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

Station: 3OLD10001 | Project: Old Hickory | Location: Cumberland River, Mile 215.7

State: Tennessee | Latitude: 36º 17" 59' | Quad: Goodlettsville, TN
County: Davidson | Longitude: 86º 39" 49' | HUC: 05130202

Sample Date: 29 Aug 2013 | Water Surface Elevation = 391.3 ft | Stream Flow = 18900 cfs

Results of Laboratory Analyses

Sample Depth ft		0.0
Alkalinity, Tot	mg/L	82
Alkalinity, Phenol	mg/L	0
Solids, Tot	mg/L	150
Solids, Tot Diss	mg/L	152
Solids, Tot Susp	mg/L	6.00
Solids, Vol	mg/L	61.0
Solids, Vol Diss	mg/L	61.0
Solids, Vol Susp	mg/L	<4.00
Ammonia N, Tot	mg/L	0.0830
Kjeldahl N, Tot	mg/L	0.240
NO3+NO2, Tot	mg/L	0.313
Phosphorus, Tot	mg/L	0.0474
Phosphorus, Diss	mg/L	0.024
OrthoPhosphate, D	mg/L	<0.05
Organic Carbon, T	mg/L	2.20
Hardness, Tot	mg/L	94.5
Sulfate, Tot	mg/L	20.9
Calcium, Tot	mg/L	28.4
Magnesium, Tot	mg/L	5.74
Sodium, Tot	mg/L	4.23
Potassium, Tot	mg/L	1.66
Chloride, Tot	mg/L	3.79
Arsenic, Tot	ug/L	0.8
Barium, Tot	ug/L	24.2
Beryllium, Tot	ug/L	<0.2
Cadmium, Tot	ug/L	<0.2
Chromium, Tot	ug/L	<0.2
Cobalt, Tot	ug/L	<0.2
Copper, Tot	ug/L	1.5
Iron, Tot	ug/L	108.0
Iron, Diss	ug/L	
Lead, Tot	ug/L	0.6
Lead, Diss	ug/L	
Manganese, Tot	ug/L	89.0
Manganese, Diss	ug/L	
Thallium, Tot	ug/L	<0.2
Molybdenum, Tot	ug/L	0.4
Nickel, Tot	ug/L	0.8
Silver, Tot	ug/L	<0.2
Vanadium, Tot	ug/L	0.7
Zinc, Tot	ug/L	3.5
Zinc, Diss	ug/L	
Antimony, Tot	ug/L	<0.2
Aluminum, Tot	ug/L	55.5
Aluminum, Diss	ug/L	
Selenium, Tot	ug/L	0.54
Mercury, Tot	ug/L	<0.005

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	24.7	76.5	6.7	80.6	206.0	7.6	

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

Station: 3OLD10050 | Project: Old Hickory | Location: Drakes Creek, Mile 4.9

State: Tennessee | Latitude: 36º 19" 0' | Quad: Hendersonville, TN
County: Sumner | Longitude: 86º 36" 19' | HUC: *

Sample Date: 29 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	186	0.0	25.9	78.6	10.6	130.2	423.0	8.1	
Alkalinity, Phenol	mg/L	0								
Solids, Tot	mg/L	300								
Solids, Tot Diss	mg/L	301								
Solids, Tot Susp	mg/L	3.00								
Solids, Vol	mg/L	103								
Solids, Vol Diss	mg/L	96.0								
Solids, Vol Susp	mg/L	7.00								
Ammonia N, Tot	mg/L	0.0412								
Kjeldahl N, Tot	mg/L	0.920								
NO3+NO2, Tot	mg/L	0.145								
Phosphorus, Tot	mg/L	0.0897								
Phosphorus, Diss	mg/L	0.080								
OrthoPhosphate, D	mg/L	0.0775								
Organic Carbon, T	mg/L	2.90								
Hardness, Tot	mg/L	217								
Sulfate, Tot	mg/L	39.5								
Calcium, Tot	mg/L	68.8								
Magnesium, Tot	mg/L	11.1								
Sodium, Tot	mg/L	5.26								
Potassium, Tot	mg/L	1.49								
Chloride, Tot	mg/L	6.90								
Arsenic, Tot	ug/L	0.8								
Barium, Tot	ug/L	33.3								
Beryllium, Tot	ug/L	<0.2								
Cadmium, Tot	ug/L	<0.2								
Chromium, Tot	ug/L	<0.2								
Cobalt, Tot	ug/L	0.2								
Copper, Tot	ug/L	1.1								
Iron, Tot	ug/L	37.0								
Iron, Diss	ug/L									
Lead, Tot	ug/L	0.6								
Lead, Diss	ug/L									
Manganese, Tot	ug/L	16.2								
Manganese, Diss	ug/L									
Thallium, Tot	ug/L	<0.2								
Molybdenum, Tot	ug/L	0.7								
Nickel, Tot	ug/L	0.6								
Silver, Tot	ug/L	<0.2								
Vanadium, Tot	ug/L	0.6								
Zinc, Tot	ug/L	3.1								
Zinc, Diss	ug/L									
Antimony, Tot	ug/L	<0.2								
Aluminum, Tot	ug/L	9.5								
Aluminum, Diss	ug/L									
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: 3OLD10054 | Project: Old Hickory | Location: Bledsoe Creek, Mile 10.3

State: Tennessee | Latitude: 36º 26" 44' | Quad: Bethpage, TN
County: Sumner | Longitude: 86º 19" 55' | HUC: *

