WELL #3

WATER TOWER BOOSTER PUMP

2009

WATER PRODUCTION

REPORT

February 3, 2010

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I. INTRODUCTION/BRIEF HISTORY

This report provides a summary of the operations of the city of Oakwood water system for the year 2009. It includes the following items:

- Water Pumpage Statistics
- Water Monitoring and Testing (OEPA Compliance)
- Water System Maintenance
- Budget Summary

Brief History

Prior to 1954 the city of Oakwood purchased all of its water from outside sources, primarily the city of Dayton. At that time the Ohio Department of Health regulated public water systems and the rules and regulations were fairly limited, thus the price of water was relatively low. In 1954 Oakwood drilled two wells at 120 Springhouse Road. This site became known as the "Springhouse Wellfield." This was the beginning of Oakwood's quest to become water independent.

From 1954 to 1965 water was pumped from these two wells. This proved so successful that three new wells (Wells #1, 2 & 3) were drilled to a greater depth so as to sustain heavier pumping. The original two wells were abandoned. This increased water production and decreased Oakwood's reliance on Dayton water. The water was chlorinated to ensure that it was free from bacteria.

In 1978 a second well field was developed at the south end of Firwood Drive off Irving Avenue in Dayton. It was referred to as the "Firwood Wellfield." Between 1978 and 1988 three production wells (Wells #4, 5 & 6) were drilled at this location. The groundwater resources in this area proved to be abundant. In 1985 Oakwood purchased land on the north side of Irving Avenue to build a soccer field. In 1986 Well #7 was drilled adjacent to the soccer field. This site became known as the "Soccer Field Wellfield".

Prior to using water from the Firwood Wellfield, the Ohio EPA required the City to construct an Iron and Manganese Removal Plant due to elevated levels of iron and manganese in Well #5. The plant was constructed in 1980 at the 210 Shafor Boulevard Service Yard. This plant also housed the chlorination system for Wells #4, 5, 6 & 7.

In 1987 Oakwood decided to explore the possibility of softening the City water. In 1988 plans were completed for the plant at 210 Shafor. The plant was constructed in 1989. In 1991 plans were completed for the plant at 120 Springhouse and the plant was built in 1992. Both water softening plants use the "Ion Exchange" softening process. This is the same process used in most private home water softening units. The softening system removes hardness, primarily calcium and magnesium. Periodically the softening units require backwashing and regenerating of the resin bed filters.

In 2004 Well #8 was drilled in the Firwood Wellfield and placed into service. This well was needed to further enhance Oakwood's water independence.

Water Pumpage Statistics

The enclosed reports and tables (Sections II & III) provide monthly and yearly totals of the city of Oakwood's 2009 water pumpage. It includes monthly and yearly totals for all wells, the Shafor plant, Springhouse plant and water purchased from outside sources (i.e., city of Dayton and Montgomery County). Throughout the entire 2009 year no water was purchased for other than valve testing purposes. No fire response in Oakwood required the purchase of Dayton or County water in 2009.

II. Water Monitoring and Testing (OEPA Compliance)

The following samples were collected at the entry points of the water system at 120 Springhouse and 210 Shafor Water Treatment Plants as required by the Ohio EPA in 2009:

- Nitrates, collected June 10, 2009
- Volatile Organic Chemicals (VOC's), collected June 10, 2009
- Inorganics Compounds, collected June 10, 2009
- Radiologicals, collected June 10, 2009

The following samples were collected at Far Hills and Ridgeway in the distribution system as required by the Ohio EPA in 2009:

- Total Haloacetic Acids (HAA5), collected July 15, 2009
- Total Trihalomethanes (TTHM), collected July 15, 2009

All samples tested under the 2009 Ohio EPA Chemical Monitoring schedule were in compliance of the Safe Drinking Water Act. Table 1 on pages 5 - 7 compares Oakwood's water with EPA standards. All results are from the most recent sample taken. The monthly routine sampling consists of the following tests:

