

**LEAK DETECTION / LOCATION SURVEY REPORT
FOR THE
FAIRCO WATER COMPANY
BEXAR COUNTY, TEXAS**

December 13, 1995 -- March 8, 1996

By

John E. Gapinski and James R. Shipley
of the
EDWARDS AQUIFER AUTHORITY
Division of Planning and Environmental Management
Leak Detection/Location Program
July, 1996

**Edwards Aquifer Authority
1615 N. St. Marys
P. O. Box 15830
San Antonio, Texas 78212-9030
210-222-2204**

EDWARDS AQUIFER AUTHORITY

6.25-7.5

August 26, 1996

Mr. Bob Weiss
General Manager
Fairco Water Company
P.O. Box 4495
Boerne, TX 78006

Dear Mr. Weiss:

We are pleased to submit this final report of the leak detection survey performed on Fairco Water Company's water distribution system. This report list findings by separate categories for your convenience.

The Edwards Aquifer Authority, formerly the Edwards Underground Water District appreciates the cooperation and assistance you have provided during the survey. Special thanks to Paul Broussard for his attention and patience during the survey. The Authority hopes that the information provided herein will be beneficial to the Company in identifying and targeting areas of actual water loss and potential water loss.

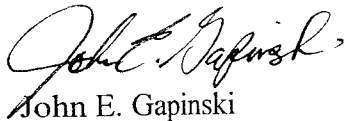
This survey has demonstrated the water saving potential of the Leak Detection Program. Maintaining the best possible program is vital in order to continue the successes realized. For this reason, the Authority is soliciting your comments, both positive and negative, and any suggestions you may have on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

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

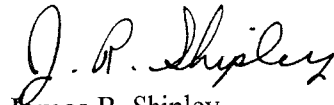
Mr. Bob Weiss
August 26, 1996 - Page 2

Please convey our commendations and thanks to Jim Ford, Elmo Davis, and Thomas Rodriguez for their assistance in this project. The Edwards Aquifer Authority sincerely appreciates your water conservation efforts. Should you require additional information regarding this report or have any water related questions, please do not hesitate to call.

Sincerely,



John E. Gapinski
Leak Detection Technician I



James R. Shipley
Leak Detection Technician II

JEP:JRS/ bmc
Enclosures

002jrs

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SUMMARY

On November 20, 1995, the Edwards Aquifer Authority (EAA) received a request from the Fairco Water Company to perform a leak detection / location survey on its water distribution system. A pre-survey conference was held November 15, 1995, at the Fairco Water Company Office to discuss the work to be performed. It was agreed that EAA would perform sonic leak detection on all available access points and computerized leak location as needed. A final report, including any unusual system condition found and an updated master water plat would be submitted to the Company at the conclusion of the survey.

John E. Gapinski of EAA began the survey on December 13, 1995. The survey was concluded on March 8, 1996. Over the course of the survey, EAA surveyed a total of 3,320 access points including 1,697 customer service connections, 973 service valves, 82 fire hydrants, 529 main valves, and 39 other access points covering 47.58 miles of distribution main.

EAA surveyors detected 20 utility side leaks and 12 customer side leaks for a total of 32 leaks. The utility side leaks included 10 service leaks, 4 meter box leaks, 4 main leak, and 2 fire hydrant leaks. EAA estimates 98,148 gallons of water per day has been saved by the repair of 20 utility side leaks as of April 18, 1996. The leaks discovered during the survey range from 71,280 gallons per day to small meter box leaks.

As part of the survey, EAA located 1,010 valves of various types, 4 fire hydrants, and 2,750 feet of main not shown on the master water plats. EAA surveyors were unable to locate 147 valves of various types and 1 fire hydrant shown on the master water plats. An additional 13 items were discovered to need cleaning, repair, or replacement.

DISCUSSION

A. Total Access Points Surveyed: 3,320

The following is an outline of the various access points used during the survey:

Customer Service Connections: 1,697
Service Valves: 973
Main Valves: 529
Fire Hydrants: 82
Others: 39

B. Total Miles of Distribution Main Surveyed: 47.58

C. Total Leaks Detected: 32

Service line, main, and fire hydrant leaks were located by acoustic leak detection, computer correlation of leak sounds or by visual inspection. Meter box leaks and customer side leaks were located through house to house surveying.

