

EDWARDS UNDERGROUND  
WATER DISTRICT

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Report 93-07

**LEAK DETECTION / LOCATION SURVEY REPORT  
FOR  
THE CITY OF LEON VALLEY, TEXAS  
CITY OF LEON VALLEY WATER SYSTEM**

**May 4, 1993 - August, 1993**



Mr. James J. Malone  
September 29, 1993

EDWARDS UNDERGROUND  
WATER DISTRICT

6.25-7.5

September 29, 1993

Mr. James J. Malone  
Director of Public Works  
City of Leon Valley  
6400 El Verde  
San Antonio, Texas 78238

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Dear Mr. Malone:

We are pleased to submit this final report of the leak detection survey performed on the City of Leon Valley water system. A summary of findings is reported in separate categories for your convenience.

The Edwards Underground Water District (District) appreciates the cooperation and assistance you have provided during the leak detection survey. Special thanks to Mr. Charles Schaver and Armando Martinez for their attention and patience during the survey. The District hopes that the information provided herein will be beneficial to the City in identifying and targeting areas of water loss and potential loss.

The Edwards Underground Water District would appreciate the opportunity to recheck the remaining 20 leak sites after repairs are completed.

This survey has demonstrated the water saving potential of the Leak Detection Program. Maintaining the best possible program is vital in order to continue the successes that have been realized. For this reason, the District is soliciting your comments, both positive and negative, and any suggestions you may have on how to improve our program.

Please respond to this request candidly, as the District cannot improve on deficiencies or support positive measures without the knowledge of such conditions.

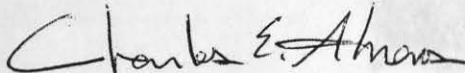
Enclosed is a water audit form. Please complete this form and return to the District within six months after all detected leaks have been repaired. This information will assist us in our continued assessment of the Leak Detection Program.



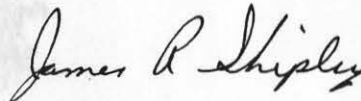
Mr. James J. Malone  
September 29, 1993 - Page 2

Should you require additional information regarding this report or have any water related questions, please do not hesitate to call.

Sincerely,



Charles E. Ahrens  
Water Resources Planner III



James R. Shipley  
Leak Detection Technician II

CEA:JRS/bmc  
Enclosures

001jrs

EDWARDS UNDERGROUND  
WATER DISTRICT

LEAK DETECTION/LOCATION SURVEY REPORT

FOR

THE CITY OF LEON VALLEY, TEXAS

CITY OF LEON VALLEY WATER SYSTEM

MAY 4, 1993 - AUGUST, 1993

PREPARED BY:

Division of Planning and Environmental Management

Leak Detection Program

August, 1993



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- B. Service Side Leaks
- C. Customer Side Leaks
- D. Valve Stacks Needing Repair
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## LEAK DETECTION/LOCATION SURVEY REPORT

FOR

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- F. Fire Hydrants Added To Plats
- G. Valves Added to Plats

## ENCLOSURES TO REPORT

- A. Revised Master Water System Distribution Plats
- B. Blank Follow-up Water Audit Forms

## SUMMARY

On December 7, 1992, the Edwards Underground Water District (EUWD) received a completed application form from the City of Leon Valley requesting a leak detection/location survey on its water distribution system. A pre-survey conference was held March 18, 1993 at the City Public Works Center to discuss the work to be performed. It was agreed that EUWD would perform sonic leak detection on all available access points, computerized leak location as needed, record any unusual system conditions found, and submit to the City a revised master water plat with the final report.

Mark L. McGinnis of EUWD began the survey on May 4, 1993, and the survey was concluded on July 2, 1993. Over the course of the survey, EUWD staff surveyed a total of 2,401 access points including 1,715 customer service connections, 184 fire hydrants, 475 main line valves, and 27 other access points covering 32.95 miles of distribution mains. Computer leak sound correlation was performed on four locations.

