

United States Army Corps of Engineers

Nashville District

CELRN-EC-H / Water Management Section

Station: 30LD10001

Project: Old Hickory

Location: Cumberland River, Mile 215.7

State: Tennessee

Latitude: 36° 17" 59'

Quad: Goodlettsville, TN

County: Davidson

Longitude: 86° 39" 49'

HUC: 05130202

Sample Date: 15 May 2012

Water Surface Elevation = 389.8 ft

Stream Flow = 11800 cfs

(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	22.0	71.6	6.3	72.2	200.0	7.7	

United States Army Corps of Engineers

Nashville District

CELNRN-EC-H / Water Management Section

Station: 30LD10001

Project: Old Hickory

Location: Cumberland River, Mile 215.7

State: Tennessee

Latitude: 36° 17" 59'

Quad: Goodlettsville, TN

County: Davidson

Longitude: 86° 39" 49'

HUC: 05130202

Sample Date: 15 May 2012

Water Surface Elevation = 391.3 ft

Stream Flow = 18600 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 76	0.0	22.1	71.8	6.2	71.1	199.0	7.6	
Alkalinity, Phenol	mg/L 0								
Solids, Tot	mg/L 138								
Solids, Tot Diss	mg/L 137								
Solids, Tot Susp	mg/L 1.00								
Solids, Vol	mg/L 66.0								
Solids, Vol Diss	mg/L 64								
Solids, Vol Susp	mg/L <2.00								
Ammonia N, Tot	mg/L 0.220								
Kjeldahl N, Tot	mg/L <0.0700								
NO3+NO2, Tot	mg/L 0.0836								
Phosphorus, Tot	mg/L 0.0700								
Phosphorus, Diss	mg/L 0.0427								
OrthoPhosphate, D	mg/L 0.0813								
Organic Carbon, T	mg/L 2.60								
Hardness, Tot	mg/L 86.2								
Sulfate, Tot	mg/L 28.2								
Calcium, Tot	mg/L 24.5								
Magnesium, Tot	mg/L 6.06								
Sodium, Tot	mg/L 5.25								
Potassium, Tot	mg/L 1.42								
Chloride, Tot	mg/L 3.90								
Arsenic, Tot	ug/L 0.668								
Barium, Tot	ug/L 23.6								
Beryllium, Tot	ug/L 0.0215								
Cadmium, Tot	ug/L 0.0277								
Chromium, Tot	ug/L 0.157								
Cobalt, Tot	ug/L 0.239								
Copper, Tot	ug/L 1.20								
Iron, Tot	ug/L 180.0								
Iron, Diss	ug/L <20.0								
Lead, Tot	ug/L 1.04								
Lead, Diss	ug/L								
Manganese, Tot	ug/L 131.0								
Manganese, Diss	ug/L <20.0								
Thallium, Tot	ug/L 0.0080								
Molybdenum, Tot	ug/L 0.437								
Nickel, Tot	ug/L 1.79								
Silver, Tot	ug/L <0.0005								
Vanadium, Tot	ug/L 0.663								
Zinc, Tot	ug/L 2.39								
Zinc, Diss	ug/L								
Antimony, Tot	ug/L 0.0839								
Aluminum, Tot	ug/L 100.0								
Aluminum, Diss	ug/L <20.0								
Selenium, Tot	ug/L 0.456								
Mercury, Tot	ug/L <0.005								

United States Army Corps of Engineers

Nashville District

CELNRN-EC-H / Water Management Section

Station: 30LD10050

Project: Old Hickory

Location: Drakes Creek, Mile 4.9

State: Tennessee

Latitude: 36° 19" 0'

Quad: Hendersonville, TN

County: Sumner

Longitude: 86° 36" 19'

HUC: *

Sample Date: 15 May 2012

Water Surface Elevation =

Stream Flow =

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 148	0.0	18.2	64.8	10.0	106.4	320.0	7.8	
Alkalinity, Phenol	mg/L 0								
Solids, Tot	mg/L 210								
Solids, Tot Diss	mg/L 209.75								
Solids, Tot Susp	mg/L <0.25								
Solids, Vol	mg/L 119								
Solids, Vol Diss	mg/L 117								
Solids, Vol Susp	mg/L <2.00								
Ammonia N, Tot	mg/L 0.210								
Kjeldahl N, Tot	mg/L <0.0700								
NO3+NO2, Tot	mg/L 0.899								
Phosphorus, Tot	mg/L 0.115								
Phosphorus, Diss	mg/L 0.0978								
OrthoPhosphate, D	mg/L 0.0677								
Organic Carbon, T	mg/L 2.20								
Hardness, Tot	mg/L 160								
Sulfate, Tot	mg/L 24.4								
Calcium, Tot	mg/L 51.5								
Magnesium, Tot	mg/L 7.74								
Sodium, Tot	mg/L 3.41								
Potassium, Tot	mg/L 1.28								
Chloride, Tot	mg/L 4.04								
Arsenic, Tot	ug/L 0.473								
Barium, Tot	ug/L 24.2								
Beryllium, Tot	ug/L 0.0246								
Cadmium, Tot	ug/L 0.0296								
Chromium, Tot	ug/L 0.219								
Cobalt, Tot	ug/L 0.242								
Copper, Tot	ug/L 0.870								
Iron, Tot	ug/L 105.0								
Iron, Diss	ug/L <20.0								
Lead, Tot	ug/L 1.24								
Lead, Diss	ug/L								
Manganese, Tot	ug/L 25.5								
Manganese, Diss	ug/L <20.0								
Thallium, Tot	ug/L 0.0076								
Molybdenum, Tot	ug/L 0.340								
Nickel, Tot	ug/L 2.83								
Silver, Tot	ug/L <0.0005								
Vanadium, Tot	ug/L 0.483								
Zinc, Tot	ug/L 2.08								
Zinc, Diss	ug/L								
Antimony, Tot	ug/L 0.0797								
Aluminum, Tot	ug/L 75.9								
Aluminum, Diss	ug/L <20.0								
Selenium, Tot	ug/L 0.523								
Mercury, Tot	ug/L								

