United States Army Corps of Engineers | Nashville District | CELRN-EC-H / Water Management Section

Station: 3COR10001 | Project: Cordell Hull | Location: Cumberland River, Mile 313.2

State: Tennessee | Latitude: 36º 17" 13' | Quad: Carthage, TN
County: Smith | Longitude: 85º 56" 27' | HUC: 05130106

Sample Date: 10 Sep 2012 | Water Surface Elevation = 446.6 ft | Stream Flow = 8500 cfs

Results of Laboratory Analyses			Profile Measurements							
Sample Depth ft		0.0	Depth ft	Water Temp deg C	Water Temp deg F	Dis Oxygen mg/l	Dis Oxygen % sat	Spec Cond umho/cm	pH units	Chloro a F ug/l
Alkalinity, Tot	mg/L	62	0.0	22.6	72.7	5.1	59.1	197.0	7.2	
Alkalinity, Phenol	mg/L	0								
Solids, Tot	mg/L	122								
Solids, Tot Diss	mg/L	115.2								
Solids, Tot Susp	mg/L	6.80								
Solids, Vol	mg/L	71.0								
Solids, Vol Diss	mg/L	71.0								
Solids, Vol Susp	mg/L	<4.00								
Ammonia N, Tot	mg/L	<0.200								
Kjeldahl N, Tot	mg/L	0.430								
NO3+NO2, Tot	mg/L	0.213								
Phosphorus, Tot	mg/L	<0.0200								
Phosphorus, Diss	mg/L	<0.0200								
OrthoPhosphate, D	mg/L	<0.0500								
Organic Carbon, T	mg/L	2.20								
Hardness, Tot	mg/L	82.5								
Sulfate, Tot	mg/L	28.4								
Calcium, Tot	mg/L	22.8								
Magnesium, Tot	mg/L	6.22								
Sodium, Tot	mg/L	5.32								
Potassium, Tot	mg/L	1.41								
Chloride, Tot	mg/L	4.17								
Arsenic, Tot	ug/L	0.6								
Barium, Tot	ug/L	29.2								
Beryllium, Tot	ug/L	<0.5								
Cadmium, Tot	ug/L	<0.5								
Chromium, Tot	ug/L	<0.5								
Cobalt, Tot	ug/L	<0.5								
Copper, Tot	ug/L	1.3								
Iron, Tot	ug/L	134.0								
Iron, Diss	ug/L	<20.0								
Lead, Tot	ug/L	0.7								
Lead, Diss	ug/L	0.6								
Manganese, Tot	ug/L	255.0								
Manganese, Diss	ug/L	149.0								
Thallium, Tot	ug/L	<0.5								
Molybdenum, Tot	ug/L	<0.5								
Nickel, Tot	ug/L	1.2								
Silver, Tot	ug/L	<0.5								
Vanadium, Tot	ug/L	0.6								
Zinc, Tot	ug/L	0.9								
Zinc, Diss	ug/L	1.7								
Antimony, Tot	ug/L	<0.5								
Aluminum, Tot	ug/L	59.2								
Aluminum, Diss	ug/L	<20.0								
Selenium, Tot	ug/L	<0.5								
Mercury, Tot	ug/L	<0.005								

United States Army Corps of Engineers | Nashville District | CELRN-EC-H / Water Management Section

Station: 3COR10020 | Project: Cordell Hull | Location: Defeated Creek, Mile 5.2

State: Tennessee | Latitude: 36º 21" 8.5' | Quad: Carthage, TN
County: Smith | Longitude: 85º 53" 37.2' | HUC: 05130106

Sample Date: 10 Sep 2012 | Water Surface Elevation = | Stream Flow =

Results of Laboratory Analyses

Sample Depth ft		0.0
Alkalinity, Tot	mg/L	188
Alkalinity, Phenol	mg/L	0
Solids, Tot	mg/L	241
Solids, Tot Diss	mg/L	241
Solids, Tot Susp	mg/L	<4.00
Solids, Vol	mg/L	105
Solids, Vol Diss	mg/L	105
Solids, Vol Susp	mg/L	<4.00
Ammonia N, Tot	mg/L	<0.200
Kjeldahl N, Tot	mg/L	<0.0700
NO3+NO2, Tot	mg/L	0.927
Phosphorus, Tot	mg/L	0.156
Phosphorus, Diss	mg/L	0.156
OrthoPhosphate, D	mg/L	0.130
Organic Carbon, T	mg/L	1.60
Hardness, Tot	mg/L	196
Sulfate, Tot	mg/L	12.8
Calcium, Tot	mg/L	66.0
Magnesium, Tot	mg/L	7.67
Sodium, Tot	mg/L	2.59
Potassium, Tot	mg/L	1.61
Chloride, Tot	mg/L	4.86
Arsenic, Tot	ug/L	<0.5
Barium, Tot	ug/L	19.6
Beryllium, Tot	ug/L	<0.5
Cadmium, Tot	ug/L	<0.5
Chromium, Tot	ug/L	<0.5
Cobalt, Tot	ug/L	<0.5
Copper, Tot	ug/L	1.2
Iron, Tot	ug/L	38.8
Iron, Diss	ug/L	<20.0
Lead, Tot	ug/L	0.7
Lead, Diss	ug/L	0.9
Manganese, Tot	ug/L	35.6
Manganese, Diss	ug/L	22.5
Thallium, Tot	ug/L	<0.5
Molybdenum, Tot	ug/L	0.81
Nickel, Tot	ug/L	2.0
Silver, Tot	ug/L	<0.5
Vanadium, Tot	ug/L	0.9
Zinc, Tot	ug/L	1.0
Zinc, Diss	ug/L	1.5
Antimony, Tot	ug/L	<0.5
Aluminum, Tot	ug/L	37.3
Aluminum, Diss	ug/L	<20.0
Selenium, Tot	ug/L	<0.5
Mercury, Tot	ug/L	

