

\*\* NORTH TEXAS MUNICIPAL WATER DISTRICT - Tawakoni  
 Water Analysis  
 Dec-2018

<u>Mineral Analysis</u>	<u>Raw</u>	<u>Treated</u>	<u>Standards</u>			
			<u>EPA Primary</u>	<u>EPA Secondary</u>	<u>TCEQ Primary</u>	<u>TCEQ Secondary</u>
	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)
Residue on Evaporation	156	224		500		1000
Silica (SiO2)	4.24	4.00				
Iron (Fe)	0.288	0.282		0.3		0.3
Calcium (Ca)	23.9	41.5				
Magnesium (Mg)	2.41	2.56				
Sodium (Na)	7.55	13.7				
Potassium (K)	3.78	3.61				
Sulfate (SO4)	7.86	57.4		250		
Nitrite (NO2)	<0.0200	<0.0200	1		1	
Nitrate (NO3)	0.228	0.316	10		10	
Chloride (Cl)	4.5	11.4		250		300
Fluoride (F)	0.156	0.206	4.0	2.0	4	2.0
Phosphates (PO4)	0.0590	<0.0100				
	(mg/L as CaCO3)	(mg/L as CaCO3)	(mg/L as CaCO3)	(mg/L as CaCO3)	(mg/L as CaCO3)	(mg/L as CaCO3)
Total Alkalinity	77.7 *	55.5 *				
Total Hardness	74.0	103				
Langelier Index		-0.6643				

**Trace Element Analysis**

	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)
Arsenic (As)	0.00145	<0.00050	0.01		0.01	
Barium (Ba)	0.0597	0.0458	2		2	
Cadmium (Cd)	<0.00100	<0.00100	0.005		0.005	
Chromium (Cr)	<0.00250	<0.00250	0.1		0.1	
Copper (Cu)	<0.00100	0.0134	1.3	1	1.3	1.0
Iron (Fe)	0.288	0.282		0.3		0.3
Lead (Pb)	<0.000500	<0.000500	0.015		0.015	
Manganese (Mn)	0.0210	0.00337		0.05		0.05
Mercury (Hg)	<0.000100	<0.000100	0.002		0.002	
Nickel (Ni)	0.00228	0.00528				
Selenium (Se)	<0.00100	<0.00100	0.05		0.05	
Silver (Ag)	<0.00050	<0.00050		0.10		0.1
Zinc (Zn)	<0.00250	<0.00250		5		5

**Other Analysis**

Chlorine Residual (mg/L)	--	3.46 *	4.0		4.0	
Total coliform ( Present / Absent )	--	A	A		A	
pH (Standard Units) @ 25°C	7.70	7.70 *		6.5 - 8.5		>7.0
Specific Conductance (Umhos)	187	300				
Turbidity (NTU)	4.9 *	0.04 *	0.3		0.3	
Threshold Odor Number	4.0	1.0				3

**Note 1: National Primary Drinking Water Regulations or Primary Standards are legally enforceable standards. National Secondary Drinking Water Regulations or Secondary Standards are non-enforceable guidelines regulating contaminants that may cause cosmetic or aesthetic effects In Drinking Water.**

**Note 2: TCEQ Primary Standards are the maximum contaminant level allowed for each constituent. TCEQ Primary Standards are legally enforceable standards.**

**Note 3: \* Identifies Monthly Average Process analyses. \*\* No odor analysis performed.**

\*\* NORTH TEXAS MUNICIPAL WATER DISTRICT - Tawakoni  
 Water Analysis  
 Nov-2018

<u>Mineral Analysis</u>	<u>Raw</u>	<u>Treated</u>	<u>Standards</u>			
			<u>EPA Primary</u>	<u>EPA Secondary</u>	<u>TCEQ Primary</u>	<u>TCEQ Secondary</u>
	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)
Residue on Evaporation	154	226		500		1000
Silica (SiO2)	5.41	5.07				
Iron (Fe)	<0.200	0.238		0.3		0.3
Calcium (Ca)	26.4	40.4				
Magnesium (Mg)	2.65	2.79				
Sodium (Na)	8.71	15.1				
Potassium (K)	4.17	3.95				
Sulfate (SO4)	7.08	54.9		250		
Nitrite (NO2)	<0.0200	<0.0200	1		1	
Nitrate (NO3)	0.302	0.383	10		10	
Chloride (Cl)	4.3	11.2		250		300
Fluoride (F)	0.168	0.209	4.0	2.0	4	2.0
Phosphates (PO4)	0.0520	0.0170				
	(mg/L as CaCO3)	(mg/L as CaCO3)	(mg/L as CaCO3)	(mg/L as CaCO3)	(mg/L as CaCO3)	(mg/L as CaCO3)
Total Alkalinity	78.2 *	54.5 *				
Total Hardness	68.4	96.6				
Langelier Index		-1.9090				

