



2019-2020



Water Quality Summary

Pueblo's Raw Water Pipeline Headgate

2020 Analytical Results Summary for Pueblo's Raw Water Pipeline

Parameter	Units	Range of Detection	Pueblo Raw Water Average Level	Number of Samples Analyzed
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Clarity				
Turbidity	NTU	0.55 - 10.7	2.10	251

Microbiological				
Total Coliform Bacteria	MPN/100 mL	1 - >24196	3665	196
E. Coli Bacteria	MPN/100 mL	<1 - 29.2	6.6	196

Radiologicals				
Gross Alpha	pCi/L	1.1	1.1	1
Radium-226	pCi/L	0.23	0.23	1
Radium-228	pCi/L	0.23	0.23	1
Uranium	pCi/L	2.5	2.5	1

Inorganic Chemicals				
Trace Metals				
Aluminum	µg/L	<1.00	<1.00	7
Antimony	µg/L	<1.00	<1.00	7
Arsenic	µg/L	<1.00	<1.00	7
Barium	µg/L	4.44 - 56.7	51.1	7
Beryllium	µg/L	<1.00	<1.00	7
Cadmium	µg/L	<1.00	<1.00	7
Calcium	mg/L	39.6 - 49.8	44.5	7
Chromium	µg/L	<1.00	<1.00	7
Cobalt	µg/L	<1.00	<1.00	7
Copper	µg/L	1.30 - 1.56	1.41	7
Iron	mg/L	<0.50	<0.50	7
Lead	µg/L	<1.00	<1.00	7
Magnesium	mg/L	10.1 - 14.7	12.0	7
Manganese	µg/L	<1.00 - 2.11	<1.00	7
Mercury	µg/L	<0.50	<0.50	7
Molybdenum	µg/L	3.64 - 4.26	3.96	7
Nickel	µg/L	2.27 - 2.73	2.52	7
Potassium	mg/L	1.79 - 2.38	2.07	7
Selenium	µg/L	2.68 - 3.51	3.20	7
Silver	µg/L	<1.00	<1.00	7
Sodium	mg/L	13.0 - 16.7	15.1	7
Thallium	µg/L	<1.00	<1.00	7
Vanadium	µg/L	<1.01 - 1.13	1.08	7
Zinc	µg/L	<1.00 - 1.82	1.59	7

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2020 Analytical Results Summary for Pueblo's Raw Water Pipeline

Parameter	Units	Range of Detection	Pueblo Raw Water Average Level	Number of Samples Analyzed
Organic Chemicals				
Total Volatile Organic Compounds (VOC's)**				
Benzene	µg/L	<0.50	<0.50	1
Bromobenzene	µg/L	<0.50	<0.50	1
Bromochloromethane	µg/L	<0.50	<0.50	1
Bromodichloromethane	µg/L	<0.50	<0.50	1
Bromoform	µg/L	<0.50	<0.50	1
Bromomethane	µg/L	<0.50	<0.50	1
n-Butylbenzene	µg/L	<0.50	<0.50	1
sec-Butylbenzene	µg/L	<0.50	<0.50	1
tert-Butylbenzene	µg/L	<0.50	<0.50	1
Carbon tetrachloride	µg/L	<0.50	<0.50	1
Chlorobenzene	µg/L	<0.50	<0.50	1
Chloroethane	µg/L	<0.50	<0.50	1
Chloroform	µg/L	<0.50	<0.50	1
Chloromethane	µg/L	<0.50	<0.50	1
o-Chlorotoluene	µg/L	<0.50	<0.50	1
p-Chlorotoluene	µg/L	<0.50	<0.50	1
Dibromochloromethane	µg/L	<0.50	<0.50	1
Dibromomethane	µg/L	<0.50	<0.50	1
m- Dichlorobenzene	µg/L	<0.50	<0.50	1
o- Dichlorobenzene	µg/L	<0.50	<0.50	1
p- Dichlorobenzene	µg/L	<0.50	<0.50	1
Dichlorodifluoromethane	µg/L	<0.50	<0.50	1
1,1- Dichloroethane	µg/L	<0.50	<0.50	1
1,2- Dichloroethane	µg/L	<0.50	<0.50	1
1,1- Dichloroethylene	µg/L	<0.50	<0.50	1
cis-1,2- Dichloroethylene	µg/L	<0.50	<0.50	1
trans-1,2- Dichloroethylene	µg/L	<0.50	<0.50	1
1,2- Dichloropropane	µg/L	<0.50	<0.50	1
1,3- Dichloropropane	µg/L	<0.50	<0.50	1
2,2- Dichloropropane	µg/L	<0.50	<0.50	1
1,1- Dichloropropene	µg/L	<0.50	<0.50	1
cis-1,3- Dichloropropene	µg/L	<0.50	<0.50	1
trans-1,3- Dichloropropene	µg/L	<0.50	<0.50	1
1,3- Dichloropropene	µg/L	<0.50	<0.50	1
Ethylbenzene	µg/L	<0.50	<0.50	1
Hexachlorobutadiene	µg/L	<0.50	<0.50	1
Isopropylbenzene	µg/L	<0.50	<0.50	1
p-Isopropyltoluene	µg/L	<0.50	<0.50	1
Methylene chloride	µg/L	<0.50	<0.50	1
Naphthalene	µg/L	<0.50	<0.50	1
n-Propylbenzene	µg/L	<0.50	<0.50	1
Styrene	µg/L	<0.50	<0.50	1
Tetrachloroethylene	µg/l	<0.50	<0.50	1
1,1,1 - Trichloroethane	µg/l	<0.50	<0.50	1
1,1,1,2- Tetrachloroethane	µg/L	<0.50	<0.50	1
1,1,2,2- Tetrachloroethane	µg/L	<0.50	<0.50	1
Toluene	µg/L	<0.50	<0.50	1

