Hominy Swamp Stream Restoration

EEP Project No: 180

2006 Annual Monitoring Report

5th Year of 5-year Monitoring Plan

Submitted to: NCDENR/Ecosystem Enhancement Program
1619 Mail Service Center
Raleigh, NC 27699-1619

December 2006

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Design Firm: KCI Associates of North Carolina, P.A.

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1.0 Executive Summary/Project Abstract

Hominy Swamp Creek was restored through the North Carolina Wetlands Restoration Program (NCWRP). The objectives of the project are to:

1.) Establish a stable dimension, pattern and profile on 2,232 feet of Hominy Swamp Creek
2.) Improve habitat within Hominy Swamp Creek
3.) Establish a riparian buffer along Hominy Swamp Creek
4.) Incorporate this project into a watershed wide management plan

This is the 5th year of the 5-year monitoring plan for Hominy Swamp Creek.

Overall, while the majority of the stream is functioning well and holding grade, the stream has areas of concern and areas of immediate need. Table X shows a summary of identified problem areas within the project reach. Channel dimension and pattern are similar to as-built conditions with the exceptions of the noted areas of bank slumping. The channel profile is void of defined bed features and is dominated by runs and pools. Placed structures are holding grade and functioning well. However, beavers have infested the project as of December 2006. Some of the newly planted vegetation within the vegetation plots and within the restored riparian buffer has been destroyed. Immediate attention is recommended to alleviate the current and potential future problems. Photographs of the recent beaver activity are located in Appendix C.

2.0 Project Background

2.1 Location and Setting

The project is located within the city limits of Wilson, North Carolina. From Raleigh, take US 64 BYP East to US 64 then US 264 (Wilson exit). Proceed east on US 264 to Exit 36B, US 264 ALT East (Raleigh Road). Continue into Wilson on Raleigh Road until you reach Ripley Road. Turn left (north) on Ripley Road and the site is immediately on the east/right side of the road. Refer to Figure 1 for project location.

2.2 Mitigation Structure and Objectives

The restoration of this portion of Hominy Swamp Creek, located within the Wilson City Recreational Park, was conducted to correct identified system deficiencies including severe bank erosion, channel widening, and the loss of aquatic habitat resulting from stream channelization, the loss of riparian vegetation, and watershed development. The goal of the project was to develop a stable stream channel with reduced bank erosion, efficient sediment transport, enhanced warm water fisheries, and improved overall stream habitat and site aesthetics. Construction of the project was completed in September 2001.

Table I. Project Structure and Objectives Table
Project No. 180 (Hominy Swamp Creek)

Segment Reach ID	Mitigation Type	Approach	Linear Feet/Acreage
Hominy Swamp Creek	Restoration	Priority 1	2,232 feet

2.3 Project History and Background

Tables II, III, and IV provide the project history, contact information and background data.