- ***10 bacteriological samples per month from Distribution System***
- ***2 sodium samples per month from Distribution System***
- ***1 sodium sample per month from each Plant***
- ***1 iron and manganese sample per week from each Plant***
- ***Hardness samples daily from each Plant and Distribution System***
- ***free and total chlorine samples daily from each Plant as well as from the Distribution System.***
- ***1 chloride and pH sample per month from each Plant (NPDES Stormwater Permit requirement)***

All 120 bacteriological samples tested negative for coliform bacteria.
Raw water sodium averaged 77 mg/L at 210 Shafor, down from 81 mg/L in 2008 and 116 mg/L at 120 Springhouse, down from 140 mg/L in 2008.
System water sodium averaged 240 mg/L, down from 244 mg/L in 2008.
Iron at both plant effluents averaged <0.1 mg/L.
Manganese at both plant effluents averaged <0.01 mg/L.

Table 1

CONTAMINANT	OAKWOOD'S WATER		OEPA	DATE
	Shafor	Springhouse	MCL	COLLECTED
VOLATILE ORGANIC COMPOUNDS	Ug/L	ug/L	ug/L	
Benzene	<0.5	<0.5	5.0	6/10/09
Carbon tetrachloride	<0.5	<0.5	5.0	6/10/09
1,1-Dichloroethane	<0.5	<0.5	7.0	6/10/09
1,2-Dichloroethane	<0.5	<0.5	5.0	6/10/09
cis-1,2-Dichloroethene	<0.5	<0.5	70.0	6/10/09
Dichloromethane	<0.5	<0.5	5.0	6/10/09
1,2-Dichloropropane	<0.5	<0.5	5.0	6/10/09
Ethylbenzene	<0.5	<0.5	700.0	6/10/09
Styrene	<0.5	<0.5	100.0	6/10/09
Toluene	<0.5	<0.5	1000.0	6/10/09
1,1,1-Trichloroethane	<0.5	<0.5	200.0	6/10/09
Tetrachloroethene	<0.5	<0.5	5.0	6/10/09
1,2,4-Trichlorobenzene	<0.5	<0.5	70.0	6/10/09
Trichloroethene	<0.5	<0.5	5.0	6/10/09
1,1,2-Trichloroethane	<0.5	<0.5	5.0	6/10/09
Vinyl chloride	<0.5	<0.5	2.0	6/10/09
Xylenes, Total	<0.5	<0.5	10000.0	6/10/09
Bromodichloromethane	<0.5	<0.5	TTHM*	6/10/09
Bromoform	<0.5	0.72	TTHM	6/10/09
Chloroform	0.58	<0.5	TTHM	6/10/09
Dibromochloromethane	<0.5	0.76	TTHM	6/10/09
Bromobenzene	<0.5	<0.5	NR**	6/10/09
Bromochloromethane	<0.5	<0.5	NR	6/10/09
Bromomethane	<0.5	<0.5	NR	6/10/09
n-Butylbenzene	<0.5	<0.5	NR	6/10/09
sec-Butylbenzene	<0.5	<0.5	NR	6/10/09
tert-Butylbenzene	<0.5	<0.5	NR	6/10/09
Chlorobenzene	<0.5	<0.5	NR	6/10/09
Chloroethane	<0.5	<0.5	NR	6/10/09
Chloromethane	<0.5	<0.5	NR	6/10/09
2-Chlorotoluene	<0.5	<0.5	NR	6/10/09
4-Chlorotoluene	<0.5	<0.5	NR	6/10/09
Dibromomethane	<0.5	<0.5	NR	6/10/09
1,2-Dichlorobenzene	<0.5	<0.5	NR	6/10/09
1,3-Dichlorobenzene	<0.5	<0.5	NR	6/10/09
1,4-Dichlorobenzene	<0.5	<0.5	NR	6/10/09
Dichlorodifluoromethane	<0.5	<0.5	NR	6/10/09
1,1-Dichloroethene	<0.5	<0.5	NR	6/10/09
trans-1,2-Dichloroethene	<0.5	<0.5	NR	6/10/09
1,3-Dichloropropane	<0.5	<0.5	NR	6/10/09
2,2-Dichloropropane	<0.5	<0.5	NR	6/10/09
1,1-Dichloropropene	<0.5	<0.5	NR	6/10/09
1,3-Dichloropropene	<0.5	<0.5	NR	6/10/09
Hexachlorobutadiene	<0.5	<0.5	NR	6/10/09
Isopropylbenzene	<0.5	<0.5	NR	6/10/09
Naphthalene	<0.5	<0.5	NR	6/10/09

* TTHM: Trihalomethanes regulated separately as Disinfection Byproducts

** NR: Not Regulated

Table 1 (cont.)

