A. L. FRANKS ENGINEERING

118 East Broad Street
Texarkana, AR 71854
PHONE 870.216.1906 • FAX 870.216.1907

June 4, 2019

Mr. Richard Healey
ADEQ – Office of Water Quality
5301 Northshore Drive
North Little Rock, Arkansas 72118-5317

Re: Progress Report for Sanitary Sewer Collection System Evaluation
Mena Water Utilities – NPDES No. AR0036692
ADEQ Consent Order LIS 18-046

Dear Mr. Healey:

Please accept with this letter a progress report of the SSES on behalf of the City of Mena in response to the Consent Order LIS 18-046. The report provides updated information regarding the work completed to date as well as recommendations for continued study efforts. Due to above average rainfall during the winter and spring of 2019 the study efforts have fallen behind schedule.

At this time roughly 8,000 linear feet of sewer cleaning and televising efforts have been performed by the Utility. This work has been very productive in identifying point sources of I/I as well as sewer mains that will require significant repairs or replacement. This study effort is expected to continue through the summer months.

If you have any questions or require additional information, please contact me at 870-216-1906 or by email at jhaley@alfranksengineering.com.

Sincerely,

A. L. FRANKS ENGINEERING, INC.

Jason C. Haley, P.E.
Project Manager

Cc: Charles Pitman, Mena Water Utilities

MENA SSES PROGRESS REPORT

June 4, 2019

Firm No. 1681

118 E BROAD STREET
TEXARKANA, ARKANSAS 71854
(870)216-1906

MENA SANTIARY SEWER STUDY PROGRESS REPORT

The City of Mena acting through the Mena Water Utilities authorized the sanitary sewer evaluation study in July of 2018. This work was considered to be supplemental to the previous study performed in 2010 and is further required as part of the Consent Order for NPDES Permit No.AR0036692 for wastewater treatment and collection facilities. This is a draft copy as the study is ongoing at this time.

CONSENT ORDER

The Current Consent Order for NPDES Permit No.AR0036692 was required in part due to 62 sanitary sewer overflows (SSO's) reported and being in violation of the discharge permit. These violations occurred between 2014 and 2017 and constitute unpermitted discharges. Additional violations were noted in the Consent Order regarding treatment limit violations at the wastewater treatment plant. The purpose of this study is to evaluate the sewer collection system in response to the sewer overflows that have occurred, determine corrective actions required, and develop a plan for corrective actions to ultimately achieve compliance with the current NPDES Permit by June 1, 2028.

PERMIT LIMITS

The Design Flow for the wastewater treatment plant is 3.1 Million Gallons per day (MGD). The City of Mena provides sewer service to approximately 2,750 connections, which includes both commercial and residential connections. The following data was obtained from the treatment plant operator during the course of the sewer study which began in August of 2018:

	Average Daily Flow to the Sewer Treatment Plant	**Monthly Rainfall Total**
August 2018	1.79 MGD	6.45 Inches
September 2018	1.21 MGD	3.05 Inches
October 2018	1.74 MGD*	4.7 inches*
November 2018	2.44 MGD	1.25 inches
December 2018	3.14 MGD	8.85 inches
January 2019	3.3 MGD	3 inches

As noted during the sewer study period there was substantial rainfall each month. This resulted in increased runoff and generally more saturated ground conditions. As these conditions increased into the later months of the 2018 the influent flow to the wastewater plant also increased substantially.

SSES STUDY PERIOD

The sewer system evaluation study (SSES) began in August of 2018. The study as planned consisted of multiple phases of investigation work to determine sources of infiltration and inflow (I/I). To date a notable amount of study has been performed on the collection system and is further described herein.

The sewer collection system in the City of Mena includes approximately 340,000 linear feet (64 miles) of pipeline. The system also includes 1,130 sewer manholes and 4 sewer lift stations. USGS maps indicate the initial city sewer plant was installed before 1959. In 1972 when the sewer treatment plant was relocated to the current location, a majority of the city sewer collection system had been installed.

The system includes a variety of construction materials including concrete pipe, clay pipe, truss pipe, and more recent pvc pipe. The size of collection lines range from 6" to 24" diameter. Manholes are of brick construction (type varies) and concrete construction.

The lift stations are all constructed with concrete wetwells and have modern piping with submersible pumps.

PHASE I - SMOKE TESTING OF SEWER SYSTEM

The first phase of the sewer investigation has been to perform smoke testing of the sewer collection system. Sewer leaks can be detected by forcing nonlethal smoke into the sewer mains at manholes. Often smoke will rise to the ground surface where mains are broken, at manhole junctions, and at service lines.

Smoke testing in the Mena collection system began in August and was stopped in mid November due to excessive ground moisture. This work was performed by ICM of Arkansas in cooperation with A.L. Franks Engineering. The work initially began at the treatment plant and proceeded along main sewer trunk lines west and north of the plant. These locations include multiple creek crossings which could be major points of I/I if sewer mains are faulty. During this phase all manholes were mapped with GPS Coordinates as well as all observed sewer leaks. As of mid November a total of 292,000 feet of sewer main has been smoke tested.

The smoke study resulted in the mapping of roughly 128 leaks. Flagging and paint was also used to physically mark each leak location. Exhibit 1 includes the leak report with locations and further descriptions of the observed leaks. The majority of leaks found are classified as private line leaks meaning that they are located on private property and are the responsibility of the landowner to operate and maintain. The leaks often are the result of cleanout caps missing or broken service lines. In most observed instances the private service leaks will require minimal excavation and materials.

Consideration by the City regarding a new ordinance is recommended that may include financial assistance to residents that qualify as low income. Business owners and home owners should receive notification from the City that a problem has been observed to the service line and repairs are necessary.

In several instances leaks were observed and appear to be sewer main and manhole leaks. In each case further review of each individual leak is required to determine the required repair. To better identify the problem televising of the main is recommended. Furthermore leaks should be prioritized according to the potential for I/I into the collection system. The Utility has used a third party contractor to perform lining of several manholes to date where leaks were observed in manholes.

GPS MAPPING OF SYSTEM

The vast majority of the Mena sewer collection system has been mapped at this time utilizing GPS equipment. The maps included with this report show the locations of manholes, sewer mains, and observed leaks found during smoke testing. Exhibit 2 includes a sample page from the new sewer maps. With the availability of this data, the system has been further mapped into basins and sub basins for the purpose of this study. By utilizing the GPS coordinates with a handheld receiver the City has the ability to locate leaks within a reasonable accuracy. In many instances manholes are located in right-of-ways that are not easily accessible and the exact locations of the manhole can become hard to detect over time. For long-term use of this data we recommend the utility purchase a handheld GPS.

Through the course of the study, several manholes were not located due to excessive vegetation, being covered by pavement or dirt, or possibly having been removed. The mapping effort of this study is still ongoing where data has been noted as incomplete. Televising the sewer main is also recommended when typical efforts to locate manholes are inconclusive.

PHASE II – SEWER FLOW STUDY

The second phase of the SSES has included a flow study to provide an additional review of the impact of I/I in the collection system. This effort began in September and concluded in February of 2019 and was performed by ICM of Arkansas in cooperation with A.L. Franks Engineering. In analyzing the layout of the sewer collection system, a basin map was produced. A sewer basin may include a number of streets or subdivision that all contribute flow through a common sewer main or to a common endpoint such as a lift station (Exhibit 3). Upon determining the basins, specific locations were identified for the placement of flow measuring equipment (flow trackers). The equipment was installed in manholes and provided continuous flow depth measurements through the manhole inverts. During each study period (typically 60 days) a total of ten flow trackers were installed at various locations.

As results from the flow study were reviewed, the trackers were then placed at new locations to further evaluate problem areas and to provide a broader study with better results. This flow study process was performed in three cycles that provided data for 30 different locations within the system. As a whole, this data has provided a method to prioritize problem areas that require further televising and/or repair.

Each flow report provided from the flow study analyzed the sewer with respect to normal daily flow patterns, surges in flow from rain events, and gradual increases in flow from infiltration. The results from this study have been used to prioritize where further sewer televising or smoke testing is necessary.

Exhibit 4 of this progress report includes a summary of flow study data with respect to the basin and ranking of importance. It is noteworthy to report that each flow tracker revealed increases in flow during rain events. This data does not reflect an entire sewer system flow study but is limited to the upper reaches of the system and areas of known older sewer infrastructure.

- The following major basins were identified to convey significant I/I into the system:
    - Business district along Mena Street / South of the Hwy 71
    - Mid South Lift Station Basin
    - Church Avenue / Reine St
    - Northernmost service area of De Queen St

PHASE III – SEWER SYSTEM TELEVISING

The third phase of the SSES has been to televise sewer mains that have been prioritized for further study. This task consists of plugging the sewer flow in mains at manholes, cleaning the sewer main in question, and then performing the camera operation through the main. This effort can be quite laborsome as several people may be required to perform various task in plugging, televising, and cleaning the sewer main. The plan to televise was determined in February of this year and was delayed until April due to excessive sewer system flow. The study is ongoing at this time and is recommended to continue through the summer. The Mena Water Utility personnel are performing this task.

To date the televising study has been very effective in observing sewer main problems that have resulted in I/I. As of June 1st, 2019 the utility has cleaned and televised a total of 9,080 linear feet of sewer main. The study has begun in the basins that were prioritized following the flow study. During each work period the study is recorded to disk and a log is written of the results that include locations of leaks, and services (Exhibit 5).

Several lines in the Mid South Lift Station Basin have been reviewed first and are generally located along W Boundary Rd, Locust St, and Wertz St among others. Collection mains in this basin include a large amount of 'Truss Pipe' that dates to the late 70s and early 80s. This pipe is a unique material that features a cement lining within a dual wall pvc pipe with a truss wall pattern. In general this pipe material appears to be in decent condition and has maintained its shape and good flow properties. However, a common occurrence has been infiltration into the main at service line connections. This appears to be from poorly performed connections without the use of gasketed joints (refer to pictures). In several instances the pipe was cracked and I/I was observed, as well. The Utility has begun repairing leaks observed found in this area.

Recent sewer televising efforts have also been performed along an alleyway being south of Jansen Park and between 7th and 9th Streets. This sewer main was clay pipe construction and likely some of the original sewer main installed in the system. Upon televising the main severe leaking was observed at joints, cracks in the pipe, and severe root intrusion into the main. The Utility is currently working to replace this section of pipe as noted.

CONCLUSIONS AND RECOMMENDATIONS

As agreed in the Consent Order between the City of Mena and Arkansas Department of Environmental Quality, corrective actions must be implemented to achieve compliance of the sewer system by June 1, 2028. To accomplish this goal several critical components must be performed as outlined below:

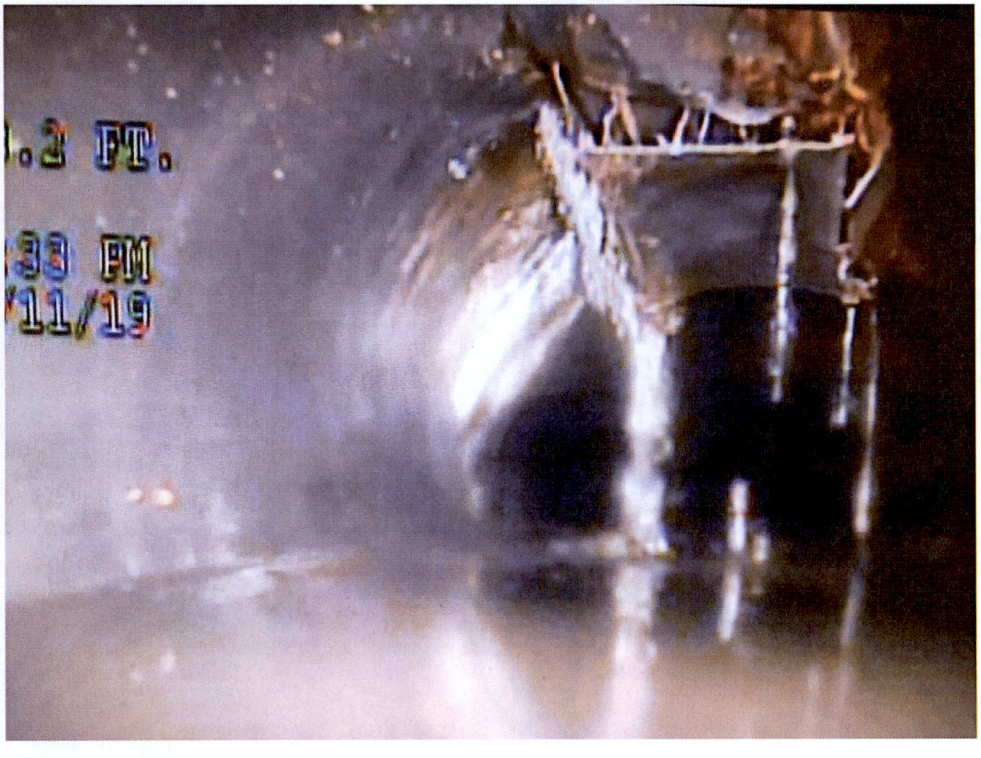
- **Televise High Priority Basins** – As noted this task is very labor intensive, however it has proven to be the most effective in reviewing point sources of I/I and general condition of mains. Sewer basins observed as having high priority should be fully evaluated first. Furthermore, priority should be given mains constructed of clay, truss and concrete pipe. Written records of these events should be well documented and utilized for further repair notes.
- **Televise Sections of Trunk Mains** – A considerable amount of trunk lines are located in the system that convey sewer to the treatment plant. The depth of main combined with continuous flow has resulted in a very difficult task of televising or cleaning these mains. During dry summer months we recommend selecting sections of these mains that are accessible to televise and review general pipe conditions. Locations in close proximity to creeks should be considered.
- **Implement an Ordinance / Plan for private service leaks** – This item has been under consideration by the City and is critical to complete so that a well developed plan can be implemented and enforced. The Utility should at a minimum began an evaluation of these to further clarify the source of the problem if it is a private service or main line leak. Simple items such as replacing cleanout caps should be completed considering extreme ease and minimal costs.
- **Purchase GPS / Complete System Mapping** – To find previously mapped leaks and add additional data to the current maps GPS equipment will prove to be a very useful tool for the Utility. This equipment is relatively inexpensive and can be operated by utility personnel. The costs for this item is approximately $4,000. The GPS will provide the ability to continue mapping areas where manholes are buried or collapsed. The effort to find these lines/manholes will likely result in finding additional points of I/I.
- **Maintain Sewer Right-of-Ways** – As observed in recent study results, excessive vegetation along sewer mains can result in severe root intrusions. Clay and Concrete sewer mains are more likely to deteriorate at joints over time which can be caused by root intrusion. This task is best performed during summer months.

