

United States Army Corps of Engineers

Nashville District

CELNRN-EC-H / Water Management Section

Station: 3DAL10001

Project: Dale Hollow

Location: Obey River, Mile 7.0

State: Tennessee

Latitude: 36° 32' 13.4'

Quad: Dale Hollow Dam, TN-KY

County: Clay

Longitude: 85° 27' 24.9'

HUC: 05130105

Sample Date: 14 Aug 2013

Water Surface Elevation = 511.6 ft

Stream Flow = 3140 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 78	0.0	12.1	53.8	6.3	58.8	190.0	7.2	0.2
Alkalinity, Phenol	mg/L 0								
Solids, Tot	mg/L 126								
Solids, Tot Diss	mg/L 79.0								
Solids, Tot Susp	mg/L 2.00								
Solids, Vol	mg/L 167								
Solids, Vol Diss	mg/L 167								
Solids, Vol Susp	mg/L <4.00								
Ammonia N, Tot	mg/L								
Kjeldahl N, Tot	mg/L 0.300								
NO3+NO2, Tot	mg/L 0.322								
Phosphorus, Tot	mg/L 0.0074								
Phosphorus, Diss	mg/L 0.0112								
OrthoPhosphate, D	mg/L <0.05								
Organic Carbon, T	mg/L 2.70								
Hardness, Tot	mg/L 85.5								
Sulfate, Tot	mg/L 17.5								
Calcium, Tot	mg/L 26.6								
Magnesium, Tot	mg/L 4.66								
Sodium, Tot	mg/L 2.49								
Potassium, Tot	mg/L 1.06								
Chloride, Tot	mg/L 4.07								
Arsenic, Tot	ug/L 0.3								
Barium, Tot	ug/L 20.3								
Beryllium, Tot	ug/L <0.02								
Cadmium, Tot	ug/L 0.04								
Chromium, Tot	ug/L 0.7								
Cobalt, Tot	ug/L 0.07								
Copper, Tot	ug/L 1.2								
Iron, Tot	ug/L 18.5								
Iron, Diss	ug/L 9.3								
Lead, Tot	ug/L 0.98								
Lead, Diss	ug/L 1.0								
Manganese, Tot	ug/L 69.6								
Manganese, Diss	ug/L 4.2								
Thallium, Tot	ug/L <0.02								
Molybdenum, Tot	ug/L 0.3								
Nickel, Tot	ug/L 0.7								
Silver, Tot	ug/L 0.04								
Vanadium, Tot	ug/L 0.2								
Zinc, Tot	ug/L 3.9								
Zinc, Diss	ug/L 5.0								
Antimony, Tot	ug/L 0.21								
Aluminum, Tot	ug/L <2.0								
Aluminum, Diss	ug/L <2.0								
Selenium, Tot	ug/L 0.28								
Mercury, Tot	ug/L 0.015								

Water Quality Physical / Chemical Data Report

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United States Army Corps of Engineers

Nashville District

CELNRN-EC-H / Water Management Section

Station: 3DAL10011

Project: Dale Hollow

Location: Wolf River, Mile 22.7

State: Tennessee

Latitude: 36° 35" 1'

Quad: Moodyville, TN-KY

County: Pickett

Longitude: 85° 7" 5'

HUC: 05130105

Sample Date: 16 Aug 2013

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 116	0.0	18.2	64.8	9.2	97.9	276.0	8.1	
Alkalinity, Phenol	mg/L 0								
Solids, Tot	mg/L 234								
Solids, Tot Diss	mg/L 149								
Solids, Tot Susp	mg/L 2.00								
Solids, Vol	mg/L 116								
Solids, Vol Diss	mg/L 112								
Solids, Vol Susp	mg/L <4.00								
Ammonia N, Tot	mg/L 0.0288								
Kjeldahl N, Tot	mg/L 0.190								
NO3+NO2, Tot	mg/L 0.927								
Phosphorus, Tot	mg/L 0.0150								
Phosphorus, Diss	mg/L 0.014								
OrthoPhosphate, D	mg/L <0.0500								
Organic Carbon, T	mg/L <1.00								
Hardness, Tot	mg/L 132								
Sulfate, Tot	mg/L 20.1								
Calcium, Tot	mg/L 41.5								
Magnesium, Tot	mg/L 6.81								
Sodium, Tot	mg/L 2.78								
Potassium, Tot	mg/L 1.01								
Chloride, Tot	mg/L 4.26								
Arsenic, Tot	ug/L 0.3								
Barium, Tot	ug/L 41.9								
Beryllium, Tot	ug/L <0.02								
Cadmium, Tot	ug/L <0.02								
Chromium, Tot	ug/L 0.92								
Cobalt, Tot	ug/L 0.16								
Copper, Tot	ug/L 0.3								
Iron, Tot	ug/L 84.8								
Iron, Diss	ug/L								
Lead, Tot	ug/L 0.3								
Lead, Diss	ug/L								
Manganese, Tot	ug/L 13.8								
Manganese, Diss	ug/L								
Thallium, Tot	ug/L <0.02								
Molybdenum, Tot	ug/L 0.2								
Nickel, Tot	ug/L 0.5								
Silver, Tot	ug/L <0.02								
Vanadium, Tot	ug/L 0.4								
Zinc, Tot	ug/L 0.8								
Zinc, Diss	ug/L								
Antimony, Tot	ug/L 0.04								
Aluminum, Tot	ug/L 75.4								
Aluminum, Diss	ug/L								
Selenium, Tot	ug/L 0.3								
Mercury, Tot	ug/L								

