

JACKSON COUNTY

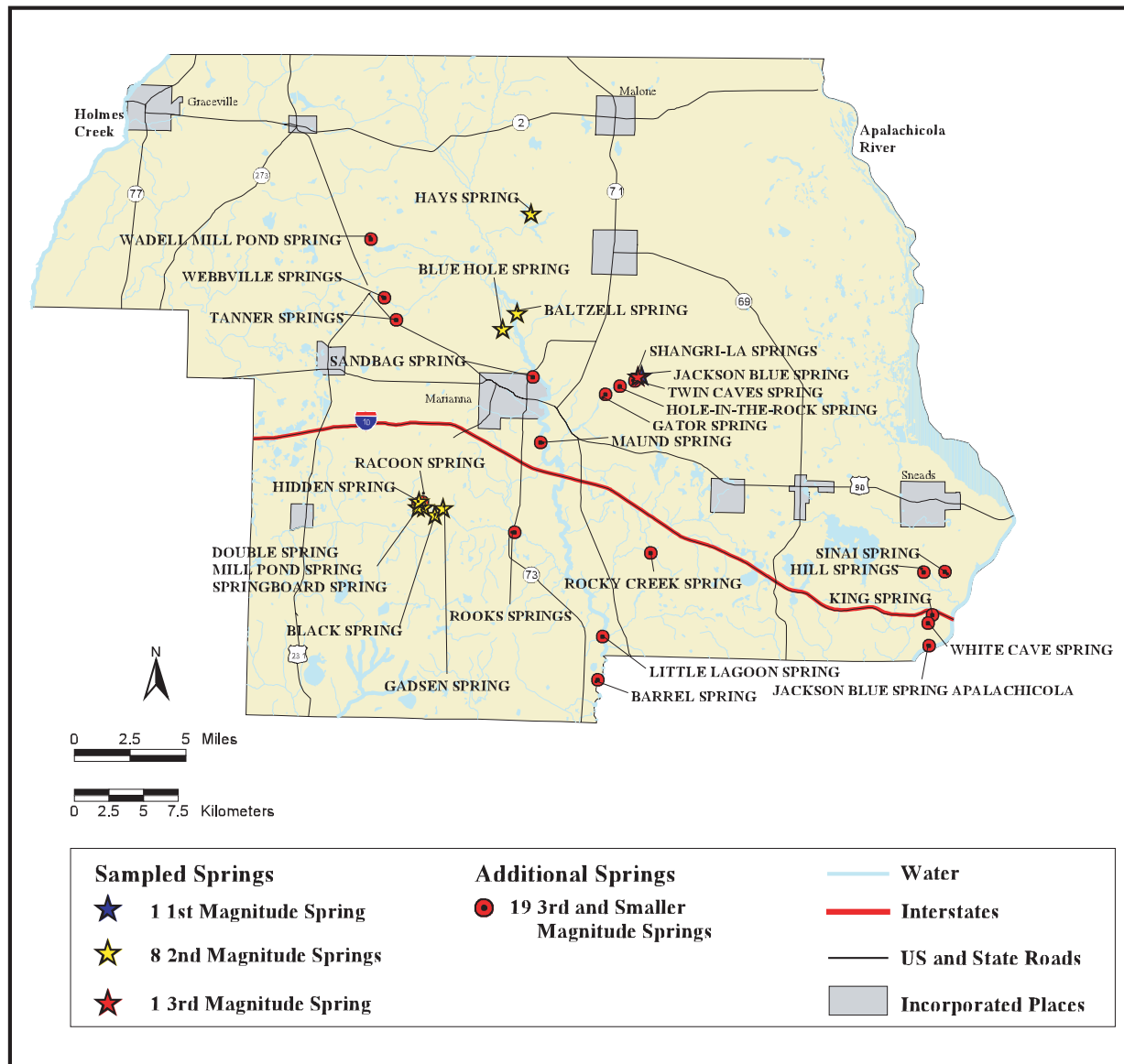


Figure 74. Springs visited by FGS in Jackson County.

Baltzell Spring



Figure 75. Baltzell Spring (photo by R. Means).

Location - Lat. 30° 49' 50.16" N., Long. 85° 14' 03.84" W. (NE ¼ SW ¼ SE ¼ sec. 16, T. 5 N., R. 10 W.). Baltzell Spring is located approximately 3.5 miles (5.6 km) north of Marianna. From the intersection of US 90 and SR 166 (Jefferson Street) in Marianna, travel north for 2.6 miles (4.2 km) on SR 166 to the Florida Caverns State park entrance. Turn west (left) into the Florida Caverns State Park and travel 1.7 miles (2.7 km) to the boat landing on the north (right) side of the road. The spring and spring run are surrounded by private property but may be accessed by traveling 1 mile (1.6 km) upstream from the Florida Caverns State Park boat ramp on the Chipola River. The spring run enters the river from the east.

Description – Baltzell Spring is also referred to as Bosel or Bozel Spring. The spring pool measures 75 ft (22.9 m) north to south and 54 ft (16.5 m) east to west. The depth of the spring over the vent measures 14.0 ft (4.3 m). The water is light blue-green with a slight murkiness. Limestone is exposed near the vent and a slight boil is present on the pool surface. There is an old collapsed dock on the east shore of the spring. A small spring run enters the spring pool from the north, and the combined flow from both exits to the south. The spring and its run support rich native aquatic vegetation. Baltzell Spring run flows south, then east for a total distance of approximately 800 ft (243.8 m) (Rosenau et al., 1977), before entering the Chipola River from the east. To the east, the ground rises to approximately 12 ft (4 m) above the water surface. An old house and cleared pasture are visible a short distance to the east. Land west of the spring is comprised of the river and its flood-plain swamp forest. There are at least three other springs in close proximity to Baltzell Spring that maybe collectively referred to as the Baltzell Springs Group.