Profile Measurements

Depth ft	Water Temp deg C	Water Temp deg F	Dis Oxygen mg/l	Dis Oxygen % sat	Spec Cond umho/cm	pH units	Chloro a F ug/l
0.0	21.2	70.2	10.8	121.9	380.0	7.9	

United States Army Corps of Engineers | Nashville District | CELRN-EC-H / Water Management Section

Station: 3COR10022 | Project: Cordell Hull | Location: Martin Creek, Mile 4.0

State: Tennessee | Latitude: 36º 14" 22' | Quad: Buffalo Valley, TN
County: Jackson | Longitude: 85º 45" 50' | HUC: 05130106

Sample Date: 10 Sep 2012 | Water Surface Elevation = | Stream Flow =

Results of Laboratory Analyses

Sample Depth ft		0.0
Alkalinity, Tot	mg/L	150
Alkalinity, Phenol	mg/L	0
Solids, Tot	mg/L	223
Solids, Tot Diss	mg/L	223
Solids, Tot Susp	mg/L	<4.00
Solids, Vol	mg/L	72.0
Solids, Vol Diss	mg/L	72.0
Solids, Vol Susp	mg/L	<4.00
Ammonia N, Tot	mg/L	<0.200
Kjeldahl N, Tot	mg/L	0.0700
NO3+NO2, Tot	mg/L	0.394
Phosphorus, Tot	mg/L	0.0896
Phosphorus, Diss	mg/L	0.0843
OrthoPhosphate, D	mg/L	0.0867
Organic Carbon, T	mg/L	<1.00
Hardness, Tot	mg/L	160
Sulfate, Tot	mg/L	11.8
Calcium, Tot	mg/L	50.5
Magnesium, Tot	mg/L	8.18
Sodium, Tot	mg/L	2.45
Potassium, Tot	mg/L	0.998
Chloride, Tot	mg/L	4.77
Arsenic, Tot	ug/L	<0.5
Barium, Tot	ug/L	15.9
Beryllium, Tot	ug/L	<0.5
Cadmium, Tot	ug/L	<0.5
Chromium, Tot	ug/L	<0.5
Cobalt, Tot	ug/L	<0.5
Copper, Tot	ug/L	1.0
Iron, Tot	ug/L	<20.0
Iron, Diss	ug/L	<20.0
Lead, Tot	ug/L	0.5
Lead, Diss	ug/L	0.6
Manganese, Tot	ug/L	7.6
Manganese, Diss	ug/L	6.4
Thallium, Tot	ug/L	<0.5
Molybdenum, Tot	ug/L	0.9
Nickel, Tot	ug/L	1.4
Silver, Tot	ug/L	<0.5
Vanadium, Tot	ug/L	0.81
Zinc, Tot	ug/L	1.1
Zinc, Diss	ug/L	1.1
Antimony, Tot	ug/L	<0.5
Aluminum, Tot	ug/L	22.1
Aluminum, Diss	ug/L	<20.0
Selenium, Tot	ug/L	<0.5
Mercury, Tot	ug/L	

Profile Measurements

Depth ft	Water Temp deg C	Water Temp deg F	Dis Oxygen mg/l	Dis Oxygen % sat	Spec Cond umho/cm	pH units	Chloro a F ug/l
0.0	21.5	70.7	9.6	108.9	318.0	7.8	

United States Army Corps of Engineers | Nashville District | CELRN-EC-H / Water Management Section

Station: 3COR10023 | Project: Cordell Hull | Location: Roaring River, Mile 6.2

State: Tennessee | Latitude: 36º 21" 36.5' | Quad: Dodson Branch, TN
County: Jackson | Longitude: 85º 35" 1.8' | HUC: 05130106

Sample Date: 10 Sep 2012 | Water Surface Elevation = | Stream Flow =

Results of Laboratory Analyses

Sample Depth ft		0.0
Alkalinity, Tot	mg/L	120
Alkalinity, Phenol	mg/L	0
Solids, Tot	mg/L	149
Solids, Tot Diss	mg/L	149
Solids, Tot Susp	mg/L	<4.00
Solids, Vol	mg/L	63.0
Solids, Vol Diss	mg/L	63.0
Solids, Vol Susp	mg/L	<4.00
Ammonia N, Tot	mg/L	<0.200
Kjeldahl N, Tot	mg/L	1.10
NO3+NO2, Tot	mg/L	0.275
Phosphorus, Tot	mg/L	0.0255
Phosphorus, Diss	mg/L	0.0246
OrthoPhosphate, D	mg/L	<0.0500
Organic Carbon, T	mg/L	1.30
Hardness, Tot	mg/L	122
Sulfate, Tot	mg/L	8.03
Calcium, Tot	mg/L	38.5
Magnesium, Tot	mg/L	6.34
Sodium, Tot	mg/L	2.67
Potassium, Tot	mg/L	1.53
Chloride, Tot	mg/L	5.52
Arsenic, Tot	ug/L	<0.5
Barium, Tot	ug/L	23.1
Beryllium, Tot	ug/L	<0.5
Cadmium, Tot	ug/L	<0.5
Chromium, Tot	ug/L	0.5
Cobalt, Tot	ug/L	<0.5
Copper, Tot	ug/L	1.1
Iron, Tot	ug/L	40.1
Iron, Diss	ug/L	22.5
Lead, Tot	ug/L	0.7
Lead, Diss	ug/L	0.7
Manganese, Tot	ug/L	22.2
Manganese, Diss	ug/L	18.1
Thallium, Tot	ug/L	<0.5
Molybdenum, Tot	ug/L	0.86
Nickel, Tot	ug/L	1.2
Silver, Tot	ug/L	<0.5
Vanadium, Tot	ug/L	0.8
Zinc, Tot	ug/L	3.0
Zinc, Diss	ug/L	1.6
Antimony, Tot	ug/L	<0.5
Aluminum, Tot	ug/L	33.6
Aluminum, Diss	ug/L	<20.0
Selenium, Tot	ug/L	<0.5
Mercury, Tot	ug/L	