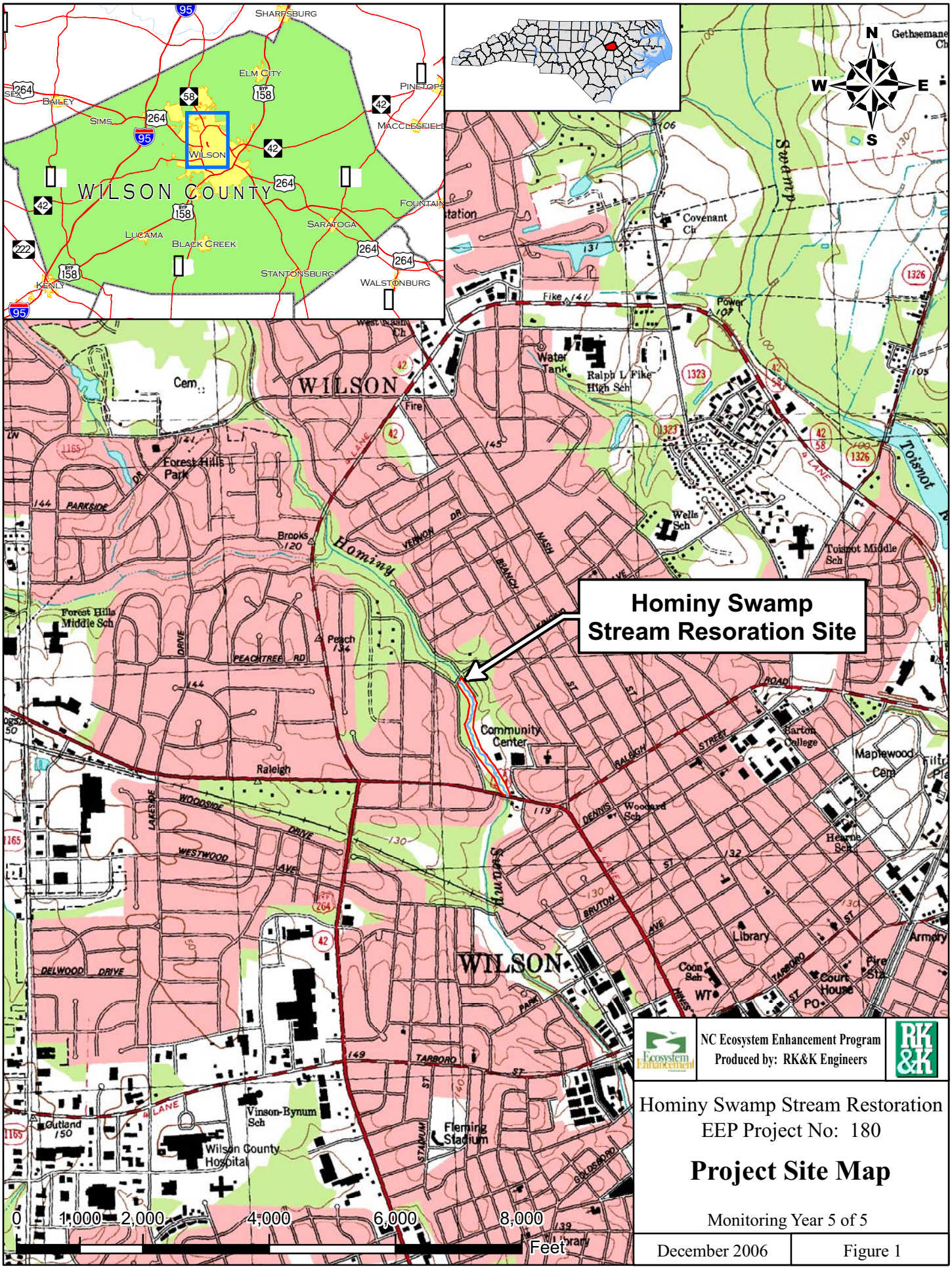
Table II. Project Activity and Reporting History Project No. 180 (Hominy Swamp Creek)		
Activity or Report	**Calendar Year of Completion or Planned Completion**	**Actual Completion Date**
Restoration Plan		2001
Mitigation Plan		January 2003
Construction		September 2001
As-Built Report		June 2002
Initial – Year 1 Monitoring		January 2003
Year 2 monitoring		December 2003
Year 3 Monitoring		December 2004
Year 4 Monitoring	December 2005 (draft)	March 2006 (final)
Year 5 Monitoring	December 2006 (draft)	January 2007 (final)
Year 5+ Monitoring	TBD	

Table III. Project Contact Table Project No. 180 (Hominy Swamp Creek)	
Designer	KCI Associates of North Carolina, P.A. Landmark Center II, Suite 200 4601 Six Forks Road Raleigh, NC 27609
Construction Contractor	Not provided
Planting Contractor	Not provided
Seeding Contractor	Not provided
Seed Mix Sources	Not provided
Nursery Stock Suppliers	Not provided
Monitoring Performers (Years 4 & 5)	Rummel, Klepper & Kahl, LLP 900 Ridgefield Drive, Suite 350 Raleigh, NC 27609
Stream Monitoring POC	Howard Woodall, P.E. 919-878-9560
Vegetation Monitoring POC	Howard Woodall, P.E. 919-878-9560