Sample Date: 29 Aug 2013 | 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	244
Solids, Tot Diss	mg/L	240
Solids, Tot Susp	mg/L	2.00
Solids, Vol	mg/L	135
Solids, Vol Diss	mg/L	135
Solids, Vol Susp	mg/L	<4.00
Ammonia N, Tot	mg/L	0.0514
Kjeldahl N, Tot	mg/L	0.300
NO3+NO2, Tot	mg/L	0.0700
Phosphorus, Tot	mg/L	0.0765
Phosphorus, Diss	mg/L	0.062
OrthoPhosphate, D	mg/L	0.0539
Organic Carbon, T	mg/L	<0.200
Hardness, Tot	mg/L	198
Sulfate, Tot	mg/L	17.0
Calcium, Tot	mg/L	59.7
Magnesium, Tot	mg/L	11.8
Sodium, Tot	mg/L	3.18
Potassium, Tot	mg/L	1.51
Chloride, Tot	mg/L	3.24
Arsenic, Tot	ug/L	0.91
Barium, Tot	ug/L	27.8
Beryllium, Tot	ug/L	<0.2
Cadmium, Tot	ug/L	<0.2
Chromium, Tot	ug/L	<0.2
Cobalt, Tot	ug/L	0.2
Copper, Tot	ug/L	1.6
Iron, Tot	ug/L	57.8
Iron, Diss	ug/L	
Lead, Tot	ug/L	0.6
Lead, Diss	ug/L	
Manganese, Tot	ug/L	30.4
Manganese, Diss	ug/L	
Thallium, Tot	ug/L	<0.2
Molybdenum, Tot	ug/L	1.1
Nickel, Tot	ug/L	0.9
Silver, Tot	ug/L	<0.2
Vanadium, Tot	ug/L	0.6
Zinc, Tot	ug/L	7.7
Zinc, Diss	ug/L	
Antimony, Tot	ug/L	<0.2
Aluminum, Tot	ug/L	10.9
Aluminum, Diss	ug/L	
Selenium, Tot	ug/L	0.4
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	25.0	77.0	7.6	91.9	374.0	7.9	

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

Station: 3OLD10055 | Project: Old Hickory | Location: Cedar Creek, Mile 7.0

State: Tennessee | Latitude: 36º 13" 53' | Quad: Hermitage, TN
County: Wilson | Longitude: 86º 30" 22' | HUC: *

Sample Date: 29 Aug 2013 | Water Surface Elevation = | Stream Flow =

Results of Laboratory Analyses

Sample Depth ft		0.0
Alkalinity, Tot	mg/L	204
Alkalinity, Phenol	mg/L	0
Solids, Tot	mg/L	148
Solids, Tot Diss	mg/L	337
Solids, Tot Susp	mg/L	2.00
Solids, Vol	mg/L	129
Solids, Vol Diss	mg/L	129
Solids, Vol Susp	mg/L	<4.00
Ammonia N, Tot	mg/L	0.0506
Kjeldahl N, Tot	mg/L	0.360
NO3+NO2, Tot	mg/L	0.0874
Phosphorus, Tot	mg/L	0.0775
Phosphorus, Diss	mg/L	0.079
OrthoPhosphate, D	mg/L	0.0676
Organic Carbon, T	mg/L	2.80
Hardness, Tot	mg/L	246
Sulfate, Tot	mg/L	35.8
Calcium, Tot	mg/L	83.8
Magnesium, Tot	mg/L	9.01
Sodium, Tot	mg/L	4.82
Potassium, Tot	mg/L	1.33
Chloride, Tot	mg/L	5.11
Arsenic, Tot	ug/L	0.8
Barium, Tot	ug/L	40.1
Beryllium, Tot	ug/L	<0.2
Cadmium, Tot	ug/L	<0.2
Chromium, Tot	ug/L	<0.2
Cobalt, Tot	ug/L	0.2
Copper, Tot	ug/L	1.1
Iron, Tot	ug/L	46.5
Iron, Diss	ug/L	
Lead, Tot	ug/L	0.58
Lead, Diss	ug/L	
Manganese, Tot	ug/L	19.1
Manganese, Diss	ug/L	
Thallium, Tot	ug/L	<0.2
Molybdenum, Tot	ug/L	0.3
Nickel, Tot	ug/L	0.6
Silver, Tot	ug/L	<0.2
Vanadium, Tot	ug/L	0.6
Zinc, Tot	ug/L	3.0
Zinc, Diss	ug/L	
Antimony, Tot	ug/L	<0.2
Aluminum, Tot	ug/L	12.9
Aluminum, Diss	ug/L	
Selenium, Tot	ug/L	0.47
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	24.1	75.4	6.2	73.8	466.0	7.8	

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

Station: 3OLD10056 | Project: Old Hickory | Location: Bartons Creek, Mile 7.1

State: Tennessee | Latitude: 36º 15" 12' | Quad: Hunters Point, TN
County: Wilson | Longitude: 86º 19" 54' | HUC: *