Water Quality Physical / Chemical Data Report

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United States Army Corps of Engineers

Nashville District

CELNRN-EC-H / Water Management Section

Station: 3DAL10012

Project: Dale Hollow

Location: Spring Creek, Mile 2.7

State: Kentucky

Latitude: 36° 38" 6'

Quad: Albany, KY-TN

County: Clinton

Longitude: 85° 8" 43'

HUC: 05130105

Sample Date: 16 Aug 2013

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	16.9	62.4	9.8	101.6	332.0	8.2	
Alkalinity, Phenol	mg/L 0								
Solids, Tot	mg/L 292								
Solids, Tot Diss	mg/L 199								
Solids, Tot Susp	mg/L 3.00								
Solids, Vol	mg/L 21.0								
Solids, Vol Diss	mg/L 21.0								
Solids, Vol Susp	mg/L <1.40								
Ammonia N, Tot	mg/L 0.0391								
Kjeldahl N, Tot	mg/L 0.200								
NO3+NO2, Tot	mg/L 2.26								
Phosphorus, Tot	mg/L 0.0246								
Phosphorus, Diss	mg/L 0.021								
OrthoPhosphate, D	mg/L <0.05								
Organic Carbon, T	mg/L 1.20								
Hardness, Tot	mg/L 149								
Sulfate, Tot	mg/L 19.6								
Calcium, Tot	mg/L 48.1								
Magnesium, Tot	mg/L 6.92								
Sodium, Tot	mg/L 6.79								
Potassium, Tot	mg/L 1.37								
Chloride, Tot	mg/L 13.0								
Arsenic, Tot	ug/L 0.4								
Barium, Tot	ug/L 33.3								
Beryllium, Tot	ug/L <0.02								
Cadmium, Tot	ug/L 0.02								
Chromium, Tot	ug/L 1.5								
Cobalt, Tot	ug/L 0.2								
Copper, Tot	ug/L 0.37								
Iron, Tot	ug/L 111.0								
Iron, Diss	ug/L								
Lead, Tot	ug/L 0.3								
Lead, Diss	ug/L								
Manganese, Tot	ug/L 17.4								
Manganese, Diss	ug/L								
Thallium, Tot	ug/L <0.02								
Molybdenum, Tot	ug/L 0.2								
Nickel, Tot	ug/L 0.5								
Silver, Tot	ug/L <0.02								
Vanadium, Tot	ug/L 0.6								
Zinc, Tot	ug/L 2.4								
Zinc, Diss	ug/L								
Antimony, Tot	ug/L 0.05								
Aluminum, Tot	ug/L 103.0								
Aluminum, Diss	ug/L								
Selenium, Tot	ug/L 0.4								
Mercury, Tot	ug/L								

Water Quality Physical / Chemical Data Report

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United States Army Corps of Engineers

Nashville District

CELNRN-EC-H / Water Management Section

Station: 3DAL10014

Project: Dale Hollow

Location: East Fork Obey River, Mile 12.6

State: Tennessee

Latitude: 36° 25" 0'

Quad: Riverton, TN

County: Fentress

Longitude: 85° 1" 38'

HUC: 05130105

Sample Date: 15 Aug 2013

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 50	0.0	21.0	69.8	11.0	123.6	179.0	8.5	
Alkalinity, Phenol	mg/L 2								
Solids, Tot	mg/L 166								
Solids, Tot Diss	mg/L 107								
Solids, Tot Susp	mg/L 1.00								
Solids, Vol	mg/L 154								
Solids, Vol Diss	mg/L 154								
Solids, Vol Susp	mg/L <1.50								
Ammonia N, Tot	mg/L 0.0303								
Kjeldahl N, Tot	mg/L 0.160								
NO3+NO2, Tot	mg/L 0.0951								
Phosphorus, Tot	mg/L 0.0040								
Phosphorus, Diss	mg/L 0.002								
OrthoPhosphate, D	mg/L <0.05								
Organic Carbon, T	mg/L 1.10								
Hardness, Tot	mg/L 75.7								
Sulfate, Tot	mg/L 37.7								
Calcium, Tot	mg/L 22.9								
Magnesium, Tot	mg/L 4.50								
Sodium, Tot	mg/L 2.64								
Potassium, Tot	mg/L 1.30								
Chloride, Tot	mg/L 3.37								
Arsenic, Tot	ug/L 0.1								
Barium, Tot	ug/L 27.8								
Beryllium, Tot	ug/L <0.02								
Cadmium, Tot	ug/L <0.02								
Chromium, Tot	ug/L 0.7								
Cobalt, Tot	ug/L 0.2								
Copper, Tot	ug/L 0.4								
Iron, Tot	ug/L 23.8								
Iron, Diss	ug/L								
Lead, Tot	ug/L 0.2								
Lead, Diss	ug/L								
Manganese, Tot	ug/L 24.0								
Manganese, Diss	ug/L								
Thallium, Tot	ug/L <0.02								
Molybdenum, Tot	ug/L 0.1								
Nickel, Tot	ug/L 1.7								
Silver, Tot	ug/L <0.02								
Vanadium, Tot	ug/L 0.1								
Zinc, Tot	ug/L 0.7								
Zinc, Diss	ug/L								
Antimony, Tot	ug/L 0.06								
Aluminum, Tot	ug/L 111.0								
Aluminum, Diss	ug/L								
Selenium, Tot	ug/L 0.3								
Mercury, Tot	ug/L								