CONTAMINANT	OAKWOOD'S WATER		OEPA MCL	DATE COLLECTED
	Shafor	Springhouse		
SYNTHETIC ORGANIC CHEMICALS	ug/L	ug/L	ug/L	
Alachlor	<0.2	<0.2	2.0	6/18/08
Aldicarb	<0.5	<0.5	7.0	8/17/05
Aldicarb sulfone	<0.5	<0.5	7.0	8/17/05
Aldicarb Sulfoxide	<0.5	<0.5	7.0	8/17/05
Atrazine	<0.3	<0.3	3.0	6/18/08
Benzo(a)pyrene	<0.05	<0.05	0.2	8/17/05
Carbofuran	<4	<4	40.0	8/17/05
Chlordane (total)	<0.4	<0.4	2.0	8/17/05
Dalapon	<20	<20	200.0	8/17/05
Dibromochloropropane	<0.05	<0.05	0.2	8/17/05
2,4-D	<7.0	<7.0	70.0	8/17/05
Dinoseb	<1.0	<1.0	7.0	8/17/05
Diquat	<2.0	<2.0	20.0	8/17/05
Endothall	<20	<20	100.0	8/17/05
Endrin	<0.2	<0.2	2.0	8/17/05
Ethylene Dibromide	<0.02	<0.02	0.05	8/17/05
Glyphosate	<70	<70	700.0	8/17/05
Heptachlor	<0.1	<0.1	0.4	8/17/05
Heptachlor Epoxide	<0.05	<0.05	0.2	8/17/05
Hexachlorobenzene	<0.25	<0.25	1.0	8/17/05
Hexachlorocyclopentadiene	<5	<5	50.0	8/17/05
Lindane	<0.04	<0.04	0.2	8/17/05
Methoxychlor	<4	<4	40.0	8/17/05
Oxamyl (Vydate)	<20	<20	200.0	8/17/05
Pentachlorophenol	<0.2	<0.2	1.0	8/17/05
Piclorm	<50	<50	500.0	8/17/05
PCB's (total)	<0.1	<0.1	0.5	8/17/05
Simazine	<0.4	<0.4	4.0	6/18/08
Toxaphene	<1	<1	3.0	8/17/05
2,4,5-TP (Silvex)	<5.0	<5.0	50.0	8/17/05
Aldrin	<30	<30	NR**	8/17/05
Butachlor	<5	<5	NR	8/17/05
Carbaryl	<10	<10	NR	8/17/05
Dicamba	<10	<10	NR	8/17/05
Dieldrin	<20	<20	NR	8/17/05
Di(2-ethylhexyl) adipate	<40	<40	NR	8/17/05
Di(2-ethylhexyl) phthalate	<1	<1	NR	8/17/05
3-Hydrooxycarbofuran	<10	<10	NR	8/17/05
Methomyl	<50	<50	NR	8/17/05
Metolachlor	<5	<5	NR	8/17/05
Metribuzin	<2	<2	NR	8/17/05
Propachlor	<5	<5	NR	8/17/05

** NR: Not Regulated

Table 1 (cont.)

CONTAMINANT	OAKWOOD'S WATER		OEPA MCL	DATE COLLECTED
	Shafor	Springhouse		
INORGANIC CONTAMINENTS	ug/L	ug/L	ug/L	
Antimony, total	<4.0	<4.0	6.0	6/10/09
Barium, total	<300	<300	2.0	6/10/09
Beryllium, total	<1.0	<1.0	4.0	6/10/09
Cadmium, total	<1.0	<1.0	5.0	6/10/09
Chromium, total	<10.0	<10.0	100.0	6/10/09
Cyanide, total	<5.0	<5.0	200.0	6/10/09
Fluoride,total	0.21	<0.20	4.0	6/10/09
Mercury, total	<0.5	<0.5	2.0	6/10/09
Nickel, total	<20.0	<20.0		6/10/09
Selenium, total	<5.0	<5.0	50.0	6/10/09
Thallium, total	<1.5	<1.5	2.0	6/10/09