1.	Service Leaks	10
2.	Fire Hydrant Leaks	2
3.	Meter Box Leaks	4
4.	Main Leaks	4
5.	Customer Side Leaks	12

A detailed listing of these leaks is recorded in appendices A through E. Separate appendices are provided for each category of leak.

D. Detected Utility Side Leaks Not Repaired, as of April 19, 1996: 0

E. Total Estimated Water Saved by Repair of Detected Utility Side Leaks In Gallons Per Day as of, April 18, 1996: 98,148

Leakage estimates for main line, service line, fire hydrants, and valve leaks are based on hole size and system pressure in pressure per square inch. This information was

furnished by Fairco Water Company personnel when EAA was not on site at the time of repair. Totals are only recorded for leaks repaired as of April 18, 1996, with estimates.

Service Leaks	3,760 GPD
Fire Hydrant Leaks	2,880 GPD
Meter Box Leaks	68 GPD
Main Leaks	91,440 GPD

Customer leaks were generally small. No attempt was made to estimate this leakage. Customers were notified by doortag or in person when possible or will be notified by Fairco Water Company personnel.

F. Miscellaneous Maintenance Needed: 13

Replacement Needed:	1
Cleaning Needed:	5
Lids Needed:	4
Repair Needed:	3

A list of these items is included in appendix G.

G. Field Survey Findings Vs. Master Water Plats.

1. Water system access points that could not be located: 148

Service Valves:	91
Fire Hydrants:	1
Air Release Valves:	4
Main Line Valves:	43
Blow Off Valves:	9

Suspected locations were surveyed by EAA with a ferromagnetic detector to locate buried 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 items are included in appendix G.

2. Valves located, but not shown on plats: 1,010

Service Valves:	973
Flush Valves:	1
Air Release Valves:	3
Main Valves:	26
Blow Off Valves:	7

A list of these valves is included in appendix F.

3. Feet of main located, but not shown on plat: Approximate 2,750'

Unit N	Ralph Fair Road.	450'
Unit N	Dietz Elkhorn Road	600'
Unit K-2	Rolling Acres to Post Trail	1,700'

4. Fire hydrants located, but not shown on plats: 4

Unit M	Dietz Elkhorn Rd. Lot 725
Unit K-2	Between Rolling Acres and Post Oak Rd. Two hydrants.
Pfeiffer Ranch	Fair Oaks Parkway @ Pfeiffer Dr.

5. Plats with service, main, or valve relocation's: 17

A list of these plats is included in appendix I.

H. Revisions To The Master Water System Distribution Plats Included With This Report

The Water Distribution Plats furnished by Fairco Water Company has been revised to reflect what was found in the field survey. All service valves and meter assemblies located were added to these plats. Incorrect locations of services, valves, air release valves, and mains were changed and noted on the plats.

Abbreviations Used on the Revised Distribution System Plats:

UTL	--	Unable To Locate
AIP	--	Abandoned In Place

All mains were surveyed from all available access points.

Fire hydrants labeled as fire hydrants without lead valves are hydrants where the lead valve could not be located or does not exist.

Any item circled and highlighted in yellow on the plats indicates that it was added, could not be located, or needs repair. All items are labeled on the plats.

All mains, fire hydrants, and valves added to the plats are for access point accounting. The location and placement of these items on the plats are intended to indicate what was actually found during the field survey. Placement of main valves on the plat is the surveyor's best guess of what they control. Every effort was made to ensure the accuracy of these plats, but EAA does not guarantee their accuracy.

RECOMMENDATIONS AND COMMENTS

- I. Revise existing water distribution plats or develop an "Overall Plat" from "As built" plans, EAA plats, and utilizing the knowledge and expertise of long term field employees.

Because of the scale and excessive detail, some of the existing plats are difficult to read. The existing plats lack conformity in scale, style, format, and symbols used. Additionally there is numerous, confusing overlaps of units showing details that are contradictory.

Master plats should show locations of all transmission mains, inline booster stations, main valves, fire hydrants, blow off valves, 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.