**Trace Element Analysis**

	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)
Arsenic (As)	0.00205	<0.00050	0.01		0.01	
Barium (Ba)	0.0660	0.0504	2		2	
Cadmium (Cd)	<0.00100	<0.00100	0.005		0.005	
Chromium (Cr)	<0.00250	<0.00250	0.1		0.1	
Copper (Cu)	<0.00100	0.0102	1.3	1	1.3	1.0
Iron (Fe)	<0.200	0.238		0.3		0.3
Lead (Pb)	<0.000500	<0.000500	0.015		0.015	
Manganese (Mn)	0.0132	0.00901		0.05		0.05
Mercury (Hg)	<0.000100	<0.000100	0.002		0.002	
Nickel (Ni)	0.00181	0.00510				
Selenium (Se)	<0.00100	<0.00100	0.05		0.05	
Silver (Ag)	<0.00050	<0.00050		0.10		0.1
Zinc (Zn)	<0.00250	0.00257		5		5

**Other Analysis**

Chlorine Residual (mg/L)	--	3.59 *	4.0		4.0	
Total coliform ( Present / Absent )	--	A	A		A	
pH (Standard Units) @ 25°C	7.70	5.12 *		6.5 - 8.5		>7.0
Specific Conductance (Umhos)	181	294				
Turbidity (NTU)	2.9 *	0.04 *	0.3		0.3	
Threshold Odor Number	2.0	<1.0				3

**Note 1: National Primary Drinking Water Regulations or Primary Standards are legally enforceable standards. National Secondary Drinking Water Regulations or Secondary Standards are non-enforceable guidelines regulating contaminants that may cause cosmetic or aesthetic effects In Drinking Water.**

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**Note 3: \* Identifies Monthly Average Process analyses. \*\* No odor analysis performed.**

Water Analysis

Oct-2018

Mineral Analysis	Standards					
	Raw	Treated	EPA Primary	EPA Secondary	TCEQ Primary	TCEQ Secondary
	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)
Residue on Evaporation	150	222		500		1000
Silica (SiO2)	5.84	5.46				
Iron (Fe)	0.228	0.357		0.3		0.3
Calcium (Ca)	24.1	37.4				
Magnesium (Mg)	2.26	2.63				
Sodium (Na)	8.57	14.6				
Potassium (K)	3.83	4.04				
Sulfate (SO4)	7.71	59.2		250		
Nitrite (NO2)	<0.0200	<0.0200	1		1	
Nitrate (NO3)	0.373	0.760	10		10	
Chloride (Cl)	4.7	12.9		250		300
Fluoride (F)	<0.250	0.222	4.0	2.0	4	2.0
Phosphates (PO4)	0.0680	<0.0100				
	(mg/L as CaCO3)	(mg/L as CaCO3)	(mg/L as CaCO3)	(mg/L as CaCO3)	(mg/L as CaCO3)	(mg/L as CaCO3)
Total Alkalinity	78.5 *	61.5 *				
Total Hardness	69.0	109				
Langelier Index		-0.0460				

**Trace Element Analysis**

	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)
Arsenic (As)	0.00247	<0.00050	0.01		0.01	
Barium (Ba)	0.0616	0.0545	2		2	
Cadmium (Cd)	<0.00100	<0.00100	0.005		0.005	
Chromium (Cr)	<0.00250	<0.00250	0.1		0.1	
Copper (Cu)	<0.00100	0.0152	1.3	1	1.3	1.0
Iron (Fe)	0.228	0.357		0.3		0.3
Lead (Pb)	<0.000500	<0.000500	0.015		0.015	
Manganese (Mn)	0.0106	0.00445		0.05		0.05
Mercury (Hg)	<0.000100	<0.000100	0.002		0.002	
Nickel (Ni)	0.00165	0.00567				
Selenium (Se)	<0.00100	<0.00100	0.05		0.05	
Silver (Ag)	<0.00050	<0.00050		0.10		0.1
Zinc (Zn)	<0.00250	0.00322		5		5

**Other Analysis**

Chlorine Residual (mg/L)	--	3.48 *	4.0		4.0	
Total coliform ( Present / Absent )	--	A	A		A	
pH (Standard Units) @ 25°C	7.40	8.00 *		6.5 - 8.5		>7.0
Specific Conductance (Umhos)	193	320				
Turbidity (NTU)	2.4 *	0.05 *	0.3		0.3	
Threshold Odor Number	4.0	1.0				3

**Note 1: National Primary Drinking Water Regulations or Primary Standards are legally enforceable standards. National Secondary Drinking Water Regulations or Secondary Standards are non-enforceable guidelines regulating contaminants that may cause cosmetic or aesthetic effects In Drinking Water.**

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**Note 3: \* Identifies Monthly Average Process analyses. \*\* No odor analysis performed.**