Table IV. Project Background Table Project No. 180 (Hominy Swamp Creek)	
Project County	Wilson County, North Carolina
Drainage Area	5.4 square miles
Drainage impervious cover estimate (%)	Not provided
Stream Order	3
Physiographic Region	Coastal Plain
Ecoregion	Rolling Coastal Plain
Rosgen Classification of As-Built	E5
Cowardin Classification	PSS1Ad
Dominant soil types	Bibb Loam (Bb)
Reference site ID	Hominy Swamp Creek
USGS HUC for Project and Reference	3020203020040
NCDWQ Sub-basin for Project and Reference	03-04-07 Neuse River Basin
NCDWQ Classification for Project and Reference	C; Sw, NSW
Any portion of any project segment 303d listed?	Yes – From its source to Conentnea Creek
Any portion of any project segment upstream of a 303d listed segment?	
Reasons for 303d listing or stressor	Impaired biological integrity; Stressors not identified (Potential sources: Urban Runoff/Storm Sewers)
% of project easement fenced	0

2.4 Monitoring Plan View

See following page for Monitoring Plan View.



NC Ecosystem Enhancement Program
Produced by: RK&K Engineers

Hominy Swamp Stream Restoration
EEP Project No: 180

Project Site Map

Monitoring Year 5 of 5

December 2006	Figure 1

1 inch equals 2,000 feet

Source: USGS 7.5 Minute Quadrangles, Wilson & Winstead Crossroads, NC

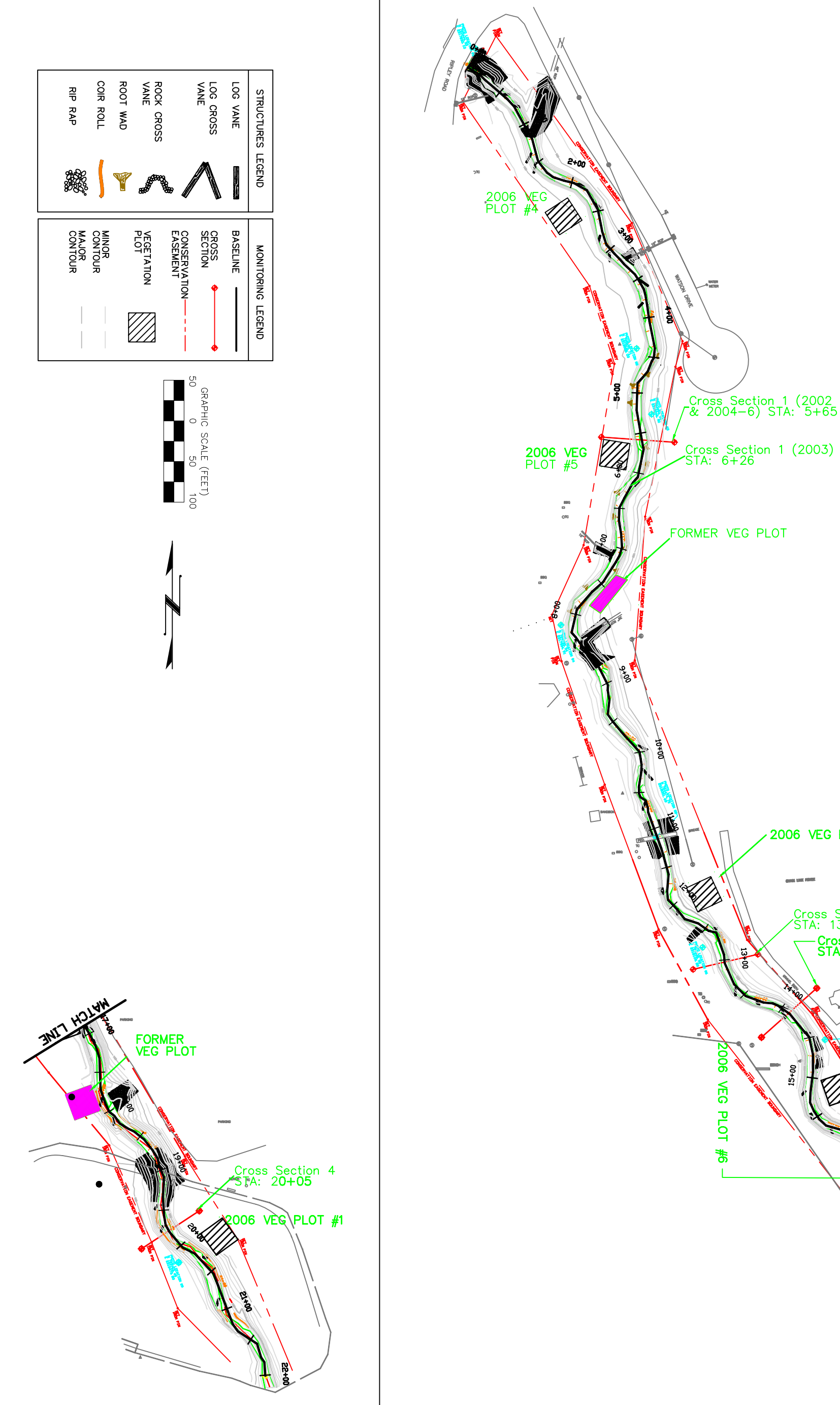
NC Ecosystem Enhancement Program
Produced by: RK&K Engineers

