City of Edmond
Water Resources
2015 Annual Report

EDMOND WATER RESOURCES

Acknowledgement

The Water Resources Department wishes to acknowledge the efforts of several persons in the timely production of this document. Without their expertise, effort, and unique abilities this would not have been possible and certainly the document would not have been produced as the professional and attractive package it is.

These persons are:

Earl Hall, Kris Neifing, Ron Birdsong, Sam Drain, Keith Stewart, Cynthia Moore, Susan Miller, Rae Reese, Jennifer Young, Linda Courtright, Abby Westbrook-Moore, Rick Opat, and Jennifer Slack.

EDMOND WATER RESOURCES

City Information

Population Estimate

	2011	2012	2013	2014	2015
*Edmond Population	83,019	83,035	84,524	84,757	89,182

*Source: Edmond Economic Development Authority

Average Number of Active Accounts

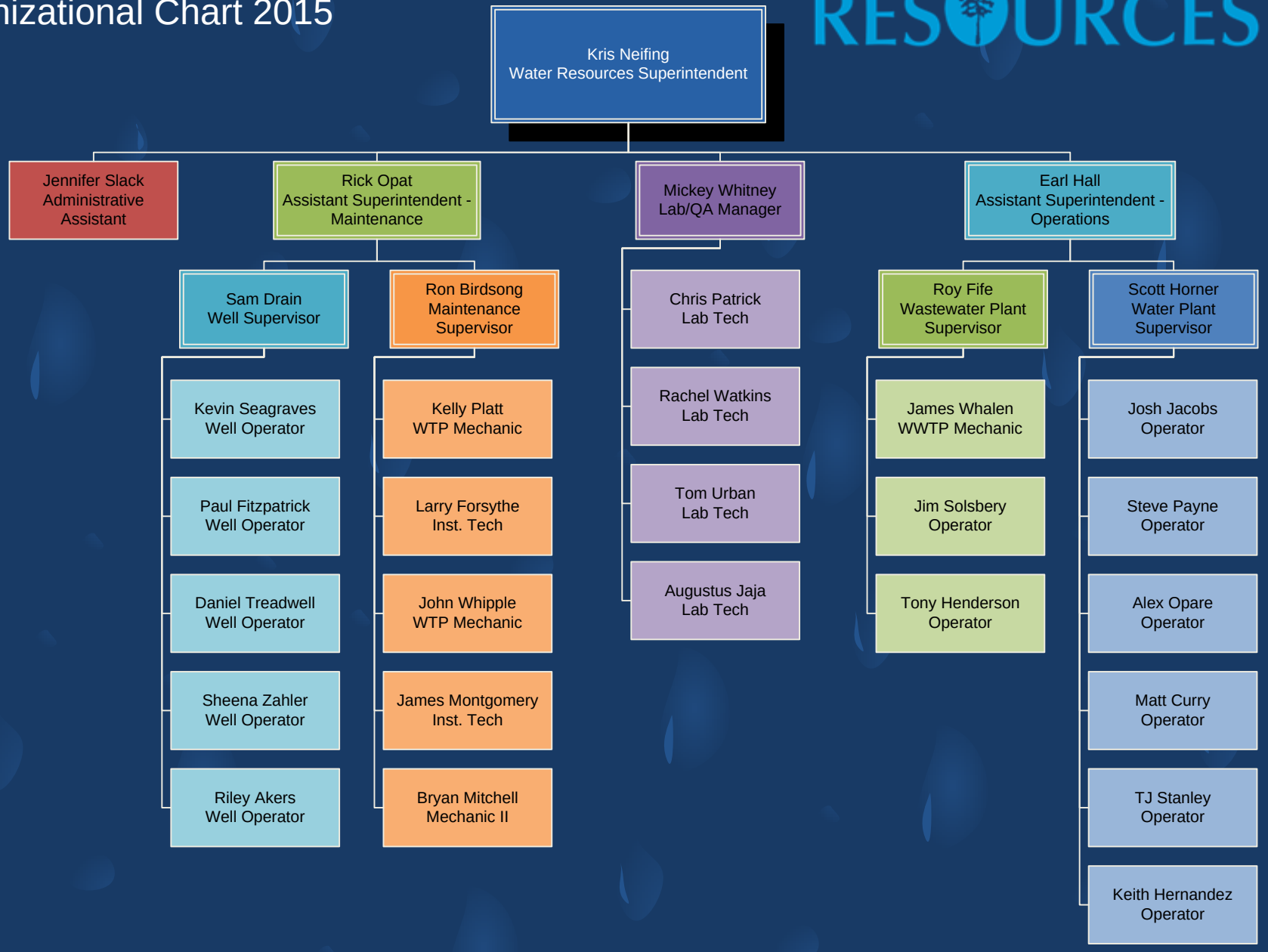
	2011	2012	2013	2014	2015
Water	26,957	27,702	28,304	28,839	29,226
Wastewater	28,535	29,241	29,906	30,527	30,026
Electric	35,497	36,985	37,713	38,505	38,414

EDMOND WATER RESOURCES

Section 1
Water Resources

EDMOND WATER RESOURCES

City Of Edmond Water Resources Organizational Chart 2015



Vision

- Community Focused Water and Wastewater Utilities

Mission

- To Meet the Needs of Edmond's Customers by providing Trustworthy Water and Wastewater Services

Goals

- Maintain the Water Resources Infrastructure
- Maintain Market Competitiveness Through the Use of Technology and Qualified Personnel
- Continue to Provide Safe Water to Consumers and Return Clean Water to the Environment

Values

- Quality Water and Wastewater Services
- Customer Satisfaction and Involvement
- Professional, Honest Relationships with our Customers and with One Another
- A Team-Created, Positive, Safe and Enjoyable Work Environment
- Trained, Empowered Employees
- Sincere, Straightforward Communication

TRUSTWORTHY SERVICE
THROUGH CONTINUOUS IMPROVEMENT

The City of Edmond has three water sources, the Garber-Wellington Aquifer, Arcadia Lake and purchased potable water from Oklahoma City. The primary water supplies are groundwater from the Garber-Wellington aquifer and surface water from Arcadia Lake. Purchasing water from Oklahoma City is a secondary source of water that was used for the first time in 2001.

After treatment at the Edmond Water Treatment Plant (Arcadia Lake water) or after pumping from the wells (Garber Wellington aquifer water), potable water is conveyed to Edmond users via a city-wide distribution system. The distribution system includes storage tanks and water towers located in the Edmond area.

Wastewater is transported through the wastewater collection system to the Wastewater Treatment Plant. The collection system also has nine (9) pumping stations that move wastewater to the treatment plant. After treatment at the Coffee Creek Wastewater Treatment Plant, the plant effluent is discharged into Coffee Creek.

The City of Edmond's Water Resources Department is made up of the following divisions:

Water Production Division

Edmond Water Treatment Plant

Pumping Stations, Water Towers and Storage Tanks

Water Wells (Fifty-six wells located throughout Edmond)

Wastewater Treatment Division

Coffee Creek Wastewater Treatment Plant

Wastewater Lift Stations

WATER PRODUCTION

EDMOND WATER TREATMENT PLANT

The Water Treatment Plant Division is responsible for management, operations and maintenance of the water treatment plant, distribution system pumping stations, water storage tanks and water towers. Plant operators also monitor the distribution system water storage levels. Fifteen (15) full-time positions staff the Water Treatment Plant.

WATER WELLS (GARBER-WELLINGTON WATER WELL FIELD)

The Garber Wellington aquifer is the source for all Edmond well water. The well system is comprised of fifty-six (56) wells and associated equipment. The Wells Division is staffed by one (1) well supervisor, and five (5) well operators.

WASTEWATER TREATMENT

The Water Resource Recovery Facility (WRRF) is responsible for operation maintenance and management of Edmond's wastewater treatment plant and wastewater lift stations. Treated plant effluent is discharged into Coffee Creek, a tributary of Deep Fork Creek. The facility is regulated under the National Pollution Discharge Elimination System (NPDES), which is administered by the Oklahoma State Department of Environmental Quality. The WWTP Division also operates and maintains nine (9) collection system wastewater lift stations. Eight (8) fulltime positions staff the WWTP Division.

WHO TO CALL

Water Resources

Superintendent	216-7696
Assistant Superintendent – Operations	216-7811
Assistant Superintendent – Maintenance	216-7809
Water Resources Administration	216-7675

Water Treatment Plant

Chief Plant Operator	216-7818
Operations Control Room/Lab	216-7690

Water Resource Recovery Facility

Chief Plant Operator	216-7695
Operations Control Room/Lab	216-7697

Section 2
Water Resource Recovery Facility

EDMOND WATER RESOURCES

WATER RESOURCE RECOVERY FACILITY

Edmond's Coffee Creek Wastewater Treatment Plant (CCWWTP) is a continuous flow activated sludge process utilizing oxidation ditches and aeration tanks for secondary treatment. It has a total design capacity of nine (9) million gallons per day. The plant is operated under an Oklahoma Pollution Discharge Elimination System (OPDES) permit, issued by the Oklahoma Department of Environmental Quality (ODEQ). In 2015 the facility received a renewed OPDES permit effective August 1. The new permit requires that we treat for Nitrate that had not been previously required and meeting E. Coli limits year around. The ODEQ also required that compliance with the Nitrate limits begin by May 31, 2020. During 2015 ODEQ personnel conducted five plant inspections and did not note any significant issues.

In 2015, Carollo Engineers began engineering the upgrades for treating Nitrate and expanding the plant to meet the current and anticipated flows. The plant is being designed for 12 MGD monthly average and 24 MGD peak flows. Design is expected to be complete in fall of 2016.

Other planned projects under design are the Chisholm Creek Lift Station upgrades and Spring Creek Lift Station and force main replacement. The Coffee Creek interceptor is being replaced to handle increased flows since it was placed in service in the early 70's.

The basic features of the wastewater treatment process are, screens to remove debris from raw wastewater entering the plant, aeration basins that provide for oxygenation and mixing of active microorganisms with raw sewage (the activated sludge process), a basin or clarifier to separate solids from the treated effluent, a system to return solids, also known as activated sludge, from the clarifiers back to the aeration basins and a system to waste or remove excess solids from either the basin or clarifier thus controlling the solids mass.

Operational controls include, controlling the oxygen level, the rate that activated solids are returned to the aeration basins and the rate that solids are withdrawn from the process. The treatment process is designed to remove carbonaceous organic material and oxidize ammonia to nitrate.

Treated water from the plant is also filtered to remove nearly all of the remaining solids, chlorinated to kill any potentially harmful microorganisms and then dechlorinated to eliminate excess chlorine that could be harmful to natural organisms in the receiving stream. The chlorination and dechlorination

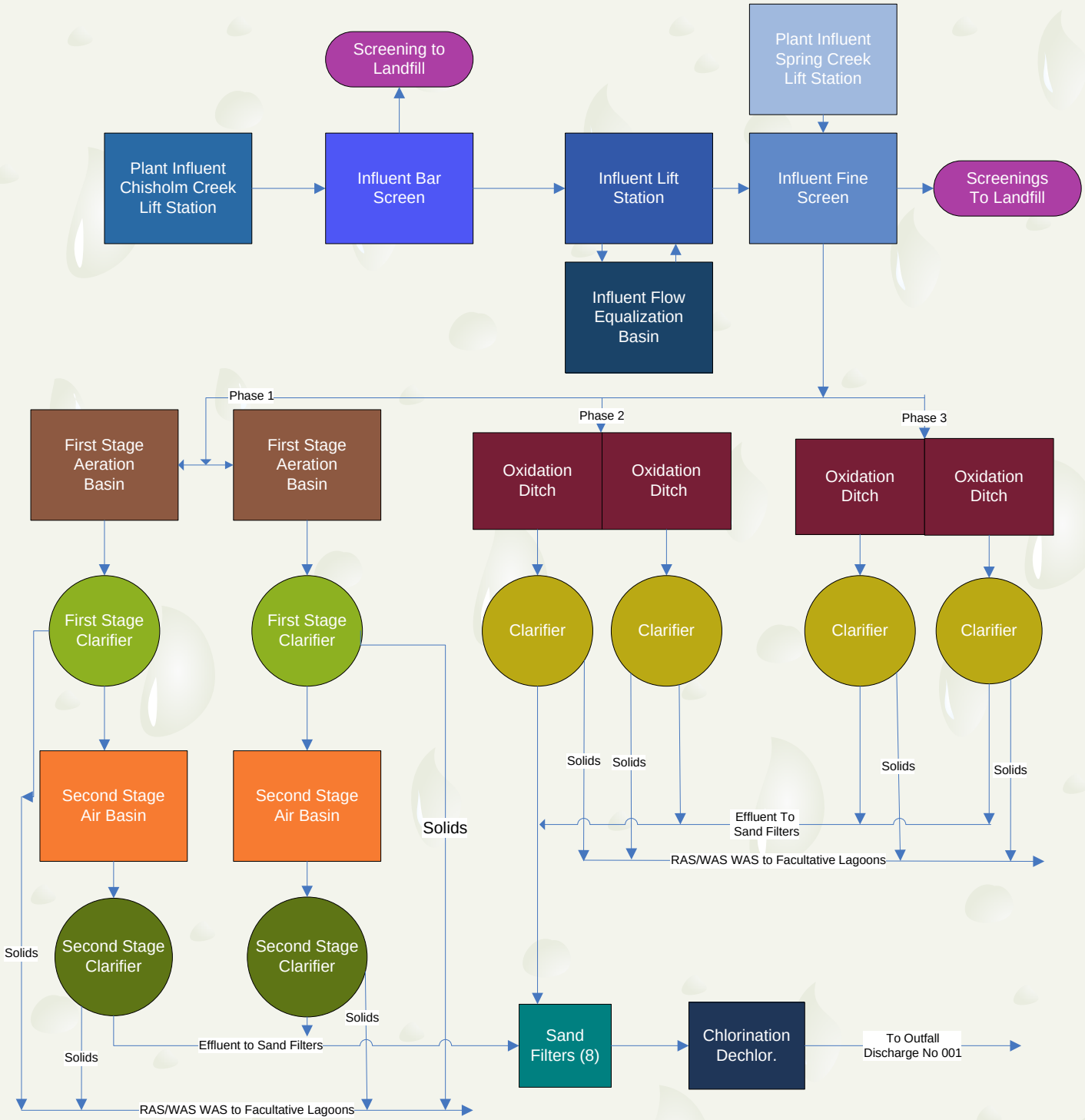
system is utilized for five months each year from May through September. These are the months most likely to have receiving stream recreational use.

Biosolids, or sludge, that is wasted or removed from the wastewater treatment process is treated in facultative lagoons. After the sludge has spent a required amount of time in the lagoons it is tested for compliance with regulatory requirements and then land applied to local farmland for growth of second generation food crops, such as hay for stock feed. This program is defined in the plant Sludge Management Plan (SMP). The current SMP was approved by ODEQ in October 2006.

The facility also has a storm water discharge permit, issued by ODEQ. This permit was issued in May 2012 and expires on May 2016. A new permit is pending ODEQ action. The document requires Edmond to maintain best management practices for control and containment of materials that should not contaminate plant storm water runoff. The CCWWTP Division is also responsible for the operation and maintenance of the City's nine (9) lift stations. The lift stations convey wastewater from the collection system to the CCWWTP. The stations are currently undergoing a rehabilitation effort to ensure that they remain at full operational capacity at all times.

The CCWWTP processed a total of 2,534,800,000 gallons of wastewater during 2015. Total operations and maintenance expenditures for 2015 were approximately $2,174,022. The percent removal of our major permitted parameters was above 98.63%. In 2015, a total of 4,233,600 gallons (562 dry tons) of Biosolids were land applied on ODEQ approved farmland.

The facility is operated by Seven (7) employees, One (1) Wastewater Plant Supervisor, One (1) Maintenance Mechanic II, One (1) Maintenance Mechanic, One (1) Laboratory Technician, two (2) Operators, and one (1) Instrumentation Technician operate and maintain the CCWWTP and the collection system lift stations. Staff is provided direction by the Water Resources Superintendent, Assistant Superintendents and the CCWRRF Plant Supervisor.