Profile Measurements

Depth ft	Water Temp deg C	Water Temp deg F	Dis Oxygen mg/l	Dis Oxygen % sat	Spec Cond umho/cm	pH units	Chloro a F ug/l
0.0	23.8	74.8	8.7	103.0	251.0	7.7	

United States Army Corps of Engineers | Nashville District | CELRN-EC-H / Water Management Section

Station: 3COR10024 | Project: Cordell Hull | Location: Mill Creek, Mile 1.7

State: Tennessee | Latitude: 36º 29" 36' | Quad: Burristown, TN
County: Clay | Longitude: 85º 33" 3' | HUC: 05130106

Sample Date: 10 Sep 2012 | Water Surface Elevation = | Stream Flow =

(No Laboratory Analyses)

Profile Measurements

Depth ft	Water Temp deg C	Water Temp deg F	Dis Oxygen mg/l	Dis Oxygen % sat	Spec Cond umho/cm	pH units	Chloro a F ug/l
0.0	19.5	67.1	5.9	64.4	459.0	7.6	

United States Army Corps of Engineers | Nashville District | CELRN-EC-H / Water Management Section

Station: 3COR10025 | Project: Cordell Hull | Location: Jennings Creek, Mile 4.7

State: Tennessee | Latitude: 36° 26" 25.1' | Quad: Whitleyville, TN
County: Jackson | Longitude: 85° 40" 28.5' | HUC: 05130106

Sample Date: 10 Sep 2012 | Water Surface Elevation = | Stream Flow =

(No Laboratory Analyses)

Profile Measurements

Depth ft	Water Temp deg C	Water Temp deg F	Dis Oxygen mg/l	Dis Oxygen % sat	Spec Cond umho/cm	pH units	Chloro a F ug/l
0.0	17.2	63.0	10.8	112.6	301.0	7.7	

United States Army Corps of Engineers | Nashville District | CELRN-EC-H / Water Management Section

Station: 3COR20002 | Project: Cordell Hull | Location: Cumberland River, Mile 314.0

State: Tennessee | Latitude: 36º 17" 47' | Quad: Carthage, TN
County: Smith | Longitude: 85º 56" 58' | HUC: 05130106

Sample Date: 10 Sep 2012 | Water Surface Elevation = 503.9 ft | Secchi Disk = 1.0 m

Results of Laboratory Analyses

Sample Depth ft		0.0	40.0
Alkalinity, Tot	mg/L	70	62
Alkalinity, Phenol	mg/L	8	0
Solids, Tot	mg/L	125	124
Solids, Tot Diss	mg/L	125	118.8
Solids, Tot Susp	mg/L	<4.00	5.20
Solids, Vol	mg/L	87.0	65.0
Solids, Vol Diss	mg/L	87.0	65.0
Solids, Vol Susp	mg/L	<4.00	<4.00
Ammonia N, Tot	mg/L	<0.200	<0.200
Kjeldahl N, Tot	mg/L	0.560	0.270
NO3+NO2, Tot	mg/L	<0.0200	0.271
Phosphorus, Tot	mg/L	<0.0200	<0.0200
Phosphorus, Diss	mg/L	<0.0200	<0.0200
OrthoPhosphate, D	mg/L	<0.0500	<0.0500
Organic Carbon, T	mg/L	3.20	2.20
Hardness, Tot	mg/L	82.8	81.3
Sulfate, Tot	mg/L	26.3	28.9
Calcium, Tot	mg/L	23.2	22.3
Magnesium, Tot	mg/L	6.05	6.21
Sodium, Tot	mg/L	5.00	5.40
Potassium, Tot	mg/L	1.47	1.40
Chloride, Tot	mg/L	4.11	4.21
Arsenic, Tot	ug/L	0.8	0.6
Barium, Tot	ug/L	20.0	30.4
Beryllium, Tot	ug/L	<0.5	<0.5
Cadmium, Tot	ug/L	<0.5	<0.5
Chromium, Tot	ug/L	<0.5	<0.5
Cobalt, Tot	ug/L	<0.5	<0.5
Copper, Tot	ug/L	1.4	1.5
Iron, Tot	ug/L	43.6	171.0
Iron, Diss	ug/L	<20.0	<20.0
Lead, Tot	ug/L	0.6	0.7
Lead, Diss	ug/L	0.6	0.6
Manganese, Tot	ug/L	40.6	323.0
Manganese, Diss	ug/L	1.4	199.0
Thallium, Tot	ug/L	<0.5	<0.5
Molybdenum, Tot	ug/L	0.61	<0.5
Nickel, Tot	ug/L	1.0	1.3
Silver, Tot	ug/L	<0.5	<0.5
Vanadium, Tot	ug/L	0.7	0.6
Zinc, Tot	ug/L	0.6	0.8
Zinc, Diss	ug/L	0.8	0.7
Antimony, Tot	ug/L	<0.5	<0.5
Aluminum, Tot	ug/L	40.5	81.2
Aluminum, Diss	ug/L	<20.0	<20.0
Selenium, Tot	ug/L	<0.5	<0.5
Mercury, Tot	ug/L	0.034	0.034