Hominy Swamp Stream Restoration
EEP Project No: 180

Aerial Watershed Photo

Monitoring Year 5 of 5

December 2006	Figure 2



DRAWING NO.	1 OF 1
SHEET NO.	
FILENAME	2006HominyE.DWG
PROJECT NO.	EEP No. 180
DATE	1/26/07

HOMINY SWAMP CREEK
WILSON COUNTY, N.C.
ECOSYSTEM ENHANCEMENT PROGRAM

FIGURE 3
AS-BUILT & MONITORING PLAN VIEW

Monitoring by:
Rummel, Klepper & Kahl, LLP
consulting engineers
900 Ridgefield Drive
Suite 350
Raleigh, NC 27609
Phone: 919-878-9560

NO	REVISIONS	DRN	CHK	DATE
1	ISSUED TO EEP	DAB	DRC	2/04/04

3.0 Project Condition and Monitoring Results

3.1 Vegetation Assessment

The vegetation monitoring for 2005 yielded no monitoring plots meeting minimum success requirements. EEP replanted the Hominy Swamp Stream restoration site for 2006 (monitoring year 5). Based upon the latest EEP vegetation monitoring guidelines, six vegetation monitoring plots were monitored for vegetation success. The plots were installed as 10 meter X 10 meter plots on or near the previous vegetation monitoring plots. The results of the stem counts yielded a site average of 405 stems per acre which exceeds the minimum success requirement of 260 stems per acre after vegetation monitoring year 5.

3.1.1 Soil Data

The Bibb series consists of very deep, poorly drained, moderately permeable soils that formed in stratified loamy and sandy alluvium. These soils are on flood plains of streams in the Coastal Plain. They are commonly flooded and water runs off the surface very slowly. Slopes range from 0 to 2 percent. The vegetation found on Bibb series is usually dominated by native woodland species consisting of sweetgum, loblolly pine, red maple, water oak, willow oak, green ash, baldcypress, swamp tupelo, and black willow.

Table V. Preliminary Soil Data
Project No. 180 (Hominy Swamp Creek)

Series	Max Depth (in.)	% Clay on Surface	K	T	OM %
Bibb Loam (Bb)	80	2 – 18	.28 - .37	5	.5 - 2

3.1.2 Vegetative Problem Areas

Table VI. Vegetative Problem Areas
Project No. 180 (Hominy Swamp Creek)

Feature/Issue	Station #/Range	Probable Cause	Photo #
Plot 2	15+00L	Dead stems	Appendix A.2 P1

3.1.3 Vegetative Problem Area Plan View

Refer to Appendix A.1 for Vegetative Problem Area Plan View.

3.1.4 Stem Counts

The results of the stem counts yielded an average of 405 trees per acre which exceeds the minimum success criteria of 260 trees per acre after year 5 monitoring. Data for the number and type of species initially planted in each vegetation plot to acquire initial totals is not available for the new plots. To determine if the surviving stems met the minimum success criteria, the density of the surviving stem counts in the plots was converted to stems per acre.

