Water Quality Criteria/Benchmarks for Consideration
Emergency Response: Bachman Services Fire - Oklahoma City, OK

	Concentration	Units	Concentration	Units	OK WQS Aquatic Life - Acute (ug/L)	OK WQS Aquatic Life - Chronic (ug/L)	OK WQS Human Health - Water + Fish (ug/L)	OK WQS Human Health - Fish Only (ug/L)	EPA CWA 304(a) Aquatic Life - Acute (ug/L)	EPA CWA 304(a) Aquatic Life - Chronic (ug/L)	EPA CWA 304(a) Human Health - Water + Fish (ug/L)	EPA CWA 304(a) Human Health - Fish Only (ug/L)	BP Oil Spill - Aquatic Life - Acute Benchmark (ug/L)	BP Oil Spill - Aquatic Life - Chronic Benchmark (ug/L)	BP Oil Spill Human Health Benchmark (ug/L)
Client Sample ID: 1372															
Hardness	255	mgCaCO3/L													
Ammonia	0.414	mg/L													
TSS	32	mg/L													
Frac Tank FT 1617															
1,2,4-Trimethylbenzene	898	ug/L													
1,3,5-Trimethylbenzene	305	ug/L													
4-Isopropyltoluene	67.9	ug/L													
Acetone	626	ug/L													
Ethylbenzene	2190	ug/L					3120	28720			530	2100	4020	790	610
Isopropylbenzene	169	ug/L											2140	420	
Naphthalene	8150	ug/L											803	193	1800
Toluene	90.3	ug/L					10150	301900			1300	15000	8140	1600	120000
m&p-Xylene	34200E	ug/L											3560	700	18000
n-Butylbenzene	150	ug/L													
n-Propylbenzene	148	ug/L													
o-Xylene	4550	ug/L											3560	700	18000
Fluorene	4590	ug/L									1100	5300	164	39.3	12000
Naphthalene	9130	ug/L											803	193	1800
Antimony	0.06	mg/L	60	ug/L							5.6	640			
Arsenic	0.016	mg/L	16	ug/L	360	190		205	340	150	0.018	0.14			
Cadmium	0.011	mg/L	11	ug/L	87.48	2.2	14.49	84.13	5.04	0.51					
Copper	0.116	mg/L	116	ug/L	42.59	26.36			31.06	19.22	1300				
Lead	0.044	mg/L	44	ug/L	239.65	9.34	5	25	239.65	9.34					
Nickel	0.016	mg/L	16	ug/L	2900.9	322.49	607.2	4583	959.66	106.7	610	4600	74	8.2	15000
Zinc	3.85	mg/L	3850	ug/L	239.62	217.04			245.34	245.34	7400	26000			
Hardness, Total	233	mgCaCO3/L													
Ammonia-N	55.6	mg/L													
Oil and Grease	265	mg/L							narrative criterion	narrative criterion					
Total Suspended Solids	67	mg/L													

Legend

	Recommendation not available
	Represents a total concentration (not dissolved), Calculated using equation in OK WQS, with Hardness = 233 mg/L
	Represents a total concentration (not dissolved), Calculated using equation on EPA's CWA 304(a) criteria website, with Hardness = 233 mg/L
	EPA 304(a) ammonia criteria recommendations are dependent upon pH, temperature, and life stage...see EPA's website for details
	Value given is for total xylene, including m, o, and p

Website Sources
OK WQS: http://www.owrb.ok.gov/util/rules/pdf_rul/RulesCurrent2011/Ch45-Current2011.pdf
EPA 304(a) Criteria Recommendations:
http://water.epa.gov/scitech/swguidance/standards/criteria/current/index.cfm#D
BP Oil Spill - Aquatic Life Benchmarks: http://www.epa.gov/bpspill/water-benchmarks.html
BP Oil Spill - Human Health Bencharks: http://www.epa.gov/bpspill/health-benchmarks.html

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