Table 78. Baltzell Spring water quality analysis.

Analytes	1973	2002	
		Dissolved	Total
Field Measures			
Temperature	20.5	19.81	
DO	-	5.77	
pH	7.6	7.24	
Sp. Cond.	-	276	
Lab Analytes			
BOD	-	-	0.2AU
Turbidity	-	-	1.2
Color	5	-	5U
Alkalinity	120	-	127
Sp. Cond.	270	300.0	-
TDS	144	-	165
TSS	-	-	4U
Cl	4	-	5.4A
SO ₄	0.4	-	1.7A
F	0	-	0.05I
Nutrients			
TOC	-	-	1I
NO ₃ + NO ₂ as N	0.88	-	2.5
NH ₃	-	-	0.01U
TKN	-	0.11I	0.12I
P	-	0.026	0.028
PO ₄	-	0.024	-
NO ₃	3.9	-	-

Analytes	1973	2002	
		Dissolved	Total
Metals			
Ca	48	51.6	50.7A
K	0.4	0.44	0.42A
Na	2.4	2.4I	2.3I
Mg	1.4	1.7	1.7A
Al	-	-	75U
As	-	3U	3U
B	-	-	15U
Cd	-	0.5U	0.5U
Co	-	-	0.75U
Cr	-	2U	2U
Cu	-	3.5U	3.5U
Fe	-	35U	36I
Mn	-	0.78I	1.7I
Ni	-	2U	2U
Pb	-	3U	5U
Ra-226	-	-	0.2U
Ra-228	-	-	4
Se	-	4U	4U
Sn	-	-	10U
Sr	70	-	38.7A
Zn	-	3.4U	2U

A=Average value U,K=Compound not detected, value shown is the method detection limit

I=Value is less than practical quantitation limit J=Est value Q=Exceeding holding time limit

Utilization - The spring is undeveloped and bordered by private lands.**Discharge** - All discharge rates are measured in ft³/s.August 16, 1973 72.8⁽¹⁾March 22, 2002 48.76⁽²⁾

Table 79. Baltzell Spring bacteriological analysis.

Bacteria Results (in #/100 mL)	
Analyte	Value
Enterococci	64Q
Fecal Coliform	14Q

Blue Hole Spring



Figure 76. Blue Hole (photo by R. Means).

Location – Lat. 30° 49' 12.52" N, Long. 85° 14' 41.62" W (SW ¼ SW ¼ NW ¼ sec. 21, T. 5 N., R. 10 W.). Blue Hole Spring is located within the Florida Caverns State Park, 3 miles (4.8 km) north of Marianna. From the intersection of US 90 and SR 166 (Jefferson Street) in Marianna, travel north 2.6 miles (4.2 km) on SR 166 to the park entrance on the west (left) side of the road. Follow the park road 0.8 miles (1.3 km) then turn north (right) on Blue Hole Drive. Travel on Blue Hole Drive for 1.8 miles (2.9 km) to the spring and picnic area.

Description – Blue Hole Spring pool is elongated and measures 159 ft (48.5 m) east to west and 258 ft (78.6 m) northwest to southeast. The depth of the spring pool is variable and measures up to 26 ft (7.9 m) (Rosenau et al., 1977). The spring has a sand bottom. Thick patches of filamentous green algae cover about half of the spring bottom. The water color is greenish and murky. No boil was visible on the water surface in June 2002. Water lettuce is abundant in the southeast portion of the pool. The west side of the pool has a limestone boulder wall with stairs leading down to a sandy swimming area. The south side of the spring has a wooden footbridge over the outflow channel. The east side has a limestone boulder wall and a wooden swimming dock. On the north side of the main pool, there is another much smaller pool that is separated from the main pool by a narrow land bridge. During the January 2002 visit, the water in the small pool was crystal clear and light blue, contrasting with the murky greenish water of the main spring pool. There is a wooden walkway that leads over the land bridge. The spring run discharges south approximately 1.6

Table 80. Blue Hole Spring water quality analysis.

Analytes	1973	2002	
		Dissolved	Total
Field Measures			
Temperature	-	17.87	
DO	4.3	5.94	
pH	7.1	7.21	
Sp. Cond.	-	219	
Lab Analytes			
BOD	-	-	0.2AU
Turbidity	-	-	4.0
Color	5	-	5U
Alkalinity	130	-	118
Sp. Cond.	255	240.0	-
TDS	134	-	147
TSS	-	-	4U
Cl	6	-	7.9
SO ₄	0.4	-	2.3
F	0.1	-	0.063I
Nutrients			
TOC	-	-	3.1I
NO ₃ + NO ₂ as N	0.12	-	0.47
NH ₃ + NH ₄	-	-	0.013I
TKN	-	0.1I	.14I
P	-	0.02A	0.032
PO ₄	-	0.02	-
NO ₃	0.5	-	-

Analytes	1973	2002	
		Dissolved	Total
Metals			
Ca	43	41.2A	41.7
K	0.5	0.69A	0.69
Na	2.5	3.8I	4.1
Mg	2.6	3.1A	3.1
Al	-	-	84I
As	-	3U	3U
B	-	-	15U
Cd	-	0.5U	0.5U
Co	-	3.5U	0.75U
Cr	-	2U	2U
Cu	-	3.5U	3.5U
Fe	-	120I	270
Mn	-	7.3A	11.1
Ni	-	2U	2U
Pb	-	3U	5U
Ra-226	-	-	0.1U
Ra-228	-	-	1U
Se	-	0.5U	4U
Sn	-	-	10U
Sr	80	-	47.6
Zn	-	1.5U	7U

A=Average value U,K=Compound not detected, value shown is the method detection limit

I=Value is less than practical quantitation limit J=Est value Q=Exceeding holding time limit

miles (2.6 km) into the Chipola River through a heavily forested lowland. All immediate surroundings are landscaped with grassy lawns, scattered tall pines, picnic tables, restroom facilities, and parking area. The ground rises gently away from the spring on the west side to approximately 10 ft (3 m) above water level. Blue Hole Spring may be a river rise of an underground channel of the nearby Chipola River. During the January 2002 visit, the physical characteristics of both spring and river water were similar (relatively high DO, low temperature, and similar color).

