

**Surface Water and Groundwater Analytical Summary**

Sections 20, 22, 23, 26-29, 33 and 34, Township 13 North, Range 15 West

Bethany-Longstreet Oil and Gas Field  
DeSoto Parish, Louisiana  
HET Project No. 8060.00

Table 1  
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Sample Location	Date	Sampler	Salinity								Metals															Alkalinity			
			Chloride	Chloride	Bromide	Cl/Br Ratio	EC	TDS	Sulfate	Silica	Aluminum	Arsenic	Barium	Cadmium	Calcium	Chromium	Iron	Lead	Magnesium	Manganese	Mercury	Potassium	Selenium	Silver	Sodium	Strontium	Zinc	Alkalinity, Bicarbonate	Alkalinity, Carbonate
			4500 mg/L	9056A mg/L	9056A mg/L	N/A N/A	120.1 umhos/cm	2540C mg/L	9056A mg/L	4500 mg/L	6020A mg/L	6020A mg/L	6020A mg/L	6020A mg/L	6020A mg/L	6020A mg/L	6020A mg/L	6020A mg/L	6020A mg/L	6020A mg/L	7470A mg/L	6020A mg/L	6020A mg/L	6020A mg/L	6020A mg/L	6020A mg/L	6020A mg/L	2320B mg/L	2320B mg/L
LDEQ RECAP SS <sup>1</sup>	10/20/03	N/A	250 <sup>2</sup>	250 <sup>2</sup>	N/A	N/A	N/A	500 <sup>2</sup>	250 <sup>2</sup>	N/A	N/A	0.01	2	0.005	N/A	0.1	0.3 <sup>2</sup>	0.015	N/A	0.05 <sup>2</sup>	0.002	N/A	0.05	0.018	N/A	N/A	1.1	N/A	N/A
<b>HET Investigation - Surface Water Pond</b>																													
C L Byrant Pond	07/24/18	HET	—	23	< 0.50	N/A	473	276	1.8	—	< 1.0	< 0.010	0.342	< 0.0050	6.96	< 0.010	< 1.0	< 0.010	2.13	<b>0.533</b>	< 0.00020	1.47	< 0.050	< 0.010	93.6	0.405	< 0.050	46.9	< 5.0
C L Byrant Pond (Dissolved)	07/24/18	HET	—	—	—	—	—	—	—	6.5	< 1.0	< 0.010	0.249	< 0.0050	7.44	< 0.010	< 1.0	< 0.010	2.2	<b>0.583</b>	< 0.00020	1.34	< 0.050	< 0.010	98.3	0.425	< 0.050	—	—
Haley Pond	07/23/18	HET	—	47.2	< 0.50	N/A	712	416	82	—	< 1.0	< 0.010	0.191	< 0.0050	9.73	< 0.010	< 1.0	< 0.010	4.66	< 0.020	< 0.00020	2.74	< 0.050	< 0.010	132	0.46	< 0.050	143	< 5.0
Haley Pond (Dissolved)	07/23/18	HET	—	—	—	—	—	—	—	5.3	< 1.0	< 0.010	0.2	< 0.0050	10.6	< 0.010	< 1.0	< 0.010	4.98	< 0.020	< 0.00020	2.87	< 0.050	< 0.010	136	0.481	< 0.050	—	—
<b>HET Investigation - Relief Wells</b>																													
David Mason Relief Well	07/24/18	HET	—	85.7	< 0.50	N/A	1830	<b>1470</b>	1.5	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	147	< 5.0
David Mason Relief Well (Dissolved)	07/24/18	HET	—	—	—	—	—	—	—	14	1.76	< 0.010	0.134	< 0.0050	5.62	< 0.010	<b>2.5</b>	< 0.010	1.64	<b>0.133</b>	< 0.00020	2.8	< 0.050	< 0.010	425	0.353	< 0.050	—	—
Derbonne Relief Well	07/24/18	HET	—	31.8	< 0.50	N/A	901	<b>532</b>	1.4	—	3.69	< 0.010	0.112	< 0.0050	1.7	< 0.010	<b>3.55</b>	< 0.010	< 1.0	0.0437	< 0.00020	1.56	< 0.050	< 0.010	198	0.0774	< 0.050	91.9	< 5.0
Derbonne Relief Well (Dissolved)	07/24/18	HET	—	—	—	—	—	—	—	12.2	< 1.0	< 0.010	0.0224	< 0.0050	< 1.0	< 0.010	< 1.0	< 0.010	< 1.0	< 0.020	< 0.00020	< 1.0	< 0.050	< 0.010	209	0.0407	< 0.050	—	—
<b>HET Investigation - Rig Supply Wells</b>																													