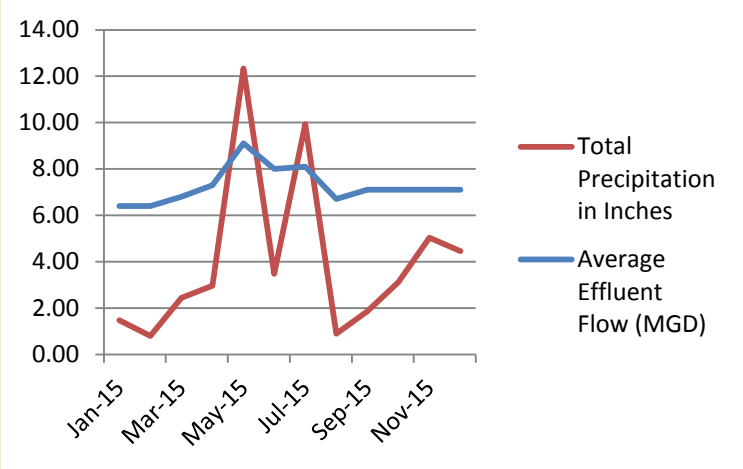
City of Edmond
Coffee Creek Wastewater Treatment Plant

1600 N Midwest Blvd
Edmond, OK
Flow Schematic
March 1, 2011

EDMOND WATER RESOURCES

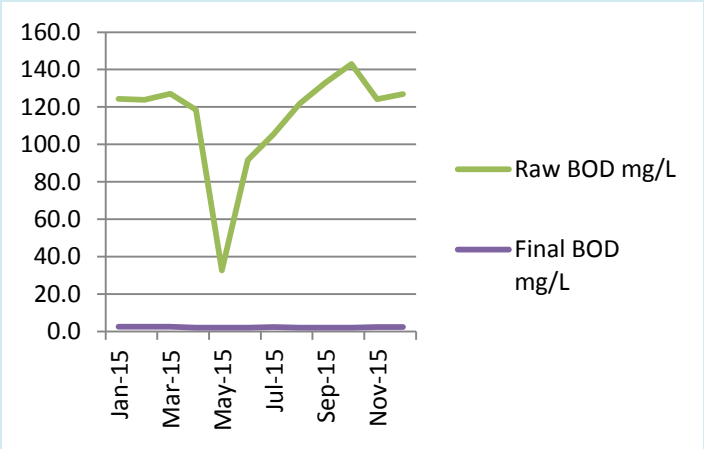
Rain vs. Effluent Flow

	Total Precipitation in Inches	Avg Effluent Flow (MGD)
Jan-15	1.48	6.4
Feb-15	0.80	6.4
Mar-15	2.44	6.8
Apr-15	2.96	7.3
May-15	12.34	9.1
Jun-15	3.47	8.0
Jul-15	9.93	8.1
Aug-15	0.90	6.7
Sep-15	1.86	7.1
Oct-15	3.11	7.1
Nov-15	5.04	7.1
Dec-15	4.46	7.1



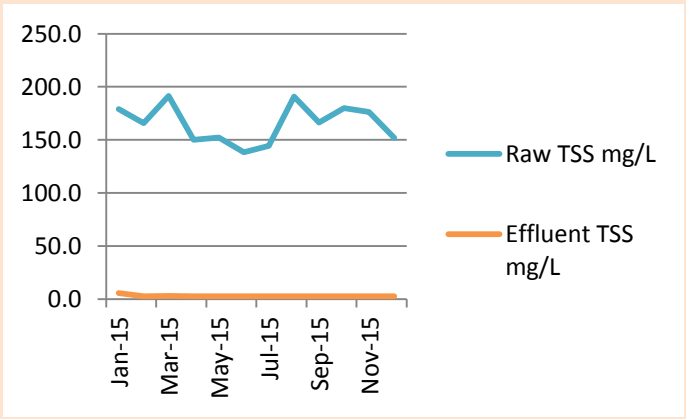
Raw vs. Effluent BOD

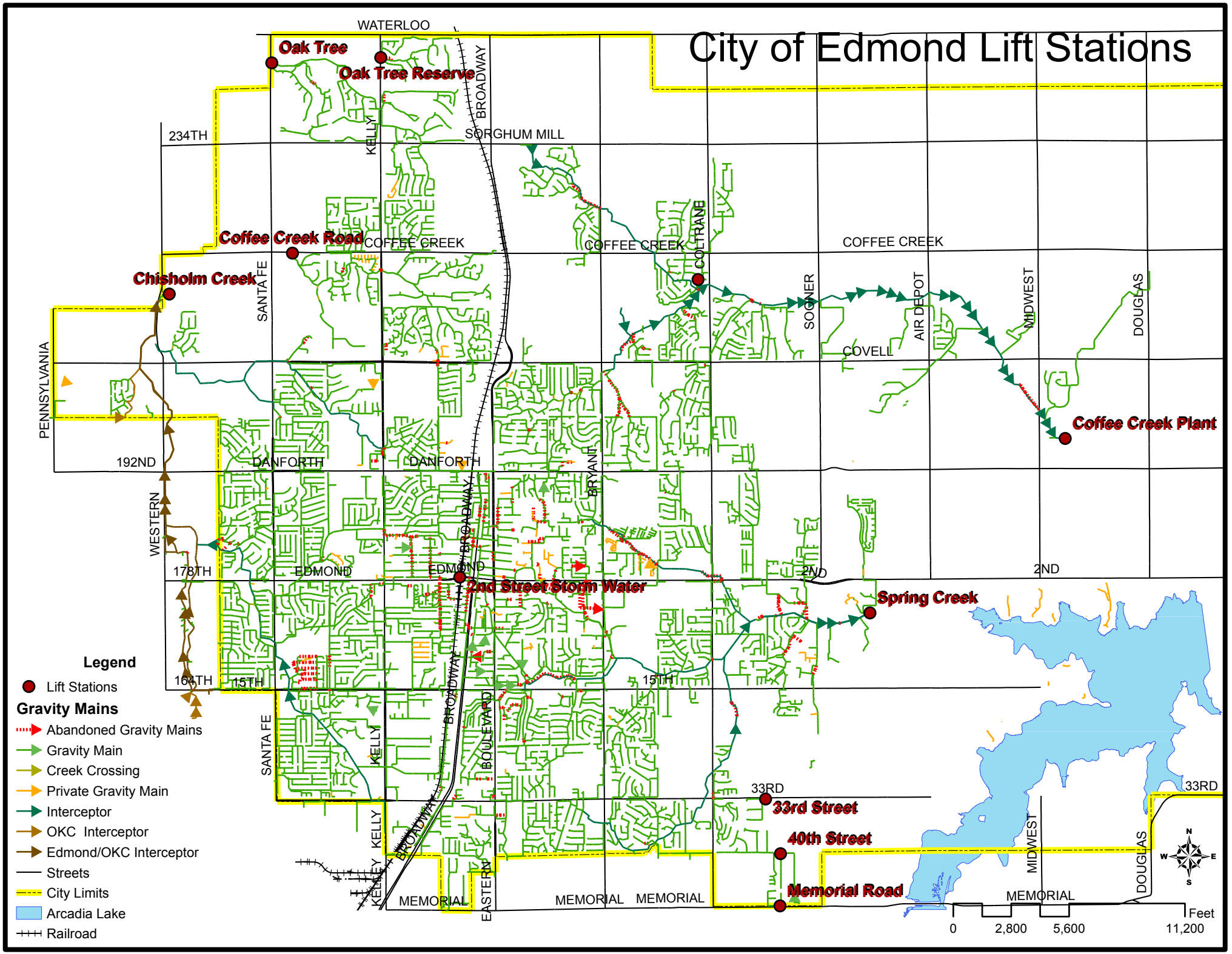
	Raw BOD mg/L	Final BOD mg/L
Jan-15	124.4	2.6
Feb-15	123.8	2.5
Mar-15	127.0	2.5
Apr-15	118.6	2.0
May-15	32.7	2.0
Jun-15	91.6	2.0
Jul-15	105.6	2.3
Aug-15	121.8	2.0
Sep-15	133.1	2.1
Oct-15	142.9	2.1
Nov-15	124.1	2.3
Dec-15	126.9	2.4



Raw vs. Effluent TSS

	Raw TSS mg/L	Effluent TSS mg/L
Jan-15	179.0	5.5
Feb-15	165.8	2.7
Mar-15	191.3	2.8
Apr-15	150.1	2.5
May-15	152.3	2.5
Jun-15	138.4	2.5
Jul-15	144.4	2.5
Aug-15	190.8	2.6
Sep-15	166.2	2.5
Oct-15	180.0	2.5
Nov-15	176.2	2.5
Dec-15	152.0	2.5

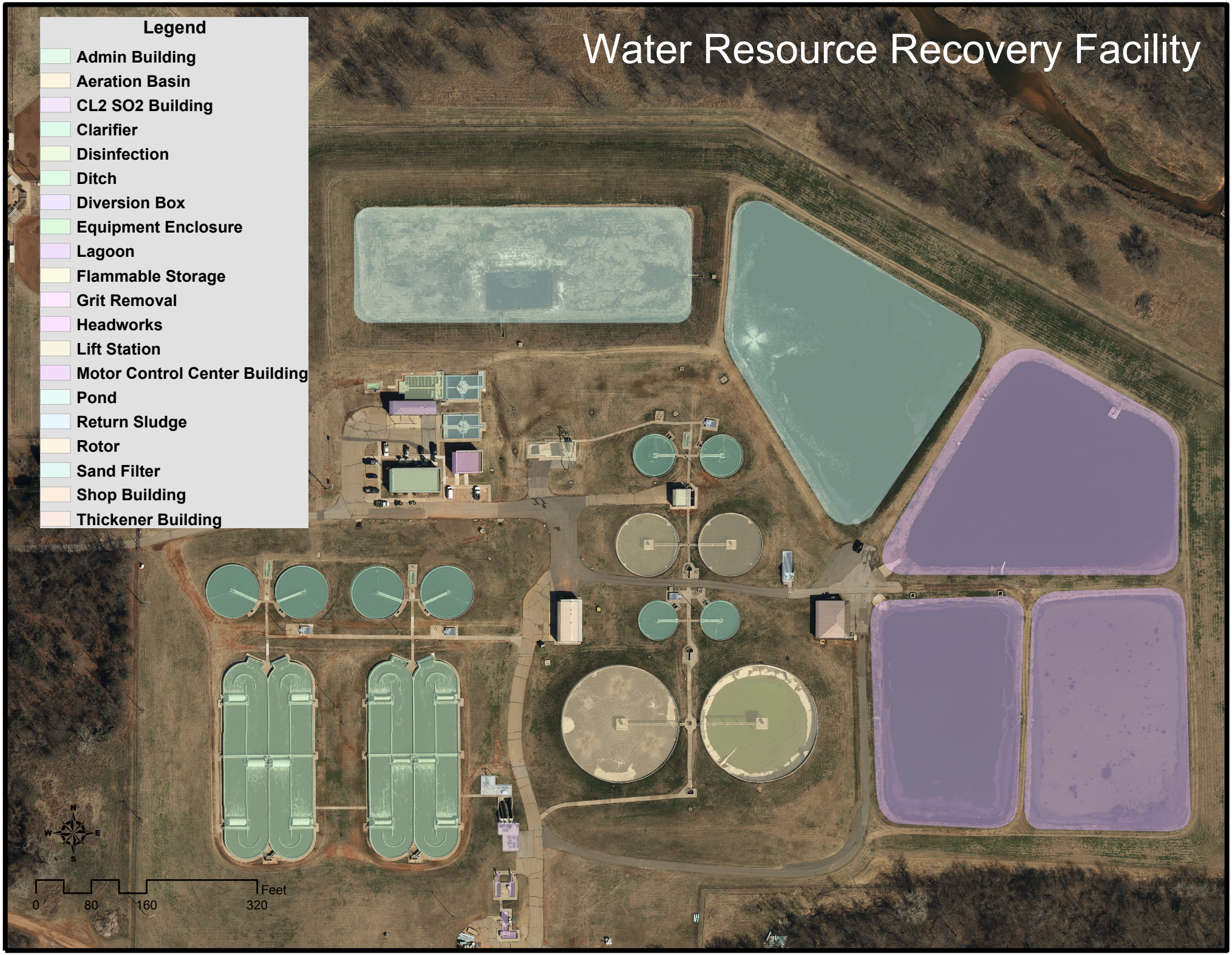



City of Edmond Lift Stations
WATERLOO
Oak Tree
Oak Tree Reserve
BROADWAY
234TH
KELLY
SORGHUM MILL
Coffee Creek Road
COFFEE CREEK
COFFEE CREEK
COLTRANE
COFFEE CREEK
Chisholm Creek
SANTA FE
SOGNER
AIR DEPOT
MIDWEST
DOUGLAS
COVELL
PENNSYLVANIA
Coffee Creek Plant
192ND
DANFORTH
DANFORTH
BRYANT
WESTERN
178TH
EDMOND
EDMOND
2nd Street Storm Water
2ND
2ND
Spring Creek
164TH
15TH
15TH
SANTA FE
KELLY
BOULEVARD
33RD
33rd Street
40th Street
Memorial Road
MEMORIAL
MEMORIAL
MEMORIAL
EASTERN
MIDWEST
DOUGLAS
33RD
MEMORIAL
Legend
Lift Stations
Gravity Mains
Abandoned Gravity Mains
Gravity Main
Creek Crossing
Private Gravity Main
Interceptor
OKC Interceptor
Edmond/OKC Interceptor
Streets
City Limits
Arcadia Lake
Railroad
N
W
E
S
0
2,800
5,600
11,200
Feet

LIFT STATION PUMPS AND MOTORS

Lift Station Name	Location	Number of Pumps	Motor HP	Pump GPM
CHISHOLM CREEK	¾ Mile North of Covell on Western	2	150	1500
		1	300	3000
COFFEE CREEK	South side of Coffee Creek, ¼ mile east of Santa Fe Ave.	3	75	1500
COFFEE CREEK TREATMENT PLANT	Coffee Creek Plant grounds	2	75	1100
		1	60	3000
MEMORIAL ROAD	North side of Memorial, ½ miles west of I-35	2	3	75
OAK TREE	6340 North Santa Fe Ave	3	130	1100
OAK TREE RESERVE	East side of Kelly , ¾ mile past Sorghum Mill	2	20	450
SPRING CREEK	¼ mile east of I-35 on 66 Highway	1	30	1000
		1	75	2000
		2	125	3100
33rd Street	South side of 33rd St, ½ miles west of I-35	2	10	75
40th Street	40th St between Karen and Stevens Dr.	2	30	200

Water Resource Recovery Facility



BIOSOLIDS APPLICATION SITES

Field Name	Legal Description						Latitude	Longitude
CR-1			SW/4	SEC 26	T14N	R1W	35° 39’ 28.613”	-97° 16’ 44.667”
CR-2		S/2	SW/4	SEC 26	T14N	R1W	35° 39’ 13.342”	-97° 16’ 35.11”
GM-1	NE 1/4	NE 1/2	SE 1/4	SEC 8	T14N	R1W	35° 42’ 12.803”	-97° 19’ 9.387”
GM-2	NE 1/4	NE 1/2	SE 1/4	SEC 8	T14N	R1W	35° 42’ 32.465”	-97° 19’ 21.433
JG-2		W/2	NE/4	SEC 30	T14N	R1W	35° 39’ 56.94”	-97° 20’ 34.022”
JG-3			NE/4	SEC 30	T14N	R1W	35° 39’ 56.993”	-97° 20’ 29.663”
JG-4		S/2	NE/4	SEC 30	T14N	R1W	35° 39’ 38.531”	-97° 20’ 34.857”
JG-5		W/2	NW/4	SEC 29	T14N	R1W	35° 39’ 56.098”	-97° 20’ 5.815”
JG-6		W/2	NW/4	SEC. 29	T14N	R1W	35° 39’ 40.748”	-97° 20’ 3.511”
JG-13		NW/4	NW/4	SEC 21	T14N	R1W	35° 40’ 48.561”	-97° 18’ 59.003”
JG-14		SW/4	SW/4	SEC 16	T14N	R1W	35° 41’ 1.442”	-97° 18’ 49.714”
JG-15		W/2	SW/4	SEC 16	T14N	R1W	35° 41’ 7.379”	-97° 19’ 3.689”
JG-16		NW/4	SW/4	SEC 16	T14N	R1W	35° 41’ 13.657”	-97° 19’ 4.669”
JG-17		N/2	SW/4	SEC 16	T14N	R1W	35° 41’ 14.08”	-97° 18’ 58.135
JG-18		E/2	SW/4	SEC 21	T14N	R1W	35° 40’ 11.561”	-97° 18’ 44.847”
JG-19		NE/4	NW/4	SEC 35	T14N	R1W	35° 39’ 2.845”	-97° 16’ 36.389”
JG-20		N/2	NE/4	SEC 35	T14N	R1W	35° 39’ 4.193”	-97° 16’ 19.267
JM-1		S/2	NW/4	SEC 8	T14N	R1W	35° 42’ 28.745”	-97° 19’ 29.088”
JM-2		S/2	NW/4	SEC 8	T14N	R1W	35° 42’ 18.487”	-97° 19’ 29.782
JM-3		S/2	NW/4	SEC 8	T14N	R1W	35° 42’ 7.524	-97° 19’ 31.045”
JM-4		S/2	NW/4	SEC 8	T14N	R1W	35° 42’ 19.92	-97° 20’ 8.191”
LS-1			SW/4	SEC 24	T14N	R2W	35° 40’ 5.795”	-97° 22’ 5.878”
LS-2		W/2	SE/4	SEC 19	T14N	R1W	35° 40’ 15.436”	-97° 20’ 36.527
LS-3		N/2	NE/4	SEC 28	T14N	R1W	35° 39’ 59.139”	-97° 18’ 20.074”
LS-4			NE/4	SEC 28	T14N	R1W	35° 39’ 41.501”	-97° 18’ 13.096”
LS-5		E/2	SW/4	SEC 21	T14N	R1W	35° 40’ 23.184”	-97° 18’ 57.692”
LS-8		W/2	NE/4	SEC 25	T14N	R2W	35° 39’ 52.351”	-97° 21’ 39.77
LS-9		E/2	NE/4	SEC 25	T14N	R2W	35° 39’ 44.149”	-97° 21’ 23.639”
LS-11			SW/4	SEC 2	T14N	R2W	35° 40’ 5.795”	-97° 22’ 5.878”
LS-12		E/2	SE/4	SEC 19	T14N	R1W	35° 40’ 2.498”	-97° 20’ 28.158”
LS-13		W/2	SE/4	SEC 24	T14N	R2W	35° 40’ 3.011”	-97° 21’ 43.151”
LS-14		N/2	NW/4	SEC 25	T14N	R2W	35° 40’ 1.465”	-97° 21’ 46.087”
LS-15			NW/4	SEC 26	T14N	R2W	35° 39’ 51.827”	-97° 22’ 16.714”
LS-16			SW/4	SEC 35	T14N	R1W	35° 38’ 18.751”	-97° 16’ 52.775”

Section 3
Water Production

EDMOND WATER RESOURCES

WATER TREATMENT PLANT AND WELLS

Water Resources, Water Division, personnel continued to perform sampling and monitoring work at well sites and water distribution sites to meet all regulatory parameters and we are happy to report a 100% compliance rate for 2015. The total gallons produced for the Water Plant and Wells were 3,687,385,756. Total operations and maintenance expenditures for 2015 were approximately $4,865,419.00.