EUWD technicians detected a total of 76 leaks. This total included 24 meter box leaks, 2 fire hydrant leaks, 28 service line leaks, 1 main leak, 1 valve leak, and 20 customer side leaks. EUWD staff estimates 305,500 gallons of water per day has been saved by the repair of 36 detected leaks as of August 9, 1993. The leaks discovered during the survey range from 300,960 gallons per day to numerous small meter box leaks.

As part of the survey, EUWD staff located 63 main line valves, 12 fire hydrants, and 0.1 miles of distribution main not shown on the master water plats. EUWD staff was unable to locate 14 main line valves and 3 fire hydrants. An additional 25 valve stacks need cleaning and/or repair. EUWD staff noted 3 water meters that were not registering accurately.

JRS/bmc  
001jrs

A list of these leaks is included in Appendix A.	
1. Meter Box Leaks.....	24
Leakage estimates of repaired leaks.....	3216 GPD
Leaks repaired.....	24
A list of these leaks is included in Appendix A.	
2. Fire Hydrant Leaks.....	2
Some fire hydrants may be repaired by flushing, others will need repair or replacement.	
Leakage estimate of repaired hydrants.....	360 GPD
Fire hydrants repaired.....	2



## DISCUSSION

- A. Total Access Points Surveyed..... 2,401

The following number of access points were used during the survey:

1. Customer service connections: 1,715
2. Main Valves: 475
3. Fire Hydrants: 184
4. Others: 27

- B. Total Miles of Distribution Main Surveyed..... 32.85

- C. Total Number of Suspected Leak Sounds Rechecked..... 240

- D. Total Leaks Detected..... 76

Main line, service line, fire hydrant, and valve leaks were located by computer correlation of leak sounds or by visual inspection. Meter box leaks and customer side leaks were located through house to house surveying.

- E. Total Estimated Water Saved by Repair of Detected Leaks in Gallons per day..... 305,500 GPD

Leakage estimates for main line, service line, fire hydrants, and valve leaks are based on hole size and system pressure in P.S.I.. This information was furnished by the City of Leon Valley personnel when EUWD was not on site at the time of repairs. Totals are only recorded for leaks repaired as of August 9, 1993, with leakage estimates.

**We would appreciate a list of leakage estimates for all detected leaks repaired after August 9, 1993 for EUWD records.**

Main line leaks were located by computer correlation of leak sounds. Valve, fire hydrant, and meter box leaks were located through access points to access point surveying.

1. Meter Box Leaks..... 24

Leakage estimates of repaired leaks..... 3216 GPD  
Leaks repaired..... 24

A list of these leaks is included in Appendix A.

2. Fire Hydrant Leaks..... 2

Some fire hydrants may be reseated by flushing, others will need repair or replacement.

Leakage estimate of repaired hydrants..... 360 GPD  
Fire hydrants repaired..... 1

- I. 6603 Blue Bird Dr.: Pending
- II. Shurgard at Bandera Rd.: Repaired 5/25 360 GPD
- 3. Service Line Leaks..... 28
  - Leakage estimates of repaired services..... 964 GPD
  - A list of service leaks is included in Appendix B.
- 4. Main Line Leaks..... 1
  - Leakage estimates of repaired mains..... 300,960 GPD
  - I. 6027 Walking Gate - Repaired 6/7/93
- 5. Main Valve Leaks..... 1
  - Leakage estimates of repaired leaks..... 0 GPD
  - I. 6219 Sun Deal - Blow Off - Pending
- 6. Customer Side Leaks..... 20
  - Customer side leaks were generally small. EUWD was unable to estimate this leakage. Customers were notified by door tag or in person when possible or will be notified by City of Leon Valley personnel.
  - A list of these leaks is included in Appendix C.
- F. Slow Water Meters..... 3
  - During house to house surveying, water use was detected on these services. Meters were not registering the flow or were observed sticking and/or jumping.
  - 1. 6506 Hoofs Ln.
  - 2. 7054 Settlers Ridge
  - 3. 6814 Conestogg
- G. General Maintenance Needed
  - 1. Valve Stacks Needing Repair..... 17
    - The majority of these valve stacks need to be raised to grade.
    - A list of these stacks is included in Appendix D.
  - 2. Valve Stacks Needing Cleaning..... 8
    - The condition of these valve stacks make them unusable at this time.
    - I. Between Linklea and Linkmeadow on Linkhaven 2 of 2
    - II. Between Eckhert Rd. and Linkside on Linkway 1 of 1
    - III. Between Linkside and Linkview on Linkcrest 1 of 2
    - IV. Cherryleaf at Huebner 1 of 1