ATTACHMENT A

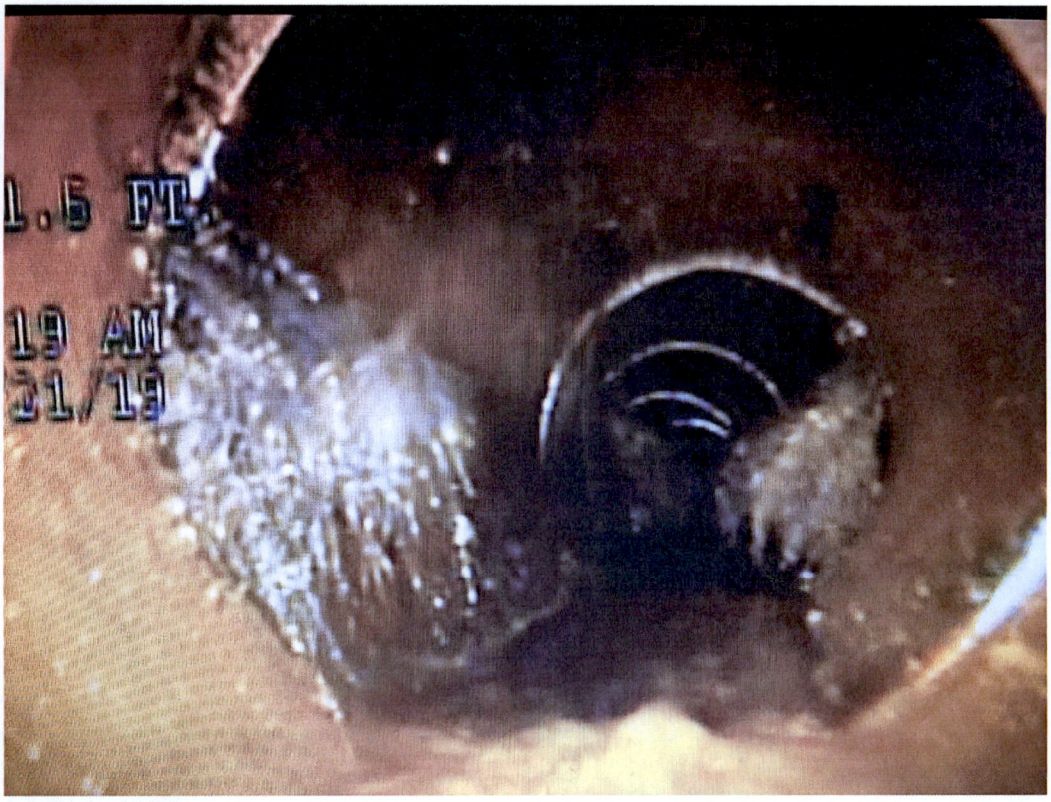
COLLECTION SYSTEM PICTURES

Brick Manhole Types in the Collection System (age and condition varies).

Service Line Tap into Truss pipe sewer Main, note the gap and failure to seal the joint



A break in the top of a Truss pipe sewer main, groundwater infiltration is occurring.



Clay Sewer Main with root intrusion at each joint

Clay Sewer Main with broken pipe, severely deformed, likely to collapse.

Typical Private Service Line Leaks that are easily corrected.

Private Service Line leaks that will require additional effort for repair.

EXHIBIT 1

SMOKE STUDY LEAK REPORT

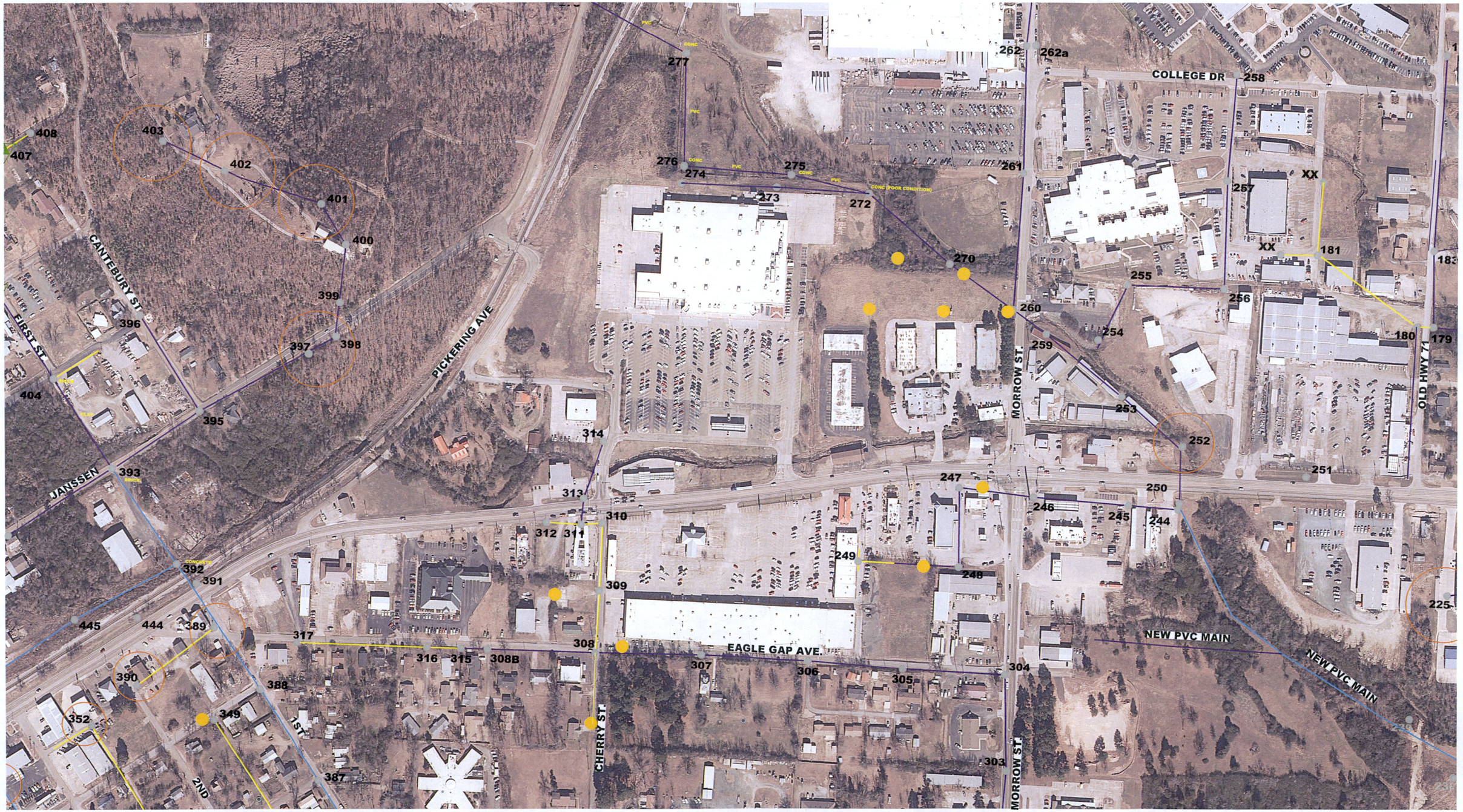
EXHIBIT 1 - MAPPED SEWER SYSTEM LEAKS

LEAK NO.	PUBLIC	PRIVATE	ADDRESS / LOCATION
1	X		At MH 597 West of Plant
2	X		MH
13	X		103' East of MH 717 (west of Hwy 375)
14		X	Business at NE Side of Maple Lane & Polk Rd 52
15		X	Business at NE Side of Maple Lane & Polk Rd 52
16	X		78' N of MH 615, N Side of Maple Lane
17	X		176' S of MH 617, Near Business at end of Taxiway
18		X	176' S of MH 617, East toward business bldg
19			
20		X	NE of MH 655, 78' from MH between houses
22		X	145' North of MH 284, on school property
23	X		AT MH 286, Dallas Ave at School
24		X	Lisa Way, North of MH 636
25		X	Lisa Way, East of MH 635
26		X	Lisa Way, East of MH 635
27		X	Lisa Way, East of MH 635
28		X	SW Corner of Lorelie Way and Lisa Way
30		X	SW of MH 633, Jolie Way
31		X	North of MH 633, private service top, N of Jolie Way
33		X	East of Southern Disposal Storage Units on Hwy 8
34		X	East of Southern Disposal Storage Units on Hwy 8
35		X	1305 Faye
36		X	1306 Faye
37		X	1401 Faye
38		X	1501 Faye
40		X	Near MH 734, 204 Bixler Ave
40		X	303 Lum
42		X	1607 Whispering Pine
43		X	400 Ridge Ave
44		X	506 Deridder
45		X	House due east of 506 Deridder
46		X	2nd House due east of 506 Deridder
47		X	2nd House due east of 506 Deridder
48		X	1001? Lincoln Ave, S of MH 690, W side of St
49	X		121' S of MH 690 in Lincoln Ave
49		X	1001 Lincoln
50		X	601 Forrest
51		X	1st house on s side of forrest, east of Cherry
52		X	North of Petros Near Vivian St (Old Service 78' NE of MH 299)
53		X	North of Petros Near Vivian St (Old Service 183' E of MH 299)
54	X		46' East of MH 296, Petros St
56		X	205 Cherry
58		X	W of MH 349, near Ally E of Martin / 2nd Inters.
59	X		N of MH 446, Sherwood & Fourth St
60	X		N of MH 381 along De Queen St, N of Holly
61	X		265' NE of MH 157 (North of Price Mobile Homes)
62	X		Stormdrain Near MH 373, Alley at Martin St E of De Queen St

63	X		Alley N of Martin between Mena / Fourth
64		X	N of MH 385, near Int of Holly St & Seventh St
65		X	N of MH 385, near Int of Holly St & Seventh St
66		X	Near Alley and Holly St, E of 9th St
67		?	E of MH 579 (126') along Sherwood, e of 8th St
68	X		MH 918, 12th St & Averitt Ave
69		X	173' N of (MH 916),N of INT of 12th St / Oak Grove Ave
71		X	68' SW of MH 572, E of Int of Reeves / 12th St
92		X	73' W of Int of Jansen / 9th St
94		X	Alley E of MH 540, E of 9th St, 80' from MH, alley south of Jansen
95		X	
96		X	W of MH 973, Gann St
97		X	Alley & Magnolia E of 7th St (s of Magnolia)
98		X	Alley & Magnolia E of 7th St (s of Magnolia)
99		X	Alley & Magnolia E of 7th St (s of Magnolia)
100		X	Dewey Near Campbell E of MH 472
101		X	Dewey Near Campbell E of MH 472
107		X	Service at House on S Side of Sutherland just west of INT of Simpson St
108		X	Near MH 3001, Casey's Way (Trailer Park)
109		X	Near MH 3001, Casey's Way (Trailer Park)
110		X	Near MH 3001, Casey's Way (Trailer Park)
113		X	Near MH 3005, Casey's Way (Trailer Park)
114		X	N of INT of Bert St / Tyler St (166' S of MH 912D)
118		X	Service near Manhole 260 along ditchline of Morrow St from Limetree Inn
119		X	Service near Manhole 260 along ditchline of Morrow St from Limetree Inn
120		X	Approximate Service Connection near Manhole 270 near creek, from Limetree Inn
121		X	Service Lines from Limetree Inn
122		X	Service Lines from Limetree Inn
123		X	Service Lines from Limetree Inn
X		X	Service Line near MH 247, at back of Walgreens (broken 4" riser)
124		X	Backside of old Papa Pablono Bldg
125		X	Backside of old Papa Pablono Bldg
126		X	SW Side of Peachtree Apartments
127		X	SW Side of Peachtree Apartments
128		X	NW Side of Peachtree Apartments

