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HRS DOCUMENTATION RECORD

for

City View Road Groundwater Plume

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August 2004

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HAZARD RANKING SYSTEM DOCUMENTATION RECORD

for

City View Road Groundwater Plume Midland, Midland County, Texas

VOLUME
1 OF 2

Prepared by:

Texas Commission on Environmental Quality
Superfund Site Discovery and Assessment Program
Austin, Texas

August 2004

HRS
Documentation Record

City View Road Groundwater Plume
Midland, Midland County, Texas

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Superfund Site Discovery and Assessment Program
Austin, Texas

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HRS DOCUMENTATION RECORD

CITY VIEW ROAD GROUNDWATER PLUME

MIDLAND, MIDLAND COUNTY, TEXAS

SIGNATURE PAGE

Saru Basnet

8/17/04
Date

Saru Basnet
Texas Commission on Environmental Quality
Superfund Site Discovery and Assessment Program
Project Manager

Lloyd Johnson

8/23/04
Date

Lloyd Johnson
Texas Commission on Environmental Quality
Superfund Site Discovery and Assessment Program
QA/QC Officer

Wesley Newberry

8/17/04
Date

Wesley Newberry
Texas Commission on Environmental Quality
Superfund Site Discovery and Assessment Program
Team Leader

David L. Davis

8/31/04
Date

David L. Davis
Texas Commission on Environmental Quality
Site Investigation and Community Relations Section
Section Manager

CONTENTS

FIGURES

HRS DOCUMENTATION RECORD - REVIEW COVER SHEET

SITE NAME: CITY VIEW ROAD GROUNDWATER PLUME

CONTACT PERSON:

Documentation Record: Saru Basnet - TCEQ Project Manager 512/239-2234

PATHWAYS OF CONCERN:

Groundwater Pathway

Releases of hazardous substances to the groundwater pathway are the major concern for this site. Hazardous substances from unidentified source have been documented in the shallow groundwater at the site. The Groundwater Pathway is being scored based on the actual contamination and potential contamination. The primary constituent of concern evaluated for this HRS documentation record is Tetrachloroethlyene.

PATHWAYS, COMPONENTS, OR THREATS NOT EVALUATED:

Surface Water Pathway

The Surface Water Pathway was not evaluated because the inclusion of this pathway would not significantly affect the score.

Soil Exposure Pathway

The Soil Exposure Pathway was not evaluated because the inclusion of this pathway would not significantly affect the site score.

Air Migration Pathway

The Air Migration Pathway was not evaluated because the inclusion of this pathway would not significantly affect the site score.

(Although these pathways have not been evaluated, the TCEQ is concerned for all pathways surrounding the site. However, evaluation of these pathways would not have significantly increased the overall site score.)

NOTES TO THE READER

The following rules were used when citing references in the HRS Documentation Record:

1. All references attached to this report have been stamped with a designated page number (example: Ref. 1, p. 10 = 001 00010). However, if the reference being cited has an original page number, that page number was cited. If the reference being cited has no original page number or the pagination is not complete, then the designated page number is cited.

2. The State predecessor agencies: Texas Natural Resource Conservation Commission (TNRCC), Texas Water Quality Board (TWQB), Texas Department of Water Resources (TDWR), Texas Water Commission (TWC), and Texas Air Control Board (TACB), referred to throughout this report are now known as the Texas Commission on Environmental Quality (TCEQ). The new agency, TCEQ, became effective September 1, 2002, as mandated under House Bill 2912, Article 18 of the 77th Regular Legislative Session.

HRS DOCUMENTATION RECORD

Name of Site: City View Road Groundwater Plume **Date Prepared:** 08/04

Site Specific Identifier: Unidentified Groundwater Plume

Location of Site: Northwest of Interstate Highway 20 and State Highway 158 Intersection

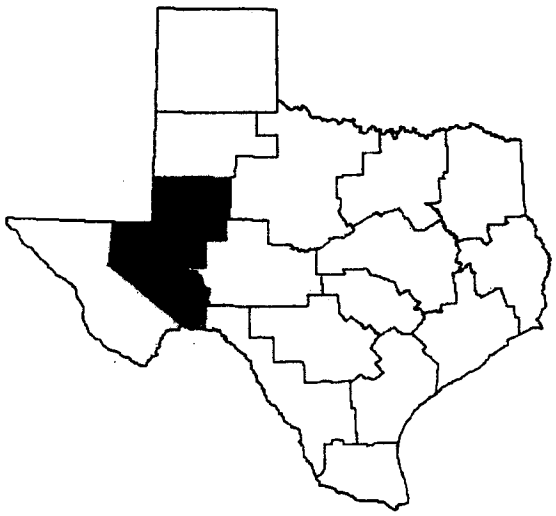
City, County, State: Midland, Midland County, Texas

General Location in the State: (see Figure 1, Site Location Map).