\*\* NORTH TEXAS MUNICIPAL WATER DISTRICT - Tawakoni  
 Water Analysis  
 Sep-2018

<u>Mineral Analysis</u>	<u>Raw</u>	<u>Treated</u>	<u>Standards</u>			
			<u>EPA Primary</u>	<u>EPA Secondary</u>	<u>TCEQ Primary</u>	<u>TCEQ Secondary</u>
	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)
Residue on Evaporation	114	180		500		1000
Silica (SiO2)	4.51	4.32				
Iron (Fe)	0.279	0.347		0.3		0.3
Calcium (Ca)	25.6	40.7				
Magnesium (Mg)	2.74	2.96				
Sodium (Na)	9.73	14.2				
Potassium (K)	4.31	4.38				
Sulfate (SO4)	8.62	61.0		250		
Nitrite (NO2)	0.0250	<0.0200	1		1	
Nitrate (NO3)	0.167	0.362	10		10	
Chloride (Cl)	4.8	12.3		250		300
Fluoride (F)	<0.250	0.255	4.0	2.0	4	2.0
Phosphates (PO4)	0.0690	0.0140				
	(mg/L as CaCO3)	(mg/L as CaCO3)	(mg/L as CaCO3)	(mg/L as CaCO3)	(mg/L as CaCO3)	(mg/L as CaCO3)
Total Alkalinity	81.5 *	62.5 *				
Total Hardness	68.0	174				
Langelier Index		-0.0880				

**Trace Element Analysis**

	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)
Arsenic (As)	0.00384	0.00069	0.01		0.01	
Barium (Ba)	0.0670	0.0607	2		2	
Cadmium (Cd)	<0.00100	<0.00100	0.005		0.005	
Chromium (Cr)	<0.00250	<0.00250	0.1		0.1	
Copper (Cu)	<0.00100	0.0217	1.3	1	1.3	1.0
Iron (Fe)	0.279	0.347		0.3		0.3
Lead (Pb)	<0.000500	<0.000500	0.015		0.015	
Manganese (Mn)	0.0404	0.00677		0.05		0.05
Mercury (Hg)	<0.000100	<0.000100	0.002		0.002	
Nickel (Ni)	0.00179	0.00573				
Selenium (Se)	<0.00100	<0.00100	0.05		0.05	
Silver (Ag)	<0.00050	<0.00050		0.10		0.1
Zinc (Zn)	0.00299	0.00424		5		5

**Other Analysis**

Chlorine Residual (mg/L)	--	3.48 *	4.0		4.0	
Total coliform ( Present / Absent )	--	A	A		A	
pH (Standard Units) @ 25°C	7.60	7.90 *		6.5 - 8.5		>7.0
Specific Conductance (Umhos)	194	1000				
Turbidity (NTU)	2.7 *	0.06 *	0.3		0.3	
Threshold Odor Number	3.0	3.0				3

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\*\* NORTH TEXAS MUNICIPAL WATER DISTRICT - Tawakoni  
 Water Analysis  
 Aug-2018

<u>Mineral Analysis</u>	<u>Raw</u>	<u>Treated</u>	<u>Standards</u>			
			<u>EPA Primary</u>	<u>EPA Secondary</u>	<u>TCEQ Primary</u>	<u>TCEQ Secondary</u>
	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)
Residue on Evaporation	136	212		500		1000
Silica (SiO2)	3.66	3.44				
Iron (Fe)	0.328	0.427		0.3		0.3
Calcium (Ca)	30.5	46.7				
Magnesium (Mg)	3.03	3.27				
Sodium (Na)	10.5	19.4				
Potassium (K)	4.54	4.55				
Sulfate (SO4)	8.53	59.0		250		
Nitrite (NO2)	<0.0200	<0.0200	1		1	
Nitrate (NO3)	0.112	0.252	10		10	
Chloride (Cl)	4.8	16.2		250		300
Fluoride (F)	<0.250	0.261	4.0	2.0	4	2.0
Phosphates (PO4)	0.0530	<0.0100				
	(mg/L as CaCO3)	(mg/L as CaCO3)	(mg/L as CaCO3)	(mg/L as CaCO3)	(mg/L as CaCO3)	(mg/L as CaCO3)
Total Alkalinity	80.6 *	71.0 *				
Total Hardness	73.2	115				
Langelier Index		-1.8810				

**Trace Element Analysis**

	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)
Arsenic (As)	0.00424	0.00081	0.01		0.01	
Barium (Ba)	0.0753	0.0679	2		2	
Cadmium (Cd)	<0.00100	<0.00100	0.005		0.005	
Chromium (Cr)	<0.00250	<0.00250	0.1		0.1	
Copper (Cu)	<0.00100	0.0215	1.3	1	1.3	1.0
Iron (Fe)	0.328	0.427		0.3		0.3
Lead (Pb)	<0.000500	<0.000500	0.015		0.015	
Manganese (Mn)	0.0673	0.0122		0.05		0.05
Mercury (Hg)	<0.000100	<0.000100	0.002		0.002	
Nickel (Ni)	0.00235	0.00696				
Selenium (Se)	<0.00100	<0.00100	0.05		0.05	
Silver (Ag)	<0.00050	<0.00050		0.10		0.1
Zinc (Zn)	<0.00250	0.00305		5		5