EXHIBIT 2

SEWER SYSTEM MAP EXAMPLE



Date	Revision	By

Designed	JCH
Checked	KAB
Drawn	JCH
Approved	ALF

A.L. FRANKS ENGINEERING
118 East Broad Street
Texarkana, Arkansas 71854
Phone (870) 216-1906
Fax (870) 216-1907

MENA WATER UTILITIES
SEWER COLLECTION SYSTEM MAPPING

GPS COLLECTION DATA

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No.9192
ANTHONY L. FRANKS

Job No.:	MWU-01-18
Scale:	1"=300'
Date:	OCT 2018
Sheet	7

EXHIBIT 3

SEWER SYSTEM BASIN MAP

Date	Revision	By

Designed	JCH
Checked	KAB
Drawn	JCH
Approved	ALF

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118 East Broad Street
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MENA WATER UTILITIES
SEWER COLLECTION SYSTEM
MAPPING

GPS COLLECTION DATA

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 9192
ANTHONY L. FRANKS

Job No.:	MWU-01-18
Scale:	1"=300'
Date:	OCT 2018
Sheet	11

EXHIBIT 4

SEWER FLOW STUDY REPORT

MenaTwo2

Date Created: 01/04/2019 13:26 PM

General Rain

261

272

344

253

391

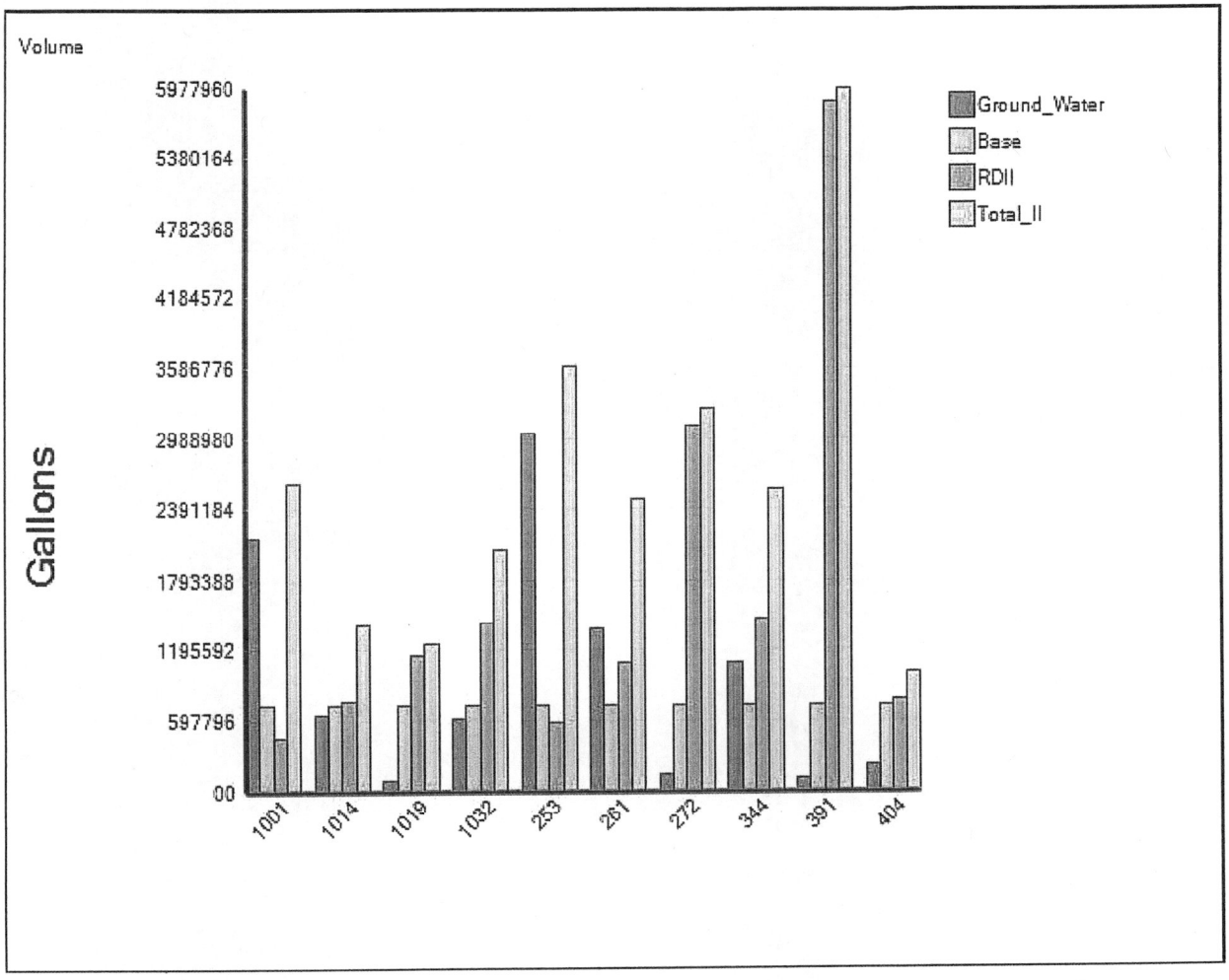
1019

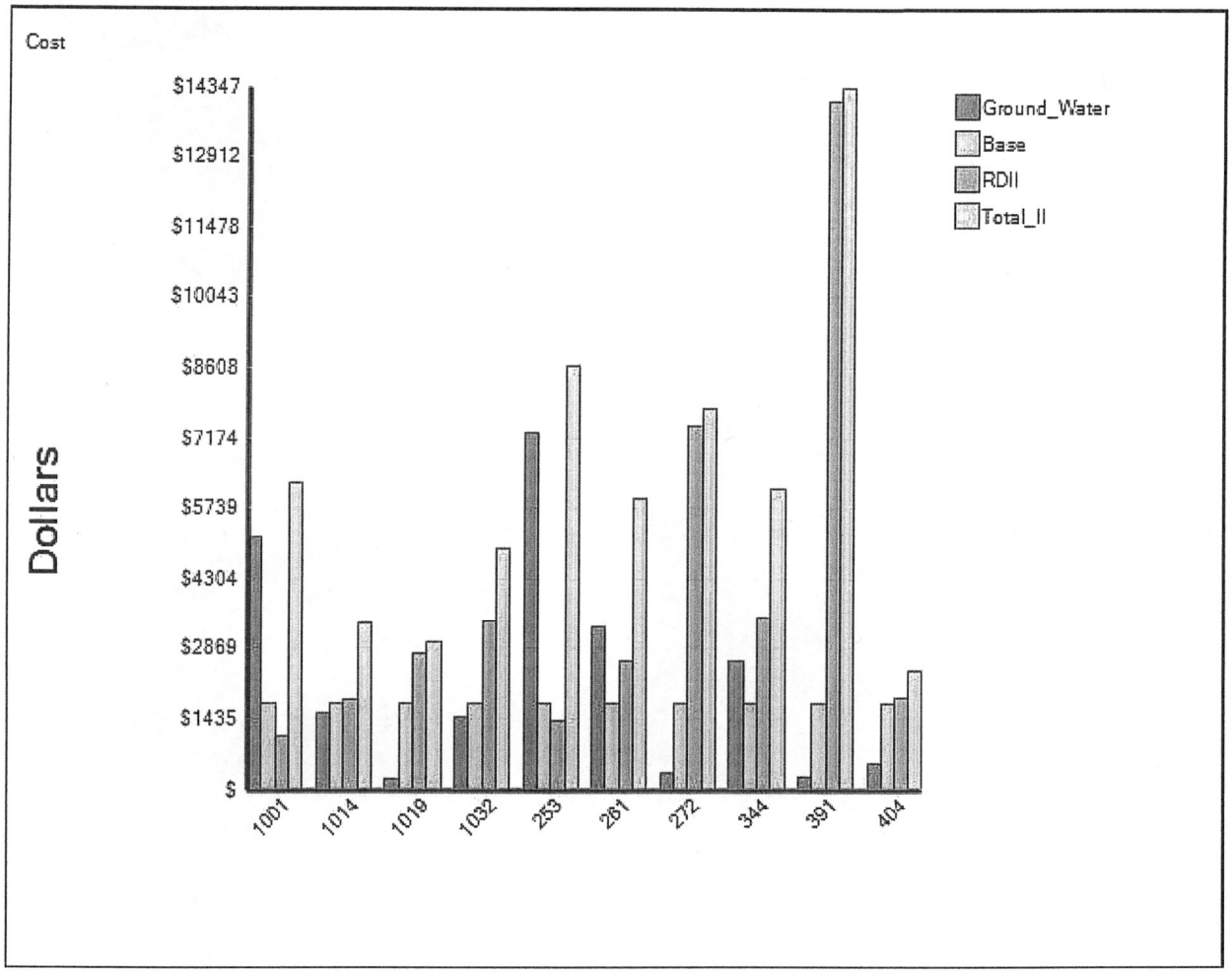
404

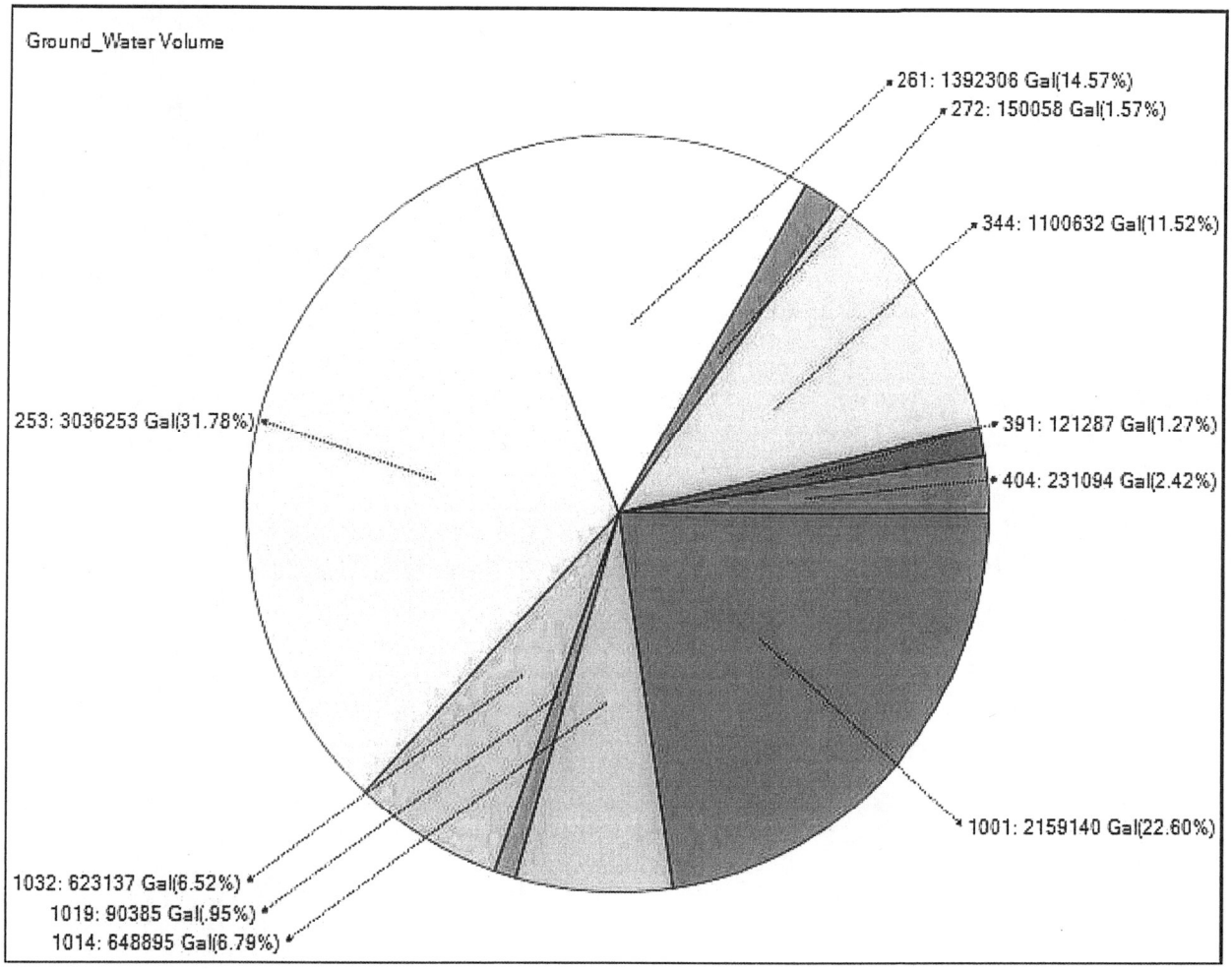
1001

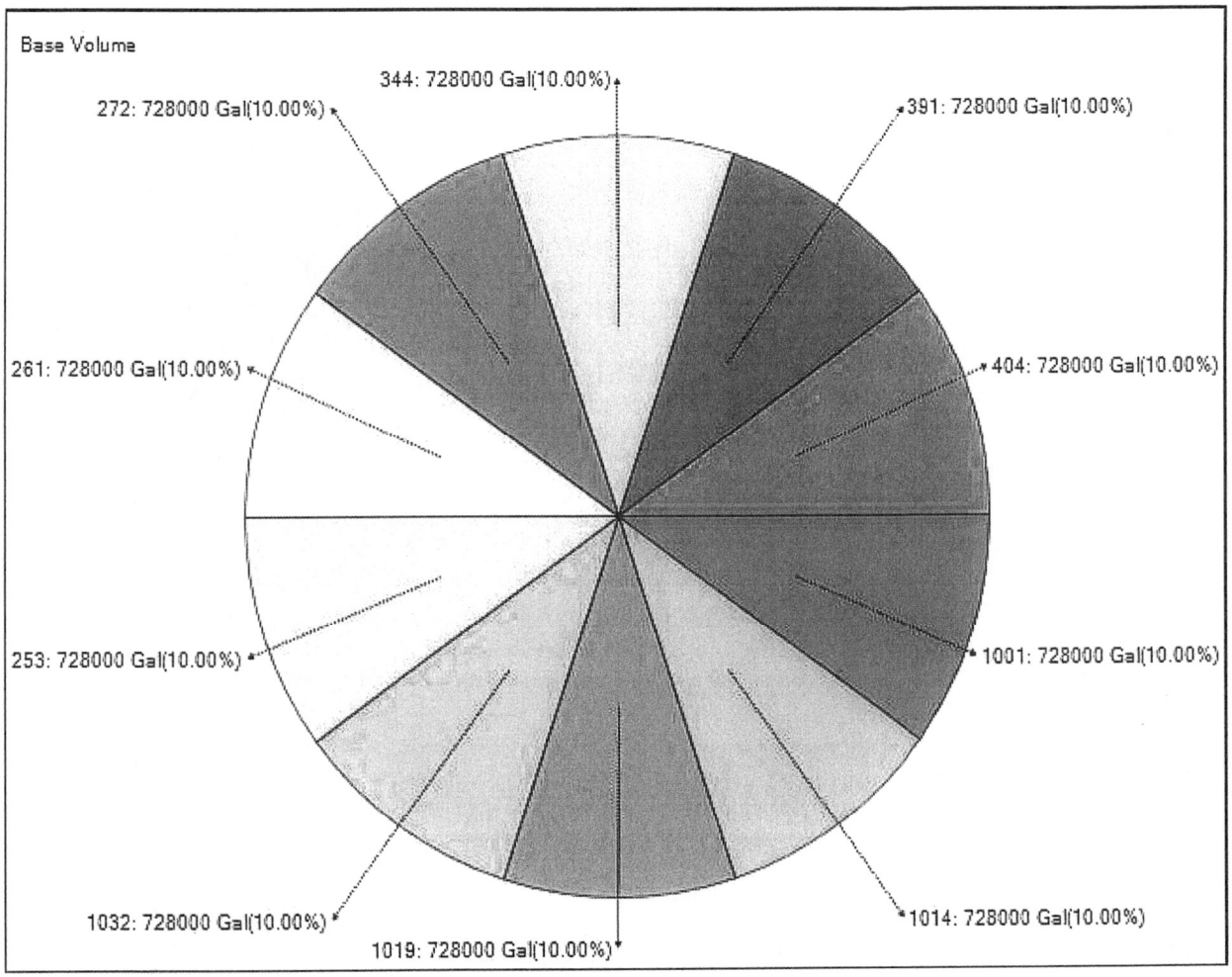
1032

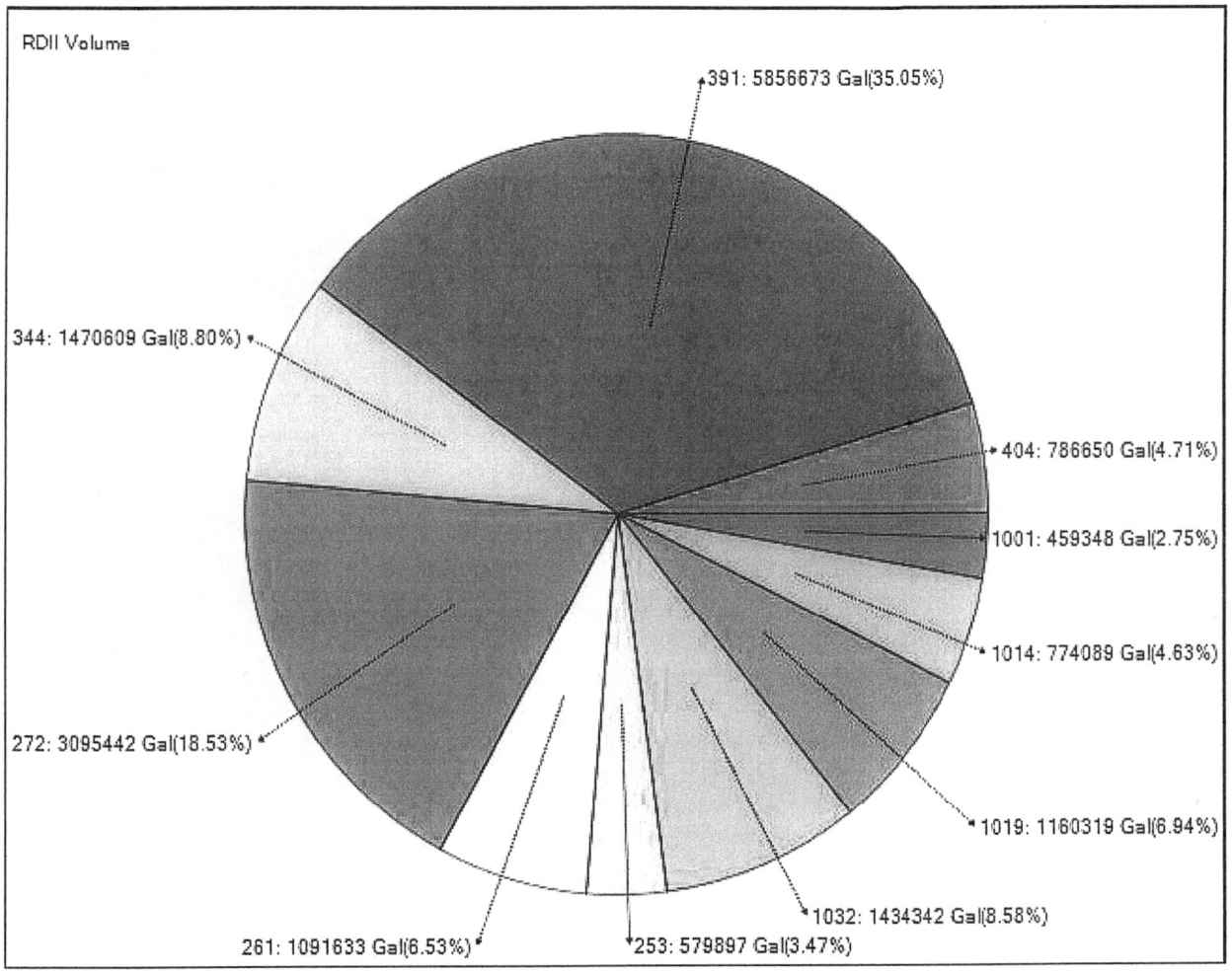
1014

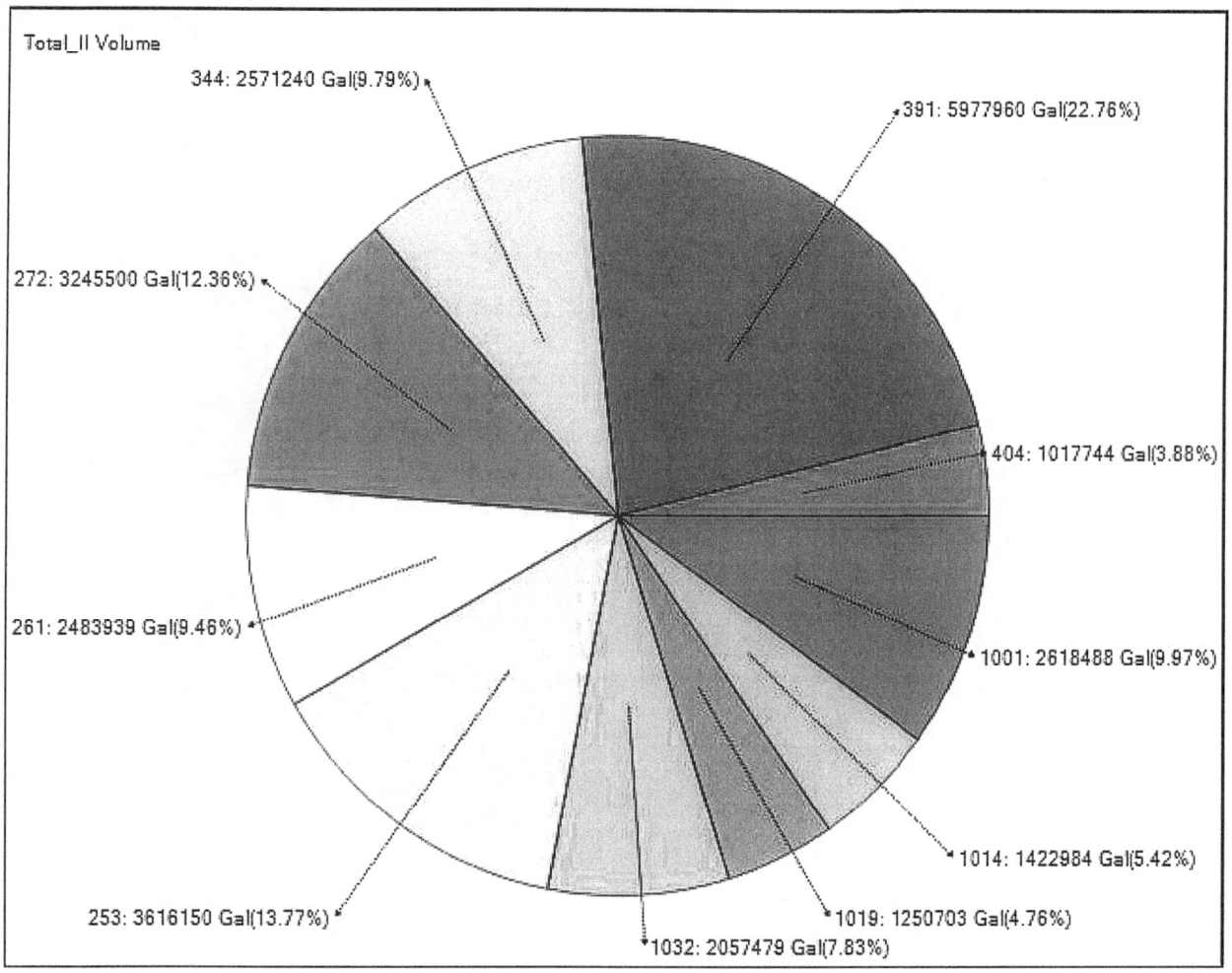

Volume
Gallons
5977960
5380164
4782368
4184572
3586776
2988980
2391184
1793388
1195592
597796
00
1001
1014
1019
1032
253
261
272
344
391
404
Ground_Water
Base
RDII
Total_II