V.	8" valve on Sawyer Dr. to Huebner Rd.	1 of 1
VI.	Poss Rd. @ Bandera Rd.	1 of 2
VII.	Forest Pine @ Evers Rd.	1 of 2

3. Valves that could not be located..... 14

Suspected locations were surveyed by EUWD with a ferromagnetic detector to locate buried main valves. When successful, these locations were marked. It is conceivable that additional valves remain unlocated within the system. All valve box lids located were painted blue.

A list of these valves is included in Appendix E.

4. Fire hydrants that could not be located..... 3

- I. 6911 Timberhill
- II. 6608 Sawyer Rd.
- III. Eckhert Rd. between Linkway and Linkhaven.

H. Survey Finding vs. Master Water Plat

1. Fire hydrants, main line valves, and feet of distribution system main located but not shown on Master Water Plats.

- I. Fire Hydrants - 12 - Appendix F
- II. Main Line Valve - 38 - Appendix G
- III. Blow Off Valves - 15 - Appendix G
- IV. Air Relief Valves - 1 - Appendix G
- V. Fire Line Valves - 4 - Appendix G
- VI. Service Valves - 5 - Appendix G
- VII. Main Footage - 530 feet

I. Revised Master Water Plats included with this report

1. The existing City of Leon Valley 1" = 400' Water Capital Improvement Plan distribution system plat has been divided into 5 separate 1" = 200' plats. A map key is provided for your convenience. Main sizes and type of material was furnished by City of Leon Valley personnel.

2. Codes

Yellow indicates mains and services were surveyed from access points only.

Blue indicates mains and services were surveyed with a ground microphone and from access points.

3. Abbreviations Used on Revised Master Plats:

- UTL - Unable to Locate
- UTS - Unable to Survey
- NC - Needs Cleaning
- RTG - Raise to Grade
- CCNH - Curb Cock not Holding

FHWV - Fire Hydrant with Valve  
FH - Fire Hydrant Without Valve  
ARV - Air Relief Valve  
PCV - Pressure Control Valve

4. All mains were surveyed from all available access points. When the spacing of access points was too great to survey properly, a ground microphone was used in combination.
5. All valves located were surveyed. When direct contact could not be made on a valve, a probe rod was used.
6. Fire hydrants labeled on the plat as fire hydrants without lead valves are hydrants where the lead valve could not be located or does not exist.
7. Any item circled on the plat indicates that it was added, could not be located, or needs repair.
8. All mains, fire hydrants, water services, blow-offs, and main line valves hand drawn on the plats are for access point accounting. The location and placement of these items on the plat is intended to indicate what was actually found during the field survey. Placement of hand drawn main valves on the plat is the technicians best guess of what they control. Every effort was made to ensure the accuracy of these plats, but EUWD does not guarantee their accuracy.