Water Quality Physical / Chemical Data Report

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United States Army Corps of Engineers

Nashville District

CELRN-EC-H / Water Management Section

Station: 3DAL10015

Project: Dale Hollow

Location: West Fork Obey River, Mile 7.5

State: Tennessee

Latitude: 36° 24" 7'

Quad: Alpine, TN

County: Overton

Longitude: 85° 10" 40'

HUC: 05130105

Sample Date: 15 Aug 2013

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 120	0.0	19.8	67.6	10.8	118.6	264.0	8.6	
Alkalinity, Phenol	mg/L 8								
Solids, Tot	mg/L 226								
Solids, Tot Diss	mg/L 148								
Solids, Tot Susp	mg/L <0.250								
Solids, Vol	mg/L 111								
Solids, Vol Diss	mg/L 111								
Solids, Vol Susp	mg/L <1.40								
Ammonia N, Tot	mg/L 0.0254								
Kjeldahl N, Tot	mg/L 0.140								
NO3+NO2, Tot	mg/L 0.466								
Phosphorus, Tot	mg/L 0.0077								
Phosphorus, Diss	mg/L 0.005								
OrthoPhosphate, D	mg/L <0.05								
Organic Carbon, T	mg/L <1.00								
Hardness, Tot	mg/L 127								
Sulfate, Tot	mg/L 24.6								
Calcium, Tot	mg/L 39.3								
Magnesium, Tot	mg/L 6.97								
Sodium, Tot	mg/L 3.33								
Potassium, Tot	mg/L 0.939								
Chloride, Tot	mg/L 4.15								
Arsenic, Tot	ug/L 0.2								
Barium, Tot	ug/L 22.6								
Beryllium, Tot	ug/L <0.02								
Cadmium, Tot	ug/L 0.02								
Chromium, Tot	ug/L 0.9								
Cobalt, Tot	ug/L 0.1								
Copper, Tot	ug/L 0.3								
Iron, Tot	ug/L 36.3								
Iron, Diss	ug/L								
Lead, Tot	ug/L 0.3								
Lead, Diss	ug/L								
Manganese, Tot	ug/L 7.5								
Manganese, Diss	ug/L								
Thallium, Tot	ug/L <0.02								
Molybdenum, Tot	ug/L 0.2								
Nickel, Tot	ug/L 0.7								
Silver, Tot	ug/L <0.02								
Vanadium, Tot	ug/L 0.3								
Zinc, Tot	ug/L 0.77								
Zinc, Diss	ug/L								
Antimony, Tot	ug/L 0.07								
Aluminum, Tot	ug/L 121.0								
Aluminum, Diss	ug/L								
Selenium, Tot	ug/L 0.3								
Mercury, Tot	ug/L								

Water Quality Physical / Chemical Data Report

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United States Army Corps of Engineers

Nashville District

CELNRN-EC-H / Water Management Section

Station: 3DAL10028

Project: Dale Hollow

Location: Big Eagle Creek, Mile 5.3

State: Tennessee

Latitude: 36° 28' 43.9'

Quad: Alpine, TN

County: Overton

Longitude: 85° 14' 29.7'

HUC: 05130105

Sample Date: 16 Aug 2013

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 146	0.0	17.5	63.5	10.0	104.9	313.0	8.3	
Alkalinity, Phenol	mg/L 0								
Solids, Tot	mg/L 244								
Solids, Tot Diss	mg/L 183								
Solids, Tot Susp	mg/L 1.00								
Solids, Vol	mg/L 126								
Solids, Vol Diss	mg/L 126								
Solids, Vol Susp	mg/L <4.00								
Ammonia N, Tot	mg/L 0.0284								
Kjeldahl N, Tot	mg/L 0.130								
NO3+NO2, Tot	mg/L 1.25								
Phosphorus, Tot	mg/L 0.0295								
Phosphorus, Diss	mg/L 0.023								
OrthoPhosphate, D	mg/L <0.05								
Organic Carbon, T	mg/L <1.00								
Hardness, Tot	mg/L 148								
Sulfate, Tot	mg/L 13.6								
Calcium, Tot	mg/L 48.9								
Magnesium, Tot	mg/L 6.23								
Sodium, Tot	mg/L 3.97								
Potassium, Tot	mg/L 1.26								
Chloride, Tot	mg/L 7.35								
Arsenic, Tot	ug/L 0.3								
Barium, Tot	ug/L 31.2								
Beryllium, Tot	ug/L <0.02								
Cadmium, Tot	ug/L <0.02								
Chromium, Tot	ug/L 1.2								
Cobalt, Tot	ug/L 0.1								
Copper, Tot	ug/L 0.2								
Iron, Tot	ug/L 44.3								
Iron, Diss	ug/L								
Lead, Tot	ug/L 0.2								
Lead, Diss	ug/L								
Manganese, Tot	ug/L 6.3								
Manganese, Diss	ug/L								
Thallium, Tot	ug/L <0.02								
Molybdenum, Tot	ug/L 0.21								
Nickel, Tot	ug/L 0.2								
Silver, Tot	ug/L <0.02								
Vanadium, Tot	ug/L 0.5								
Zinc, Tot	ug/L 0.2								
Zinc, Diss	ug/L								
Antimony, Tot	ug/L 0.05								
Aluminum, Tot	ug/L 33.1								
Aluminum, Diss	ug/L								
Selenium, Tot	ug/L 0.4								
Mercury, Tot	ug/L								