Topographic Map(s): US Geological Survey 7.5 Minute Topographic Map, Southeast Midland Quadrangle, Rev. 1965.

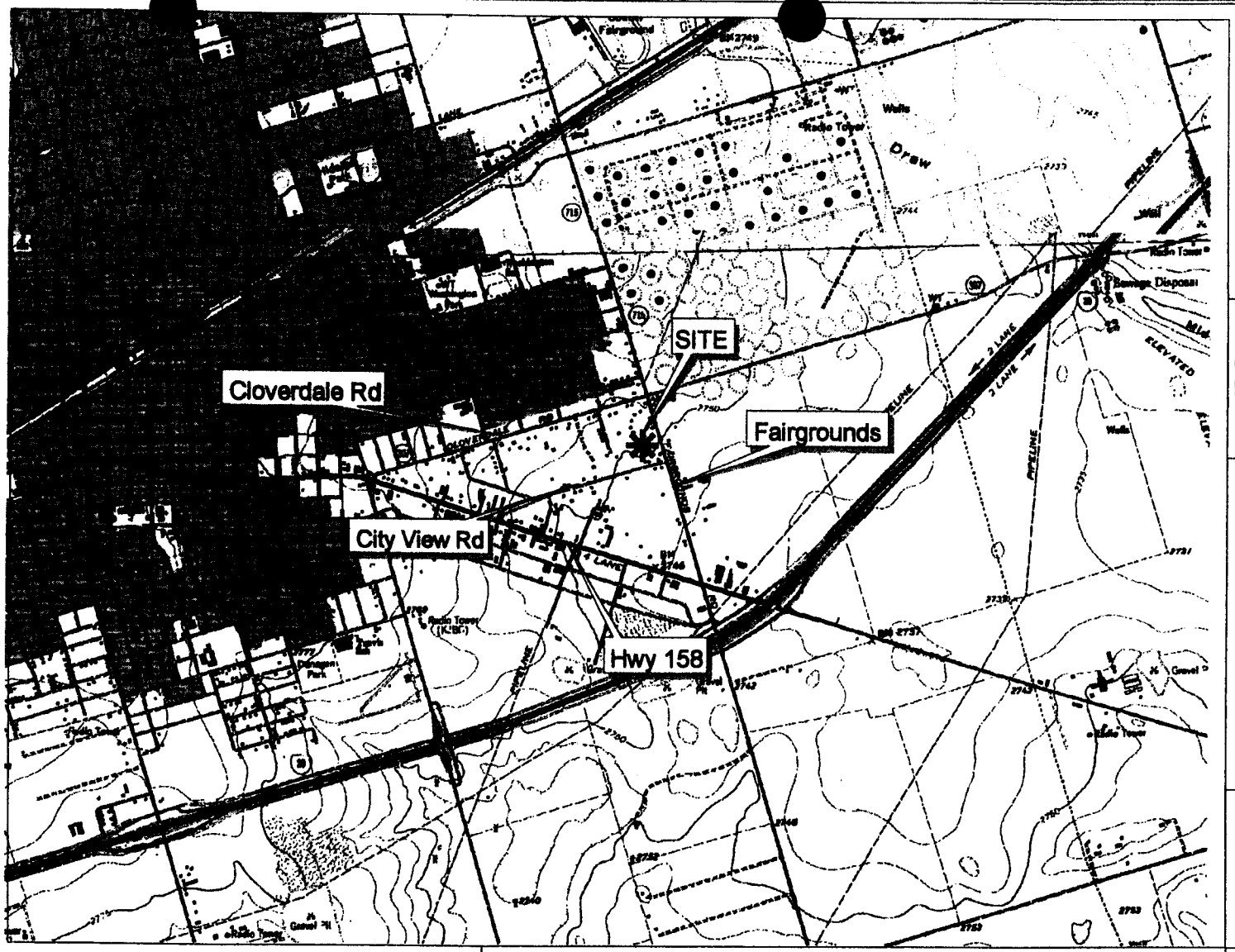
Latitude: 31° 59' 25.91" North **Longitude:** 102° 2' 43.79" West
(see Attachment A, Topographic Maps)