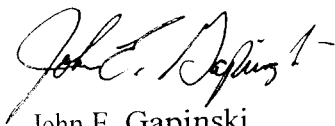
- II. Review the existing water distribution system and planned water system improvements to ensure sufficient access points are in place to facilitate future leak detection/ location surveys.
- III. Consider ductile iron pipe for the primary main line material used for new installation and main replacement. As the production cost 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 if pipe material.
- IV. 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 degrade the inherent specified accuracy below an acceptable level. Meters installed in close proximity to a bend, valve, or other fitting that is likely to disturb the flow conditions at the meter could invalidate the manufactures meter calibration. EAA recommends that all well meters and a percentage of large commercial meters be tested in place yearly for accuracy.

- V. During the course of the survey, EAA noted meters in need of replacement. We recommend the initiation of a systemwide customer meter maintenance program. System meters should be upgraded through an ongoing meter change out program. This program should involve replacing a specified number of meters each period with new or rebuild meters, until all system meters have been replaced.

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 a short period 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 commercial meters be tested in place yearly for accuracy.

- VI. We wish to express our appreciation for the assistance and cooperation we received from the management and staff of Fairco Water Company. Management's professional and progressive approach to serving the needs of their customers while helping to conserve a valued resource is commendable. All personnel we worked with were highly trained, meticulous in the performance of their duties, and had a very positive attitude about their jobs and the customers they serve. The staff's knowledge, enthusiasm, and professional work habits contributed to the success of this survey. Our thanks to Paul Broussard, Jim Ford, Elmo Davis, and Thomas Rodriguez for their diligence in helping to conserve a precious resource.



John E. Gapinski
Leak Detection Technician I



James R. Shipley
Leak Detection Technician II

**FAIRCO WATER COMPANY
SERVICE LINE LEAK LIST / 1995-96
APPENDIX A**

Page 1 of 1

<u>Line #</u>	<u>Address</u>	<u>Loss G.P.M.</u>	<u>Date Repaired</u>	<u>Comments</u>	<u>Recheck Date</u>
1	7419 Secretariat	17	3/12		4/18
2	7414 Scintilla Ln.	1440	Unknown	Male Adapter	2/28
3	29650 Fairway Place	720	Unknown		2/28
4	29642 Fairway Place	720	Unknown		2/28
5	29618 Fairway Place	43	3/4		4/18
6	Sendero Ridge Lot 458	240	Unknown		2/28
7	30830 Robin Dale	43	3/14		4/18
8	8622 Rolling Acres Tr.	43	3/14		4/18
9	8871 Fair Oaks Parkway	120	3/14		4/18
10	Vacant Lot next to 8627 Summer Song	360	3/15		4/18

**FAIRCO WATER COMPANY
FIRE HYDRANT LEAK LIST / 1995-96
APPENDIX B**

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<u>Line #</u>	<u>Address</u>	<u>Loss G.P.M.</u>	<u>Date Repaired</u>	<u>Comments</u>	<u>Recheck Date</u>
1	Royal Ascot @ Rocking Horse	1,440	3/17		4/18
2	Duberry @ Summer Ridge	1,440	4/12		4/18

FAIRCO WATER COMPANY
METER LEAK LIST / 1995-96
APPENDIX C

Page 1 of 1

<u>Line #</u>	<u>Address</u>	<u>Loss G.P.M.</u>	<u>Date Repaired</u>	<u>Comments</u>	<u>Recheck Date</u>
1	29405 Preakness	9	2/28	Outlet washer	2/28
2	2934 Sea Biscuit	25	3/7	Inlet Washer	3/7
3	8507 Fairway Bluff	17	3/1	Check Valve	3/1
4	29610 Double Eagle Cir.	17	3/11	Check Valve	4/18

**FAIRCO WATER COMPANY
MAIN LEAK LIST / 1995-96
APPENDIX D**

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<u>Line #</u>	<u>Address</u>	<u>Loss G.P.M</u>	<u>Date Repaired</u>	<u>Comments</u>	<u>Date Rechecked</u>
1	Quadrille @ Rocking Horse	7,920	Unknown	Split Tee	2/28
2	Red Bud Hill Lot 1259	4,320	Unknown		2/28
3	Preakness @ Red Bud Hill	71,280	Unknown		2/28
4	Dietz Elkhorn Rd.	7,920	4/19	Crack On Tee	