Table 81. Blue Hole Spring bacteriological analysis.

Bacteria Results (in #/100 mL)	
Analyte	Value
Enterococci	160Q
Fecal Coliform	180Q

Utilization - The spring is a popular swimming area within Florida Caverns State Park. Picnic tables and full facilities are near the spring. The park provides campgrounds, cavern tours, horse trails and boat access to the Chipola River.

Discharge - Discharge rates are measured in ft³/s.

August 8, 1973 56.8⁽¹⁾

June 28, 2002 0.65⁽²⁾

Hays Spring



Figure 77. Hays Spring (photo by R. Means).

Location – Lat. 30° 53' 42.33" N., Long. 85° 13' 28.15" W. (NE ¼ SW ¼ NW ¼ sec. 27, T. 6 N., R. 10 W.). Hays Spring enters the Chipola River approximately 10 miles northwest of Marianna. The spring run enters the Chipola River from the northeast about 0.3 miles (0.5 km) upstream from the CR 162 bridge over the Chipola River. From Marianna head north on CR 166 (Jefferson Street) approximately 3 miles (4.8 km) to the intersection with CR 167. Turn north (left) on CR 167 and drive approximately 4.2 miles (6.8 km) to the intersection with CR 162. Turn west (left) on CR 162 and travel approximately 2.6 miles (4.2 km) to the bridge over the Chipola River. There is limited small watercraft access to the river south of the bridge on the west bank.

Description – Hays Spring pool measures 75 ft (22.9 m) north to south and 100 ft (30.5 m) east to west. Spring bathymetry is dramatic, with limestone cliffs and overhangs near the vent. The spring pool is shallow, except over the elongated vent opening, where depths reach 14.9 ft (4.5 m). Rosenau et al. (1977) report that the bottom is soft and muddy. Hays Spring is bluish and slightly murky. Water lettuce and exotic aquatic vegetation are present. There was no visible boil over the spring during the February 2003 sampling visit. A creek channel comes in on the northwest side of the spring pool. Hays Spring Run exits the pool to the southwest. The upper section of the spring run is approximately 0.5 mi (0.8 km) long and 100 ft (30.5 m) wide. Thereafter, the spring run narrows, is often multi-chan-

Table 82. Hays Spring water quality analysis.

Analytes	2003	
	Dissolved	Total
Field Measures		
Temperature		20.45
DO		6.37
pH		7.61
Sp. Cond.		269
Lab Analytes		
BOD	-	0.4AI
Turbidity	-	0.30
Color	-	5U
Alkalinity	-	120
Sp. Cond.	280.0	-
TDS	-	149.0
TSS	-	4U
Cl	-	4.2
SO ₄	-	0.62
F	-	0.05U
Nutrients		
TOC	-	1U
NO ₃ + NO ₂ as N	-	3.10
NH ₃ + NH ₄	-	0.01U
TKN	0.06U	0.06U
P	0.021I	0.015U
PO ₄	0.018	-
NO ₃	-	-

Analytes	2003	
	Dissolved	Total
Metals		
Ca	50.9	52.3A
K	0.36	0.38A
Na	1.7I	1.8I
Mg	1.1	1.1A
Al	-	10U
As	3U	3U
B	-	10U
Cd	0.5U	0.5U
Co	-	1U
Cr	2U	2U
Cu	3.5U	4U
Fe	5U	11I
Mn	0.25U	1.1I
Ni	2U	2U
Pb	5U	5U
Ra-226	-	0.4
Ra-228	-	0.8U
Se	8U	8U
Sn	-	4U
Sr	-	35.4A
Zn	2.5U	4U

A=Average value U,K=Compound not detected, value shown is the method detection limit

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neled, and runs for a total length of approximately 2.8 mi (4.5 km) southwestward into the Chipola River. A pipe leads into the Hays Spring from the northeast bank. The northeast side also has a pavilion and cleared boat launch area. The immediate surroundings are forested, with cleared farmland visible through the trees to the east.

Utilization – The spring is undeveloped and surrounded by private lands.

Discharge – No discharge rate is available.

Table 83. Hays Spring bacteriological analysis.

Bacteria Results (in #/100 mL)	
Analyte	Value
Enterococci	4Q
Fecal Coliform	1KQ

Jackson Blue Spring



Figure 78. Jackson Blue Spring (photo by T. Scott).



Figure 79. Jackson Blue Spring aerial photo (photo by T. Scott).

Location—Lat. 30° 47' 25.85" N., Long. 85° 08' 24.31" W. (SW ¼ SE ¼ NW ¼ sec. 33, T. 5 N., R. 9 W.). Jackson Blue Spring is about 5 miles (8 km) east of Marianna at the northeast end of Merritts Mill Pond. From the intersection of US 90 and SR 73 in Marianna, head east 1.4 miles (2.3 km) on U.S. 90. Turn north (left) on SR 71 and travel 1.2 miles (1.9 km) to the intersection of SR 164. Turn east (right) and drive 3.3 miles (5.3 km) to the county park entrance on the south (right) side of the road. The spring is 0.1 mile (0.2 km) southeast of SR164 in a county park.

