The City of Springfield

WATER TREATMENT

2014
ANNUAL REPORT

The City of Springfield Ohio

Water Treatment Plant

Springfield Water Treatment Plant, 201 Eagle City Road

The City of Springfield, Ohio's first public water system was established in 1882. In 1958 the Eagle City Road Water Treatment Plant was constructed, replacing the Pump House Road treatment facility. The Water Treatment Plant has a 36 million gallon per day (MGD) peak design capacity and provides an average of 11 MGD of potable water to the citizens of Springfield, Ohio and surrounding communities. The facility is classified as a Class III Public Water System by the Ohio Environmental Protection Agency (OEPA).

Source water for the plant is obtained from the Mad River Buried Valley Aquifer. A well field along Mad River at Eagle City Road consists of twelve separate wells with depths ranging from 100 to 115 feet. Each well has a pumping capacity of 3.5 million gallons of ground water per day. Once at the plant the raw water is treated in two parallel treatment trains, 100 feet wide by 465 feet long, each capable of handling 18 MGD.

Water traveling through the basins receives treatment through well established and accepted industry standards. These treatments include lime for softening, ferric sulfate for removing excess lime and suspended particles, chlorine for disinfection, and sodium hexametaphosphate for corrosion control and to prevent calcium deposits in the distribution system.

The final stage of the treatment process is filtration, which removes the finest particles before water is pumped to the distribution system. This process involves eight mono

media rapid sand filters, 32 feet wide by 32 feet long, each capable of filtering 4.5 MGD. Six high service pumps, with design capacities ranging from 4,200 to 9,800 gallons per minute (GPM), are used to deliver water to the system.

Both underground and elevated storage are utilized to ensure uniform system pressure and emergency reserves. The largest storage is the five million gallon underground tank at the Water Treatment Plant. Elevated storage tanks throughout the system include:
A two million gallon tank at Greenmount Avenue and Main Street
A one million gallon tank on Leffel Lane near Clark State Community College
A half million gallon tank on Bird Road at Reid Park Golf Course
A one million gallon tank on Bird Road at Reid Park Golf Course

Superintendent Allen Jones, an OEPA Certified Class III Water Supply Operator, manages the Water Treatment Plant under the direction of Operations Engineer Timothy Weaver, P.E., and Service Director Christopher Moore. Sixteen full-time employees, including an Assistant Superintendent, two Laboratory Technicians, seven Plant Operators, three Plant Maintenance Mechanics, and two Plant Electrical Technicians, support plant operations. The plant is staffed 24/7 by certified OEPA Operators

For additional information contact the following:

Contact: Allen Jones – Plant Superintendent
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Fax: 937-525-5886
Email: ajones@ci.springfield.oh.us

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WATER TREATMENT PLANT

FOREWORD

This report summarizes the operations of the Springfield Water Treatment Plant for the year 2014. It is for use by professionals, plant personnel, and the general public. The primary function of the Water Treatment Plant is to provide the City of Springfield an uninterrupted supply of clean, safe, potable water that complies with all the Drinking Water Regulations, as mandated by The Safe Drinking Water Act, at the most reasonable cost.

The safety of all citizens is considered when providing ample water pressure for residential, commercial, industrial, and emergency needs. The well being of the Springfield community is dependent upon the plant personnel to exercise their knowledge, skills, resourcefulness, reliability, and integrity to accomplish this function. The scope of this function is very broad. Not only must we meet current day demands, we also have the responsibility of ensuring that the community has a safe and abundant water supply for generations to come.

The Water Treatment Plant delivered a total of **4,016890,000** gallons of water in 2014 at a chemical cost of **$166.39** per million gallons. The total cost associated with treating and pumping the water supply was **$604.41** per million gallons. Ongoing laboratory testing and adjustments of chemical feed rates to optimize the treatment process allows us to be as cost efficient as possible and still maintain the quality of our drinking water.

A Consumer Confidence Report is provided to all water customers each year. This report includes information such as sampling results that have occurred and other mandatory EPA language. We have had two violations in our Laboratory for failure to report Contract Samples in a timely manner. We strive to meet or exceed all of the EPA regulations.

We, the plant staff, will continue our efforts in 2014 to provide the City of Springfield and its water customers an economical, clean, safe, and high quality water supply.

Respectfully submitted,

Allen Jones

Water Plant Superintendent

SPRINGFIELD WATER TREATMENT PLANT

PRIMARY FUNCTION

The following four sections within the Water Treatment Plant accomplish our primary function:

ADMINISTRATION

Oversee maintenance needs and staff to plan projects for the total operation and function of the Water Treatment Plant. Ensure the most effective use of all resources to meet all of our goals and objectives.

OPERATIONS

Operate the plant in the most efficient manner to produce the highest quality water possible. Remain alert to system changes and adjust plant output accordingly.

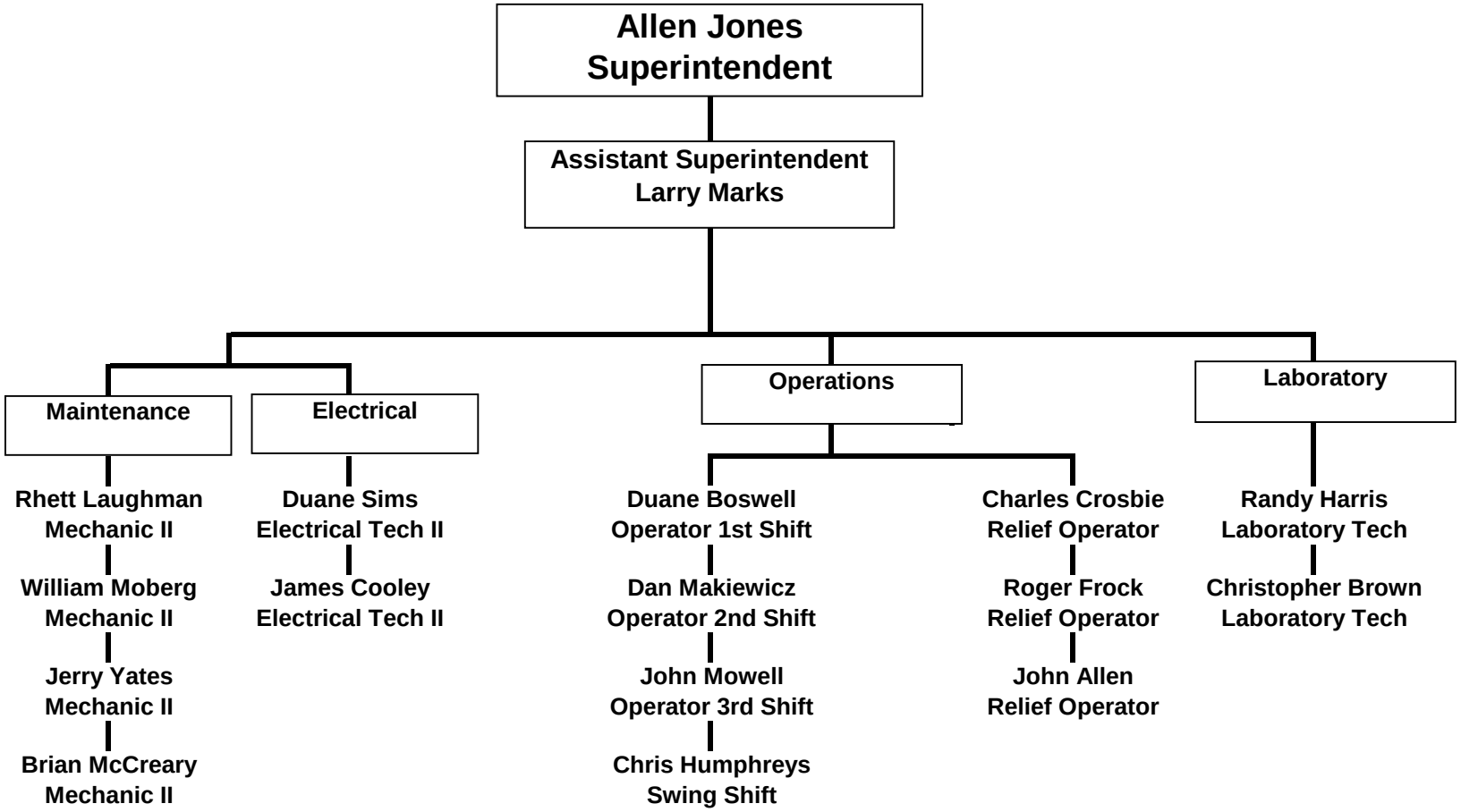
MAINTENANCE

Establish a comprehensive maintenance program that includes preventive maintenance, response to all emergency repairs as needed, and maintenance of all buildings and grounds.

LABORATORY

Collect and analyze water samples for plant quality control and to ensure the Treatment Facility remains in compliance with all EPA regulations. Maintain analytical data to ensure proper operation of the treatment process and report to the OEPA accordingly. Provide laboratory services and assistance to other local water systems and local residents with private wells.

SPRINGFIELD
WATER TREATMENT PLANT
ORGANIZATIONAL CHART



Jerry Yates resigned 2014
Randy Harris retired 2014

OHIO EPA

CERTIFIED PLANT PERSONNEL

EMPLOYEE	POSITION	CERTIFICATION
Allen Jones	Superintendent	Class III (WS)-MMO-MUG
Larry Marks	Assistant Superintendent	Class II (WS)
Randy Harris	Lab Tech	Class II (WS)- MMO-MUG Wet Chemistry
Christopher Brown	Lab Tech	Class III (WS)- MMO-MUG Wet Chemistry
Charles Crosbie	Operator	Class III (WS)
John Mowell	Operator	Class III (WS)
Dan Makiewicz	Operator	Class II (WS)
Duane Boswell	Operator	Class I (WS)
Roger Frock	Operator	Class I (WS)
John Allen	Operator	Class I (WS)
Chris Humphreys	Operator	Class I (WS)

All Plant Operators are required to be O.E.P.A. Certified in Quality Control parameters and obtain a Class I (WS) certification.

Laboratory Technicians are required to be O.E.P.A. Certified in MMO-MUG and Chemistry and obtain a Class II (WS) certification.