TCEQ Region: 7



Pathway Scores:
Ground Water Migration Pathway - 14.11
Surface Water Migration Pathway - NE
Soil Exposure Pathway - NE
Air Migration Pathway - NE
(NE - Not Evaluated)

HRS SITE SCORE: 7.06



TCEQ

City View Road Groundwater Plume, Midland, Texas

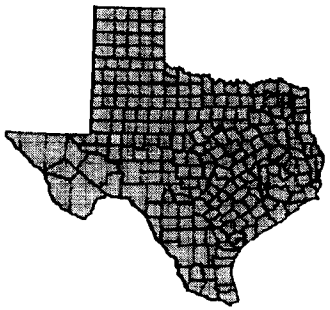


Figure -1
Site Location Map

Source

The base data used is the Southeast Midland, Texas 1:24,000 Digital Raster Graphic (DRG), which is a scanned image of a U.S. Geological Survey topographic map. UTM NAD 27 Zone 13

0.7 0 0.7 1.4 Miles

N
W E
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SITE SUMMARY

General Description of the Site:

The City View Road Groundwater Plume site is the location of a contaminated groundwater plume of tetrachloroethylene (PCE) from an unknown source located northwest of the intersection of Interstate Highway 20 and State Highway 158 in the City View Road area in Midland, Texas (see Figure 1, Site Location Map). The approximate geographic coordinates of the site are latitude 31° 59' 25.91" North and longitude 102° 2' 43.79" West. The source of PCE is unknown and the area of the contamination remains undefined. The impacted wells are clustered near the corner of Cloverdale Road, Fairgrounds Road and City View Road. The site is comprised of private homes, trailers and a few scattered small businesses.

Site History:

The City View Road Groundwater Plume was discovered in 2003 during an investigation of a crude oil spill from a pipeline leak. On March, 2003, All American Pipelines (AAP), subsidiary of Plains All American Pipeline, L.P. (PAAP), received complaint from Ms. Trish Biver regarding odor in water from her domestic well. Water samples was taken and results indicated a benzene in the water sample (Ref-7, p. 1).

In the course of the investigation in June 2003, AAP, installed two replacement water supply wells (DW-1 & DW-2) on the property of Mr. Benjamin Olvera and also installed several monitoring wells in this area. The DW-2 sample exhibited detectable concentrations of methyl ethyl ketone (MEK), tetrachloroethlyene (PCE) and carbon disulfide (Ref 7, p. 6, 9). In July 31, 2003, AAP's contractor took samples from MW-5, MW-6, and from the domestic well Shafer 2. These samples indicated the presence of PCE at each of the sampled wells. In addition, tetrahydrofuran and trichlorfluoromethane were detected in the Shafer 2 well (Ref-7, p. 7,9). The monitor wells and domestic supply wells discussed above are all completed in the shallow water-bearing zone, approximately 30 ft below ground surface (Ref-7,p. 7, Ref-8). PCE, MEK and tetrahyrdofuran are industrial solvents. Trichlorofluoromethane is a component of commercial refrigerants. According to AAP, they have never handled these types of chemicals in their pipelines or elsewhere in their business (Ref-7, p.7).

Data provided to the Midland Regional office in November from AAP, the US Body Shop 2, had PCE concentration of 5.72 μg/l, which is above the (Maximum Contaminant Level) MCL for drinking water of 5 μg/l (Ref-13). This well is located up-gradient of the physical location of the AAP facility. This data prompted the Emergency Response Program to perform a water well survey and well sampling in the area of the identified PCE plume (Ref-1,p. 1).

On February 4, 2004, a water well survey was conducted by the Emergency Response contractor in the City View acres area and obtained access agreements forms from residents with water wells. The results of the survey indicated that all the residents in this area had at least one water well and several entities had more than one (maximum of 5) on their respective properties. A total 38 wells were identified and the wells are shallow ranging from 43-80 ft. deep with most of the wells in the 50-60 ft. range (Ref-3, p.1).