Profile Measurements

Depth ft	Water Temp deg C	Water Temp deg F	Dis Oxygen mg/l	Dis Oxygen % sat	Spec Cond umho/cm	pH units	Chloro a F ug/l
0.0	28.1	82.6	9.3	118.6	197.0	8.7	4.4
5.0	27.9	82.2	9.5	120.8	196.0	8.7	7.8
10.0	26.4	79.5	9.9	122.7	195.0	8.8	9.8
15.0	25.7	78.3	7.3	89.4	197.0	8.3	11.3
20.0	24.8	76.6	4.0	48.2	199.0	7.2	6.8
25.0	22.7	72.9	2.0	23.2	199.0	6.9	2.3
30.0	22.0	71.6	3.6	41.2	197.0	6.8	1.3
35.0	21.5	70.7	4.1	46.5	198.0	6.8	0.7
40.0	21.3	70.3	4.2	47.5	197.0	6.8	0.7
45.0	21.3	70.3	4.3	48.6	197.0	6.8	0.6
50.0	21.3	70.3	3.7	41.8	197.0	6.8	0.7
55.0	21.3	70.3	3.6	40.7	198.0	6.8	0.8
60.0	21.3	70.3	3.6	40.7	197.0	6.8	0.8
65.0	21.3	70.3	3.8	43.0	197.0	6.8	0.8
70.0	21.3	70.3	3.8	43.0	198.0	6.8	0.7
75.0	21.3	70.3	3.8	43.0	197.0	6.8	0.8
78.0	21.3	70.3	3.8	43.0	198.0	6.8	1.0

United States Army Corps of Engineers | Nashville District | CELRN-EC-H / Water Management Section

Station: 3COR20003 | Project: Cordell Hull | Location: Cumberland River, Mile 323.0

State: Tennessee | Latitude: 36º 16" 47' | Quad: Carthage, TN
County: Smith | Longitude: 85º 53" 10' | HUC: 05130106

Sample Date: 10 Sep 2012 | Water Surface Elevation = 503.9 ft | Secchi Disk = 1.0 m

(No Laboratory Analyses)

Profile Measurements

Depth ft	Water Temp deg C	Water Temp deg F	Dis Oxygen mg/l	Dis Oxygen % sat	Spec Cond umho/cm	pH units	Chloro a F ug/l
0.0	28.2	82.8	9.6	122.7	199.0	8.7	3.9
5.0	26.8	80.2	10.1	126.0	197.0	8.8	7.6
10.0	25.8	78.4	8.3	101.8	198.0	8.5	7.5
15.0	25.5	77.9	6.7	81.8	199.0	8.0	5.8
20.0	22.6	72.7	4.5	52.1	199.0	7.1	1.7
25.0	21.4	70.5	5.3	60.0	198.0	7.0	1.4
30.0	20.4	68.7	5.7	63.3	197.0	7.0	1.2
35.0	20.4	68.7	5.8	64.4	197.0	7.0	0.9
40.0	20.0	68.0	5.9	65.1	196.0	6.9	0.9
45.0	19.9	67.8	5.8	63.8	197.0	6.9	0.9
50.0	19.9	67.8	5.8	63.8	196.0	6.9	0.9
55.0	19.9	67.8	5.7	62.7	196.0	6.9	0.9
60.0	19.9	67.8	5.7	62.7	197.0	6.9	1.0
65.0	19.9	67.8	5.7	62.7	197.0	6.9	1.0
68.0	19.9	67.8	5.7	62.7	196.0	6.9	1.1

United States Army Corps of Engineers | Nashville District | CELRN-EC-H / Water Management Section

Station: 3COR20004 | Project: Cordell Hull | Location: Cumberland River, Mile 327.9

State: Tennessee | Latitude: 36° 16" 51' | Quad: Granville, TN
County: Smith | Longitude: 85° 50" 11' | HUC: 05130106

Sample Date: 10 Sep 2012 | Water Surface Elevation = 503.9 ft | Secchi Disk = 0.7 m

(No Laboratory Analyses)

Profile Measurements

Depth ft	Water Temp deg C	Water Temp deg F	Dis Oxygen mg/l	Dis Oxygen % sat	Spec Cond umho/cm	pH units	Chloro a F ug/l
0.0	26.6	79.9	8.9	110.7	199.0	8.6	6.2
5.0	26.2	79.2	8.0	98.8	200.0	8.4	6.7
10.0	26.0	78.8	7.3	89.9	200.0	8.1	5.9
15.0	24.2	75.6	6.6	78.7	201.0	7.5	4.2
20.0	21.7	71.1	6.6	75.2	199.0	7.2	3.2
25.0	20.6	69.1	6.5	72.5	197.0	7.0	2.6
30.0	19.9	67.8	6.3	69.3	197.0	7.0	1.3
35.0	19.7	67.5	6.2	68.0	197.0	6.9	1.1
40.0	19.6	67.3	6.2	67.8	196.0	6.9	1.1
45.0	19.6	67.3	6.2	67.8	196.0	6.9	1.0
50.0	19.5	67.1	6.2	67.7	196.0	6.9	1.0
55.0	19.5	67.1	6.2	67.7	197.0	6.9	1.0
60.0	19.5	67.1	6.1	66.6	197.0	6.9	1.0

United States Army Corps of Engineers | Nashville District | CELRN-EC-H / Water Management Section

Station: 3COR20005 | Project: Cordell Hull | Location: Cumberland River, Mile 340.8

State: Tennessee | Latitude: 36º 19" 11' | Quad: Gainesboro, TN
County: Jackson | Longitude: 85º 44" 47' | HUC: 05130106

Sample Date: 10 Sep 2012 | Water Surface Elevation = 503.9 ft | Secchi Disk = 0.7 m

