Chlorobenzene	100		<5	<1	<5	<1
Ethylbenzene	700		<5	<1	<5	<1
Xylene (total)	10000		<5	<1	<5	<1
Styrene	100		<5	<1	<5	<1
Bromoform		8.5	<5	<1	<5	<1
1,1,2,2-Tetrachloroethane		0.055	<5	<1	<5	<1

Comparison of Analytical Results for Groundwater Samples - Volatile Organic Compounds (continued)

Compound	Reference		Sample Location, Result, and Date Sampled			
	EPA MCL	EPA MSSL	SS052MW333		ST006MW026	
			EPA	KAFB	EPA	KAFB
Chloromethane		1.5	<5	<1	<5	<1
Vinyl Chloride	2		<5	<1	<5	<1
Bromomethane		8.7	<5	<1	<5	<1
Chloroethane			<5	<1	<5	<1
1,1-Dichloroethene	7		<5	<1	<5	<1
Acetone		610	<5	<4	<5	<5
Carbon Disulfide		1000	<5	<1	<5	<1
Methylene Chloride		4.3	<5	<2	<5	<2
1,1-Dichloroethane		810	<5	<1	<5	<1
Vinyl acetate		410	<5	<5	<5	<5
1,2-Dichloroethene	7		<5	<1	<5	0.2 J
2-Butanone		1900	<5	<5	<5	<5
Chloroform		0.16	<5	<1	<5	<1
1,1,1-Trichloroethane	200		<5	<1	<5	<1
Carbon Tetrachloride	5		<5	<1	<5	<1
Benzene	5		<5	<1	<5	<1
1,2-Dichloroethane	5		<5	<1	<5	<1
Trichloroethene	5		<5	<1	<5	0.3 J
1,2-Dichloropropane	5		<5	<1	<5	<1
Bromodichloromethane		0.18	<5	<1	<5	<1
cis-1,3-Dichloropropene		0.081	<5	<1	<5	<1
4-Methyl-2-Pentanone		160	<5	<5	<5	<5
Toluene	1000		<5	<1	<5	<1
trans-1,3-Dichloropropene		0.081	<5	<1	<5	<1
1,1,2-Trichoroethane	5		<5	<1	<5	<1
Tetrachloroethene	5		<5	<1	3 J	1

Comparison of Analytical Results for Groundwater Samples - Volatile Organic Compounds (continued)

Compound	Reference		Sample Location, Result, and Date Sampled			
	EPA MCL	EPA MSSL	SS052MW333		ST006MW026	
			EPA	KAFB	EPA	KAFB
2-Hexanone			<5	<5	<5	<5
Dibromochloromethane		0.13	<5	<1	<5	<1
Chlorobenzene	100		<5	<1	<5	<1
Ethylbenzene	700		<5	<1	<5	<1
Xylene (total)	10000		<5	<1	<5	<1
Styrene	100		<5	<1	<5	<1
Bromoform		8.5	<5	<1	<5	<1
1,1,2,2-Tetrachloroethane		0.055	<5	<1	<5	<1

* All results are reported in micrograms per liter ($\mu g/\ell$).

a Where an EPA MCL was not available for a compound, the corresponding EPA MSSL has been provided for comparison.

b EPA Maximum Contaminant Levels (EPA MCL) for inorganic chemicals in the drinking water supply.

c EPA Region 6 Human Health Medium-Specific Screening Levels (EPA MSSL) for inorganic chemicals in tap water (July 1999).

J The reported value is estimated because the Quality Control criteria was not met.

Comparison of Analytical Results for Groundwater Samples - Inorganics*
Kelly Air Force Base