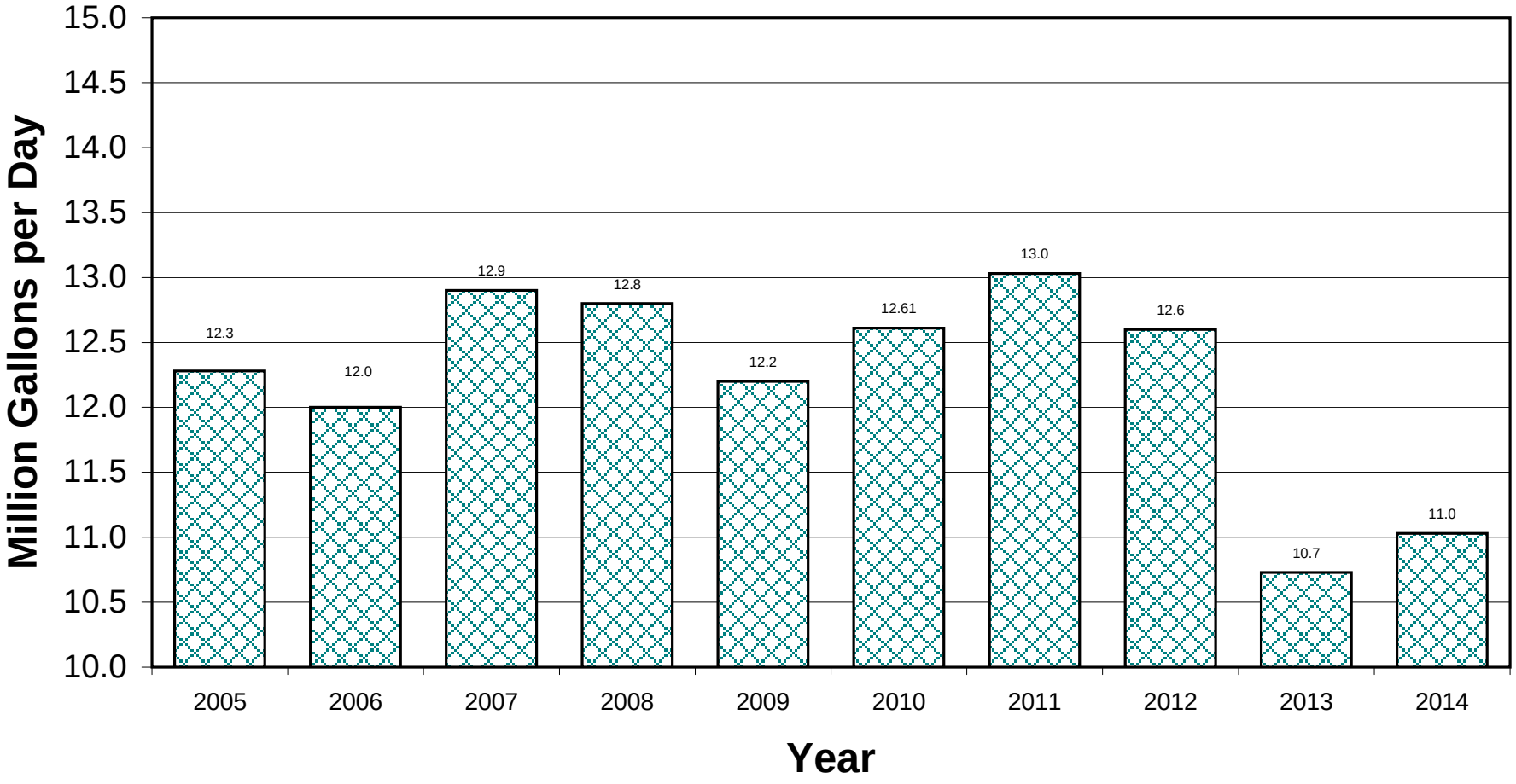
WS = Water Supply
MMO-MUG = Bacteria Certified

PERSONNEL	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY	SUNDAY
1ST SHIFT BOSWELL	OP-1	OP-1	OP-1	OP-1	OP-1	**OFF**	**OFF**
2ND SHIFT MAKIEWICZ	OP-2	**OFF**	**OFF**	OP-2	OP-2	OP-2	OP-2
3RD SHIFT MOWELL	**OFF**	OP-3	OP-3	OP-3	OP-3	OP-3	**OFF**
RELIEF OPERATORS							
1ST SHIFT CROSBIE	MAINT	MAINT	MAINT	MAINT	MAINT	**OFF**	**OFF**
1ST SHIFT FROCK	MAINT	MAINT	MAINT	MAINT	MAINT	**OFF**	**OFF**
1ST SHIFT ALLEN	MAINT	MAINT	MAINT	**OFF**	**OFF**	OP-1	OP-1
SWING SHIFT HUMPHREYS	OP-3	OP-2	OP-2	MAINT-2	**OFF**	**OFF**	OP-3
MAINTENANCE							
MAINT/MECH II LAUGHMAN	ON	ON	ON	ON	ON	**OFF**	**OFF**
MAINT/MECH II MOBERG	ON	ON	ON	ON	ON	**OFF**	**OFF**
MAINT/MECH II YATES	ON	ON	ON	ON	ON	**OFF**	**OFF**
MAINT/MECH II McCREARY	ON	ON	ON	ON	ON	**OFF**	**OFF**
CUSTODIAN BOWERS	WTP	WWTP	WTP	WWTP	WTP	**OFF**	**OFF**
E & E TECH II COOLEY	ON	ON	ON	ON	ON	**OFF**	**OFF**
E & E TECH II SIMS	ON	ON	ON	ON	ON	**OFF**	**OFF**
LABORATORY							
LAB TECH HARRIS	ON	ON	ON	ON	ON	**OFF**	**OFF**
LAB TECH C. BROWN	ON	ON	ON	ON	ON	**OFF**	**OFF**

2014 WATER TREATMENT UTILITY SUMMARY

	ELECTRIC		GAS	
MONTH	KWH	AMOUNT	CCF	AMOUNT
JAN.	599,984	$35,102.43	5,586	$4,534.62
FEB.	578,520	$34,639.30	5,310	$4,336.91
MAR.	621,051	$35,631.82	4,623	$4,938.49
APR.	539,887	$34,556.05	4,289	$3,387.47
MAY	546,109	$33,551.60	2,929	$2,453.41
JUN.	587,285	$38,796.94	2,456	$2,212.54
JUL.	554,483	$46,824.64	2,705	$2,369.51
AUG.	602,789	$50,692.27	2,369	$2,082.69
SEP.	562,027	$41,597.07	2,474	$2,168.79
OCT.	533,710	$39,912.64	1,753	$1,575.02
NOV.	543,152	$41,481.47	3,676	$2,879.57
DEC.	526,667	$40,325.97	4,427	$3,787.66
TOTALS:	6,795,664	$473,112.20	42,597	$36,726.68

10 yr Daily Average Pumpage



2014 SPRINGFIELD WELLWATER PRODUCTION

WITHDRAWALS

GROUND WATER (in Units of Millions of Gallons) Registration Number 00494

SOURCE	JAN.	FEB.	MAR.	APR.	MAY	JUN.	JUL.	AUG.	SEPT.	OCT.	NOV.	DEC.	TOTAL PER YEAR MG
WELL NO.1	17.63	26.66	0	0	39.75	28.78	34.27	29.61	32.9	41.63	31.31	50.43	**332.97**
WELL NO.2	41.66	15.84	19.75	0	5.91	31.77	27.13	24.15	22.37	22.43	27.71	34.06	**272.78**
WELL NO.3	28.67	22.51	29.44	28.98	28.78	23.93	27.21	15.94	28.83	33.09	27.69	14.03	**309.10**
WELL NO.4	0	52.93	40.28	29.47	43.52	33.86	33.26	30.13	29.11	29.1	28.25	41.82	**391.73**
WELL NO.5	40.22	32.61	42.04	50.64	21.71	31.97	36.43	45.38	33.64	33.62	22.84	46.46	**437.56**
WELL NO.6	37.21	31.88	33.08	29.58	38.38	0	2.07	38.68	33.08	33.89	17.72	34.19	**329.76**
WELL NO.7	34.07	26.41	33.82	29.1	26.78	29.46	34.47	34.63	3.99	3.88	8.1	33.45	**298.16**
WELL NO.8	34.66	28.99	16.07	24.21	32.71	31.95	30.74	19.43	24.31	24.16	32.87	44.31	**344.41**
WELL NO.9	37.51	27.74	14.94	28.04	21.57	36.2	30.44	42.79	29.85	33.76	39.48	46.35	**388.67**
WELL NO.10	28.09	21.35	43.51	25.61	26.44	42.97	44.78	22.3	34.98	35	25.31	62.49	**412.83**
WELL NO.11	17.38	32.05	43.28	36.25	35.89	19.66	10.81	27.38	41.41	43.76	38.14	46.25	**392.26**
WELL NO.12	49.85	23.86	42	40.47	38.53	33.1	42.48	46	30.18	30.28	33.46	34.47	**444.68**
TOTAL	366.95	342.83	358.21	322.35	359.97	343.65	354.09	376.42	344.65	364.6	332.88	488.31	**GRAND TOTAL 4,354.91**
MAXIMUM	49.85	52.93	43.51	50.64	43.52	42.97	44.78	46	41.41	43.76	39.48	62.49	
MINIMUM	17.38	15.84	14.94	24.21	5.91	19.66	2.07	15.94	3.99	3.88	8.10	14.03	
DAYS IN OPERATION	31	28	31	30	31	30	31	31	30	31	30	31	**TOTAL OPERATION DAYS 365**

MG= MILLION GALLONS

Flows calculated when conducting static/drawdown measurements (Meter reading x hours ran (rounded to nearest #)

AVERAGE DAILY WELL PUMPAGE (million gallons) 11.93

TREATMENT PROCESS CHEMICAL SUMMARY

2014

CHEMICALS REPORTED IN POUNDS

MONTH	HIGH SERVICE FLOW MG	AVERAGE HS MGD	LIME	AVG LIME/DAY	CHLORINE	AVERAGE CHLORINE/ DAY	FERRIC SULFATE	AVERAGE FERRIC SULFATE/ DAY	SODIUM HEX	AVERAGE SODIUM HEX/ DAY
January	394.57	12.73	775,788	25,025	7,132	230	31,310	1,010	3,100	100
February	334.02	11.93	722,191	25,793	6,190	221	27,310	975	2,800	100
March	351.70	11.35	691,183	22,296	6,388	206	29,482	951	3,100	100
April	327.81	10.93	640,312	21,344	6,279	209	27,975	933	3,000	100
May	344.50	11.11	633,586	20,438	7,290	235	30,657	989	3,100	100
June	327.69	10.92	548,318	18,277	6,497	217	28,525	951	3,000	100
July	332.52	10.73	692,679	22,344	7,213	233	28,597	922	3,100	100
August	356.64	11.50	742,962	23,967	7,163	231	29,985	967	3,100	100
September	325.59	10.85	720,660	24,022	6,652	222	27,718	924	3,000	100
October	312.92	10.09	646,367	20,851	6,342	205	27,440	885	3,100	100
November	302.99	10.10	607,448	20,248	5,806	194	26,799	893	3,000	100
December	305.94	9.87	637,683	20,570	6,568	212	28,696	926	3,100	100
TOTAL	4,016.89		8,059,177		79,520		344,494		36,500	
MONTHLY AVERAGE	334.74		671,598		6,627		28,708		3,042	
DAILY AVERAGE		11.01		22,079.94		217.86		943.82		100

MGD= MILLION GALLONS DAY **MG= MILLION GALLONS** **HS= HIGH SERVICE**

Laboratory Summary

2014

The Springfield Water Treatment Plant Laboratory consists of two separate labs with independent Ohio Environment Protection Agency (EPA) Certifications. The Microbiological Lab carries approval #600 and the Chemical Lab #1491. Beginning in May of 2014 OEPA made changes to the approval numbering system and now both Labs share approval #600. Each laboratory, lab technician, and plant operator must be re-certified every 3 years. Combined, these labs have the primary purposes of regulatory compliance with all Federal and State EPA laws governing potable water, as well as assisting in operational control and chemical treatment at the plant. The lab personnel are also responsible for the oversight of proper bacterial and disinfection testing of all new water line installations and repairs in the water distribution system. This includes sampling and testing protocol for "Boil Water Advisories."