Results of Laboratory Analyses

Sample Depth ft		20.0
Alkalinity, Tot	mg/L	66
Alkalinity, Phenol	mg/L	0
Solids, Tot	mg/L	126
Solids, Tot Diss	mg/L	126
Solids, Tot Susp	mg/L	<4.00
Solids, Vol	mg/L	53.0
Solids, Vol Diss	mg/L	53.0
Solids, Vol Susp	mg/L	<4.00
Ammonia N, Tot	mg/L	<0.200
Kjeldahl N, Tot	mg/L	0.260
NO3+NO2, Tot	mg/L	0.294
Phosphorus, Tot	mg/L	<0.0200
Phosphorus, Diss	mg/L	<0.0200
OrthoPhosphate, D	mg/L	<0.0500
Organic Carbon, T	mg/L	2.30
Hardness, Tot	mg/L	85.7
Sulfate, Tot	mg/L	25.1
Calcium, Tot	mg/L	24.5
Magnesium, Tot	mg/L	5.92
Sodium, Tot	mg/L	4.66
Potassium, Tot	mg/L	1.40
Chloride, Tot	mg/L	4.33
Arsenic, Tot	ug/L	<0.5
Barium, Tot	ug/L	21.2
Beryllium, Tot	ug/L	<0.5
Cadmium, Tot	ug/L	<0.5
Chromium, Tot	ug/L	<0.5
Cobalt, Tot	ug/L	<0.5
Copper, Tot	ug/L	1.6
Iron, Tot	ug/L	49.2
Iron, Diss	ug/L	<20.0
Lead, Tot	ug/L	0.6
Lead, Diss	ug/L	5.4
Manganese, Tot	ug/L	31.4
Manganese, Diss	ug/L	0.9
Thallium, Tot	ug/L	<0.5
Molybdenum, Tot	ug/L	<0.5
Nickel, Tot	ug/L	1.3
Silver, Tot	ug/L	<0.5
Vanadium, Tot	ug/L	<0.5
Zinc, Tot	ug/L	2.2
Zinc, Diss	ug/L	1.3
Antimony, Tot	ug/L	<0.5
Aluminum, Tot	ug/L	37.6
Aluminum, Diss	ug/L	<20.0
Selenium, Tot	ug/L	<0.5
Mercury, Tot	ug/L	

Profile Measurements

Depth ft	Water Temp deg C	Water Temp deg F	Dis Oxygen mg/l	Dis Oxygen % sat	Spec Cond umho/cm	pH units	Chloro a F ug/l
0.0	26.9	80.4	10.5	131.3	202.0	8.7	3.2
5.0	25.9	78.6	11.3	138.8	201.0	8.7	9.0
10.0	22.3	72.1	8.9	102.5	198.0	7.7	7.5
15.0	20.3	68.5	7.7	85.4	197.0	7.1	4.6
20.0	19.9	67.8	7.3	80.3	198.0	7.0	3.2
25.0	19.8	67.6	7.1	78.0	198.0	7.0	3.0
30.0	19.7	67.5	7.0	76.7	197.0	7.0	2.8
35.0	19.7	67.5	6.9	75.6	197.0	7.0	2.6
40.0	19.6	67.3	6.9	75.5	197.0	7.0	2.6
45.0	19.6	67.3	6.7	73.3	197.0	7.0	2.6
50.0	19.6	67.3	6.7	73.3	197.0	7.0	1.9
55.0	19.6	67.3	6.6	72.2	197.0	7.0	2.3

United States Army Corps of Engineers | Nashville District | CELRN-EC-H / Water Management Section

Station: 3COR20006 | Project: Cordell Hull | Location: Cumberland River, Mile 358.6

State: Tennessee | Latitude: 36º 23" 5' | Quad: Whitleyville, TN
County: Jackson | Longitude: 85º 38" 31' | HUC: 05130106

Sample Date: 10 Sep 2012 | Water Surface Elevation = 503.9 ft | Secchi Disk = 2.4 m

Results of Laboratory Analyses

Sample Depth ft		15.0
Alkalinity, Tot	mg/L	62
Alkalinity, Phenol	mg/L	0
Solids, Tot	mg/L	116
Solids, Tot Diss	mg/L	116
Solids, Tot Susp	mg/L	<4.00
Solids, Vol	mg/L	59.0
Solids, Vol Diss	mg/L	59.0
Solids, Vol Susp	mg/L	<4.00
Ammonia N, Tot	mg/L	<0.200
Kjeldahl N, Tot	mg/L	0.240
NO3+NO2, Tot	mg/L	0.304
Phosphorus, Tot	mg/L	<0.0200
Phosphorus, Diss	mg/L	<0.0200
OrthoPhosphate, D	mg/L	<0.0500
Organic Carbon, T	mg/L	2.20
Hardness, Tot	mg/L	82.1
Sulfate, Tot	mg/L	28.0
Calcium, Tot	mg/L	22.8
Magnesium, Tot	mg/L	6.08
Sodium, Tot	mg/L	5.28
Potassium, Tot	mg/L	1.38
Chloride, Tot	mg/L	4.34
Arsenic, Tot	ug/L	<0.5
Barium, Tot	ug/L	19.0
Beryllium, Tot	ug/L	<0.5
Cadmium, Tot	ug/L	<0.5
Chromium, Tot	ug/L	<0.5
Cobalt, Tot	ug/L	<0.5
Copper, Tot	ug/L	2.7
Iron, Tot	ug/L	33.8
Iron, Diss	ug/L	<20.0
Lead, Tot	ug/L	0.6
Lead, Diss	ug/L	0.6
Manganese, Tot	ug/L	21.5
Manganese, Diss	ug/L	6.3
Thallium, Tot	ug/L	<0.5
Molybdenum, Tot	ug/L	<0.5
Nickel, Tot	ug/L	1.2
Silver, Tot	ug/L	<0.5
Vanadium, Tot	ug/L	<0.5
Zinc, Tot	ug/L	0.8
Zinc, Diss	ug/L	0.6
Antimony, Tot	ug/L	<0.5
Aluminum, Tot	ug/L	32.3
Aluminum, Diss	ug/L	<20.0
Selenium, Tot	ug/L	<0.5
Mercury, Tot	ug/L	

Profile Measurements

Depth ft	Water Temp deg C	Water Temp deg F	Dis Oxygen mg/l	Dis Oxygen % sat	Spec Cond umho/cm	pH units	Chloro a F ug/l
0.0	20.2	68.4	7.6	84.1	195.0	7.2	0.8
5.0	18.9	66.0	7.9	85.3	194.0	7.1	1.6
10.0	18.7	65.7	7.7	82.8	194.0	7.1	2.1
15.0	18.6	65.5	7.6	81.5	194.0	7.1	1.5
20.0	18.5	65.3	7.5	80.3	194.0	7.1	1.4
25.0	18.0	64.4	7.4	78.4	195.0	7.0	1.1
30.0	17.8	64.0	7.4	78.1	196.0	7.0	1.1
35.0	17.7	63.9	7.3	76.9	195.0	7.0	1.1
37.0	17.7	63.9	7.3	76.9	195.0	7.0	1.0