Description—Numerous springs feed Merritts Mill Pond. Jackson Blue Spring is the main spring at the head of the pond. It is situated about 10 ft (3 m) west of the diving platform. Spring pool diameter is approximately 240 ft (73.2 m) southwest to northeast and 233 ft (71 m) northwest to southeast. Maximum depth over the vent is 16.5 ft (5 m). The vent is elliptical and approximately 5 ft (1.5 m) high and 25 feet (7.6 m) wide. Limestone is exposed near the vent, and it bears backhoe scars. Clear bluish water issues from the vent. A boil is slightly visible at the surface. There is approximately 40% algae coverage on the pool bottom and very little aquatic or emergent vegetation. The spring pool is a designated swimming area separated from the rest of Merritts Mill Pond by a chain link fence across the channel approximately 300 ft (91.4 m) downstream. The southern shore of the spring pool meets a lowland cypress-gum forest. The northern half of the pool is bordered by high ground sloping upward to nearly 20 ft (6.1 m) above water level. Most of the high ground is cleared and grassy. All nearby uplands are developed. There are buildings and a parking

Table 84. Jackson Blue Spring water quality analysis.

Analytes	1924	1946	1972	2001	
				Unfilt.	Filter
Field Measures					
Temperature	-	-	20.5	20.94	-
DO	-	-	7.8	7.26	-
pH	-	7.5	7.5	7.58	-
Sp. Cond.	-	-	220	243	-
Lab Analytes					
BOD	-	-	0.0	0.2 AU	-
Turbidity	-	-	0	0.05 U	-
Color	-	-	0	5U	-
Alkalinity	-	-	98	108	109
Sp. Cond.	-	-	-	270	-
TDS	-	-	-	139	-
TSS	-	-	-	4U	-
Cl	2.0	2.5	2.5	3.7	3.8 A
SO ₄	2.4	0.9	0.0	1	1.1 A
F	-	0.0	0.1	0.036 I	0.035 I
Nutrients					
TOC	-	-	0.0	1 U	-
NO3 + NO2	-	-	1.4	3.3	3.3
NH3 + NH4	-	-	-	0.01 U	0.01 U
TKN	-	-	-	0.074 I	0.06 U
P	-	-	0.02	0.023	0.022
PO ₄	-	-	0.02	0.02	-

Analytes	1924	1946	1972	2001	
				Unfilt.	Filter
Metals					
Ca	43	38	37	44.5	43.6
K	-	0.4	0.2	0.29	0.29
Na	2.3	1.7	1.6	1.73	1.54
Mg	1.0	2.1	2.1	2.3	2.1
As	-	-	10	3 U	3 U
Al	-	-	-	-	75 U
B	-	-	0	30 U	-
Cd	-	-	-	0.75 U	0.5 U
Co	-	-	0	0.75 U	-
Cr	-	-	1	2 U	2 U
Cu	-	-	10	2 U	2 U
Fe	-	-	-	25 U	20 U
Mn	-	-	-	0.5 U	0.5 U
Ni	-	-	-	2 U	2 U
Pb	-	-	2	5 U	3 U
Se	-	-	-	3.5 U	3.5 U
Sn	-	-	-	7U	-
Sr	-	-	40	32 I	-
Zn	-	-	-	4 U	3.5 U

A=Average value U,K=Compound not detected, value shown is the method detection limit

I=Value shown is less than the practical quantitation limit J=Estimated value Q=Exceeding holding time limit

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area constructed on the uplands. Surrounding the spring, are a concrete retaining wall near shore, slides, a diving board, and picnic tables. An extensive underwater cave system has been mapped at Jackson Blue Spring.

Utilization- Jackson Blue Spring is a county swimming and recreational park.

Discharge- Current discharge measurement was calculated at Turner Landing, below the damn on Merritts Mill Pond. All discharge rates are measured in ft³/s.

January 24, 1929	134 ⁽¹⁾
December 22, 1934	56 ⁽¹⁾
May 20, 1942	265 ⁽¹⁾
November 15, 1946	178 ⁽¹⁾
January 30, 1947	178 ⁽¹⁾
August 6, 1973	287 ⁽¹⁾
December 17, 2001	63.6 ⁽²⁾

Table 85. Jackson Blue Spring bacteriological analysis.

Bacteria Results (in #/100 mL)	
Analyte	Value
<i>Escherichia coli</i>	1 K
Enterococci	1 K
Fecal Coliform	1 K
Total Coliform	1 K

Shangri-La Springs



Figure 80. Shangri-La Springs (photo by R. Means).

Location – Lat. 30° 47' 24.60" N., Long. 85° 08' 34.39" W. (SE ¼ SW ¼ NW ¼ sec. 33, T. 5 N., R. 9 W.). Shangri-La Springs is located near the west bank of Merritts Mill Pond, 5 miles (8 km) east of Marianna. The spring is accessible by canoe or small boat from the public boat ramp on Hunter Fish Camp Road. From Marianna head east on US 90 to the intersection with SR 71, approximately 1.4 miles (2.3 km). Turn north (left) onto SR 71 and travel 1.2 miles (1.9 km) to the intersection with CR 164. Turn east (right) onto CR 164 and travel approximately 1.7 miles (2.7 km) to the intersection with Hunter Fish Camp Road. Turn south (right) on Hunter Fish Camp Road and travel approximately 0.6 mile (1 km) to the public boat landing. The spring vent is approximately 1.5 miles (2.4 km) upstream. Just after passing the recreation area buoys, look to the left. The spring is in a cove adjacent to a vegetated, car-sized boulder. There are a few dozen metal poles that stick out of the water near the vent. Alternatively, the spring is 2,100 ft (640 m) downstream from Jackson Blue Spring and can be accessed using Blue Springs Recreation Area boat launch.

Description – Shangri-La Springs is situated between a large boulder and a 20 ft (6.1 m) high vertical limestone bluff on the west side of Merritts Mill Pond and forms a 40 ft (12.2 ft) diameter spring cove with native aquatic vegetation and little algae. Shangri-La Springs vent is 7 ft (2.1 m) deep and sand-bottomed with exposed limestone. Another vent is situat-

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Table 86. Shangri-La Spring water quality analysis.