CONTAMINANT	OAKWOOD'S WATER		OEPA MCL	DATE COLLECTED
	Far Hills	Ridgeway		
TOTAL TRIHALOMETHANES	ug/L	ug/L	ug/L	
Chloroform	0.66	0.55		7/15/09
Bromoform	0.82	0.77		7/15/09
Bromodichloromethane	0.76	0.67		7/15/09
Dibromochloromethane	1.71	1.57		7/15/09
Total TTHM's	3.95	3.56	80.0	

CONTAMINANT	OAKWOOD'S WATER		OEPA MCL	DATE COLLECTED
	Far Hills	Ridgeway		
FIVE HALOACETIC ACIDS	ug/L	ug/L	ug/L	
Dibromoacetic Acid	1.542	<1.00		7/15/09
Dichloroacetic Acid	<1.00	<1.00		7/15/09
Monobromoacetic Acid	<1.00	<1.00		7/15/09
Monochloroacetic Acid	<2.00	<2.00		7/15/09
Trichloroacetic Acid	<1.00	<1.00		7/15/09
Total HAA5's	1.61	<1.00	60.00	

CONTAMINANT	OAKWOOD'S WATER		OEPA MCL	DATE COLLECTED
	Shafor	Springhouse		
MISCELLANEOUS	Mg/L	mg/L	mg/L	
Arsenic	<0.003	<0.003	0.01	6/10/09
Nitrate	1.49	1.54	10	6/10/09
Sulfate	52	63	250	7/12/95
Asbestos	<0.0002	<0.0002		7/5/94

CONTAMINANT	OAKWOOD'S WATER		OEPA MCL	DATE COLLECTED
	Shafor	Springhouse		
RADIOLOGICAL	Pci/L	pci/L	pci/L	
Alpha, total	<3	<3	15	6/10/09
Radium-228	<1.0	1.21	5	6/10/09
Beta, total	<4.0	<4.0	4	8/14/03

System water hardness at 210 Shafor averaged 200 mg/L, down from 204 mg/L in 2008 and 195 mg/L at 120 Springhouse, down from 198 mg/L in 2008.

Oakwood's water plants reduced the hardness level by 60.4% on the average while the sodium content of the water increased by 221% on the average during 2009.

III. WELL PUMPAGE REPORT AND CHARTS

The eight production wells produced 444,274,000 gallons of water in 2009, which is an average of 1,217,000 gallons per day. In 2008, eight production wells produced 446,675,000 gallons of water. This represents a 0.6% decrease in raw water produced in 2009. The 2009 maximum day well production was on June 6 at 2,176,000 gallons. It is common that our highest usage occurs during the summer months when many property owners irrigate their lawns. The 2009 minimum day well production was on November 11 at 868,000 gallons. The minimum day production normally occurs in the middle of winter.

Out of the 444,274,000 gallons pumped in 2009, 34,197,000 gallons were used to either backwash filters or regenerate the softening units at 210 Shafor and 120 Springhouse. This represents 7.7% of the total water pumped for the year, a 1% increase from 2008.

Charts 1 and 2 below show the 2009 water table draw downs compared to 2006, 2007 and 2008.