United States Army Corps of Engineers	Nashville District	CELRN-EC-H / Water Management Section
Station: 30LD10054	Project: Old Hickory	Location: Bledsoe Creek, Mile 10.3
State: Tennessee	Latitude: 36° 26" 44'	Quad: Bethpage, TN
County: Sumner	Longitude: 86° 19" 55'	HUC: *
Sample Date: 15 May 2012	Water Surface Elevation =	Stream Flow =

(No Laboratory Analyses)

Profile Measurements							
Depth	Water Temp	Water Temp	Dis Oxygen	Dis Oxygen	Spec Cond	pH	Chloro a F
ft	deg C	deg F	mg/l	% sat	umho/cm	units	ug/l
-----	-----	-----	-----	-----	-----	-----	-----
0.0	17.3	63.1	10.1	105.5	317.0	7.9	

United States Army Corps of Engineers

Nashville District

CELNRN-EC-H / Water Management Section

Station: 30LD10055

Project: Old Hickory

Location: Cedar Creek, Mile 7.0

State: Tennessee

Latitude: 36° 13" 53'

Quad: Hermitage, TN

County: Wilson

Longitude: 86° 30" 22'

HUC: *

Sample Date: 15 May 2012

Water Surface Elevation =

Stream Flow =

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 208	0.0	18.3	64.9	8.4	89.6	442.0	7.9	
Alkalinity, Phenol	mg/L 0								
Solids, Tot	mg/L 300								
Solids, Tot Diss	mg/L 299.75								
Solids, Tot Susp	mg/L <0.25								
Solids, Vol	mg/L 121								
Solids, Vol Diss	mg/L 119								
Solids, Vol Susp	mg/L <2.00								
Ammonia N, Tot	mg/L 0.220								
Kjeldahl N, Tot	mg/L <0.0700								
NO3+NO2, Tot	mg/L 0.550								
Phosphorus, Tot	mg/L 0.121								
Phosphorus, Diss	mg/L 0.106								
OrthoPhosphate, D	mg/L 0.0787								
Organic Carbon, T	mg/L 4.00								
Hardness, Tot	mg/L 228								
Sulfate, Tot	mg/L 35.7								
Calcium, Tot	mg/L 78.8								
Magnesium, Tot	mg/L 7.68								
Sodium, Tot	mg/L 4.04								
Potassium, Tot	mg/L 1.82								
Chloride, Tot	mg/L 4.54								
Arsenic, Tot	ug/L 0.502								
Barium, Tot	ug/L 33.4								
Beryllium, Tot	ug/L 0.0106								
Cadmium, Tot	ug/L 0.237								
Chromium, Tot	ug/L 0.126								
Cobalt, Tot	ug/L 0.251								
Copper, Tot	ug/L 1.02								
Iron, Tot	ug/L 113.0								
Iron, Diss	ug/L 52.2								
Lead, Tot	ug/L 16.1								
Lead, Diss	ug/L								
Manganese, Tot	ug/L 26.1								
Manganese, Diss	ug/L <20.0								
Thallium, Tot	ug/L 0.0055								
Molybdenum, Tot	ug/L 0.284								
Nickel, Tot	ug/L 4.04								
Silver, Tot	ug/L 0.0060								
Vanadium, Tot	ug/L 0.706								
Zinc, Tot	ug/L 2.96								
Zinc, Diss	ug/L								
Antimony, Tot	ug/L 0.162								
Aluminum, Tot	ug/L 123.0								
Aluminum, Diss	ug/L <20.0								
Selenium, Tot	ug/L 0.285								
Mercury, Tot	ug/L								

United States Army Corps of Engineers

Nashville District

CELNRN-EC-H / Water Management Section

Station: 30LD10056

Project: Old Hickory

Location: Bartons Creek, Mile 7.1

State: Tennessee

Latitude: 36° 15" 12'

Quad: Hunters Point, TN

County: Wilson

Longitude: 86° 19" 54'

HUC: *

Sample Date: 15 May 2012

Water Surface Elevation =

Stream Flow =

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 182	0.0	19.5	67.1	9.7	105.9	409.0	8.0	
Alkalinity, Phenol	mg/L 0								
Solids, Tot	mg/L 268								
Solids, Tot Diss	mg/L 266								
Solids, Tot Susp	mg/L 2.00								
Solids, Vol	mg/L 128								
Solids, Vol Diss	mg/L 126								
Solids, Vol Susp	mg/L <2.00								
Ammonia N, Tot	mg/L 0.220								
Kjeldahl N, Tot	mg/L <0.0700								
NO3+NO2, Tot	mg/L 0.794								
Phosphorus, Tot	mg/L 0.0763								
Phosphorus, Diss	mg/L 0.0705								
OrthoPhosphate, D	mg/L <0.0500								
Organic Carbon, T	mg/L 3.30								
Hardness, Tot	mg/L 207								
Sulfate, Tot	mg/L 31.9								
Calcium, Tot	mg/L 72.6								
Magnesium, Tot	mg/L 6.27								
Sodium, Tot	mg/L 4.50								
Potassium, Tot	mg/L 1.97								
Chloride, Tot	mg/L 5.59								
Arsenic, Tot	ug/L 0.466								
Barium, Tot	ug/L 31.2								
Beryllium, Tot	ug/L 0.0036								
Cadmium, Tot	ug/L 0.0676								
Chromium, Tot	ug/L 0.283								
Cobalt, Tot	ug/L 0.203								
Copper, Tot	ug/L 1.12								
Iron, Tot	ug/L 75.2								
Iron, Diss	ug/L 36.9								
Lead, Tot	ug/L 3.75								
Lead, Diss	ug/L								
Manganese, Tot	ug/L <20.0								
Manganese, Diss	ug/L <20.0								
Thallium, Tot	ug/L 0.0036								
Molybdenum, Tot	ug/L 0.451								
Nickel, Tot	ug/L 3.73								
Silver, Tot	ug/L <0.0005								
Vanadium, Tot	ug/L 0.557								
Zinc, Tot	ug/L 3.33								
Zinc, Diss	ug/L								
Antimony, Tot	ug/L 0.227								
Aluminum, Tot	ug/L 47.1								
Aluminum, Diss	ug/L <20.0								
Selenium, Tot	ug/L 0.333								
Mercury, Tot	ug/L								

