

Table 2.--U.S. Environmental drinking-water standards and representative water analyses for the aquifers of southwestern Louisiana

[Results in milligrams per liter (mg/L) or micrograms per liter (µg/L) except as noted]

Constituent and properties	U.S. Environmental Protection Agency Primary (p) and secondary (s) drinking-water standards	Chicot aquifer system																				Remarks
		Atchafalaya aquifer				"Upper sand"					"200-foot" sand			"500-foot" sand	"700-foot" sand	"Lower sand"			Evangeline aquifer		Jasper aquifer	
		Arnaudville SMn-46	DeRidder Be-375	Elton JD-544	Chicot State Park Ev-703	Iota Ac-517	Opelousas SL-188	Lafayette Lf-585	Abbeville Ve-722	New Iberia I-78	Lake Charles Cu-622	Hackberry Cn-159	Lake Charles Cu-683	Charles Cu-457	Jennings JD-529	Broussard Lf-617	Merryville Be-468	DeQuincy Cu-579	Oakdale Al-370	Opelousas SL-322	DeRidder Be-366	
Alkalinity, mg/L-----		328	30	103	209	179	265	196	271	423	152	235	176	136	186	297	134	114	160	300	192	Buffers changes in pH and influences toxicity of pollutants.
Arsenic, dissolved, µg/L-----	(p) 50	16	1	1	1	1	1	1	6	19	1	1	<1	<1	1	1	3	1	1	<1	1	Can be toxic, most arsenic is ingested in food.
Barium, dissolved, µg/L-----	(p) 1000	530	80	140	160	260	230	210	170	350	280	280	250	310	280	320	62	160	14	290	17	Can be toxic, ingested mostly in air and water.
Beryllium, dissolved, µg/L-----		<1	<1	<1	<.5	<.5	<1	<.5	<1	<1	<1	<1	<1	<1	<1	<.5	1	<1	<.5	<1	<1	Can be toxic, needed in trace amounts.
Boron, dissolved, µg/L-----		70	20	<10	20	40	50	<20	20	160	<10	100	30	30	30	40	70	70	130	200	90	Essential for plants in concentrations <750 µg/L.
Bromide, dissolved, mg/L-----		.1	<.10	.2	<.10	.3	.0	<.10	.2	<.10	.2	.7	.1	.2	.2	.34	<.10	.4	.5	.1	<.10	Generally not hazardous.
Cadmium, dissolved, µg/L-----	(p) 10	<1	<1	<1	<1	<1	<1	<1	3	<1	<1	<1	<1	<1	<1	1	<1	<1	<1	<1	<1	Causes chronic diseases and contributes to hypertension (Hopps, 1978).
Calcium, dissolved, mg/L-----		62	3.0	17	50	48	59	54	45	100	39	25	43	26	41	22	7.8	8.9	.8	22	2.1	Required by plants and animals, contributes to hardness.
Carbon, organic, total, mg/L-----		16	.1	<.1	3.7	2.1	5.8	.4	.5	2.3	.2	.2	2.4	.4	3.1	.5	.1	.5	.6	2.3	.1	Concentration of total organic compound, generally not hazardous.
Chloride, dissolved, mg/L-----	(s) 250	24	7.2	32	9.2	49	11	3.6	60	28	44	280	28	100	48	110	4.4	14	5.4	100	5.0	Water tastes salty above 250 mg/L and becomes increasingly corrosive.
Chromium, dissolved, µg/L-----	(p) 50	10	10	10	10	10	10	10	<10	<10	10	10	10	10	0	<10	0	10	10	<10	<10	Trace amounts of Cr ⁺⁶ is toxic.
Cobalt, dissolved, µg/L-----		<3	<3	48	<3	<3	<3	<3	27	4	9	3	<3	<3	<3	<3	3	<3	<3	<3	<3	Generally not hazardous, needed in tracer amounts.
Color (platinum-cobalt units)	(s) 75	5	0	5	5	5	0	0	5	5	10	5	0	0	0	5	0	0	5	0	0	Typically caused by natural organic acids, generally not hazardous.
Copper, dissolved, µg/L-----	(s) 1000	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	10	<10	<10	<10	<10	10	<10	<10	10	20	Required by plants and animals.
Dissolved solids (residue 180°C)	(s) 500	396	88	240	254	300	305	232	406	489	268	711	273	331	299	540	177	178	197	522	207	Excess amounts may cause physiological effects, tastes, and corrosion.
Fluoride, dissolved, mg/L-----	(p) 1.4-2.4 ^c	.1	<.1	.2	.2	.2	.2	.2	.3	.2	.2	.3	.1	.1	.1	.3	.3	.2	.4	.4	.5	Improves bone structure in trace amounts, toxic in high concentrations.
Hardness, total as CaCO ₃ , mg/L-----		240	11	68	180	170	220	180	160	380	140	89	140	99	150	90	22	32	-----	80	6	Increases need for detergents, ^d creates scale in pipes.
Iodine, dissolved, µg/L-----		.03	.01	.03	.01	.03	.01	.01	.03	<.01	.03	.07	.05	.06	.00	.05	.01	.00	.01	.02	.01	Needed in human nutrition in trace amounts.