Analytes	2003	
	Dissolved	Total
Field Measures		
Temperature	20.92	
DO	6.26	
pH	7.54	
Sp. Cond.	275	
Lab Analytes		
BOD	-	0.2U
Turbidity	-	0.05
Color	-	5U
Alkalinity	-	119
Sp. Cond.	263.0	-
TDS	-	168.0
TSS	-	4U
Cl	-	4.3A
SO ₄	-	1.2A
F	-	0.05U
Nutrients		
TOC	-	1U
NO ₃ + NO ₂ as N	-	3.4
NH ₃ + NH ₄	-	0.01U
TKN	0.06U	0.06U
P	0.035I	0.032I
PO ₄	0.021	-
NO ₃	-	-

Analytes	2003	
	Dissolved	Total
Metals		
Ca	53.4A	51A
K	0.29A	0.29A
Na	1.5I	1.87A
Mg	1.8A	1.8A
Al	-	10U
As	4U	7U
B	-	10U
Cd	0.5U	0.5U
Co	-	2U
Cr	2U	2U
Cu	5U	3U
Fe	15U	10U
Mn	0.25U	1U
Ni	2U	2U
Pb	5U	12U
Ra-226	-	0.1
Ra-228	-	0.9U
Se	8U	15U
Sn	-	11U
Sr	-	39A
Zn	3U	3U

A=Average value U,K=Compound not detected, value shown is the method detection limit
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ed in a limestone fissure 50 ft (15.2 m) to the east. The water is light blue and clear. A prominent boil is seen over the vent near the bluff. A lone scraggly cypress tree stands in the open waters of the mill pond, 100 ft (30.5 m) southeast of the main vent. The bluff face, boulder, and surrounding area are lush with ferns and other vegetation. Merritts Mill Pond is a 5 mile (8 km) long impounded spring run. Several springs feed into the pond along the edges or directly from the pond bottom. Jackson Blue Spring forms the headwaters of Merritt's Mill Pond.

Table 87. Shangri-La Spring bacteriological analysis.

Bacteria Results (in #/100 mL)	
Analyte	Value
Enterococci	1KQ
Fecal Coliform	1KQ

Utilization – The spring is surrounded by private, forested land on one side and Merritts Mill Pond, a popular fishing area, on the other.

Discharge – No discharge rate is available at this time.

Spring Lake Springs

The Florida Geological Survey sampled five second magnitude springs that flow into Spring Lake. Spring Lake actually is a 100-200 ft (30.5-61 m) wide spring run that forms at the confluence of Mill Pond Spring and Springboard Springs. Three other named springs enter into the lake (run) downstream, Double Spring and Black Spring from the south, and Gadsen Spring from the north. A low-lying swamp forest buffer surrounds the entire lake basin, and farther upslope becomes cleared farmland. Spring Lake discharges into Dry Creek, a dark water stream that flows approximately 13 miles (21 km) to the Chipola River. From the confluence, Dry Creek is clear and often flows over limestone.

Location - Spring Lake is located approximately 6.5 miles (10.5 km) southwest of Marianna and has one boat launch that is privately owned but open to the public. Due to extremely shallow spring run conditions, these springs are accessible by canoe or small boat only. From I-10, drive southwest 0.7 miles (1.1 km) on SR 276 to its intersection with SR 167. Turn south (left) on SR 167, travel 4.3 miles (6.9 km). Turn east (left) on Mystery Springs Road and travel 1.4 miles (2.3 km). Turn north (left) on a small track just before the end of the road. Follow this track down to the water and the boat launch. Directions to each spring are given in relation to Black Spring run where this boat launch is located.

Black Spring



Figure 81. Black Spring (photo by R. Means).

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Location – Lat. 30° 41' 55.40" N., Long. 85° 17' 40.08" W. (SE ¼ SW ¼ SW ¼ sec. 36, T. 4 N., R. 11 W.). Black Spring is 150 ft (45.7 m) upstream (west) of the boat launch on the south side of Spring Lake.

Description – Black Spring is also known as Black Hole (Rosenau et al., 1977). The spring pool is nearly circular, steep-sided, and deep. It measures 150 ft (45.7 m) in diameter, and is 49.1 ft (15.0 m) deep northeast of the pool's center. Approximately 20 ft (6.1 m) below the surface on the northeast side, a 25 ft (7.6 m) vertical limestone wall leads down to the spring vent. The water is clear to slightly tannic but appears very dark. Black Spring derives its name from its tendency to issue tannic water during times when all other springs associated with Spring Lake may be discharging clear water. This was the case during the March 2002 sampling visit; however, the water of Black Spring was clear and bluish two months later. Abundant aquatic vegetation, including water lettuce, exotic aquatic vegetation and algae, covers the shallow areas around the perimeter of the spring pool. No boil was visible in March 2002. Black Spring flows through three separate stream channels. The main channel flows north, another northeast, and the other east, all under a swamp forest canopy and into Spring Lake. The north-flowing channel is approximately 150 ft (45.7 m) long, the northeast-flowing and smallest channel is approximately 300 ft (91.4 m), and the east-flowing run approximately 350 ft (106.7 m). The runs are up to 50 ft (15.2 m) wide and 5 ft (1.5 m) deep. All immediate surroundings are low-lying with dense hardwood and cypress

Table 88. Spring Lake Springs, Black Spring water quality analysis.