**Other Analysis**

Chlorine Residual (mg/L)	--	3.46 *	4.0		4.0	
Total coliform ( Present / Absent )	--	A	A		A	
pH (Standard Units) @ 25°C	7.50	8.10 *		6.5 - 8.5		>7.0
Specific Conductance (Umhos)	202	343				
Turbidity (NTU)	3.5 *	0.05 *	0.3		0.3	
Threshold Odor Number	2.0	1.0				3

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**Note 3: \* Identifies Monthly Average Process analyses. \*\* No odor analysis performed.**

\*\* NORTH TEXAS MUNICIPAL WATER DISTRICT - Tawakoni  
 Water Analysis  
 Jul-2018

<u>Mineral Analysis</u>	<u>Raw</u>	<u>Treated</u>	<u>Standards</u>			
			<u>EPA Primary</u>	<u>EPA Secondary</u>	<u>TCEQ Primary</u>	<u>TCEQ Secondary</u>
	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)
Residue on Evaporation	132	202		500		1000
Silica (SiO2)	3.01	2.81				
Iron (Fe)	0.412	0.302		0.3		0.3
Calcium (Ca)	26.7	51.4				
Magnesium (Mg)	2.37	2.54				
Sodium (Na)	9.98	17.7				
Potassium (K)	3.71	3.61				
Sulfate (SO4)	8.80	64.5		250		
Nitrite (NO2)	<0.0200	<0.0200	1		1	
Nitrate (NO3)	0.0830	0.164	10		10	
Chloride (Cl)	4.8	12.0		250		300
Fluoride (F)	<0.250	0.243	4.0	2.0	4	2.0
Phosphates (PO4)	0.0760	<0.0100				
	(mg/L as CaCO3)	(mg/L as CaCO3)	(mg/L as CaCO3)	(mg/L as CaCO3)	(mg/L as CaCO3)	(mg/L as CaCO3)
Total Alkalinity	78.8 *	62.5 *				
Total Hardness	74.0	116				
Langelier Index		0.3260				

**Trace Element Analysis**

	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)
Arsenic (As)	0.00360	0.00060	0.01		0.01	
Barium (Ba)	0.0740	0.0679	2		2	
Cadmium (Cd)	<0.00100	<0.00100	0.005		0.005	
Chromium (Cr)	<0.00250	<0.00250	0.1		0.1	
Copper (Cu)	0.00131	0.0149	1.3	1	1.3	1.0
Iron (Fe)	0.412	0.302		0.3		0.3
Lead (Pb)	<0.000500	<0.000500	0.015		0.015	
Manganese (Mn)	0.0854	0.00623		0.05		0.05
Mercury (Hg)	<0.000100	<0.000100	0.002		0.002	
Nickel (Ni)	0.00199	0.00528				
Selenium (Se)	<0.00100	<0.00100	0.05		0.05	
Silver (Ag)	<0.00050	<0.00050		0.10		0.1
Zinc (Zn)	0.00441	<0.00250		5		5

**Other Analysis**

Chlorine Residual (mg/L)	--	3.39 *	4.0		4.0	
Total coliform ( Present / Absent )	--	A	A		A	
pH (Standard Units) @ 25°C	7.70	8.30 *		6.5 - 8.5		>7.0
Specific Conductance (Umhos)	196	322				
Turbidity (NTU)	4.3 *	0.05 *	0.3		0.3	
Threshold Odor Number	4.0	2.0				3

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\*\* NORTH TEXAS MUNICIPAL WATER DISTRICT - Tawakoni  
 Water Analysis  
 Jun-2018

<u>Mineral Analysis</u>	<u>Raw</u>	<u>Treated</u>	<u>Standards</u>			
			<u>EPA Primary</u>	<u>EPA Secondary</u>	<u>TCEQ Primary</u>	<u>TCEQ Secondary</u>
	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)
Residue on Evaporation	140	210		500		1000
Silica (SiO2)	2.53	2.98				
Iron (Fe)	0.424	0.475		0.3		0.3
Calcium (Ca)	28.1	46.1				
Magnesium (Mg)	2.51	2.63				
Sodium (Na)	9.98	15.1				
Potassium (K)	3.85	3.64				
Sulfate (SO4)	9.35	60.1		250		
Nitrite (NO2)	<0.0200	<0.0200	1		1	
Nitrate (NO3)	0.0720	0.236	10		10	
Chloride (Cl)	4.3	12.0		250		300
Fluoride (F)	<0.250	0.260	4.0	2.0	4	2.0
Phosphates (PO4)	0.0560	<0.0100				
	(mg/L as CaCO3)	(mg/L as CaCO3)	(mg/L as CaCO3)	(mg/L as CaCO3)	(mg/L as CaCO3)	(mg/L as CaCO3)
Total Alkalinity	81.6 *	66.5 *				
Total Hardness	97.8	142				
Langelier Index		0.4420				