Iron, dissolved, µg/L-----	(s) 300	4100	10	6900	710	10	1100	760	1700	3100	1300	120	390	1900	890	20	20	330	10	270	60	Required by plants and animals; stains above 200 µg/L (Purchase, 1979).
Lead, dissolved, µg/L-----	(p) 50	16	<10	<10	<10	<10	<10	<10	30	<10	<10	10	14	<10	<10	<10	<10	<10	<10	<10	<10	Can be toxic.
Lithium, dissolved, µg/L-----		23	<4	13	10	18	14	14	14	15	23	29	24	25	21	26	13	13	7	23	11	Generally not hazardous.
Magnesium, dissolved, mg/L-----		20	.8	6.1	14	11	18	12	12	31	9.9	6.2	8.1	8.2	12	8.3	.6	2.3	<.1	5.9	.2	Required by plants and animals, contributes to hardness.
Manganese, dissolved, µg/L-----	(p) 200	140	4	460	210	120	140	120	210	180	440	91	300	430	240	10	8	47	<3	64	3	Required by plants and animals in trace amounts; stains like iron.
Mercury, total, µg/L-----	(p) 2	<.1	<.1	<.1	<.1	<.1	<.1	.1	<.1	.1	<.1	<.1	<.1	.1	<.1	<.1	<.1	<.1	<.1	<.1	.1	Can be toxic especially in organic complexes.
Molybdenum, dissolved, µg/L-----		<10	<10	<10	<10	<10	<10	<10	<10	<10	10	<10	<10	<10	<10	<10	10	<10	<10	10	<10	Required by animals in trace amounts.
Nickel, dissolved, µg/L-----		10	-----	-----	3	-----	-----	1	-----	2	-----	-----	-----	-----	7	3	-----	-----	-----	-----	10	Relatively non-toxic to man, needed in plants and animals in trace amounts.
Nitrogen, dissolved, (as NO ₃), mg/L-----	(p) 45	-----	-----	-----	.87	1.4	-----	.84	-----	-----	-----	-----	-----	-----	-----	.14	.10	-----	.61	-----	.17	Needed for plant and animal growth, hazardous in high concentrations.
pH (units)		6.7	6.2	6.4	6.5	5.6	6.9	6.0	6.8	7.1	6.9	7.5	7.0	6.6	6.4	6.6	7.0	6.5	7.9	7.3	8.2	Negative logarithm of the hydrogen ion concentration, pH of 7.0 units is neutral.
Phosphate, dissolved, mg/L-----		-----	-----	-----	-----	-----	-----	.11	-----	<.06	-----	-----	-----	-----	-----	.15	<.06	-----	-----	-----	<.06	Required by plants and animals, can be hazardous.
Potassium, dissolved, mg/L-----		2.6	1.9	1.3	.8	1.5	2.1	.8	1.3	3.3	1.8	1.5	1.9	2.4	1.6	1.8	.8	1.6	.3	2.9	.5	Required by plants and animals.
Selenium, dissolved, µg/L-----	(p) 10	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	Essential for animals and some plants in trace amounts.
Silica, dissolved, mg/L-----		41	46	58	44	48	37	44	36	39	48	32	51	55	51	31	21	43	17	43	16	Required by plants and animals, contributes to boiler scale.
Sodium, dissolved, mg/L-----		55	9.9	34	21	46	25	11	87	35	36	260	36	77	43	180	59	47	82	170	90	Concentrations above 2000 mg/d may contribute to hypertension.
Specific conductance (µS/cm at 25°C)	(s) ~850	677	71	302	402	488	517	362	697	830	440	1280	414	560	495	891	280	265	304	863	340	Measures electrical resistance of water, generally proportional to dissolved solids.
Strontium, dissolved, µg/L-----		340	51	140	160	190	200	130	160	330	320	370	270	250	160	350	54	110	13	350	19	Generally not toxic, contributes to hardness.
Sulfate, dissolved, mg/L-----	(s) 250	1.0	2.0	2.4	2.0	3.0	1.6	3.0	<.1	<1.0	2.8	4.3	1.0	1.0	1.0	11	7.0	1.0	1.0	2.0	8.8	Concentrations >250 mg/L create bitter taste, essential to life.
Vanadium, dissolved, µg/L-----		<6	<6	<6	<6	<6	6	<6	<6	<6	6	<6	<6	<6	<6	6	6	<6	<6	6	<6	Needed in human nutrition in trace amounts.
Zinc, dissolved, µg/L-----	(s) 5000	<3	8	<4	57	35	21	17	<4	4	8	7	28	10	3	6	4	28	<3	8	<4	Essential for plants and animals, generally not toxic.

^a Analysis by ion chromatograph. ^b Kolego and Wooking, 1979. ^c Standard changes because solubility of fluoride changes with temperatures.

^d Classification: Soft (0-75 mg/L), moderately hard (75-150 mg/L), and very hard (>300 mg/L). ^e National Academy of Sciences, 1968.