Currently a Water Plant expansion is under design by Carollo Engineers. This will increase the capacity of the Water Plant to 30 Million gallons per day. A new transmission line to I-35, new pump station at I-35, and Intake structure are all needed to meet the increased treatment capacity. The NW Water Tower is also being constructed at the corner of Coffee Creek and Broadway. This is a 2 million gallon water tower to provide increased storage as part of the Master Plan improvements. Other water line projects are in the planning stages to meet our current and future demands.

The Edmond area experienced another wet summer by recent standards. This resulted in a slightly lower demand than that of CY 2014. Edmond's single day, peak demand, usage was 18,248,350 gallons. This occurred on September 7, 2015. Mandatory water conservation continues on the odd/even system.

Edmond's Treatment Plant was constructed and completed in 1987. This facility treats water from Arcadia Lake, which provides flood control, water supply, and recreation for the Upper Deep Fork River Basin. Edmond's facility is equipped with many treatment processes to ensure a high quality of water is produced. The Edmond Water Treatment Plant is designed to treat 12.0 MGD. Major water treatment plant upgrades were completed in 2004.

The following is a brief description of the treatment process, after water from Arcadia Lake is pumped to the plant headworks:

Screen building: Screens remove leaves, sticks, fish, and other large debris.

Air stripping: Aeration is intended to remove certain dissolved gases in the water. It can also be used to increase the waters dissolved oxygen content, which is the first step in the removal of iron and manganese.

Pre-ozone: Ozone is a better virucide than chlorine. Unlike chlorine, there are no disinfection byproducts produced. Ozonation removes color, odor, and taste. This process also oxidizes iron, manganese, sulfide, and organics.

Flocculation, Clarifiers: This process gathers together the fine, light particles to form larger particles that will not readily settle or filter out of the water. The floc settles out the larger particles. Arcadia Lake raw water quality has historically been good enough to allow Edmond to forego this systems use.

Chemical Building: Pebble quick lime is mixed with the water to form calcium hydroxide for softening purposes. Polymer is added as a coagulant aid.

Solids Contact Clarifiers: These units are designed to allow the lime and other solids to settle out of the water after hardness reduction.

Post-ozone: Ozone is a better virucide than chlorine. Unlike chlorine, there are no disinfection byproducts produced. Ozonation removes color, odor, and taste. This process also oxidizes iron, manganese, sulfide, and organics.

Carbon Dioxide-Recarbonation: This process is used to lower the pH and alkalinity. It is effective in doing this, particularly in lime-softened water.

Mixed Media Filters: Filtration removes small solids from the water being treated. Filtration is the process of passing water through material, such as sand, coal, granulated carbon and/or other substances to trap particles.

Granulated Activated Carbon (GAC) Filtration: GAC filtration is effective for removal of many types of organic compounds, including those that can form potentially harmful byproducts after chlorination. This process removes synthetic organic compounds such as solvents, cleaning compounds, insecticides and herbicides.

The facility is operated twenty-four (24) hours per day, seven (7) days per week. Staff includes Nineteen (19) employees: One (1) Water Plant Supervisor, One (1) Maintenance Supervisor, two (2) Mechanics, one (1) Instrumentation and Controls Technician, six (6) Operators, one (1) well supervisor, five (5) Water Well Operators, and three (3) Laboratory Technicians. The water plant is operated and

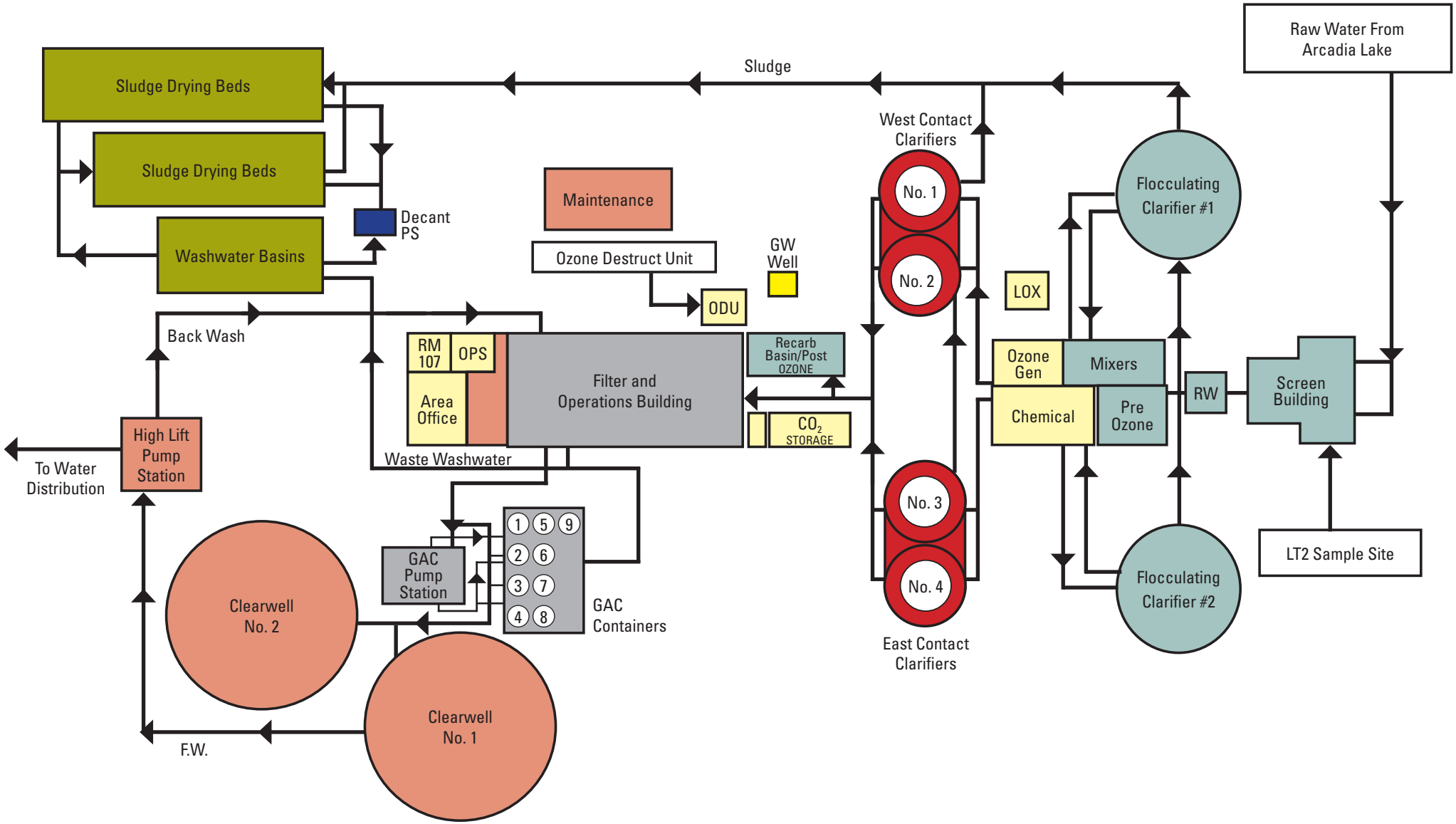
maintained under the direction of the Water Resources Superintendent, Assistant Superintendents and Chief Water Plant Operator.

EDMOND WATER RESOURCES

WATER TREATMENT PLANT

City of Edmond, Oklahoma

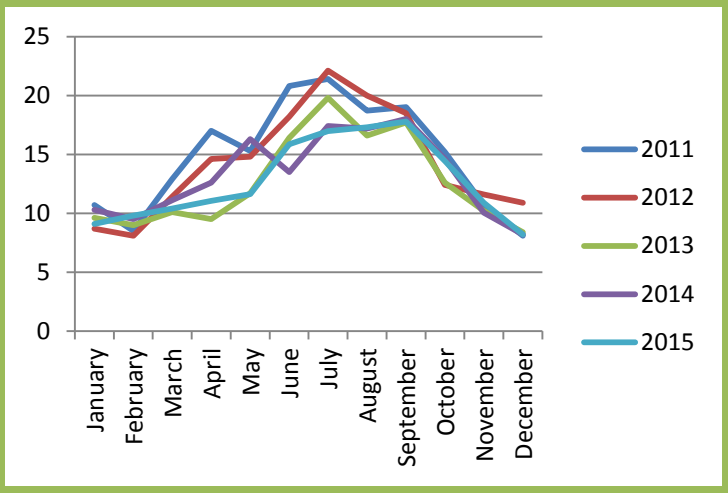
PWSID# OK1020723



Edmond
A GREAT PLACE TO GROW

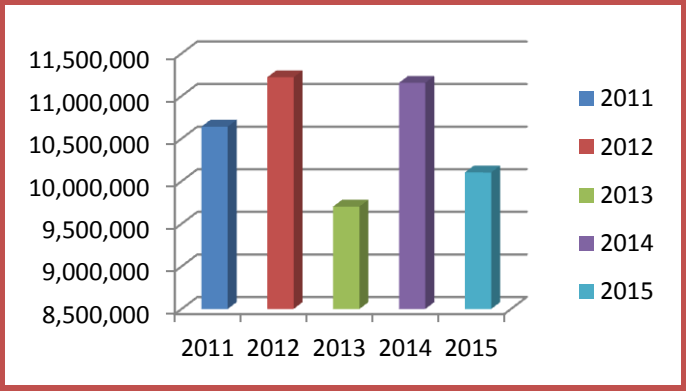
Peak Flow During Month By Year (Million Gallons)

	2011	2012	2013	2014	2015
January	10.7	8.7	9.6	10.3	9.1
February	8.5	8.1	9	9.5	9.8
March	12.9	11.4	10.1	11.1	10.4
April	17	14.6	9.5	12.6	11.1
May	15.3	14.8	11.7	16.3	11.6
June	20.8	18.2	16.4	13.5	15.9
July	21.4	22.1	19.8	17.4	17.0
August	18.7	20	16.6	17.2	17.3
September	19	18.5	17.7	18	17.8
October	15.2	12.4	12.6	14.6	14.4
November	10.7	11.6	10.2	10.4	10.9
December	8.1	10.9	8.4	8.2	8.2
Max for Year	21.4	22.1	19.8	18	17.8



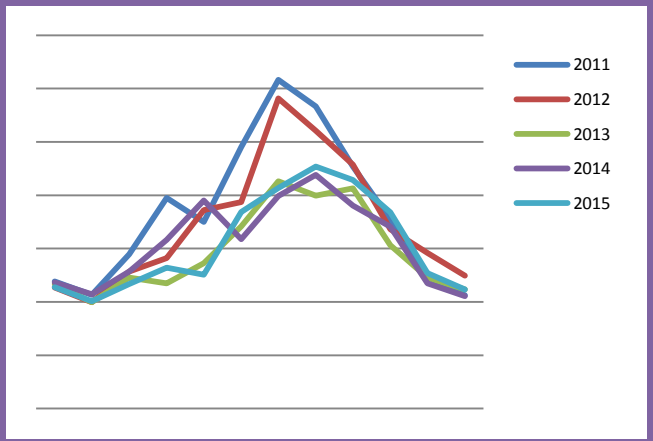
Average Daily Flow By Year

Gallons	
2011	10,640,288
2012	11,220,194
2013	9,701,952
2014	11,155,121
2015	10,102,427



Annual Comparisons (Million Gallons)

	2011	2012	2013	2014	2015
January	238.47	227.13	233.84	236.87	227.73
February	213.28	199.39	199.58	214.47	201.41
March	289.50	256.77	245.42	256.83	233.38
April	395.20	282.33	234.94	316.59	264.30
May	350.23	371.98	272.39	390.49	251.13
June	490.59	387.36	341.88	317.34	368.78
July	616.26	581.46	425.93	398.64	413.51
August	566.35	521.22	399.02	438.15	453.68
September	453.84	457.34	413.29	380.50	428.32
October	354.92	336.32	306.32	341.21	367.92
November	246.86	291.77	245.42	234.94	253.99
December	212.70	249.06	223.19	210.83	223.24



WELL PRODUCTION – MONTHLY GALLONS

WELL#	January	February	March	April	May	June	July	August	September	October	November	December	Total
Well08	2,107,704	1,867,867	1,772,533	2,651,628	2,081,165	4,823,630	3,413,425	4,004,715	4,579,521	2,282,767	3,271,355	3,208,557	36,064,866
Well09	1,851,298	1,650,106	1,890,702	2,766,966	2,851,788	4,932,887	3,588,796	4,467,971	3,474,554	2,352,584	1,564,239	1,270,949	32,662,842
Well10	488,585	556,546	403,800	793,728	684,511	1,605,163	1,213,440	1,398,878	2,161,827	924,753	406,527	333,579	10,971,340
Well11	1,727,400	1,638,479	1,492,820	2,444,240	3,317,576	3,762,451	3,504,119	3,700,897	3,640,475	2,352,341	1,900,540	1,532,241	31,013,579
Well14	874,821	539,571	1,072,088	1,428,645	813,584	1,739,890	1,456,513	2,109,255	1,330,913	1,127,679	749,337	744,991	13,987,288
Well15	1,903,237	943,308	1,465,513	2,150,402	2,834,805	3,187,794	3,860,952	4,216,975	3,967,117	2,615,910	1,788,122	1,163,366	30,097,502
Well18	0	0	77,263	1,289,376	1,504,918	2,389,710	2,100,039	1,379,353	1,959,351	1,733,112	1,062,080	461,489	13,956,690
Well19	1,940,437	1,135,678	1,298,773	2,403,107	2,643,776	3,616,513	3,834,430	4,615,594	3,768,678	2,596,194	1,710,890	1,423,342	30,987,410
Well20	1,140,041	682,386	992,665	1,489,242	932,382	2,383,057	1,960,809	2,094,360	1,835,441	1,219,802	1,372,052	526,594	16,628,832
Well21	1,580,890	1,075,907	1,374,725	2,226,791	2,627,893	3,699,785	3,400,179	4,002,840	2,364,358	2,368,080	1,985,526	1,443,117	28,150,091
Well22	1,048,063	922,926	1,345,021	1,773,410	751,048	2,423,035	1,283,101	1,397,995	2,683,396	1,846,101	2,127,145	1,521,748	19,122,988
Well23	2,003,737	1,211,609	1,324,781	3,029,184	2,519,499	5,377,785	4,945,643	5,511,623	3,827,949	4,230,604	2,798,501	1,430,762	38,211,677
Well24	1,754,149	2,253,039	1,794,336	2,852,061	3,083,699	4,075,730	2,606,014	3,859,067	3,492,818	1,781,564	1,713,206	2,043,633	31,309,316
Well25	2,148,740	1,312,725	2,290,301	2,849,935	2,844,565	5,623,931	4,565,143	5,427,533	5,238,408	2,918,970	2,232,751	1,708,653	39,161,655
Well26	902,347	606,437	1,294,351	1,851,203	1,188,522	1,912,488	2,217,063	2,348,964	2,620,842	1,185,111	1,048,083	850,578	18,025,992
Well27	1,655,776	1,478,488	1,235,224	3,169,125	1,403,661	3,271,124	3,273,432	3,688,717	4,554,689	2,428,835	305,009	0	26,464,080
Well28	1,242,820	1,055,395	1,331,063	2,152,966	773,553	2,637,678	3,001,765	3,790,647	3,286,409	2,511,089	1,808,322	1,671,188	25,262,894
Well29	1,516,835	411,110	1,497,429	2,914,631	776,976	2,010,290	3,521,545	3,705,831	3,169,706	2,535,177	1,886,781	999,479	24,945,790
Well31	1,992,662	1,273,707	1,563,343	2,909,303	1,403,633	3,490,848	2,678,824	2,880,184	2,971,969	2,944,134	2,302,136	785,037	27,195,778
Well32	2,117,096	2,690,834	3,312,308	3,934,044	2,762,253	5,915,547	3,876,128	4,814,993	3,470,536	3,750,187	1,203,237	0	37,847,163
Well33	2,346,238	1,470,044	1,811,751	3,375,520	4,038,173	5,015,314	4,442,094	4,349,222	4,935,199	3,749,120	3,575,320	2,455,310	41,563,306
Well34	3,105,114	3,920,953	2,027,572	3,340,081	1,028,540	4,803,209	3,732,032	5,040,646	5,383,221	2,618,509	1,958,388	1,892,381	38,850,646
Well35	1,883,572	627,429	1,723,239	2,737,180	1,813,697	4,592,592	3,359,167	4,112,832	4,000,525	3,226,346	4,225,551	2,582,301	34,884,431
Well36	2,773,275	1,373,319	2,275,037	3,925,540	2,666,860	4,779,400	5,985,062	5,431,341	5,282,721	5,967,829	5,869,790	2,859,044	49,189,217
Well37	3,314,801	5,409,549	3,870,046	6,026,866	5,770,894	7,623,075	6,965,063	8,281,398	7,740,836	6,333,748	6,313,455	4,562,294	72,212,022
Well38	3,181,478	3,967,363	4,320,153	3,570,120	0	0	0	36,000	0	0	0	0	15,075,114
Well39	2,337,573	1,349,266	2,275,675	3,044,719	3,119,625	4,703,545	4,162,990	4,455,267	4,344,471	2,560,183	1,768,251	217,766	34,339,331
Well40	1,435,374	0	0	2,422,944	933,529	2,764,946	3,410,679	4,627,412	3,020,884	1,896,218	1,590,434	1,228,147	23,330,567
Well41	1,265,757	643,464	1,121,512	1,641,528	1,209,855	1,435,490	3,155,018	2,908,113	2,334,071	1,324,220	833,966	498,254	18,371,247
Well42	1,759,119	997,568	1,127,063	2,110,490	1,968,768	1,066,669	3,446,000	1,489,109	1,277,442	2,677,775	1,750,957	1,013,606	20,684,567
Well43	2,758,424	1,314,397	1,212,113	2,233,104	3,351,698	3,151,721	3,721,593	3,825,056	2,685,495	2,179,587	2,031,977	1,065,046	29,530,211
Well44	2,438,242	2,166,386	2,244,315	5,102,592	481,794	3,675,702	6,076,635	6,619,833	5,660,908	3,425,534	2,744,230	2,928,474	43,564,647
Well45	0	0	0	0	0	0	0	0	0	0	0	0	0
Well46	1,716,400	1,203,399	1,689,921	2,292,218	2,163,167	3,373,970	3,619,637	3,849,835	3,022,511	1,937,996	1,836,150	1,612,143	28,317,347
Well47	2,580,651	1,457,078	1,843,620	3,134,481	3,867,628	5,567,705	5,959,731	5,078,031	4,911,749	4,156,223	2,780,403	2,123,018	43,460,316
Well48	2,376,691	1,427,810	1,854,838	4,390,720	1,779,169	4,522,808	4,021,725	5,159,284	2,202,271	4,161,492	2,480,830	2,057,396	36,435,033
Well49	1,237,977	755,818	1,062,568	2,080,478	1,314,565	2,528,131	3,116,516	3,441,878	2,228,594	1,431,978	915,904	605,034	20,719,442
Well50	3,005,936	2,963,981	3,285,580	4,500,878	4,957,693	7,579,595	3,594,399	4,458,157	4,293,273	2,413,372	3,294,504	212,417	44,559,784
Well51	2,355,293	2,947,234	4,194,482	4,389,860	511,881	3,586,853	3,410,891	4,747,637	3,594,069	4,162,817	4,280,149	4,458,114	42,639,281