The Ohio EPA requires the City of Springfield to perform a minimum of 70 Total Coliform tests per month within our own distribution system. The City of Springfield not only performs testing for itself, but also performs Total Coliform analysis under contract for many small local water systems such as villages, mobile home parks, churches, restaurants, private wells, and the Clark County Utilities Department. In 2014, we tested over 2,400 samples for bacteria, which was a 30% increase from 2013 in which 1,700 samples were tested. This change largely being brought about due to the closing of a local private laboratory the previous year which affected many Public Water Systems (PWS) in the area that used the facility for their Micro Analysis.

The Chemical Lab, consisting of lab technicians and operators was recertified in June 2013 and will be due for recertification in June 2016. In October of 2014 Mr. Randy Harris, with over 24 years of service, retired from his position as a Laboratory Technician with the City of Springfield. Certification for the Micro Lab was scheduled for July of 2014 but was postponed with the hopes of having a replacement for Mr. Harris before the end of the year. Unfortunately we were unable to fill the position vacated by Mr. Harris within this timeframe. The July 2014 recertification date for the City's Micro

Lab was postponed until December 2014, at this time one Lab technician and the Superintendent Allen Jones of the Water Treatment Plant (WTP) were re-certified.

As part of our ongoing Well Head Protection Plan, comprehensive biannual testing of 8 monitoring wells was performed in 2014. Results for contaminates tested for were either not detected, below detection level or well below maximum contamination levels allowed in any of the wells since their installation in 2004. We will continue testing these wells biannually in 2015. Monitoring Sodium and Chloride levels continue to be a monthly exercise. Sites for these additional well test are as follows: monitor well #2 (North of Tremont City Road, East of the railroad tracks), monitor well #6 (at Woodrow Corp., supply well # 10, and supply well #11 (our Northern most supply wells), and the plant tap (finished water). In addition to these steps, we have tested private wells at 3 residences along Tremont City Road. All test results show natural levels of sodium and chloride, indicating no influence from external sources at the time of analysis.

The Springfield Water Treatment Plant will continue to provide an ample supply of affordable, high quality water through the diligent water quality analysis, operation, and maintenance of the facility by our dedicated and professional staff.

Christopher M. Brown
Laboratory Technician

CITY OF SPRINGFIELD WATER TREATMENT PLANT CONSUMER CONFIDENCE REPORT FOR YEAR 2014

Dear Valued Customer,
Thank you for the opportunity to reliably supply you with clean and safe water. We are extremely pleased to have once again provided you with water that meets or exceeds Environmental Protection Agency Standards for safety. We hope you find this document about the source of your water, how it's cleaned, test results, and answers to some frequently asked questions to be helpful. Please contact us with any questions or comments. In 2014, the City of Springfield Water Treatment Plant produced 4,016,890,000 gallons of potable water and met or exceeded all drinking water standards. We had TWO violations in 2014, (Failure to Report Contract Samples in Time). Springfield currently holds an Unconditional License to Operate.

How Is My Water Treated? Your water undergoes several treatment processes after arriving at the plant and before it is sent to the distribution system. Our water treatment includes coagulation and flocculation (to cause small particles from the raw water to adhere to each other), sedimentation (to remove those particles), chlorination (for disinfection), and filtration (to remove the very smallest particles). Sodium hexametaphosphate is also added to help with corrosion control and stability.

Is My Water "HARD"? Although we do soften the water, Springfield's water is considered to be hard. The water from the supply wells has an average of 351mg/l or 20.40 grains hardness. The water after treatment has an average of 148mg/l or 8.60 grains hardness.

What's In My Drinking Water? Drinking water may include small amounts of contaminants. The presence of contaminants does not necessarily indicate that the water poses a health risk. As water travels over and through the ground on its way to the Mad River Valley Buried Aquifer, it dissolves naturally occurring minerals, can pick up substances resulting from the presence of animals or from human activity, and in some cases, radioactive materials. To ensure that our water is safe to drink, we treat and disinfect it to meet or exceed the standards set by the USEPA. More information about contaminants and potential health effects may be obtained by contacting the USEPA Safe Drinking Water Hotline at 1-800-426-4791.

Section 1: Source Water Information. Springfield WTP receives its drinking water from 12 wells located in the Mad River Valley Buried Aquifer. Due to the depth and porosity of this aquifer, there is a high susceptibility to contamination. Also, several potential sources of contamination have been identified within the Source Water Assessment (SWA) Area. This area encompasses all lands within a (5) five-year time of travel to the well-field. The City Of Springfield has developed a comprehensive SWA plan to manage all potential sources of contamination within this zone and to minimize impacts to the aquifer. Communication with property and business owners and the general public are emphasized in the SWA. SWA reports are available by calling the Springfield WTP at 937-525-5880 or the Ohio EPA at 614-644-2752.

Section 2: What are sources of contamination to drinking water? The sources of drinking water, both tap and bottled include: rivers, lakes, streams, ponds, reservoirs, springs, and wells. As water passes over and through the ground it is likely to pick up dissolved minerals, contaminants, and sometimes radioactive materials. Contaminants that may be present in source water include: **(A) Microbial -** Viruses and Bacteria which may come from sewage treatment plants, septic systems, agricultural livestock operations, and wildlife. **(B) Inorganics -** Such as salts and metals, which can be naturally occurring or result from urban storm water run off, industrial or domestic wastewater discharges, oil and gas production, mining, or farming. **(C) Pesticides and Herbicides -** Which may come from a variety of sources such as agricultural, urban storm water run off and residential uses. **(D) Organic Chemicals (synthetic and volatile) -** By-products of industrial processes and petroleum production. Can also come from gas stations, urban storm water run off and septic systems. **(E) Radioactive -** Can be naturally occurring or result from oil and gas production, and mining.

Section 3: Who needs to take special precautions? Some people may be more vulnerable to contaminants in drinking water than the general population. Immuno-compromised persons, such as persons with cancer undergoing chemotherapy, persons who have undergone organ transplants, people with HIV/Aids or other immune system disorders, some elderly, and infants can be particularly at risk from infection. These people should seek advice about drinking water from their health care providers. EPA/Center for Disease Control (CDC) guidelines on appropriate means to lessen the risk of infection by Cryptosporidium and other microbial contaminants are available from the Safe Drinking Water Hotline (1-800-426-4791)

Section 4: What is the quality of my drinking water? The EPA requires regular sampling to ensure water safety. The City of Springfield Water Treatment Plant conducted sampling for Bacteria, Inorganics, SOC's, VOC's, Nitrites, Nitrates, Lead, Copper, Disinfection byproducts, Sodium, and Chloride. Samples were collected for a total of 13 different contaminants in the Springfield Water supply. The Ohio EPA requires us to monitor for some contaminants less than once per year because the concentrations of these contaminants do not change frequently. Some of our data, though accurate, is more than one year old. Below is a list of water quality parameters for the Springfield Water Treatment Plant.

For more information concerning the water quality or the Water Treatment Plant, please visit the City's website at www.ci.springfield.oh.us or contact Allen Jones, Water Plant Superintendent, at 937-525-5880 or e-mail your questions or concerns to: ajones@ci.springfield.oh.us.

CONTAMINANT	AVERAGE	HIGHEST DETECTION	MCL	SOURCE
INORGANICS				
BARIUM		0.0199mg/l	2mg/l	natural deposits, industrial discharge
NITRATE		1.17mg/l	10mg/l	field runoff, sewage, natural deposits
LEAD	0.0042mg/l	0.00754mg/l	0.015mg/l	geological, leaching from plumbing
COPPER	0.0272mg/l	0.11mg/l	1.3mg/l	geological, leaching from plumbing
TTHM'S	22.49ug/l	47.53ug/l	80ug/l	byproduct of drinking water disinfection
HAA5	4.09ug/l	6.88ug/l	60ug/l	byproduct of drinking water disinfection
TOTAL CHLORINE	1.43mg/l	2.21mg/l	4.0mg/l	water additive to control microbes
TOTAL COLIFORM		1 sample or 0.1%	5%	naturally present in environment
SODIUM	13.33mg/l	21.8mg/l	N/A	naturally present in environment
CHLORIDE	35.53mg/l	43.5mg/l	250mg/l	naturally present in environment

QUALITY	AVERAGE	HIGHEST DETECTION
pH	9.62	9.87
HARDNESS	148	174mg/l
MAGNESIUM	23mg/l	28mg/l
CALCIUM	21mg/l	26mg/l
PHOSPHATE	0.74mg/l	1.17mg/l
STABILITY	2	3
TURBIDITY	0.039NTU	0.099NTU
TOTAL ALKALINITY	78mg/l	104mg/l

UCMR3 MONITORING- benefits the environment and public health as follows: EPA and other interested parties will have scientifically valid data on the occurrence of targeted contaminants in drinking water; EPA can assess the number of people potentially being exposed; and EPA can provide an estimate of the levels of that exposure. This data set is one of the primary sources of occurrence and exposure information the agency uses to develop regulatory decisions for contaminants of concern. Below are the results of the 2014 UCMR 3 sampling event. Springfield sampled for 21 separate contaminants and reported only the ones that had results above the lowest detection limit.

CONTAMINANT	AVERAGE	HIGHEST DETECTION
CHROMIUM-6	0.28225ug/l	0.300ug/l
CHROMIUM (TOTAL)	0.39525ug/l	0.412ug/l
MOLYBDENUM	3.82ug/l	4.221ug/l
STRONTIUM	159.52ug/l	204.832ug/l
VANADIUM	0.2435ug/l	0.246ug/l

ppm or mg/l: Parts per Million
ppb or ug/l: Parts per Billion
<: Less than symbol
NTU: Nephelometric Turbidity Units
BDL: Below Detectable Limits
MCLG: Maximum Contaminant Level Goal –
The level of a contaminant in drinking water below which there is no known or expected risk to health.
MCL: Maximum Contaminant Level: Threshold limit allowed.
(AL): Action Level - contaminant concentration that triggers a treatment requirement.
TT: Treatment Technique - Process intended to reduce contaminant level in water.