**Trace Element Analysis**

	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)
Arsenic (As)	0.00182	<0.00050	0.01		0.01	
Barium (Ba)	0.0627	0.0680	2		2	
Cadmium (Cd)	<0.00100	<0.00100	0.005		0.005	
Chromium (Cr)	<0.00250	<0.00250	0.1		0.1	
Copper (Cu)	<0.00100	0.0121	1.3	1	1.3	1.0
Iron (Fe)	0.424	0.475		0.3		0.3
Lead (Pb)	<0.000500	<0.000500	0.015		0.015	
Manganese (Mn)	0.0409	0.00254		0.05		0.05
Mercury (Hg)	<0.000100	<0.000100	0.002		0.002	
Nickel (Ni)	0.00210	0.00522				
Selenium (Se)	<0.00100	<0.00100	0.05		0.05	
Silver (Ag)	<0.00050	<0.00050		0.10		0.1
Zinc (Zn)	<0.00250	<0.00250		5		5

**Other Analysis**

Chlorine Residual (mg/L)	--	3.54 *	4.0		4.0	
Total coliform ( Present / Absent )	--	A	A		A	
pH (Standard Units) @ 25°C	7.80	8.40 *		6.5 - 8.5		>7.0
Specific Conductance (Umhos)	198	316				
Turbidity (NTU)	5.4 *	0.06 *	0.3		0.3	
Threshold Odor Number	**	**				3

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## Water Analysis

May-2018

<u>Mineral Analysis</u>	<u>Raw</u>	<u>Treated</u>	<u>Standards</u>			
			<u>EPA Primary</u>	<u>EPA Secondary</u>	<u>TCEQ Primary</u>	<u>TCEQ Secondary</u>
	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)
Residue on Evaporation	150	202		500		1000
Silica (SiO <sub>2</sub> )	5.22	5.06				
Iron (Fe)	1.46	0.403		0.3		0.3
Calcium (Ca)	24.8	40.0				
Magnesium (Mg)	2.66	2.56				
Sodium (Na)	7.91	12.9				
Potassium (K)	4.05	3.69				
Sulfate (SO <sub>4</sub> )	9.53	67.9		250		
Nitrite (NO <sub>2</sub> )	<0.0200	<0.0200	1		1	
Nitrate (NO <sub>3</sub> )	0.468	0.564	10		10	
Chloride (Cl)	4.4	11.1		250		300
Fluoride (F)	<0.250	0.217	4.0	2.0	4	2.0
Phosphates (PO <sub>4</sub> )	0.0910	<0.0100				
	(mg/L as CaCO <sub>3</sub> )	(mg/L as CaCO <sub>3</sub> )	(mg/L as CaCO <sub>3</sub> )	(mg/L as CaCO <sub>3</sub> )	(mg/L as CaCO <sub>3</sub> )	(mg/L as CaCO <sub>3</sub> )
Total Alkalinity	82.2 *	64.0 *				
Total Hardness	123	134				
Langelier Index		-0.1420				

Trace Element Analysis

	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)
Arsenic (As)	0.00185	<0.00050	0.01		0.01	
Barium (Ba)	0.0742	0.0716	2		2	
Cadmium (Cd)	<0.00100	<0.00100	0.005		0.005	
Chromium (Cr)	<0.00250	<0.00250	0.1		0.1	
Copper (Cu)	0.00182	0.0260	1.3	1	1.3	1.0
Iron (Fe)	1.46	0.403		0.3		0.3
Lead (Pb)	0.000792	<0.000500	0.015		0.015	
Manganese (Mn)	0.0704	0.00608		0.05		0.05
Mercury (Hg)	<0.000100	<0.000100	0.002		0.002	
Nickel (Ni)	0.00318	0.00615				
Selenium (Se)	<0.00100	<0.00100	0.05		0.05	
Silver (Ag)	<0.00050	<0.00050		0.10		0.1
Zinc (Zn)	0.00635	0.00290		5		5

Other Analysis

Chlorine Residual (mg/L)	--	3.53 *	4.0		4.0	
Total coliform ( Present / Absent )	--	A	A		A	
pH (Standard Units) @ 25°C	7.70	7.90 *		6.5 - 8.5		>7.0
Specific Conductance (Umhos)	319	195				
Turbidity (NTU)	14.9 *	0.06 *	0.3		0.3	
Threshold Odor Number	**	**				3