Analyte	Reference[a]		Sample Location, Result, and Date Collected											
	EPA MCL[b]	EPA MSSL[c]	SS003MW011		SS004MW009		SS025MW007		SS037MW119		SS050MW047		SS050MW156	
			EPA	KAFB	EPA	KAFB	EPA	KAFB	EPA	KAFB	EPA	KAFB	EPA	KAFB
Antimony	6		<5.0	<0.5	<5.0	<1	<5.0	<2	<5.0	<0.5	<5.0	<0.5	<5.0	<0.5
Arsenic	50		<3.3	<0.6	<3.3	<1.5	<3.3	1.7 J	<3.3	13.3	<3.3	<1.3	<3.3	<0.6
Barium	2000		266	236	120	110	110	101 J	105	154	49.5	48.4	168	150
Beryllium	4		0.34 B	<1	<0.30	<1	<0.30	<1	<0.30	<1	<0.30	<1	<0.30	<1
Cadmium	5		<0.30	<2	<0.37	<2	<0.30	<2	<0.30	<2	<0.30	<2	<0.30	<2
Chromium	100		20.3	<2.6	<10	<2	<10	<4	43.7	358	<10	51.5	32.6	29.4
Cobalt		2200	2.2 B	<4	<1.7	<4	2.6 B	<4	3.0 B	7 J	<1.7	<4	11.5	<4
Copper	1300		14.3	<1.3	2.6 B	<1	19.9	2.5 J	1.4 B	13.4	<2.8	2.5 J	10.2	<1
Lead	15		3.1	0.6 J	<2.1	<0.5	<2.1	9.4	<2.1	4 J	3.4	<0.7	4.9	0.6 J
Mercury	2		<0.10	<0.1	0.12 B	<0.1	<0.10	<0.1	0.13 B	<0.1	<0.10	<0.1	<0.10	<0.1
Nickel		730	17.7	<8	<2.8	<8	12.8	<8	22.8 J	254	169	138	123	11 J
Selenium	50		<2.9	<0.8	<2.9	1.1 J	<2.9	3 J	<3.5	<0.8	<2.9	2 J	<2.9	<1.1
Silver		180	<2.0	<2	<2.0	<2	<2.0	<2.5	<2.0	<2	<2.0	<2	<2.0	<2
Thallium	2		<2.3	<0.9	<2.3	<0.9	<2.3	<1	<2.3	<0.9	<2.3	<0.9	<2.3	<0.9
Vanadium		260	7.0	<9.4	9.9	10.3	6.7	12.9	2.2 B	11.3	8.5	8.3 J	2.6 J	<5
Zinc		11000	<11.9	<5.7	<9.9	<2.6	20.6	18.7	<14.8	49.6	16.2 B	<8.6	22.5	<5.5

Comparison of Analytical Results for Groundwater Samples - Inorganics (continued)

Analyte	Reference		Sample Location, Result, and Date Collected									
	EPA MCL	EPA MSSL	SS050MW167		SS050MW183		SS052MW197		SS052MW212		SS052MW214	
			EPA	KAFB	EPA	KAFB	EPA	KAFB	EPA	KAFB	EPA	KAFB
Antimony	6		<5.0		<5.0	<0.5	<5.0	<0.5	<5.0	<0.5	<5.0	<0.5
Arsenic	50		<3.3		<3.3	0.8 J	<3.3	1.1 J	<3.3	0.9 J	<3.3	1 J
Barium	2000		131		125	143	68.6	68.2	219	145	179	270
Beryllium	4		<0.30		<0.30	<1	<0.30	<1	<0.30	<1	<0.30	<1
Cadmium	5		<0.30		<0.30	<2	<0.30	<2	<0.30	<2	<0.30	<2
Chromium	100		10.2		310	5.8 J	12.2	<2	119	297	<10	7.4 J
Cobalt		2200	7.1		25.7	5.9 J	5.6	<4	7.4	4.7 J	1.8 B	10.2
Copper	1300		27.4		<4.9	3.6 J	<2.6	<1	5.6 B	9.4	<1.0	5.9
Lead	15		<2.1		2.1 B	<1.1	<2.1	<0.5	<2.1	<0.5	<2.1	1.6 J
Mercury	2		0.77		<0.10	<0.1	<0.10	<0.1	0.14 B	<0.1	<0.10	<0.1
Nickel		730	261 J		507	69.1	43.1	<8	451 J	710	3.1 B	<8
Selenium	50		<3.1		<2.9	1.2 J	<2.9	1.3 J	<2.9	<0.8	<2.9	<0.8
Silver		180	<2.0		<2.0	<2	<2.0	<2	<2.0	<2	<2.0	<2
Thallium	2		<2.3		<2.3	<0.9	<2.3	<1.6	<2.3	<1	<2.3	1.3 J
Vanadium		260	2.7 B		5.7 B	6.3 J	10.5	11.4	3.8 B	6 J	9.6	13.7
Zinc		11000	<15.8		<12.1	<6.8	16.4 B	<3.6	<17.3	<3.3	<7.3	27.6

Comparison of Analytical Results for Groundwater Samples - Inorganics (continued)