Sample Date: 29 Aug 2013 | Water Surface Elevation = | Stream Flow =

Results of Laboratory Analyses			Profile Measurements							
			Depth	Water Temp	Water Temp	Dis Oxygen	Dis Oxygen	Spec Cond	pH	Chloro a F
Sample Depth ft		0.0	ft	deg C	deg F	mg/l	% sat	umho/cm	units	ug/l
Alkalinity, Tot	mg/L	186	0.0	24.7	76.5	8.4	101.1	401.0	8.0	
Alkalinity, Phenol	mg/L	0								
Solids, Tot	mg/L	278								
Solids, Tot Diss	mg/L	291								
Solids, Tot Susp	mg/L	2.00								
Solids, Vol	mg/L	111								
Solids, Vol Diss	mg/L	111								
Solids, Vol Susp	mg/L	<4.00								
Ammonia N, Tot	mg/L	0.0347								
Kjeldahl N, Tot	mg/L	0.400								
NO3+NO2, Tot	mg/L	0.0311								
Phosphorus, Tot	mg/L	0.0215								
Phosphorus, Diss	mg/L	0.024								
OrthoPhosphate, D	mg/L	<0.0500								
Organic Carbon, T	mg/L	4.00								
Hardness, Tot	mg/L	206								
Sulfate, Tot	mg/L	27.7								
Calcium, Tot	mg/L	70.7								
Magnesium, Tot	mg/L	7.27								
Sodium, Tot	mg/L	5.82								
Potassium, Tot	mg/L	1.07								
Chloride, Tot	mg/L	5.70								
Arsenic, Tot	ug/L	0.6								
Barium, Tot	ug/L	31.2								
Beryllium, Tot	ug/L	<0.2								
Cadmium, Tot	ug/L	<0.2								
Chromium, Tot	ug/L	<0.2								
Cobalt, Tot	ug/L	<0.2								
Copper, Tot	ug/L	1.1								
Iron, Tot	ug/L	36.9								
Iron, Diss	ug/L									
Lead, Tot	ug/L	0.6								
Lead, Diss	ug/L									
Manganese, Tot	ug/L	12.3								
Manganese, Diss	ug/L									
Thallium, Tot	ug/L	<0.2								
Molybdenum, Tot	ug/L	0.4								
Nickel, Tot	ug/L	0.5								
Silver, Tot	ug/L	<0.2								
Vanadium, Tot	ug/L	0.5								
Zinc, Tot	ug/L	3.2								
Zinc, Diss	ug/L									
Antimony, Tot	ug/L	<0.2								
Aluminum, Tot	ug/L	14.2								
Aluminum, Diss	ug/L									
Selenium, Tot	ug/L	0.5								
Mercury, Tot	ug/L									

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Station: 3OLD10057 | Project: Old Hickory | Location: Spring Creek, Mile 5.8

State: Tennessee | Latitude: 36º 16" 36' | Quad: Hunters Point, TN
County: Wilson | Longitude: 86º 16" 31' | HUC: 05130201

Sample Date: 29 Aug 2013 | Water Surface Elevation = | Stream Flow =

Results of Laboratory Analyses			Profile Measurements							
			Depth	Water Temp	Water Temp	Dis Oxygen	Dis Oxygen	Spec Cond	pH	Chloro a F
Sample Depth ft		0.0	ft	deg C	deg F	mg/l	% sat	umho/cm	units	ug/l
Alkalinity, Tot	mg/L	218	0.0	25.3	77.5	6.1	74.2	412.0	7.9	
Alkalinity, Phenol	mg/L	0								
Solids, Tot	mg/L	256								
Solids, Tot Diss	mg/L	259								
Solids, Tot Susp	mg/L	3.00								
Solids, Vol	mg/L	140								
Solids, Vol Diss	mg/L	140								
Solids, Vol Susp	mg/L	<4.00								
Ammonia N, Tot	mg/L	0.0611								
Kjeldahl N, Tot	mg/L	0.310								
NO3+NO2, Tot	mg/L	0.132								
Phosphorus, Tot	mg/L	0.184								
Phosphorus, Diss	mg/L	0.168								
OrthoPhosphate, D	mg/L	0.145								
Organic Carbon, T	mg/L	2.40								
Hardness, Tot	mg/L	218								
Sulfate, Tot	mg/L	7.84								
Calcium, Tot	mg/L	78.4								
Magnesium, Tot	mg/L	5.39								
Sodium, Tot	mg/L	3.11								
Potassium, Tot	mg/L	2.10								
Chloride, Tot	mg/L	3.41								
Arsenic, Tot	ug/L	1.3								
Barium, Tot	ug/L	32.0								
Beryllium, Tot	ug/L	<0.2								
Cadmium, Tot	ug/L	<0.2								
Chromium, Tot	ug/L	<0.2								
Cobalt, Tot	ug/L	0.3								
Copper, Tot	ug/L	1.0								
Iron, Tot	ug/L	93.7								
Iron, Diss	ug/L									
Lead, Tot	ug/L	0.6								
Lead, Diss	ug/L									
Manganese, Tot	ug/L	28.7								
Manganese, Diss	ug/L									
Thallium, Tot	ug/L	<0.2								
Molybdenum, Tot	ug/L	<0.2								
Nickel, Tot	ug/L	0.5								
Silver, Tot	ug/L	<0.2								
Vanadium, Tot	ug/L	0.8								
Zinc, Tot	ug/L	3.0								
Zinc, Diss	ug/L									
Antimony, Tot	ug/L	0.2								
Aluminum, Tot	ug/L	17.1								
Aluminum, Diss	ug/L									
Selenium, Tot	ug/L	0.4								
Mercury, Tot	ug/L									

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

Station: 3OLD10058 | Project: Old Hickory | Location: Round Lick Creek, Mile 8.3

State: Tennessee | Latitude: 36º 10" 13.2' | Quad: New Middleton, TN
County: Smith | Longitude: 86º 5" 26' | HUC: 05130201