On March 22, 2004, confirmation testing was undertaken by the TCEQ Emergency Response contractor. A total of 24 wells sampled had detectable levels of PCE and other volatile constituents (Ref-1, p.1, Ref-4, p.4). The Shafer-1 well had a reported concentration of 1,1-dichloroethane of 0.990μg/l. Other volatile organic compounds detected in water well samples were methyl tertiary butyl ether (MTBE) at concentrations ranging from 0.500 μg/l to 2.13 μg/l, chloroform at 0.500μg/l - 161 μg/l, tetrahydrofuran at 0.500 μg/l - 98.3 μg/l, and trichlorofluromethane at 0.500 μg/l -3.58 μg/l. The Shafer-1 well located near the AAP crude oil release also had detection's of constituents consistent with petroleum hydrocarbons associated with crude oil including benzene (289 μg/l), ethylbenzene (14.8 μg/l), isopropylbenzene (2.43 μg/l), napthalene (9.65 μg/l), n-propylbenzene (1.51 μg/l), 1,3,5-trimethylbenzene (1.86 μg/l), 1,2,4-trimethylbenzene (8.48 μg/l), m-and-p-xylene (7.96 μg/l) and o-xylene (4.19 μg/l) (Ref-4, p.6, 11-15). Four wells had concentrations of PCE exceeding the MCL for drinking water. The following wells had concentrations of PCE exceeding the MCL: the Shafer-2 well- 7.26 ppb, the Natividad family - 6.96 ppb, the Huitron Body Shop- 5.67 ppb and the Yadon -1 - 5.89 ppb.

Among all the wells sampled, Yadon-1 and Yadon-2 are the only drinking water wells. The owner stated that there are currently 11 connections associated with the wells. The wells are tied together before distribution (Ref-6). According to the U.S. Census Bureau 2000, the number of persons per household for Midland county is 2.68 (Ref- 17). The Yadon -2 well, has a concentration of PCE below the MCL at 3.78 μg/l. For HRS purpose, the population is apportioned equally to both of the wells (Ref-16, p. 276). The rest of the wells are being used for washing clothes, washing dishes, for bathing, for watering lawns/gardens and for pets/livestock.

On April 14, 2004, Field Operations referred this site to the Superfund Site Discovery and Assessment Program (SSDAP) (Ref-1). On April 16, 2004, SSDAP installed a filtration system on the four wells: Shafer-2, Natividad, Huitron Body Shop and Yadon-1that had concentration above the MCL (Ref-2).

During the week of May 24, 2004, SSDAP sampled 35 wells in the area including the 24 wells sampled by TCEQ Emergency Response. One well (Prince, 2310 Cloverdale) was detected with PCE above MCL at 5.33 μg/l. The four wells that had concentration of PCE above the MCL were sampled after the filtration system and the sample results were non-detect for PCE. Other volatile organic compounds detected in the water samples were MTBE ranging from1.69 μg/l to 37.18 μg/l, trichlorofluromethane at 1.24 μg/l to 2.76 μg/l, benzene at 469.60 μg/l to 2122.00 μg/l, ethylbenzene at 42.34 μg/l to 471.20 μg/l, toluene at 32.33 μg/l to 273.20 μg/l, m,p-xylene at 34.63 μg/l to 93.87 μg/l, naphthalene at 0.89 μg/l to 100.20 μg/l, 1,2,4-trimethylbenzene at 18.10 μg/l to 58.36 μg/l, n-propylbenzene at 6.51 μg/l to 46.01 μg/l, isopropylbenzene at 6.88 μg/l to 32.12 μg/l, 4-isopropyltoluene at 1.28 μg/l to 3.78 μg/l, 1,3,5-trimethylbenzene at 6.81 μg/l, sec-butylbenzene at 2.7 μg/l to 3.02 μg/l, and 2-hexanone at 2.77 μg/l (Ref-5,p. 21-175).

The four background samples were below detection limit for PCE (Table 1). The concentrations of PCE in the target wells sample results were greater than the background SQL, thus met the observed release criteria for the HRS (Ref. 16, p. 58).

No source has been found. Currently there are three active businesses in the area, a body shop, a welding shop and storage facility. The welding shop is owned by Mr. David Shafer which is also the location of a former septic tank repair company (Ref 1,p. 2).