United States Army Corps of Engineers | Nashville District | CELRN-EC-H / Water Management Section

Station: 3COR20007 | Project: Cordell Hull | Location: Cumberland River, Mile 374.0

State: Tennessee | Latitude: 36° 29" 44' | Quad: Burristown, TN
County: Clay | Longitude: 85° 34" 19' | HUC: 05130106

Sample Date: 10 Sep 2012 | Water Surface Elevation = 503.9 ft | Secchi Disk = 2.9 m

(No Laboratory Analyses)

Profile Measurements

Depth ft	Water Temp deg C	Water Temp deg F	Dis Oxygen mg/l	Dis Oxygen % sat	Spec Cond umho/cm	pH units	Chloro a F ug/l
0.0	15.5	59.9	7.4	74.5	192.0	7.0	0.1
5.0	15.4	59.7	7.4	74.3	191.0	7.0	0.2
10.0	15.4	59.7	7.4	74.3	191.0	7.0	0.2
15.0	15.2	59.4	7.4	74.0	191.0	7.0	0.4
20.0	15.2	59.4	7.4	74.0	192.0	6.9	0.4
25.0	15.2	59.4	7.4	74.0	191.0	6.9	0.4
28.0	15.2	59.4	7.4	74.0	191.0	6.9	0.4

United States Army Corps of Engineers | Nashville District | CELRN-EC-H / Water Management Section

Station: 3COR20008 | Project: Cordell Hull | Location: Defeated Creek, Mile 1.0

State: Tennessee | Latitude: 36º 18" 11' | Quad: Carthage, TN
County: Smith | Longitude: 85º 54" 9' | HUC: 05130106

Sample Date: 10 Sep 2012 | Water Surface Elevation = 503.9 ft | Secchi Disk = 0.7 m

Results of Laboratory Analyses

Sample Depth ft		0.0	25.0
Alkalinity, Tot	mg/L	70	62
Alkalinity, Phenol	mg/L	4	0
Solids, Tot	mg/L	112	120
Solids, Tot Diss	mg/L	112	120
Solids, Tot Susp	mg/L	<4.00	<4.00
Solids, Vol	mg/L	55.0	65.0
Solids, Vol Diss	mg/L	55.0	65.0
Solids, Vol Susp	mg/L	<4.00	<4.00
Ammonia N, Tot	mg/L	<0.200	<0.200
Kjeldahl N, Tot	mg/L	0.540	0.190
NO3+NO2, Tot	mg/L	<0.0200	0.278
Phosphorus, Tot	mg/L	<0.0200	0.0228
Phosphorus, Diss	mg/L	<0.0200	<0.0200
OrthoPhosphate, D	mg/L	<0.0500	<0.0500
Organic Carbon, T	mg/L	3.50	2.30
Hardness, Tot	mg/L		82.6
Sulfate, Tot	mg/L	25.1	28.7
Calcium, Tot	mg/L	23.9	22.8
Magnesium, Tot	mg/L	6.10	6.26
Sodium, Tot	mg/L	4.90	5.37
Potassium, Tot	mg/L	1.51	1.42
Chloride, Tot	mg/L	4.01	4.74
Arsenic, Tot	ug/L	0.8	0.6
Barium, Tot	ug/L	16.8	28.9
Beryllium, Tot	ug/L	<0.5	<0.5
Cadmium, Tot	ug/L	<0.5	<0.5
Chromium, Tot	ug/L	<0.5	<0.5
Cobalt, Tot	ug/L	<0.5	<0.5
Copper, Tot	ug/L	1.4	1.5
Iron, Tot	ug/L	42.1	175.0
Iron, Diss	ug/L	<20.0	<20.0
Lead, Tot	ug/L	0.6	0.7
Lead, Diss	ug/L	0.8	0.6
Manganese, Tot	ug/L	58.4	240.0
Manganese, Diss	ug/L	1.5	26.3
Thallium, Tot	ug/L	<0.5	<0.5
Molybdenum, Tot	ug/L	0.6	<0.5
Nickel, Tot	ug/L	0.9	1.3
Silver, Tot	ug/L	<0.5	<0.5
Vanadium, Tot	ug/L	0.8	0.5
Zinc, Tot	ug/L	0.9	0.8
Zinc, Diss	ug/L	<0.5	1.0
Antimony, Tot	ug/L	<0.5	<0.5
Aluminum, Tot	ug/L	43.0	79.3
Aluminum, Diss	ug/L	23.0	<20.0
Selenium, Tot	ug/L	<0.5	<0.5
Mercury, Tot	ug/L		

Profile Measurements

Depth ft	Water Temp deg C	Water Temp deg F	Dis Oxygen mg/l	Dis Oxygen % sat	Spec Cond umho/cm	pH units	Chloro a F ug/l
0.0	27.7	81.9	10.0	126.7	197.0	8.9	5.8
5.0	27.5	81.5	10.0	126.3	196.0	8.8	8.9
10.0	26.2	79.2	6.0	74.1	199.0	8.2	11.4
15.0	24.3	75.7	0.7	8.4	202.0	6.9	4.0
20.0	22.1	71.8	1.0	11.5	201.0	6.7	1.0
25.0	21.4	70.5	2.2	24.9	197.0	6.7	0.7
30.0	21.4	70.5	1.7	19.3	198.0	6.7	0.7
35.0	21.3	70.3	0.4	4.5	202.0	6.7	2.2

United States Army Corps of Engineers | Nashville District | CELRN-EC-H / Water Management Section

Station: 3COR20010 | Project: Cordell Hull | Location: Cumberland River, Mile 381.0

State: Tennessee | Latitude: 36º 33" 23' | Quad: Celina, TN-KY
County: Clay | Longitude: 85º 30" 44' | HUC: 05130103