Sample Date: 28 Aug 2013 | Water Surface Elevation = | Stream Flow =

Results of Laboratory Analyses

Sample Depth ft		0.0
Alkalinity, Tot	mg/L	182
Alkalinity, Phenol	mg/L	0
Solids, Tot	mg/L	232
Solids, Tot Diss	mg/L	232
Solids, Tot Susp	mg/L	3.00
Solids, Vol	mg/L	65.0
Solids, Vol Diss	mg/L	65.0
Solids, Vol Susp	mg/L	<4.00
Ammonia N, Tot	mg/L	0.0412
Kjeldahl N, Tot	mg/L	0.600
NO3+NO2, Tot	mg/L	<0.0200
Phosphorus, Tot	mg/L	0.0969
Phosphorus, Diss	mg/L	0.088
OrthoPhosphate, D	mg/L	0.0702
Organic Carbon, T	mg/L	3.50
Hardness, Tot	mg/L	185
Sulfate, Tot	mg/L	10.0
Calcium, Tot	mg/L	64.8
Magnesium, Tot	mg/L	5.65
Sodium, Tot	mg/L	3.65
Potassium, Tot	mg/L	1.44
Chloride, Tot	mg/L	3.64
Arsenic, Tot	ug/L	1.1
Barium, Tot	ug/L	31.1
Beryllium, Tot	ug/L	<0.2
Cadmium, Tot	ug/L	<0.2
Chromium, Tot	ug/L	<0.2
Cobalt, Tot	ug/L	0.2
Copper, Tot	ug/L	1.0
Iron, Tot	ug/L	63.0
Iron, Diss	ug/L	
Lead, Tot	ug/L	0.57
Lead, Diss	ug/L	
Manganese, Tot	ug/L	18.3
Manganese, Diss	ug/L	
Thallium, Tot	ug/L	<0.2
Molybdenum, Tot	ug/L	0.3
Nickel, Tot	ug/L	0.5
Silver, Tot	ug/L	<0.2
Vanadium, Tot	ug/L	0.7
Zinc, Tot	ug/L	2.9
Zinc, Diss	ug/L	
Antimony, Tot	ug/L	<0.2
Aluminum, Tot	ug/L	23.0
Aluminum, Diss	ug/L	
Selenium, Tot	ug/L	0.4
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	27.9	82.2	10.1	128.4	359.0	8.1	

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

Station: 3OLD10059 | Project: Old Hickory | Location: Caney Fork River, Mile 7.3

State: Tennessee | Latitude: 36º 13" 6.9' | Quad: Gordonsville, TN
County: Smith | Longitude: 85º 56" 56.4' | HUC: 05130108

Sample Date: 28 Aug 2013 | Water Surface Elevation = | Stream Flow =

Results of Laboratory Analyses

Sample Depth ft		0.0
Alkalinity, Tot	mg/L	80
Alkalinity, Phenol	mg/L	0
Solids, Tot	mg/L	124
Solids, Tot Diss	mg/L	130
Solids, Tot Susp	mg/L	3.00
Solids, Vol	mg/L	92.0
Solids, Vol Diss	mg/L	92.0
Solids, Vol Susp	mg/L	<4.00
Ammonia N, Tot	mg/L	0.0401
Kjeldahl N, Tot	mg/L	0.460
NO3+NO2, Tot	mg/L	0.521
Phosphorus, Tot	mg/L	0.0402
Phosphorus, Diss	mg/L	0.043
OrthoPhosphate, D	mg/L	<0.05
Organic Carbon, T	mg/L	3.40
Hardness, Tot	mg/L	86.5
Sulfate, Tot	mg/L	11.5
Calcium, Tot	mg/L	28.2
Magnesium, Tot	mg/L	3.88
Sodium, Tot	mg/L	3.24
Potassium, Tot	mg/L	1.32
Chloride, Tot	mg/L	2.72
Arsenic, Tot	ug/L	0.6
Barium, Tot	ug/L	19.7
Beryllium, Tot	ug/L	<0.2
Cadmium, Tot	ug/L	<0.2
Chromium, Tot	ug/L	<0.2
Cobalt, Tot	ug/L	<0.2
Copper, Tot	ug/L	0.8
Iron, Tot	ug/L	66.7
Iron, Diss	ug/L	
Lead, Tot	ug/L	0.6
Lead, Diss	ug/L	
Manganese, Tot	ug/L	101.0
Manganese, Diss	ug/L	
Thallium, Tot	ug/L	<0.2
Molybdenum, Tot	ug/L	0.3
Nickel, Tot	ug/L	0.6
Silver, Tot	ug/L	<0.2
Vanadium, Tot	ug/L	0.4
Zinc, Tot	ug/L	3.2
Zinc, Diss	ug/L	
Antimony, Tot	ug/L	<0.2
Aluminum, Tot	ug/L	15.5
Aluminum, Diss	ug/L	
Selenium, Tot	ug/L	0.4
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	19.6	67.3	8.6	94.1	182.0	7.5	

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

Station: 3OLD20002 | Project: Old Hickory | Location: Cumberland River, Mile 216.9

State: Tennessee | Latitude: 36º 17" 29' | Quad: Goodlettsville, TN
County: Davidson | Longitude: 86º 38" 41' | HUC: 05130201

Sample Date: 29 Aug 2013 | Water Surface Elevation = 444.3 ft | Secchi Disk = 1.1 m