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2020 Analytical Results Summary for Pueblo's Raw Water Pipeline

Parameter	Units	Range of Detection	Pueblo Raw Water Average Level	Number of Samples Analyzed
Organic Chemicals (continued)**				
1,2,3- Trichlorobenzene	µg/L	<0.50	<0.50	1
1,2,4- Trichlorobenzene	µg/L	<0.50	<0.50	1
1,1,2- Trichloroethane	µg/L	<0.50	<0.50	1
Trichloroethylene	µg/L	<0.50	<0.50	1
Trichlorofluoromethane	µg/L	<0.50	<0.50	1
1,2,3- Trichloropropane	µg/L	<0.50	<0.50	1
1,2,4- Trimethylbenzene	µg/L	<0.50	<0.50	1
1,3,5- Trimethylbenzene	µg/L	<0.50	<0.50	1
Vinyl chloride	µg/L	<0.50	<0.50	1
m,p- Xylene	µg/L	<0.50	<0.50	1
o-Xylene	µg/L	<0.50	<0.50	1
Xylenes, Total	µg/L	<0.50	<0.50	1
Pesticides				
Aldrin	µg/L	<0.0095	<0.0095	2
alpha-Chlordane	µg/L	<0.0095	<0.0095	2
gamma-Chlordane	µg/L	<0.0095	<0.0095	2
Chlordane	µg/L	<0.19	<0.19	2
Dieldrin	µg/L	<0.0095	<0.0095	2
Endrin	µg/L	<0.0095	<0.0095	2
Hexachlorocyclopentadiene	µg/L	<0.095	<0.095	2
Heptachlor	µg/L	<0.0095	<0.0095	2
Heptachlor epoxide	µg/L	<0.0095	<0.0095	2
Hexachlorobenzene	µg/L	<0.0095	<0.0095	2
Methoxychlor	µg/L	<0.047	<0.047	2
Toxaphene	µg/L	<0.71	<0.71	2
gamma-BHC	µg/L	<0.0095	<0.0095	2
Aroclor 1016	µg/L	<0.076	<0.076	2
Aroclor 1221	µg/L	<0.24	<0.24	2
Aroclor 1232	µg/L	<0.095	<0.095	2
Aroclor 1242	µg/L	<0.095	<0.095	2
Aroclor 1248	µg/L	<0.095	<0.095	2
Aroclor 1254	µg/L	<0.095	<0.095	2
Aroclor 1260	µg/L	<0.095	<0.095	2
PCB-Total	µg/L	<0.24	<0.24	2
Alachlor	µg/L	<0.1	<0.1	2
Atrazine	µg/L	<0.1	<0.1	2
Simazine	µg/L	<0.07	<0.07	2
Herbicides				
2,4,-D	µg/L	<0.10	<0.10	2
2,4,5-TP	µg/L	<0.20	<0.20	2
Dicamba	µg/L	<0.30	<0.30	2
Dalapon	µg/L	<1.0	<1.0	2
Dinoseb	µg/L	<0.20	<0.20	2
Pentachlorophenol	µg/L	<0.040	<0.040	2
Picloram	µg/L	<0.10	<0.10	2