United States Army Corps of Engineers	Nashville District	CELRN-EC-H / Water Management Section
Station: 30LD10057	Project: Old Hickory	Location: Spring Creek, Mile 5.8
State: Tennessee	Latitude: 36° 16" 36'	Quad: Hunters Point, TN
County: Wilson	Longitude: 86° 16" 31'	HUC: 05130201
Sample Date: 15 May 2012	Water Surface Elevation =	Stream Flow =

(No Laboratory Analyses)

Profile Measurements							
Depth	Water Temp	Water Temp	Dis Oxygen	Dis Oxygen	Spec Cond	pH	Chloro a F
ft	deg C	deg F	mg/l	% sat	umho/cm	units	ug/l
0.0	19.7	67.5	6.3	69.1	311.0	7.6	

United States Army Corps of Engineers

Nashville District

CELNRN-EC-H / Water Management Section

Station: 30LD10058

Project: Old Hickory

Location: Round Lick Creek, Mile 8.3

State: Tennessee

Latitude: 36° 10" 13.2'

Quad: New Middleton, TN

County: Smith

Longitude: 86° 5" 26'

HUC: 05130201

Sample Date: 14 May 2012

Water Surface Elevation =

Stream Flow =

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 140	0.0	21.8	71.2	8.8	100.4	256.0	7.9	
Alkalinity, Phenol	mg/L 0								
Solids, Tot	mg/L 172								
Solids, Tot Diss	mg/L 171								
Solids, Tot Susp	mg/L 1.00								
Solids, Vol	mg/L 68.0								
Solids, Vol Diss	mg/L 66								
Solids, Vol Susp	mg/L <2.00								
Ammonia N, Tot	mg/L <0.200								
Kjeldahl N, Tot	mg/L 0.200								
NO3+NO2, Tot	mg/L <0.0200								
Phosphorus, Tot	mg/L 0.0892								
Phosphorus, Diss	mg/L 0.0715								
OrthoPhosphate, D	mg/L <0.0500								
Organic Carbon, T	mg/L 4.80								
Hardness, Tot	mg/L 134								
Sulfate, Tot	mg/L 8.71								
Calcium, Tot	mg/L 45.4								
Magnesium, Tot	mg/L 5.06								
Sodium, Tot	mg/L 5.31								
Potassium, Tot	mg/L 1.81								
Chloride, Tot	mg/L 8.43								
Arsenic, Tot	ug/L 1.03								
Barium, Tot	ug/L 26.4								
Beryllium, Tot	ug/L 0.0070								
Cadmium, Tot	ug/L 0.0300								
Chromium, Tot	ug/L 0.212								
Cobalt, Tot	ug/L 0.268								
Copper, Tot	ug/L 0.649								
Iron, Tot	ug/L 116.0								
Iron, Diss	ug/L 30.3								
Lead, Tot	ug/L 1.58								
Lead, Diss	ug/L								
Manganese, Tot	ug/L 32.7								
Manganese, Diss	ug/L <20.0								
Thallium, Tot	ug/L 0.0061								
Molybdenum, Tot	ug/L 0.338								
Nickel, Tot	ug/L 2.40								
Silver, Tot	ug/L 0.0196								
Vanadium, Tot	ug/L 0.727								
Zinc, Tot	ug/L 1.65								
Zinc, Diss	ug/L								
Antimony, Tot	ug/L 0.188								
Aluminum, Tot	ug/L 88.2								
Aluminum, Diss	ug/L <20.0								
Selenium, Tot	ug/L 0.388								
Mercury, Tot	ug/L								

United States Army Corps of Engineers

Nashville District

CELNRN-EC-H / Water Management Section

Station: 30LD10059

Project: Old Hickory

Location: Caney Fork River, Mile 7.3

State: Tennessee

Latitude: 36° 13' 6.9'

Quad: Gordonsville, TN

County: Smith

Longitude: 85° 56' 56.4'