Results of Laboratory Analyses

Sample Depth ft		0.0	60.0
Alkalinity, Tot	mg/L	84	86
Alkalinity, Phenol	mg/L	10	0
Solids, Tot	mg/L	144	312
Solids, Tot Diss	mg/L	164	163
Solids, Tot Susp	mg/L	4.00	9.00
Solids, Vol	mg/L	144	74.0
Solids, Vol Diss	mg/L	138	74.0
Solids, Vol Susp	mg/L	6.00	<4.00
Ammonia N, Tot	mg/L	0.0503	0.147
Kjeldahl N, Tot	mg/L	0.450	0.530
NO3+NO2, Tot	mg/L	<0.0200	0.189
Phosphorus, Tot	mg/L	0.0216	0.0587
Phosphorus, Diss	mg/L	0.009	0.042
OrthoPhosphate, D	mg/L	<0.05	<0.05
Organic Carbon, T	mg/L	2.90	2.80
Hardness, Tot	mg/L	94.2	94.8
Sulfate, Tot	mg/L	21.6	20.1
Calcium, Tot	mg/L	28.3	28.6
Magnesium, Tot	mg/L	5.73	5.67
Sodium, Tot	mg/L	4.44	4.25
Potassium, Tot	mg/L	1.62	1.67
Chloride, Tot	mg/L	3.64	3.60
Arsenic, Tot	ug/L	0.7	0.9
Barium, Tot	ug/L	21.4	26.9
Beryllium, Tot	ug/L	<0.2	<0.2
Cadmium, Tot	ug/L	<0.2	<0.2
Chromium, Tot	ug/L	<0.2	<0.2
Cobalt, Tot	ug/L	<0.2	<0.2
Copper, Tot	ug/L	0.7	0.8
Iron, Tot	ug/L	25.7	140.0
Iron, Diss	ug/L		
Lead, Tot	ug/L	0.2	0.3
Lead, Diss	ug/L		
Manganese, Tot	ug/L	24.6	133.0
Manganese, Diss	ug/L		
Thallium, Tot	ug/L	<0.2	<0.2
Molybdenum, Tot	ug/L	0.4	0.39
Nickel, Tot	ug/L	0.6	0.8
Silver, Tot	ug/L	<0.2	<0.2
Vanadium, Tot	ug/L	0.6	0.7
Zinc, Tot	ug/L	1.4	1.8
Zinc, Diss	ug/L		
Antimony, Tot	ug/L	<0.2	<0.2
Aluminum, Tot	ug/L	13.5	60.2
Aluminum, Diss	ug/L		
Selenium, Tot	ug/L	0.5	0.47
Mercury, Tot	ug/L	0.14	0.147

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	28.8	83.8	12.8	165.2	203.0	9.1	6.2
5.0	27.7	81.9	12.2	154.6	203.0	8.9	8.6
10.0	26.2	79.2		8.8	206.0	8.2	11.6
15.0	25.8	78.4	7.8	95.7	207.0	7.8	10.0
20.0	25.4	77.7	6.5	79.2	208.0	7.6	7.7
25.0	25.0	77.0	6.2	75.0	208.0	7.5	6.9
30.0	24.6	76.3	5.8	69.7	207.0	7.4	4.7
35.0	24.5	76.1	5.6	67.1	207.0	7.4	4.2
40.0	24.2	75.6	5.6	66.8	208.0	7.4	3.9
45.0	23.6	74.5	5.5	64.9	206.0	7.3	3.1
50.0	23.3	73.9	5.4	63.4	207.0	7.3	2.1
55.0	23.2	73.8	5.3	62.1	206.0	7.3	2.0
60.0	23.1	73.6	5.2	60.8	206.0	7.3	2.0
65.0	23.1	73.6	5.2	60.8	206.0	7.3	2.0
69.0	23.1	73.6	5.2	60.8	206.0	7.3	2.1

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

Station: 3OLD20003 | Project: Old Hickory | Location: Cumberland River, Mile 221.2

State: Tennessee | Latitude: 36º 14" 41' | Quad: Hermitage, TN
County: Davidson | Longitude: 86º 36" 50' | HUC: 05130201

Sample Date: 29 Aug 2013 | Water Surface Elevation = 444.3 ft | Secchi Disk = 1.1 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	29.2	84.6	12.5	162.4	205.0	9.0	7.0
5.0	27.7	81.9	12.8	162.2	205.0	8.9	11.5
10.0	25.6	78.1	7.6	92.9	209.0	7.7	7.6
15.0	24.9	76.8	6.8	82.1	208.0	7.5	6.2
20.0	24.9	76.8	6.3	76.1	208.0	7.5	5.5
25.0	24.0	75.2	6.7	79.6	206.0	7.5	4.4
30.0	23.7	74.7	6.4	75.6	206.0	7.4	3.8
35.0	23.3	73.9	6.6	77.4	204.0	7.4	2.8
40.0	23.1	73.6	6.5	76.0	204.0	7.4	2.5
45.0	23.0	73.4	6.2	72.3	204.0	7.4	2.2
50.0	23.0	73.4	6.2	72.3	204.0	7.4	2.2
55.0	23.0	73.4	6.1	71.2	205.0	7.4	2.1
60.0	22.9	73.2	5.9	68.7	205.0	7.3	2.0
65.0	22.9	73.2	5.8	67.5	205.0	7.3	2.1
70.0	22.9	73.2	5.8	67.5	204.0	7.3	2.1

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

Station: 3OLD20004 | Project: Old Hickory | Location: Cumberland River, Mile 236.0

State: Tennessee | Latitude: 36º 18" 48' | Quad: Laguardo, TN
County: Wilson | Longitude: 86º 29" 18' | HUC: 05130201

Sample Date: 29 Aug 2013 | Water Surface Elevation = 444.3 ft | Secchi Disk = 0.8 m