**FAIRCO WATER COMPANY
CUSTOMER SIDE LEAK LIST / 1995-96
APPENDIX E**

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<u>Line #</u>	<u>Date</u>	<u>Address</u>
1	2/28	29136 Aqueduct
2	2/28	8258 Pimlico
3	3/7	29225 Sea Biscuit
4	3/7	8608 Summer Song
5	1/17	7203 Fair Oaks Parkway
6	2/28	7414 Scintilla
7	2/28	7411 Scintilla
8	2/28	7415 Scintilla
9	2/28	7403 Scintilla
10	3/24	29530 Terra Vista
11	3/1	29614 Terra Bella
12	2/8	31210 Silver Spur

**FAIRCO WATER COMPANY
ADDED TO PLATS / 1995-96
APPENDIX F**

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<u>Line #</u>	<u>Unit</u>	<u>Address</u>	<u>Added</u>	<u>Number Added</u>
1	1	Secretariat Ln. West of Preakness Dr.	Valve	1
2	2	Triple Crown @ Equestrian	Valve	1
3	4	Fair Oaks Parkway lot 245	Valve	1
4	AC	Red Bud Hill lot 1258	Air Release Valve	1
5	L	Scintilla Ln. @ Softwind Circle	Valve	1
6	M	Dietz Elkhorn Rd. lot 725	Fire Hydrant With Valve	1
7	N	Mandetta Dr. @ Saddle Star	Valve	1
8	N	Dietz Elkhorn Rd.	3 Valves 1 Blow Off 600' of Main	4
9	N	Ralph Fair Rd.	1 Blow Off 450' of Main	1
10	K-3	Wild Oak Hill @ Windmill Circle	Air Release Valve	1
11	K-4	Transmission Main to Unit AC	2 Valves 1 Blow Off	3
12	K-5	Rolling Acres Tr. @ Wild Oak Hill	Valve	1
13	K-6	Burnt Cedar lot 266	Valve	1
14	AE	Raintree Woods Dr. lot 1308	Valve Flush Valve	2
15	W	Battle Intense lot 750	Blow off	1

**FAIRCO WATER COMPANY
ADDED TO PLATS / 1995-96
APPENDIX F**

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<u>Line #</u>	<u>Unit</u>	<u>Address</u>	<u>Added</u>	<u>Number Added</u>
16	Blackjack Estates I	Fairway Place lot 819	Blow Off	1
17	AC	Red Bud Hill @ Raintree Woods	Valve	1
18	6	Dietz Elkhorn Rd. @ Fair Oaks Parkway	Valve	1
19	A	Raintree Ridge	Booster Station With Two Valves	2
20	A	Triple Crown @ Fair Oaks Parkway	Valve	1
21	R	29719 Mellow Wind	Valve	1
22	R	Sweet Wind Circle lot 46	Valve	1
23	K-2	Rolling Acres to Post Oak Tr.	2 Valves 2 Fire Hydrants With Valves 1,700' Main	4
24	Oakwood 1	Oak View Pass	Valve 2 Blow Offs	3
25	C-2	7730 Intrepid	Air Release Valve	1
26	K-6	Burnt Cedar lot 306	Valve	1
27	Blackjack Oaks II	Fairway Bluff lot 102	Valve	1

**FAIRCO WATER COMPANY
ADDED TO PLATS / 1995-96
APPENDIX F**

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<u>Line #</u>	<u>Unit</u>	<u>Address</u>	<u>Added</u>	<u>Number Added</u>
28	Blackjack Oaks II	Fairway Bluff lot 92	Valve	1
29	Pfeiffer Ranch	Fair Oaks Parkway @ Pfeiffer Dr.	Fire Hydrant With Valve	1