TCEQ

City View Road Groundwater Plume, Midland, Texas

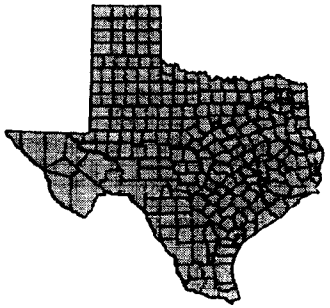

Figure -2
Sample Location Map

- ● Above the PCE MCL
- ▣ Detected, But below the PCE MCL
- ◍ Not Detected for PCE

Sample date : March 22, 2004 & May 24, 2004

Source
The base data used is the Southeast Midland Digital Orthoquarter Quad (DOQQ), which is a digital version of an aerial photograph. This DOQQ was produced by the TCEQ using USGS Guidelines. UTM NAD 83 Zone 15

0.1 0 0.1 Miles

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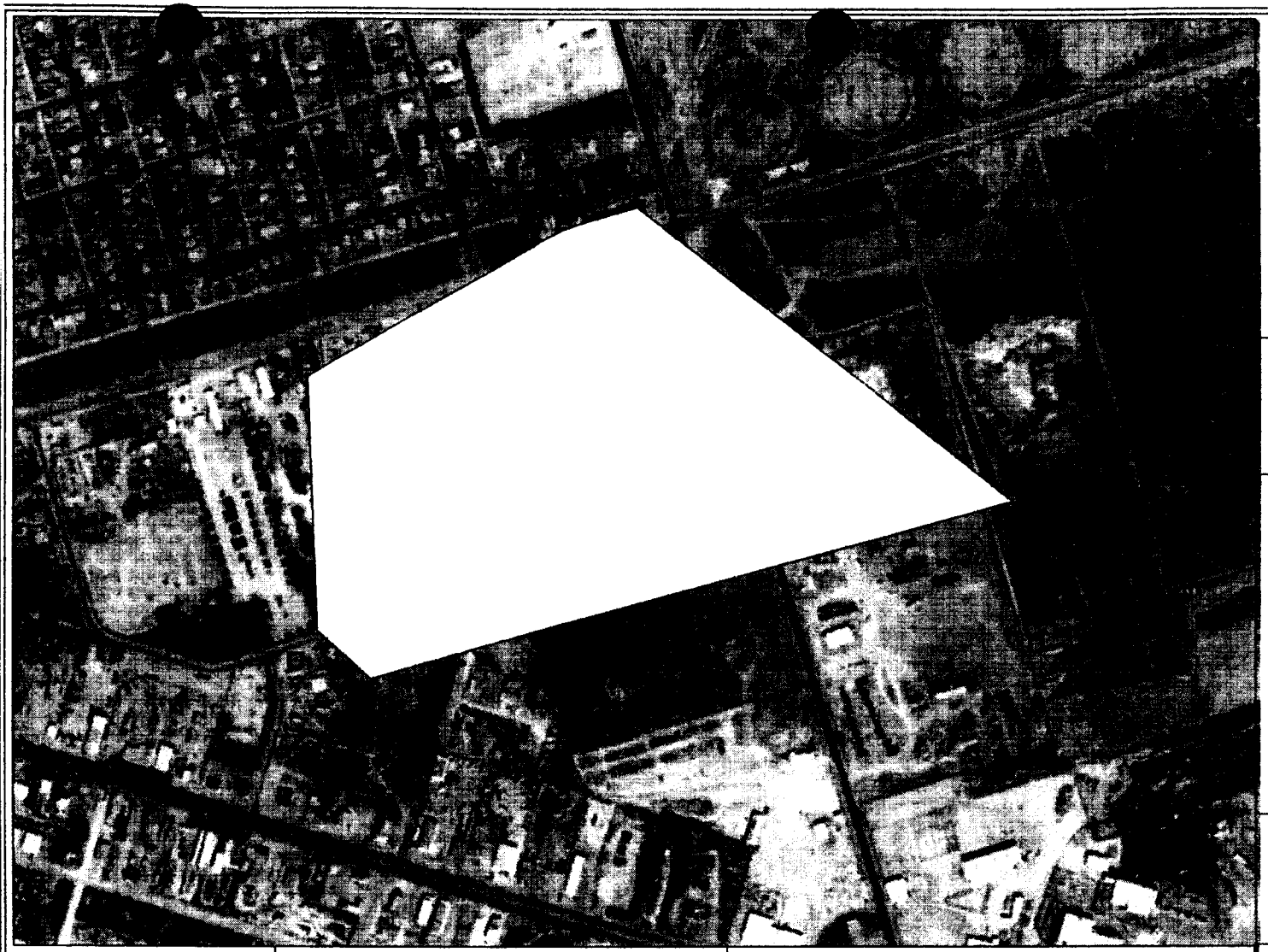

