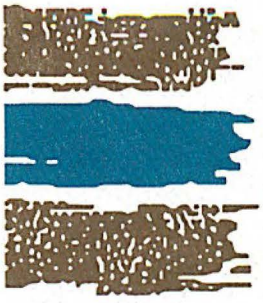

EDWARDS UNDERGROUND
WATER DISTRICT

Report 94-03

LEAK DETECTION / LOCATION SURVEY REPORT
FOR
COUNTY LINE WATER SUPPLY CORPORATION
CALDWELL & HAYS COUNTIES, TEXAS

May, 1994

EDWARDS UNDERGROUND
WATER DISTRICT

6.25-7.5

June 3, 1994

Mr. Daniel R. Heideman
County Line Water Supply Corporation
140 Grist Mill Rd.
Uhland, Texas 78640

Dear Mr. Heideman:

We are pleased to submit this final report of the leak detection survey performed on the County Line Water Supply Corporation 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. The District hopes that the information provided herein will be beneficial to the corporation in identifying and targeting areas of water loss and potential loss.

This survey has demonstrated the water saving potential of the Leak Detection/Location 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. The District requests that this form be completed and returned to the District sixty days after all detected leaks have been repaired. This information will assist the District in our continued assessment of the Leak Detection Program.

1615 N. ST. MARYS - P.O. BOX 15830
SAN ANTONIO TEXAS 78212-9030
210-222-2204
FAX 222-9869

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

001ajrs

TABLE OF CONTENTS

ENCLOSURES TO REPORT

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

SUMMARY

On June 24, 1991, the Edwards Underground Water District (EUWD) received a completed application form from County Line Water Supply Corporation requesting a leak detection/location survey on its water distribution system. A pre-survey conference was held October 26, 1993 at the County Line Water Supply Corporation office 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 Corporation a revised master water plat with the final report.

Mr. John E. Gapinski of the EUWD began the survey on April 4, 1994, and the survey was concluded on April 18, 1994. Over the course of the survey, EUWD surveyed a total of 567 access points including 395 customer service connections, 2 fire hydrants, 120 main line valves, and 50 other access points covering 44.26 miles of distribution mains.

Mr. Gapinski detected a total of 7 leaks. This total included 2 service line leaks, 3 valve leaks, and 2 customer side leaks.

As part of the survey, EUWD located 176 customer service connections, 3 master meters, 42 valves, 2 fire hydrants, and .45 miles of distribution main not shown on the master water plats. EUWD staff was unable to locate 2 main line valves, 3 air relief valves, 1 flush valve, and 6 customer service connections. EUWD noted 2 air relief valves, and 3 customer service connections that have been removed from the system.

JRS/bmc
001jrs

DISCUSSION

A. Total Access Points Surveyed..... 567

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

1. Customer Service Connections: 395
2. Main Valves: 120
3. Fire Hydrants: 2
4. Others: 50

B. Total Miles of Distribution and Transmission Main Surveyed..... 44.26

C. Total Leaks Detected..... 7

1. Valve Leaks..... 3

I. D-9 FM 150 at Master meter
II. F-9 County Rd. 203 at FM 150
III. G-10 End of State Hwy 21

2. Service Leaks..... 2

I. E-11 Street next to Tobias at cow tank.
II. D-11 State Hwy 21 close to FM 2001.

3. Customer Side Leaks..... 3

I. F-9 #52 FM 150 - Customer notified..... 4
II. F-10 FM 150 Immanuel Baptist Church - Customer notified.
III. F-10 FM 150 across from Immanuel Baptist Church.

EUWD would appreciate a list of leakage estimates for all detected leaks repaired after April 8, 1994 for our Leak Detection Program records.

D. Survey Finding Vs. Master Water Plats

1. Unable to Locate

I. Services..... 6

Plat C-9	1
Plat D-10	1
Plat D-11	2
Plat F-11	2

II. Main Valves..... 2

Plat C-9	2

III. Air Relief Valves..... 3

Plat C-9	1
Plat D-9	1
Plat D-10	1

IV. Flush Valve..... 1

Plat E-10	1

2. Removed

I. Services..... 3

Plat D-10	1
Plat D-11	1
Plat E-9	1

II. Air Relief Valves..... 2

Plat C-8	1
Plat D-10	1

3. Location Changed

I. Services..... 9

Plat D-10	1
Plat D-11	1
Plat E-9	1
Plat E-10	2
Plat E-11	1
Plat F-10	1
Plat F-11	2

II. Master Meter..... 1

Plat D-9	1

III. Air Relief Valve..... 1

Plat E-10

4. Added to Plats

I. Services..... 175

Plat D-9	9
Plat D-10	1
Plat D-11	3
Plat E-9	10
Plat E-10	24
Plat E-11	94
Plat F-9	1
Plat F-10	31
Plat G-10	2

II. Main Valves..... 29

Plat D-10	2
Plat D-12	4
Plat E-9	3
Plat E-10	5
Plat E-11	10
Plat F-9	2
Plat F-10	2
Plat F-11	1

III. Flush Valves..... 12

Plat D-9	1
Plat D-10	1
Plat D-11	1
Plat D-12	1
Plat E-9	2
Plat E-10	2
Plat E-11	3
Plat G-10	1

IV. Fire Hydrants..... 2

Plat D-9	1
Plat E-11	1

V. Master Meters..... 3

Plat D-12	2
Plat E-10	1

VI. Air Relief Valve..... 1

Plat F-10

Valves, services, fire hydrants, and main located were hand drawn and highlighted in yellow on the updated master water plats.

E. General notes for updated master water plats included with this report.

1. All mains were surveyed from all available access points.
2. All valves located were surveyed. When direct contact could not be made, a probe rod was used.
3. Any item circled and highlighted in yellow on the plats indicate that it was added, could not be located, or needs repair.
4. All services were surveyed unless otherwise noted on the plats.
5. Leak locations have been highlighted in blue.

F. 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
NR - Needs Repair
FHWV - Fire Hydrant with Valve
FH - Fire Hydrant Without Valve
ARV - Air Relief Valve
PCV - Pressure Control Valve
SV - Service Valve
PIV - Post Indicator Valve
BFP - Back Flow Preventer
NR - Needs Repair

All mains, fire hydrants, water services, flush valves, 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 AND COMMENTS

1. Revise master water distribution plats from "As Built" plans and EUWD survey plats. 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 for use in the operation and maintenance of the water distribution system. Consider adding service addresses or account numbers to service locations on the plats to assist field customer service employees.

2. 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. Consider replacing plastic valve box lids with metal lids to facilitate valve locating with a metal detector.

3. A thorough evaluation of the water distribution systems air relief needs should be conducted. Air relief valves should be located, inspected, repaired, replaced, or installed as needed. Transmission and cross-country mains with moderate to major elevation differentials should have the highest priority.

4. Consider ductile iron pipe for the primary main line material used for new installations 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.

5. Review the existing water distribution system and future water system improvements to ensure sufficient access points are in place to facilitate future leak detection/location surveys.

6. The Edwards Underground Water District commends your interest in water conservation and was grateful for the opportunity to survey your water system. Your efforts and the timely repair of the leaks recorded in this report will save a significant amount of precious Edwards Aquifer water.

John E. Gapinski
Leak Detection Technician I

James R. Shipley
Leak Detection Technician II

JRS:JEG/bmc
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