WHERE TO CALL

BILLING
324-7365

WATER METER READINGS
324-7365

WATER METER REPAIR
525-5800

WATER LEAKS
DAYTIME 525-5800
NIGHTS - WEEKENDS & HOLIDAYS 324-7663

WATER DISTRIBUTION
525-5800

WATER ADMINISTRATION
525-5800

WATER TREATMENT PLANT
525-5880

WATER QUALITY
525-5880

MAYOR
WARREN COPELAND

CITY MANAGER
JIM BODENMILLER

SERVICE DIRECTOR
CHRIS MOORE (525-5800)

OPERATIONS ENGINEER
TIM WEAVER (525-5800)

WATER PLANT SUPERINTENDENT
ALLEN JONES (525-5880)

2014

City of Springfield

Stage 2 DBP Sample Monitoring Plan

Ground Water Systems Serving 10,000-99,999

PWS NAME: SPRINGFIELD,CITY OF	PWS ID: OH1204412	YEAR	2014

SAMPLE MONITORING LOCATION ID	MONITORING LOCATION ADDRESS		PROJECTED SAMPLING DATES (MONTH/WEEK)sample dates must be **90** ±**5** days apart					
			February	May	August	November	Yearly Avg/Site	MCL ug/L
			RESULTS ug/L	RESULTS ug/L	RESULTS ug/L	RESULTS ug/L		
DS201	2100 Quality Ln.	Total TTHM	16.09	18.84	23.66	32.55	22.79	80
		Total HAA5	2.83	2.68	4.92	6.88	4.33	60
DS202	1576 E. Main St.	Total TTHM	14.61	15.73	17.28	15.16	15.70	80
		Total HAA5	2.54	3.00	4.32	4.36	3.56	60
DS203	1985 Airpark Ave.	Total TTHM	47.53	34.58	35.80	31.00	37.23	80
		Total HAA5	6.31	4.82	6.13	5.86	5.78	60
DS204	1938 Mitchell Blvd	Total TTHM	13.11	14.71	15.55	13.71	14.27	80
		Total HAA5	1.59	2.69	2.35	4.19	2.71	60

PRIMARY STANDARDS

		pCi/l	MCL pCi/l
Radionucleides	**Total Alpha Particle**	ND	<15 pCi/l
	Total Beta Particle	ND	4 pCi/l
	Radium	**0.96**	pCi/l

2014
P R I M A R Y S T A N D A R D S
INORGANICS CHEMICALS
(mg/l)

CONTAMINANT	SPRINGFIELD WATER	MAXIMUM CONTAMINANT LEVEL	SOURCE	HEALTH EFFECTS
Antimony	BDL	0.006	ceramics,glass,pesticides	slows growth
Arsenic	BDL	0.05	geological,industrial waste	toxic to nervous system
Asbestos	Not Required	7	geological,construction materials	tumors
Barium	0.0199	2	geological,industrial uses	circulatory system effects
Beryllium	BDL	0.004	geological,industrial uses	possible cancer
Cadmium	BDL	0.005	geological,metal finishing	kidney effects
Chromium	BDL	0.1	metal finishing,tanning,textiles	liver,kidney,digestive system
Cyanide	BDL	0.2	electroplating,plastics	spleen,brain,liver effects
Flouride	BDL	4	geological,toothpaste	skeletal damage
Lead	0.0042	0.015	geological,leaches from pipes	toxic to nervous system
Copper	0.0272	1.3	geological,leaches from pipes	digestive sytem,liver damage,kidney
Mercury	BDL	0.002	paint,paper,fungicides	nervous system disorders
Nickel	BDL	0.1	electroplating,ceramics,batteries	spleen,brain,liver effects
Nitrate	1.17	10	fertilizer,feedlots,sewage	methemoglobinemia
Nitrite	Not Required	1	geological	methemoglobinemia
Selenium	BDL	0.05	geological,copper mining/smelting	nervous system disorders
Thallium	BDL	0.002	electronics & glass industry	kidney,brain,liver effects
Zinc	Not Required	5	plating of steel(corrosion resistant)	slow growth,infection susceptibility

Primary standards are health related.

mg/l = milligrams per liter = parts per million

ug/l = micrograms per liter = parts per billion

When the prefix "<" (less than) is used, the result is below the concentration that the method used can accurately detect.

2014

P R I M A R Y S T A N D A R D S

VOLITALE ORGANIC CHEMICALS

ug/L

ANALYTE	SPRINGFIELD WATER	MAXIMUM CONTAMINANT LEVEL
Benzene	BDL	5
Vinyl chloride	BDL	2
Carbon tetrachloride	BDL	5
1,2-Dichloroethane	BDL	5
1,1,1-Trichloroethane	BDL	200
1,2-Dichlorobenzene	BDL	75
1,1-Dichloroethene	BDL	7
1,3-Dichlorobenzene	BDL	600
cis-1,2-Dichloroethene	BDL	5
trans,1,2-Dichloroethene	BDL	100
1,2-Dichloropropane	BDL	5
Ethylbenzene	BDL	700
Monochlorobenzene		100
Styrene	BDL	100
Tetrachloroethylene	BDL	B
Toluene	BDL	1000
Xylenes(total)	BDL	10000
Dichloromethane		5
1,2,4-Trichlorobenzene	BDL	70
2,2-Dichloropropane	BDL	*******
Dichlorodifluoromethane	BDL	*******
Dichloromethane		*******
1,3-Dichloropropane	BDL	*******
Chloromethane	BDL	*******
Bromomethane	BDL	*******
Bromodichloromethane	4	*******
Dibromochloromethane	2.26	*******

ANALYTE	SPRINGFIELD WATER	MAXIMUM CONTAMINANT LEVEL
1,2,3-Trichloropropane	BDL	*******
1,1,1,2-Tetrachloroethane	BDL	*******
1,1,2,2-Tetrachloroethane	BDL	*******
1,1-Dichloropropene	BDL	*******
Chloroethane	BDL	*******
1,3-Dichloroprene		*******
Hexachlorobutadiene	BDL	*******
Naphthalene	BDL	*******
tert-Butylbenzene	BDL	*******
p-Isopropyltoluene		*******
Fluortrichloromethane		*******
sec-Butylbenzene	BDL	*******
1,1-Dichloroethane	BDL	*******
Bromobenzene	BDL	*******
m-Xylene		*******
o-Xylene	n/a	*******
p-Xylene	n/a	*******
n-Propylbenzene	BDL	*******
o-Chlorotoluene		*******
p-Chlorotoluene		*******
1,4-Dichlorobenzene	BDL	*******
1,2,3-Trichlorobenzene	BDL	*******
1,2,4-Trichlorobenzene	BDL	*******
n-Butylbenzene	BDL	*******
1,3,5-Trimethylbenzene	BDL	*******
Chloroform	5.75	*******

BDL = Below Detectable Limits

ug/l = Micrograms per liter

2014
P R I M A R Y S T A N D A R D S
SYNTHETIC ORGANIC CHEMICALS
mg/L

ANALYTE	SPRINGFIELD WATER	MAXIMUM CONTAMINANT LEVEL
Alachlor	ND	0.002 mg/l
Asdicarb		0.007(proposed)
Aldicarb Sulfone		0.007(proposed)
Aldicarb Sulfoxide		0.007(proposed)
Aldrin		
Atrazine	ND	0.003 mg/l
Benzoapyrene		0.0002 mg/l
Butachlor		
Carbaryl		
Carbofuran		0.04 mg/l
Chlordane		0.002 mg/l
Dalapon		0.2 mg/l
Dibromochloropropane		0.0002 mg/l
Dicamba		
Dieldrin		
Di(2-ethylhexyl)adipate		0.4 mg/l
Di(2-ethylhexyl)phthalate		0.006 mg/l
2,4-D		0.07 mg/l
Dinoseb		0.007 mg/l
Diquat		0.02 mg/l
Endothall		0.1 mg/l
Endrin		0.002 mg/l
Ethylene Dibromide		0.00005 mg/l

ANALYTE	SPRINGFIELD WATER	MAXIMUM CONTAMINANT LEVEL
Glyphosate	n/a	0.7 mg/l
Methomyl		
Methoxychlor	n/a	0.04 mg/l
Metolachlor	n/a	
Metribuzin	n/a	
Oxamyl(Vydate)		0.2 mg/l
Pentachllorophenol		0.001 mg/l
Picloram		0.5 mg/l
PCBs	n/a	
Propachlor	n/a	
Simazine	ND	0.004 mg/l
Silvex		
Toxaphene	n/a	
2,4,5-TP (Silvex)	n/a	
Cyanazine	n/a	
Trifluralin	n/a	
Heptachlor	n/a	0.0004 mg/l
Heptachlor Epoxide	n/a	0.0002 mg/l
Hexachlorobenzene	n/a	0.001 mg/l
Hexachlorocycolopentadiene	n/a	0.05 mg/l
3-Hydroxycarbofuran		
Lindane	n/a	0.0002 mg/l

These chemicals are from pesticides and herbicides

mg/l = miligrams per liter

ND = none detected

n/a = not applicable

2014

S E C O N D A R Y PARAMETERS

	ANALYTE	UNITS	SPRINGFIELD WATER	MAXIMUM CONTAMINANT LEVEL
Treatment Parameters	pH	0-14	9.62	7-10.5
	Magnesium	mg/l	23	
	Hardness	mg/l	148	
	Phosphate	mg/l	0.740	
	Calcium	mg/l	21	

Other Parameters	T.D.S.	mg/l	*372	500 mg/l
	Sulfate	mg/l	*66	250 mg/l
	Chloride	mg/l	35.53	250 mg/l
	Manganese	mg/l	*<.030	0.05 mg/l
	Sodium	mg/l	13.33	
	Iron	mg/l	*<.080	0.3 mg/l
	Alkalinity	mg/l	78	

Secondary parameters are chemicals that are not health related but are aesthetic guidelines for drinking water.

NTU = nephelometric turbidity units

mg/l = milligrams per liter = parts per million

CU = color units

The symbol "---" means that the EPA has not set a maximum level for that chemical.

N/A Test were not required by the O.E.P.A.

*Results From 2010

2014
BACTERIOLOGICAL REPORT

MONTH	NUMBER OF TESTS	TOTAL COLIFORM POSITIVE
JANUARY	72	0
FEBRUARY	72	0
MARCH	72	0
APRIL	72	0
MAY	72	0
JUNE	76	1
JULY	72	0
AUGUST	72	0
SEPTEMBER	72	0
OCTOBER	72	0
NOVEMBER	72	0
DECEMBER	72	0
TOTAL	868	1

We are required to sample at least 70 locations every month in Springfield. These are the results of those tests. We also perform bacteria tests for customer complaints, boil notices, some mobile home parks, and other public water supply contracts. Those results have not

2014

TAP WATER ANALYSIS SUMMARY

MONTH	pH	ALKALINITY Phenol	ALKALINITY Total	HARDNESS	CALCIUM	MAGNESIUM	STABILITY	NO-3	*PO4-P Residual	CHLORINE RESIDUAL Plant Free	CHLORINE RESIDUAL Plant Total	DISTRIBUTION Free	DISTRIBUTION Total
JANUARY	9.66	17	77	146	19	24	2	1.17	0.86	1.26	1.39	1.07	1.19
FEBRUARY	9.60	16	73	143	23	21	2	1.40	0.96	1.25	1.39	1.16	1.27
MARCH	9.61	16	74	147	19	24	1	1.65	0.74	1.21	1.34	1.10	1.22
APRIL	9.64	17	76	148	21	23	1	1.83	1.17	1.28	1.41	1.05	1.17
MAY	9.65	17	73	142	23	21	2	1.63	0.87	1.37	1.50	1.13	1.26
JUNE	9.64	19	81	150	22	21	2	1.50	0.00	1.34	1.48	1.12	1.25
JULY	9.63	18	79	150	21	22	2	1.63	0.76	1.30	1.43	1.06	1.18
AUGUST	9.64	17	78	148	21	22	1	1.00	0.79	1.43	1.56	1.15	1.28
SEPTEMBER	9.63	17	81	152	22	23	2	1.78	0.78	1.37	1.48	1.14	1.24
OCTOBER	9.58	17	82	152	20	27	3	1.58	0.81	1.40	1.51	1.19	1.32
NOVEMBER	9.55	18	83	153	21	23	1	1.53	0.72	1.28	1.38	1.14	1.26
DECEMBER	9.58	16	77	148	21	23	1	1.43	0.41	1.22	1.33	1.05	1.17
AVERAGES	9.62	17	78	148	21	23	2	1.51	0.74	1.31	1.43	1.11	1.23