Analytes	1973	2002	
		Dissolved	Total
Field Measures			
Temperature	21		20.64
DO	3		4.30
pH	6.8		7.26
Sp. Cond.	-		180
Lab Analytes			
BOD	-	-	0.3AI
Turbidity	-	-	0.7
Color	5	-	5U
Alkalinity	90	-	89A
Sp. Cond.	190	180.00	-
TDS	112	-	105.0
TSS	-	-	4U
Cl	4	-	3.0
SO ₄	1.2	-	1.7
F	0.2	-	0.065I
Nutrients			
TOC	-	-	2.9I
NO ₃ + NO ₂ as N	0.09	-	0.43J
NH ₃ + NH ₄	-	-	0.019I
TKN	-	.083I	0.16I
P	-	0.016	0.017
PO ₄	-	0.011	-

Analytes	1973	2002	
		Dissolved	Total
Metals			
Ca	30	27.2	28.4
K	0.4	0.4	0.4
Na	1.4	1.6	1.5I
Mg	5.2	5.1	5.3
Al	-	-	93I
As	-	3U	3U
B	-	-	15U
Cd	-	0.5U	0.5U
Co	-	-	0.75U
Cr	-	2U	2U
Cu	-	3.5U	3.5U
Fe	-	66I	100I
Mn	-	11.2	14.1
Ni	-	2U	2U
Pb	-	3U	5U
Ra226	-	-	0.2
Ra228	-	-	0.7
Se	-	4U	4U
Sn	-	-	10U
Sr	60	-	32.8
Zn	-	1.5U	2U

A=Average value U,K=Compound not detected, value shown is the method detection limit

I=Value is less than practical quantitation limit J=Est value Q=Exceeding holding time limit

swamp forest. The nearest high ground is approximately 150 ft (45.7 m) south and gently rises to a height of about 12 ft (3.7 m) above the lowlands.

Utilization - The spring is undeveloped and surrounded by private land.

Discharge - Discharge rates are measured in ft³/s.

July 18, 1973 73.2⁽¹⁾

May 23, 2002 51.60⁽²⁾

Table 89. Spring Lake Springs, Black Spring bacteriological analysis.

Bacteria Results (in #/100 mL)	
Analyte	Value
<i>Enterococci</i>	520Q
Fecal Coliform	134Q

Double Spring



Figure 82. Double Spring (photo by R. Means).

Location – Lat. 30° 42' 13.68" N., Long. 85° 18' 11.16" W. (NE ¼ NW ¼ SE ¼ sec. 35, T. 4 N., R. 11 W.). The short spring run flows into Spring Lake from the southwest, 0.6 miles (1 km) upstream from Black Spring Run.

Description – Double Spring, a karst window, is composed of a spring, a short run, and a siphon, all on the south side of Spring Lake. Double Spring is nearly circular and sits in a bowl-shaped depression measuring 87 ft (26.5 m) in diameter. The depth of the spring pool is 18.0 ft (5.5 m), and the water is somewhat murky with a bluish hue. Limestone can be

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Table 90. Spring Lake Springs, Double Spring water quality analysis.

Analytes	1973	2002	
		Dissolved	Total
Field Measures			
Temperature	21		20.06
DO	4.5		5.89
pH	7.4		7.46
Sp. Cond.	-		250
Lab Analytes			
BOD	-	-	0.2AU
Turbidity	-	-	1.1
Color	5	-	5U
Alkalinity	120	-	121.0
Sp. Cond.	210	240.0	-
TDS	144	-	131.0
TSS	-	-	4U
Cl	4	-	3.4
SO ₄	0	-	1.9
F	0.2	-	0.086I
Nutrients			
TOC	-	-	1U
NO ₃ + NO ₂ as N	0.2	-	0.95
NH ₃ + NH ₄	-	-	0.01U
TKN	-	0.06U	0.06U
P	-	0.019	0.021
PO ₄	-	0.018	-
NO ₃	0.9	-	-

Analytes	1973	2002	
		Dissolved	Total
Metals			
Ca	41	42.6	38.6A
K	0.4	0.35	0.32A
Na	1.8	1.7I	1.8I
Mg	5	5.6	5.3A
Al	-	-	75U
As	-	3U	3U
B	-	-	15U
Cd	-	0.5U	0.5U
Co	-	-	.75U
Cr	-	2U	2U
Cu	-	3.5U	3.5U
Fe	-	35U	35U
Mn	-	1.4U	1.4U
Ni	-	2U	2U
Pb	-	3U	5U
Ra-226	-	-	0.1U
Ra-228	-	-	1.2U
Se	-	4U	4U
Sn	-	-	10U
Sr	80	-	44.9A
Zn	-	1.5U	2U

A=Average value U,K=Compound not detected, value shown is the method detection limit

I=Value is less than practical quantitation limit J=Est value Q=Exceeding holding time limit

found near the vent and siphon, but the rest of the spring, siphon and run has a soft sand bottom. A moderate boil is present on the water surface. There are large, thick mats of filamentous algae scattered about the pool among native aquatic vegetation with some exotic invasive aquatic plants. The spring discharges through a run as wide as the spring and flows for approximately 75 ft (22.9 m), where it splits into two channels, one flowing north and one flowing east. The majority of flow travels eastward approximately 200 ft (61 m) into a siphon that is estimated to have a depth of 15 ft (4.6 m). The northward run flows through a narrow channel a short distance into Spring Lake. Higher ground on the south side of the spring rises gently to approximately 8 ft (2.4 m) above the water. There is a wooden dock on the south side of the pool, and a private residence can be seen to the southwest on the higher ground. The area around the spring is within in a dense hardwood and cypress swamp forest.

Utilization – Double Spring is surrounded by private lands and is used privately for swimming.

Discharge - Discharge rates are measured in ft³/s.
 July 17, 1973 37.5⁽¹⁾
 May 22, 2002 appeared to be
 siphoning during the 2002 visit⁽²⁾

Table 91. Spring Lake Springs, Double Spring bacteriological analysis.

Bacteria Results (in #/100 mL)	
Analyte	Value
Enterococci	16Q
Fecal Coliform	2Q

Gadsen Spring



Figure 83. Gadsen Spring (photo by R. Means).