JRS/bmc  
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## RECOMMENDATIONS

- I. Install meters on all water services, even if the consumer is not to be billed. Set reasonable and prudent usage standards for each type of water use. There is no inducement to the consumer to conserve or use water wisely when water is supplied without charge or without usage limits. The potential benefits of metering to the City are numerous:
  - A. Conservation of a precious and valuable resource.
  - B. Potential reduction in water consumption and related waste water treatment costs.
  - C. Extension of existing supplies to meet increasing needs. This could help defer the construction of new facilities such as new wells, booster stations, storage tanks, or distribution systems upgrades.
  - D. Allows the City to identify and verify all water use and determine water system efficiency.
  - E. Gives the City the tools needed to select and implement programs to enhance efficiency, prevent loss, and foster water conservation.
- II. All meter installations should be reviewed to determine whether the meter is properly sized and the correct type for the current use and flow-demand.

Water meters are designed to deliver a maximum flow for short periods and a lower flow for long periods without sustaining damage or above normal wear. If a meter is operating outside its intended range, it cannot register all flow, even though it may be calibrated. We recommend that all well meters and a percentage of large commercial meters be tested in place yearly for accuracy.
- III. Placement of well flow meters should be checked against meter manufacturer specifications for recommended straight pipe lengths both upstream and downstream of meter. All meters have limitations due to piping configurations. An improperly located or installed meter will reduce the inherent specified accuracy below an acceptable level. Meters installed in close proximity to a bend, valve or other fittings that is likely to disturb the flow condition at the meter could invalidate the manufactures meter calibration.
- IV. Revise master water distribution plats from "As Built" plans, EUWD plat, and utilizing the knowledge and expertise of long term field employees. Master plats should show locations of all main valves, fire hydrants, blow offs, drain or flush valves, air relief valves, and pressure regulating valves. Revised



plats should be made available to field maintenance supervisors for use in the operation and maintenance of the water distribution system.

- V. Utilizing the revised master distribution plats, all distribution system main line valves should be located, adjusted, marked, cleaned, tested, and repaired or replaced as needed. The use of valve marker posts are recommended on main line valves that are subject to being lost or buried. Time spent searching for lost or buried main valves and flushing fire hydrants to reduce pressure and volume for leak repair is a major source of water loss.

Install lead valves as part of the installation on all new or replacement fire hydrants.

- VII. Consider ductile iron pipe for the primary main line material used for new installation and main replacement. As the production costs of water increase, the need for routine systemwide leak detection surveys will also increase. Leak sounds generated in metallic pipe are louder and have a tendency to travel further than those developed in non-metallic pipe.

Ductile iron pipe has a proven history of long service life and its sound carrying characteristics for leak detection are far superior to any other type of pipe material.

JRS/bmc  
003jrs

## COMMENTS

### Edwards Underground Water District Meter Box Leaks 1993

We greatly appreciate the assistance and cooperation we received from the management and staff of the City of Leon Valley. We commend your interest in water conservation and are grateful for the opportunity to survey your water system.

The active participation of Albert San Miguel in this survey is greatly appreciated. His knowledge, experience, and professional work habits contributed to its success.

Your efforts and timely repair of the leaks recorded in this report will save a significant amount of precious water. Our thanks to all the staff for their efforts in helping to conserve the Edwards Aquifer.