United States Army Corps of Engineers

Nashville District

CELNRN-EC-H / Water Management Section

Station: 3DAL20002

Project: Dale Hollow

Location: Obey River, Mile 7.7

State: Tennessee

Latitude: 36° 32' 24.1'

Quad: Dale Hollow Dam, TN-KY

County: Clay

Longitude: 85° 26' 46'

HUC: 05130105

Sample Date: 14 Aug 2013

Water Surface Elevation = 649.4 ft

Secchi Disk = 5.5 m

Results of Laboratory Analyses

Profile Measurements

Sample	Depth ft	0.0	65.0	135.0	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	82	80	82	0.0	27.5	81.5	8.9	112.4	196.0	8.5	0.7
Alkalinity, Phenol	mg/L	0	0	0	5.0	27.5	81.5	8.9	112.4	196.0	8.5	0.9
Solids, Tot	mg/L	124	128	140	10.0	27.4	81.3	8.9	112.2	195.0	8.5	1.2
Solids, Tot Diss	mg/L	87.0	103	112	15.0	27.4	81.3	8.9	112.2	196.0	8.5	1.4
Solids, Tot Susp	mg/L	1.00	<0.250	5.00	20.0	27.3	81.1	8.9	112.0	196.0	8.5	1.6
Solids, Vol	mg/L	107	132	146	25.0	26.4	79.5		10.3	199.0	8.5	3.5
Solids, Vol Diss	mg/L	107	132	142	30.0	24.4	75.9	11.9	142.4	198.0	8.5	3.3
Solids, Vol Susp	mg/L	<4.00	<4.00	<4.00	35.0	21.0	69.8	11.2	125.9	197.0	8.3	2.7
Ammonia N, Tot	mg/L	0.0931	0.0614	0.0500	40.0	19.4	66.9	10.0	109.0	199.0	8.0	1.9
Kjeldahl N, Tot	mg/L	0.480	0.190	0.260	45.0	18.1	64.6	8.6	91.3	199.0	7.7	1.0
NO3+NO2, Tot	mg/L	<0.0200	0.335	0.306	50.0	16.4	61.5	6.5	66.7	194.0	7.4	0.7
Phosphorus, Tot	mg/L	0.0146	0.0092	0.0152	55.0	15.4	59.7	5.5	55.2	191.0	7.4	0.7
Phosphorus, Diss	mg/L	0.0112	0.0082	0.0193	60.0	14.3	57.7	4.5	44.1	184.0	7.2	0.6
OrthoPhosphate, D	mg/L	<0.05	<0.05	<0.05	65.0	13.6	56.5	4.1	39.6	183.0	7.2	0.5
Organic Carbon, T	mg/L	3.10	2.70	2.60	70.0	12.8	55.0	3.9	37.0	183.0	7.1	0.4
Hardness, Tot	mg/L	86.1	83.4	90.1	75.0	11.9	53.4	3.5	32.5	186.0	7.1	0.3
Sulfate, Tot	mg/L	17.5	16.6	18.4	80.0	11.2	52.2	2.7	24.7	188.0	7.1	0.2
Calcium, Tot	mg/L	26.4	25.9	27.9	85.0	10.7	51.3	1.9	17.2	190.0	7.0	0.2
Magnesium, Tot	mg/L	4.89	4.56	5.00	90.0	10.4	50.7	1.4	12.6	192.0	7.0	0.2
Sodium, Tot	mg/L	2.51	2.33	2.75	95.0	10.0	50.0	1.3	11.6	195.0	7.0	0.1
Potassium, Tot	mg/L	1.08	1.04	1.12	100.0	9.8	49.6	1.2	10.6	196.0	7.0	0.1
Chloride, Tot	mg/L	3.98	3.65	4.51	105.0	9.6	49.3	1.3	11.4	198.0	7.0	0.1
Arsenic, Tot	ug/L	0.58	0.34	0.6	110.0	9.5	49.1	1.3	11.4	198.0	7.0	0.1
Barium, Tot	ug/L	19.2	21.3	20.3	115.0	9.3	48.7	1.3	11.4	198.0	7.0	0.1
Beryllium, Tot	ug/L	<0.02	<0.02	<0.02	120.0	9.2	48.6	1.3	11.3	199.0	7.0	0.1
Cadmium, Tot	ug/L	0.06	<0.02	<0.02	125.0	9.1	48.4	1.3	11.3	200.0	7.0	0.1
Chromium, Tot	ug/L	0.5	0.5	0.6	130.0	9.1	48.4	1.3	11.3	199.0	7.0	0.1
Cobalt, Tot	ug/L	0.06	0.06	0.07	135.0	9.1	48.4	1.2	10.4	199.0	7.0	0.1
Copper, Tot	ug/L	0.4	0.35	0.3	140.0	9.0	48.2	1.0	8.7	200.0	7.0	0.1
Iron, Tot	ug/L	5.7	8.1	4.4	143.0	9.0	48.2	0.9	7.8	200.0	7.0	0.8
Iron, Diss	ug/L	<2.0	<2.0	<2.0								
Lead, Tot	ug/L	0.4	0.2	0.09								
Lead, Diss	ug/L	0.3	0.2	0.3								
Manganese, Tot	ug/L	4.4	9.1	225.0								
Manganese, Diss	ug/L	0.4	0.67	1.0								
Thallium, Tot	ug/L	<0.02	<0.02	<0.02								
Molybdenum, Tot	ug/L	0.8	0.4	0.08								
Nickel, Tot	ug/L	0.5	0.61	0.6								
Silver, Tot	ug/L	0.03	<0.02	0.03								
Vanadium, Tot	ug/L	0.4	0.24	0.1								
Zinc, Tot	ug/L	0.2	0.2	0.1								
Zinc, Diss	ug/L	0.2	0.2	0.6								
Antimony, Tot	ug/L	0.2	0.09	0.2								
Aluminum, Tot	ug/L	<2.0	<2.0	<2.0								
Aluminum, Diss	ug/L	<2.0	<2.0	<2.0								
Selenium, Tot	ug/L	0.3	0.2	0.32								
Mercury, Tot	ug/L	0.307	0.177	0.118								