HUC: 05130108

Sample Date: 14 May 2012

Water Surface Elevation =

Stream Flow =

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 80	0.0	16.1	61.0	10.5	107.0	187.0	7.8	
Alkalinity, Phenol	mg/L 0								
Solids, Tot	mg/L 112								
Solids, Tot Diss	mg/L 111.75								
Solids, Tot Susp	mg/L <0.25								
Solids, Vol	mg/L 57.0								
Solids, Vol Diss	mg/L 55								
Solids, Vol Susp	mg/L <2								
Ammonia N, Tot	mg/L 0.210								
Kjeldahl N, Tot	mg/L <0.0700								
NO3+NO2, Tot	mg/L 0.501								
Phosphorus, Tot	mg/L 0.0421								
Phosphorus, Diss	mg/L 0.0250								
OrthoPhosphate, D	mg/L <0.0500								
Organic Carbon, T	mg/L 2.30								
Hardness, Tot	mg/L 84.2								
Sulfate, Tot	mg/L 14.3								
Calcium, Tot	mg/L 27.4								
Magnesium, Tot	mg/L 3.85								
Sodium, Tot	mg/L 4.90								
Potassium, Tot	mg/L 1.19								
Chloride, Tot	mg/L 3.32								
Arsenic, Tot	ug/L 0.321								
Barium, Tot	ug/L 19.1								
Beryllium, Tot	ug/L <0.0005								
Cadmium, Tot	ug/L 0.0187								
Chromium, Tot	ug/L 0.114								
Cobalt, Tot	ug/L 0.127								
Copper, Tot	ug/L 0.483								
Iron, Tot	ug/L 56.2								
Iron, Diss	ug/L <20.0								
Lead, Tot	ug/L 0.625								
Lead, Diss	ug/L								
Manganese, Tot	ug/L 40.3								
Manganese, Diss	ug/L 23.8								
Thallium, Tot	ug/L 0.0054								
Molybdenum, Tot	ug/L 0.422								
Nickel, Tot	ug/L 1.62								
Silver, Tot	ug/L <0.0005								
Vanadium, Tot	ug/L 0.277								
Zinc, Tot	ug/L 1.03								
Zinc, Diss	ug/L								
Antimony, Tot	ug/L 0.0452								
Aluminum, Tot	ug/L 44.3								
Aluminum, Diss	ug/L <20.0								
Selenium, Tot	ug/L 0.228								
Mercury, Tot	ug/L								

United States Army Corps of Engineers
Station: 30LD10062
State: Tennessee
County: Trousdale
Sample Date: 15 May 2012

Nashville District
Project: Old Hickory
Latitude: 36° 23' 2.5'
Longitude: 86° 7' 44'
Water Surface Elevation =

CELNRN-EC-H / Water Management Section
Location: Goose Creek, Mile 4.5
Quad: Hartsville, TN
HUC: 05130201
Stream Flow =

(No Laboratory Analyses)

Profile Measurements							
Depth	Water Temp	Water Temp	Dis Oxygen	Dis Oxygen	Spec Cond	pH	Chloro a F
ft	deg C	deg F	mg/l	% sat	umho/cm	units	ug/l
0.0	17.0	62.6	9.8	101.8	310.0	8.0	

United States Army Corps of Engineers

Nashville District

CELRN-EC-H / Water Management Section

Station: 30LD20002

Project: Old Hickory

Location: Cumberland River, Mile 216.9

State: Tennessee

Latitude: 36° 17" 29'

Quad: Goodlettsville, TN

County: Davidson

Longitude: 86° 38" 41'

HUC: 05130201

Sample Date: 15 May 2012

Water Surface Elevation = 445.1 ft

Secchi Disk = 0.8 m

Results of Laboratory Analyses

Profile Measurements

Sample Depth ft	0.0	60.0	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	70	68	0.0	23.4	74.1	9.1	106.8	198.7	8.5	6.5
Alkalinity, Phenol mg/L	4	0	5.0	22.8	73.0	7.7	89.2	199.0	7.8	6.9
Solids, Tot mg/L	140	146	10.0	22.6	72.6	7.1	82.2	199.4	7.7	4.8
Solids, Tot Diss mg/L	139.75	145	15.0	22.4	72.3	6.8	78.4	199.5	7.6	3.9
Solids, Tot Susp mg/L	<0.25	1.00	20.0	22.4	72.3	6.8	78.4	199.1	7.6	3.7
Solids, Vol mg/L	84.0	66.0	25.0	22.3	72.2	6.6	76.4	199.3	7.6	3.1
Solids, Vol Diss mg/L	82	64	30.0	22.3	72.2	6.6	76.3	199.4	7.6	2.8
Solids, Vol Susp mg/L	<2.00	<2.00	35.0	22.2	72.0	6.4	73.2	199.8	7.5	2.6
Ammonia N, Tot mg/L	0.250	0.270	40.0	22.1	71.8	6.4	72.8	200.3	7.5	3.1
Kjeldahl N, Tot mg/L	<0.0700	<0.0700	45.0	21.8	71.2	6.1	69.2	200.5	7.4	2.6
NO3+NO2, Tot mg/L	0.254	0.284	50.0	20.6	69.1	4.8	53.5	200.0	7.2	2.0
Phosphorus, Tot mg/L	0.0637	0.0750	55.0	19.8	67.6	3.8	42.1	200.2	7.1	1.6
Phosphorus, Diss mg/L	0.0375	0.0565	60.0	19.7	67.4	3.7	40.1	200.7	7.1	1.6
OrthoPhosphate, D mg/L	<0.0500	<0.0500	65.0	19.7	67.4	3.7	39.9	200.4	7.1	1.6
Organic Carbon, T mg/L	2.60	2.60	69.0	19.7	67.4	3.6	39.8	200.5	7.1	1.6
Hardness, Tot mg/L	85.9	86.8								
Sulfate, Tot mg/L	29.1	27.5								
Calcium, Tot mg/L	24.4	24.8								
Magnesium, Tot mg/L	6.09	6.05								
Sodium, Tot mg/L	5.23	5.20								
Potassium, Tot mg/L	1.42	1.51								
Chloride, Tot mg/L	3.84	3.97								
Arsenic, Tot ug/L	0.631	0.803								
Barium, Tot ug/L	23.2	25.1								
Beryllium, Tot ug/L	0.0086	0.0239								
Cadmium, Tot ug/L	0.0206	0.0329								
Chromium, Tot ug/L	0.233	0.224								
Cobalt, Tot ug/L	0.188	0.300								
Copper, Tot ug/L	1.39	1.60								
Iron, Tot ug/L	134.0	207.0								
Iron, Diss ug/L	<20.0	36.3								
Lead, Tot ug/L	2.92	3.06								
Lead, Diss ug/L										
Manganese, Tot ug/L	83.9	231.0								
Manganese, Diss ug/L	<20.0	88.6								
Thallium, Tot ug/L	0.0087	0.0100								
Molybdenum, Tot ug/L	0.445	0.474								
Nickel, Tot ug/L	1.79	1.91								
Silver, Tot ug/L	<0.0005	<0.0005								
Vanadium, Tot ug/L	0.706	0.797								
Zinc, Tot ug/L	2.15	2.29								
Zinc, Diss ug/L										
Antimony, Tot ug/L	0.0765	0.0877								
Aluminum, Tot ug/L	114.0	118.0								
Aluminum, Diss ug/L	21.4	33.8								
Selenium, Tot ug/L	0.564	0.573								
Mercury, Tot ug/L	0.0114	<0.005								