All concentrations are reported in milligrams per liter
Sodium hexametaphosphate, Calgon unadjusted glass, used for corrosion control
Stability is plus
PO4-P = phosphate as phosphorus
*Belmont Lab Results

2014

City of Springfield

UCMR3

Analyte	JUNE		DECEMBER	
	SAMPLE MONITORING LOCATION	SAMPLE MONITORING LOCATION ID	SAMPLE MONITORING LOCATION	SAMPLE MONITORING LOCATION ID
	201 Eagle City Rd. EP001	**1985 Airpark Dr. MR001**	**201 Eagle City Rd. EP001**	**1985 Airpark Dr. MR001**
	RESULTS ug/L	RESULTS ug/L	RESULTS ug/L	RESULTS ug/L
1,1-dichloroethane	<0.03		0.034	
1,2,3-trichloropropane	<0.03		<0.03	
1,3-butadiene	<0.1		<0.1	
bromochloromethane	<0.06		<0.06	
bromomethane	<0.2		<0.2	
chlorodiflouromethane	<0.08		<0.08	
chloromethane	<0.2		<0.2	
chlorate	<20	<20	<20	<20
1,4-dioxane	<0.07		<0.07	
chromium-6	0.258	0.300	0.288	0.283
PFBS	<0.09		<0.09	
PFHpA	<0.01		<0.01	
PFHxS	<0.03		<0.03	
PFNA	<0.02		<0.02	
PFOA	<0.02		<0.02	
PFOS	<0.04		<0.04	
chromium(total)	0.362	0.396	0.411	0.412
cobalt	<1	<1	<1	<1
molybdenum	3.639	3.422	4.221	3.999
strontium	176.88	204.832	124.868	131.506
vanadium	0.246	<0.2	<0.2	0.241

WELL WATER QUALITY

January-14

SOURCE	Iron	TEMP. Celsius	Cond.	pH	Total Alkalinity	Hardness	Calcium	N.T.U.	Total Coliform	NO3
well#1	0.130	13.1	804	7.29	286	352	88	0.186	NEG	1.32
well#2	0.090	13.1	847	7.31	308	376	98	0.903	NEG	<1
well#3	0.650	12.8	803	7.38	298	360	93	0.340	NEG	1.34
well#4	OOS	OOS	OOS	OOS	OOS	OOS	OOS	OOS	OOS	OOS
well#5	0.480	12.1	712	7.32	274	322	83	1.220	NEG	1.24
well#6	0.090	12.5	666	7.37	262	320	86	0.277	NEG	1.46
well#7	0.650	12.5	680	7.54	274	338	82	0.539	NEG	1.72
well#8	0.040	11.5	680	7.59	272	336	87	0.123	POS	1.870
well#9	0.190	11.7	720	7.34	274	340	86	0.574	NEG	1.37
well#10	0.100	12.6	735	7.43	268	340	92	0.564	NEG	1.78
well#11	1.350	12.2	774	7.36	308	370	98	0.98	NEG	<1
well#12	0.060	11.9	670	7.55	272	336	88	0.267	NEG	1.99

OOS = out of service for maintenance

WELL WATER QUALITY

February-14

SOURCE	Iron	TEMP. Celsius	Cond.	pH	Total Alkalinity	Hardness	Calcium	N.T.U.	Total Coliform	NO3
well#1	1.17	13.2	780	7.23	284	346	87	1.480	NEG	1.05
well#2	0.44	13.4	829	7.24	312	372	93	0.846	NEG	<1
well#3	0.24	13.2	792	7.30	290	356	93	0.240	NEG	1.10
well#4	0.06	12.0	764	7.47	284	352	91	0.089	NEG	1.50
well#5	0.27	12.3	741	7.35	272	328	83	2.10	NEG	1.35
well#6	0.41	12.4	672	7.30	264	322	84	0.445	NEG	1.80
well#7	0.21	12.3	673	7.48	272	330	82	1.610	NEG	1.70
well#8	0.14	10.3	691	7.41	276	334	82	0.387	POS	1.95
well#9	0.14	11.1	727	7.42	276	352	85	1.030	NEG	1.60
well#10	0.21	11.5	741	7.37	276	350	90	1.45	NEG	1.95
well#11	1.12	12.2	779	7.17	298	358	99	1.12	NEG	1.05
well#12	0.08	11.3	660	7.35	268	334	86	0.087	NEG	2.00

OOS = out of service for maintenance

WELL WATER QUALITY

March-14

SOURCE	Iron	TEMP. Celsius	Cond.	pH	Total Alkalinity	Hardness	Calcium	N.T.U.	Total Coliform	NO3
well#1	OOS	OOS	OOS	OOS	OOS	OOS	OOS	OOS	OOS	OOS
well#2	0.430	13.3	856	7.23	314	386	98	0.746	NEG	<1
well#3	0.290	12.9	803	7.25	286	362	93	1.990	NEG	1.20
well#4	0.080	11.5	785	7.45	294	362	94	0.384	NEG	1.75
well#5	0.250	11.9	729	7.36	268	334	82	1.190	NEG	1.50
well#6	0.120	11.5	675	7.51	270	336	89	0.699	NEG	1.90
well#7	0.260	10.5	680	7.42	270	328	82	1.550	NEG	1.80
well#8	0.060	9.1	676	7.57	276	344	89	0.147	NEG	2.30
well#9	0.130	10.7	712	7.43	268	338	84	0.701	NEG	1.65
well#10	0.240	10.7	740	7.46	280	346	90	1.020	NEG	1.80
well#11	0.940	12.3	782	7.17	300	372	101	13.50	NEG	<1
well#12	0.110	10.5	678	7.28	284	346	94	0.634	NEG	1.95

OOS = out of service for maintenance

WELL WATER QUALITY

April-14

SOURCE	Iron	TEMP. Celsius	Cond.	pH	Total Alkalinity	Hardness	Calcium	N.T.U.	Total Coliform	NO3
well#1	OSS	OSS	OSS	OSS	OSS	OSS	OSS	OSS	OSS	OSS
well#2	0.380	13.2	828	7.24	298	360	89	0.210	NEG	<1
well#3	0.100	12.4	825	7.31	288	356	92	0.166	NEG	<1
well#4	0.030	10.7	763	7.33	290	354	90	0.081	NEG	2.16
well#5	0.031	12.0	757	7.31	282	350	85	1.090	NEG	1.50
well#6	0.110	11.3	676	7.45	262	330	78	0.518	NEG	1.92
well#7	0.080	11.3	683	7.45	274	334	83	0.192	NEG	1.91
well#8	0.050	10.1	655	7.52	268	322	85	0.218	POS	2.03
well#9	0.100	10.6	715	7.48	270	336	84	0.136	NEG	1.46
well#10	0.530	10.4	743	7.43	276	352	89	1.240	NEG	1.52
well#11	1.240	12.5	776	7.31	308	382	99	4.24	NEG	<1
well#12	0.060	9.8	670	7.40	268	340	83	0.155	NEG	2.11

OOS = out of service for maintenance

WELL WATER QUALITY

May-14

SOURCE	Iron	TEMP. Celsius	Cond.	pH	Total Alkalinity	Hardness	Calcium	N.T.U.	Total Coliform	NO3
well#1	0.120	12.9	800	7.34	270	338	84	0.258	NEG	1.41
well#2	0.230	13.3	883	7.21	302	382	94	2.260	NEG	<1
well#3	0.280	12.0	848	7.30	294	368	92	1.470	NEG	<1
well#4	0.070	11.2	805	7.38	294	360	93	0.315	NEG	1.71
well#5	0.160	11.9	775	7.36	290	350	90	1.620	NEG	1.48
well#6	0.030	11.3	678	7.49	272	328	86	0.302	NEG	1.92
well#7	0.180	11.3	678	7.56	274	332	85	1.340	NEG	1.73
well#8	0.040	11.8	688	7.57	272	332	88	0.227	NEG	1.83
well#9	0.170	11.0	717	7.50	274	332	85	0.926	NEG	1.36
well#10	0.160	10.3	731	7.44	266	336	87	1.140	NEG	1.45
well#11	0.450	12.3	776	7.29	302	372	98	6.93	NEG	<1
well#12	0.100	10.5	671	7.45	272	340	86	0.414	NEG	1.59

OOS = out of service for maintenance

WELL WATER QUALITY

June-14

SOURCE	Iron	TEMP. Celsius	Cond.	pH	Total Alkalinity	Hardness	Calcium	N.T.U.	Total Coliform	NO3
well#1	0.160	12.1	839	7.34	288	360	92	0.170	NEG	1.40
well#2	0.060	12.5	875	728.00	312	382	106	1.270	NEG	<1
well#3	0.170	11.5	824	7.32	298	360	96	1.630	NEG	1.30
well#4	0.030	11.7	770	7.35	286	354	93	0.150	NEG	1.55
well#5	0.260	12.4	694	7.48	268	320	82	1.530	NEG	1.40
well#6	OOS	OOS	OOS	OOS	OOS	OOS	OOS	OOS	OOS	OOS
well#7	0.240	11.5	670	7.48	270	326	84	1.530	NEG	1.45
well#8	0.080	12.6	682	7.52	270	330	85	0.265	NEG	1.80
well#9	0.180	11.8	712	7.51	280	334	92	0.723	NEG	1.30
well#10	0.220	11.0	731	7.41	270	336	88	1.040	NEG	1.25
well#11	1.240	12.6	778	7.39	292	*****	100	2.76	POS	1.00
well#12	0.090	11.0	654	7.39	268	332	84	0.347	NEG	2.10

OOS = out of service for maintenance

***** = Interference

WELL WATER QUALITY

July-14

SOURCE	Iron	TEMP. Celsius	Cond.	pH	Total Alkalinity	Hardness	Calcium	N.T.U.	Total Coliform	NO3
well#1	0.150	12.4	881	7.26	296	370	93	1.360	NEG	1.53
well#2	0.310	12.9	896	7.28	304	374	94	3.320	NEG	<1
well#3	0.320	12.2	886	7.27	300	372	96	0.184	NEG	1.50
well#4	0.090	12.0	760	7.35	276	336	87	0.144	NEG	2.13
well#5	0.230	12.5	696	7.37	260	320	81	0.319	NEG	1.58
well#6	0.080	11.4	683	7.42	260	326	82	0.226	POS	1.740
well#7	0.140	12.9	695	7.44	272	324	84	1.730	NEG	1.69
well#8	0.130	14.1	709	7.51	270	328	81	0.342	NEG	2.20
well#9	0.150	13.2	739	7.45	280	336	88	1.220	NEG	1.57
well#10	0.160	12.3	753	7.49	280	352	92	1.250	NEG	1.90
well#11	0.660	2.6	837	7.27	302	388	101	1.48	POS	<1
well#12	0.110	12.5	684	7.51	266	338	86	0.246	NEG	2.55