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Parameter	Units	Range of Detection	Pueblo Raw Water Average Level	Number of Samples Analyzed
Herbicides (cont'd)				
Butachlor	µg/L	<0.1	<0.1	2
Metolachlor	µg/L	<0.1	<0.1	2
Metribuzin	µg/L	<0.1	<0.1	2
Propachlor	µg/L	<0.1	<0.1	2
Endothall	µg/L	<0.90	<0.90	2
Carbamate Pesticides				
3-Hydroxycarbofuran	µg/L	<0.500	<0.500	2
Aldicarb	µg/L	<0.500	<0.500	2
Aldicarb sulfone	µg/L	<0.500	<0.500	2
Aldicarb sulfoxide	µg/L	<0.500	<0.500	2
Carbaryl	µg/L	<0.500	<0.500	2
Carbofuran	µg/L	<0.500	<0.500	2
Methiocarb	µg/L	<0.500	<0.500	2
Methomyl	µg/L	<0.500	<0.500	2
Oxamyl (Vydate)	µg/L	<0.500	<0.500	2
Propoxur	µg/L	<0.500	<0.500	2
1,2-Dibromo 3-chloropropane	µg/L	<0.0098	<0.0098	2
1,2-Dibromoethane	µg/L	<0.0098	<0.0098	2
Other Organic Chemicals				
Benzo(a)pyrene	µg/L	<0.02	<0.02	2
Bis(2-ethylhexyl)adipate	µg/L	<0.60	<0.60	2
Bis(2-ethylhexyl)phthalate	µg/L	<0.60	<0.60	2
Additional Parameters				
Alkalinity (as CaCO ₃)	mg/L	84.0 - 116	100	52
Bromide	mg/L	<0.10	<0.10	13
Calcium Hardness (as CaCO ₃)	mg/L	98.4 - 141	117	52
Chloride	mg/L	4.76 - 7.25	6.00	49
Conductivity	µmho/cm	258 - 415	363	251
Fluoride	mg/L	0.29 - 0.44	0.37	366
Nitrate as N	mg/L	<0.10 - 0.22	<0.10	14
Nitrite as N	mg/L	<0.10	<0.10	14
Total Hardness (as CaCO ₃)	mg/L	132 - 177	154	52
Ortho-Phosphate (as Phosphorous)	mg/L	<0.10	<0.10	14
pH	units	7.62 - 8.71	8.22	251
Total Dissolved Solids	mg/L	217 - 289	255	52
Sulfate	mg/L	60.0 - 91.7	76.7	49
Total Organic Carbon	mg/L	2.0 - 2.5	2.1	50

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Listed on previous pages are regulated and unregulated contaminants detected in the raw water in 2020.

Terms and Definitions Used in the Above Data Table

Oocysts - Life cycle stage of a parasitic organism.

Turbidity - Turbidity is a measure of the cloudiness of water. We monitor it because it is a good indicator of the effectiveness of our plant's filtration system.

NTU - Nephelometric Turbidity Unit - A unit of measurement of turbidity in the water.

MPN/100 mL - Most Probable Number per 100 milliliter - The most probable number of bacterial colonies per 100 milliliters of a water sample.

ND - Not Detected

µg/L - microgram per liter or one part per billion

mg/L - milligram per liter or one part per million

µmho/cm - a unit of measurement of the conductivity of the water

< - Less Than **>** - Greater Than

****Organics analyzed in 2017.**

Please contact the Board of Water Works Water Quality Laboratory for any additional information regarding water quality at (719) 584-0467. Hours are 7:00 am - 3:30 pm Monday through Friday.