Sample Date: 10 Sep 2012 | Water Surface Elevation = 503.9 ft | Secchi Disk = 2.0 m

Results of Laboratory Analyses			Profile Measurements								
			Depth	Water Temp	Water Temp	Dis Oxygen	Dis Oxygen	Spec Cond	pH	Chloro a F
Sample Depth ft		5.0	ft	deg C	deg F	mg/l	% sat	umho/cm	units	ug/l
Alkalinity, Tot	mg/L	56	0.0	19.2	66.6	9.2	99.9	190.0	7.5	0.2
Alkalinity, Phenol	mg/L	0	5.0	19.0	66.2	9.2	99.5	190.0	7.4	0.3
Solids, Tot	mg/L	118	10.0	19.0	66.2	9.2	99.5	190.0	7.4	0.3
Solids, Tot Diss	mg/L	118	15.0	19.0	66.2	9.2	99.5	190.0	7.4	0.3
Solids, Tot Susp	mg/L	<4.00	17.0	19.0	66.2	9.2	99.5	190.0	7.4	0.4
Solids, Vol	mg/L	78.0								
Solids, Vol Diss	mg/L	78.0								
Solids, Vol Susp	mg/L	<4.00								
Ammonia N, Tot	mg/L	<0.200								
Kjeldahl N, Tot	mg/L	1.10								
NO3+NO2, Tot	mg/L	0.331								
Phosphorus, Tot	mg/L	<0.0200								
Phosphorus, Diss	mg/L	<0.0200								
OrthoPhosphate, D	mg/L	<0.0500								
Organic Carbon, T	mg/L	3.20								
Hardness, Tot	mg/L	79.6								
Sulfate, Tot	mg/L	32.2								
Calcium, Tot	mg/L	20.7								
Magnesium, Tot	mg/L	6.80								
Sodium, Tot	mg/L	6.21								
Potassium, Tot	mg/L	1.56								
Chloride, Tot	mg/L	4.13								
Arsenic, Tot	ug/L	<0.5								
Barium, Tot	ug/L	15.9								
Beryllium, Tot	ug/L	<0.5								
Cadmium, Tot	ug/L	<0.5								
Chromium, Tot	ug/L	<0.5								
Cobalt, Tot	ug/L	<0.5								
Copper, Tot	ug/L	1.5								
Iron, Tot	ug/L	52.1								
Iron, Diss	ug/L	<20.0								
Lead, Tot	ug/L	0.63								
Lead, Diss	ug/L	<0.5								
Manganese, Tot	ug/L	27.9								
Manganese, Diss	ug/L	13.5								
Thallium, Tot	ug/L	<0.5								
Molybdenum, Tot	ug/L	<0.5								
Nickel, Tot	ug/L	1.2								
Silver, Tot	ug/L	<0.5								
Vanadium, Tot	ug/L	<0.5								
Zinc, Tot	ug/L	1.2								
Zinc, Diss	ug/L	0.8								
Antimony, Tot	ug/L	<0.5								
Aluminum, Tot	ug/L	99.4								
Aluminum, Diss	ug/L	<20.0								
Selenium, Tot	ug/L	<0.5								
Mercury, Tot	ug/L									

United States Army Corps of Engineers | Nashville District | CELRN-EC-H / Water Management Section

Station: 3COR20013 | Project: Cordell Hull | Location: Cumberland River, Mile 349.5

State: Tennessee | Latitude: 36º 21" 38' | Quad: Gainesboro, TN
County: Jackson | Longitude: 85º 40" 51' | HUC: 05130106

Sample Date: 10 Sep 2012 | Water Surface Elevation = 503.9 ft | Secchi Disk = 1.6 m

(No Laboratory Analyses)

Profile Measurements

Depth ft	Water Temp deg C	Water Temp deg F	Dis Oxygen mg/l	Dis Oxygen % sat	Spec Cond umho/cm	pH units	Chloro a F ug/l
0.0	21.5	70.7	9.4	106.7	203.0	7.6	3.7
5.0	20.3	68.5	9.7	107.6	202.0	7.3	8.4
10.0	20.0	68.0	8.9	98.1	202.0	7.1	7.4
15.0	19.7	67.5	8.1	88.8	201.0	7.0	7.4
20.0	19.4	66.9	7.5	81.7	200.0	6.9	4.0
25.0	19.4	66.9	7.3	79.6	200.0	6.9	3.0
30.0	19.2	66.6	7.3	79.2	200.0	6.9	2.1
35.0	19.2	66.6	7.3	79.2	200.0	6.9	3.1
40.0	19.2	66.6	7.3	79.2	200.0	6.9	2.9
44.0	19.2	66.6	7.2	78.2	199.0	6.9	2.5

United States Army Corps of Engineers | Nashville District | CELRN-EC-H / Water Management Section

Station: 3COR20015 | Project: Cordell Hull | Location: Martin Creek, Mile 1.0

State: Tennessee | Latitude: 36º 16" 20' | Quad: Granville, TN
County: Jackson | Longitude: 85º 47" 27.6' | HUC: 05130106

Sample Date: 10 Sep 2012 | Water Surface Elevation = 503.9 ft | Secchi Disk = 0.7 m