**Note 1: National Primary Drinking Water Regulations or Primary Standards are legally enforceable standards. National Secondary Drinking Water Regulations or Secondary Standards are non-enforceable guidelines regulating contaminants that may cause cosmetic or aesthetic effects In Drinking Water.**

**Note 2: TCEQ Primary Standards are the maximum contaminant level allowed for each constituent. TCEQ Primary Standards are legally enforceable standards.**

**Note 3: \* Identifies Monthly Average Process analyses. \*\* No odor analysis performed.**



Water Analysis

Apr-2018

Mineral Analysis	Raw (mg/L)	Treated (mg/L)	Standards			
			EPA Primary (mg/L)	EPA Secondary (mg/L)	TCEQ Primary (mg/L)	TCEQ Secondary (mg/L)
Residue on Evaporation	148	350		500		1000
Silica (SiO2)	3.74	2.61				
Iron (Fe)	1.29	<0.200		0.3		0.3
Calcium (Ca)	27.0	46.6				
Magnesium (Mg)	2.46	2.96				
Sodium (Na)	8.43	16.6				
Potassium (K)	4.29	4.60				
Sulfate (SO4)	9.49	67.1		250		
Nitrite (NO2)	<0.0200	<0.0200	1		1	
Nitrate (NO3)	0.499	0.604	10		10	
Chloride (Cl)	4.4	13.3		250		300
Fluoride (F)	<0.250	0.216	4.0	2.0	4	2.0
Phosphates (PO4)	0.0980	<0.0100				
	(mg/L as CaCO3)	(mg/L as CaCO3)	(mg/L as CaCO3)	(mg/L as CaCO3)	(mg/L as CaCO3)	(mg/L as CaCO3)
Total Alkalinity	81.1 *	60.0 *				
Total Hardness	72.4	110				
Langelier Index		-0.2280				

**Trace Element Analysis**

	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)
Arsenic (As)	0.00179	<0.00050	0.01		0.01	
Barium (Ba)	0.0718	0.0708	2		2	
Cadmium (Cd)	<0.00100	<0.00100	0.005		0.005	
Chromium (Cr)	0.00210	<0.00100	0.1		0.1	
Copper (Cu)	0.00172	0.0283	1.3	1	1.3	1.0
Iron (Fe)	1.29	<0.200		0.3		0.3
Lead (Pb)	0.000799	<0.000500	0.015		0.015	
Manganese (Mn)	0.0349	0.00997		0.05		0.05
Mercury (Hg)	<0.000100	<0.000100	0.002		0.002	
Nickel (Ni)	0.00220	0.00444				
Selenium (Se)	<0.00100	<0.00100	0.05		0.05	
Silver (Ag)	<0.00050	<0.00050		0.10		0.1
Zinc (Zn)	0.00570	<0.00500		5		5

**Other Analysis**

Chlorine Residual (mg/L)	--	3.39 *	4.0		4.0	
Total coliform ( Present / Absent )	--	A	A		A	
pH (Standard Units) @ 25°C	7.60	7.90 *		6.5 - 8.5		>7.0
Specific Conductance (Umhos)	195	328				
Turbidity (NTU)	20.6 *	0.05 *	0.3		0.3	
Threshold Odor Number	**	**				3

**Note 1: National Primary Drinking Water Regulations or Primary Standards are legally enforceable standards. National Secondary Drinking Water Regulations or Secondary Standards are non-enforceable guidelines regulating contaminants that may cause cosmetic or aesthetic effects In Drinking Water.**

**Note 2: TCEQ Primary Standards are the maximum contaminant level allowed for each constituent. TCEQ Primary Standards are legally enforceable standards.**

**Note 3: \* Identifies Monthly Average Process analyses. \*\* No odor analysis performed.**

**NORTH TEXAS MUNICIPAL WATER DISTRICT - Tawakoni**

**Water Analysis**

**Mar-2018**

<b>Mineral Analysis</b>	<b>Raw</b>	<b>Treated</b>	<b>Standards</b>			
			<b>EPA Primary</b>	<b>EPA Secondary</b>	<b>TCEQ Primary</b>	<b>TCEQ Secondary</b>
	<b>(mg/L)</b>	<b>(mg/L)</b>	<b>(mg/L)</b>	<b>(mg/L)</b>	<b>(mg/L)</b>	<b>(mg/L)</b>
Residue on Evaporation	132	196		500		1000
Silica (SiO <sub>2</sub> )	2.43	<2.00				
Iron (Fe)	0.576	0.214		0.3		0.3
Calcium (Ca)	32.6	43.9				
Magnesium (Mg)	2.58	2.72				
Sodium (Na)	11.4	18.2				
Potassium (K)	4.58	4.19				
Sulfate (SO <sub>4</sub> )	9.71	60.5		250		
Nitrite (NO <sub>2</sub> )	<0.0200	<0.0200	1		1	
Nitrate (NO <sub>3</sub> )	0.393	0.471	10		10	
Chloride (Cl)	4.7	13.7		250		300
Fluoride (F)	<0.250	0.219	4.0	2.0	4	2.0
Phosphates (PO <sub>4</sub> )	0.0140	0.115				
	<b>(mg/L as CaCO<sub>3</sub>)</b>	<b>(mg/L as CaCO<sub>3</sub>)</b>	<b>(mg/L as CaCO<sub>3</sub>)</b>	<b>(mg/L as CaCO<sub>3</sub>)</b>	<b>(mg/L as CaCO<sub>3</sub>)</b>	<b>(mg/L as CaCO<sub>3</sub>)</b>
Total Alkalinity	79.7 *	77.0 *				
Total Hardness	96.4	113				
Langelier Index		0.0267				