Sincerely,

*Mark L. McGinnis*  
Mark L. McGinnis

Leak Detection Technician I

*James R. Shipley*

James R. Shipley

Leak Detection Technician II

MLM:JRS/bmc

004jrs

**APPENDIX A**  
**Edwards Underground Water District**  
**Meter Box Leaks**  
**1993**

System: City of Leon Valley

Page 1 of 2

Line #	Date #	Plat	Address	Loss G.P.D.	Date Repaired	Comments
1	5/24	1	7011 Cades Cove	8.6	5/26	Inlet Washer
2	5/24	2	6205 Jeff Loop	8.6	5/26	Angle Stop
3	5/24	2	5708 El Verde	25.9	5/26	Pinhole on meter
4	5/24	5	6879 Bandera Rd.	2,880	5/27	Flange Leak
5	5/25	5	7414 Canterfield	17.2	6/9	Outlet Washers
6	5/25	5	7346 Canterfield	8.6	6/9	Meter Washers
7	5/25	5	7342 Canterfield	25.9	6/9	Curb Stop - Washer
8	5/25	5	7326 Canterfield	17.2	6/22	Curb Stop
9	5/25	5	6526 Halter Ln.	8.6	5/26	Inlet Washer
10	5/25	4	7203 Poss Rd.	25.9	5/26	Longhorn Leak
11	5/25	4	7207 Poss Rd.	34.5	5/26	Tee
12	5/25	5	6415 Stable Dr.	8.6	6/9	Inlet Washer
13	5/25	5	6506 Hoofs Ln.	8.6	6/3	Outlet Washer
14	5/26	5	7207 Gumtree	8.6	6/3	Outlet Washer
15	5/26	5	6739 Peachtree	8.6	6/17	Outlet Washer
16	6/7	4	6011 Walking Gate	43.2	6/10	Pinhole in meter
17	6/7	4	6138 Saddlebow	8.6	6/17	Outlet Washer
18	6/7	4	7418 High Stepper	8.6	6/17	Outlet Washer
19	6/7	4	6227 Walking Gate	8.6	6/17	Curb Stop
20	6/7	4	6314 Stirrup Ln.	8.6	?	Pinhole in meter
21	6/7	4	6234 Stirrup Ln.	8.6	6/22	Outlet Washer



**APPENDIX A**  
**Edwards Underground Water District**  
**Meter Box Leaks**  
**1993**

System: City of Leon Valley

Page 2 of 2

Line #	Date #	Plat	Address	Loss G.P.D.	Date Repaired	Comments
22	6/7	4	6219 Sun Dial St.	8.6	6/22/93	Outlet Washer
23	5/26	4	7236 Poss Rd.	17.2	5/26/93	Angle Stop
24	5/26	2	5908 El Verde	8.6	5/26/93	Washers
4	5/26	5	6504 Green Valley		Pending	Corporation Leak
5	5/27	4	7108 Larkwood	32.0	5/29/93	Corporation Leak
6	5/27	4	7206 Horse Whip		Pending	Corporation Leak
7	5/27	4	7207 Horse Whip	34.5	6/21/93	Leak & Longhorn
8	6/7	4	6204 Setting Sun		Pending	Corporation Leak
9	6/7	3	6110 Royal Sun		Pending	Corporation Leak
10	6/14	1	6614 Bushmar		Pending	Corporation Leak
11	6/14	1	6611 Grist Mill	23.9	6/6/93	Winhole
12	6/14	1	6647 Grist Mill	8.4	6/5/93	Corporation Leak
13	6/14	1	6643 Cedar Cove	16.0	7/8/93	Corporation Leak
14	6/14	2	6343 Mary Jackson	8.6	6/8/93	Corporation Leak
15	6/14	2	6219 Hindman Dr.		Pending	Corporation Leak
16	6/14	3	7219 Bridge Path		Pending	Corporation Leak
17	6/14	4	6215 Walking Gate	25.9	6/25/93	Corporation Leak
18	6/14	4	6134 Whirring Top		Pending	Corporation Leak
19	6/14	4	6119 Royal Sun		Pending	Corporation Leak
20	6/14	4	6314 Roe Sophie		Pending	Corporation Leak
21	8/9	5	7114 Canterbury		Pending	Corporation Leak