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Parameter	Units	Range of Detection	Pueblo Raw Water Average Level	Number of Samples Analyzed
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Clarity				
Turbidity	NTU	0.55 - 10.7	2.10	251

Microbiological				
Total Coliform Bacteria	MPN/100 mL	1 - >24196	3665	196
E. Coli Bacteria	MPN/100 mL	<1 - 29.2	6.6	196

Radiologicals*				
Gross Alpha	pCi/L	5.1	5.1	1
Gross Alpha (Less Radon and Uranium)	pCi/L	2.6	2.6	1
Radium-226	pCi/L	0.0	0.0	1
Radium-228	pCi/L	0.30	0.30	1
Uranium	pCi/L	2.5	2.5	1
Uranium	µg/L	3.6	3.60	1

Inorganic Chemicals				
Trace Metals				
Aluminum	µg/L	<1.00 - 9.71	3.36	9
Antimony	µg/L	<1.00	<1.00	9
Arsenic	µg/L	<1.00 - 1.01	<1.00	9
Barium	µg/L	39.0 - 70.7	55.3	9
Beryllium	µg/L	<1.00	<1.00	9
Cadmium	µg/L	<1.00	<1.00	9
Calcium	mg/L	32.7 - 74.0	52.3	7
Chromium	µg/L	<1.00	<1.00	9
Cobalt	µg/L	<1.00	<1.00	9
Copper	µg/L	1.13 - 1.59	1.33	9
Iron	mg/L	<0.50	<0.50	7
Lead	µg/L	<1.00	<1.00	9
Magnesium	mg/L	7.22 - 17.5	12.5	7
Manganese	µg/L	<1.00 - 3.67	<1.00	9
Mercury	µg/L	<0.50	<0.50	4
Molybdenum	µg/L	3.12 - 5.49	4.44	9
Nickel	µg/L	1.15 - 2.67	2.00	9
Potassium	mg/L	1.55 - 2.88	2.26	7
Selenium	µg/L	1.86 - 7.61	4.21	9
Silver	µg/L	<1.00	<1.00	9
Sodium	mg/L	8.92 - 24.6	17.4	9
Thallium	µg/L	<1.00	<1.00	9
Vanadium	µg/L	1.03 - 1.53	1.18	9
Zinc	µg/L	1.16 - 5.58	1.96	9