CELNRN-EC-H / Water Management Section

Location: Obey River, Mile 27.7

Quad: Dale Hollow Reservoir SE, TN-KY
HUC: 05130105

Secchi Disk = 3.7 m

Profile Measurements

Sample				Depth	Water Temp	Water Temp	Dis Oxygen	Dis Oxygen	Spec Cond	pH	Chloro a F	
Depth ft		0.0	35.0	95.0	ft	deg C	deg F	mg/l	% sat	umho/cm	units	ug/l
Alkalinity, Tot	mg/L	80	76	90	0.0	28.0	82.4	8.5	108.3	191.0	8.6	1.0
Alkalinity, Phenol	mg/L	3	0	0	5.0	28.0	82.4	8.5	108.3	191.0	8.6	1.2
Solids, Tot	mg/L	128	124	152	10.0	27.8	82.0	8.6	109.2	192.0	8.6	1.7
Solids, Tot Diss	mg/L	104	85.0	86.0	15.0	27.4	81.3	8.5	107.2	193.0	8.5	2.8
Solids, Tot Susp	mg/L	<0.250	4.00	7.00	20.0	26.9	80.4	7.8	97.5	198.0	8.3	3.6
Solids, Vol	mg/L	129	123	151	25.0	25.2	77.4	5.5	66.8	204.0	7.6	6.2
Solids, Vol Diss	mg/L	129	123	151	30.0	22.4	72.3	5.1	180.0		7.4	7.3
Solids, Vol Susp	mg/L	<4.00	<4.00	<4.00	35.0	20.3	68.5	2.8	31.1	169.0	7.2	2.7
Ammonia N, Tot	mg/L	0.0296	0.0397	0.121	40.0	18.1	64.6	1.6	17.0	170.0	7.1	1.3
Kjeldahl N, Tot	mg/L	0.210	0.450	0.400	45.0	16.7	62.1	2.1	21.7	177.0	7.1	0.8
NO3+NO2, Tot	mg/L	<0.0200	0.254	0.164	50.0	15.8	60.4	1.8	18.2	177.0	7.1	0.7
Phosphorus, Tot	mg/L	0.0127	0.0125	0.0131	55.0	14.6	58.3	1.8	17.8	177.0	7.1	0.6
Phosphorus, Diss	mg/L	0.004	0.009	0.007	60.0	13.5	56.3	1.3	12.5	176.0	7.0	0.6
OrthoPhosphate, D	mg/L	<0.05	<0.05	<0.05	65.0	12.7	54.9	0.5	4.7	179.0	7.0	0.5
Organic Carbon, T	mg/L	3.10	3.10	2.70	70.0	12.0	53.6	0.0	0.0	184.0	7.0	0.5
Hardness, Tot	mg/L	83.4	75.6	88.0	75.0	11.6	52.9	0.0	0.0	188.0	7.0	0.5
Sulfate, Tot	mg/L	16.9	15.0	15.5	80.0	10.9	51.6	0.0	0.0	196.0	7.0	0.4
Calcium, Tot	mg/L	25.5	23.6	27.4	85.0	10.7	51.3	0.0	0.0	198.0	7.1	0.4
Magnesium, Tot	mg/L	4.77	4.07	4.78	90.0	10.5	50.9	0.0	0.0	201.0	7.1	0.4
Sodium, Tot	mg/L	2.46	2.01	2.43	95.0	10.3	50.5	0.0	0.0	202.0	7.1	0.3
Potassium, Tot	mg/L	1.02	1.14	1.05	100.0	10.2	50.4	0.0	0.0	203.0	7.1	0.3
Chloride, Tot	mg/L	3.90	3.02	4.00	105.0	10.0	50.0	0.0	0.0	203.0	7.1	0.3
Arsenic, Tot	ug/L	0.5	0.38	0.7								
Barium, Tot	ug/L	20.9	24.0	28.9								
Beryllium, Tot	ug/L	<0.02	<0.02	<0.02								
Cadmium, Tot	ug/L	<0.02	<0.02	<0.02								
Chromium, Tot	ug/L	0.5	0.5	1.1								
Cobalt, Tot	ug/L	0.06	0.07	0.27								
Copper, Tot	ug/L	0.3	0.3	0.3								
Iron, Tot	ug/L	8.6	16.6	130.0								
Iron, Diss	ug/L											
Lead, Tot	ug/L	0.2	0.2	0.2								
Lead, Diss	ug/L											
Manganese, Tot	ug/L	4.9	12.4	1360.0								
Manganese, Diss	ug/L											
Thallium, Tot	ug/L	<0.02	<0.02	<0.02								
Molybdenum, Tot	ug/L	0.4	0.2	0.4								
Nickel, Tot	ug/L	0.4	0.6	0.76								
Silver, Tot	ug/L	<0.02	<0.02	<0.02								
Vanadium, Tot	ug/L	0.3	0.3	0.2								
Zinc, Tot	ug/L	<0.02	0.08	0.4								
Zinc, Diss	ug/L											
Antimony, Tot	ug/L	0.1	0.07	0.06								
Aluminum, Tot	ug/L	<2.0	<2.0	<2.0								
Aluminum, Diss	ug/L											
Selenium, Tot	ug/L	0.21	0.2	0.2								
Mercury, Tot	ug/L											