# APPENDIX B

## Edwards Underground Water District Service Line Leaks 1993

System: City of Leon Valley

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Line #	Date #	Plat	Address	Loss G.P.D.	Date Repaired	Comments
1	5/26	5	710 Tealeaf Dr.	25.9	6/25/93	Leak @ Longhorn
2	5/26	5	6731 Cherryleaf	34.5	6/21/93	Leak @ Longhorn
3	5/26	5	6823 Grass Valley		Pending	Corporation Leak
4	5/26	5	6904 Grass Valley		Pending	Corporation Leak
5	5/27	4	7108 Larksong	320	6/29/93	Corporation Leak
6	5/27	4	7206 Horse Whip		Pending	Corporation Leak
7	5/27	4	7207 Horse Whip	34.5	6/21/93	Leak @ Longhorn
8	6/2	4	6204 Setting Sun		Pending	Corporation Leak
9	6/2	4	6110 Royal Sin		Pending	Corporation Leak
10	6/14	1	6634 Huebner		Pending	Corporation Leak
11	6/14	1	6611 Grist Mill	25.9	8/6/93	Pinhole
12	6/14	1	6647 Grist Mill	8.6	8/5/93	Corporation Leak
13	6/14	1	6643 Cades Cove	160	7/5/93	Corporation Leak
14	6/14	2	6343 Mary Jamison	8.6	8/9/93	Corporation Leak
15	6/14	2	6019 Kiniman Dr.		Pending	Corporation Leak
16	6/14	5	7219 Bridle Path		Pending	Corporation Leak
17	6/14	4	6215 Walking Gate	25.9	6/25/93	Corporation Leak
18	6/14	4	6134 Stirrup Ln.		Pending	Corporation Leak
19	6/14	4	6119 Royal Sun		Pending	Corporation Leak
20	6/14	4	6314 Rue Sophie		Pending	Corporation Leak
21	8/9	5	7314 Canterfield		Pending	Corporation Leak

## APPENDIX B

### Edwards Underground Water District Service Line Leaks 1993

System: City of Leon Valley

Page 2 of 2

Line #	Date #	Plat	Address	Loss G.P.D.	Date Repaired	Comments
22	8/9	5	7315 Canterfield		Pending	Corporation Leak
23	8/9	5	6514 Halter Ln.		Pending	Corporation Leak
24	8/9	4	6906 Fernmoss		Pending	Corporation Leak
25	8/9	4	6119 Walking Gate		Pending	Corporation Leak
26	8/9	4	6132 Stirrup Ln		Pending	Corporation Leak
27	8/9	4	6931 Sunlight Dr.		Pending	Corporation Leak
28	8/9	4	6406 Red Jacket		Pending	Corporation Leak
8	5/24	2	4801 El Verde Drive			Notified
9	5/24	2	4803 El Verde Drive			Door Tagged
10	5/24	2	5712 El Verde Drive			Door Tagged
11	5/24	2	5809 Grace Hill			Door Tagged
12	5/24	4	6608 Bandera Street			Notified
13	5/24	5	7529 Linkside Drive			Hand Valve/Notified
14	5/24	5	6418 Stable Drive			Door Tagged
15	5/24	5	7710 Canterfield Drive			Door Tagged
16	5/25	5	7355 Canterfield Drive			Notified
17	5/25	5	6425 Trotter Lane			Notified
18	5/25	4	7210 Sulby Lane			Door Tagged
19	5/25	4	7120 Sulby Lane			Door Tagged
20	5/25	5	7211 Bridle Path			Door Tagged



# APPENDIX C

## Edwards Underground Water District Customer Side Leaks 1993

System: City of Leon Valley

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Line #	Date #	Plat	Address	Comments
1	5/24	1	7023 Mill Stream	
2	5/24	1	7002 Mill Stream	
3	5/24	1	7018 Mill Wheel	
4	5/24	1	7054 Settlers Ridge	Door Tagged
5	5/24	1	6814 Conestoga Drive	
6	5/24	2	6403 Endenborough Drive	
7	5/24	2	6312 El Verde Drive	Notified
8	5/24	2	6001 El Verde Drive	Notified
9	5/24	2	5805 El Verde Drive	Door Tagged
10	5/24	2	5712 El Verde Drive	Door Tagged
11	5/24	2	5823 Grass Hill	Door Tagged
12	5/24	4	6608 Bandera Street	Notified
13	5/24	5	7529 Linkside Drive	Hand Valve/Notified
14	5/24	5	6418 Stable Drive	Door Tagged
15	5/24	5	7710 Canterfield Drive	Door Tagged
16	5/25	5	7355 Canterfield Drive	Notified
17	5/25	5	6435 Trotter Lane	Notified
18	5/25	4	7218 Sulky Lane	Door Tagged
19	5/25	4	7230 Sulky Lane	Door Tagged
20	5/25	5	7214 Bridle Path	Door Tagged