United States Army Corps of Engineers

Nashville District

CELNRN-EC-H / Water Management Section

Station: 30LD20003

Project: Old Hickory

Location: Cumberland River, Mile 221.2

State: Tennessee

Latitude: 36° 14" 41'

Quad: Hermitage, TN

County: Davidson

Longitude: 86° 36" 50'

HUC: 05130201

Sample Date: 15 May 2012

Water Surface Elevation = 445.1 ft

Secchi Disk = 0.8 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	24.2	75.6	9.9	117.9	200.8	8.4	6.3
5.0	23.8	74.8	10.0	117.8	200.5	8.4	14.2
10.0	22.2	72.0	7.7	88.1	201.3	7.8	10.8
15.0	22.1	71.7	7.2	82.1	201.1	7.6	8.4
20.0	22.0	71.5	7.0	80.0	201.6	7.6	9.1
25.0	21.6	70.9	6.3	71.0	201.4	7.4	4.3
30.0	21.2	70.1	5.7	64.1	201.6	7.3	3.6
35.0	20.4	68.7	5.1	56.1	201.2	7.2	2.8
40.0	19.8	67.6	4.8	52.6	200.9	7.2	2.6
45.0	19.4	66.9	3.9	42.4	200.8	7.1	1.6
50.0	19.0	66.2	4.0	43.3	202.2	7.1	2.1
55.0	18.8	65.8	3.6	39.1	203.4	7.1	2.0
60.0	18.4	65.1	2.6	27.3	202.6	7.0	1.4
65.0	17.8	64.0	0.9	9.6	203.4	6.9	0.6
66.0	17.8	64.0	0.9	9.1	204.0	6.9	0.7

United States Army Corps of Engineers

Nashville District

CELNRN-EC-H / Water Management Section

Station: 30LD20004

Project: Old Hickory

Location: Cumberland River, Mile 236.0

State: Tennessee

Latitude: 36° 18" 48'

Quad: Laguardo, TN

County: Wilson

Longitude: 86° 29" 18'

HUC: 05130201

Sample Date: 15 May 2012

Water Surface Elevation = 445.1 ft

Secchi Disk = 0.6 m

Results of Laboratory Analyses

Profile Measurements

Sample Depth ft	25.0	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 70	0.0	23.1	73.6	8.4	98.1	200.8	7.8	7.8
Alkalinity, Phenol	mg/L 0	5.0	22.9	73.2	8.1	93.8	201.0	7.7	9.5
Solids, Tot	mg/L 140	10.0	21.7	71.0	7.0	79.5	202.7	7.5	7.6
Solids, Tot Diss	mg/L 139.75	15.0	21.5	70.6	6.8	77.1	203.0	7.4	5.1
Solids, Tot Susp	mg/L <0.25	20.0	21.4	70.5	6.7	76.3	202.7	7.4	5.2
Solids, Vol	mg/L 72.0	25.0	21.1	70.1	6.5	73.2	201.6	7.4	3.8
Solids, Vol Diss	mg/L 70.0	30.0	20.7	69.2	6.4	70.8	200.6	7.3	3.4
Solids, Vol Susp	mg/L <2.00	35.0	20.2	68.4	6.3	69.7	197.1	7.3	4.2
Ammonia N, Tot	mg/L 0.330	40.0	19.4	66.9	6.4	69.2	195.9	7.3	4.5
Kjeldahl N, Tot	mg/L <0.0700	45.0	18.6	65.5	6.4	68.0	188.3	7.2	4.7
NO3+NO2, Tot	mg/L 0.160	50.0	18.5	65.3	6.3	67.6	186.9	7.2	4.9
Phosphorus, Tot	mg/L 0.0571	55.0	18.4	65.2	6.0	63.9	187.4	7.2	4.7
Phosphorus, Diss	mg/L 0.0456								
OrthoPhosphate, D	mg/L <0.0500								
Organic Carbon, T	mg/L 2.30								
Hardness, Tot	mg/L 86.4								
Sulfate, Tot	mg/L 27.6								
Calcium, Tot	mg/L 24.6								
Magnesium, Tot	mg/L 6.05								
Sodium, Tot	mg/L 5.61								
Potassium, Tot	mg/L 1.40								
Chloride, Tot	mg/L 4.08								
Arsenic, Tot	ug/L 0.613								
Barium, Tot	ug/L 24.5								
Beryllium, Tot	ug/L 0.0190								
Cadmium, Tot	ug/L 0.0243								
Chromium, Tot	ug/L 0.282								
Cobalt, Tot	ug/L 0.262								
Copper, Tot	ug/L 1.23								
Iron, Tot	ug/L 168.0								
Iron, Diss	ug/L <20.0								
Lead, Tot	ug/L 3.09								
Lead, Diss	ug/L								
Manganese, Tot	ug/L 86.6								
Manganese, Diss	ug/L <20.0								
Thallium, Tot	ug/L 0.0106								
Molybdenum, Tot	ug/L 0.427								
Nickel, Tot	ug/L 1.83								
Silver, Tot	ug/L 0.0155								
Vanadium, Tot	ug/L 0.844								
Zinc, Tot	ug/L 1.80								
Zinc, Diss	ug/L								
Antimony, Tot	ug/L 0.127								
Aluminum, Tot	ug/L 92.1								
Aluminum, Diss	ug/L 20.4								
Selenium, Tot	ug/L 0.566								
Mercury, Tot	ug/L								