CELNRN-EC-H / Water Management Section

Location: Obey River, Mile 41.6

Quad: Byrdstown, TN-KY
HUC: 05130105

Secchi Disk = 3.5 m

Profile Measurements

[illegible]

United States Army Corps of Engineers

Nashville District

CELNRN-EC-H / Water Management Section

Station: 3DAL20007

Project: Dale Hollow

Location: Obey River, Mile 55.8

State: Tennessee

Latitude: 36° 28' 21.3'

Quad: Alpine, TN

County: Pickett

Longitude: 85° 8' 6.8'

HUC: 05130105

Sample Date: 15 Aug 2013

Water Surface Elevation = 649.4 ft

Secchi Disk = 1.7 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 84	0.0	28.0	82.4	8.3	105.7	192.0	8.4	1.9
Alkalinity, Phenol	mg/L 0	5.0	27.5	81.5	8.4	106.1	192.0	8.3	4.3
Solids, Tot	mg/L 202	10.0	27.4	81.3		8.3	191.0	8.3	4.7
Solids, Tot Diss	mg/L 115	15.0	27.1	80.8	8.0	100.3	193.0	8.2	4.2
Solids, Tot Susp	mg/L 5.00	20.0	23.7	74.7	6.7	79.2	217.0	7.7	3.0
Solids, Vol	mg/L 375	25.0	21.6	70.9	6.4	72.8	228.0	7.6	2.4
Solids, Vol Diss	mg/L 373	30.0	21.4	70.5	6.2	70.2	230.0	7.6	2.2
Solids, Vol Susp	mg/L <4.00	35.0	21.3	70.3	6.1	69.0	230.0	7.6	2.5
Ammonia N, Tot	mg/L 0.0271	40.0	21.3	70.3	5.8	65.6	230.0	7.6	3.3
Kjeldahl N, Tot	mg/L 0.160								
NO3+NO2, Tot	mg/L 0.0450								
Phosphorus, Tot	mg/L 0.0168								
Phosphorus, Diss	mg/L 0.006								
OrthoPhosphate, D	mg/L <0.05								
Organic Carbon, T	mg/L 1.90								
Hardness, Tot	mg/L 86.2								
Sulfate, Tot	mg/L 18.6								
Calcium, Tot	mg/L 26.5								
Magnesium, Tot	mg/L 4.87								
Sodium, Tot	mg/L 2.31								
Potassium, Tot	mg/L 1.03								
Chloride, Tot	mg/L 3.42								
Arsenic, Tot	ug/L 0.5								
Barium, Tot	ug/L 33.0								
Beryllium, Tot	ug/L <0.02								
Cadmium, Tot	ug/L <0.02								
Chromium, Tot	ug/L 0.6								
Cobalt, Tot	ug/L 0.2								
Copper, Tot	ug/L 0.3								
Iron, Tot	ug/L 83.1								
Iron, Diss	ug/L								
Lead, Tot	ug/L 0.3								
Lead, Diss	ug/L								
Manganese, Tot	ug/L 36.3								
Manganese, Diss	ug/L								
Thallium, Tot	ug/L <0.02								
Molybdenum, Tot	ug/L 0.2								
Nickel, Tot	ug/L 0.5								
Silver, Tot	ug/L 0.04								
Vanadium, Tot	ug/L 0.3								
Zinc, Tot	ug/L 0.3								
Zinc, Diss	ug/L								
Antimony, Tot	ug/L 0.1								
Aluminum, Tot	ug/L 51.5								
Aluminum, Diss	ug/L								
Selenium, Tot	ug/L 0.2								
Mercury, Tot	ug/L								