TCEQ

City View Road Groundwater Plume, Midland, Texas

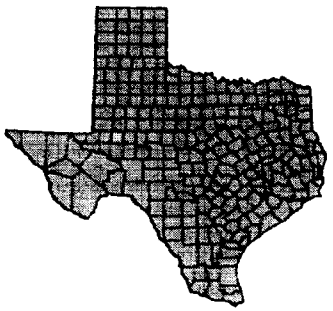

Figure -3
Source Area Map

Approximate boundary of the PCE Plume

Source
The base data used is the Southeast Midland Digital Orthoquarter Quad (DOQQ), which is a digital version of an aerial photograph. This DOQQ was produced by the TCEQ using USGS Guidelines. UTM NAD 83 Zone 15

0.1 0 0.1 0.2 Miles

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Table 1 Background Sample Table (Ground Water Plume with No Identified Source)				
Organic Constituent	**Station ID**	**Highest Concentration MCL (µg/L) [SQL]**	**3 x Highest Background Concentration µg/L**	**Reference**
PCE	Magallon	ND [0.13]	NA	Ref. 5, p. 147-151
PCE	Segura	ND [0.13]	NA	Ref. 5, p. 152-155
PCE	O'Neal	ND [0.13]	NA	Ref. 5, p. 172-175
PCE	Manrrique	ND [0.13]	NA	Ref. 5, p. 156-159

NA- Not Applicable
ND- Non detected at reported quantitation limit

Table 2-1 Release Table (Sample Date: Week of March 22nd)				
Sample Location	Backgroumd SQL	3 x Highest Background Concentration µg/L	PCE (µg/l)	Reference
Yadon-1	0.13	NA	5.89	Ref. 4, p. 11, 356, 485
Solis	0.13	NA	4.35	Ref. 4, p. 11, 358, 486
Martinez	0.13	NA	4.14	Ref. 4, p. 11, 359, 488
Mills	0.13	NA	1.83	Ref. 4, p. 11, 363, 491
Yadon-2	0.13	NA	3.78	Ref. 4, p. 11, 365, 493
Zachery	0.13	NA	2.62	Ref. 4, p. 11, 366, 492
Carillo	0.13	NA	4.09	Ref. 4, p. 12, 368, 496
Alonzo	0.13	NA	3.25	Ref. 4, p. 12, 370, 497
Nunez	0.13	NA	3.62	Ref. 4, p. 12, 371, 499
Langley	0.13	NA	2.45	Ref. 4, p. 12, 218, 256
Strickland	0.13	NA	1.15	Ref. 4, p. 12, 220, 257
Marquez	0.13	NA	0.350J	Ref. 4, p. 13, 221, 259
Prince	0.13	NA	3.89	Ref. 4, p. 13, 223, 261
Natividad	0.13	NA	6.96	Ref. 4, p. 13, 225, 262
C. Martinez	0.13	NA	1.79	Ref. 4, p. 13, 227, 264
Hinojos	0.13	NA	1.23	Ref. 4, p. 13, 228, 265
Granados	0.13	NA	1.29	Ref. 4, p. 13, 230, 267
Mckinney	0.13	NA	1.99	Ref. 4, p. 14, 232, 268
Molinar	0.13	NA	1.66	Ref. 4, p. 14, 233, 270
Wilson	0.13	NA	1.37	Ref. 4, p. 11, 235, 272
Hodges-1	0.13	NA	3.61	Ref. 4, p. 14, 237, 273
Shafer-1	0.13	NA	2.43	Ref. 4, p. 14, 239, 275
Shafer-2	0.13	NA	7.26	Ref. 4, p. 14, 240, 276
Huitron	0.13	NA	5.87	Ref. 4, p. 15, 241, 278