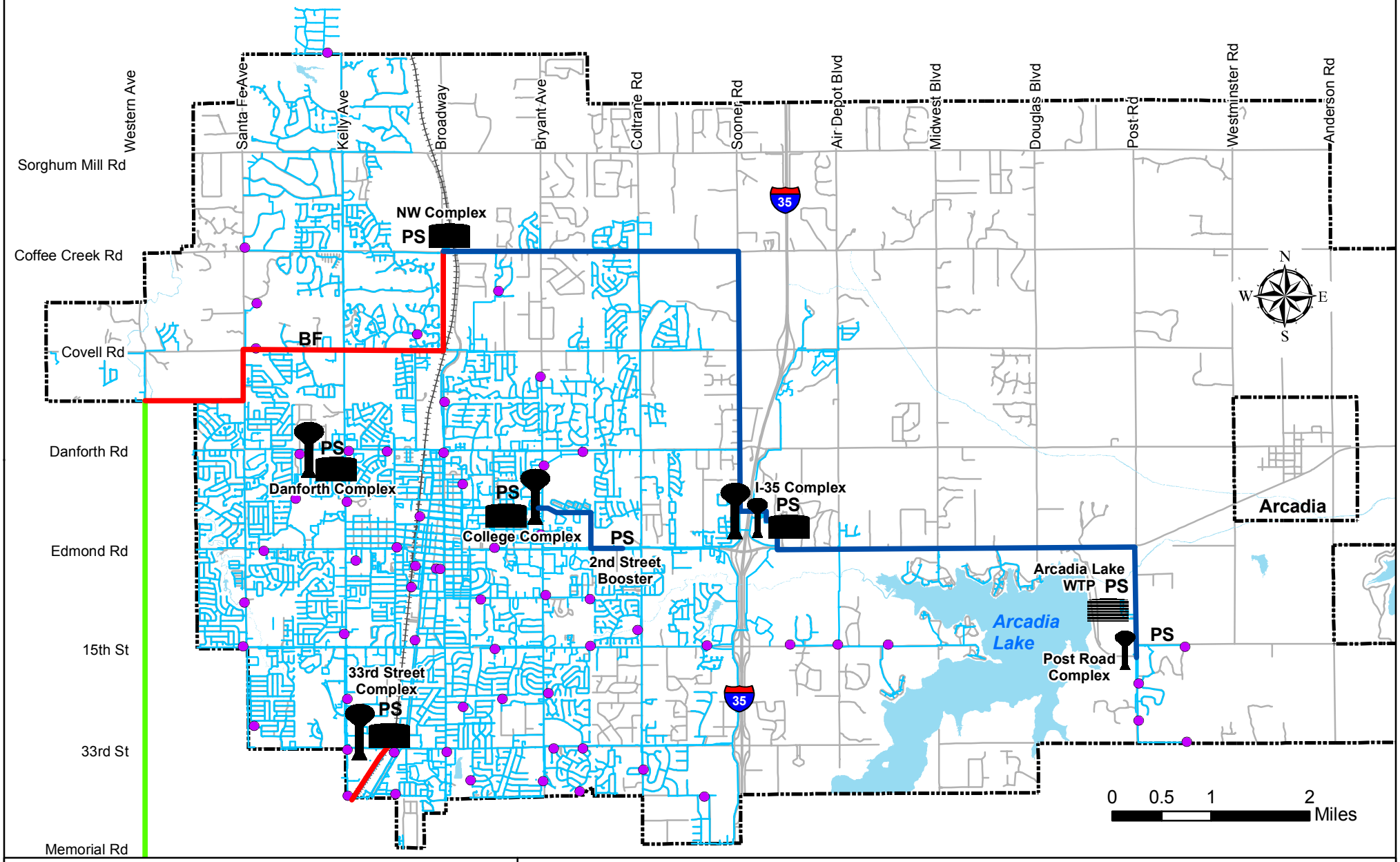
Well52	1,043,171	646,048	831,446	1,437,098	255,450	0	0	0	0	0	0	262,736	4,475,950
Well53	1,850,441	1,835,318	2,326,919	4,022,588	1,594,124	3,749,666	3,284,369	3,486,444	2,693,495	1,891,015	1,617,152	2,077,126	30,428,657
Well54	1,748,983	1,440,763	857,735	3,250,504	3,313,595	4,804,671	4,601,286	4,864,860	2,604,232	0	0	0	27,486,629
Well55	0	0	0	0	0	0	0	0	37,189	111,568	0	0	148,757
Well56	1,588,447	1,092,595	959,347	2,733,023	2,283,670	3,496,092	3,409,538	2,204,332	2,358,551	2,756,308	1,453,220	688,921	25,024,044
Well57	4,232,040	2,863,981	3,847,155	6,835,321	7,550,606	9,037,548	7,727,426	9,947,398	8,403,711	5,989,276	6,685,220	3,226,506	76,346,187
Well58	869,483	775,105	1,382,308	2,155,002	1,020,033	3,037,282	2,091,263	3,024,147	2,669,325	1,742,685	1,602,278	763,732	21,132,643
Well59	965,866	1,160,741	681,413	65,221	227	1,777,920	2,537,065	2,846,669	1,805,719	1,549,274	1,710,647	767,864	15,868,626
Well60	1,221,715	550,266	1,498,282	1,795,994	759,835	2,285,119	3,703,107	3,615,443	2,514,152	1,878,065	1,343,364	503,491	21,668,834
Well61	1,046,328	578,759	1,260,527	1,889,653	570,081	2,305,371	2,930,446	2,402,161	2,238,932	1,560,190	876,242	579,140	18,237,830
Well62	1,059,740	726,887	1,089,527	1,519,509	431,798	2,892,224	2,552,047	2,702,393	2,630,343	1,585,941	1,236,878	661,350	19,088,635
Well63	210,033	12,450	0	345,594	123,866	257,928	174,395	0	0	0	0	0	1,124,267
Well64	902,873	908,773	1,134,852	2,216,547	841,719	1,937,220	2,590,242	2,562,762	2,146,729	1,560,113	1,108,474	1,486,262	19,396,565
Well65	1,720,659	970,403	1,767,824	2,508,520	1,822,308	2,194,825	1,646,800	1,571,297	2,466,294	2,330,523	2,406,205	2,843,651	24,249,309
Well66	1,957,419	1,364,920	2,232,234	2,501,991	1,378,143	2,360,562	1,979,102	1,722,788	2,623,281	2,628,245	2,734,944	3,001,089	26,484,716
Well67	1,868,504	1,069,211	1,969,263	2,825,451	1,853,713	2,375,946	1,832,623	1,797,707	2,781,175	2,608,783	2,581,106	2,821,169	26,384,652
Well68	1,812,777	1,009,274	1,971,572	2,703,625	1,806,460	2,417,143	2,052,996	1,655,968	2,789,886	2,447,259	2,590,072	3,020,984	26,278,016
Well69	0	0	0	0	0	0	0	0	0	0	0	0	0
WellWTP	0	0	1,594,880	1,551,504	3,946,123	4,945,257	3,878,597	3,321,971	5,448,169	534,319	5,295,670	4,362,111	34,878,602
Ttl(MG)	96.0	74.3	92.2	147.8	108.3	189.5	179.5	195.1	177.5	131.1	114.7	82.6	1,588.5

WELL PRODUCTION – MONTHLY HOURS

Well#	January	February	March	April	May	June	July	August	September	October	November	December	Total
Well08	162	156	150	223	164	401	294	343	434	203	278	255	3,063
Well09	128	118	135	198	201	357	269	346	277	178	115	90	2,412
Well10	47	53	39	77	66	161	126	148	158	99	42	32	1,047
Well11	140	134	126	204	298	356	340	368	370	231	182	143	2,892
Well14	138	85	168	226	129	275	230	333	210	178	118	118	2,208
Well15	212	104	156	238	315	355	429	466	450	291	199	129	3,345
Well18	0	0	4	77	96	167	152	102	150	129	75	30	982
Well19	198	118	133	253	272	385	427	542	450	306	198	155	3,437
Well20	156	93	130	212	130	343	300	334	308	188	162	62	2,419
Well21	190	128	158	280	318	453	445	548	336	325	259	177	3,616
Well22	125	114	145	250	102	365	223	244	376	211	228	146	2,529
Well23	149	90	98	232	193	433	420	501	345	358	231	110	3,159
Well24	158	201	156	276	298	421	278	445	448	194	175	201	3,249
Well25	163	99	171	223	221	449	374	456	451	244	183	134	3,169
Well26	98	67	143	216	133	215	273	271	314	138	120	95	2,083
Well27	124	111	92	246	107	255	261	302	386	197	24	0	2,105
Well28	124	104	129	230	85	295	364	487	459	315	201	181	2,975
Well29	124	30	111	224	57	158	292	344	326	239	164	79	2,146
Well31	162	105	130	245	118	335	304	351	390	376	267	80	2,863
Well32	191	198	239	353	247	548	359	483	386	383	110	0	3,497
Well33	150	94	120	222	266	346	316	323	375	273	253	161	2,899
Well34	224	295	170	260	86	368	307	428	472	203	152	139	3,104
Well35	76	50	139	225	150	399	300	413	448	354	420	218	3,193
Well36	181	82	157	262	175	303	427	378	384	423	398	185	3,356
Well37	196	330	237	368	341	462	470	570	542	438	426	317	4,698
Well38	214	268	308	237	0	0	0	4	0	0	0	0	1,031
Well39	171	100	170	228	231	364	329	351	356	198	135	16	2,647
Well40	145	0	0	175	53	253	303	436	306	168	130	97	2,067
Well41	147	73	131	195	150	166	367	341	273	143	85	54	2,125
Well42	194	108	119	247	221	121	364	158	149	279	168	94	2,223
Well43	232	108	99	231	324	318	391	426	334	242	209	124	3,039

Well#	January	February	March	April	May	June	July	August	September	October	November	December	Total
Well44	132	121	125	292	28	210	368	416	361	204	160	165	2,582
Well45	0	0	0	0	0	0	0	0	0	0	0	0	0
Well46	164	115	164	224	210	334	368	405	324	200	187	154	2,850
Well47	178	99	143	243	269	405	454	404	398	324	209	148	3,273
Well48	161	95	127	311	123	337	310	420	184	318	184	139	2,709
Well49	119	72	101	207	130	259	343	385	265	155	95	59	2,191
Well50	196	193	259	305	328	517	250	334	328	171	232	16	3,129
Well51	194	237	330	365	28	351	360	470	295	332	330	336	3,627
Well52	149	93	138	224	39	0	0	0	0	0	0	47	691
Well53	174	175	196	391	153	373	348	377	317	201	164	199	3,068
Well54	153	124	71	288	294	443	439	465	275	0	0	0	2,552
Well55	0	0	0	0	0	0	0	0	8	24	0	0	32
Well56	160	123	104	311	258	425	477	335	355	328	173	82	3,132
Well57	236	170	228	395	425	513	442	584	498	346	384	184	4,406
Well58	119	107	191	305	144	435	312	477	437	271	239	112	3,151
Well59	129	158	95	19	15	255	362	444	304	242	251	110	2,384
Well60	125	56	148	183	77	236	399	405	285	206	144	50	2,316
Well61	119	63	126	217	65	266	374	309	315	210	113	66	2,245
Well62	100	70	107	150	43	331	304	329	338	193	134	61	2,159
Well63	65	4	0	112	38	89	69	0	0	0	0	0	377
Well64	96	114	152	273	99	236	334	331	286	209	136	183	2,447
Well65	251	139	269	409	291	359	272	259	440	399	430	476	3,993
Well66	256	172	293	376	193	352	293	253	440	415	417	411	3,871
Well67	252	140	257	441	261	348	266	259	468	414	407	400	3,913
Well68	249	136	268	419	259	345	291	232	465	385	410	433	3,894
Well69	0	0	0	0	0	0	0	0	0	0	0	0	0
WellWTP	0	0	118	124	271	358	266	230	376	37	375	312	2,467
Total Hours	8,495	6,393	8,272	13,717	9,592	17,603	17,440	19,367	18,426	13,091	10,877	7,764	151,035

City of Edmond Water System



January 14, 2009

- Elevated Storage Tank
- Ground Storage Tank
- BF Breakpoint Facility
- PS Pumping Station
- Water Well
- Distribution Lines
- Transmission Line (Edmond Water)
- Transmission Line (OKC Water)
- Transmission Line (OKC Owned)