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Parameter	Units	Range of Detection	Pueblo Raw Water Average Level	Number of Samples Analyzed
Organic Chemicals				
Total Volatile Organic Compounds (VOC's)**				
Benzene	µg/L	<0.50	<0.50	1
Bromobenzene	µg/L	<0.50	<0.50	1
Bromochloromethane	µg/L	<0.50	<0.50	1
Bromodichloromethane	µg/L	<0.50	<0.50	1
Bromoform	µg/L	<0.50	<0.50	1
Bromomethane	µg/L	<0.50	<0.50	1
n-Butylbenzene	µg/L	<0.50	<0.50	1
sec-Butylbenzene	µg/L	<0.50	<0.50	1
tert-Butylbenzene	µg/L	<0.50	<0.50	1
Carbon tetrachloride	µg/L	<0.50	<0.50	1
Chlorobenzene	µg/L	<0.50	<0.50	1
Chloroethane	µg/L	<0.50	<0.50	1
Chloroform	µg/L	<0.50	<0.50	1
Chloromethane	µg/L	<0.50	<0.50	1
o-Chlorotoluene	µg/L	<0.50	<0.50	1
p-Chlorotoluene	µg/L	<0.50	<0.50	1
Dibromochloromethane	µg/L	<0.50	<0.50	1
Dibromomethane	µg/L	<0.50	<0.50	1
m- Dichlorobenzene	µg/L	<0.50	<0.50	1
o- Dichlorobenzene	µg/L	<0.50	<0.50	1
p- Dichlorobenzene	µg/L	<0.50	<0.50	1
Dichlorodifluoromethane	µg/L	<0.50	<0.50	1
1,1- Dichloroethane	µg/L	<0.50	<0.50	1
1,2- Dichloroethane	µg/L	<0.50	<0.50	1
1,1- Dichloroethylene	µg/L	<0.50	<0.50	1
cis-1,2- Dichloroethylene	µg/L	<0.50	<0.50	1
trans-1,2- Dichloroethylene	µg/L	<0.50	<0.50	1
1,2- Dichloropropane	µg/L	<0.50	<0.50	1
1,3- Dichloropropane	µg/L	<0.50	<0.50	1
2,2- Dichloropropane	µg/L	<0.50	<0.50	1
1,1- Dichloropropene	µg/L	<0.50	<0.50	1
cis-1,3- Dichloropropene	µg/L	<0.50	<0.50	1
trans-1,3- Dichloropropene	µg/L	<0.50	<0.50	1
1,3- Dichloropropene	µg/L	<0.50	<0.50	1
Ethylbenzene	µg/L	<0.50	<0.50	1
Hexachlorobutadiene	µg/L	<0.50	<0.50	1
Isopropylbenzene	µg/L	<0.50	<0.50	1
p-Isopropyltoluene	µg/L	<0.50	<0.50	1
Methylene chloride	µg/L	<0.50	<0.50	1
Naphthalene	µg/L	<0.50	<0.50	1
n-Propylbenzene	µg/L	<0.50	<0.50	1
Styrene	µg/L	<0.50	<0.50	1
Tetrachloroethylene	µg/l	<0.50	<0.50	1
1,1,1- Trichloroethane	µg/l	<0.50	<0.50	1
1,1,1,2- Tetrachloroethane	µg/L	<0.50	<0.50	1
1,1,2,2- Tetrachloroethane	µg/L	<0.50	<0.50	1
Toluene	µg/L	<0.50	<0.50	1

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2019 Analytical Results Summary for Pueblo's Raw Water Pipeline

Parameter	Units	Range of Detection	Pueblo Raw Water Average Level	Number of Samples Analyzed
Organic Chemicals (continued)**				
1,2,3- Trichlorobenzene	µg/L	<0.50	<0.50	1
1,2,4- Trichlorobenzene	µg/L	<0.50	<0.50	1
1,1,2- Trichloroethane	µg/L	<0.50	<0.50	1
Trichloroethylene	µg/L	<0.50	<0.50	1
Trichlorofluoromethane	µg/L	<0.50	<0.50	1
1,2,3- Trichloropropane	µg/L	<0.50	<0.50	1
1,2,4- Trimethylbenzene	µg/L	<0.50	<0.50	1
1,3,5- Trimethylbenzene	µg/L	<0.50	<0.50	1
Vinyl chloride	µg/L	<0.50	<0.50	1
m,p- Xylene	µg/L	<0.50	<0.50	1
o-Xylene	µg/L	<0.50	<0.50	1
Xylenes, Total	µg/L	<0.50	<0.50	1
Pesticides				
Aldrin	µg/L	<0.0095	<0.0095	2
alpha-Chlordane	µg/L	<0.0095	<0.0095	2
gamma-Chlordane	µg/L	<0.0095	<0.0095	2
Chlordane	µg/L	<0.19	<0.19	2
Dieldrin	µg/L	<0.0095	<0.0095	2
Endrin	µg/L	<0.0095	<0.0095	2
Hexachlorocyclopentadiene	µg/L	<0.095	<0.095	2
Heptachlor	µg/L	<0.0095	<0.0095	2
Heptachlor epoxide	µg/L	<0.0095	<0.0095	2
Hexachlorobenzene	µg/L	<0.0095	<0.0095	2
Methoxychlor	µg/L	<0.047	<0.047	2
Toxaphene	µg/L	<0.71	<0.71	2
gamma-BHC	µg/L	<0.0095	<0.0095	2
Aroclor 1016	µg/L	<0.076	<0.076	2
Aroclor 1221	µg/L	<0.24	<0.24	2
Aroclor 1232	µg/L	<0.095	<0.095	2
Aroclor 1242	µg/L	<0.095	<0.095	2
Aroclor 1248	µg/L	<0.095	<0.095	2
Aroclor 1254	µg/L	<0.095	<0.095	2
Aroclor 1260	µg/L	<0.095	<0.095	2
PCB-Total	µg/L	<0.24	<0.24	2
Alachlor	µg/L	<0.1	<0.1	2
Atrazine	µg/L	<0.1	<0.1	2
Simazine	µg/L	<0.07	<0.07	2
Herbicides				
2,4,-D	µg/L	<0.10	<0.10	2
2,4,5-TP	µg/L	<0.20	<0.20	2
Dicamba	µg/L	<0.30	<0.30	2
Dalapon	µg/L	<1.0	<1.0	2
Dinoseb	µg/L	<0.20	<0.20	2