# APPENDIX D

## Edwards Underground Water District Valve Stacks Needing Repair 1993

System: City of Leon Valley

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Line #	Plat #	Location	Needed	Number of Valve	Number of Valve
1	1	Huebner @ Mill Stream	Raise to Grade	1 of 3	1 of 3
2	3	Bandera @ Echo Hill	Raise to Grade	2 of 2	2 of 2
3	3	8" Valve on Bander Rd. to Ancira Chevy	Raise to Grade	1 of 1	1 of 1
4	3	5328 Blackberry	Raise to Grade	1 of 1	1 of 1
5	4	Echo Hill @ Corn Planter	Raise to Grade	2 of 2	2 of 2
6	4	Seneca @ Rue Sophie	Raise to Grade	1 of 3	1 of 3
7	4	6013 El Verde	Raise to Grade	1 F.H. Valve	1 F.H. Valve
8	5	Grass Valley @ Cherryleaf	Raise to Grade	3 of 3	3 of 3
9	5	Grass Valley & Peachtree	Raise to Grade	3 of 3	3 of 3
10	5	Behind 7613 Linkside	Repair	1 of 1	1 of 1
11	5	Behind 7704 Linkside	Repair	1 F.H. Valve	1 F.H. Valve

## APPENDIX E

### Edwards Underground Water District Valves That Could Not Be Located 1993

System: City of Leon Valley

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Line #	Plat #	Location	Number of Valve
1	1	Timberhill @ Autumn Chase	1 of 3
2	3	Apartment Complex on Rue Marielyne	3 of 3
3	3	Thistle @ Bandera	1 of 2
4	3	Thistle @ Watercross	1 of 1
5	4	Evening Sun @ Sunlight	1 of 2
6	4	Grass Valley @ Bandera	1 of 3
7	4	Peachtree @ Huebner	1 of 2
8	4	Grissom Rd. @ Bandera	1 of 2
9	4	Red Jacket @ Rue Sophie	1 of 3
10	5	Grass Valley @ Bandera	1 of 3
11	5	Linkcrest @ Eckhert Rd.	1 of 1
12	5	Chaparrel @ Huebner	1 of 1



# APPENDIX F

## Edwards Underground Water District Fire Hydrants Added to Plats 1993

System: City of Leon Valley

Page 1 of 1

Line #	Plat #	Location	Type	Number Added	Number of Valves
1	1	6508 Sawyer	Blow Off	1	1
2	2	Poss Rd. @ Grissom Rd.	Blow Off	1	1
3	2	Seneca Rd. @ Edenborough	Blow Off	1	1
4	2	Rinkus @ William Rancher Dr.	Main Line Valve	1	1
5	3	South of 6336 Bandera Rd.	Main Valve	1	1
6	3	Hurly between Watercross and Bandera Rd.	Main Valve	1	1
7	3	6221 Bandera Rd.	Main Valve	1	1
8	4	6712 Bandera Rd.	Blow Off	1	1
9	4	South of 6436 Bandera Rd.	Main Valve	1	1
10	4	6988 Bandera Rd.	Blow Off	1	1
11	5	Between 6988 - 6904 Bandera Rd.	Blow Off	1	1
12	5	Between 6812 - 10 Bandera Rd.	Main Valve	1	1
13	1	End of Sawyer Rd. main	Air Relief Valve		1
14	1	6520 Sawyer Rd.	Main Valve		1
15	2	Griss Cross Rd.	Main Valve		1
16	1	Griss Cross Rd.	Blow Off		1
17	2	End of Grissom Rd. main	Blow Off		1
18	2	End of Grissom Rd. main	Main Valve		1
19	2	End of Grissom Rd. main	Service Valve		1
20	2	Shadow Mist	Blow Off		1