Results of Laboratory Analyses

Sample Depth ft		25.0
Alkalinity, Tot	mg/L	80
Alkalinity, Phenol	mg/L	0
Solids, Tot	mg/L	156
Solids, Tot Diss	mg/L	173
Solids, Tot Susp	mg/L	4.00
Solids, Vol	mg/L	107
Solids, Vol Diss	mg/L	101
Solids, Vol Susp	mg/L	6.00
Ammonia N, Tot	mg/L	0.100
Kjeldahl N, Tot	mg/L	0.420
NO3+NO2, Tot	mg/L	0.168
Phosphorus, Tot	mg/L	0.0247
Phosphorus, Diss	mg/L	0.019
OrthoPhosphate, D	mg/L	<0.05
Organic Carbon, T	mg/L	2.60
Hardness, Tot	mg/L	91.8
Sulfate, Tot	mg/L	23.5
Calcium, Tot	mg/L	27.1
Magnesium, Tot	mg/L	5.86
Sodium, Tot	mg/L	4.75
Potassium, Tot	mg/L	1.55
Chloride, Tot	mg/L	3.64
Arsenic, Tot	ug/L	0.6
Barium, Tot	ug/L	24.2
Beryllium, Tot	ug/L	<0.2
Cadmium, Tot	ug/L	<0.2
Chromium, Tot	ug/L	<0.2
Cobalt, Tot	ug/L	<0.2
Copper, Tot	ug/L	0.7
Iron, Tot	ug/L	79.9
Iron, Diss	ug/L	
Lead, Tot	ug/L	0.3
Lead, Diss	ug/L	
Manganese, Tot	ug/L	50.2
Manganese, Diss	ug/L	
Thallium, Tot	ug/L	<0.2
Molybdenum, Tot	ug/L	0.4
Nickel, Tot	ug/L	0.7
Silver, Tot	ug/L	<0.2
Vanadium, Tot	ug/L	0.5
Zinc, Tot	ug/L	1.7
Zinc, Diss	ug/L	
Antimony, Tot	ug/L	<0.2
Aluminum, Tot	ug/L	40.0
Aluminum, Diss	ug/L	
Selenium, Tot	ug/L	0.4
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	27.9	82.2	12.0	152.6	209.0	8.9	7.7
5.0	27.0	80.6		11.3	209.0	8.7	11.7
10.0	25.7	78.3	9.4	115.1	209.0	8.1	7.7
15.0	24.1	75.4	8.7	103.5	205.0	7.7	4.7
20.0	23.3	73.9	8.1	95.0	204.0	7.6	4.3
25.0	23.0	73.4	8.0	93.3	203.0	7.5	3.6
30.0	22.9	73.2	7.9	92.0	204.0	7.5	3.1
35.0	22.8	73.0	7.9	91.8	202.0	7.5	3.3
40.0	22.8	73.0	7.5	87.2	204.0	7.5	3.3
45.0	22.8	73.0	6.9	80.2	205.0	7.4	3.2
50.0	22.7	72.9	7.0	81.2	205.0	7.4	3.2
53.0	22.7	72.9	7.1	82.4	204.0	7.4	3.2

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

Station: 3OLD20005 | Project: Old Hickory | Location: Cumberland River, Mile 241.0

State: Tennessee | Latitude: 36º 19" 40' | Quad: Laguardo, TN
County: Wilson | Longitude: 86º 25" 5' | HUC: 05130201

Sample Date: 29 Aug 2013 | Water Surface Elevation = 444.3 ft | Secchi Disk = 0.9 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	27.7	81.9	11.7	148.3	205.0	8.6	12.6
5.0	27.0	80.6	10.8	135.2	206.0	8.3	12.0
10.0	25.4	77.7	9.9	111.5	212.0	7.9	9.6
15.0	23.9	75.0	9.4	102.9	205.0	7.8	7.6
20.0	23.1	73.6	8.8	101.3	203.0	7.6	6.3
25.0	22.9	73.2	8.7	101.3	202.0	7.6	5.8
30.0	22.8	73.0	8.5	98.8	204.0	7.6	5.4
35.0	22.8	73.0	8.5	98.8	203.0	7.6	5.0
40.0	22.7	72.9	8.6	99.8	203.0	7.6	4.6
45.0	22.7	72.9	8.5	98.6	203.0	7.6	4.3
50.0	22.7	72.9	8.5	98.6	203.0	7.6	4.1
55.0	22.5	72.5	8.0	92.5	214.0	7.4	4.0

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

Station: 3OLD20006 | Project: Old Hickory | Location: Cumberland River, Mile 245.0

State: Tennessee | Latitude: 36º 19" 40' | Quad: Laguardo, TN
County: Wilson | Longitude: 86º 23" 22' | HUC: 05130201

Sample Date: 29 Aug 2013 | Water Surface Elevation = 444.3 ft | Secchi Disk = 0.9 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	26.1	79.0	11.1	136.9	203.0	8.6	7.5
5.0	24.2	75.6	10.3	122.8	203.0	8.2	8.6
10.0	23.0	73.4	9.1	106.2	202.0	7.7	5.0
15.0	22.8	73.0	8.8	102.3	202.0	7.7	5.4
20.0	22.7	72.9	8.8	102.1	202.0	7.7	4.3
25.0	22.6	72.7	8.8	101.9	202.0	7.7	4.3
30.0	22.6	72.7	8.7	100.8	202.0	7.6	4.2
35.0	22.5	72.5	8.6	99.4	200.0	7.6	4.0
40.0	22.5	72.5	8.5	98.3	200.0	7.6	4.0
45.0	22.4	72.3	8.5	98.1	200.0	7.6	3.9
50.0	22.4	72.3	8.4	96.9	200.0	7.6	3.2
53.0	22.4	72.3	8.2	94.6	200.0	7.6	3.0

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

Station: 3OLD20007 | Project: Old Hickory | Location: Cumberland River, Mile 263.1

State: Tennessee | Latitude: 36º 17" 57' | Quad: Hunters Point, TN
County: Wilson | Longitude: 86º 15" 49' | HUC: 05130201

Sample Date: 29 Aug 2013 | Water Surface Elevation = 444.3 ft | Secchi Disk = 1.1 m