OOS = out of service for maintenance

WELL WATER QUALITY

August-14

SOURCE	Iron	TEMP. Celsius	Cond.	pH	Total Alkalinity	Hardness	Calcium	N.T.U.	Total Coliform	NO3
well#1	0.150	12.6	858	7.30	296	360	88	1.230	NEG	1.15
well#2	0.400	12.3	917	7.26	308	382	95	0.800	NEG	<1
well#3	0.280	12.3	889	7.27	310	372	98	1.050	NEG	1.35
well#4	0.050	13.5	817	7.27	286	364	96	0.395	NEG	1.35
well#5	0.260	13.9	745	7.41	272	342	87	0.148	NEG	1.20
well#6	0.050	13.1	697	7.45	266	332	86	0.336	NEG	1.50
well#7	0.230	13.3	749	7.46	278	328	89	0.654	NEG	1.45
well#8	0.060	14.7	723	7.51	276	332	90	0.261	NEG	1.40
well#9	0.170	14.1	751	7.49	278	340	90	0.132	NEG	1.20
well#10	0.170	12.9	757	7.37	286	354	94	0.892	NEG	1.45
well#11	1.150	12.6	818	7.26	302	378	100	13.70	NEG	<1
well#12	0.030	13.2	711	7.46	270	344	86	0.155	NEG	1.60

OOS = out of service for maintenance

WELL WATER QUALITY

September-14

SOURCE	Iron	TEMP. Celsius	Cond.	pH	Total Alkalinity	Hardness	Calcium	N.T.U.	Total Coliform	NO3
well#1	0.130	12.4	856	7.53	280	348	87	0.651	POS	1.57
well#2	0.340	12.4	905	7.22	312	364	95	2.750	NEG	< 1
well#3	0.250	12.7	856	7.27	302	364	97	1.710	NEG	1.72
well#4	0.050	14.2	825	7.42	292	368	94	0.201	NEG	1.67
well#5	0.200	13.9	755	7.59	274	340	86	1.730	NEG	1.07
well#6	0.090	14.6	711	7.55	276	332	87	0.540	NEG	1.63
well#7	OOS	OOS	OOS	OOS	OOS	OOS	OOS	OOS	OOS	OOS
well#8	0.020	15.4	731	7.60	286	342	87	0.368	NEG	1.81
well#9	0.140	14.8	751	7.30	286	344	88	0.994	NEG	1.46
well#10	0.170	13.7	753	7.66	288	356	90	1.220	NEG	1.86
well#11	0.120	12.4	714	7.52	300	374	98	17.30	NEG	< 1
well#12	0.100	14.0	711	7.47	276	340	88	0.373	NEG	2.14

OOS = out of service for maintenance

WELL WATER QUALITY

October-14

	Iron	TEMP. Celsius	Cond.	pH	Total Alkalinity	Hardness	Calcium	N.T.U.	Total Coliform	NO3
well#1	0.170	13.2	829	7.20	304	358	91	0.967	NEG	1.70
well#2	0.380	12.7	849	7.30	316	370	93	0.330	NEG	<1
well#3	0.230	12.9	840	7.30	284	364	102	0.387	NEG	1.47
well#4	0.240	14.4	758	7.30	284	350	90	0.177	NEG	2.06
well#5	0.290	14.2	699	7.40	278	338	82	0.186	NEG	1.63
well#6	0.060	15.1	655	7.50	270	326	84	0.234	NEG	1.66
well#7	OOS	OOS	OOS	OOS	OOS	OOS	OOS	OOS	OOS	OOS
well#8	0.100	14.4	698	7.60	278	344	88	0.322	NEG	2.00
well#9	0.190	13.3	728	7.50	284	338	90	0.181	NEG	1.79
well#10	0.190	14.9	723	7.40	282	352	90	0.295	NEG	1.85
well#11	1.350	11.2	774	7.30	302	374	98	3.97	NEG	1.08
well#12	0.160	14.1	682	7.40	272	340	86	0.357	NEG	2.17

OOS = out of service for maintenance

WELL WATER QUALITY

November-14

SOURCE	Iron	TEMP. Celsius	Cond.	pH	Total Alkalinity	Hardness	Calcium	N.T.U.	Total Coliform	NO3
well#1	0.160	12.8	808	7.30	290	350	87	0.243	NEG	1.47
well#2	0.350	12.2	839	7.20	314	370	94	1.490	NEG	1.08
well#3	0.280	13.1	860	7.30	306	376	94	1.400	NEG	1.48
well#4	0.070	13.5	741	7.30	286	342	89	0.183	NEG	2.320
well#5	0.210	13.7	725	7.50	286	344	90	0.801	NEG	1.88
well#6	0.080	14.3	680	7.50	272	334	83	0.246	NEG	2.25
well#7	0.140	13.3	674	7.50	276	336	85	0.546	NEG	1.87
well#8	0.030	13.5	705	7.60	282	344	84	0.171	NEG	2.65
well#9	0.120	13.7	732	7.60	286	352	90	0.413	NEG	1.88
well#10	0.010	13.6	729	7.40	284	348	88	0.580	NEG	2.36
well#11	1.120	12.1	777	7.30	304	370	97	9.12	NEG	1.27
well#12	0.330	14.1	688	7.40	274	342	87	0.383	NEG	2.88

OOS = out of service for maintenance

WELL WATER QUALITY

December-14

SOURCE	Iron	TEMP. Celsius	Cond.	pH	Total Alkalinity	Hardness	Calcium	N.T.U.	Total Coliform	NO3
well#1	0.160	13.3	788	7.23	282	340	84	0.106	NEG	1.14
well#2	0.370	12.7	855	7.22	316	372	93	1.190	NEG	<1
well#3	0.270	13.5	830	7.19	296	356	93	0.526	NEG	1.48
well#4	0.100	12.0	739	7.34	284	342	85	0.142	NEG	1.77
well#5	0.280	13.6	687	7.43	272	324	82	0.317	NEG	1.73
well#6	0.180	13.7	679	7.49	272	322	82	1.010	NEG	2.00
well#7	0.170	13.5	680	7.44	278	332	84	0.146	NEG	1.65
well#8	0.070	11.5	700	7.47	278	336	83	0.257	NEG	2.02
well#9	0.320	12.8	723	7.40	280	350	87	0.264	NEG	1.92
well#10	0.190	12.7	741	7.37	284	350	87	0.709	NEG	1.67
well#11	1.220	12.1	775	7.24	302	376	98	1.19	NEG	1.02
well#12	0.160	12.8	696	7.39	274	340	86	0.114	NEG	2.68

OOS = out of service for maintenance

SPRINGFIELD, OHIO

MONITORING WELL ANALYSIS

2014

MONITORING WELL WATER QUALITY

1st half 2014

SOURCE	DATE	Temp C°	Cond.	pH	Total Alkalinity mg/l	Hardness mg/l	Calcium mg/l	NO3 mg/l	Fe mg/l	NTU
well #1	5/21/14	14.5	862	7.43	336	378	102	<1	0.02	0.058
well #2	5/16/14	8.8	797	7.22	304	416	114	1.14	0.03	0.08
well #3	5/19/14	12.4	797	7.23	310	420	108	<1	0.89	15.3
well #4	5/19/14	12.2	777	7.36	346	414	115	<1	0.38	5.16
well #5	5/20/14	11.0	763	7.04	344	412	112	2.90	0.12	0.98
well #6	5/16/14	11.8	911	7.2	302	*****	118	<1	2.8	13.1
well #7	No longer in use									
well #8	5/21/2014	11.8	739	7.27	308	376	99	7.50	0.37	0.043
well #9	5/21/2014	13.1	737	7.31	334	374	102	<1	0.13	1.19

mg/l = milligrams per liter NTU = Nephelometric Turbidity units * = interference

MONITORING WELL WATER QUALITY

2nd half 2014

SOURCE	DATE	Temp C°	Cond.	pH	Total Alkalinity mg/l	Hardness mg/l	Calcium mg/l	NO3 mg/l	Fe mg/l	NTU
well #1	11/5/14	13.8	832	7.04	340	400	98	1.07	0.04	0.072
well #2	11/5/14	13.1	828	7.02	314	430	116	<1	0.05	0.401
well #3	11/10/14	12.2	802	7.24	308	422	107	<1	3.00	1.04
well #4	11/10/14	12.9	796	7.08	360	428	112	<1	0.82	0.156
well #5	11/6/14	13.7	827	6.91	378	442	120	<1	0.33	0.25
well #6	11/5/14	13.5	912	7.05	312	406	122	<1	1.9	24.8
well #7	No longer in use									
well #8	11/10/2014	13.2	707	7.23	294	356	96	9.08	0.02	0.046
well #9	11/10/2014	12.3	737	7.33	336	360	104	<1	0.33	0.324