**FAIRCO WATER COMPANY
UNABLE TO LOCATE / 1995-96
APPENDIX G**

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<u>Line #</u>	<u>Unit</u>	<u>Address</u>	<u>Type</u>	<u>Number</u>
1	AC	29530 Red Bud Hill	Service Valve	1
2	AC	8610 Raintree Hill	Service Valve	1
3	AC	8619 Raintree Hill	Service Valve	1
4	AC	29590 Red Bud Hill	Service Valve	1
5	AC	8657 Willow Wind	Service Valve	1
6	AD	Raintree Woods lot 1202	Service Valve	1
7	A	Sea Biscuit lot 71	Service Valve	1
8	A	8606 Bold Forbes	Service Valve	1
9	A	8658 Terret Circle	Service Valve	1
10	A	Tessara Ct. lots 14-16-18	Service Valve	3
11	A	Sea Biscuit lots 1223-1224	Service Valve	2
12	A	Dew Ridge lots 1237-1238	Service Valve	2
13	A	8603 Connemara Dr.	Service Valve	1
14	A	8606 Connemara Dr.	Service Valve	1
15	A	8611 Connemara Dr.	Service Valve	1
16	A	8637 Connemara Dr.	Service Valve	1
17	4	28512 Clydesdale Circle	Service Valve	1
18	4	28524 Clydesdale Circle	Service Valve	1

**FAIRCO WATER COMPANY
UNABLE TO LOCATE / 1995-96
APPENDIX F**

Page 2 of 9

<u>Line #</u>	<u>Unit</u>	<u>Address</u>	<u>Type</u>	<u>Number</u>
19	4	8162 Fair Oaks Parkway	Service Valve	1
20	3	8122 Triple Crown	Service Valve	1
21	3	8208 Triple Crown	Service Valve	1
22	3	8220 Triple Crown	Service Valve	1
23	3	Rocking Horse lot 192-193	Service Valve	2
24	3	8228 Rocking Horse	Service Valve	1
25	3	8129 Rocking Horse	Service Valve	1
26	3	Across from 8129 Rocking Horse	Service Valve	1
27	3	28417 Quadrille	Service Valve	1
28	3	8414 Triple Crown	Service Valve	1
29	3	8311 Damascus	Service Valve	1
30	3	28426 Royal Ascot	Service Valve	1
31	3	28226 Royal Ascot	Service Valve	1
32	3	8114 Pintado	Service Valve	1
33	3	28116 Royal Ascot	Service Valve	1
34	2	7940 Triple Crown	Service Valve	1
35	1	28339 Pimlico	Service Valve	1
36	1	29136 Aqueduct	Service Valve	1
37	1	7640 Pimlico	Service Valve	1

**FAIRCO WATER COMPANY
UNABLE TO LOCATE / 1995-96
APPENDIX F**

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<u>Line #</u>	<u>Unit</u>	<u>Address</u>	<u>Type</u>	<u>Number</u>
38	1	7511 Secretariat	Service Valve	1
39	1	28573 Dapper Dan	Service Valve	1
40	B	29429 No Le Hace	Service Valve	1
41	B	29451 No Le Hace	Service Valve	1
42	B	29715 Saddle Back Circle	Service Valve	1
43	O	29701 No Le Hace	Service Valve	1
44	O	29708 Cojak	Service Valve	1
45	O	29733 Cojak	Service Valve	1
46	O	29750 Cojak	Service Valve	1
47	Oakwood Heights	29115 Oak View Bend	Service Valve	1
48	Oakwood Heights	8519 North View Pass	Service Valve	1
49	The Falls	Falls Terrace lot 972	Service Valve	1
50	The Falls	Falls Terrace lot 988	Service Valve	1
51	The Falls	Falls Terrace lot 985	Service Valve	1
52	The Falls	Falls Terrace lot 987	Service Valve	1
53	C	Sumpter Dr. lot 264	Service Valve	1
54	C	Grand Coteau lot 243	Service Valve	1
55	C	29353 Grand Coteau	Service Valve	1
56	C	29366 Grand Coteau	Service Valve	1