**Trace Element Analysis**

	<b>(mg/L)</b>	<b>(mg/L)</b>	<b>(mg/L)</b>	<b>(mg/L)</b>	<b>(mg/L)</b>	<b>(mg/L)</b>
Arsenic (As)	0.00140	<0.00050	0.01		0.01	
Barium (Ba)	0.0690	0.0619	2		2	
Cadmium (Cd)	<0.00100	<0.00100	0.005		0.005	
Chromium (Cr)	<0.00250	<0.00250	0.1		0.1	
Copper (Cu)	0.00109	0.0325	1.3	1	1.3	1.0
Iron (Fe)	0.576	0.214		0.3		0.3
Lead (Pb)	<0.000500	<0.000500	0.015		0.015	
Manganese (Mn)	0.0249	0.00371		0.05		0.05
Mercury (Hg)	<0.000100	<0.000100	0.002		0.002	
Nickel (Ni)	0.00154	0.00388				
Selenium (Se)	<0.00100	<0.00100	0.05		0.05	
Silver (Ag)	<0.00050	<0.00050		0.10		0.1
Zinc (Zn)	0.00270	<0.00250		5		5

**Other Analysis**

Chlorine Residual (mg/L)	--	3.60 *	4.0		4.0	
Total coliform ( Present / Absent )	--	A	A		A	
pH (Standard Units) @ 25°C	7.60	8.10 *		6.5 - 8.5		>7.0
Specific Conductance (Umhos)	198	311				
Turbidity (NTU)	16.3 *	0.05 *	0.3		0.3	
Threshold Odor Number	50E	17Cl				3

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**Note 3: \* Identifies Monthly Average Process analyses.**

**NORTH TEXAS MUNICIPAL WATER DISTRICT - Tawakoni**

**Water Analysis**

**Feb-2018**

<b>Mineral Analysis</b>	<b>Standards</b>					
	<b>Raw</b>	<b>Treated</b>	<b>EPA Primary</b>	<b>EPA Secondary</b>	<b>TCEQ Primary</b>	<b>TCEQ Secondary</b>
	<b>(mg/L)</b>	<b>(mg/L)</b>	<b>(mg/L)</b>	<b>(mg/L)</b>	<b>(mg/L)</b>	<b>(mg/L)</b>
Residue on Evaporation	124	192		500		1000
Silica (SiO <sub>2</sub> )	<2.00	<2.00				
Iron (Fe)	<0.200	<0.200		0.3		0.3
Calcium (Ca)	34.8	51.3				
Magnesium (Mg)	2.64	3.46				
Sodium (Na)	9.67	16.4				
Potassium (K)	4.64	4.68				
Sulfate (SO <sub>4</sub> )	9.72	64.1		250		
Nitrite (NO <sub>2</sub> )	<0.0200	<0.0200	1		1	
Nitrate (NO <sub>3</sub> )	0.335	0.411	10		10	
Chloride (Cl)	4.9	12.5		250		300
Fluoride (F)	<0.250	0.268	4.0	2.0		2.0
Phosphates (PO <sub>4</sub> )	0.0400	<0.0100				
	<b>(mg/L as CaCO<sub>3</sub>)</b>	<b>(mg/L as CaCO<sub>3</sub>)</b>	<b>(mg/L as CaCO<sub>3</sub>)</b>	<b>(mg/L as CaCO<sub>3</sub>)</b>	<b>(mg/L as CaCO<sub>3</sub>)</b>	<b>(mg/L as CaCO<sub>3</sub>)</b>
Total Alkalinity	85.6 *	67.0 *				
Total Hardness	99.4	120				
Langelier Index		-0.2813				