Analyte	Reference		Sample Location, Result, and Date Collected											
	EPA MCL	EPA MSSL	SS052MW273		SS052MW308		SS052MW313		SS052MW314		SS052MW319		SS052MW322	
			EPA	KAFB	EPA	KAFB	EPA	KAFB	EPA	KAFB	EPA	KAFB	EPA	KAFB
Antimony	6		<5.0	<0.5	<5.0	<0.5	<5.0	<0.5	<5.0	<0.5	<5.0	<0.5	<5.0	<0.5
Arsenic	50		<3.3	<0.8	<3.3	<0.6	<3.3	0.8 J	<3.3	<1.1	<3.3	<1.2	<3.3	<1.6
Barium	2000		52.2	54.8 J	52.1	50.1	35.8	27.1	89.1	89.4	122	120 J	34.1	36.5
Beryllium	4		0.36 B	<1	<0.30	<1	0.56 B	<1	<0.30	<1	<0.30	<1	<0.30	<1
Cadmium	5		<0.30	<2	<0.30	<2	<0.30	<2	<0.30	<2	<0.30	<2	<0.30	<2
Chromium	100		20.2	<2	12.8	<2	18.1	<2	<10	<2	37.1	3.8 J	<10	<2
Cobalt		2200	2.0 B	<4	<1.7	<4	3.2 B	4.2 J	2.3 B	<4	3.7 B	6.9 J	<1.7	<4
Copper	1300		8.7	<1	6.7 B	<1.6	18.8	<1.4	1.1 B	<2.6	<1.5	28	32.2	11.9
Lead	15		3.1	<0.5	<2.1	<0.5	<2.1	<0.5	<2.1	<0.5	<2.1	<0.5	3.2	<0.5
Mercury	2		0.15 B	<0.1	<0.10	<0.5	<0.10	<0.5	0.16 B	<0.1	<0.10	<0.1	0.14 B	<0.1
Nickel		730	90.8	16.4 J	14.2	<8	50.1	11 J	25.4 J	<8	127	89.9	10.6	<8
Selenium	50		<2.9	<1.2	3.4 J	6	<2.9	<4.2	<2.9	<1.3	<2.9	<1.3	<2.9	<4.4
Silver		180	<2.0	<2	<2.0	<2	<2.0	<2	<2.0	<2.2	<2.0	<2	<2.0	<2
Thallium	2		<2.3	<0.9	<2.3	<0.9	<2.3	<0.9	<2.3	<0.9	<2.3	<0.9	2.3 B	<0.9
Vanadium		260	5.6 B	8.4 J	14.9	14.7	10.9	14.9	9.4	10.8	9.6	10.3	8.2	7.8 J
Zinc		11000	<14.7	<2.9	<12.0	<2.3	<12.2	<2.4	<6.7	<2	<9.3	<6.1	24.5	<4.4

Comparison of Analytical Results for Groundwater Samples - Inorganics (continued)

Analyte	Reference		Sample Location, Result, and Date Collected									
	EPA MCL	EPA MSSL	SS052MW329		SS052MW331		SS052MW332		SS052MW333		ST006MW026	
			EPA	KAFB	EPA	KAFB	EPA	KAFB	EPA	KAFB	EPA	KAFB
Antimony	6		<5.0	<0.5	<5.0	<0.5	<5.0	<0.5	<5.0	<0.5	<5.0	<0.5
Arsenic	50		<3.3	<1.4	<3.3	<0.6	<3.3	<0.6	<3.3	<0.6	<3.3	1.1 J
Barium	2000		66.1	67.9 J	120	120	121	117	94.6	89.5	79.8	90.8
Beryllium	4		<0.30	<1	<0.30	<1	<0.30	<1	<0.30	<1	<0.30	<1
Cadmium	5		<0.30	<2	<0.30	<2	<0.30	<2	<0.30	<2	<7.7	<2
Chromium	100		<10	<2	13.0	11.8	<10	<2	<10	<2	<10	<2
Cobalt		2200	<1.7	<4	7.0	4.1 J	3.5 B	<4	<1.7	<4	2.4 B	<4
Copper	1300		<1.0	<1	<3.0	<1	<2.6	<1.8	<2.6	2.4 J	2.1 B	<2.2
Lead	15		<2.1	<0.5	<2.1	<0.5	<2.1	<0.5	<2.1	<0.5	<2.1	<1.7
Mercury	2		<0.10	<0.1	<0.10	<0.5	<0.10	<0.5	0.13 B	<0.1	0.16 B	<0.1
Nickel		730	4.1 B	<8	18.6	28.1	4.5 B	<8	1.8 B	<8	67.6 J	20.2
Selenium	50		<2.9	<0.8	<2.9	<1.9	<2.9	<1.6	<2.9	1.8 J	<3.5	<0.8
Silver		180	<2.0	<2	<2.0	<2	<2.0	<2	<2.0	<2	<2.0	<2
Thallium	2		<2.3	<0.9	<2.3	<0.9	<2.3	<0.9	<2.3	<0.9	<2.3	<0.9
Vanadium		260	9.8	13.2	11.3	12.3	10.3	12.6	6.5	8.8 J	11.2	11.9
Zinc		11000	<7.6	<5.6	15.6 B	<2	<9.1	<2.2	<6.7	<3.9	<17.3	41