United States Army Corps of Engineers

Nashville District

CELRN-EC-H / Water Management Section

Station: 30LD20005

Project: Old Hickory

Location: Cumberland River, Mile 241.0

State: Tennessee

Latitude: 36° 19" 40'

Quad: Laguardo, TN

County: Wilson

Longitude: 86° 25" 5'

HUC: 05130201

Sample Date: 15 May 2012

Water Surface Elevation = 445.1 ft

Secchi Disk = 0.5 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	25.6	78.0	8.7	106.3	208.1	8.0	11.2
5.0	24.0	75.2	7.7	90.9	206.9	7.6	9.9
10.0	22.2	72.0	7.2	82.4	204.5	7.5	8.1
15.0	21.2	70.1	7.2	81.5	200.8	7.4	5.9
20.0	20.6	69.2	6.8	76.2	201.0	7.4	5.4
25.0	20.4	68.7	6.6	73.6	203.0	7.4	5.2
30.0	20.3	68.6	6.6	73.0	202.5	7.4	4.7
35.0	20.3	68.5	6.7	73.9	200.7	7.4	4.4
40.0	20.3	68.5	6.7	74.1	200.1	7.4	4.4
43.0	20.3	68.5	6.6	73.2	200.2	7.4	4.4

United States Army Corps of Engineers

Nashville District

CELNRN-EC-H / Water Management Section

Station: 30LD20006

Project: Old Hickory

Location: Cumberland River, Mile 245.0

State: Tennessee

Latitude: 36° 19" 40'

Quad: Laguardo, TN

County: Wilson

Longitude: 86° 23" 22'

HUC: 05130201

Sample Date: 15 May 2012

Water Surface Elevation = 445.1 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	22.0	71.6	8.2	94.0	197.7	8.4	3.2
5.0	21.4	70.5	7.9	89.5	198.0	7.7	5.5
10.0	20.7	69.2	7.2	80.6	196.9	7.4	5.0
15.0	20.6	69.1	7.1	79.4	196.7	7.4	5.6
20.0	20.6	69.0	7.1	79.4	196.4	7.4	4.3
25.0	20.4	68.8	7.1	78.5	195.9	7.4	4.7
30.0	20.3	68.5	7.0	77.6	195.8	7.4	3.9
35.0	20.0	68.0	7.0	76.6	193.9	7.4	3.8
40.0	19.5	67.1	6.8	74.0	190.1	7.4	4.1
45.0	19.4	67.0	6.7	73.0	189.3	7.4	4.3
50.0	19.3	66.8	6.6	71.7	188.5	7.4	4.6
52.0	19.3	66.7	6.6	71.6	188.3	7.4	4.6

United States Army Corps of Engineers

Nashville District

CELRN-EC-H / Water Management Section

Station: 30LD20007

Project: Old Hickory

Location: Cumberland River, Mile 263.1

State: Tennessee

Latitude: 36° 17" 57'

Quad: Hunters Point, TN

County: Wilson

Longitude: 86° 15" 49'