CELNRN-EC-H / Water Management Section

Location: Wolf River, Mile 8.7

Quad: Byrdstown, TN-KY
HUC: 05130105

Secchi Disk = 1.9 m

Profile Measurements

[illegible]

United States Army Corps of Engineers

Nashville District

CELNRN-EC-H / Water Management Section

Station: 3DAL20009

Project: Dale Hollow

Location: East Fork Obey River, Mile 2.0

State: Tennessee

Latitude: 36° 27' 6.9'

Quad: Riverton, TN

County: Pickett

Longitude: 85° 5' 38.5'

HUC: 05130105

Sample Date: 15 Aug 2013

Water Surface Elevation = 649.4 ft

Secchi Disk = 1.3 m

Results of Laboratory Analyses

Profile Measurements

Sample Depth ft	10.0	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 82	0.0	26.8	80.2	8.6	107.3	199.0	8.2	8.7
Alkalinity, Phenol	mg/L 0	5.0	26.4	79.5		8.5	199.0	8.1	9.8
Solids, Tot	mg/L 178	10.0	25.5	77.9	8.2	100.1	202.0	8.0	5.2
Solids, Tot Diss	mg/L 113	15.0	22.2	72.0	8.3	95.4	208.0	7.8	1.7
Solids, Tot Susp	mg/L 6.00	20.0	21.8	71.2	8.2	93.6	208.0	7.9	1.5
Solids, Vol	mg/L 31.4	25.0	20.9	69.6	5.8	65.1	223.0	7.5	1.7
Solids, Vol Diss	mg/L 30.0	28.0	20.3	68.5	2.0	22.2	263.0	7.3	1.7
Solids, Vol Susp	mg/L <1.40								
Ammonia N, Tot	mg/L 0.0277								
Kjeldahl N, Tot	mg/L 0.180								
NO3+NO2, Tot	mg/L <0.0200								
Phosphorus, Tot	mg/L 0.0074								
Phosphorus, Diss	mg/L 0.017								
OrthoPhosphate, D	mg/L <0.05								
Organic Carbon, T	mg/L 2.10								
Hardness, Tot	mg/L 87.1								
Sulfate, Tot	mg/L 19.6								
Calcium, Tot	mg/L 26.8								
Magnesium, Tot	mg/L 4.90								
Sodium, Tot	mg/L 2.36								
Potassium, Tot	mg/L 1.02								
Chloride, Tot	mg/L 3.40								
Arsenic, Tot	ug/L 0.6								
Barium, Tot	ug/L 44.2								
Beryllium, Tot	ug/L <0.02								
Cadmium, Tot	ug/L <0.02								
Chromium, Tot	ug/L 1.1								
Cobalt, Tot	ug/L 0.3								
Copper, Tot	ug/L 0.4								
Iron, Tot	ug/L 109.0								
Iron, Diss	ug/L								
Lead, Tot	ug/L 0.3								
Lead, Diss	ug/L								
Manganese, Tot	ug/L 56.3								
Manganese, Diss	ug/L								
Thallium, Tot	ug/L <0.02								
Molybdenum, Tot	ug/L 0.2								
Nickel, Tot	ug/L 0.6								
Silver, Tot	ug/L 0.03								
Vanadium, Tot	ug/L 0.25								
Zinc, Tot	ug/L 8.4								
Zinc, Diss	ug/L								
Antimony, Tot	ug/L 0.1								
Aluminum, Tot	ug/L 51.2								
Aluminum, Diss	ug/L								
Selenium, Tot	ug/L 0.2								
Mercury, Tot	ug/L								

United States Army Corps of Engineers

Nashville District

CELNRN-EC-H / Water Management Section

Station: 3DAL20010

Project: Dale Hollow

Location: West Fork Obey River, Mile 1.8

State: Tennessee

Latitude: 36° 26' 49.3'

Quad: Alpine, TN

County: Overton

Longitude: 85° 9' 8.9'