* All results reported in micrograms per liter ($\mu g/\ell$).
a Where an EPA MCL was not available for an analyte, the corresponding EPA MSSL has been provided for comparison.
b EPA Maximum Contaminant Levels (EPA MCL) for inorganic chemicals in the drinking water supply.
c EPA Region 6 Human Health Medium-Specific Screening Levels (EPA MSSL) for inorganic chemicals in tap water (July 1999).

B The reported value was obtained from a reading that was less than the Contract Required Detection Limit (CRDL) but greater than or equal to the Instrument Detection Limit (IDL).
J The reported value is estimated because the Quality Control criteria was not met.

Summary of Analytical Results for Soil Samples - Inorganics*
Kelly Air Force Base

Analyte	Reference	Sample Location, Result, and Date Collected					
	EPA MSSL Residential[a]	SS-01 (2/9/00)	SS-02 (2/15/00)	SS-03 (2/15/00)	SS-04 (2/15/00)	SS-05 (2/15/00)	SS-06 (2/15/00)
Antimony	31	<0.34	<0.32	<0.32	<0.35	<0.32	<0.32
Arsenic	22	8.1	5.3	7.1	8.1	7.2	5.9
Barium	5400	69.1	78.8	62.4	83.9	127	77.8
Beryllium	150	1.2	0.71	1.1	0.91	0.92	0.75
Cadmium	39	0.89	0.77	0.64	1.4	1.5	0.67
Chromium	210	20.0	14.5	16.1	26.8	16.7	14.7
Cobalt	3400	7.6 J	5.6 J	6.3 J	6.2 J	5.2 J	5.0 J
Copper	2900	17.2	9.8	15.3	28.7	22.8	12.0
Lead	400	40.5	20.6	18.5	36.4	660	21.9
Mercury	23	0.02 J	<0.02	0.02 J	0.03 J	0.05 J	0.02 J
Nickel	1600	16.1	12.6	13.7	28.2	13.6	12.0
Selenium	390	0.81	<0.39	<0.39	0.79	0.80	<0.40
Silver	390	<0.15	<0.14	<0.14	<0.14	<0.14	<0.14
Thallium	7	<0.61	<0.45	<0.80	<1.4	<0.40	<0.41
Vanadium	550	26.6	26.9	24.8	24.5	31.5	27.6
Zinc	23000	60.1 J	101 J	52.5 J	80.5 J	442 J	54.9 J

Summary of Analytical Results for Soil Samples - Inorganics (continued)

Analyte	Reference	Sample Location, Result, and Date Collected				
	EPA MSSL Residential	SS-07 (2/15/00)	SS-08 (2/15/00)	SS-09 (2/17/00)	SS-10 (2/17/00)	SS-11 (2/9/00)
Antimony	31	<0.31	<0.31	<0.34	<0.34	<0.33
Arsenic	22	5.6	6.5	7.5	7.8	8.6
Barium	5400	96.0	58.1	69.5	66.1	69.8
Beryllium	150	0.68	0.96	1.2	1.1	1.2
Cadmium	39	0.65	0.59	1.4	0.70	0.93
Chromium	210	11.9	14.2	19.7	17.2	20.1
Cobalt	3400	5.3 J	5.4 J	7.3 J	6.8 J	7.5 J
Copper	2900	12.0	12.0	16.2	15.2	17.1
Lead	400	20.6	20.9	29.0	32.6	39.0
Mercury	23	0.02 J	<0.02	<0.02	0.03 J	0.02 J
Nickel	1600	12.4	23.5	15.4	14.7	16.5
Selenium	390	0.62	<0.38	0.75	0.69	0.65
Silver	390	<0.14	<0.14	<0.15	<0.15	<0.15
Thallium	7	<0.75	<0.40	<0.58	<0.45	<1.0
Vanadium	550	30.0	24.5	26.1	25.7	29.6
Zinc	23000	69.5 J	40.5 J	68.9 J	57.2 J	60.6 J

* All results reported in milligrams per kilogram (mg/kg).