Results of Laboratory Analyses

Sample Depth ft		20.0
Alkalinity, Tot	mg/L	74
Alkalinity, Phenol	mg/L	0
Solids, Tot	mg/L	129
Solids, Tot Diss	mg/L	124.6
Solids, Tot Susp	mg/L	4.40
Solids, Vol	mg/L	93.0
Solids, Vol Diss	mg/L	89.0
Solids, Vol Susp	mg/L	4
Ammonia N, Tot	mg/L	<0.200
Kjeldahl N, Tot	mg/L	0.570
NO3+NO2, Tot	mg/L	<0.0200
Phosphorus, Tot	mg/L	0.0345
Phosphorus, Diss	mg/L	<0.0200
OrthoPhosphate, D	mg/L	<0.0500
Organic Carbon, T	mg/L	2.50
Hardness, Tot	mg/L	87.5
Sulfate, Tot	mg/L	26.0
Calcium, Tot	mg/L	24.7
Magnesium, Tot	mg/L	6.28
Sodium, Tot	mg/L	5.16
Potassium, Tot	mg/L	1.49
Chloride, Tot	mg/L	4.22
Arsenic, Tot	ug/L	1.0
Barium, Tot	ug/L	35.7
Beryllium, Tot	ug/L	<0.5
Cadmium, Tot	ug/L	<0.5
Chromium, Tot	ug/L	<0.5
Cobalt, Tot	ug/L	<0.5
Copper, Tot	ug/L	1.5
Iron, Tot	ug/L	266.0
Iron, Diss	ug/L	<20.0
Lead, Tot	ug/L	0.75
Lead, Diss	ug/L	0.6
Manganese, Tot	ug/L	992.0
Manganese, Diss	ug/L	820.0
Thallium, Tot	ug/L	<0.5
Molybdenum, Tot	ug/L	0.5
Nickel, Tot	ug/L	1.3
Silver, Tot	ug/L	<0.5
Vanadium, Tot	ug/L	0.54
Zinc, Tot	ug/L	0.8
Zinc, Diss	ug/L	1.0
Antimony, Tot	ug/L	<0.5
Aluminum, Tot	ug/L	105.0
Aluminum, Diss	ug/L	<20.0
Selenium, Tot	ug/L	<0.5
Mercury, Tot	ug/L	

Profile Measurements

Depth ft	Water Temp deg C	Water Temp deg F	Dis Oxygen mg/l	Dis Oxygen % sat	Spec Cond umho/cm	pH units	Chloro a F ug/l
0.0	27.8	82.0	9.1	115.5	207.0	8.6	2.6
5.0	26.9	80.4	9.7	121.3	206.0	8.7	10.5
10.0	25.7	78.3	7.4	90.6	207.0	8.3	10.5
15.0	24.3	75.7	2.0	23.9	204.0	7.0	4.3
20.0	21.7	71.1	0.1	1.1	211.0	6.7	2.1
25.0	20.0	68.0	2.5	27.6	201.0	6.7	1.8
29.0	19.9	67.8	1.8	19.8	205.0	6.7	6.0

United States Army Corps of Engineers | Nashville District | CELRN-EC-H / Water Management Section

Station: 3COR20016 | Project: Cordell Hull | Location: Roaring River, Mile 0.8

State: Tennessee | Latitude: 36º 22" 43' | Quad: Whitleyville, TN
County: Jackson | Longitude: 85º 38" 7.8' | HUC: 05130106

Sample Date: 10 Sep 2012 | Water Surface Elevation = 503.9 ft | Secchi Disk = 0.6 m

Results of Laboratory Analyses			Profile Measurements								
			Depth	Water Temp	Water Temp	Dis Oxygen	Dis Oxygen	Spec Cond	pH	Chloro a F
Sample Depth ft		10.0	ft	deg C	deg F	mg/l	% sat	umho/cm	units	ug/l
Alkalinity, Tot	mg/L	66	0.0	24.2	75.6	9.5	113.3	246.0	8.0	3.4
Alkalinity, Phenol	mg/L	0	5.0	20.8	69.4	8.8	98.5	205.0	7.4	36.2
Solids, Tot	mg/L	126	10.0	18.5	65.3	6.3	67.4	197.0	6.9	17.4
Solids, Tot Diss	mg/L	126	15.0	18.4	65.1	5.2	55.6	199.0	6.8	10.5
Solids, Tot Susp	mg/L	<4.00	20.0	18.2	64.8	4.1	43.6	199.0	6.7	11.0
Solids, Vol	mg/L	53.0	24.0	18.3	64.9	3.5	37.3	200.0	6.7	8.0
Solids, Vol Diss	mg/L	53.0								
Solids, Vol Susp	mg/L	<4.00								
Ammonia N, Tot	mg/L	<0.200								
Kjeldahl N, Tot	mg/L	0.320								
NO3+NO2, Tot	mg/L	0.308								
Phosphorus, Tot	mg/L	0.0208								
Phosphorus, Diss	mg/L	<0.0200								
OrthoPhosphate, D	mg/L	<0.0500								
Organic Carbon, T	mg/L	2.50								
Hardness, Tot	mg/L	86.6								
Sulfate, Tot	mg/L	25.7								
Calcium, Tot	mg/L	24.8								
Magnesium, Tot	mg/L	5.99								
Sodium, Tot	mg/L	4.84								
Potassium, Tot	mg/L	1.41								
Chloride, Tot	mg/L	4.47								
Arsenic, Tot	ug/L	<0.5								
Barium, Tot	ug/L	22.0								
Beryllium, Tot	ug/L	<0.5								
Cadmium, Tot	ug/L	<0.5								
Chromium, Tot	ug/L	<0.5								
Cobalt, Tot	ug/L	<0.5								
Copper, Tot	ug/L	1.6								
Iron, Tot	ug/L	83.9								
Iron, Diss	ug/L	<20.0								
Lead, Tot	ug/L	0.7								
Lead, Diss	ug/L	0.58								
Manganese, Tot	ug/L	50.0								
Manganese, Diss	ug/L	19.8								
Thallium, Tot	ug/L	<0.5								
Molybdenum, Tot	ug/L	<0.5								
Nickel, Tot	ug/L	1.3								
Silver, Tot	ug/L	<0.5								
Vanadium, Tot	ug/L	<0.5								
Zinc, Tot	ug/L	0.9								
Zinc, Diss	ug/L	0.9								
Antimony, Tot	ug/L	<0.5								
Aluminum, Tot	ug/L	52.1								
Aluminum, Diss	ug/L	<20.0								
Selenium, Tot	ug/L	<0.5								
Mercury, Tot	ug/L									