**FAIRCO WATER COMPANY
UNABLE TO LOCATE / 1995-96
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<u>Line #</u>	<u>Unit</u>	<u>Address</u>	<u>Type</u>	<u>Number</u>
57	C	7203 Saddle Side	Service Valve	1
58	L	7411 Scintilla	Service Valve	1
59	R	7825 Sweet Wind Circle	Service Valve	1
60	R	7525 Sweet Wind Circle	Service Valve	1
61	D	7707 Fair Oaks Parkway	Service Valve	1
62	D	7719 Fair Oaks Parkway	Service Valve	1
63	D	29624 Terra Vista	Service Valve	1
64	D	29531 Terra Vista	Service Valve	1
65	D	29530 Terra Vista	Service Valve	1
66	D	7733 Terra Manor	Service Valve	1
67	D	7726 Terra Manor	Service Valve	1
68	D	7715 Terra Manor	Service Valve	1
69	W	29708 High Echelon	Service Valve	1
70	W	29730 High Echelon	Service Valve	1
71	W	7706 Battle Intense	Service Valve	1
72	W	29711 Hansel	Service Valve	1
73	P	29618 Terra Bella	Service Valve	1
74	P	29638 Terra Bella	Service Valve	1
75	M	7822 Timber Top	Service Valve	1

**FAIRCO WATER COMPANY
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<u>Line #</u>	<u>Unit</u>	<u>Address</u>	<u>Type</u>	<u>Number</u>
76	K-4	30930 Fire Bird Ln.	Service Valve	1
77	K-3	Wild Oak Hill lots 119-120	Service Valve	2
78	K-3	Wild Oak Hill lots 144-145	Service Valve	2
79	Blackjack Oaks 2	29707 Fairway Bluff	Service Valve	1
80	Blackjack Oaks 2	8510 Fairway Trail	Service Valve	1
81	Blackjack Oaks 2	8506 Fairway Bluff	Service Valve	1
82	J	29367 Duberry Ridge	Service Valve	1
83	K-6	8592 Rolling Acres Trail	Service Valve	1
84	The Falls	Fire Department on Falls View	Service Valve	1
85	AD	Summer Song Circle @ Raintree Woods	Valve	1
86	1	Preakness Dr. @ Secretariat Ln.	Valve	1
87	1	Ruffian Dr. lot 33	Valve	1
88	2	Rocking Horse Ln. lot 80	Valve	1
89	2	Triple Crown @ Equestrian Dr.	Air Release Valve	1
90	AC	Willow Wind Dr. east of Red Bud Hill	Valve	1

**FAIRCO WATER COMPANY
UNABLE TO LOCATE / 1995-96
APPENDIX F**

<u>Line #</u>	<u>Unit</u>	<u>Address</u>	<u>Type</u>	<u>Number</u>
91	E	No Le Haze Dr. north of Fair Oaks Parkway	Valve	1
92	F	Summit Ridge Dr. south of lot 600-R	Valve	1
93	F	Summit Ridge Dr. @ Ridgeview Trail	Valve	1
94	F-2	Summit Ridge Dr. lot 637	Fire Hydrant With Valve	1
95	F-2	Summit Ridge Dr. lot 648	Blow Off	1
96	L	Behind 7403 Scintilla Ln.	Valve	1
97	M	Dietz Elkhorn Rd.	Valves	2
98	N	Saddle Star	Blow Off	1
99	N	Saddle Pass	Blow Off	1
100	N	Saddle Side	Blow Off	1
101	N	Sumpter Dr.	Blow Off	1
102	N	29322 Mandetta Dr.	Valve	1
103	N	Saddle Song @ Dietz Elkhorn Rd.	Valve	1
104	P	Fair Oaks Parkway @ Terra Bella	Valve	1
105	P	Terra Bella lot 525	Valve	1