**Trace Element Analysis**

	<b>(mg/L)</b>	<b>(mg/L)</b>	<b>(mg/L)</b>	<b>(mg/L)</b>	<b>(mg/L)</b>	<b>(mg/L)</b>
Arsenic (As)	0.00098	0.00053	0.01		0.01	
Barium (Ba)	0.0746	0.0589	2		2	
Cadmium (Cd)	<0.00100	<0.00100	0.005		0.005	
Chromium (Cr)	<0.00100	<0.00100	0.1		0.1	
Copper (Cu)	<0.00100	0.0284	1.3		1.3	1.0
Iron (Fe)	<0.200	<0.200		0.3		
Lead (Pb)	<0.000500	<0.000500	0.15		0.15	
Manganese (Mn)	0.0178	0.00220		0.05		0.05
Mercury (Hg)	<0.000100	<0.000100	0.002		0.002	
Nickel (Ni)	0.00156	0.00419				
Selenium (Se)	<0.00100	<0.00100	0.05		0.05	
Silver (Ag)	<0.00050	<0.00050		0.10		0.1
Zinc (Zn)	<0.00500	<0.00500		5		5

**Other Analysis**

Chlorine Residual (mg/L)	--	3.66 *	4.0		4.0	
Total coliform ( Present / Absent )	--	A	A		A	
pH (Standard Units) @ 25°C	8.00	8.00 *		6.5 - 8.5		>7.0
Specific Conductance (Umhos)	216	333				
Turbidity (NTU)	4.6 *	0.05 *	0.3		0.3	
Threshold Odor Number	8E	1.4Cl				3

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**NORTH TEXAS MUNICIPAL WATER DISTRICT - Tawakoni**

**Water Analysis**

**Jan-2018**

<b>Mineral Analysis</b>	<b>Standards</b>					
	<b>Raw</b>	<b>Treated</b>	<b>EPA Primary</b>	<b>EPA Secondary</b>	<b>TCEQ Primary</b>	<b>TCEQ Secondary</b>
	<b>(mg/L)</b>	<b>(mg/L)</b>	<b>(mg/L)</b>	<b>(mg/L)</b>	<b>(mg/L)</b>	<b>(mg/L)</b>
Residue on Evaporation	116	174		500		1000
Silica (SiO <sub>2</sub> )	<2.00	<2.00				
Iron (Fe)	0.274	<0.200		0.3		0.3
Calcium (Ca)	34.0	44.8				
Magnesium (Mg)	3.76	3.66				
Sodium (Na)	11.2	15.7				
Potassium (K)	5.38	4.98				
Sulfate (SO <sub>4</sub> )	10.2	59.1		250		
Nitrite (NO <sub>2</sub> )	<0.0200	<0.0200	1		1	
Nitrate (NO <sub>3</sub> )	0.329	0.399	10		10	
Chloride (Cl)	5.5	11.9		250		300
Fluoride (F)	<0.250	0.262	4.0	2.0		2.0
Phosphates (PO <sub>4</sub> )	0.0280	<0.0100				
	<b>(mg/L as CaCO<sub>3</sub>)</b>	<b>(mg/L as CaCO<sub>3</sub>)</b>	<b>(mg/L as CaCO<sub>3</sub>)</b>	<b>(mg/L as CaCO<sub>3</sub>)</b>	<b>(mg/L as CaCO<sub>3</sub>)</b>	<b>(mg/L as CaCO<sub>3</sub>)</b>
Total Alkalinity	85.7 *	73.0 *				
Total Hardness	81.2	116				
Langelier Index		-0.3413				

**Trace Element Analysis**

	<b>(mg/L)</b>	<b>(mg/L)</b>	<b>(mg/L)</b>	<b>(mg/L)</b>	<b>(mg/L)</b>	<b>(mg/L)</b>
Arsenic (As)	0.00144	0.00055	0.01		0.01	
Barium (Ba)	0.0727	0.0515	2		2	
Cadmium (Cd)	<0.00100	<0.00100	0.005		0.005	
Chromium (Cr)	<0.00250	<0.00250	0.1		0.1	
Copper (Cu)	<0.00100	0.0313	1.3		1.3	1.0
Iron (Fe)	0.274	<0.200		0.3		
Lead (Pb)	<0.000500	<0.000500	0.15		0.15	
Manganese (Mn)	0.0420	0.00164		0.05		0.05
Mercury (Hg)	<0.000100	<0.000100	0.002		0.002	
Nickel (Ni)	0.00158	0.00377				
Selenium (Se)	<0.00100	<0.00100	0.05		0.05	
Silver (Ag)	<0.00050	<0.00050		0.10		0.1
Zinc (Zn)	<0.00250	<0.00250		5		5

**Other Analysis**

Chlorine Residual (mg/L)	--	3.52 *	4.0		4.0	
Total coliform ( Present / Absent )	--	A	A		A	
pH (Standard Units) @ 25°C	7.80	7.90 *		6.5 - 8.5		>7.0
Specific Conductance (Umhos)	215	322				
Turbidity (NTU)	3.7 *	0.04 *	0.3		0.3	
Threshold Odor Number	8G	17Cl				3

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