Dennison Rig Supply	07/18/18	HET	127	111	0.52	213	1480	<b>901</b>	< 0.50	—	< 1.0	< 0.010	0.0251	< 0.0050	2.66	< 0.010	< 1.0	< 0.010	< 1.0	< 0.020	< 0.00020	1.27	< 0.050	< 0.010	428	0.104	< 0.050	381	13.9
Dennison Rig Supply (Dissolved)	07/18/18	HET	—	—	—	—	—	—	—	11.6	< 1.0	< 0.010	0.0228	< 0.0050	1.5	< 0.010	< 1.0	< 0.010	< 1.0	< 0.020	< 0.00020	1.15	< 0.050	< 0.010	414	0.0904	< 0.050	—	—
Gamble Rig Supply	07/19/18	HET	114	105	< 0.50	N/A	1440	<b>876</b>	< 0.50	—	< 1.0	< 0.010	0.0298	< 0.0050	2.64	< 0.010	< 1.0	< 0.010	< 1.0	< 0.020	< 0.00020	1.36	< 0.050	< 0.010	422	0.107	< 0.050	396	14.1
Gamble Rig Supply (Dissolved)	07/19/18	HET	—	—	—	—	—	—	—	12.2	< 1.0	< 0.010	0.0276	< 0.0050	1.68	< 0.010	< 1.0	< 0.010	< 1.0	< 0.020	< 0.00020	1.33	< 0.050	< 0.010	402	0.105	< 0.050	—	—
Long 1 & 2 Rig Supply	07/23/18	HET	—	48.8	< 0.50	N/A	846	<b>503</b>	51.4	—	< 1.0	< 0.010	0.0218	< 0.0050	1.19	< 0.010	< 1.0	< 0.010	< 1.0	< 0.020	< 0.00020	< 1.0	< 0.050	< 0.010	185	0.0849	< 0.050	244	5.9
Long 1 & 2 Rig Supply (Dissolved)	07/23/18	HET	—	—	—	—	—	—	—	11.6	< 1.0	< 0.010	0.021	< 0.0050	1.22	< 0.010	< 1.0	< 0.010	< 1.0	< 0.020	< 0.00020	< 1.0	< 0.050	< 0.010	177	0.0838	< 0.050	—	—
Long 3 & 4 Rig Supply	07/23/18	HET	—	38.3	< 0.50	N/A	751	451	7.7	—	< 1.0	< 0.010	0.0326	< 0.0050	1.34	< 0.010	< 1.0	< 0.010	< 1.0	< 0.020	< 0.00020	< 1.0	< 0.050	< 0.010	163	0.0992	< 0.050	204	5.7
Long 3 & 4 Rig Supply (Dissolved)	07/23/18	HET	—	—	—	—	—	—	—	13.4	< 1.0	< 0.010	0.0258	< 0.0050	1.3	< 0.010	< 1.0	< 0.010	< 1.0	< 0.020	< 0.00020	< 1.0	< 0.050	< 0.010	173	0.0959	< 0.050	—	—
Maximum	N/A	N/A	127	111	0.52	213	1830	<b>1470</b>	82	14	3.69	0	0.342	0	10.6	0	<b>3.55</b>	0	4.98	<b>0.583</b>	0	2.87	0	0	428	0.481	0	396	14.1
LDEQ RECAP SS <sup>1</sup>	10/20/03	N/A	250 <sup>2</sup>	250 <sup>2</sup>	N/A	N/A	N/A	500 <sup>2</sup>	250 <sup>2</sup>	N/A	N/A	0.01	2	0.005	N/A	0.1	0.3 <sup>2</sup>	0.015	N/A	0.05 <sup>2</sup>	0.002	N/A	0.05	0.018	N/A	N/A	1.1	N/A	N/A

1 - LDEQ RECAP Groundwater Screening Standards per Table 1 of LDEQ RECAP document dated October 20, 2003 listed for reference purposes only

2 - EPA Secondary Drinking Water Standard

EC - Electrical Conductivity

TDS - Total Dissolved Solids

Filtered - Dissolved metal containers filtered and preserved at time of sample collection

mg/L - milligrams per liter equivalent to parts per million (ppm)

umhos/cm - micro mohs per centimeter

— Not Analyzed

N/A - Not Applicable

**SUMMARY:** **No exceedance of EPA Primary Drinking Water Standards / LDEQ RECAP health based Screening Standards.**  
**Small number of exceedances of EPA Secondary Drinking Water Standards in TDS, Iron, and Manganese.**  
**EPA Secondary Drinking Water Standards are non-enforceable guidelines for drinking water, based on aesthetic considerations only, such as taste, color, and odor, and are not considered to present a risk to human health.**  
**All parameters are within natural tolerances for the Wilcox aquifer in this portion of Louisiana.**