J- Estimated value
NA- Not Applicable

Table 3 Release Table (Sample Date: Week of May 24th)					
Sample Location	Sample location	Background SQL	3 x Highest Background Concentration µg/L	PCE (µg/l)	Reference
Yadon-1	2309 Cloverdale	0.13	NA	ND (After filter)	Ref. 5, p. 55
Solis	1910 Cloverdale	0.13	NA	3.93	Ref. 5, p. 22
E. Martinez	1908 Cloverdale	0.13	NA	4.04	Ref. 5, p. 99
Mills	1810 Cloverdale	0.13	NA	2.17	Ref. 5, p. 29
Yadon-2	2309 Cloverdale	0.13	NA	ND (After filter)	Ref. 5, p. 59
Zachery-1	2302 Cloverdale	0.13	NA	2.15	Ref. 5, p. 49
Zachery-2	2304 Cloverdale	0.13	NA	0.50	Ref. 5, p. 53
Carillo	1003 S. Webster	0.13	NA	3.87	Ref. 5, p. 160
Alonzo	1000 S. Webster	0.13	NA	3.56	Ref. 5, p. 91
Huitron	2310.5 Cloverdale	0.13	NA	ND (After filter)	Ref. 5, p. 25
Langley	1200 S. Webster	0.13	NA	2.28	Ref. 5, p. 33
Strickland	1201 S. Webster	0.13	NA	1.67	Ref. 5, p. 37
Marquez-1	1300 S. Webster	0.13	NA	0.61	Ref. 5, p. 67
Marquez-2	2409 City View Rd	0.13	NA	1.26	Ref. 5, p. 71
Prince	2310 Cloverdale	0.13	NA	5.33	Ref. 5, p. 79
Natividad	1110 S. Fairgrounds	0.13	NA	ND (After filter)	Ref. 5, p. 124
C. Martinez	2405 City View Rd	0.13	NA	1.54	Ref. 5, p. 75
Granados	2406 City View Rd	0.13	NA	1.32	Ref. 5, p. 140
Mckinney	2401 City View Rd	0.13	NA	2.0	Ref. 5, p. 95
Molinar	2411 City View Rd	0.13	NA	1.42	Ref. 5, p. 41
Shafer-1	116 S. Fairgrounds	0.13	NA	2.76	Ref. 5, p. 103
Shafer-2	2310 Cloverdale	0.13	NA	ND (After filter)	Ref. 5, p. 107
Rodriguez	2112 City View Rd	0.13	NA	1.80	Ref. 5, p. 45

Table 2 contd... Release Table (Sample Date: Week of May 2004)					
Sample Location	Sample location	Background SQL	3 x Highest Background Concentration µg/L	PCE (µg/l)	Reference
L. Rodriguez	2200 City View Rd	0.13	NA	1.75	Ref. 5, p. 83
Villa	2204 City View Rd	0.13	NA	3.25	Ref. 5, p. 87
Biver	2310.5 Cloverdale	0.13	NA	2.41	Ref. 5, p. 115
Olivera	2201 S. Fairpark	0.13	NA	2.86	Ref. 5, p. 120
Decker	2109 City View Rd	0.13	NA	1.25	Ref. 5, p. 128
Wilson	2204 Fairpark	0.13	NA	1.49	Ref. 5, p. 168
M. Hodges	2209 City View Rd	0.13	NA	3.14	Ref. 5, p. 136
M. Carrasco	2300 S. County Rd	0.13	NA	0.78	Ref. 5, p. 143

SQL - Sample Quatitation Limit
NA- Not Applicable
ND- Non detected at reported quantitation limit

Site Name: Cityview Road GW Plume

Region: 7

City, County, State: Midland, Midland County TX

Evaluator: Saru Basnet

EPA ID#: None

Date: 8/11/2004

Lat/Long: 31 59' 25.91"N/102 2' 43.79"W

T/R/S:

Congressional District: 19

This Scoresheet is for: HRS Package

Scenario Name: Groundwater Plume

Description: The City View Road Groundwater Plume site is the location of a contaminated groundwater plume of tetrachloroethylene (PCE) from an unknown source located northwest of the intersection of Interstate Highway 20 and State Highway 158 in the City View Road area in Midland, Texas. The approximate geographic coordinates of the site are latitude 31° 59' 25.91" North and longitude 102° 2' 43.79" West. The source of PCE is unknown and the area of the contamination remains undefined. The impacted wells are clustered near the corner of Cloverdale Road, Fairgrounds Road and City View Road. The site is comprised of private homes, trailers and a few scattered small businesses.