Distribution System Facilities

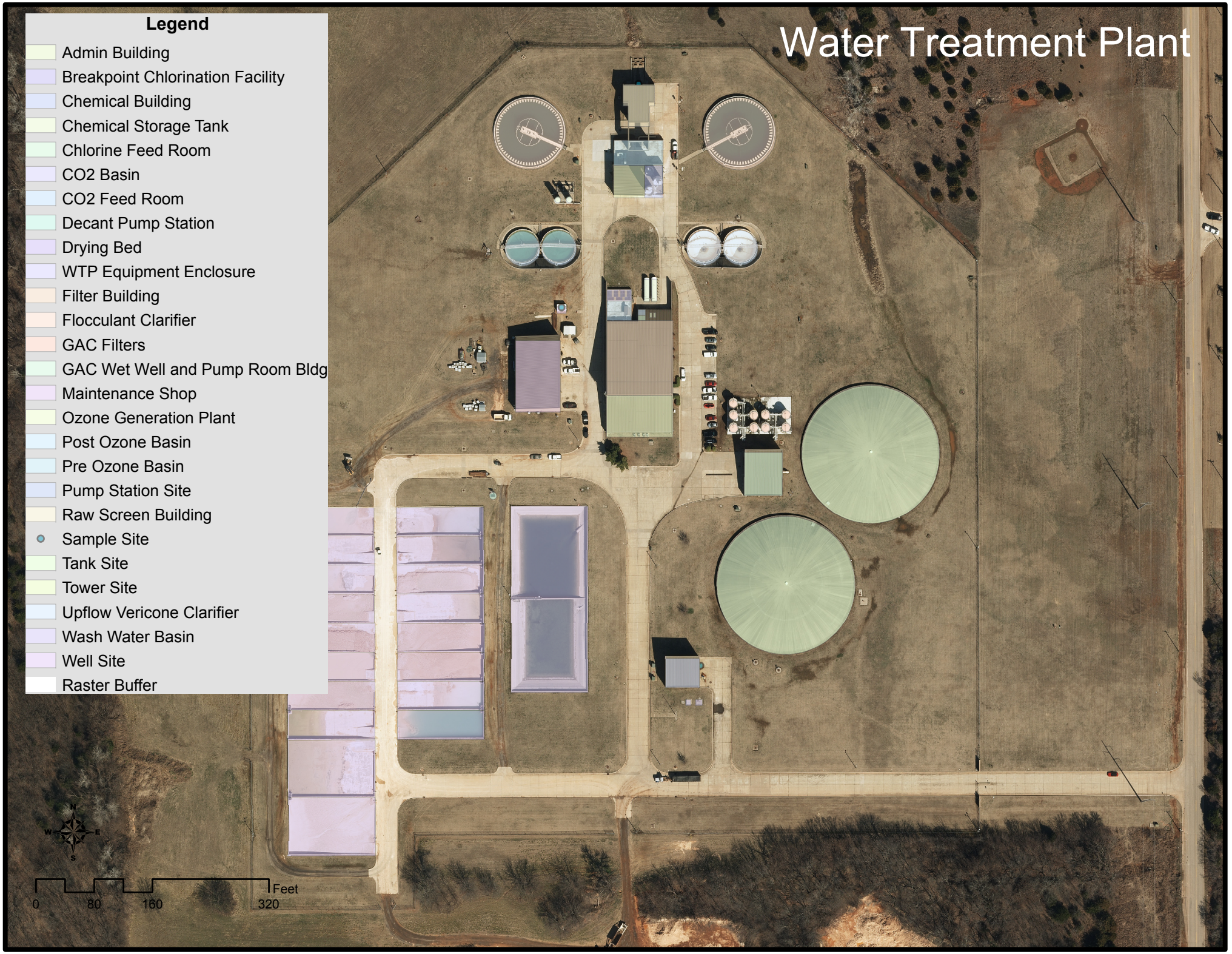
DANFORTHWATER TOWER COMPLEX	
CLEARWELL CAPACITY	2.0 MG
CLEARWELL DIAMETER	146'-0"
CLEARWELL DEPTH	17'-0"
TOWER CAPACITY	0.5 MG
OVERFLOW	1340
GPM	1500 each
HORSEPOWER	2 each at 75
Chlorination provided to ground storage.	
Notes: Continuous monitoring provided.	
PLANT HIGH LIFT PUMP STATION	
CLEARWELL CAPACITY	2 each at 4.0 MG
CLEARWELL DIAMETER	180'
CLEARWELL DEPTH	20'
POST RD TOWER CAPACITY	0.5 MG
OVERFLOW	1240
NUMBER OF UNITS	4
GPM	2 at 2,800; 2 at 5,560
HORSEPOWER	2 at 250; 2 at 500
Notes: Continuous monitoring provided and required.	
33RD STREET WATER TOWER COMPLEX	
CLEARWELL CAPACITY	2.0 MG
CLEARWELL DIAMETER	146' 0"
CLEARWELL DEPTH	17' 0"
TOWER CAPACITY	0.5 MG
OVERFLOW	1340
GPM	2 at 1800 each
HORSEPOWER	2 each at 100
Chlorination provided to ground storage.	
Notes: Continuous monitoring provided.	
2ND STREET BOOSTER PUMP STATION	
NUMBER OF UNITS	3
GPM DESIGN CAPACITY	2,000 GPM each
HORSEPOWER	3 each at 125

Distribution System Facilities Continued

COLLEGE TOWER COMPLEX	
CLEARWELL CAPACITY	2.0 MG
CLEARWELL DIAMETER	88' 10" Inside Dia.
CLEARWELL DEPTH	42' 7.5" Liquid Depth
TOWER CAPACITY	0.5 MG
OVERFLOW	1340
GPM	650 each
HORSEPOWER	2 each at 60
Chlorination provided to ground storage.	
Notes: Continuous monitoring provided.	
NORTHWEST COMPLEX	
CLEARWELL CAPACITY	2.0 MG
CLEARWELL DIAMETER	125' Inside Diameter
CLEARWELL DEPTH	22' 6" Liquid Depth
NUM. OF PUMP UNITS	4
GPM	2 at 3,000; 2 at 5,000
HORSEPOWER	2 at 300; 2 at 450
I-35 BOOSTER PUMP STATION	
CLEARWELL CAPACITY	1.0 MG
CLEARWELL DIAMETER	94" Inside Diameter
CLEARWELL DEPTH	19' Liquid Depth
SHORT TOWER CAPACITY	0.5 MG
OVERFLOW	1240
TALL TOWER CAPACITY	0.5 MG
OVERFLOW	1336
GPM	2 at 1,530; 2 at 2,800; 2 at 6,000
HORSEPOWER	2 at 125; 2 at 250; 2 at 400
15TH STREET BOOSTER PUMP STATION	
NUMBER OF UNITS	3
GPM DESIGN CAPACITY	300 GPM
HORSEPOWER	7.5 HP
PLANT LOW LIFT PUMP STATION	
GPM	1 at 2,800; 4 at 2,080
HORSEPOWER	50 each

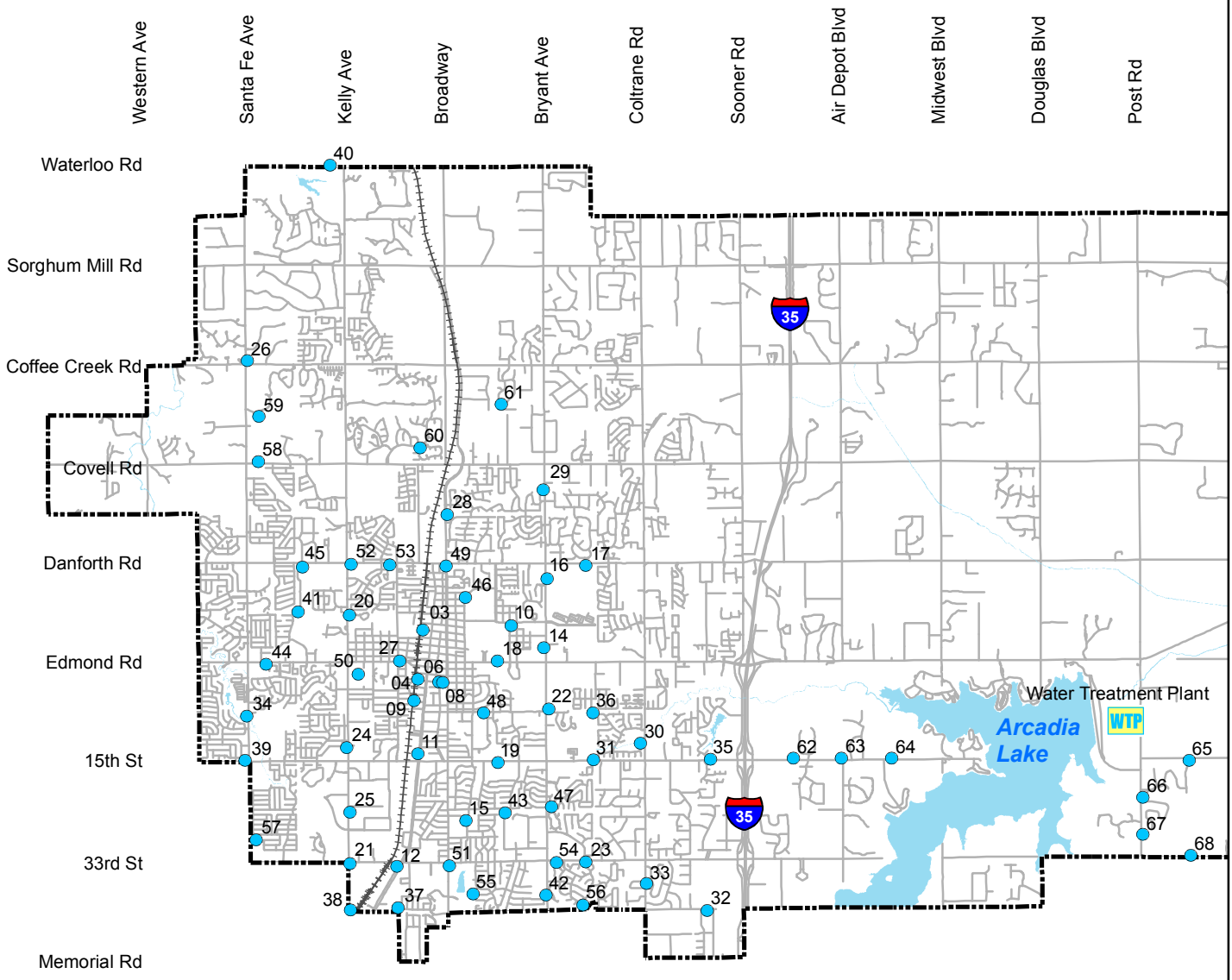
WATER TOWER HEIGHTS

Location	Feet	PSI
College	115	50.945
Danforth	155	68.665
33rd St	155	68.665
I-35 Tall	218	96.574
I-35 Short	124	54.932
Post Rd	159	70.437


Water Treatment Plant
Legend
Admin Building
Breakpoint Chlorination Facility
Chemical Building
Chemical Storage Tank
Chlorine Feed Room
CO2 Basin
CO2 Feed Room
Decant Pump Station
Drying Bed
WTP Equipment Enclosure
Filter Building
Flocculant Clarifier
GAC Filters
GAC Wet Well and Pump Room Bldg
Maintenance Shop
Ozone Generation Plant
Post Ozone Basin
Pre Ozone Basin
Pump Station Site
Raw Screen Building
Sample Site
Tank Site
Tower Site
Upflow Vericone Clarifier
Wash Water Basin
Well Site
Raster Buffer
N
W
E
S
0
80
160
320
Feet

City of Edmond

Water Well Locations



0 0.5 1 2 Miles

N
W E
S

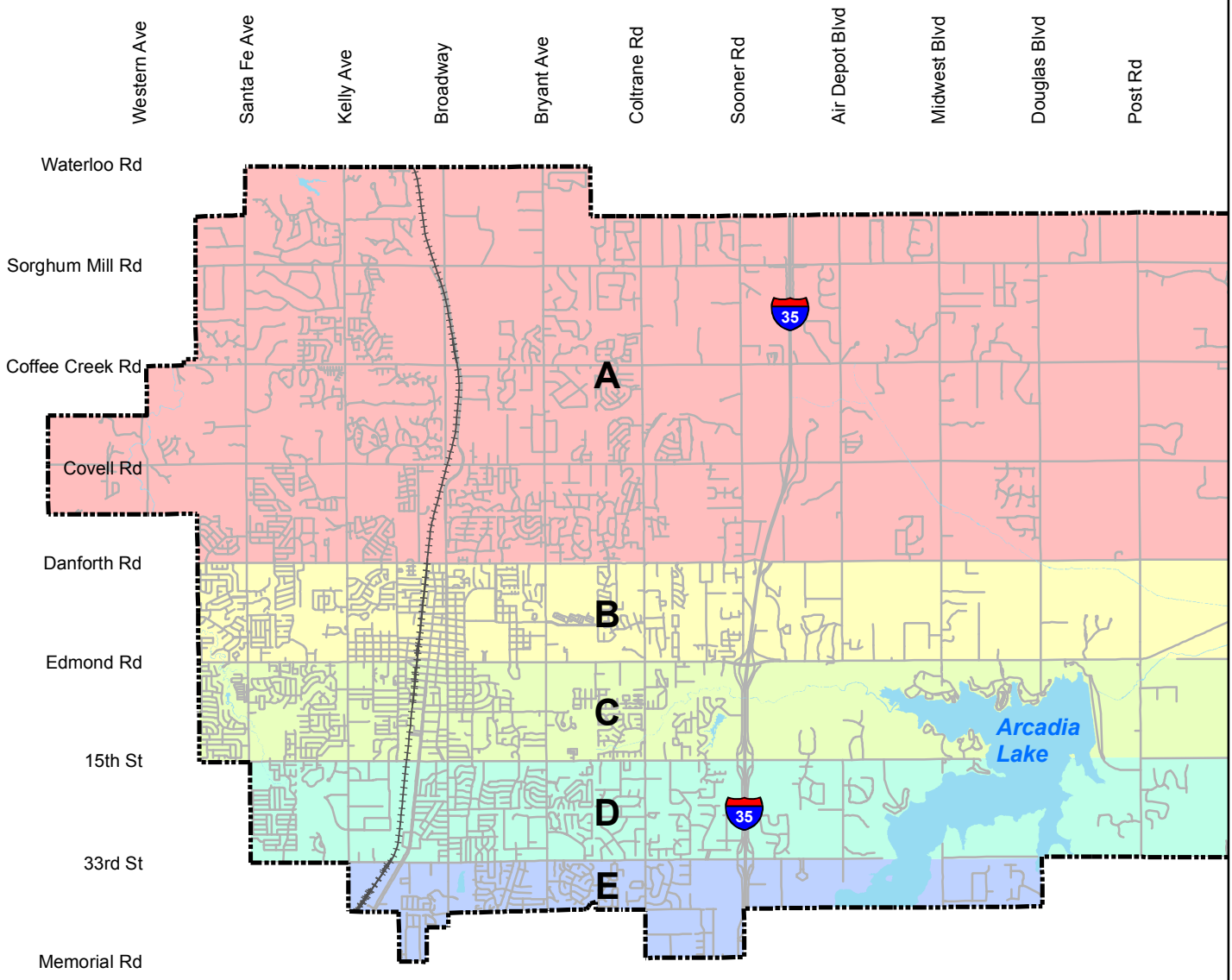
Legend

- WTP — Water Treatment Plant
- Water Well
- City Limits
- Railroad
- Streets

January 14, 2009

City of Edmond

Water Well Zones



0 0.5 1 2 Miles

N
W E
S

Legend

- City Limits
- Railroad
- Streets
- Water Well Zone A
- Water Well Zone B
- Water Well Zone C
- Water Well Zone D
- Water Well Zone E

January 14, 2009

WELL STATISTICS

Well Number	Location	Date Drilled	Latitude	Longitude	Flow GPM	Electrical Control	Pump	Stages	Motor	Horse power	Pump Install	Elevation	Total Depth	Top Perf	Lower Perf	Pump Set	Method Drill	Driller	Num Joints	Size Casing	Size Column	PVCSteel Pump
8	109 E 5th St	1952	35.65	-97.48	120	ABB/VFD	Christiansen	6 inch 8 stage	Franklin	50 HP	1992	1190'	650'	252'	442'	540'	Cable Tool	Rouner		10.75"	4"	140'steel, 400'certilock
9	37 W 8th St	1954	35.65	-97.48	170	ABB/VFD	Christiansen	8 stage	Franklin	50 HP	2008	1188'	554'	228'	425'	527'	Cable Tool	Statts		10.75"	4"	126' Steel, 400' PVC
10	326 N Baumann Ave	1957	35.66	-97.47	171	ABB/VFD	Christiansen	7walc/6 stage	Centripro	40 HP	2009	1224'	719'	317'	713'	580'	Cable Tool	Rouner	27	10.75"	5.5"	
11	1335 S Broadway	1964	35.64	-97.48	190	ABB/VFD	Christiansen	6CHC 10stage	Franklin	40 HP	2012	1183'	724'	355'	722'	622.4	Cable Tool	Rouner	36	10.75"	5.5"	29joints pvc 2joints steel
14	17 N Bryant Ave	1969	35.65	-97.46	119	ABB/VFD	Christiansen	7 stage	Franklin	40 HP	2011	1188'	747'	355'	694'	619.5	Cable Tool	Statts		10.75"	4"	21joints pvc 10 steel
15	2335 S Rankin St	1967	35.63	-97.47	170	ABB/VFD	Centrilift	7 stage	PSM	60 HP		1187'	775'	281'	766'	660'	Cable Tool	Statts	33	10.75"	5.5"	
18	817 E 2nd St	1979	35.65	-97.47	173	ABB/VFD	Christiansen	8 stage	Franklin	50/3450	2011	1180'	684'	291'	662'	614'	Cable Tool	Statts		10.75"	4"	25joints pvc 10 steel
19	916 E 15th St	1971	35.64	-97.47	120	ABB/VFD	Christensen/6CLC	16st/4.19 impellar	Franklin	60 HP/ 3450	2010	1150'	689'	230'	669'	620'	Cable Tool	Statts	30	10.75"	5.5"	
20	580 N Kelly Ave	1972	35.66	-97.49	135	ABB VFD	Centrilift	14 stage	Centrilift	40 HP		1170'	635'	109'	630'	550'	Cable Tool	Statts	27	10.75"	5.5"	
21	3308 S Kelly Ave	1972	35.62	-97.49	160	Abb/VFD	Christenson	8 stage	Centripro	30 HP	2008	1165'	705'	240'		567'	Cable Tool	Statts	29	10.75"	5.5"	
22	840 S Bryant Ave	1972	35.64	-97.46	175	ABB/VFD	PSM	13 stage	PSM	45 HP		1100'	650'	130'	585'	602'	Cable Tool	Statts	28	10.75"	5.5"	
23	2016 E 33rd St	1973	35.62	-97.45	210	ABB/VFD	Christenson	8stage	Franklin	50HP	2013	1145'	698'	114'	690'	445.2'	Cable Tool	Statts	21	10.75"	5.5"	
24	1309 S Kelly Ave	1973	35.64	-97.49	210	ABB/VFD	Christenson	09stage	Franklin	50HP	2013	1150'	604'	114'	604'	551'	Cable Tool	Statts	26	10.75"	5.5"	
25	2400 S Kelly Ave	1975	35.63	-97.49	230	ABB/VFD	Centrilift	6 stage	Centrilift	57 HP/ 3600		1150'	705'	356'	680'	483'	Cable Tool	Statts		10.75"	5.5"	
26	4116 N Santa Fe Ave	1977	35.69	-97.51	150	ABB/VFD	Centrilift	19 stage	Centrilift	50 HP		1055'	475'	154'	398'	361'	Cable Tool	Statts	17	10.75"	5.5"	
27	216 S Fretz Ave	1978	35.65	-97.49	210	ABB/VFD	Christiansen	8 stage	Franklin	60 HP	2015	1190'	710'	200'	585'	550'	Cable Tool	Statts	27	10.75"	5.5"	
28	1932 N Boulevard	1977	35.67	-97.48	180	ABB/VFD	Christiansen	7stage	Franklin	40 hp	2011	1150'	478'	235'	406'	391	Cable Tool	Sequoyah		10.75"	4"	19joints pvc
29	2301 N Bryant Ave	1978	35.68	-97.46	210	ABB/VFD	Christensen	9st/6CHC	Franklin	50 HP/ 3450	2009	1140'	532'	186'	464'	420'	Cable Tool	Statts	20	10.75"	5.5"	
31	2201 E 15th St	1978	35.64	-97.45	166	ABB/VFD	PSM	7 stage	PSM	60 HP		1100'	715'	250'	695'	525'	Cable Tool	Statts		10.75"	5.5"	
32	3740 E 40th St	1978	35.62	-97.43	285	ABB/VFD	Christensen	5 stage	Franklin	60HP	2013	1120'	523'	193'	632'	469.7	Cable Tool	Statts		10.75"	5.5"	22 joints steel
33	3650 S Coltrane Rd	1978	35.62	-97.44	160	ABB/VFD	Christiansen	5 stage	Franklin	50hp	2011	1140'	700'	212'	560'	462'	Cable Tool	Statts		10.75"	5.5"	
34	941 S Santa Fe Ave	1978	35.64	-97.51	300	ABB/VFD	Christensen	5st/7WAHC	Franklin	50 HP/3450	2009	1125'	527'	110'	472'	407'	Cable Tool	Statts		10.75"	5.5"	407' 4" PVC
35	3809 E 15th St	1978	35.64	-97.43	185	ABB/VFD	Christensen	7 stage	Centripro	50 HP	2008	1100'	625'	198'	518'	475'	Cable Tool	Statts	19	10.75"	5.5"	