Location – Lat. 30° 42' 12.09" N., Long. 85° 17' 18.42" W. (NW ¼ NW ¼ SE ¼ sec. 36, T. 4 N., R. 11 W.). Gadsen Spring flows into Spring Lake from the north, 2100 ft (640 m) downstream from Black Spring Run.

Description – Gadsen Spring occupies a deep, conical, nearly circular to oval depression 120 ft (36.6 m) north to south and 141 ft (43 m) east to west. The depth of the spring pool measured over the vent is 43 ft (13.1m). The vent is located beneath a vertical limestone ledge that is slightly north of the pool's center. The water is slightly murky with a greenish blue color. No boil on the pool surface was observed in March 2002. There is abundant native aquatic vegetation with some thick algae mats. Gadsen Spring discharges south 75 ft (22.9 m) through a narrow run that is shallow, approximately 1-3 ft (0.3-0.9 m) deep. The run then widens to about 100 ft (30.5 m) forming a pool that is approximately 150 ft (45.7 m) long and has dense aquatic vegetation. This pool is reported to be a sinkhole that takes some of the water (Rosenau et al., 1977). Continuing downstream southward, the run again narrows and flows swiftly for approximately 800 ft (243.8 m) through low-lying swamp forest until entering Spring Lake. A mowed grassy track accesses the spring on the north side. To the north, land rises very gently to a height of about 10 ft (3.1 m) above the lowlands. There is a small water-filled sinkhole to the north a short distance. All surrounding lands are forested.

Utilization - The spring is undeveloped and surrounded by private land.

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Discharge - Discharge rates are measured in ft³/s.

July 18, 1973 18.0⁽¹⁾
 May 23, 2002 12.8⁽²⁾

Table 92. Spring Lake Springs, Gadsen Spring water quality analysis.

Analytes	1973	2002	
		Dissolved	Total
Field Measures			
Temperature	20	20.54	
DO	-	4.36	
pH	7.2	7.26	
Sp. Cond.	-	250	
Lab Analytes			
BOD	-	-	0.2U
Turbidity	-	-	0.5
Color	5	-	5U
Alkalinity	120	-	125
Sp. Cond.	220	250.0	-
TDS	140	-	134
TSS	-	-	4U
Cl	2	-	3.6
SO ₄	0.8	-	1.7
F	0.2	-	0.084I
Nutrients			
TOC	-	-	1U
NO ₃ + NO ₂ as N	0.16	-	0.84J
NH ₃ + NH ₄	-	-	0.01U
TKN	-	0.06U	0.06U
P	-	0.02	0.017
PO ₄	-	0.016	-
NO ₃	0.7	-	-

Analytes	1973	2002	
		Dissolved	Total
Metals			
Ca	39	40	41.7
K	0.3	0.35	0.34
Na	1.7	1.8	1.6I
Mg	5.7	6.3	6.5
Al	-	-	75U
As	-	3U	3U
B	-	-	15U
Cd	-	0.5U	0.5U
Co	-	-	0.75U
Cr	-	2U	2U
Cu	-	3.5U	3.5U
Fe	-	35U	35U
Mn	-	1.1I	2.5
Ni	-	2U	2U
Pb	-	3U	5U
Ra-226	-	-	0.4
Ra-228	-	-	1.2U
Se	-	4U	4U
Sn	-	-	10U
Sr	90	-	49.7
Zn	-	1.5U	2U

A=Average value U,K=Compound not detected, value shown is the method detection limit
 I=Value is less than practical quantitation limit J=Est value Q=Exceeding holding time limit

Table 93. Spring Lake Springs, Gadsen Spring bacteriological analysis.

Bacteria Results (in #/100 mL)	
Analyte	Value
Enterococci	4Q
Fecal Coliform	4Q

Mill Pond Spring



Figure 84. Mill Pond Spring (photo by R. Means).

Location – Lat. 30° 42' 13.32" N., Long. 85° 18' 27.00" W. (NE ¼ NE ¼ SW ¼ sec. 35, T. 4 N., R. 11 W.). Mill Pond Spring flows into the lake from the southwest 0.85 miles (1.37 km) upstream from Black Spring Run. The spring is surrounded by private land.

Description – Mill Pond Spring pool measures 126 ft (38.4 m) north to south and 150 ft (45.7 m) east to west. It occupies a conical depression. The depth measured near the center of the pool is 16.8 ft (5.1 m). The sides of the pool are steep and sandy, leading down to a deeper central area with limestone exposed in the spring vent. The water is clear and light blue. No boil was visible on the pool surface during the March 2002 visit. The pool has an abundance of exotic aquatic vegetation, except for the deeper central portion. Mill Pond Spring flows into uppermost Spring Lake on the southwest side via a 600 ft (182.8 m)-long, shallow spring run. The run averages 2 ft (0.6 m) deep. Private residences are present along the northwest side of the spring and the uppermost part of its run. The houses are situated on a gently sloping 8 ft (2.5 m) high ridge. The rest of the land surrounding the spring and its run is densely forested and mostly low-lying. High ground is also adjacent to the spring run on its south side approximately 400 ft (121.9 m) downstream from the spring.

Utilization - The spring is located on private land and a portion of the water is extracted by a water bottling company.

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Discharge - All discharge rates are measured in ft³/s.

July 18, 1973	33.2 ⁽¹⁾
May 22, 2002	23.21 ⁽²⁾

Table 94. Spring Lake Springs, Mill Pond Spring water quality analysis.