# APPENDIX G

## Edwards Underground Water District Valves Added to Plats 1993

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Line #	Plat #	Location	Type	Number of Valve
1	1	Conestoga	Blow Off	1
2	1	Strawberry Park	Blow Off	1
3	1	Wagon Spoke	Blow Off	1
4	1	Huebner @ Sawyer Rd.	Fire Line Valve	1
5	1	Huebner Rd. Tank @ Bandera Rd.	Main Valve	1
6	1	Sawyer Rd. @ 8" main intersection	Main Valve	1
7	1	Huebner Rd. @ Grist Mill	Main Valve	1
8	1	General Store	Blow Off	1
9	1	Sawyer Rd. @ Mill Stream	Main Valve	1
10	1	Cades Cove	Blow Off	1
11	1	Mill Wheel	Blow Off	1
12	1	End of Sawyer Rd. main	Main Valve	1
13	1	End of Sawyer Rd. main	Air Relief Valve	1
14	1	6520 Sawyer Rd.	Main Valve	1
15	1	Criss Cross Rd.	Main Valve	1
16	1	Criss Cross Rd.	Blow Off	1
17	2	End of Grissom Rd. main	Blow Off	1
18	2	End of Grissom Rd. main	Main Valve	2
19	2	End of Grissom Rd. main	Service Valve	1
20	2	Shadow Mist	Blow Off	1

**APPENDIX G**  
**Edwards Underground Water District**  
**Valves Added to Plats**  
**1993**

System: City of Leon Valley

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Line #	Plat #	Location	Type	Number of Valve
21	2	6011 Grissom Rd.	Main Valve	1
22	2	6000 Grissom Rd.	Main Valve	1
23	2	Poss Rd.	Fire Line Valve	1
24	2	End of El Verde main	Main Valve	2
25	2	6000 El Verde	Main Valve	1
26	2	Jeff Loop East @ El Verde	Main Valve	1
27	2	Jeff Loop West @ El Verde	Main Valve	1
28	2	6313 El Verde	Main Valve	1
29	2	4405 El Verde	Main Valve	1
30	2	Aids Dr. @ William Rancher Dr.	Main Valve	1
31	2	Britania Ct.	Blow Off	1
32	2	Samaritan Dr.	Blow Off	1
33	3	Grass Hill @ Bandera	Main Valve	4
34	3	Watercross @ Wurzbach	Main Valve	1
35	3	Watercross @ Wurzbach	Service Valve	1
36	3	Hurly Dr. between Watercross & Bandera Rd.	Service Valve	2
37	3	Hurly Dr. between Watercross & Bandera Rd.	Main Valves	2
38	3	Hurly Dr. between Watercross & Bandera Rd.	Fire Line Valve	1
39	3	Wurzbach between Sindle Dr. & Exchange Parkway	Main Valve	3



# APPENDIX G

## Edwards Underground Water District Valves Added to Plats 1993

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Line #	Plat #	Location	Type	Number of Valve
40	4	Grissom Rd. @ Bandera	Main Valve	1
41	4	6528 Bandera Rd.	Main Valve	1
42	4	Grass Hill @ Bandera	Main Valve	1
43	4	6820 Poss Rd.	Service Valve	1
44	4	Sulky Ln. @ Trotter Ln.	Main Valve	1
45	4	Crownpiece @ Stirrup	Main Valve	1
46	4	Forest Meadow @ Sunlight Dr.	Main Valve	1
47	4	Sun Dial @ Seneca	Main Valve	1
48	4	Forest Meadow @ Enes	Blow Off	1
49	4	Desert Sun	Blow Off	2
50	4	Royal Sun	Blow Off	1
51	4	Sun Dial	Blow Off	1
52	5	Reindeer Tr.	Fire Line Valve	1
53	5	Linkwood @ Linkway	Main Valve	2