**FAIRCO WATER COMPANY
UNABLE TO LOCATE / 1995-96
APPENDIX F**

<u>Line #</u>	<u>Unit</u>	<u>Address</u>	<u>Type</u>	<u>Number</u>
106	P	Terra Bella lot 521	Valve	1
107	C-2	Robin Dale @ Intrepid Dr.	Valve	1
108	C-2	Robin Dale lot 31	Valve	1
109	K-3	Windmill Circle	Valve	1
110	K-4	Firebird	Blow Off	1
111	K-5	Rexon Circle	Blow Off	1
112	Blackjack Estates 1	Fairway Green @ Fairway Place	Valve	1
113	Blackjack Estates 1	Fairway Green lot 806	Blow Off	1
114	Blackjack Estates 2	Fairway Green lot 856	Blow Off	1
115	6	Royal Mustang Circle lot 345	Valve	1
116	7	Dietz Elkhorn Rd. @ Fair Oaks Parkway	Valves	2
117	A	Raintree Woods @ Willow Wind	Valve	1
118	A	Raintree Woods @ Red Bud Hill	Valves	2
119	A	Raintree Ridge lots 1247-48	Valve	1
120	A	Sea Biscuit @ Bold Forbes	Valve	1

**FAIRCO WATER COMPANY
UNABLE TO LOCATE / 1995-96
APPENDIX F**

<u>Line #</u>	<u>Unit</u>	<u>Address</u>	<u>Type</u>	<u>Number</u>
121	A	Sea Biscuit @ Deer Leap	Valve	1
122	B	7203 Fair Oaks Parkway	Valve	1
123	B	9335 No Le Hace lot 119	Air Release Valve	1
124	B	29267 No Le Hace	Valve	1
125	D	Terra Manor lot 564	Valve	1
126	D	7633 Fair Oaks Parkway	Valve	1
127	R	29719 Mellow Wind	Valve	1
128	T	Fair Oaks Parkway @ Terra Bella	Valve	1
129	K-2	Wild Oak Hill lot 98	Valve	1
130	O	Fair Oaks Parkway @ Ralph Fair	Valve	1
131	O	No Le Hace lot 182	Valve	1
132	Oakwood Heights	Dietz Elkhorn Rd. to Oakview Bend	Valve	1
133	Windermere	Cloud Croft Ln. lot 460	Valve	1
134	Windermere	Cloud Croft Ln. lot 458	Valve	1
135	Windermere	Cloud Croft Ln. Lot 455	Air release Valve	1

**FAIRCO WATER COMPANY
UNABLE TO LOCATE / 1995-96
APPENDIX F**

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<u>Line #</u>	<u>Unit</u>	<u>Address</u>	<u>Type</u>	<u>Number</u>
136	Blackjack Oaks I	Fairway Valley	Valves	2
137	Blackjack Oaks II	Fairway Bluff lot 84	Air Release Valve	1
138	Pfeiffer Ranch	Fair Oaks Parkway @ Pfeiffer Dr.	Valve	1

**FAIRCO WATER COMPANY
REPAIRS OR CLEANING NEEDED / 1995-96
APPENDIX H**

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<u>Line #</u>	<u>Unit</u>	<u>Address</u>	<u>Type</u>	<u>Needed</u>
1	2	28214 Equestrian	Service Valve	Cleaning
2	L	Scintilla Ln. @ Softwind Circle	2 Valves	Missing Caps
3	AE	Alydar Circle @ Raintree Woods Dr.	Valve Stack	Repair
4	D	29515 Terra Vista	Valve	Concreted Shut
5	Blackjack Oaks 2	8507 Fairway Green	Valve	Shaft Broken
6	B	Dietz Elkhorn Rd. @ No Le Hace	Valve	Missing Lid
7	Oakwood Heights	8575 Northview Pass	Meter Box	Missing box
8	D	29616 Terra Vista	Service Valve	Missing Cap
9	D	7732 Terra Manor	Service Valve	Missing Cap
10	The Falls	End of Falls View	Air Release Valve	Cleaning
11	N	7607 Fair Oaks Parkway	Valve	Cleaning
12	R	7725 Sweet Wind Circle	Service Valve	Cleaning
13	C	Sumpter lot 259	Service Valve	Cleaning

**FAIRCO WATER COMPANY
SERVICE, MAIN, OR VALVE RELOCATIONS / 1995-96
APPENDIX I**

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<u>Line #</u>	<u>Unit</u>
1	AB
2	AC
3	AD
4	AE
5	C
6	F
7	K-6
8	N
9	P
10	T
11	W
12	Blackjack Estates Unit 1
13	Blackjack Oaks Unit 1
14	The Crossing
15	Windermere
16	6
17	Pfeiffer Ranch