Analytes	1973	2002	
		Dissolved	Total
Field Measures			
Temperature	20.5	20.39	
DO	6.5	4.17	
pH	7.4	7.53	
Sp. Cond.	-	204	
Lab Analytes			
BOD	-	-	0.2U
Turbidity	-	-	0.2
Color	5	-	5U
Alkalinity	97	-	120
Sp. Cond.	180	237.0	-
TDS	117	-	130
TSS	-	-	4U
Cl	2	-	3.4
SO ₄	0.4	-	1.8
F	0.2	-	0.082I
Nutrients			
TOC	-	-	1U
NO ₃ + NO ₂ as N	0.2	-	0.97
NH ₃ + NH ₄	-	-	0.01U
TKN	-	0.06U	0.06U
P	-	0.02	0.020
PO ₄	-	0.018	-
NO ₃	0.9	-	-

Analytes	1973	2002	
		Dissolved	Total
Metals			
Ca	30	41.4	37.5
K	0.4	0.35	0.32
Na	1.5	1.8I	1.5I
Mg	5.8	5.4	5.0
Al	-	-	75U
As	-	3U	3U
B	-	-	15U
Cd	-	0.5U	1U
Co	-	-	0.75U
Cr	-	2U	2U
Cu	-	3.5U	3.5U
Fe	-	35U	35U
Mn	-	0.5U	0.5U
Ni	-	2U	2U
Pb	-	3U	5U
Ra-226	-	-	0.2
Ra-228	-	-	1.2U
Se	-	4U	4U
Sn	-	-	10U
Sr	60	-	42.3
Zn	-	1.5U	2U

A=Average value U,K=Compound not detected, value shown is the method detection limit
I=Value is less than practical quantitation limit J=Est value Q=Exceeding holding time limit

Table 95. Spring Lake Springs, Mill Pond Spring bacteriological analysis.

Bacteria Results (in #/100 mL)	
Analyte	Value
Enterococci	16Q
Fecal Coliform	2Q

Springboard Spring



Figure 85. Springboard Spring (photo by R. Means).

Location – Lat. 30° 42' 26.64" N., Long. 85° 18' 23.76" W. (NE ¼ SE ¼ NW ¼ sec. 35, T. 4 N., R. 11 W.). Springboard Spring is on the northwest side of Spring Lake 0.9 miles (1.5 km) upstream from Black Spring run at the head of Spring Lake. At the head of Spring Lake, take the spring run that enters from the north and follow it approximately 1,000 ft (304.8 m) to the spring.

Description – Springboard Spring pool measures 78 ft (23.8 m) north to south and 60 ft (18.3 m) east to west. The spring issues from a deep crack in limestone near the center of the spring pool and is 18.4 ft (5.6 m) deep. Its water is clear and bluish. Aquatic vegetation including exotic aquatic vegetation and algae are abundant. A very slight boil was present in March 2002. It has two spring runs, one flowing southwest, and one flowing southeast. The southwest run, approximately 1,000 ft (304.8 m) long, is narrow, averages 2 ft (0.6 m) deep, and merges with Mill Pond Spring run to form upper Spring Lake. The southeast-flowing run is approximately 125 ft (38.1 m) wide and averages less than 1 ft (0.3 m) deep. It has a soft sand and detritus-covered bottom with rich aquatic vegetation and freshwater mollusks. Approximately 800 ft (243.8 m) downstream, half of the southeast run flows into a swirling siphon approximately 50 ft (15.2 m) in diameter. The other half flows southward a short distance from the first siphon into another. During higher water levels, water flows past the siphons via an ephemeral stream channel southward to the northwest portion of Spring Lake. This intermittent channel was dry in March 2002. The immediate lands to the north of the spring are all low-lying and densely forested with mixed hardwoods and cypress.

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A forested island surrounded by the two spring runs is south of the spring along the north-west perimeter of Spring Lake.

Utilization - The spring is remote, undeveloped, and surrounded by private property.

Discharge - Discharge rates are measured in ft³/s.

July 18, 1973	17.4 ⁽¹⁾
May 22, 2002	33.96 ⁽²⁾

Table 96. Spring Lake Springs, Springboard Spring water quality analysis.

Analytes	1973	2002	
		Dissolved	Total
Field Measures			
Temperature	21.5	20.27	
DO	7.5	4.22	
pH	7.7	7.34	
Sp. Cond.	-	245	
Lab Analytes			
BOD	-	-	0.2U
Turbidity		-	0.20
Color	10	-	5U
Alkalinity	120	-	99A
Sp. Cond.	240	198.0	-
TDS	137	-	110.0
TSS	-	-	4U
Cl	3.0	-	2.8
SO ₄	0.8	-	1.4
F	0.2	-	0.07
Nutrients			
TOC	-	-	1U
NO ₃ + NO ₂ as N	0.2	-	0.64
NH ₃ + NH ₄	-	-	0.011I
TKN	-	0.06U	0.06U
P	-	0.016	0.018
PO ₄	-	0.018	-
NO ₃	0.9	-	-

Analytes	1973	2002	
		Dissolved	Total
Metals			
Ca	39	31.3A	26.6
K	0.3	0.39A	0.34
Na	1.7	1.6I	1.4I
Mg	4.8	6.4A	5.5
Al	-	-	75U
As	-	3U	3U
B	-	-	15U
Cd	-	0.5U	0.5U
Co	-	-	0.75U
Cr	-	2U	2U
Cu	-	3.5U	3.5U
Fe	-	35U	35U
Mn	-	0.5U	0.5U
Ni	-	2U	2U
Pb	-	3U	5U
Ra-226	-	-	0.1
Ra-228	-	-	1.2U
Se	-	4U	4U
Sn	-	-	10U
Sr	100	-	31.2
Zn	-	1.5U	2U

A=Average value U,K=Compound not detected, value shown is the method detection limit
I=Value is less than practical quantitation limit J=Est value Q=Exceeding holding time limit

Table 97. Spring Lake Springs, Springboard Spring bacteriological analysis.

Bacteria Results (in #/100 mL)	
Analyte	Value
Enterococci	1KQ
Fecal Coliform	1KQ