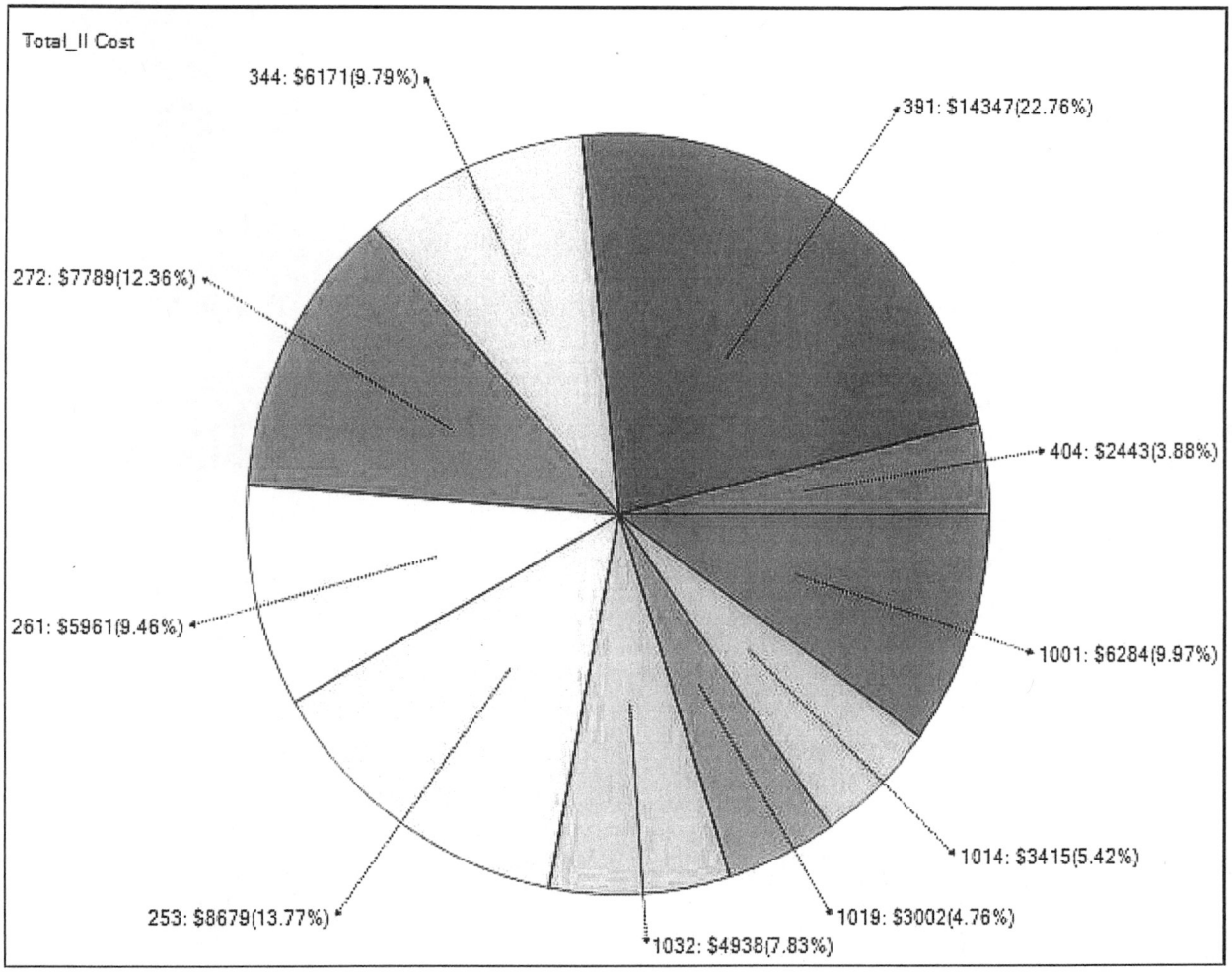

Cost
Dollars
$14347
$12912
$11478
$10043
$8608
$7174
$5739
$4304
$2869
$1435
$
1001
1014
1019
1032
253
261
272
344
391
404
Ground_Water
Base
RDII
Total_II

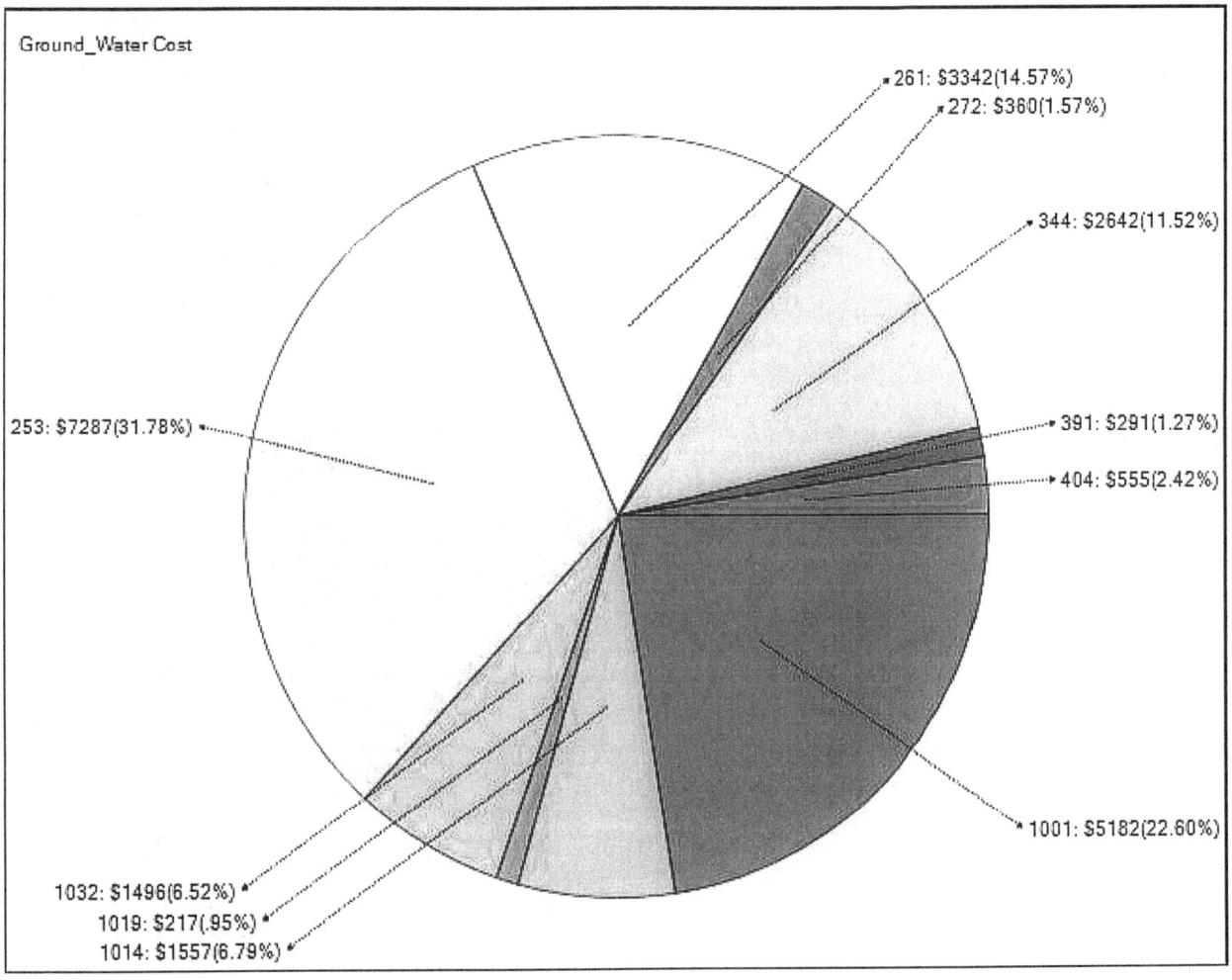

Ground_Water Volume
261: 1392306 Gal(14.57%)
272: 150058 Gal(1.57%)
344: 1100632 Gal(11.52%)
253: 3036253 Gal(31.78%)
391: 121287 Gal(1.27%)
404: 231094 Gal(2.42%)
1001: 2159140 Gal(22.60%)
1032: 623137 Gal(6.52%)
1019: 90385 Gal(.95%)
1014: 648895 Gal(6.79%)

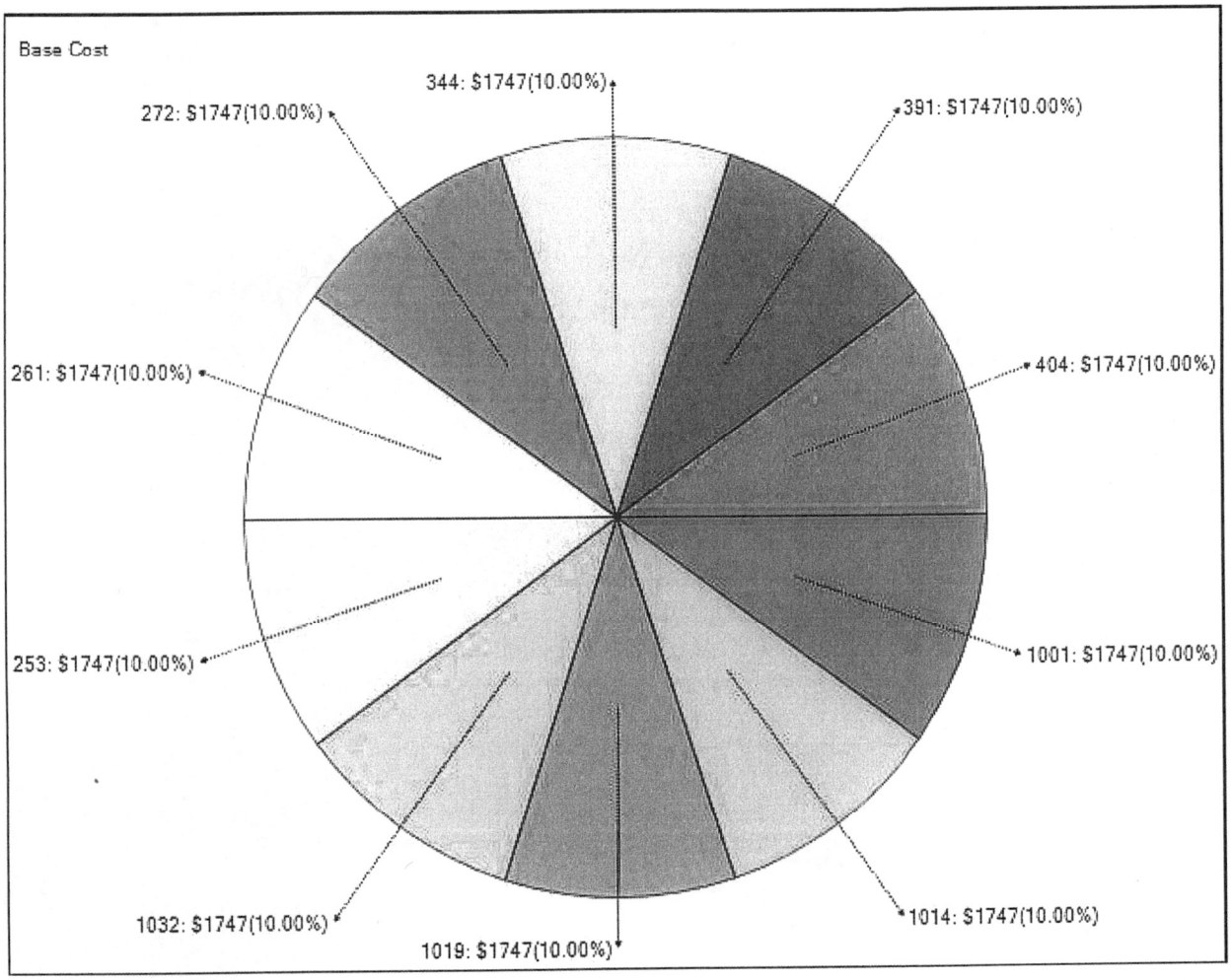

Base Volume
344: 728000 Gal(10.00%)
391: 728000 Gal(10.00%)
272: 728000 Gal(10.00%)
261: 728000 Gal(10.00%)
404: 728000 Gal(10.00%)
253: 728000 Gal(10.00%)
1001: 728000 Gal(10.00%)
1032: 728000 Gal(10.00%)
1014: 728000 Gal(10.00%)
1019: 728000 Gal(10.00%)

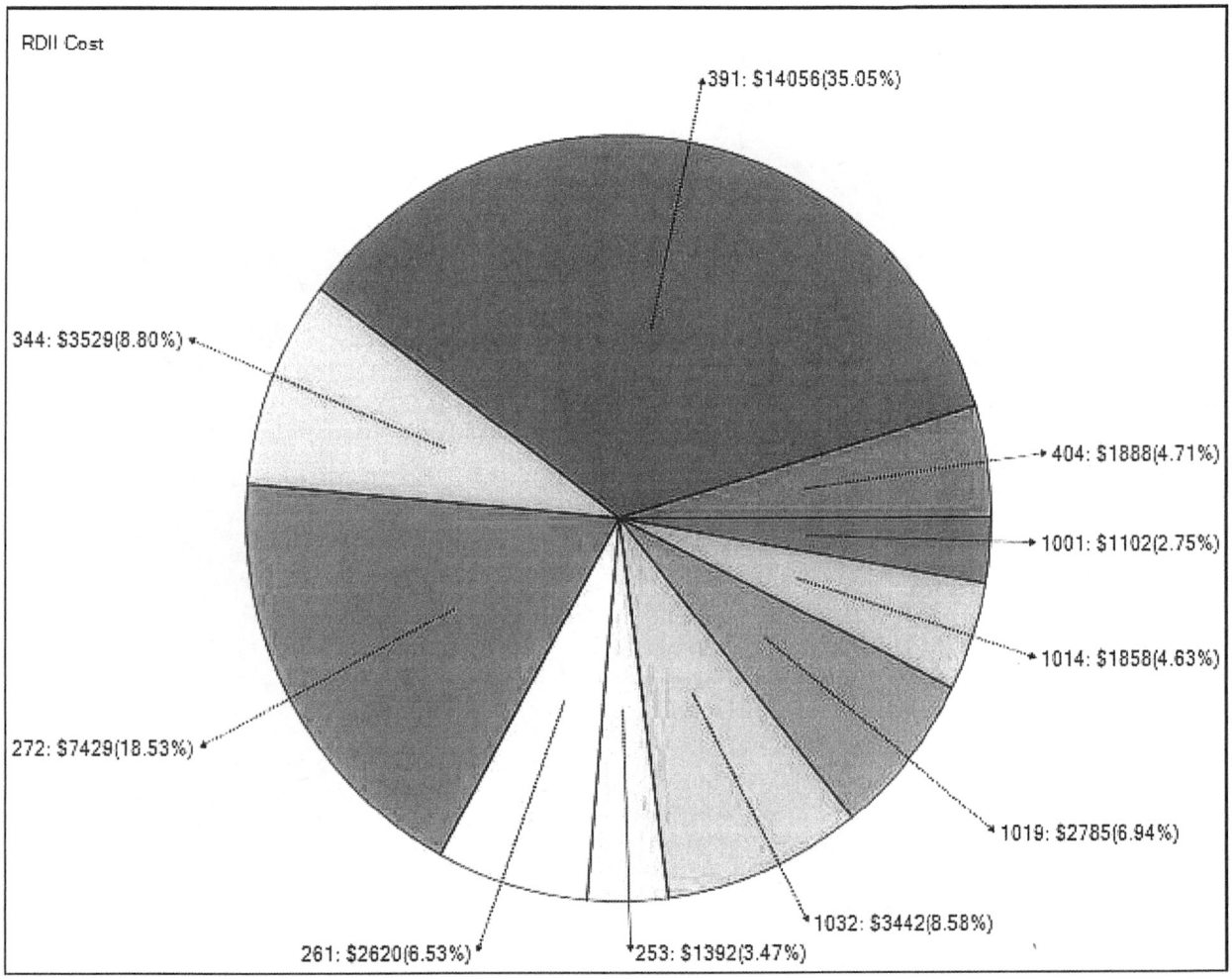

RDII Volume
391: 5856673 Gal(35.05%)
344: 1470609 Gal(8.80%)
404: 786650 Gal(4.71%)
1001: 459348 Gal(2.75%)
1014: 774089 Gal(4.63%)
272: 3095442 Gal(18.53%)
1019: 1160319 Gal(6.94%)
1032: 1434342 Gal(8.58%)
261: 1091633 Gal(6.53%)
253: 579897 Gal(3.47%)