	S pathway	S^2 pathway
Ground Water Migration Pathway Score (S_{gw})	14.11	199.0921
Surface Water Migration Pathway Score (S_{sw})		
Soil Exposure Pathway Score (S_s)	0	0
Air Migration Score (S_a)	0	0
$S^2_{gw} + S^2_{sw} + S^2_s + S^2_a$		199.0921
$(S^2_{gw} + S^2_{sw} + S^2_s + S^2_a)/4$		49.773025
$\sqrt{(S^2_{gw} + S^2_{sw} + S^2_s + S^2_a)/4}$		7.06

* Pathways not assigned a score (explain):

TABLE 3-1 --GROUND WATER MIGRATION PATHWAY SCORESHEET

Factor categories and factors	Maximum Value	Value Assigned	
Aquifer Evaluated: Ogallala			
Likelihood of Release to an Aquifer:			
1. Observed Release (Ref-5, Appendix A)	550	550	
2. Potential to Release:			
2a. Containment			
2b. Net Precipitation			
2c. Depth to Aquifer			
2d. Travel Time			
2e. Potential to Release [lines 2a(2b + 2c + 2d)]			
3. Likelihood of Release (higher of lines 1 and 2e)	550		550
Waste Characteristics:			
4. Toxicity/Mobility (Ref-15, Ref-14, Section 3.2.1.3, Table 3-9)	(a)	100	
5. Hazardous Waste Quantity (Ref-14, Section 2.4.2.2)	(a)	100	
6. Waste Characteristics (Ref-14, Table 2-7)	100		10
Targets:			
7. Nearest Well (Ref-4, p 356, Ref-6)	(b)	50	
8. Population:			
8a. Level I Concentrations (Ref-4, p 356, Ref-6)	(b)	147	
8b. Level II Concentrations (Ref-4, p 365, Ref-6)	(b)	14.7	
8c. Potential Contamination	(b)		
8d. Population (lines 8a + 8b + 8c)	(b)	161.7	
9. Resources	5	0	
10. Wellhead Protection Area	20	0	
11. Targets (lines 7 + 8d + 9 + 10)	(b)		211.7
Ground Water Migration Score for an Aquifer:			
12. Aquifer Score [(lines 3 x 6 x 11)/82,5000][c]	100		14.11
Ground Water Migration Pathway Score:			
13. Pathway Score (S_{gw}), (highest value from line 12 for all aquifers evalueated)[c]	100		14.11

[a] Maximum value applies to waste characteristics category
[b] Maximum value not applicable
[c] Do not round to nearest integer

REFERENCES

Reference
Number Description of the Reference

1. Patricia Fontenot, Manager, Field Operations Division, Texas Commission on Environmental Quality, to Jacqueline Hardee. Interoffice Memorandum. April 14, 2004

2. Monthly Status Report, Water Filtration Systems Services. Work Period, April 1, 2004 - April 30, 2004.

3. Damon Waresback, Eagle Construction and Environmental Services, L. P, Fort Worth, Texas to Pete Wehner, Texas Commission on Environmental Quality. February 23, 2004. 35 pages with attachments.

4. Water Well Sampling, City View Acres, Midland, Texas by Eagle Construction and Environmental Services, L. P., for Field Operations Division, Texas Commission on Environmental Quality. April 30, 2004. 537 pages.

5. Data Usability Summary, City View Road Site, Midland, Texas, Groundwater Investigation by ECS Environmental Chemistry Services for URS Corporation, Dallas, Texas. July 21, 2004. 417 pages.

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7. Chronology of Events, City View Acres, Midland, Texas by All American Pipeline. 122 pages with attachments.

8. Doug Kennedy, Plains All American Pipeline, to Pete Wehner, Texas Commission on Environmental Quality. Facsimile. December 22, 2003. 14 pages with attachments.

9. Climatic Atlas of Texas, Texas Department of Water Resources. December 1983. 2 pages.

10. Evaluation of Groundwater Resources in Parts of Midland, Reagan, and Upton Counties, Texas, Texas Water Development Board. Report 312. 6 pages.

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12. U. S. Geological Survey. Satusma, Texas Quadrangle, 7.5 Minute Series. Topographic Map. 1974. 1 sheet.

13. U.S. Environmental Protection Agency. National Primary Drinking Water Standards, EPA 816-F-02-013, Office of Water, July 2002. 7 pages.

14. U.S. Environmental Protection Agency, 40CFR Part 300, *Hazard Ranking System*, Appendix A, 55 FR 51583, December, 1990. 1 page.

15. U.S. Environmental Protection Agency, *Superfund Chemical Data Matrix (SCDM)*. January, 2004. 1 page.

16. U.S. Environmental Protection Agency. Hazard Ranking System Guidance Manual, EPA 540-R-92-026, OSWER Publication 9345.1-07, November 1992. 1 page

17. City View Road Groundwater Plume, Midland, Texas. Field Log Book. 21 pages.

18. Midland County QuickFacts from the US Census Bureau, http://quickfacts.census.gov/qfd/states/48/48329.html. Internet Website. 2 pages.