Well Number	Location	Date Drilled	Latitude	Longitude	Flow GPM	Electrical Control	Pump	Stages	Motor	Horse power	Pump Install	Elevation	Total Depth	Top Perf	Lower Perf	Pump Set	Method Drill	Driller	Num Joints	Size Casing	Size Column	PVCSteel Pump
36	906 S Bryant Ave	1979	35.64	-97.45	200	ABB/VFD	7WAHC	6 stage	Franklin	60 HP	2007	1100'	599'	132'	595'	446'	Cable Tool	Statts	24	10.75"	5.5"	
37	3840 S Broadway	1979	35.62	-97.49	200	ABB/VFD	Christensen	6stage	Franklin	60HP	2013	1160'	700'	192'	694'	599'	Cable Tool	Statts	29	10.75"	5.5"	
38	4016 S Kelly Ave	1980	35.62	-97.49	175	ABB/VFD	7WAHC	6 stage	Franklin	60 HP	2009	1160'	797'	116'	772'	636'	Cable Tool	Statts	30	10.75"	5.5"	
39	2337 W 15th St	1980	35.64	-97.51	200	ABB/VFD	Christensen	6 stage	Centripro	40 HP	2010	1125'	515'	182'	460'	404'	Cable Tool	Statts	18	10.75"	5.5"	420' PVC
40	1045 W Waterloo Rd	1980	34.72	-97.5	185	ABB/VFD	Christensen	5 stage	Franklin	50HP	Apr-15	1080'	465'	160'	437'	399'	Cable Tool	Statts	16	10.75"	5.5"	
41	1516 W Danforth Rd	1981	35.66	-97.5	225	ABB/VFD	Christensen	8 stage	Franklin	50 HP	2009	1150'	583'	200'	490'	508'	Cable Tool	Statts		10.75"	5.5"	Certiloc
42	3721 S Bryant Ave	1981	35.62	-97.46	175	ABB/VFD	Centrilift	13 stage	Centrilift	46 HP		1160'	690'	294'	676'	600'	Cable Tool	Statts	29	10.75"	5.5"	
43	2524 Hidden Valley Rd	1981	35.63	-97.47	225	Toshiba	Christensen	6 stage	Centripro	40 HP	2008	1130'	700'	210'	632'	560'	Cable Tool	Statts	29	10.75"	5.5"	
44	2008 W Edmond Rd	1981	35.65	-97.51	270	ABB/VFD	Christiansen	7stage	Franklin	60HP	2015	1105'	510'	202'	466'	438	Cable Tool	Statts	20	10.75"	5.5"	
45	1508 W Danforth Rd	1982	35.67	-97.5	133	ABB/VFD	Christensen	7stage	Franklin	40HP	Jan-15	1160'	570'	265'	526'	509'	Cable Tool	Statts	24	10.75"	5.5"	25 joints
46	709 N University Dr	1982	35.66	-97.47	150	ABB/VFD	Christensen	11st/6CLC	Centrapro	40 HP	2008	1180'	590'	200'	585'	525'	Cable Tool	Statts	36	10.75"	5.5"	
47	1601 Ridgecrest Rd	1984	35.63	-97.6	150	ABB/VFD	Christensen	6CHC9stage	Franklin	50HP/ 3450	2012	1125'	720'	180'	620'	540	Rotary	Hemphill	27	10.75"	5.5"	
48	520 E 9th St	1984	35.64	-97.47	175	ABB/VFD	Christensen	6st/7WAHC	Franklin	60 HP/ 3450	2010	1130'	720'	180'	620'	605.2'	Rotary	Hemphill	28	12.75"	5.5"	
49	1122 N Boulevard	1985	35.67	-97.48	185	ABB/VFD	Christiansen	10stage	Franklin	40 HP/ 3600		1205'	600'	210'	534'	529'	Air Rotary	Henkle	22	12.75"	5.5"	
50	720 W Edmond Rd	1985	35.65	-97.49	150	ABB/VFD	Christensen	10st/6CLC	Centripro	40 HP/ 3450	Jan-15	1160'	600'	200'	500'	515'	Air Rotary	Henkle	25	12.75"	5.5"	
51	3308 S Boulevard	1985	35.62	-97.48	225	ABB/VFD	PSM	22 stage	PSM	60 HP		1170'	670'	200'	670'	610'	Air Rotary	Henkle	29	12.75"	5.5"	
52	850 W Danforth Rd	1986	35.67	-97.49	140	ABB/VFD	Christensen	9 stage	Centripro	30 HP/ 3450	Dec-15	1180'	590'	210'	486'	491'	Air Rotary	Henkle	24	12.75"	5.5"	
53	326 W Danforth Rd	1986	35.67	-97.49	250	ABB/VFD	Christensen	6CHC 7 stage	Franklin	40 HP/ 3450	2013	1190'	535'	210'	520'	490'	Air Rotary	Henkle	20	12.75"	5.5"	
54	1640 E 33rd St	1986	35.62	-97.46	215	ABB/VFD	Christensen	14 stage	Centripro	50 HP	2008	1160'	652'	210'	638'	557'	Air Rotary	Henkle	24	12.75"	5.5"	
55	501 Pepperdine Ave	1992	35.62	-97.47	225	ABB/VFD	Christiansen	10 stage	Franklin	60 HP		1162'	675'	248'	590'	650'	Rotary	Henkle	65	12.75"	4"	

Well Number	Location	Date Drilled	Latitude	Longitude	Flow GPM	Electrical Control	Pump	Stages	Motor	Horse power	Pump Install	Elevation	Total Depth	Top Perf	Lower Perf	Pump Set	Method Drill	Driller	Num Joints	Size Casing	Size Column	PVCSteel Pump
56	3831 Marked Tree Dr	1992	35.62	-97.45	175	ABB/VFD	Christensen	9 stage	Franklin	60 HP	2008	1130'	640'	226'	620'	567.7'	Rotary	Henkle	63	12.75"	5.5"	
57	2204 Aurora Rd	2001	35.63	-97.51	350	ABB/VFD	Chirstensen	6st/7WAHC	Franklin	60 HP/ 3450	2010	1120'	525'	220'	490'	475'	Rotary	Henkle		10.75"	4"	
58	2175 W Covell Rd	2001	35.68	-97.51	140	ABB/VFD	Christensen	9 stage	Centripro	30 HP	2008	1100'	425'	256'	405'	340'	Rotary	Henkle		10.75"	4"	
59	3336 N Santa Fe Ave	2001	35.69	-97.51	120	ABB/VFD	Christensen	8stage	Franklin	25HP	2015	1140'	425'	254'	396'	387'	Rotary	Henkle		10.75"	4"	
60	2932 Shortgrass Rd	2002	35.68	-97.48	171	ABB/VFD	PSM		PSM		2006	1167'	385'	216'	360'	320'	Rotary	Henkle		10.75"	4"	
61	828 Ascot	2002	35.69	-97.47	200	ABB/VFD	Christensen	5 stage	Centripro	40 HP/ 3450	2013	1193'	475'	232'	460'	366'	Rotary	Henkle		10.75"	4"	
62	5001 E 15th St	2005	35.64	-97.42	100	ABB/VFD	Christensen	6st/7WALC	Franklin	40 HP/ 3450	2010	1083'	442'	300'	412'	340.8'	Air Rotary	Layne	16	10.75"	4"	
63	5655 E 15th St	2005	35.64	-97.41	90	ABB/VFD	Christensen	6st/7RAHC	Franklin	25 HP/ 3450	2010	1075'	420'	214'	392'	340.8'	Air Rotary	Layne	16	10.75"	4"	
64	6401 E 15th St	2005	35.64	-97.4	200	ABB/VFD	Christensen	6st/WALC	Franklin	40 HP/ 3450	2010	1085'	420'	214'	416'	362.1'	Air Rotary	Layne	17	10.75"	4"	
65	10570 E 15th St	2007	35.64	-97.34	130	ABB/VFD	Layne	9 stage	Centripro	25 HP		500'		192'	470'	451'	Air Rotary	Layne		10.75"	4"	
66	2200 S Post Rd	2007	35.63	-97.34	130	ABB/VFD	Layne	9 stage	Centripro	25 HP		500'		200'	466'	451'	Air Rotary	Layne		10.75"	4"	
67	2900 S Post Rd	2007	35.63	-97.35	130	ABB/VFD	Layne	9 stage	Centripro	25 HP		540'		220'	510'	493'	Air Rotary	Layne		10.75"	4"	
68	10539 E 33rd St	2007	35.62	-97.34	130	ABB/VFD	Layne	9 stage	Centripro	25 HP		540'		222'	494'	493'	Air Rotary	Layne		10.75"	4"	
Plant Well	801 S Post Rd	1987			254	ABB/VFD	Christiansen	5stage	Franklin	60HP	2015					457.7'	Air Rotary			10.75"	4"	21 joints

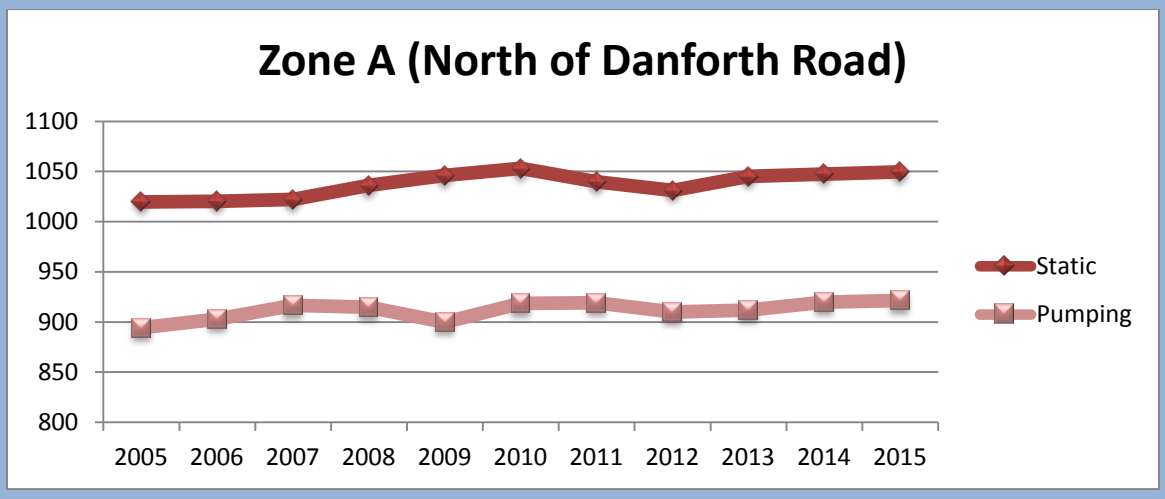
2015 WELL MAINTENANCE PERFORMED AND 2016 RECOMMENDATIONS

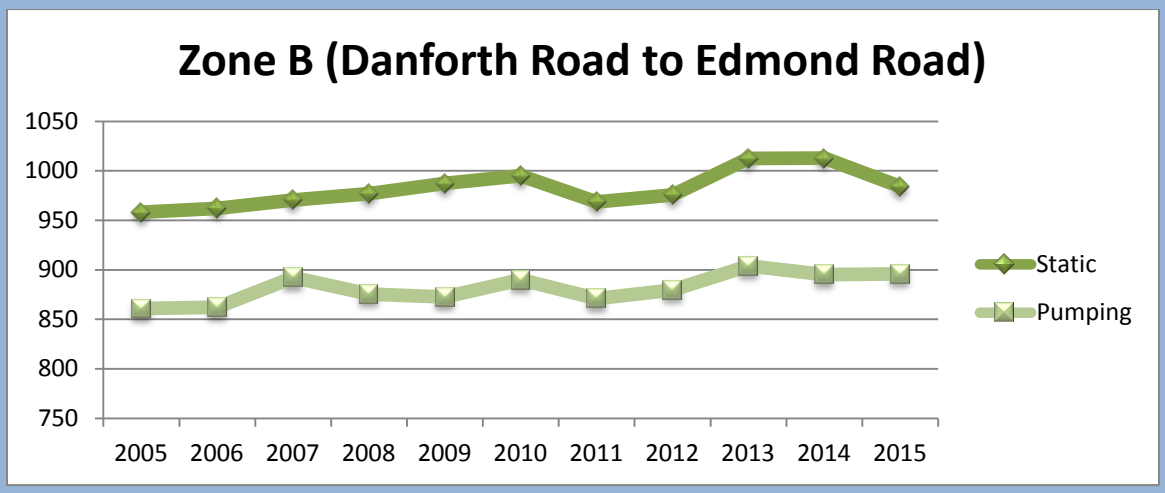
Work Performed	General Condition	Recommendations 2016
Performed routine maintenance	Good	Perform routine maintenance
performed routine maintenance	Good	Perform routine maintenance
Performed routine maintenance	Good	Perform routine maintenance
Performed routine maintenance	Good	Perform routine maintenance
Rehabilitated well head and performed routine maintenance.	Fair	Perform routine maintenance
Rehabilitated well head and performed routine maintenance.	Good	Perform routine maintenance
Replaced aging VFD and performed routine maintenance.	Good	perform routine maintenance
Performed routine maintenance	Good	Perform routine maintenance
Replaced aging VFD and performed routine maintenance.	Good	Change out pump and motor and perform routine maintenance
Performed routine maintenance	Good	Perform routine maintenance
Performed routine maintenance	Good	Perform routine maintenance
changed out old flow meter to Khrone 4" performed routine maintenance	Good	Perform routine maintenance
Performed routine maintenance, installed heat pump for keeping variable frequency drive cool	Good	Perform routine maintenance
Performed routine maintenance	Good	Perform routine maintenance
Performed routine maintenance	Good	Replace mainline from well to valve. Perform maint.
Pulled pump and motor, rehabilitated casing replaced Pump and motor performed routine maintenance	Good	Perform routine maintenance
Performed routine maintenance	Good	Perform routine maintenance
Performed routine maintenance	Good	Perform routine maintenance
Performed routine maintenance	Good	Perform routine maintenance
Performed routine maintenance worked on the east access road for the chlorine crew	Good	Perform routine maintenance Pull pump and motor, rehabilitate casing.
Performed routine maintenance	Good	Perform routine maintenance
Performed routine maintenance	Good	Perform routine maintenance
installed a/c unit to keep VFD cool, painted with exterior coating. Installed new Krohn flow meter	Good	Perform routine maintenance
Installed a/c unit to keep VFD cool. Performed routine maintenance.	Good	Perform routine maintenance, rehabilitate well head and paint with rust inhibiting paint.
Performed routine maintenance	Excellent	Perform routine maintenance
well encountered bad chemistry, it has been pulled from service until further investigation is done.	Good	Perform routine maintenance
Performed routine maintenance	Good	Perform routine maintenance