CHART 1

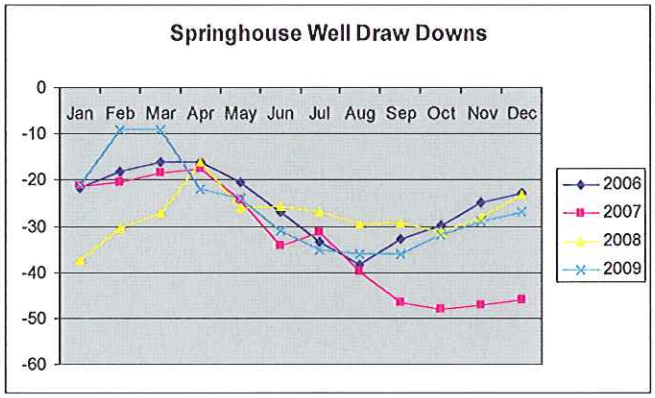
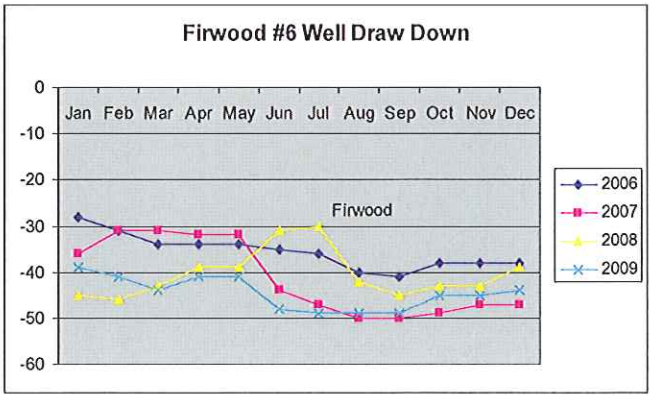


CHART 2



The aquifer water levels in the Wells were heavily stressed in 2007 due to the extreme hot and dry weather. In the Springhouse wells the water level recovered back to a more normal level in April of 2008. As you can see in Chart #1 above the water level stayed higher than normal in the summer months and ended the year at the 2006 level. Well #6 at Firwood took a little longer to recover in 2008 than the Springhouse wells but ended the year at the 2006 levels. (See Chart #2 above) The rest of the wells at Firwood (Wells #4, #7 and #8) had similar results to #6 well.

Table 2 on the next page shows a comparison of total production in gallons per well per month for 2008 and 2009.

TABLE 2

Oakwood, Ohio

CITY OF OAKWOOD WATER DEPARTMENT
MONTHLY WELL PUMPAGE RECORD

YEAR: 2009
MONTH: December

MONTH	WELL #1		WELL #2		WELL #3		WELL #4		WELL #5		WELL #6		WELL #7		WELL #8		MONTHLY TOTAL		ANNUAL TOTAL	
	2008	2009	2008	2009	2008	2009	2008	2009	2008	2009	2008	2009	2008	2009	2008	2009	2008	2009	2008	2009
JANUARY	12.146	9.095	0.000	0.681	0.019	1.128	17.732	10.235	0.000	0.000	2.034	4.439	0.000	3.418	0.007	1.900	31.938	30.896	31.938	30.896
FEBRUARY	10.433	4.794	0.000	0.000	0.000	0.000	17.588	16.246	0.000	0.000	1.114	0.504	0.002	4.668	0.000	1.580	29.137	27.792	61.075	58.688
MARCH	14.468	8.951	0.195	0.000	1.174	0.028	5.841	15.932	0.000	0.000	7.403	3.327	0.016	1.899	1.577	1.305	30.674	31.442	91.749	90.130
APRIL	5.828	16.289	0.112	0.028	0.807	1.546	16.457	11.490	0.000	0.000	5.667	0.023	3.055	2.622	1.328	1.160	33.254	33.158	125.003	123.288
MAY	16.956	15.956	0.000	0.114	1.410	3.658	14.439	14.380	0.000	0.000	2.586	5.649	1.071	2.158	0.484	2.409	36.946	44.324	161.949	167.612
JUNE	17.325	18.153	0.000	0.221	2.337	3.938	0.804	8.645	0.000	0.000	13.981	14.000	2.045	0.696	0.000	2.785	36.492	48.438	198.441	216.050
JULY	19.031	19.089	0.187	0.043	3.651	3.878	6.877	8.131	0.000	0.000	14.968	1.991	0.596	0.628	1.218	15.585	46.528	49.345	244.969	265.395
AUGUST	17.254	18.876	0.655	0.034	4.810	2.910	17.726	6.955	0.000	0.000	5.287	1.200	5.589	0.196	5.823	15.374	57.144	45.545	302.113	310.940
SEPTEMBER	17.296	16.651	0.923	0.000	3.255	2.039	4.878	4.690	0.000	0.000	9.268	0.631	4.621	0.405	2.735	15.317	42.976	39.733	345.089	350.673
OCTOBER	20.209	13.803	0.091	0.004	0.979	1.073	5.794	0.034	0.000	0.000	9.422	5.990	2.212	1.178	1.662	10.129	40.369	32.211	385.458	382.884
NOVEMBER	17.529	12.413	0.001	0.000	0.089	1.124	4.679	0.104	0.000	0.000	7.786	14.762	0.806	1.217	0.000	0.015	30.890	29.635	416.348	412.519
DECEMBER	13.794	12.982	0.382	0.136	0.665	0.756	14.912	1.278	0.000	0.000	0.002	14.877	0.572	1.716	0.000	0.010	30.327	31.755	446.675	444.274
ANNUAL	182.269	167.052	2.546	1.261	19.196	22.078	127.727	98.120	0.000	0.000	79.518	67.393	20.585	20.801	14.834	67.569	446.675	444.274	446.675	444.274
TOTALS	40.81%	37.60%	0.57%	0.28%	4.30%	4.97%	28.60%	22.09%	0.00%	0.00%	17.80%	15.17%	4.61%	4.68%	3.32%	15.21%	100.00%	100.00%		