HUC: 05130105

Sample Date: 15 Aug 2013

Water Surface Elevation = 649.4 ft

Secchi Disk = 1.3 m

Results of Laboratory Analyses

Profile Measurements

Sample Depth ft	10.0	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	28.4	83.1	9.2	118.0	197.0	8.5	2.2
Alkalinity, Phenol	mg/L 2	5.0	26.8	80.2		9.7	196.0	8.6	7.3
Solids, Tot	mg/L 186	10.0	24.6	76.3	8.9	106.9	219.0	8.3	4.0
Solids, Tot Diss	mg/L 108	15.0	20.4	68.7	9.6	106.7	269.0	8.3	1.6
Solids, Tot Susp	mg/L 7.00	20.0	20.2	68.4	9.4	104.0	271.0	8.3	1.6
Solids, Vol	mg/L 29.4	23.0	20.0	68.0	8.6	94.8	271.0	8.1	1.6
Solids, Vol Diss	mg/L 28.0								
Solids, Vol Susp	mg/L <1.40								
Ammonia N, Tot	mg/L 0.0300								
Kjeldahl N, Tot	mg/L 0.240								
NO3+NO2, Tot	mg/L <0.0200								
Phosphorus, Tot	mg/L 0.0161								
Phosphorus, Diss	mg/L 0.015								
OrthoPhosphate, D	mg/L <0.05								
Organic Carbon, T	mg/L 2.00								
Hardness, Tot	mg/L 88.3								
Sulfate, Tot	mg/L 18.4								
Calcium, Tot	mg/L 27.1								
Magnesium, Tot	mg/L 5.02								
Sodium, Tot	mg/L 2.35								
Potassium, Tot	mg/L 1.05								
Chloride, Tot	mg/L 3.42								
Arsenic, Tot	ug/L 0.6								
Barium, Tot	ug/L 43.2								
Beryllium, Tot	ug/L <0.02								
Cadmium, Tot	ug/L <0.02								
Chromium, Tot	ug/L 0.6								
Cobalt, Tot	ug/L 0.2								
Copper, Tot	ug/L 0.4								
Iron, Tot	ug/L 112.0								
Iron, Diss	ug/L								
Lead, Tot	ug/L 0.3								
Lead, Diss	ug/L								
Manganese, Tot	ug/L 43.0								
Manganese, Diss	ug/L								
Thallium, Tot	ug/L <0.02								
Molybdenum, Tot	ug/L 0.2								
Nickel, Tot	ug/L 0.6								
Silver, Tot	ug/L 0.02								
Vanadium, Tot	ug/L 0.4								
Zinc, Tot	ug/L 2.6								
Zinc, Diss	ug/L								
Antimony, Tot	ug/L 0.1								
Aluminum, Tot	ug/L 64.0								
Aluminum, Diss	ug/L								
Selenium, Tot	ug/L 0.3								
Mercury, Tot	ug/L								

United States Army Corps of Engineers

Nashville District

CELNRN-EC-H / Water Management Section

Station: 3DAL20020

Project: Dale Hollow

Location: Spring Creek, Mile 0.5

State: Kentucky

Latitude: 36° 37" 54'

Quad: Albany, KY-TN

County: Clinton

Longitude: 85° 9" 28.9'

HUC: 05130105

Sample Date: 15 Aug 2013

Water Surface Elevation = 649.4 ft

Secchi Disk = 1.3 m

Results of Laboratory Analyses

Profile Measurements

Sample Depth ft	10.0	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 128	0.0	27.0	80.6	11.4	142.7	188.0	9.0	4.1
Alkalinity, Phenol	mg/L 0	5.0	26.1	79.0		11.2	195.0	8.9	9.0
Solids, Tot	mg/L 242	10.0	16.9	62.4	9.8	101.6	303.0	8.2	1.3
Solids, Tot Diss	mg/L 185	15.0	16.6	61.9	9.6	98.9	305.0	8.2	1.0
Solids, Tot Susp	mg/L 13.0								
Solids, Vol	mg/L 40.1								
Solids, Vol Diss	mg/L 39.0								
Solids, Vol Susp	mg/L <2.20								
Ammonia N, Tot	mg/L 0.0385								
Kjeldahl N, Tot	mg/L 0.170								
NO3+NO2, Tot	mg/L 1.59								
Phosphorus, Tot	mg/L 0.0203								
Phosphorus, Diss	mg/L 0.017								
OrthoPhosphate, D	mg/L <0.05								
Organic Carbon, T	mg/L 1.30								
Hardness, Tot	mg/L 129								
Sulfate, Tot	mg/L 16.3								
Calcium, Tot	mg/L 41.9								
Magnesium, Tot	mg/L 5.95								
Sodium, Tot	mg/L 4.65								
Potassium, Tot	mg/L 1.37								
Chloride, Tot	mg/L 8.66								
Arsenic, Tot	ug/L 0.5								
Barium, Tot	ug/L 31.0								
Beryllium, Tot	ug/L 0.02								
Cadmium, Tot	ug/L 0.03								
Chromium, Tot	ug/L 1.1								
Cobalt, Tot	ug/L 0.29								
Copper, Tot	ug/L 0.4								
Iron, Tot	ug/L 134.0								
Iron, Diss	ug/L								
Lead, Tot	ug/L 0.6								
Lead, Diss	ug/L								
Manganese, Tot	ug/L 46.7								
Manganese, Diss	ug/L								
Thallium, Tot	ug/L <0.02								
Molybdenum, Tot	ug/L 0.2								
Nickel, Tot	ug/L 0.6								
Silver, Tot	ug/L 0.06								
Vanadium, Tot	ug/L 0.6								
Zinc, Tot	ug/L 0.98								
Zinc, Diss	ug/L								
Antimony, Tot	ug/L 0.2								
Aluminum, Tot	ug/L 114.0								
Aluminum, Diss	ug/L								
Selenium, Tot	ug/L 0.4								
Mercury, Tot	ug/L								