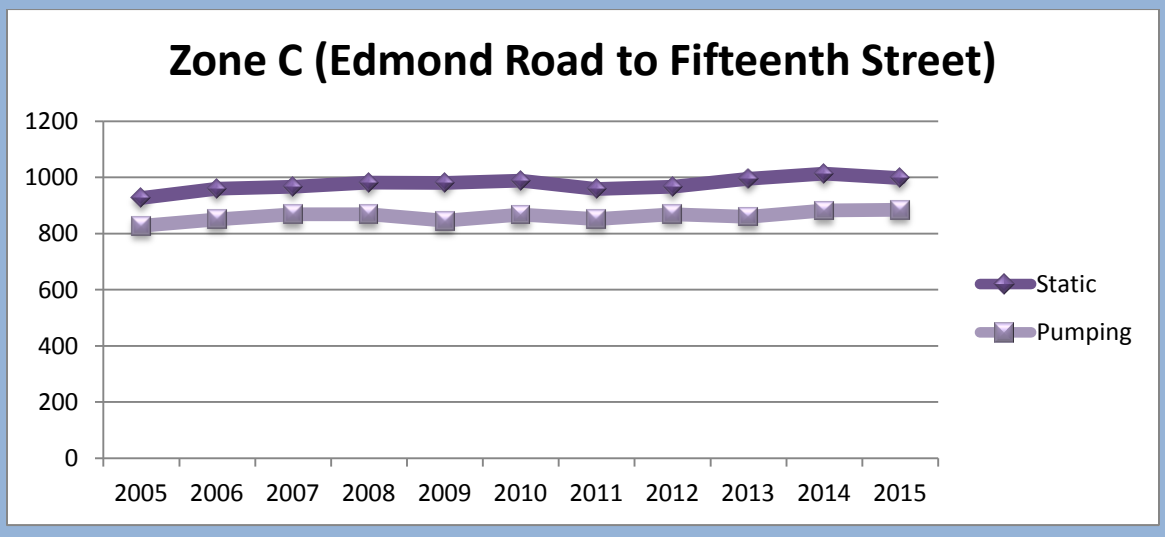
Work Performed	General Condition	Recommendations 2016
Pulled pump and motor, rehabilitated casing replaced Pump and motor installed new krohn flow meter	Good	Perform routine maintenance
Performed routine maintenance	Good	Perform routine maintenance
Installed new VFD performed routine maint.	Good	Perform routine maintenance
Installed new sump pump and performed routine maintenance	Good	Install new VFD and perform routine maintenance also rehabilitate well head
changed out motor that went bad performed routine maintenance.	Good	Perform routine maintenance
pulled pump and motor and replaced painted with 25 year coating, performed routine maintenance.	Good	Perform routine maintenance
Performed routine maintenance	Good	pull pump and motor unit, rehabilitate casing, install new equipment. Rehabilitate well head.
Performed routine maintenance	Good	Perform routine maintenance
Installed A/C unit to keep the drive cool. Performed routine maintenance	Good	Perform routine maintenance
Performed routine maintenance	Good	Rehabilitate well head painting with rust inhibiting paint. Perform routine maintenance.
Pulled pump and motor and replaced with new equipment. Installed A/C unit to keep drive cool Performed routine maintenance	Good	Perform routine maintenance
Performed routine maintenance	Good	pull pump and motor unit, rehabilitate casing, install new equipment. Rehabilitate well head.
Pulled pump and motor and installed new equipment, Installed new VFD performed routine maintenance	Good	Perform routine maintenance and rehabilitate wellhead. Painting with a rust inhibitor paint.
Performed routine maintenance	Good	Perform routine maintenance
Performed routine maintenance	Good	pull pump and motor unit, rehabilitate casing, install new equipment. Rehabilitate well head.
Plugged well with grout, stripped well house in preparation for demolition	Good	
Performed routine maintenance	Good	tear out driveway next to well house and repour, driveway has shifted up due to roots and well door is barely accessible.
Performed routine maintenance	Good	Perform routine maintenance
Performed routine maintenance	Good	Perform routine maintenance
Pulled pump and motor and installed new equipment. Replaced VFD	Good	Perform routine maintenance
Performed routine maintenance	Good	Perform routine maintenance
Performed routine maintenance	Good	Perform routine maintenance

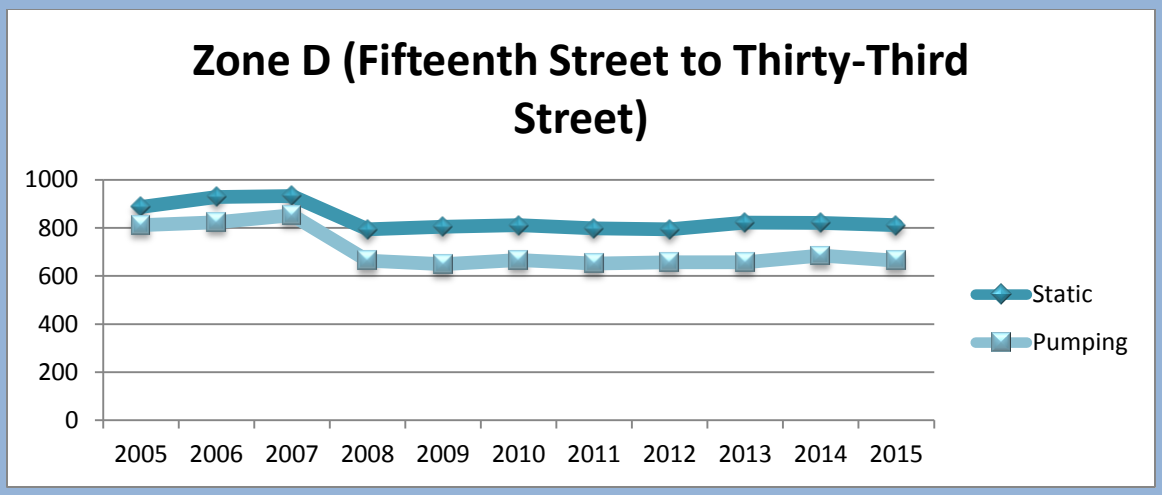
Work Performed	General Condition	Recommendations 2016
Performed routine maintenance	Good	Perform routine maintenance
Performed routine maintenance	Good	Perform routine maintenance
performed routine maintenance	Good	Perform routine maintenance
performed routine maintenance	Good	Perform routine maintenance
performed routine maintenance	Good	Perform routine maintenance
performed routine maintenance	Good	Perform routine maintenance
performed routine maintenance	Good	Perform routine maintenance
Pulled pump and motor and installed new equipment. Performed routine maintenance	Good	Perform routine maintenance

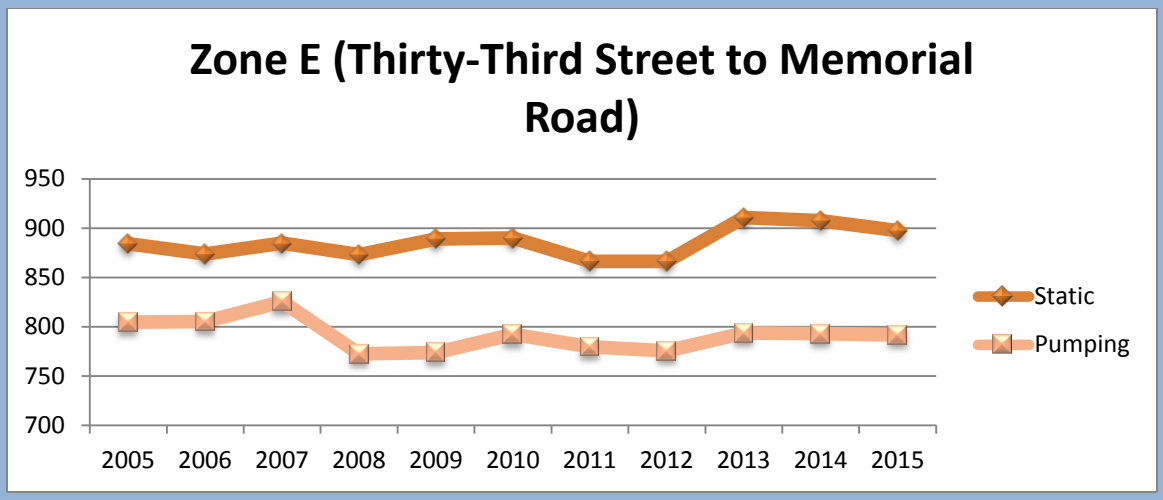
WELL STATIC AND PUMPING LEVELS








Zone D (Fifteenth Street to Thirty-Third Street)
1000
800
600
400
200
0
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015
Static
Pumping


Zone E (Thirty-Third Street to Memorial Road)
950
900
850
800
750
700
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015
Static
Pumping

Section 4
Public Works Field Services

EDMOND WATER RESOURCES

Public Works
Field Services
Organizational Chart 2015

PUBLIC WORKS FIELD SERVICES

Field Services is made up of four divisions; Water Line Maintenance, Wastewater Line Maintenance, Street Maintenance and Traffic. The department as a whole employs 67 individuals, with the Field Services Superintendent's responsibilities being split between the divisions. The water, wastewater and street groups have been cross trained in the various job functions of each group. This has allowed the department to staff for normal demand, but be able to respond, in force, to peak demand. The Administrative staff, which has also been consolidated, functions much the same way as operations. Field Services is still responsible for the health and well-being of City of Edmond customers by providing quality water and removing wastewater in a safe, efficient manner.

Field Services prides itself on its excellent customer service. It is never a pleasant experience to have a water leak in your front yard or have a blockage in the wastewater line, but through excellent customer service and positive attitude we strive to make these experiences as painless as possible.

WATER LINE MAINTENANCE

History of the Water Line Maintenance Division goes back to 1889 when the first water well was hand dug in Edmond. The first tower was constructed in 1909 at 27 W. Third Street. Beginning with only a couple of people, the Water Line Maintenance Division grew to 28 employees in 1984. Since then the area of responsibility has continued to expand but manpower has been downsized through better management practices and technological advances.

Water Line Maintenance Division is comprised of twenty (19) positions, which includes eighteen (18) public health professionals and one (1) supervisor. The Water Line Maintenance Division's function is maintaining Edmond's 516 miles of water distribution system, 4524 hydrants in the fire protection system and 29,226 residential and commercial meters. In the last year there were 10.78 miles of new water line added to the distribution system. The Division is responsible for the following main areas: Emergency repair of water main breaks and service line leaks - Every call Water Line Maintenance receives is treated as an emergency, until crews are on site and make an informed decision of the severity of the leak. If the leak is an immediate threat to health or property, emergency locates will be called in and the repair will be made as quickly and safely as possible. If the leak is not an immediate threat to health or property, forty-eight (48) hour locates will be called in, and the leak scheduled as time permits. Water Line Maintenance repaired 49 main breaks in the last year.

Installation of new residential meters - There are currently two options for new services to be installed in the City of Edmond. Contractors can choose to have Water Line Maintenance install the service line; setter and meter can or have a contractor install the service. All parts installed for new services must be purchased from and approved by Utility Line Maintenance. If the resident chooses to have a contractor install the service, Utility Line Maintenance inspects the quality of work and physically installs the meter after the inspection. Last year Water Line Maintenance installed 382 new meters and contractors installed 178 new residential and commercial meters.

Preventative maintenance of system valves and fire hydrants – Preventative maintenance is the backbone of any good water distribution system. Currently Water Line Maintenance has two employees performing preventative maintenance on valves and one employee performing preventative maintenance of fire hydrants. In the last year numerous valves have been found buried, missing or non-functional. Water Line Maintenance is working diligently to rectify the valve situation throughout the system. Throughout the previous year Water Line Maintenance has inspected and operated 9,925 valves and 874 fire hydrants.

Perform utility line locates to minimize the damage to City of Edmond's water and wastewater utilities due to excavation around the utilities. In the last year, Water Line Maintenance actually located 4,781 requests for utility line locates.

Maintain fifteen (15) year meter change out program. In the last year 258 meters were changed out. Water Line Maintenance is currently conducting testing on the meters that are removed to ascertain what time frame would provide the lost/benefit ratio.

Street Maintenance continues to replace sod and concrete that is removed by the Water Line Maintenance crews. It was determined the department could perform the work more efficiently, productively and maintain a better-finished product than an outside contractor.

Continue updating of all utility maps. Accurate mapping is one of the most useful tools at our disposal. When working with maps on a daily basis, the employees are constantly finding discrepancies between the maps and what is actually in the system. When these problems are found it requires a joint effort

with Management Information System (MIS) to make the corrections to ensure that we have the best possible data.

Leak detection is a large part of the preventative maintenance program conducted throughout Water Line Maintenance. Numerous leaks have been located while they are still small and repaired that would normally not have been found until they were large enough to be noticed. This also aids in tracking unaccounted water.

WASTEWATER LINE MAINTENANCE

Wastewater Line Maintenance history started when the division was created in 1972. Before then, the Sanitation Department was responsible for taking care of problems in the collection system. The line maintenance division worked out of the old City Garage barn at 27 W. Third Street, which is now demolished. Over the years three buildings were constructed at 100 N. Kelly, which became the site for the Wastewater Line Maintenance Division. In 1994 the division was moved back to 27 W. Third. Wastewater Line Maintenance is comprised of (14) positions, which include thirteen (13) public health professionals and one (1) supervisor.

The function of the Wastewater Line Maintenance Division is maintaining Edmond's 431 miles of gravity mainline, 22 miles of force main, 3 siphon sewers, and 11,057 manholes. The surface area of the collection system is 36,591 acres. In the last year there were 8.46 miles of new wastewater lines added to the collection system. The division is responsible for the following main areas:

Wastewater Line Maintenance performs preventative maintenance of the collection system daily by four (4) basic methods, hydraulic cleaning, video inspection, mechanical root removal and chemical root control. Wastewater Line Maintenance strives to be proactive in its preventative maintenance program. In the last year Wastewater Line Maintenance hydraulically cleaned 457,731 feet of collection system, performed video inspection of 253,372 feet of collection system and performed mechanical root removal on 153,905 feet of wastewater lines. In addition, 119,925 feet of the collection system was chemically treated for roots. The chemical treatment was performed by an outside contractor. Collection system blockage removal is treated as an emergency on every call that is received. Wastewater Line Maintenance treats blockages as emergencies because crews need to be on site to determine what the problem is and what needs to be done to rectify the situation. There are a number

of ways to remove blockages in the collection system, but the two most common are hydraulic cleaning and mechanical sawing. In the last year Wastewater Line Maintenance removed 131 blockages from the collection system, and had a total of 79 Sanitary Sewer Overflows or 17.44 per 100 miles of collection system.

Emergency and point repairs are also made throughout the collection system. Point repairs are sometimes as simple as a cracked joint of pipe to slight offsets in the bells of the pipes where they go together to emergency repairs which usually constitute a total failure in the system (collapsed line). In the last year Wastewater Line Maintenance made 39-point repairs.

Manhole inspections are conducted to ensure the integrity, stability and cleanliness. Manholes should be free of any waste and grit that may accumulate in the opening. There were 2,108 manholes inspected during the year, and 95 manholes were either raised or repaired.

2015 STOP-UPS		
Date	**Stop Up Address**	**Manholes Inspected**
1.1.15	2016 Ridgecrest Rd.	Manhole # 24353
1.7.15	421 Albany Dr.	Manhole # 21323
1.7.15	613 Winding Lane	Manhole # 21655
1.7.15	509 Country Club Dr.	Manhole # 21017
1.8.15	2400 Hanover Ln	Manhole # 23968
1.15.15	205 North Trail Ridge Rd.	Manhole # 18981
1.15.15	917 E 11th St.	Manholes # 25697 & 256681
1.18.15	3421 Baird Dr.	Manhole # 26252
1.20.15	1604 Washington St.	Manhole # 24958
1.21.15	400 W. 8th St.	Manhole # 27085
1.21.15	1405 Kelly Park Rd.	Manhole # 18560
1.23.15	400 W. Edmond Rd.	Manhole # 21958
1.26.15	528 Wild Wind Rd.	Manhole #21620
1.27.15	1900 Nighthawk Ct	Manhole # 23540
1.28.15	1501 W. Covell Rd.	Manholes # 19659 & 19658
2.7.15	2405 Bent Trail Rd.	Manhole # 19040
2.7.15	501 W. 15th St.	Manholes # 21903 & 26533
2.8.15	821 W. 8th St.	Manhole # 22014
2.8.15	1321 Fox Lake Ln.	Manhole # 23010
2.8.15	1801 Wood Ln.	Manhole # 19098
2.8.15	N Santa Fe & Williamsburg	Manhole # 20124
2.13.15	610 Timber Ln	Manhole # 6392
2.13.15	810 Brookside Ave.	Manhole # 26601
2.14.15	900 S Bryant Ave.	Manhole # 22914
2.17.15	2100 Cobblestone	Manhole # 79476
2.18.15	3224 Teakwood	Manhole # 20477
2.19.15	1616 S Kelly Ave.	Manhole # 20515
2.22.15	1712 Courtney Ln.	Manhole # 20676
2.23.15	812 Harward Ct.	Manhole # 26269
2.24.15	1601 Kings Rd	Manhole # 20633
2.27.15	801 S. Bryant Ave.	Manhole # 24286
3.3.15	202 Benton Rd.	Manhole # 27044
3.8.15	2513 Tredington Way	Manhole # 24109
3.10.15	24 South Ave.	Manholes # 20655 & 20656
3.12.15	612 Cherryvale Rd.	Manhole # 21142
3.15.15	1521 Venus Cir.	Manhole #18611
3.17.15	1504 Nightingale Ln.	Manholes # 23529 & 23528