AVG. DAY (2008 YTD): 1.220 M.G.D.
AVG. DAY (2009 YTD): 1.217 M.G.D.

2008 Springhouse wells 204.011 MGD 45.67%
Firwood wells 242.664 MGD 54.33%

2009 Springhouse wells 190.391 MGD 42.85%
Firwood wells 253.883 MGD 57.15%

IV. TOTAL PUMPAGE TO SYSTEM REPORT AND CHARTS

The City was able to produce 100% of its total water demand of 410,077,000 gallons (1.123 M.G.D. avg/day) for the second year in a row. The maximum day system usage was on June 6 at 1,994,000 gallons and the minimum day system usage was on March 29 at 790,000 gallons. No fire events (i.e., extra demand) occurred in 2009 that required city of Dayton water.

Table 3 below shows a comparison of the water resources needed to meet the City's demands in 2008 and 2009.

TABLE 3

Location	2008 Gallons	2008%	2009 Gallons	2009%
Oakwood Wells	416,856,000	99.9991%	410,074,000	99.9994%
Dayton/Shroyer	4,000	0.0009%	2,000	0.0004%
Dayton/Springhouse	0	0%	1,000	0.0002%
County/Fairmont	0	0%	0	0%
TOTALS:	416,860,000	100%	410,077,000	100%

There was a decrease in demand of 6,783,000 gallons of water in 2009 compared to 2008 (1.7%). Table 4 on the next page shows the comparison in total gallons pumped to the system per month for 2008 and 2009.

V. MAINTENANCE

The following is a summary of the larger maintenance projects that took place in 2009.

January:	Replaced #4 Well heater breaker
	Rebuilt effluent valve on #3 softening unit at 210 Shafor
	Replace sump pump at 120 Springhouse
February:	Replaced all micro switches on stagers for all softening units at 120 Springhouse
	Scraped, primed and painted effluent water lines at 120 Springhouse
March:	Replaced plugged 10" storm line for backwash water at 120 Springhouse
	Replace transmitter on #4 softening unit at 210 Shafor
April:	Cleaned salt storage tanks at 210 Shafor
	Rewound #3 high service pump at 120 Springhouse
	Cleaned #6 well screen
	Replaced transmitter on #1 softening unit at 210 Shafor
	Replaced chlorine feed line at 120 Springhouse
May:	Cleaned salt storage tanks at 120 Springhouse
June:	Rebuilt #2 high service pump and replaced column pipe at 120 Springhouse
July:	Replaced brine pump at 120 Springhouse
	Replaced dehumidifier at 120 Springhouse
August:	Replaced VFD on #2 high service pump at 120 Springhouse
	Replaced clearwell transmitter at 120 Springhouse
September:	Replace chlorine injector at 120 Springhouse
	Scraped, primed and painted #8 well
October:	Replaced 6" spool at Well #6
	Replace chlorine injector at 210 Shafor