HUC: 05130201

Sample Date: 15 May 2012

Water Surface Elevation = 445.1 ft

Secchi Disk = 1.1 m

Results of Laboratory Analyses

Profile Measurements

Sample Depth ft	20.0	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	21.3	70.3	9.5	107.4	197.0	8.0	4.8
Alkalinity, Phenol	mg/L 0	5.0	20.4	68.7	9.6	106.7	195.0	7.9	9.1
Solids, Tot	mg/L 132	10.0	20.2	68.4	9.3	102.9	194.0	7.8	7.9
Solids, Tot Diss	mg/L 128	15.0	20.0	68.0	8.8	97.0	194.0	7.7	7.3
Solids, Tot Susp	mg/L 4.00	20.0	20.0	68.0	8.8	97.0	194.0	7.7	7.0
Solids, Vol	mg/L 85.0	25.0	19.9	67.8	8.7	95.7	194.0	7.7	6.9
Solids, Vol Diss	mg/L 83.0	30.0	19.9	67.8	8.7	95.7	194.0	7.7	6.7
Solids, Vol Susp	mg/L <2.00	35.0	19.8	67.6	8.4	92.3	194.0	7.6	5.6
Ammonia N, Tot	mg/L 0.270	40.0	19.8	67.6	8.3	91.2	194.0	7.6	5.3
Kjeldahl N, Tot	mg/L <0.0700	45.0	19.8	67.6	8.3	91.2	194.0	7.6	5.3
NO3+NO2, Tot	mg/L 0.219	50.0	19.8	67.6	8.3	91.2	194.0	7.6	5.3
Phosphorus, Tot	mg/L 0.0281								
Phosphorus, Diss	mg/L <0.0200								
OrthoPhosphate, D	mg/L <0.0500								
Organic Carbon, T	mg/L 2.40								
Hardness, Tot	mg/L 82.0								
Sulfate, Tot	mg/L 26.5								
Calcium, Tot	mg/L 23.0								
Magnesium, Tot	mg/L 5.98								
Sodium, Tot	mg/L 5.76								
Potassium, Tot	mg/L 1.36								
Chloride, Tot	mg/L 4.67								
Arsenic, Tot	ug/L 0.400								
Barium, Tot	ug/L 20.5								
Beryllium, Tot	ug/L 0.0187								
Cadmium, Tot	ug/L 0.0229								
Chromium, Tot	ug/L 0.166								
Cobalt, Tot	ug/L 0.157								
Copper, Tot	ug/L 0.857								
Iron, Tot	ug/L 83.8								
Iron, Diss	ug/L 35.9								
Lead, Tot	ug/L 2.91								
Lead, Diss	ug/L								
Manganese, Tot	ug/L 37.9								
Manganese, Diss	ug/L <20.0								
Thallium, Tot	ug/L 0.0115								
Molybdenum, Tot	ug/L 0.350								
Nickel, Tot	ug/L 1.60								
Silver, Tot	ug/L 0.0836								
Vanadium, Tot	ug/L 0.318								
Zinc, Tot	ug/L 1.49								
Zinc, Diss	ug/L								
Antimony, Tot	ug/L 0.213								
Aluminum, Tot	ug/L 48.2								
Aluminum, Diss	ug/L <20.0								
Selenium, Tot	ug/L 0.513								
Mercury, Tot	ug/L								

United States Army Corps of Engineers

Nashville District

CELNRN-EC-H / Water Management Section

Station: 30LD20008

Project: Old Hickory

Location: Cumberland River, Mile 278.7

State: Tennessee
County: TrousdaleLatitude: 36° 22" 25'
Longitude: 86° 10" 37'Quad: Bellwood, TN
HUC: 05130201

Sample Date: 15 May 2012

Water Surface Elevation = 445.1 ft

Secchi Disk = 1.2 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	18.5	65.3	8.2	87.8	191.0	7.5	2.7
5.0	18.4	65.1	8.1	86.5	191.4	7.5	4.4
10.0	18.3	65.0	8.0	85.4	192.9	7.5	4.9
15.0	18.3	65.0	8.1	85.9	193.3	7.5	4.5
20.0	18.3	65.0	8.0	84.9	193.0	7.5	4.8
25.0	18.3	65.0	8.0	85.0	194.0	7.5	4.7
30.0	18.3	65.0	8.0	84.8	193.1	7.5	4.4
35.0	18.3	65.0	8.0	84.9	193.3	7.5	4.7
40.0	18.4	65.0	8.0	85.3	192.5	7.5	4.8
42.0	18.4	65.0	8.0		192.6	7.5	4.9

United States Army Corps of Engineers

Nashville District

CELRN-EC-H / Water Management Section

Station: 30LD20009

Project: Old Hickory

Location: Cumberland River, Mile 308.2

State: Tennessee

Latitude: 36° 14" 54'

Quad: Gordonsville, TN

County: Smith

Longitude: 85° 57" 18'

HUC: 05130201

Sample Date: 15 May 2012

Water Surface Elevation = 445.1 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	18.6	65.5	7.0	74.9	193.0	7.5	3.4
5.0	18.6	65.5	7.0	74.9	192.8	7.5	4.2
10.0	18.6	65.4	7.0	74.8	193.1	7.4	3.3
15.0	18.6	65.4	7.0	75.0	193.0	7.4	3.0
19.0	18.6	65.4	7.0	75.0	193.2	7.4	2.6

CELNRN-EC-H / Water Management Section

Location: Drakes Creek, Mile 1.9

Quad: Hendersonville, TN
HUC: 05130201

Secchi Disk = 1.1 m

Profile Measurements

[illegible]

United States Army Corps of Engineers

Nashville District

CELNRN-EC-H / Water Management Section

Station: 30LD20016

Project: Old Hickory

Location: Cumberland River, Mile 292.4

State: Tennessee

Latitude: 36° 15" 51'

Quad: Dixon Springs, TN

County: Smith

Longitude: 86° 4" 12'