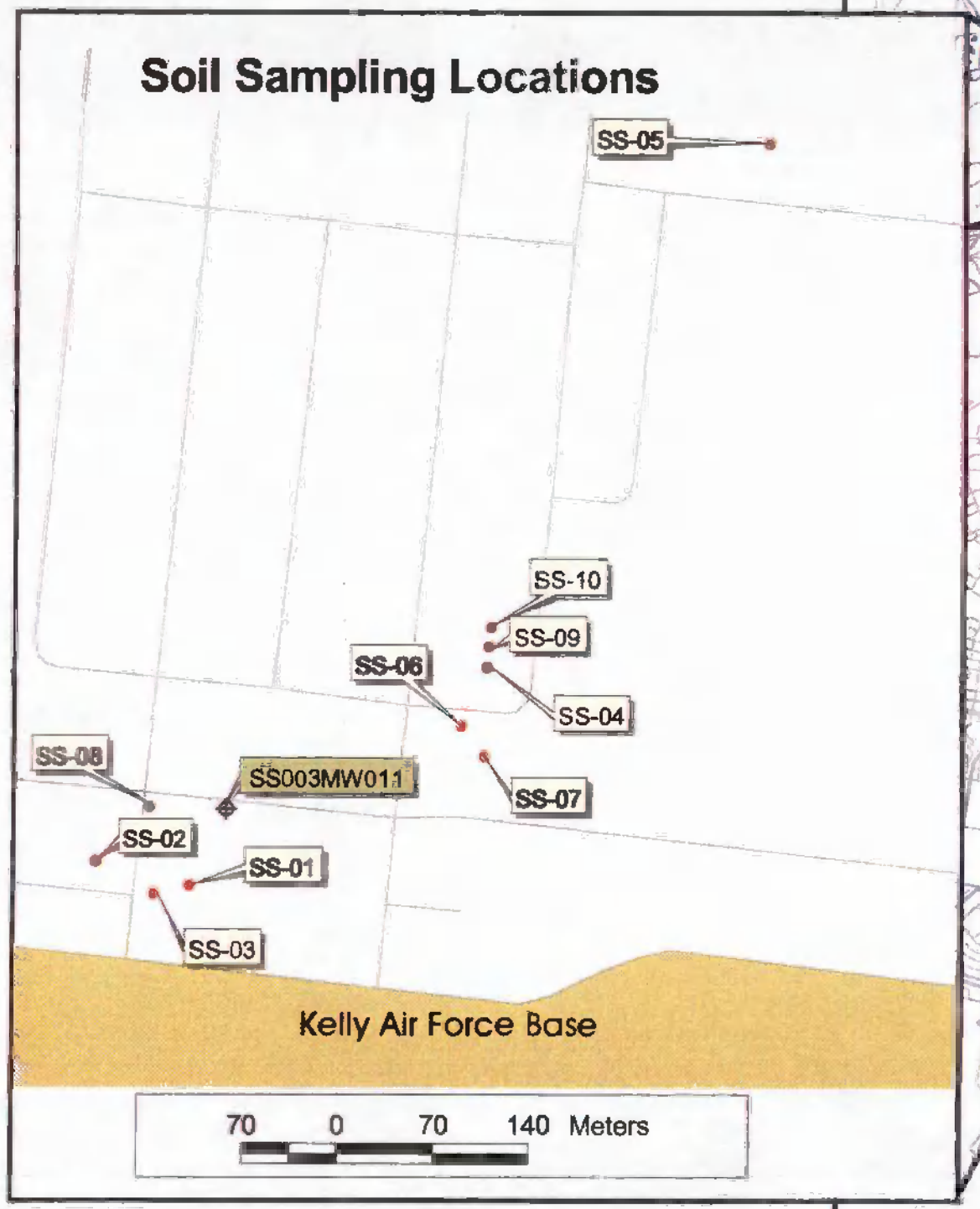
a EPA Region 6 Human Health Medium-Specific Screening Levels (EPA MSSL) for residential soil scenario (July 1999).