TABLE 4

Oakwood, Ohio

CITY OF OAKWOOD WATER DEPARTMENT
MONTHLY PUMPAGE TO SYSTEM RECORD

YEAR: 2009
MONTH: December

MONTH	SPRINGHOUSE		FIRWOOD		DAYTON/SHROYER		FAIRMONT		DAYTON/SPRING.		MONTHLY TOTAL		ANNUAL TOTAL	
	2008	2009	2008	2009	2008	2009	2008	2009	2008	2009	2008	2009	2008	2009
JANUARY	11.801	10.564	17.708	18.190	0.000	0.000	0.000	0.000	0.000	0.000	29.509	28.754	29.509	28.754
FEBRUARY	10.148	4.586	16.760	20.800	0.000	0.000	0.000	0.000	0.000	0.000	26.908	25.386	56.417	54.140
MARCH	15.444	8.620	13.520	19.955	0.000	0.000	0.000	0.000	0.000	0.000	28.964	28.575	85.381	82.715
APRIL	6.586	17.057	23.851	13.911	0.000	0.001	0.000	0.000	0.000	0.000	30.437	30.969	115.818	113.684
MAY	17.817	19.095	16.356	21.759	0.000	0.000	0.000	0.000	0.000	0.000	34.173	40.854	149.991	154.538
JUNE	19.013	21.593	15.353	23.059	0.000	0.000	0.000	0.000	0.000	0.000	34.366	44.652	184.357	199.190
JULY	22.265	22.296	21.086	22.922	0.000	0.000	0.000	0.000	0.000	0.000	43.351	45.218	227.708	244.408
AUGUST	22.064	21.115	30.879	20.423	0.004	0.000	0.000	0.000	0.000	0.000	52.947	41.538	280.655	285.946
SEPTEMBER	20.938	17.910	19.648	18.219	0.000	0.001	0.000	0.000	0.000	0.001	40.586	36.130	321.241	322.076
OCTOBER	20.803	14.272	17.429	15.223	0.000	0.000	0.000	0.000	0.000	0.000	38.232	29.495	359.473	351.571
NOVEMBER	16.974	12.923	11.999	14.852	0.000	0.000	0.000	0.000	0.000	0.000	28.973	27.775	388.446	379.346
DECEMBER	14.322	14.322	14.092	16.409	0.000	0.000	0.000	0.000	0.000	0.000	28.414	30.731	416.860	410.077
ANNUAL	198.175	184.353	218.681	225.722	0.004	0.001	0.000	0.000	0.000	0.001	416.860	410.077	416.860	410.077
TOTALS	47.54%	44.96%	52.46%	55.04%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%	100.00%		

2008 Summary		
	M.G.	
Oakwood:	416.856	100.00%
Dayton:	0.004	0.00%
County:	0.000	0.00%
TOTAL:	416.860	100%

2008 Avg. per day 1.139 MGD

2009 Summary		
	M.G.	
Oakwood:	410.075	100.00%
Dayton:	0.002	0.00%
County:	0.000	0.00%
TOTAL:	410.077	100%

2009 Avg. per day: 1.123 MGD

November: Replaced dehumidifier at Fairmont pit.
Rebuild #1 water booster pump at the water tower pump station
Replace 3/8" cooling line at #6 well

December: Replace 6" butterfly valve on influent of #1 softening unit at 210 Shafor
Replace starter contactor unit on #2 high service pump at 120 Springhouse
DP&L replaced incoming power pot for Shroyer Road pump station

All preventive maintenance was preformed on schedule and all day-to-day repairs were preformed as needed. All parts inventories are up-to-date in case of any emergencies that might occur.

VI. BUDGET

In 2009, the Oakwood Water Production Unit was allocated $507,800.00 toward the production of the City's drinking water. The 2008 allocation was $445,824.00. This computes to an average cost of $1,031.35 per million gallons treated in 2009, up from $948.23 per million gallons in 2008. The cost per million gallons will fluctuate up or down depending on the total water demand for the year. Our total water demand has decreased for the second year in a row. We are striving to bring down the cost of water by optimizing our treatment process. In the conclusion section of this report we will discuss the results of this effort so far.