Results of Laboratory Analyses

Sample Depth ft		20.0
Alkalinity, Tot	mg/L	70
Alkalinity, Phenol	mg/L	0
Solids, Tot	mg/L	162
Solids, Tot Diss	mg/L	171
Solids, Tot Susp	mg/L	8.00
Solids, Vol	mg/L	181
Solids, Vol Diss	mg/L	176
Solids, Vol Susp	mg/L	5.00
Ammonia N, Tot	mg/L	0.0704
Kjeldahl N, Tot	mg/L	0.470
NO3+NO2, Tot	mg/L	0.183
Phosphorus, Tot	mg/L	0.0151
Phosphorus, Diss	mg/L	0.007
OrthoPhosphate, D	mg/L	<0.05
Organic Carbon, T	mg/L	2.40
Hardness, Tot	mg/L	86.1
Sulfate, Tot	mg/L	25.6
Calcium, Tot	mg/L	24.6
Magnesium, Tot	mg/L	5.99
Sodium, Tot	mg/L	5.19
Potassium, Tot	mg/L	1.50
Chloride, Tot	mg/L	3.88
Arsenic, Tot	ug/L	0.5
Barium, Tot	ug/L	23.0
Beryllium, Tot	ug/L	<0.2
Cadmium, Tot	ug/L	<0.2
Chromium, Tot	ug/L	<0.2
Cobalt, Tot	ug/L	<0.2
Copper, Tot	ug/L	0.5
Iron, Tot	ug/L	91.5
Iron, Diss	ug/L	
Lead, Tot	ug/L	0.36
Lead, Diss	ug/L	
Manganese, Tot	ug/L	45.7
Manganese, Diss	ug/L	
Thallium, Tot	ug/L	<0.2
Molybdenum, Tot	ug/L	0.3
Nickel, Tot	ug/L	0.7
Silver, Tot	ug/L	<0.2
Vanadium, Tot	ug/L	0.4
Zinc, Tot	ug/L	1.9
Zinc, Diss	ug/L	
Antimony, Tot	ug/L	0.4
Aluminum, Tot	ug/L	40.5
Aluminum, Diss	ug/L	
Selenium, Tot	ug/L	0.4
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	22.8	73.0	9.5	110.4	197.0	7.8	4.5
5.0	22.4	72.3	9.2	106.2	196.0	7.8	7.0
10.0	22.3	72.1		9.1	196.0	7.7	7.6
15.0	22.3	72.1	9.0	103.7	196.0	7.6	7.8
20.0	22.3	72.1	9.0	103.7	195.0	7.7	8.0
25.0	22.3	72.1	9.0	103.7	195.0	7.7	7.6
30.0	22.3	72.1	9.0	103.7	195.0	7.6	7.5
35.0	22.3	72.1	9.0	103.7	196.0	7.7	7.2
40.0	22.3	72.1	8.9	102.5	196.0	7.6	6.9
45.0	22.3	72.1	8.9	102.5	196.0	7.7	7.3
48.0	22.3	72.1	8.9	102.5	196.0	7.6	7.1

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

Station: 3OLD20008 | Project: Old Hickory | Location: Cumberland River, Mile 278.7

State: Tennessee | Latitude: 36º 22" 25' | Quad: Bellwood, TN
County: Trousdale | Longitude: 86º 10" 37' | HUC: 05130201

Sample Date: 29 Aug 2013 | Water Surface Elevation = 444.3 ft | Secchi Disk = 1.5 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	21.6	70.9	8.1	92.1	192.0	7.5	6.1
5.0	21.6	70.9	8.0	90.9	192.0	7.4	5.9
10.0	21.5	70.7	7.9	89.6	192.0	7.4	5.9
15.0	21.5	70.7	7.9	89.6	192.0	7.4	6.1
20.0	21.5	70.7	7.9	89.6	192.0	7.4	6.1
25.0	21.5	70.7	7.9	89.6	192.0	7.4	6.5
30.0	21.5	70.7	7.8	88.5	192.0	7.4	5.7
35.0	21.5	70.7	7.8	88.5	192.0	7.4	4.9

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

Station: 3OLD20013 | Project: Old Hickory | Location: Drakes Creek, Mile 1.9

State: Tennessee | Latitude: 36º 16" 16' | Quad: Hendersonville, TN
County: Sumner | Longitude: 86º 36" 4' | HUC: 05130201

Sample Date: 29 Aug 2013 | Water Surface Elevation = 444.3 ft | Secchi Disk = 1.0 m