Total_II Volume
344: 2571240 Gal(9.79%)
391: 5977960 Gal(22.76%)
272: 3245500 Gal(12.36%)
404: 1017744 Gal(3.88%)
261: 2483939 Gal(9.46%)
1001: 2618488 Gal(9.97%)
1014: 1422984 Gal(5.42%)
253: 3616150 Gal(13.77%)
1019: 1250703 Gal(4.76%)
1032: 2057479 Gal(7.83%)


Total_II Cost
344: $6171(9.79%)
391: $14347(22.76%)
272: $7789(12.36%)
404: $2443(3.88%)
261: $5961(9.46%)
1001: $6284(9.97%)
1014: $3415(5.42%)
253: $8679(13.77%)
1019: $3002(4.76%)
1032: $4938(7.83%)

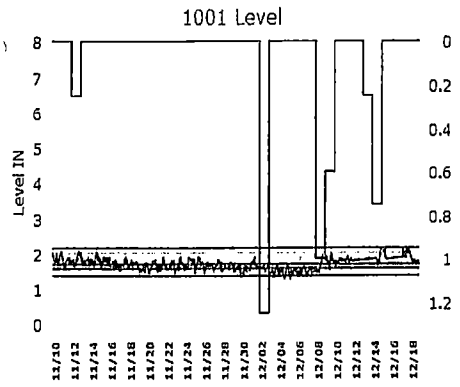

Ground_Water Cost
261: $3342(14.57%)
272: $360(1.57%)
344: $2642(11.52%)
391: $291(1.27%)
404: $555(2.42%)
1001: $5182(22.60%)
1032: $1496(6.52%)
1019: $217(.95%)
1014: $1557(6.79%)
253: $7287(31.78%)

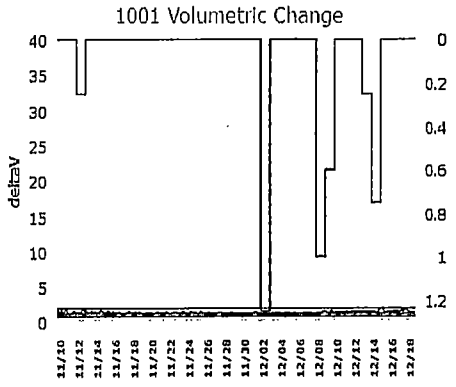

Base Cost
344: $1747(10.00%)
391: $1747(10.00%)
272: $1747(10.00%)
404: $1747(10.00%)
261: $1747(10.00%)
1001: $1747(10.00%)
253: $1747(10.00%)
1014: $1747(10.00%)
1032: $1747(10.00%)
1019: $1747(10.00%)

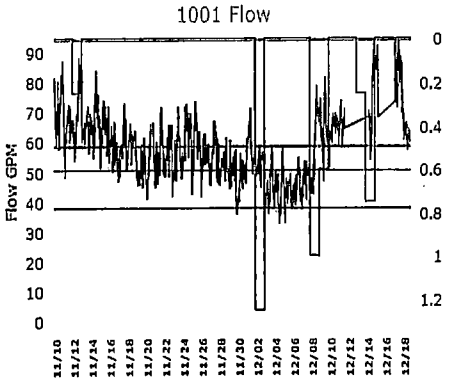

RDII Cost
391: $14056(35.05%)
344: $3529(8.80%)
404: $1888(4.71%)
1001: $1102(2.75%)
1014: $1858(4.63%)
272: $7429(18.53%)
1019: $2785(6.94%)
1032: $3442(8.58%)
261: $2620(6.53%)
253: $1392(3.47%)