HUC: 05130201

Sample Date: 15 May 2012

Water Surface Elevation = 445.1 ft

Secchi Disk = 1.5 m

Results of Laboratory Analyses

Profile Measurements

Sample Depth ft	15.0	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 60	0.0	19.0	66.2	7.5	80.7	193.0	7.5	3.0
Alkalinity, Phenol	mg/L 0	5.0	18.9	66.0	7.4	79.4	192.6	7.5	4.5
Solids, Tot	mg/L 136	10.0	18.9	66.0	7.4	79.4	192.8	7.5	4.8
Solids, Tot Diss	mg/L 134	15.0	18.9	66.0	7.4	79.7	192.9	7.5	4.7
Solids, Tot Susp	mg/L 2.00	20.0	18.9	66.0	7.4	79.3	192.8	7.5	5.1
Solids, Vol	mg/L 104	25.0	18.9	66.0	7.4	79.2	192.9	7.5	5.2
Solids, Vol Diss	mg/L 102	30.0	18.9	66.0	7.3	79.0	193.0	7.5	5.4
Solids, Vol Susp	mg/L <2.00								
Ammonia N, Tot	mg/L 0.260								
Kjeldahl N, Tot	mg/L <0.0700								
NO3+NO2, Tot	mg/L 0.268								
Phosphorus, Tot	mg/L 0.0218								
Phosphorus, Diss	mg/L 0.0355								
OrthoPhosphate, D	mg/L <0.0500								
Organic Carbon, T	mg/L 2.30								
Hardness, Tot	mg/L 82.4								
Sulfate, Tot	mg/L 28.5								
Calcium, Tot	mg/L 22.8								
Magnesium, Tot	mg/L 6.15								
Sodium, Tot	mg/L 5.59								
Potassium, Tot	mg/L 1.37								
Chloride, Tot	mg/L 4.22								
Arsenic, Tot	ug/L 0.397								
Barium, Tot	ug/L 20.7								
Beryllium, Tot	ug/L 0.0136								
Cadmium, Tot	ug/L 0.0310								
Chromium, Tot	ug/L 0.158								
Cobalt, Tot	ug/L 0.160								
Copper, Tot	ug/L 0.909								
Iron, Tot	ug/L 84.3								
Iron, Diss	ug/L <20.0								
Lead, Tot	ug/L 2.89								
Lead, Diss	ug/L								
Manganese, Tot	ug/L 47.7								
Manganese, Diss	ug/L <20.0								
Thallium, Tot	ug/L 0.0112								
Molybdenum, Tot	ug/L 0.424								
Nickel, Tot	ug/L 1.70								
Silver, Tot	ug/L 0.0241								
Vanadium, Tot	ug/L 0.335								
Zinc, Tot	ug/L 1.80								
Zinc, Diss	ug/L								
Antimony, Tot	ug/L 0.177								
Aluminum, Tot	ug/L 56.0								
Aluminum, Diss	ug/L 68.2								
Selenium, Tot	ug/L 0.550								
Mercury, Tot	ug/L								

United States Army Corps of Engineers

Nashville District

CELRN-EC-H / Water Management Section

Station: 30LD20019

Project: Old Hickory

Location: Gallatin Fossil Plant Discharge, Mile 0.3

State: Tennessee
County: SumnerLatitude: 36° 18" 50.6'
Longitude: 86° 24" 12.8'Quad: Laguardo, TN
HUC: 05130201

Sample Date: 15 May 2012

Water Surface Elevation = 445.1 ft

Secchi Disk = 0.4 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	28.4	83.2	6.6	85.5	200.0	7.5	3.8
5.0	28.4	83.2	6.7	85.7	200.2	7.4	4.4
10.0	28.4	83.1	6.6	84.7	200.1	7.4	4.4
13.0	28.4	83.2	6.5	83.8	200.4	7.4	4.3

United States Army Corps of Engineers

Nashville District

CELNRN-EC-H / Water Management Section

Station: 30LD20025

Project: Old Hickory

Location: Cumberland River, Mile 296.5

State: Tennessee

Latitude: 36° 18" 38.2'

Quad: Dixon Springs, TN

County: Smith

Longitude: 86° 3" 58.6'

HUC: 05130201

Sample Date: 15 May 2012

Water Surface Elevation = 445.1 ft

Secchi Disk = 1.2 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	19.0	66.3	7.5	80.8	193.6	7.5	2.5
5.0	19.0	66.2	7.4	80.3	193.7	7.5	3.6
10.0	19.0	66.2	7.4	80.1	193.6	7.5	4.0
15.0	19.0	66.2	7.4	80.1	193.8	7.5	3.7
20.0	18.9	66.1	7.4	80.0	193.8	7.5	4.1
25.0	18.9	66.1	7.4	79.9	193.8	7.5	4.2
30.0	19.0	66.1	7.4	79.8	193.7	7.5	4.1
35.0	19.0	66.1	7.4	79.8	193.7	7.5	4.2
40.0	19.0	66.1	7.4	79.7	193.7	7.5	4.2
45.0	19.0	66.1	7.4	79.7	193.4	7.5	4.2
50.0	19.0	66.2	7.4	80.0	194.0	7.5	4.3
52.0	19.0	66.1	7.4	79.8	193.5	7.5	4.4

United States Army Corps of Engineers

Nashville District

CELRN-EC-H / Water Management Section

Station: 30LD20026

Project: Old Hickory

Location: Cumberland River, Mile 301.8

State: Tennessee

Latitude: 36° 17" 54.6'

Quad: Dixon Springs, TN

County: Smith

Longitude: 86° 0" 13'

HUC: 05130201

Sample Date: 15 May 2012

Water Surface Elevation = 445.1 ft

Secchi Disk = 1 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	19.0	66.1	7.3	78.2	189.4	7.5	3.6
5.0	19.0	66.1	7.3	78.3	189.4	7.5	4.0
10.0	19.0	66.1	7.2	77.8	189.4	7.5	4.0
15.0	19.0	66.1	7.2	78.0	189.0	7.5	4.0
20.0	19.0	66.1	7.2	77.9	189.3	7.5	3.8

United States Army Corps of Engineers

Nashville District

CELRN-EC-H / Water Management Section

Station: 30LD20027

Project: Old Hickory

Location: Cumberland River, Mile 305.8

State: Tennessee

Latitude: 36° 16" 7.4'

Quad: Carthage, TN

County: Smith

Longitude: 85° 58" 55.9'

HUC: 05130201

Sample Date: 15 May 2012

Water Surface Elevation = 445.1 ft

Secchi Disk = 1 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	18.7	65.7	7.1	76.1	197.3	7.4	3.5
5.0	18.7	65.6	7.2	76.6	199.1	7.5	4.4
10.0	18.6	65.5	7.2	77.3	198.6	7.5	5.6
15.0	18.6	65.5	7.2	76.9	198.6	7.5	4.7
20.0	18.5	65.3	7.4	78.7	201.2	7.5	3.5
25.0	18.5	65.3	7.4	78.9	200.9	7.5	3.0