Results of Laboratory Analyses

Sample Depth ft		0.0	25.0
Alkalinity, Tot	mg/L	90	94
Alkalinity, Phenol	mg/L	10	0
Solids, Tot	mg/L	166	174
Solids, Tot Diss	mg/L	163	166
Solids, Tot Susp	mg/L	3.00	7.00
Solids, Vol	mg/L	109	93.0
Solids, Vol Diss	mg/L	103	93.0
Solids, Vol Susp	mg/L	6.00	<4.00
Ammonia N, Tot	mg/L	0.0487	0.276
Kjeldahl N, Tot	mg/L	0.610	0.620
NO3+NO2, Tot	mg/L	<0.0200	<0.0200
Phosphorus, Tot	mg/L	0.0274	0.244
Phosphorus, Diss	mg/L	0.010	0.119
OrthoPhosphate, D	mg/L	<0.05	0.104
Organic Carbon, T	mg/L	3.00	3.20
Hardness, Tot	mg/L	100	102
Sulfate, Tot	mg/L	22.1	19.6
Calcium, Tot	mg/L	30.3	31.6
Magnesium, Tot	mg/L	5.91	5.67
Sodium, Tot	mg/L	4.28	4.27
Potassium, Tot	mg/L	1.67	1.75
Chloride, Tot	mg/L	3.78	3.59
Arsenic, Tot	ug/L	1.0	2.1
Barium, Tot	ug/L	20.2	34.2
Beryllium, Tot	ug/L	<0.2	<0.2
Cadmium, Tot	ug/L	<0.2	<0.2
Chromium, Tot	ug/L	<0.2	<0.2
Cobalt, Tot	ug/L	<0.2	0.2
Copper, Tot	ug/L	0.72	0.67
Iron, Tot	ug/L	25.1	214.0
Iron, Diss	ug/L		
Lead, Tot	ug/L	0.21	0.3
Lead, Diss	ug/L		
Manganese, Tot	ug/L	34.3	850.0
Manganese, Diss	ug/L		
Thallium, Tot	ug/L	<0.2	<0.2
Molybdenum, Tot	ug/L	0.41	0.4
Nickel, Tot	ug/L	0.46	0.6
Silver, Tot	ug/L	<0.2	<0.2
Vanadium, Tot	ug/L	0.8	0.5
Zinc, Tot	ug/L	1.4	2.0
Zinc, Diss	ug/L		
Antimony, Tot	ug/L	<0.2	0.3
Aluminum, Tot	ug/L	8.8	44.3
Aluminum, Diss	ug/L		
Selenium, Tot	ug/L	0.4	0.45
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	29.4	84.9	14.0	182.5	211.0	9.1	6.8
5.0	28.1	82.6		13.8	206.0	9.0	15.1
10.0	25.7	78.3	6.6	80.8	212.0	7.7	15.4
15.0	25.3	77.5	4.8	58.4	212.0	7.4	12.5
20.0	24.8	76.6	0.4	4.8	215.0	7.1	7.3
25.0	23.6	74.5	0.0	0.0	232.0	7.1	4.0
27.0	23.5	74.3	0.0	0.0	234.0	7.1	4.0

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

Station: 3OLD20016 | Project: Old Hickory | Location: Cumberland River, Mile 292.4

State: Tennessee | Latitude: 36º 15" 51' | Quad: Dixon Springs, TN
County: Smith | Longitude: 86º 4" 12' | HUC: 05130201

Sample Date: 29 Aug 2013 | Water Surface Elevation = 444.3 ft | Secchi Disk = 1.4 m

Results of Laboratory Analyses

Sample Depth ft		10.0
Alkalinity, Tot	mg/L	66
Alkalinity, Phenol	mg/L	0
Solids, Tot	mg/L	154
Solids, Tot Diss	mg/L	167
Solids, Tot Susp	mg/L	4.00
Solids, Vol	mg/L	133
Solids, Vol Diss	mg/L	129
Solids, Vol Susp	mg/L	<4.00
Ammonia N, Tot	mg/L	0.0813
Kjeldahl N, Tot	mg/L	<0.140
NO3+NO2, Tot	mg/L	0.225
Phosphorus, Tot	mg/L	0.0136
Phosphorus, Diss	mg/L	0.010
OrthoPhosphate, D	mg/L	<0.05
Organic Carbon, T	mg/L	2.30
Hardness, Tot	mg/L	83.6
Sulfate, Tot	mg/L	27.2
Calcium, Tot	mg/L	23.4
Magnesium, Tot	mg/L	6.12
Sodium, Tot	mg/L	5.36
Potassium, Tot	mg/L	1.51
Chloride, Tot	mg/L	3.82
Arsenic, Tot	ug/L	0.5
Barium, Tot	ug/L	21.8
Beryllium, Tot	ug/L	<0.2
Cadmium, Tot	ug/L	<0.2
Chromium, Tot	ug/L	<0.2
Cobalt, Tot	ug/L	<0.2
Copper, Tot	ug/L	0.5
Iron, Tot	ug/L	60.8
Iron, Diss	ug/L	
Lead, Tot	ug/L	0.31
Lead, Diss	ug/L	
Manganese, Tot	ug/L	42.5
Manganese, Diss	ug/L	
Thallium, Tot	ug/L	<0.2
Molybdenum, Tot	ug/L	0.3
Nickel, Tot	ug/L	0.8
Silver, Tot	ug/L	<0.2
Vanadium, Tot	ug/L	0.3
Zinc, Tot	ug/L	1.6
Zinc, Diss	ug/L	
Antimony, Tot	ug/L	0.3
Aluminum, Tot	ug/L	20.3
Aluminum, Diss	ug/L	
Selenium, Tot	ug/L	0.4
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	21.3	70.3	7.4	83.7	193.0	7.4	4.1
5.0	21.3	70.3	7.4	83.7	193.0	7.3	4.0
10.0	21.3	70.3		7.3	192.0	7.3	4.6
15.0	21.2	70.2	7.3	82.4	192.0	7.3	4.4
20.0	21.2	70.2	7.3	82.4	191.0	7.3	4.6
25.0	21.2	70.2	7.3	82.4	190.0	7.4	4.2
30.0	21.2	70.2	7.3	82.5	191.0	7.3	4.6

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

Station: 3OLD20019 | Project: Old Hickory | Location: Gallatin Fossil Plant Discharge, Mile 0.3

State: Tennessee | Latitude: 36º 18" 50.6' | Quad: Laguardo, TN
County: Sumner | Longitude: 86º 24" 12.8' | HUC: 05130201

Sample Date: 29 Aug 2013 | Water Surface Elevation = 444.3 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	30.4	86.7	8.6	113.9	202.0	7.7	3.3
5.0	30.3	86.5	8.6	113.8	202.0	7.7	3.7
10.0	30.3	86.5	8.6	113.8	202.0	7.6	3.7
13.0	30.3	86.5	8.6	113.8	202.0	7.6	3.7