2015 STOP-UPS		
Date	**Stop Up Address**	**Manholes Inspected**
3.17.15	133 Brad St.	Manhole # 21889
3.17.15	608 Joni Deanne Ct.	Manhole # 23800
3.19.15	407 Wimbledon Rd.	Manholes # 21861 & 21862
3.20.15	1005 Medical Park Blvd	Manhole # 20159
3.20.15	601 Comfort Dr.	Manhole # 26456
3.24.15	3445 Baird Dr.	Manhole # 26227
3.24.15	1208 N Blackwelder	Manhole # 25152
3.26.15	124 W 2nd St.	Manhole # 79842
3.27.15	1201 N Fretz	Manhole # 21846
3.27.15	317 E 14th St.	Manhole # 22097
4.1.15	2713 Downing Ct.	Manhole # 24098
4.4.15	425 Lilac Dr.	Manhole # 22967
4.10.15	2113 S. Boulevard	Manhole # 20660
4.19.15	4500 Steven Dr.	Manhole # 23310
4.22.15	2517 Antelope Cir.	Manhole # 19043
4.25.15	1035 S. Broadway #11	Manhole # 27071
4.25.15	20 South Ave.	Manhole # 20655
4.27.15	836 San Simeon Dr.	Manhole # 19126
4.29.15	1100 East Dr.	Manhole # 25556 & 25555
5.1.15	2425 Crossing Dr.	Creek crossing
5.1.15	421 E. 8th St.	Manhole # 27041
5.1.15	425 E. 8th St.	Manhole # 27040
5.3.15	3301 Choctaw Dr.	Manhole # 24564
5.3.15	1704 Edgewood	Manhole # 26017
5.6.15	401 Brighton Dr.	Manhole # 21180
5.6.15	305 Canyon Rd.	Manholes # 25007 & 25008
5.8.15	1004 Hunters Glen Cir.	Manhole # 19229
5.9.15	900 N. Fretz Ave.	Manhole # 21658
5.22.15	208 N. Lockport Dr.	Manhole # 20892
5.27.15	508 Centennial Blvd.	Manhole # 20145
5.29.15	601 Vista Lane	Manhole # 24055
6.2.15	6 N. Lockeport Dr.	Manhole # 20894
6.4.15	1704 Edgewood Dr.	Manhole # 26006
6.8.15	3804 Villas Creek Ct.	Manhole # 19722
6.22.15	512 Robin Hill Rd.	Manhole # 21674
6.25.15	900 N. Blackwelder	Manhole # 25307
6.25.15	1805 Willow Creek Rd.	Manhole # 26155

2015 STOP-UPS		
Date	**Stop Up Address**	**Manholes Inspected**
6.25.15	400 E. Danforth Rd.	Manhole # 25186
7.9.15	901 W 15th St.	Manholes # 18491 & 18492
7.10.15	915 Crown Dr.	Manholes # 25143 & 25149
7.14.15	4020 Eaton Place	Manhole # 22732
7.14.15	1519 W Gemini	Manhole # 78918
7.29.15	344 Sahoma Ter.	Manhole # 25932
8.4.15	2626 Elwood Dr.	Manholes # 20585 & 20584
8.5.15	616 W. 18th St.	Manhole # 80275
8.13.15	424 N. Bradbury Dr.	Manhole # 22814
8.25.15	700 Centennial Blvd.	Manhole # 20145
8.28.15	1325 N. Bryant Ave.	Manhole # 23758
8.25.15	1000 Old Bridge Rd.	Manhole # 22589
9.8.15	1313 Fox Cove Ct.	Manhole # 22985
9.10.15	1632 Saratoga Way	Manhole # 19658
9.11.15	501 E. 15th St.	Manhole # 22103
9.15.15	2501 The Ranch Rd.	Manhole # 27404
9.15.15	3808 Polo Club Ct.	Manhole # 27204
9.16.15	1220 N. Blackwelder	Manhole # 25153
9.17.15	2619 Kelly Point Parkway	Manholes # 20140 & 20141
9.21.15	711 Willment Pl.	Manhole # 25620
9.24.15	1317 Nay Ave.	Manholes # 79776 & 79777
9.29.15	3708 Shalamar Rd.	Manhole # 25907
10.1.15	2209 Sagewood	Manhole # 20229
10.6.15	120 W. 10th St.	Manhole # 21890
10.7.15	1304 Prairie Ave.	Manhole # 26357
10.8.15	3300 Wakefield	Manhole # 80262
10.9.15	228 Brad St.	Manhole # 21897
10.10.15	100 E. 9th St.	Manhole # 22029
10.13.15	229 Brad St.	Manhole # 21888
10.20.15	1001 Val Genes	Manhole # 18590
10.22.15	1904 Ryan Way	Manhole # 21066
10.22.15	224 W. Wayne St.	Manhole # 21723
10.27.15	905 S. College St.	Manhole # 26973
11.10.15	902 Castle Rd.	Manhole # 25315
11.13.15	729 Howard Ct.	Manhole # 22057
11.15.15	34 E. 13th St.	Manhole # 22095
11.17.15	2200 Mark Rd.	Manhole # 18728

2015 STOP-UPS		
Date	**Stop Up Address**	**Manholes Inspected**
11.19.15	811 Sunny Brook Dr.	Manhole # 22601
11.22.15	1900 Cherokee	Manhole # 23200
11.29.15	609 Mary Lee Ln.	Manhole # 25571
11.29.15	3808 Whispering Height Dr.	Manhole # 26312
12.1.15	1004 Hunters Glen Cir.	Manhole # 19273
12.1.15	756 Tuscany Way	Manhole # 24064
12.3.15	1201 W. 15th St.	Manholes # 18492 & 18494
12.3.15	1111 Washington St.	Manhole # 25028
12.3.15	1724 Rising Star Ln.	Manhole # 23727
12.5.15	1100 Countrywood Ln.	Manhole # 19844
12.8.15	8 S. Grand Fork Dr.	Manholes # 20071 & 20072
12.10.15	Kelley Pointe Pkwy & S. Kelley Ave.	Manhole # 20140
12.11.15	W. Danforth & Homestead Blvd.	Manhole # 18759
12.14.15	2016 Gebron Dr.	Manholes # 19843 & 19844
12.15.15	1105 East Dr.	Manhole # 25505
12.15.15	2112 E. 37th St.	Manhole # 24514
12.16.15	606 E. 27th St.	Manhole # 26059
12.18.15	404 Canyon Rd.	Manhole # 25014
12.30.15	1705 Kings Rd.	Manhole # 20630
12.30.15	825 Lapwing Rd.	Manhole # 19928

2015 BYPASS REPORT

ADDRESS AND MANHOLE ID NUMBER	DATE	ESTIMATED GALLONS	REASONS	DURATION (HOURS)	WET/DRY WEATHER EVENT	REACHED "WATERS OF THE STATE"
2016 Ridgecrest Rd. - cleanout	1.1.15	50	Roots	2 hours	No	Ground
2400 Hanover Ln. - manhole # 23968	1.8.15	200	Debris and leaves	1.25 hours	No	Ground
400 W. 8th St. - manhole # 27085	1.21.15	100	Roots and debris	1 hour	No	Ground
1405 Kelly Park Rd. - cleanout	1.21.15	50	Grease and debris	1 hour	No	Ground
400 W. Edmond Rd. - manhole # 21958	1.23.15	1,000	Debris	1.25 hours	No	Drainage channel
1501 W Covell Rd. - manholes # 19659 & 19658	1.28.15	2,100	Roots	4 hours	No	Ground
2405 Bent Trail Rd. - manhole # 19040	2.7.15	8,000	Roots	2 hours	No	Creek
501 W. 15th St. - manholes # 21903 & 26533	2.7.15	3,000	Roots & debris	1.25 hours	No	Duck pond
1321 Fox Lake Run- manhole # 23010	2.8.15	50	Debris	1 hour	No	Drainage channel
1801 Woody Ln. - manhole # 19098	2.8.15	75,000	Roots	12 hours	No	Drainage channel
N. Santa Fe & Williamsburg Blvd. - manhole # 20124	2.8.15	18,000	Broken pipe	3 hours	No	Creek
610 Timber Ln. - Lamphole	2.13.15	30	Roots & debris	0.50 hour	No	Ground
810 Brookside Ave. - manhole # 26601	2.13.15	1,500	Grease & debris	2.50 hours	No	Drainage channel
900 S Bryant Ave. - broken pipe	2.14.15	15,000	Broken pipe	11 hours	No	Creek
1616 S. Kelly Ave. - manhole #20515	2.19.15	20	Debris	0.5 hour	No	Ground
1712 Courtney Ln. - cleanout	2.22.15	50	Grease	2.5 hours	No	Ground
812 Harward Ct. - manhole # 26269	2.23.15	300	Roots	2.75 hours	No	Ground
1601 Kings Rd. - manhole # 20633	2.24.15	4,000	Debris	1.75 hours	No	Drainage channel
202 Benton Rd. - manhole # 27044	3.3.15	500	Debris	1.5 hours	No	Drainage channel
2513 Tredington Way - manhole #24109	3.8.15	1,000	Debris	2.5 hours	No	Drainage channel
24 South Ave. - inside house	3.10.15	300	Roots	1.25 hours	No	Ground, Driveway, Drainage Channel
612 Cherryvale Rd. - manhole #21142	3.12.15	375	Roots	1.25 hours	No	Ground, Drainage Channel
133 Brad St. - cleanout	3.17.15	2,000	Grease	1 hour	No	Ground, Drainage Channel

ADDRESS AND MANHOLE ID NUMBER	DATE	ESTIMATED GALLONS	REASONS	DURATION (HOURS)	WET/DRY WEATHER EVENT	REACHED "WATERS OF THE STATE"
608 Joni Deanne Ct. - manhole #23800	3.17.15	30	Roots Debris - Damaged	1.5 hours	No	Ground
407 Wimbledon Rd. - damaged main	3.19.15	25,000	Main	1.5 hours	No	Drainage channel
317 E 14th St. - cleanout	3.27.15	100	Debris	1 hour	No	Ground
2713 Downing Ct. - cleanout	4.1.15	100	Roots	2 minutes	No	Ground
425 Lilac Dr. - cleanout	4.4.15	100	Roots	3 hours	No	Ground
2113 S. Boulevard - cleanout	4.10.15	100	Roots	1 hour	No	Ground
6201 E. 2nd St. contractor bore into force main	4.21.15	25,000	Broken pipe	10 minutes	No	Ground
2517 Antelope Cir. - manhole # 19043	4.22.15	2,000	Roots	1.5 hours	No	Drainage channel
1035 S. Broadway #11 - cleanout	4.25.15	25	Debris	1.5 hours	No	Ground
20 South Ave. - manhole # 20655	4.25.15	2,000	Debris	2 hours	No	Debris
836 San Simeon Dr. - manhole # 19126	4.27.15	1,000,000	Unknown	No time	Fish Kill	Creek and pond
1100 East Dr. - cleanout	4.29.15	300	Roots	1 hour	No	Ground
2425 Crossing Dr.	5.1.15	200	Broken pipe	1 hour	No	Drainage channel
421 E. 8th St. - jetting	5.1.15	200	No backflow preventer	5 minutes	No	Inside house
425 E. 8th St. - manhole # 27041	5.1.15	20	Roots	30 minutes	No	Ground
1004 Hunters Glen Cir. - cleanout	5.8.15	300	Debris	2 hours	No	Ground
900 N. Fretz Ave. - manhole # 21658	5.9.15	700	Grease	2.5 hours	No	Drainage channel
1704 Edgewood Dr. - cleanout	5.15.15	150	Debris	1 hour	No	Ground
601 Vista Ln. - manhole #24055	5.29.15	1,500	Debris	2.5 hours	No	Drainage channel
1413 cedar Ridge Rd. - manhole # 25867	5.30.15	300	Roots	1.50 hours	No	Ground
6 N Lockport Dr. - manhole # 20894	6.2.15	300	Roots	2.25 hours	No	Ground
3804 Villas Creek Ct. - manhole # 19722	6.8.15	10,000	Roots, grease and rags	5 hours	No	Creek
1805 Willow Creek Rd. - manhole # 26155	6.25.15	2,500	Debris	1 hour	No	Drainage channel
9th & Bryant Ave. - broken sewer pipe	7.1.15	10,000	Broken pipe	4.25	Yes - rains	Drainage channel
9th & Bryant Ave. - broken sewer pipe	7.3.15	5,000	Broken pipe	4	Yes - rains	Drainage channel

ADDRESS AND MANHOLE ID NUMBER	DATE	ESTIMATED GALLONS	REASONS	DURATION (HOURS)	WET/DRY WEATHER EVENT	REACHED "WATERS OF THE STATE"
901 W. 15th St. manholes 18491 & 18492	7.9.15	10,000	Debris	0.5	No	Drainage channel
915 Crown Dr. - cleanout	7.10.15	200	Roots	0.5	No	Ground
616 W. 18th St. - manhole # 80275	8.5.15	100	Debris	100	No	Ground
700 Centennial Blvd. - manhole # 20145	8.25.15	10,000	Debris	1.5	No	Drainage channel
1313 Fox Cove Ct. - sewage coming up out of the ground	9.8.15	1,000	Roots	1.75	No	Drainage channel
1632 Saratoga Way - manhole # 19658	9.10.15	7,000	Debris	1.75	No	Drainage channel
501 E. 15th St. - manhole # 22103	9.11.15	1,500	Debris	1.5	No	Drainage channel
3808 Polo Club Ct. - manhole # 27204	9.15.15	500	Grease	1.5	No	Drainage channel
711 Willment Pl. - manhole # 25620	9.21.15	5,000	Debris	2	No	Drainage channel
3708 Shalamar Rd. - manhole # 25907	9.29.15	3,600	Roots	3	No	Ground
120 W.10th Place - cleanout	10.6.15	75	Roots	1	No	Drainage channel
228 Brad St. - manhole # 21897	10.9.15	50	Debris	1	No	Ground
100 E. 9th St.- manhole #22029	10.12.15	100	Debris	1.75	No	Ground
229 Brad St. - manhole # 21888	10.13.15	10,000	Grease	1.75	No	Drainage channel
905 College St. - manhole # 26973	10.27.15	100	Debris	1.25	No	Ground
729 Howard Ct. - manhole # 22057	11.13.15	300	Roots	1.5	No	Ground
34 E. 13th St. - damage main	11.15.15	1,000	Grease	3.5	No	Drainage channel
2200 Mark Rd. - manhole # 18728	11.17.15	100	Debris	2	No	Ground
811 Sunnybrook Dr. - manhole # 22601	11.19.15	4,100	Debris	2.25	No	Drainage channel
1900 Cherokee - inside of house	11.22.15	100	Debris	1.25	No	Floors
1004 Hunters Glen Cir. - cleanout	12.1.15	300	Grease	1	No	Ground
756 Tuscany Way - private manhole	12.1.15	1,000	Debris	2.5	No	Drainage channel
1201 W. 15th St. - manholes #18492 & 18494	12.3.15	5,000	Debris	0.75	No	Ground and drainage channel
1111 Washington St. - manhole # 25028	12.3.15	5,000	Grease	5	No	Drainage channel
1724 Rising Star Ln. - manhole # 23727	12.3.15	150	Grease	0.75	No	Ground

ADDRESS AND MANHOLE ID NUMBER	DATE	ESTIMATED GALLONS	REASONS	DURATION (HOURS)	WET/DRY WEATHER EVENT	REACHED "WATERS OF THE STATE"
8 S. Grand Fork Dr. - manholes 20071 & 20072	12.8.15	30	Ground	2	No	Ground
Kelley Pointe Parkway & S. Kelly Ave. - broken main	12.10.15	1,800	Broken pipe	1.5	No	Drainage channel
W. Danforth & homestead Blvd. - manhole # 18759	12.11.15	300	Grease & roots	1	No	Drainage channel
812 Pine Oak Dr. manhole # 25664	12.24.15	50	Roots	1	No	Street
1705 Kings Rd. - manhole # 20630	12.30.15	500	Debris	1.25	No	Drainage channel
825 Lapwing Rd. - manhole # 19928	12.30.15	500	Roots	2.25	No	Ground

2015 Water and Sanitary Sewer Maintence Bonds Accepted

		Water Line							Sanitary Sewer					
New Projects	**Project Nbr.**	**24"**	**18"**	**14"**	**12"**	**10"**	**8"**	**6"**	**18"**	**15"**	**12"**	**10"**	**8"**	**6"**
Birnam Woods 2	PR13-00054						1,110						636	
Black Oak at Iron Horse Ranch	PR14-00010				1,997		6,429				1,843		3,590	
Bradbury Station	PR14-00005						808	36					640	
COE - Proposed WL at Kelly & Coffee Creek	WC12-00005	3,160	215		540		40	70						
Covell Valley 1	PR13-00041						4,440				554	4,986		
Cypress Point Estates	PR13-00059						2,400						2,124	
Designs by Tammy	SP12-00025							63						
Edmond Office Park	SP14-00005												240	
Enclave Apartments	SP060053						1,792						810	
French Park West	SP13-00005						960						533	
Frontier Elementary School	EP12-00001				1,341		1,682	162					817	
Golden Gate 5 at Twin Bridges	PR14-00027						551	5					253	
Hidden Prairie at Kelley Pointe 4	PR14-00012				1,999		2,116	318					3,825	
Hundred Oaks Village, Phase 1	PR13-00043				905		45						969	
Kelly Lake Estates 3	PR14-00039						2,760						3,480	
Kingsbury Ridge 2	PR14-00002						2,455	1,154					3,425	
Mon Abri	PR13-00016						2,051	140					1,887	
OnCue at Kelley Pointe	SP13-00033				255								178	
Summit 3 at Oak Tree	PR14-0013				1,900								1,658	
Timbercrest 1	PR14-00008				2,264		3,344					948	4,714	
Town Square 2	PR14-0004				100		2,836						2,201	
Tuscan Park 2	PR14-00006						867						1,430	
Twin Bridges Village	PR14-00041						3,551	30					2,920	
	Subtotals	**3,160**	**215**	**0**	**11,301**	**0**	**40,237**	**1,978**	**0**	**0**	**2,397**	**5,934**	**36,330**	**0**

56,891 **Total Liner Feet of Water Line**

44,661 **Total Liner Feet of Sanitary Sewer**