mg/l = milligrams per liter NTU = Nephelometric Turbidity units * = interference

2014 1st half	Contaminants	Units	Well #1 Eagle City	Well #2 Turnall	Well #3 River (D)	Well #4 River (S)	Well #5 River Rd	Well #6 Woodrow	Well #7 UVP	Well #8 St. Paris(S)	Well #9 St. Paris(D)
Arsenic, tot.	Arsenic	µg/L	BDL	BDL		BDL	BDL	BDL	OUT OF SERVICE	BDL	BDL
Cadmium, tot.	Cadmium	µg/L	BDL	BDL	BDL	BDL	BDL	BDL		BDL	BDL
Mercury, tot.	Mercury	µg/L	BDL							BDL	BDL
ICP Metals, Drinking Water	Aluminum	mg/L									
	Barium	µg/L									
	Beryllium	µg/L	BDL	BDL	BDL	BDL	BDL	BDL		BDL	BDL
	Chromium	mg/L	BDL	BDL	BDL	BDL	BDL	BDL		BDL	BDL
	Copper	mg/L									
	Iron	mg/L									
	Manganese	mg/L									
	Nickel	µg/L	BDL	BDL	BDL	BDL	BDL	BDL		BDL	BDL
	Zinc	mg/L									
Antimony, tot.	Antimony	µg/L	BDL	BDL	BDL	BDL	BDL	BDL		BDL	BDL
Lead, tot.	Lead	µg/L									
Selenium, tot.	Selenium	µg/L	BDL	BDL	BDL	BDL	BDL	BDL		0.00586	BDL
Thallium, tot.	Thallium	µg/L	BDL	BDL	BDL	BDL	BDL	BDL		BDL	BDL
Cyanide, tot.	Cyanide	mg/L	BDL	BDL	BDL	BDL	BDL	BDL		BDL	BDL
Chloride	Chloride	mg/L									
Sodium	Sodium	mg/L									
GC/MS Volatiles	Nitrobenzene	µg/L	BDL	BDL	BDL	BDL	BDL	BDL		BDL	BDL
	Dichlorodifluoromethane	µg/L	BDL	BDL	BDL	BDL	BDL	BDL		BDL	BDL
	Chloromethane	µg/L	BDL	BDL	BDL	BDL	BDL	BDL		BDL	BDL
	Vinyl chloride	µg/L	BDL	BDL	BDL	BDL	BDL	BDL		BDL	BDL
	Bromomethane	µg/L	BDL	BDL	BDL	BDL	BDL	BDL		BDL	BDL
	Chloroethane	µg/L	BDL	BDL	BDL	BDL	BDL	BDL		BDL	BDL
	Trichlorofluoromethane	µg/L	BDL	BDL	BDL	BDL	BDL	BDL		BDL	BDL
	1,1-Dichloroethene	µg/L	BDL	BDL	BDL	BDL	BDL	BDL		BDL	BDL
	Methylene chloride	µg/L	BDL	BDL	BDL	BDL	BDL	BDL		BDL	BDL
	trans-1,2-Dichloroethene	µg/L	BDL	BDL	BDL	BDL	BDL	BDL		BDL	BDL
	Methyl tert-butyl ether	µg/L	BDL	BDL	BDL	BDL	BDL	BDL		BDL	BDL
	1,1-Dichloroethane	µg/L	BDL	BDL	BDL	BDL	BDL	BDL		BDL	BDL
	cis-1,2-Dichloroethene	µg/L	BDL	BDL	BDL	BDL	BDL	BDL		BDL	BDL
	Bromochloromethane	µg/L	BDL	BDL	BDL	BDL	BDL	BDL		BDL	BDL
	Chloroform	µg/L	BDL	BDL	BDL	BDL	BDL	BDL		BDL	BDL
	2,2-Dichloropropane	µg/L	BDL	BDL	BDL	BDL	BDL	BDL		BDL	BDL
	1,2-Dichloroethane	µg/L	BDL	BDL	BDL	BDL	BDL	BDL		BDL	BDL
	1,1,1-Trichloroethane	µg/L	BDL	BDL	BDL	BDL	BDL	BDL		BDL	BDL
	1,1-Dichloropropene	µg/L	BDL	BDL	BDL	BDL	BDL	BDL		BDL	BDL
	Carbon tetrachloride	µg/L	BDL	BDL	BDL	BDL	BDL	BDL		BDL	BDL
	Benzene	µg/L	BDL	BDL	BDL	BDL	BDL	BDL		BDL	BDL
	Dibromomethane	µg/L	BDL	BDL	BDL	BDL	BDL	BDL		BDL	BDL
	1,2-Dichloropropane	µg/L	BDL	BDL	BDL	BDL	BDL	BDL		BDL	BDL
	Trichloroethene	µg/L	BDL	BDL	BDL	BDL	BDL	BDL		BDL	BDL
	Bromodichloromethane	µg/L	BDL	BDL	BDL	BDL	BDL	BDL		BDL	BDL
	cis-1,3-Dichloropropene	µg/L	BDL	BDL	BDL	BDL	BDL	BDL		BDL	BDL
	trans-1,3-Dichloropropene	µg/L	BDL	BDL	BDL	BDL	BDL	BDL		BDL	BDL
	1,1,2-Trichloroethane	µg/L	BDL	BDL	BDL	BDL	BDL	BDL		BDL	BDL
	Toluene	µg/L	BDL	BDL	BDL	BDL	BDL	BDL		BDL	BDL
	1,3-Dichloropropane	µg/L	BDL	BDL	BDL	BDL	BDL	BDL		BDL	BDL
	Dibromochloromethane	µg/L	BDL	BDL	BDL	BDL	BDL	BDL		BDL	BDL
	1,2-Dibromoethane	µg/L	BDL	BDL	BDL	BDL	BDL	BDL		BDL	BDL
	Tetrachloroethene	µg/L	BDL	BDL	BDL	BDL	BDL	BDL		BDL	BDL
	1,1,1,2-Tetrachloroethane	µg/L	BDL	BDL	BDL	BDL	BDL	BDL		BDL	BDL
	Chlorobenzene	µg/L	BDL	BDL	BDL	BDL	BDL	BDL		BDL	BDL
	Ethylbenzene	µg/L	BDL	BDL	BDL	BDL	BDL	BDL		BDL	BDL
	Bromoform	µg/L	BDL	BDL	BDL	BDL	BDL	BDL		BDL	BDL
	Styrene	µg/L	BDL	BDL	BDL	BDL	BDL	BDL		BDL	BDL
	1,1,2,2-Tetrachloroethane	µg/L	BDL	BDL	BDL	BDL	BDL	BDL		BDL	BDL
	1,2,3-Trichloropropane	µg/L	BDL	BDL	BDL	BDL	BDL	BDL		BDL	BDL
	Isopropylbenzene	µg/L	BDL	BDL	BDL	BDL	BDL	BDL		BDL	BDL
	Bromobenzene	µg/L	BDL	BDL	BDL	BDL	BDL	BDL		BDL	BDL
	n-Propylbenzene	µg/L	BDL	BDL	BDL	BDL	BDL	BDL		BDL	BDL
	2-Chlorotoluene	µg/L	BDL	BDL	BDL	BDL	BDL	BDL		BDL	BDL
	4-Chlorotoluene	µg/L	BDL	BDL	BDL	BDL	BDL	BDL		BDL	BDL
	1,3,5-Trimethylbenzene	µg/L	BDL	BDL	BDL	BDL	BDL	BDL		BDL	BDL
	tert-Butylbenzene	µg/L	BDL	BDL	BDL	BDL	BDL	BDL		BDL	BDL
	1,2,4-Trimethylbenzene	µg/L	BDL	BDL	BDL	BDL	BDL	BDL		BDL	BDL
	sec-Butylbenzene	µg/L	BDL	BDL	BDL	BDL	BDL	BDL		BDL	BDL
	1,3-Dichlorobenzene	µg/L	BDL	BDL	BDL	BDL	BDL	BDL		BDL	BDL
	1,4-Dichlorobenzene	µg/L	BDL	BDL	BDL	BDL	BDL	BDL		BDL	BDL
	4-Isopropyltoluene	µg/L	BDL	BDL	BDL	BDL	BDL	BDL		BDL	BDL
	1,2-Dichlorobenzene	µg/L	BDL	BDL	BDL	BDL	BDL	BDL		BDL	BDL
	n-Butylbenzene	µg/L	BDL	BDL	BDL	BDL	BDL	BDL		BDL	BDL
	Xylenes (total)	µg/L	BDL	BDL	BDL	BDL	BDL	BDL		BDL	BDL
	1,2,4-Trichlorobenzene	µg/L	BDL	BDL	BDL	BDL	BDL	BDL		BDL	BDL
	Naphthalene	µg/L	BDL	BDL	BDL	BDL	BDL	BDL		BDL	BDL
	Hexachlorobutadiene	µg/L	BDL	BDL	BDL	BDL	BDL	BDL		BDL	BDL
	1,2,3-Trichlorobenzene	µg/L	BDL	BDL	BDL	BDL	BDL	BDL		BDL	BDL
	Surr: 4-Bromofluorobenzene	%REC	94.9	93.6	97.4	96.3	95.6	93.5		94	93.5
	Surr: 1,2-Dichlorobenzene-d4	%REC	94.7	93.8	96.2	95.4	94	91.8		93.8	95.6
Fluoride	Fluoride	mg/L	0.460	0.435	0.233	BDL	0.221	0.333		0.207	0.204
SOCs	Alachlor	µg/L	BDL	BDL	ND	ND	BDL	BDL		BDL	BDL
	Atrazine	µg/L	BDL	BDL	ND	ND	BDL	BDL		BDL	BDL
	Simazine	µg/L	BDL	BDL	ND	ND	BDL	BDL		BDL	BDL
	Metolachlor	µg/L									
	Metribuzin	µg/L									
	Butachlor	µg/L									
	1,3-Dimethyl-2-nitrobenzene	%REC									
	Di (2-ethylhexyl) adipate	µg/L									
	Di (2-ethylhexyl) phthalate	µg/L									
	Tripheny phosphate	%REC									
	Perylene-d12	%REC									
	Benzo(a)pyrene	µg/L									

BDL = Below Detectable Limits
ND = Not Detected
ug/L = Parts Per Billion
mg/L = Parts Per Million
Surr: 4-Bromofluorobenzene > Lab
Surr: 1,2-Dichlorobenzene-d4 QC