The water production unit budget consists of five main categories: personnel, utilities, chemicals, maintenance and miscellaneous. The following charts show what percentage of the budget goes to each of these categories and shows a comparison from the year before.

CHART 3

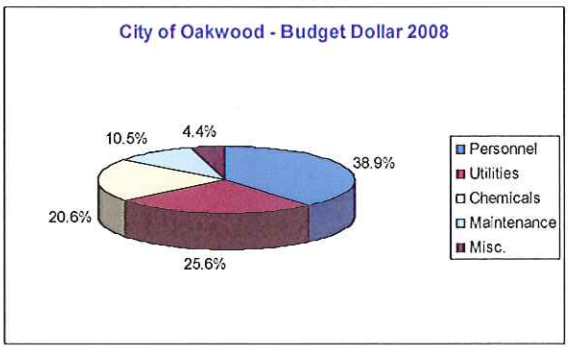
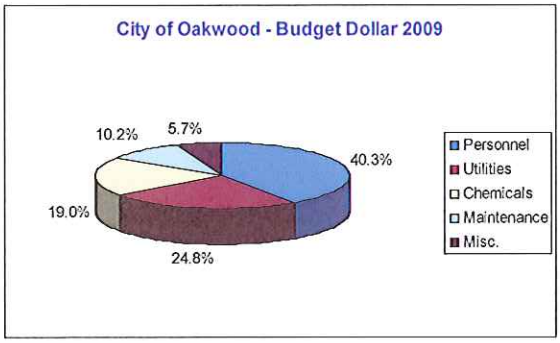


CHART 4



Personnel costs were $170,246.00 for the year representing a 3.2% increase from 2008. Utility costs were $104,761.00 which includes electric and natural gas representing a 3.4 % decrease over 2008. Chemical costs were $80,520.00 representing a 7.9% decrease over 2008. 875 tons of salt compared to 1,190 tons in 2008 and 2,800 gallons of sodium hypochlorite compared to 3,205 gallons in 2008 were used to treat the water.

Maintenance costs were $43,285.00 representing a 46.9% increase compared to 2008. The larger maintenance projects were discussed earlier in this report. 2009 was a challenging year on the maintenance side due to several expensive pieces of equipment breaking down and needing to be replaced. Pictured on the following page are two of the major items that were replaced in 2009.

New VFD (On left)

New Dehumidifier

Both pieces of equipment were replaced at the Springhouse Softening Plant.

VI. CONCLUSION

In reviewing our water system, 2009 was a very successful year. All monthly and annual reports to the Ohio EPA and Ohio Department of Natural Resources were submitted on time. All lab testing was completed as required.

Over the past three years we have been looking at ways to optimize our treatment process in order to maintain high water quality at the lowest cost. Some of the things we have accomplished to date are changing out faulty micro switches, rebuilding process valves, adjust treatment sequences and monitor regeneration cycles on the softeners more closely.

The best way to measure the results of these efforts was to track salt usage, the largest cost item in the treatment process. We have dropped the salt usage from 2.817 tons per million

TABLE 5

Salt Savings	2007	2008	2009
Total Tons of Salt	1,585.76	1,190.48	875.15
Total Cost of Salt	$102,868.26	$85,024.07	$80,034.57
$/Ton	$64.87	$71.42	$91.42
Total MG	562.775	446.675	444.274
Tons of Salt/MG	2.817	2.665	1.969
$/MG	$182.79	$190.35	$180.15
2009 Equivalents			
Cost of Salt 2009 Equivalent	$144,970.18	$108,833.68	$80,034.57
$/MG 2009 Equivalent	$257.60	$243.65	$180.15

gallons in 2007 to 1.969 tons per million gallons in 2009. This equates out to a $77.45 cost per million gallons savings on salt only. The hardness of the water was not jeopardized by cutting down the amount of salt being used, in fact it has improved slightly. System water hardness at 210 Shafor averaged 200 mg/L, down from 204 mg/L in 2008 and 195 mg/L at 120 Springhouse, down from 198 mg/L in 2008.

In looking forward to 2010 and beyond, we will continue to seek ways to operate the water plants in the most efficient manner possible.

Respectfully submitted,
Gary L. Dursch Sr.
Water Plant Superintendent