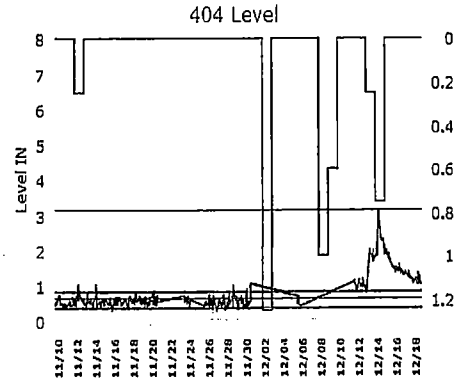
Sewer Report

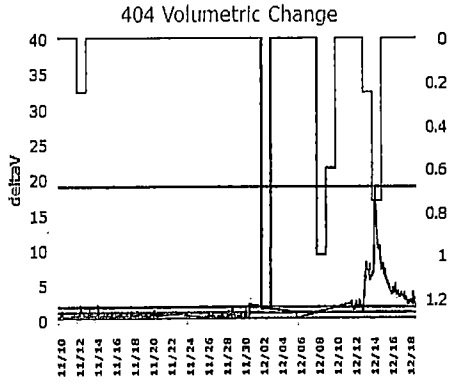
Data Rain Peak Avg Dry GW

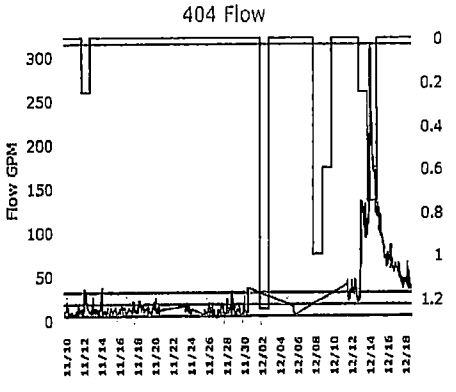




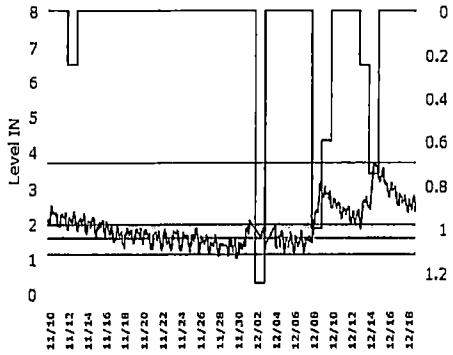




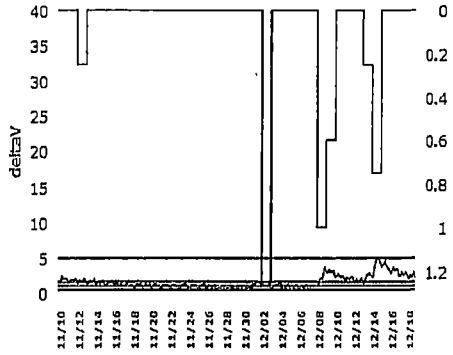




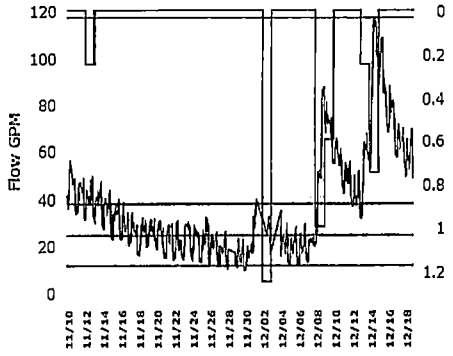
1014 Level



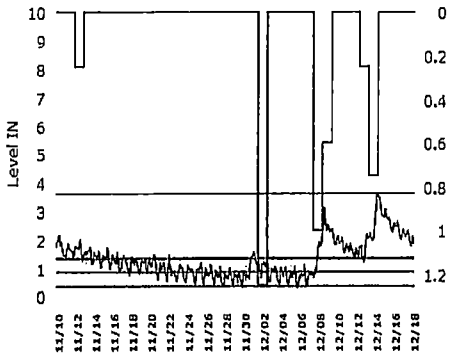
1014 Volumetric Change



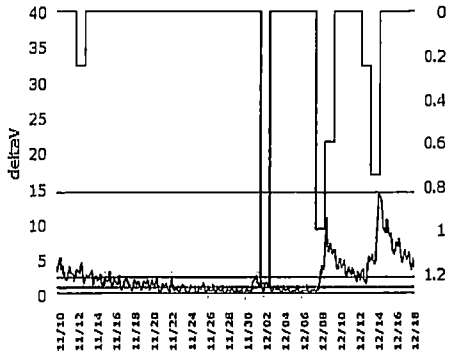
1014 Flow



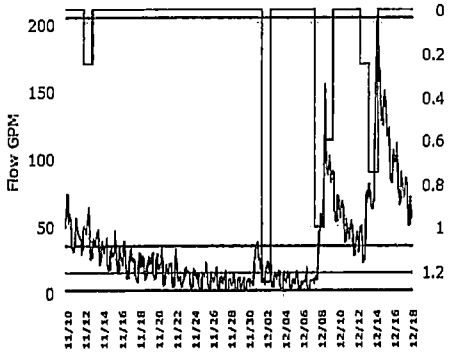
1019 Level



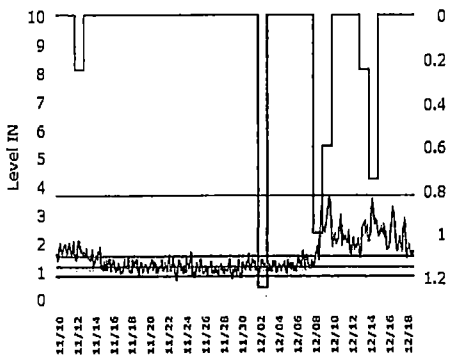
1019 Volumetric Change



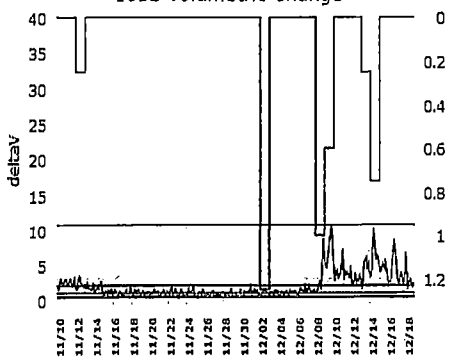
1019 Flow



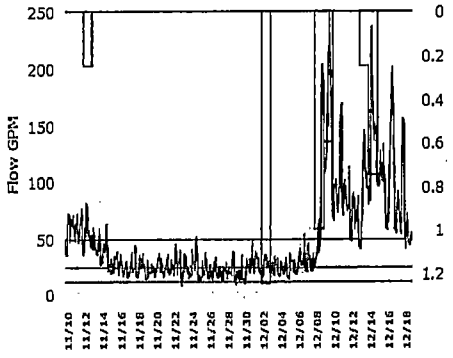
1032 Level



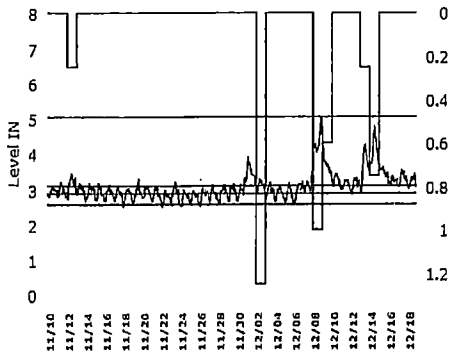
1032 Volumetric Change



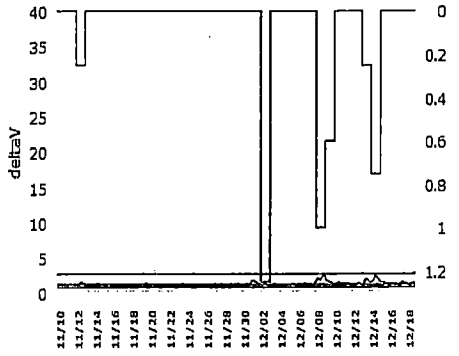
1032 Flow



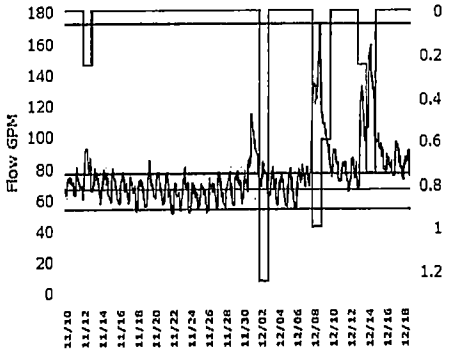
253 Level



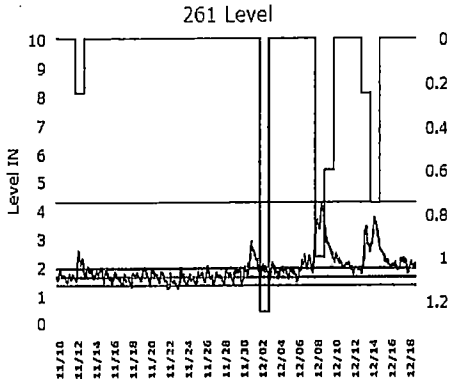
253 Volumetric Change



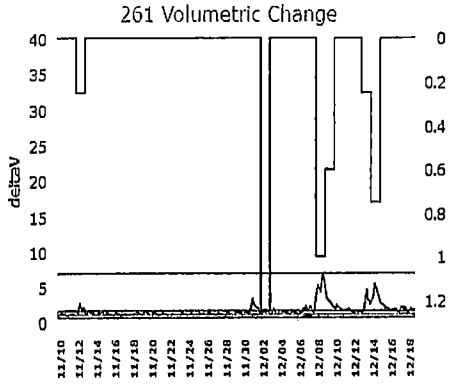
253 Flow



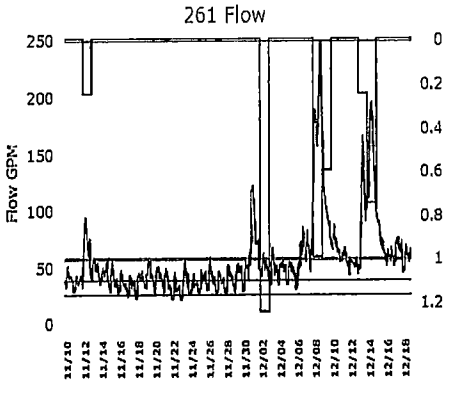
261 Level



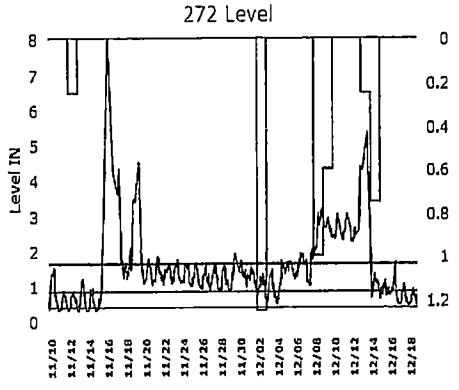
261 Volumetric Change



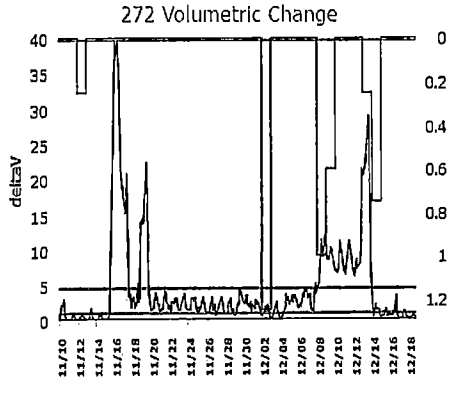
261 Flow



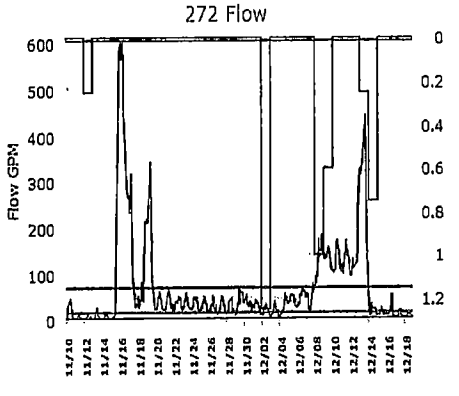
272 Level

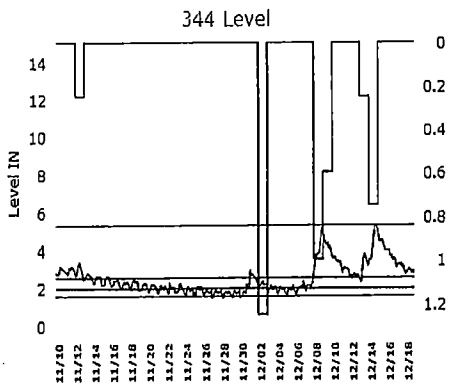


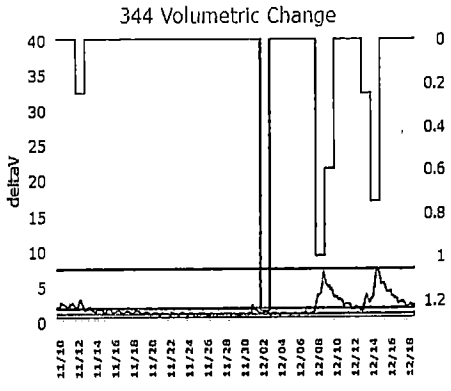
272 Volumetric Change

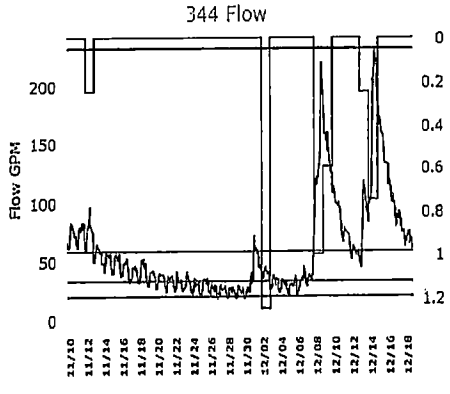


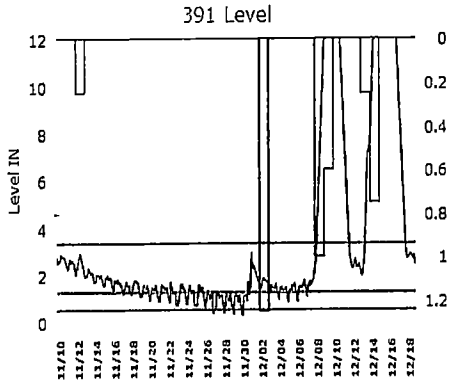
272 Flow

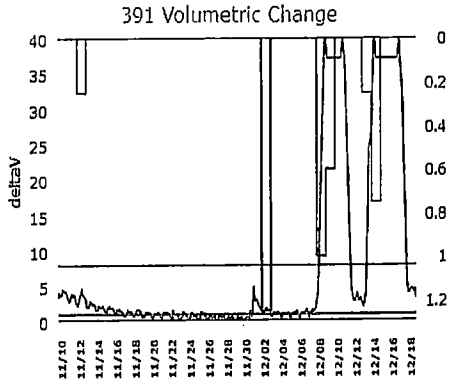



344 Level
Level IN
0
2
4
6
8
10
12
14
0
0.2
0.4
0.6
0.8
1
1.2


344 Volumetric Change
deltaV
0
5
10
15
20
25
30
35
40
0
0.2
0.4
0.6
0.8
1
1.2


344 Flow
Flow GPM
0
50
100
150
200
0
0.2
0.4
0.6
0.8
1
1.2


391 Level
Level IN
0
2
4
6
8
10
12
0
0.2
0.4
0.6
0.8
1
1.2


391 Volumetric Change
deltaV
0
5
10
15
20
25
30
35
40
0
0.2
0.4
0.6
0.8
1
1.2

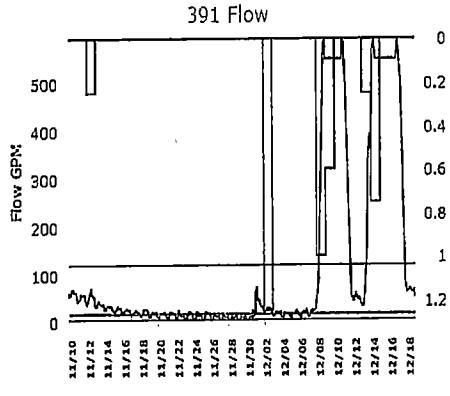

391 Flow
Flow GPM
0
100
200
300
400
500
0
0.2
0.4
0.6
0.8
1
1.2

EXHIBIT 5

SEWER TELEVISING REPORTS

Mena

INSPECTION SERVICES

SANITARY SEWER INSPECTION REPORT

1046 - 1070 - 1072 - 1078 - 1083

COMMENTS: 1086 - 1087

Distance	Clock Position	Cracked Pipe	Roots L,M,H	Debris L,M,H	Protruding Tap	Infiltration L,M,H	Offset Joint	PT. Repair	Broken Pipe	
146.7	11:00	X				X				Service Tap
203.6	12:00	X								
236.2	12:00 + 6:00	X								
252.5	12:00 + 6:00	X								
286.2										manhole - 1070
337.4	11:00					X				service tap
430.8										manhole - 1072
466.4				X						Rocks in main
										move to manhole - 1072
195.7										manhole - 1078
385.1										manhole - 1083
										move to manhole - 1086 → 1087
380										manhole - 1087 roots in manhole
205.5										manhole - 1086 → 1085
										manhole - 1085

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Project Name: City of Mena

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Mena

INSPECTION SERVICES

SANITARY SEWER INSPECTION REPORT

1019 - 1020 - 1022

Distance	Clock Position	Cracked Pipe	Roots L,M,H	Debris L,M,H	Protruding Tap	Infiltration L,M,H	Offset Joint	PT. Repair	Broken Pipe	COMMENTS:
19		X								INNER CASING
20.1	3:00									SERVICE TAP.
154										MANHOLE.
177										BELLY - 177 · 185.
241	12:00									SERVICE TAP
358	11:00									SERVICE TAP.
359	12:00	X				X				
412	12:00									SERVICE TAP
448										BELLY 448 - 493
493										MANHOLE

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SANITARY SEWER INSPECTION REPORT

1026 - 1025

Distance	Clock Position	Cracked Pipe	Roots L,M,H	Debris L,M,H	Protruding Tap	Infiltration L,M,H	Offset Joint	PT. Repair	Broken Pipe	COMMENTS:
1	3:00									SERVICE TAP
2'	9:00									SERVICE TAP
39'	3:00									SERVICE TAP
85.6	3:00					X				SERVICE TAP
127.	3:00					X				SERVICE TAP
184	9:00					X				SERVICE TAP
208	3:00					X				SERVICE TAP
251		X					X			
253										DROP.
										1022 - 1024
31.'										CANT PASS. (NEED TO CLEAN ROCKS.
										1025 - 1024
87.7										DISC STOPPED. NEW DISC. 87. ↑
144'										MANHOLE.
										1025 - 1028 - 1030
69.4'		X				X				
103										BELLY 103 - 109
160										~~ROCK (BIG ROCK)~~ MANHOLE
433		X				X				SPLIT
512										MANHOLE

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SANITARY SEWER INSPECTION REPORT

992 - 991B - 991A

Distance	Clock Position	Cracked Pipe	Roots L,M,H	Debris L,M,H	Protruding Tap	Infiltration L,M,H	Offset Joint	PT. Repair	Broken Pipe	COMMENTS:
62.7	12:00									SERVICE TAP.
62.5	3:00	X	X			X				SERVICE TAP
68.5	9:00	X	X			X				SERVICE TAP
146	2:00	X	X							
223	1:00									SERVICE TAP
308										MANHOLE 991B.
433	3:00									SERVICE TAP.
555	3:00					X				SERVICE TAP
569	9:00									SERVICE TAP
587.										MANHOLE
										UNKNOWN MANHOLE UP.
23	3:00	X								SERVICE TAP
84	9:00									SERVICE TAP.
100	3:00					X				SERVICE TAP.
107										CAN'T GO NO FURTHER
58.5	9:00									SERVICE TAP. DOWN - 991B.
93.9	3:00									SERVICE TAP (HAD TO CLEAN CAMERA)
142	9:00									SERVICE TAP
198										END OF LINE DROP SERVICE.
										997 - 998
12.2	9:00									SERVICE TAP
21.9										ROOT BALL
										997 - 992
19.	11:00									SERVICE TAP
21.8	3:00									SERVICE TAP
93.2	11:00	X					X			CRACKED LINE
113.6	11:00	X					X			CRACKED LINE

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SANITARY SEWER INSPECTION REPORT

997-992

Distance	Clock Position	Cracked Pipe	Roots L,M,H	Debris L,M,H	Protruding Tap	Infiltration L,M,H	Offset Joint	PT. Repair	Broken Pipe	COMMENTS:
178.6	11:00	X				X				SERVICE TAP INF. UNDER TAP
180		X								POSS. JUST INNER CASING
194.5	12:00	X				X				CRACKED LINE
224	9:00	X	X			X				SERVICE TAP. CANT PASS ROOTS.