2014 2nd half	Contaminants	Units	Well #1 Eagle City	Well #2 Turnall	Well #3 River (D)	Well #4 River (S)	Well #5 River Rd	Well #6 Woodrow	Well #7 UVP	Well #8 St. Paris(S)	Well #9 St. Paris(D)
Arsenic, tot.	Arsenic	µg/L	BDL	BDL	0.0048	BDL	BDL	BDL	OUT OF SERVICE	BDL	BDL
Cadmium, tot.	Cadmium	µg/L	BDL	BDL	BDL	BDL	BDL	BDL		BDL	BDL
Mercury, tot.	Mercury	µg/L	BDL	BDL	BDL	BDL	BDL	BDL		BDL	BDL
ICP Metals, Drinking Water	Aluminum	mg/L									
	Barium	µg/L	0.336	0.0636	0.0613	0.136	0.153	0.13		0.195	0.213
	Beryllium	µg/L	BDL	BDL	BDL	BDL	BDL	BDL		BDL	BDL
	Chromium	mg/L	BDL	BDL	BDL	BDL	BDL	BDL		BDL	BDL
	Copper	mg/L									
	Iron	mg/L									
	Manganese	mg/L									
	Nickel	µg/L	BDL	0.007	BDL	BDL	BDL	BDL		BDL	BDL
	Zinc	mg/L									
Antimony, tot.	Antimony	µg/L	BDL	BDL	BDL	BDL	BDL	BDL		BDL	BDL
Lead, tot.	Lead	µg/L									
Selenium, tot.	Selenium	µg/L	BDL	BDL	BDL	BDL	BDL	BDL		BDL	BDL
Thallium, tot.	Thallium	µg/L	BDL	0.0014	BDL	BDL	BDL	BDL		BDL	BDL
Cyanide, tot.	Cyanide	mg/L	BDL	BDL	BDL	BDL	BDL	BDL		BDL	BDL
Chloride	Chloride	mg/L	45.9	20.1	24.4	20.1	13.5	69.9		14.9	15.6
Sodium	Sodium	mg/L	19.9	8.81	4.48	4.15	8.42	30.1		6.44	8.63
GC/MS Volatiles	Nitrobenzene	µg/L									
	Dichlorodifluoromethane	µg/L	BDL	BDL	BDL	BDL	BDL	BDL		BDL	BDL
	Chloromethane	µg/L	BDL	BDL	BDL	BDL	BDL	BDL		BDL	BDL
	Vinyl chloride	µg/L	BDL	BDL	BDL	BDL	BDL	BDL		BDL	BDL
	Bromomethane	µg/L	BDL	BDL	BDL	BDL	BDL	BDL		BDL	BDL
	Chloroethane	µg/L	BDL	BDL	BDL	BDL	BDL	BDL		BDL	BDL
	Trichlorofluoromethane	µg/L	BDL	BDL	BDL	BDL	BDL	BDL		BDL	BDL
	1,1-Dichloroethene	µg/L	BDL	BDL	BDL	BDL	BDL	BDL		BDL	BDL
	Methylene chloride	µg/L	BDL	BDL	BDL	BDL	BDL	BDL		BDL	BDL
	trans-1,2-Dichloroethene	µg/L	BDL	BDL	BDL	BDL	BDL	BDL		BDL	BDL
	Methyl tert-butyl ether	µg/L	BDL	BDL	BDL	BDL	BDL	BDL		BDL	BDL
	1,1-Dichloroethane	µg/L	BDL	BDL	BDL	BDL	BDL	BDL		BDL	BDL
	cis-1,2-Dichloroethene	µg/L	BDL	BDL	BDL	BDL	BDL	BDL		BDL	BDL
	Bromochloromethane	µg/L	BDL	BDL	BDL	BDL	BDL	BDL		BDL	BDL
	Chloroform	µg/L	BDL	BDL	BDL	BDL	BDL	BDL		BDL	BDL
	2,2-Dichloropropane	µg/L	BDL	BDL	BDL	BDL	BDL	BDL		BDL	BDL
	1,2-Dichloroethane	µg/L	BDL	BDL	BDL	BDL	BDL	BDL		BDL	BDL
	1,1,1-Trichloroethane	µg/L	BDL	BDL	BDL	BDL	BDL	BDL		BDL	BDL
	1,1-Dichloropropene	µg/L	BDL	BDL	BDL	BDL	BDL	BDL		BDL	BDL
	Carbon tetrachloride	µg/L	BDL	BDL	BDL	BDL	BDL	BDL		BDL	BDL
	Benzene	µg/L	BDL	BDL	BDL	BDL	BDL	BDL		BDL	BDL
	Dibromomethane	µg/L	BDL	BDL	BDL	BDL	BDL	BDL		BDL	BDL
	1,2-Dichloropropane	µg/L	BDL	BDL	BDL	BDL	BDL	BDL		BDL	BDL
	Trichloroethene	µg/L	BDL	BDL	BDL	BDL	BDL	BDL		BDL	BDL
	Bromodichloromethane	µg/L	BDL	BDL	BDL	BDL	BDL	BDL		BDL	BDL
	cis-1,3-Dichloropropene	µg/L	BDL	BDL	BDL	BDL	BDL	BDL		BDL	BDL
	trans-1,3-Dichloropropene	µg/L	BDL	BDL	BDL	BDL	BDL	BDL		BDL	BDL
	1,1,2-Trichloroethane	µg/L	BDL	BDL	BDL	BDL	BDL	BDL		BDL	BDL
	Toluene	µg/L	BDL	BDL	BDL	BDL	BDL	BDL		BDL	BDL
	1,3-Dichloropropane	µg/L	BDL	BDL	BDL	BDL	BDL	BDL		BDL	BDL
	Dibromochloromethane	µg/L	BDL	BDL	BDL	BDL	BDL	BDL		BDL	BDL
	1,2-Dibromoethane	µg/L	BDL	BDL	BDL	BDL	BDL	BDL		BDL	BDL
	Tetrachloroethene	µg/L	BDL	BDL	BDL	BDL	BDL	BDL		BDL	BDL
	1,1,1,2-Tetrachloroethane	µg/L	BDL	BDL	BDL	BDL	BDL	BDL		BDL	BDL
	Chlorobenzene	µg/L	BDL	BDL	BDL	BDL	BDL	BDL		BDL	BDL
	Ethylbenzene	µg/L	BDL	BDL	BDL	BDL	BDL	BDL		BDL	BDL
	Bromoform	µg/L	BDL	BDL	BDL	BDL	BDL	BDL		BDL	BDL
	Styrene	µg/L	BDL	BDL	BDL	BDL	BDL	BDL		BDL	BDL
	1,1,2,2-Tetrachloroethane	µg/L	BDL	BDL	BDL	BDL	BDL	BDL		BDL	BDL
	1,2,3-Trichloropropane	µg/L	BDL	BDL	BDL	BDL	BDL	BDL		BDL	BDL
	Isopropylbenzene	µg/L	BDL	BDL	BDL	BDL	BDL	BDL		BDL	BDL
	Bromobenzene	µg/L	BDL	BDL	BDL	BDL	BDL	BDL		BDL	BDL
	n-Propylbenzene	µg/L	BDL	BDL	BDL	BDL	BDL	BDL		BDL	BDL
	2-Chlorotoluene	µg/L	BDL	BDL	BDL	BDL	BDL	BDL		BDL	BDL
	4-Chlorotoluene	µg/L	BDL	BDL	BDL	BDL	BDL	BDL		BDL	BDL
	1,3,5-Trimethylbenzene	µg/L	BDL	BDL	BDL	BDL	BDL	BDL		BDL	BDL
	tert-Butylbenzene	µg/L	BDL	BDL	BDL	BDL	BDL	BDL		BDL	BDL
	1,2,4-Trimethylbenzene	µg/L	BDL	BDL	BDL	BDL	BDL	BDL		BDL	BDL
	sec-Butylbenzene	µg/L	BDL	BDL	BDL	BDL	BDL	BDL		BDL	BDL
	1,3-Dichlorobenzene	µg/L	BDL	BDL	BDL	BDL	BDL	BDL		BDL	BDL
	1,4-Dichlorobenzene	µg/L	BDL	BDL	BDL	BDL	BDL	BDL		BDL	BDL
	4-Isopropyltoluene	µg/L	BDL	BDL	BDL	BDL	BDL	BDL		BDL	BDL
	1,2-Dichlorobenzene	µg/L	BDL	BDL	BDL	BDL	BDL	BDL		BDL	BDL
	n-Butylbenzene	µg/L	BDL	BDL	BDL	BDL	BDL	BDL		BDL	BDL
	Xylenes (total)	µg/L	BDL	BDL	BDL	BDL	BDL	BDL		BDL	BDL
	1,2,4-Trichlorobenzene	µg/L	BDL	BDL	BDL	BDL	BDL	BDL		BDL	BDL
	Naphthalene	µg/L	BDL	BDL	BDL	BDL	BDL	BDL		BDL	BDL
	Hexachlorobutadiene	µg/L	BDL	BDL	BDL	BDL	BDL	BDL		BDL	BDL
	1,2,3-Trichlorobenzene	µg/L	BDL	BDL	BDL	BDL	BDL	BDL		BDL	BDL
	Surr: 4-Bromofluorobenzene	%REC	104	108	90.9	91.1	91	103		90.3	91.2
	Surr: 1,2-Dichlorobenzene-d4	%REC	99.9	102	84.2	85.8	86.4	97.8		86	85.8
Fluoride	Fluoride	mg/L	0.460	0.415	0.285	0.211	0.245	0.31		BDL	0.208
SOCs	Alachlor	µg/L	ND	ND	ND	ND	ND	ND		ND	ND
	Atrazine	µg/L	ND	ND	ND	ND	ND	ND		ND	ND
	Simazine	µg/L	ND	ND	ND	ND	ND	ND		ND	ND
	Metolachlor	µg/L									
	Metribuzin	µg/L									
	Butachlor	µg/L									
	1,3-Dimethyl-2-nitrobenzene	%REC									
	Di (2-ethylhexyl) adipate	µg/L									
	Di (2-ethylhexyl) phthalate	µg/L									
	Tripheny phosphate	%REC									
	Perylene-d12	%REC									
	Benzo(a)pyrene	µg/L									

BDL = Below Detectable Limits
ND = Not Detected
ug/L = Parts Per Billion
mg/L = Parts Per Million
Surr: 4-Bromofluorobenzene > Lab
Surr: 1,2-Dichlorobenzene-d4 QC

MAINTENANCE SUMMARY
2014

The Water Treatment Plant (WTP) maintenance staff perform a broad range of duties in their efforts to ensure proper upkeep and operation of the water treatment facilities. Responsibilities include maintenance and repair of all process equipment, pumps, motors, instrumentation, electrical components, grounds, buildings, elevated tanks, and booster stations.

Staffing for maintenance operations includes three Maintenance Mechanic II's, two Electrical Technician II's, and four Relief / Swing Shift Operators when not on shift assignment. An annual seasonal position is used primarily for grounds upkeep, which includes approximately 61 acres of mowing and weed control. This year, Mr. Jerry Yates, Plant Maintenance Mechanic II, resigned to pursue a private business venture, and we wish him great success on his endeavor.

In 2014 with the help of Heapy Engineering, the Water Plant completed an extensive Arc Flash Analysis. The analysis included with it: identification and labeling of potential hazards in order to warn personnel of potential hazards associated with these potential points of contact, and Arc Flash Training, in which personnel are instructed how to properly outfit and protect themselves from injury in the event that an electric circuit which is being worked on were to have electrical energy available to it and arc, or bridge the gap between two conductors or a conductor and ground.

A large task undertaken this year was the replacement of two underground valves original to the Plant in 1958, located within the area outside the Filter Building on the two main 36-inch concrete transmission lines. These valves are the first valves to the City as water from the plant makes its way to the homes of consumers. With the replacement of these valves it was necessary to hire Culy Contracting based in Indiana to tap into the transmission lines by means of cutting through concrete and steel linings, and then temporarily plug these lines. Each line was completed individually at a separate time so as to not interrupt service to the City, and facilitate replacement of the two cone valves. This process was a huge success and the maintenance staff did an amazing job planning and coordinating the valve replacement.

In preparation for the cold and in response to numerous repairs having been needed the prior year, our Electrical Technicians completed a project that upgraded our heat tape system which is used to keep lubrication and drain lines flowing on the wells during the winter months.

In addition to annual basin cleaning and maintenance we have begun a program which will help to restore the integrity of the coating system for the pipes within our Filter Building. Often overlooked, the paint, or coating system is the primary defense against corrosion of these lines and is crucial to maintaining and prolonging the life of these systems.

The Water Plant also hired Integrity Aquatic; a company that specializes in underwater construction, maintenance, and inspections, to inspect the 5 million gallon underground reservoir / clearwell located on premises. With the inspection of the clearwell it was found that a line related to the instrumentation which measures the depth of the water contained within the clearwell was in need of repair and this repair was then able to be completed underwater by the dive team without the need to interrupt operations.

Thanks to the help from the City's Facilities department, the Water Plant replaced the chiller unit installed at the Chemical Building, and also replaced with a high efficiency unit, the heater in the garage.

Other projects involving remote sites included the replacement of the fence surrounding the 2 million gallon elevated tank located off of N. Florence St. to maintain the security of the facility, and Pressure washing all four of the Elevated Tanks to help maintain and prolong the life of the coating systems.

Continuing in 2015 with daily maintenance duties which keep our Plant in top operating condition, the Water Plant looks forward to the completion of installation of a 2.25 megawatt backup generator that will enable the plant to continue to provide service to consumers should there be an emergency that would interrupt power for an extended period of time from our electric provider. As with any aging infrastructure we also look forward to making repairs to the aging basins in order to continue to provide the best possible service to the City's consumers.

Our appreciation continues to go to the plant staff for their continuing effort and cooperation in maintaining Springfield's Water Treatment Plant as we endeavor to provide the safest and highest quality drinking water possible to our consumers.

Thank you,

Larry Marks
WTP Assistant Superintendent