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Herbicides				
Pentachlorophenol	µg/L	<0.040	<0.040	2
Picloram	µg/L	<0.10	<0.10	2
Butachlor	µg/L	<0.1	<0.1	2
Metolachlor	µg/L	<0.1	<0.1	2
Metribuzin	µg/L	<0.1	<0.1	2
Propachlor	µg/L	<0.1	<0.1	2
Endothall	µg/L	<0.90	<0.90	2
Carbamate Pesticides				
3-Hydroxycarbofuran	µg/L	<0.500	<0.500	2
Aldicarb	µg/L	<0.500	<0.500	2
Aldicarb sulfone	µg/L	<0.500	<0.500	2
Aldicarb sulfoxide	µg/L	<0.500	<0.500	2
Carbaryl	µg/L	<0.500	<0.500	2
Carbofuran	µg/L	<0.500	<0.500	2
Methiocarb	µg/L	<0.500	<0.500	2
Methomyl	µg/L	<0.500	<0.500	2
Oxamyl (Vydate)	µg/L	<0.500	<0.500	2
Propoxur	µg/L	<0.500	<0.500	2
1,2-Dibromo 3-chloropropane	µg/L	<0.0098	<0.0098	2
1,2-Dibromoethane	µg/L	<0.0098	<0.0098	2
Other Organic Chemicals				
Benzo(a)pyrene	µg/L	<0.02	<0.02	2
Bis(2-ethylhexyl)adipate	µg/L	<0.60	<0.60	2
Bis(2-ethylhexyl)phthalate	µg/L	<0.60	<0.60	2
Additional Parameters				
Alkalinity (as CaCO ₃)	mg/L	69.2 - 127	103	53
Ammonia (as Nitrogen)	mg/L	<0.01 - 0.11	0.03	39
Calcium Hardness (as CaCO ₃)	mg/L	78 - 172	125	53
Chloride	mg/L	3.12 - 9.23	6.47	50
Conductivity	µmho/cm	228 - 530	398	251
Fluoride	mg/L	0.29 - 0.49	365.00	0.4
Total Hardness (as CaCO ₃)	mg/L	79.2 - 216	165	52
Ortho-Phosphate (as Phosphorous)	mg/L	<0.50	<0.50	4
pH	units	7.45 - 8.99	8.12	251
Total Dissolved Solids	mg/L	166 - 371	279	52
Sulfate	mg/L	42.6 - 134	93	52
Total Organic Carbon	mg/L	2.0 - 3.2	2.30	52

2019

Listed on previous pages are regulated and unregulated contaminants detected in the raw water in 2019.

Terms and Definitions Used in the Above Data Table

Oocysts - Life cycle stage of a parasitic organism.

Turbidity - Turbidity is a measure of the cloudiness of water. We monitor it because it is a good indicator of the effectiveness of our plant's filtration system.

NTU - Nephelometric Turbidity Unit - A unit of measurement of turbidity in the water.

MPN/100 mL - Most Probable Number per 100 milliliter - The most probable number of bacterial colonies per 100 milliliters of a water sample.

ND - Not Detected

µg/L - microgram per liter or one part per billion

mg/L - milligram per liter or one part per million

µmho/cm - a unit of measurement of the conductivity of the water

< - Less Than > - Greater Than

* Radiologicals analyzed in 2012. **Organics analyzed in 2017.

Please contact the Board of Water Works Water Quality Laboratory for any additional information regarding water quality at (719) 584-0467. Hours are 7:00 am - 3:30 pm Monday through Friday.