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SANITARY SEWER INSPECTION REPORT

Distance	Clock Position	Cracked Pipe	Roots L,M,H	Debris L,M,H	Protruding Tap	Infiltration L,M,H	Offset Joint	PT. Repair	Broken Pipe	COMMENTS:
138.5										ROOTS IN JOINT.
149.9										ST. PLUGGED
158.7										ROOTS IN JOINT / CANT PASS
162										ROOTS IN JOINT
165										ROOTS IN JOINT
166	3:00									S.T.
168		X								ROOTS IN JOINT. / CRACKED 168'- 183'
174										S. T. PLUGGED
183.										
184										→ P.V.C.
187.	1:00									S.T.
205										→ BACK TO CEMENT PIPE
208										ROOTS IN JOINT
210										
289-	294-315	X								CRACKED ALONG TOP. (294- 315 CHRUSED LINE 317 CANT GO ANY FUTHER VET.

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SANITARY SEWER INSPECTION REPORT

497 B.

Distance	Clock Position	Cracked Pipe	Roots L,M,H	Debris L,M,H	Protruding Tap	Infiltration L,M,H	Offset Joint	PT. Repair	Broken Pipe	COMMENTS:
1'	3:00									S.T.
22'	12:00									JOINT SPREAD APART.
26.3	11:00									2
29	3:00									PLUGGED TAP.
35.3	9:00									S.T.
44.1	3:00									S.T.
46	12:00									S.T.
51.2	12:00									S.T. PLUGGED
76.6	11:00									S.T. PLUGGED.
79.2	1:00									S.T. PLUGGED
87.0	12:00									S.T.
98.8	1:00									S.T.
100'										ROOTS IN JOINT
102	9:00									S.T. PLUGGED.
103										ROOTS IN JOINT
105.7										ROOTS IN JOINT
110.3										ROOTS IN JOINT.
112.8										ROOTS IN JOINT.
115.6										ROOTS IN JOINT
118.2										ROOTS IN JOINT
120.5										ROOTS IN JOINT
122.2	9:00									S.T.
122.9										ROOTS IN JOINT.
125.7										ROOTS IN JOINT
128.3										ROOTS IN JOINT
130	3:00									S.T. PLUGGED
130.9										ROOTS IN JOINT
133.1										ROOTS IN JOINT
135.5										ROOTS IN JOINT
137.6	1:00									S.T.

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SANITARY SEWER INSPECTION REPORT

264-6367
264-354

Distance	Clock Position	Cracked Pipe	Roots L,M,H	Debris L,M,H	Protruding Tap	Infiltration L,M,H	Offset Joint	PT. Repair	Broken Pipe	COMMENTS:
9.6'	12:00	X								
13.2'	12:00	X							X	
14.3'	12:00	X							X	
16.9'	3:00									service tap
19.5'	12:00	X								
54.9'	2:00	X							X	Plug service tap
66.7'	all around	X								
125'	all around								X	
134.4'	12:00								X	
136.4										Fernco Joint to PVC
71.6'	12:00								X	all around
80.4	12:00								X	at Joint
133.1	12'00									old tap
156-167		X								
176	9:00	X								service tap
253										manhole -354

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SANITARY SEWER INSPECTION REPORT

Distance	Clock Position	Cracked Pipe	Roots L,M,H	Debris L,M,H	Protruding Tap	Infiltration L,M,H	Offset Joint	PT. Repair	Broken Pipe	COMMENTS: +87' from 381 – 382
142'		X								
166'	2:00	X								Service tap Pipe broke opposite of tap
215'	12:00									Service tap
246'		X								
268'		X	X							Roots in Joint
300'			X							Separated Joint
312'										manhole 382

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Mena **INSPECTION SERVICES**

SANITARY SEWER INSPECTION REPORT

8TH St. UPSTREAM TO #540

Distance	Clock Position	Cracked Pipe	Roots L,M,H	Debris L,M,H	Protruding Tap	Infiltration L,M,H	Offset Joint	PT. Repair	Broken Pipe	COMMENTS:
.5'	3:00									SERVICE TAP
~~2.8~~		X								ALONG TOP
20.8		X								BOTTOM & SIDES.
28'		X								SIDES & TOP.
52.7	3:00	X								SERVICE TAP
56.4	3:00									SERVICE TAP
57.'		X								ALL OVER
61.7		X				X				CRACKED & INFIL.
61-66		X								CRACKED ALONG BOTTOM
88.4										SERVICE TAP PLUGGED OFF
108.	1:00									SERVICE TAP.
108.										ROOTS IN JOINT.
111.5										ROOTS IN JOINT
113.6										ROOTS IN JOINT.
116.5										ROOTS IN JOINT.
122.										ROOTS IN JOINT.
123.6										ROOTS IN JOINT
124.9	3:00									ROOTS ~~IN~~ AROUND SERVICE TAP.
126.5										ROOTS IN JOINT
128.4	1:00									SERVICE TAP PLUGGED OFF
131.3		X								ROOTS IN JOINT.
139.1										ROOTS IN JOINT.
144										ROOTS IN JOINT
146.4										ROOTS IN JOINT
149.4										ROOTS IN JOINT
151.6		X								ROOTS IN JOINT
154.1										ROOTS IN JOINT.
156.7										ROOTS IN JOINT.
160.2										ROOTS IN JOINT
164		X								ROOTS IN JOINT

Job No:

Project Name:City of Mena

City/State:

Crew/Operator: TV

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PIPE SIZE:

DATE TELEVISED:

NUMBER OF SERVICES:

DVD:

Mena **INSPECTION SERVICES**

SANITARY SEWER INSPECTION REPORT

8TH ST. UPSTREAM TO #540

Distance	Clock Position	Cracked Pipe	Roots L,M,H	Debris L,M,H	Protruding Tap	Infiltration L,M,H	Offset Joint	PT. Repair	Broken Pipe	COMMENTS:
169.2										ROOTS IN JOINT.
177.1	1:00									SERVICE TAP. ROOTS IN JOINT.
200	1:00									SERVICE TAP.
213	1:00									SERVICE TAP
223	1:00									SERVICE TAP.
236		X								ROOTS IN JOINT.
247	1:00	X								SERVICE TAP
249	9:00	K								SERVICE TAP
272	1:00									SERVICE TAR ROOTS AROUND TAP.
320										ROOTS IN JOINT.
336										JOINT.
344										MANHOLE 540

Job No:

Project Name:City of Mena

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PIPE SIZE:

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Mena **INSPECTION SERVICES**

SANITARY SEWER INSPECTION REPORT

Distance	Clock Position	Cracked Pipe	Roots L,M,H	Debris L,M,H	Protruding Tap	Infiltration L,M,H	Offset Joint	PT. Repair	Broken Pipe	COMMENTS: 1019 - 1019 B
6.2	9:00									SERVICE TAP.
19.0										BELLY 19.10 - 47.2' UNDERWATER
62.6										BELLY 62' - 100.8' UNDERWATER
105.										BELLY 105' - 110'
118	9:00									SERVICE TAP.
165.8	9:00									SERVICE TAP.
298	3:00									POSSIBLE PATCH
310										BELLY 310 - 330" 1/2 UNDERWATER
391-										STOPPED.
373										MANHOLE
										1019 - 1018 - 1017
10.8'										SPLIT JOINT
14.3'										SPLIT JOINT
16-										" "
283		X								EVERY JOINT SPLIT.
363						X				
365		X								No Water coming in Splits

Job No:

Project Name:City of Mena

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DVD:

Mena

INSPECTION SERVICES

SANITARY SEWER INSPECTION REPORT

~~1032~~ 1032 - 1036 1038 - 1039 - 1043

Distance	Clock Position	Cracked Pipe	Roots L,M,H	Debris L,M,H	Protruding Tap	Infiltration L,M,H	Offset Joint	PT. Repair	Broken Pipe	COMMENTS:
131'										manhole - 1036
142-149.5										Belly
149'	12:00	X								
151.9	12:00	X				X				Drip
162'	1:00	X				X				Pouring
204-243		X								Belly
243	12:00	X								
277.4	3:00	X				X				at Joint
286										manhole - ~~1039~~ 1038
316.7	12:00	X								
352	12:00	X								
364										manhole-1039
401.2	12:00	X				X				
454										manhole - ?
519	12:00	X								
~~636~~ 637.9										manhole - 1043

Job No:

Project Name:City of Mena
City/State:
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PIPE SIZE:
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NUMBER OF SERVICES:
DVD:

Mena **INSPECTION SERVICES,**

SANITARY SEWER INSPECTION REPORT

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Distance	Clock Position	Cracked Pipe	Roots L,M,H	Debris L,M,H	Protruding Tap	Infiltration L,M,H	Offset Joint	PT. Repair	Broken Pipe	COMMENTS:
80'	3:00									BROKE @ SERVICE TAP.

Job No:

Project Name:City of Mena
City/State:
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PIPE SIZE:
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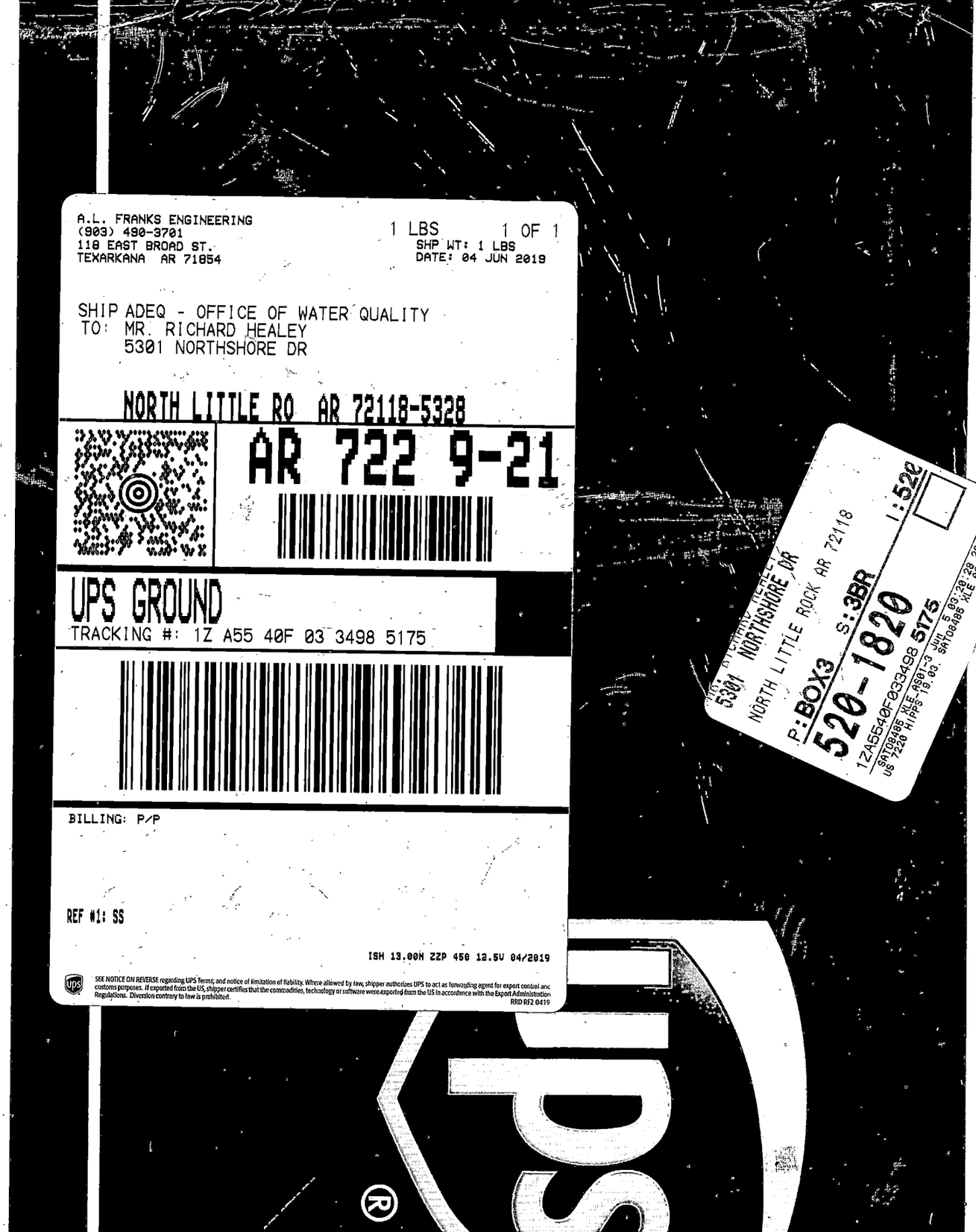
DVD: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SHP WT: 1 LBS
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