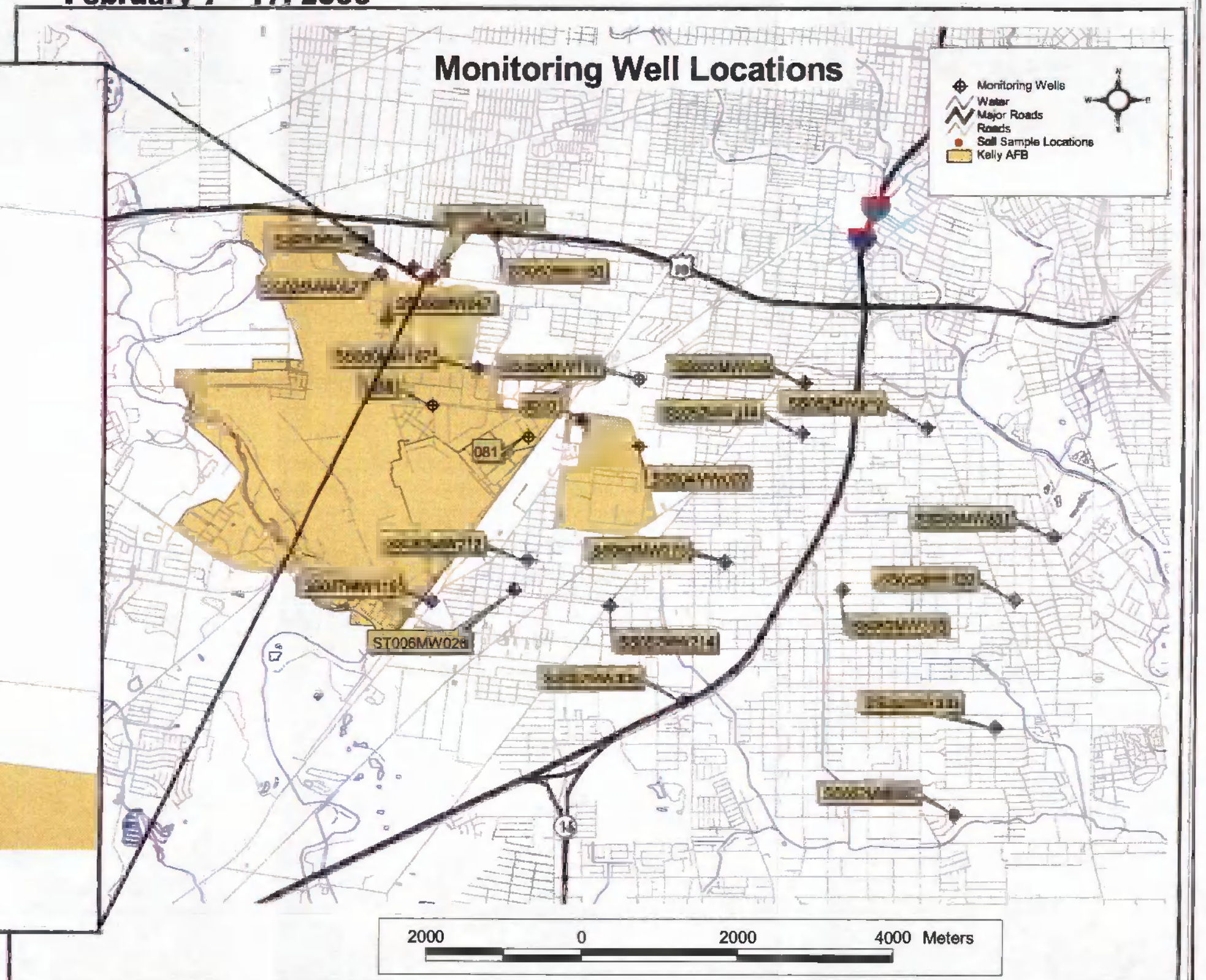
J The reported value is estimated because the Quality Control criteria was not met.

Kelly Air Force Base

Sampling Locations

February 7 - 17, 2000





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ADMINISTRATIVE RECORD

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