Table VII. Stem counts for each species arranged by plot
Project No. 180 (Hominy Swamp Creek)

Species	Plots							Year 5 Totals	Initial Totals	Survival %
	1	**2**	**3**	**4**	**5**	**6**				
Trees										
Quercus nigra								0	N/A	N/A
Quercus lyrata					2			2	N/A	N/A
Quercus laurifolia	2		5	2		2		11	N/A	N/A
Quercus phellos	1	2			2	5		10	N/A	N/A
Quercus pagoda	2	1	3	2	3			11	N/A	N/A
Quercus michauxii								0	N/A	N/A
Quercus alba								0	N/A	N/A
Taxodium distichum								0	N/A	N/A
Carya ovata								0	N/A	N/A
Ilex verticillata								0	N/A	N/A
Nyssa sylvatica			2	1	3			6	N/A	N/A
Fraxinus pennsylvanica				1	1			2	N/A	N/A
Cornus florida	2			1				3	N/A	N/A
Viburnum dentatum								0	N/A	N/A
Amelanchier canadensis								0	N/A	N/A
Cercis canadensis			2	2				4	N/A	N/A
Clethra alnifolia			2	2	1			5	N/A	N/A
Itea virginica			2	1	2			5	N/A	N/A
Caphlanthus occidentalis		1						1	N/A	N/A
Salix nigra									N/A	N/A

3.1.5 Vegetation Plot Photos

Photos are located in Appendix A.

3.2 Stream Assessment

3.2.1 Procedural Items

3.2.1.a Morphometric Criteria

Dimension – Previously established cross-sections were surveyed for comparison to past measurements.

Profile – The longitudinal profile of the restored stream was also surveyed for comparison to the previous monitoring survey. Since the total restored length is less than 3000 feet, the entire reach was surveyed.

3.2.1.b Hydrologic Criteria

Two bankfull events must be recorded during the 5 year monitoring period in order to meet hydrologic criteria.

Table VIII. Verification of Bankfull Events Project No. 180 (Hominy Swamp Creek)
2002 (MY-1) : January 5, January 22, March 2
2004 (MY-3) : Unspecified date (see 2004 report Sec. 2.1.1 "Results and Discussions" on pg. 7)

3.2.1.c Bank Stability Assessment

Table IX. BEHI and Sediment Export Estimates Project No. 180 (Hominy Swamp Creek)

Time Point	Segment/ Reach	Linear Footage or Acreage	Extreme		Very High		High		Moderate		Low		Very low		Sediment Export
			ft	%	ft	%	ft	%	ft	%	ft	%	ft	%	Ton /y
Post Con.	Reach I	2,232 lf	50	2.2	28	1.2	25	1.1	60	2.7	2069	92.8			57
	Project Total	2,232 lf	50	2.2	28	1.2	25	1.1	60	2.7	2069	92.8			57

3.2.2 Problem Areas Plan View (Stream) – Refer to B.1 for Problem Areas Plan View.

3.2.3 Problem Areas Table – Table X below provides categorical feature issues by station, the suspected cause, and denotes the number of a representative photo of the condition (Appendix B).

Table X. Stream Problem Areas Project No. 180 (Hominy Swamp Creek)			
Feature/Issue	**Station Numbers**	**Suspected Cause**	**Photo number**
Aggradation/ Bar Formation	**01+65 – 01+85**	Upstream bank scour and watershed disturbance	**P74**
	03+70 - 03+90	Upstream bank scour and watershed disturbance	**P65, P67**
	04+10 - 04+40	Upstream bank scour and watershed disturbance	**P62**
	05+15 - 05+55	Upstream bank scour and watershed disturbance	**P58, P59**
	09+80 - 10+15	Upstream bank scour and watershed disturbance	**P40, P42**
Bank Scour	**1+00 – 1+50**	Lack of Riparian Buffer, overland flow, lack bank vegetation root mass	**P75, P76**
	02+65 – 02+85	Lack of Riparian Buffer, overland flow, lack bank vegetation root mass	**P70, P72**
	06+00 – 06+30	Lack of Riparian Buffer, overland flow, lack bank vegetation root mass	**P54**
	15+15 – 15+45	Lack of Riparian Buffer, overland flow, lack bank vegetation root mass	**P25**
	15+60 – 15+90	Lack of Riparian Buffer, overland flow, lack bank vegetation root mass	**P23**
	21+50 – 21+65	Lack of Riparian Buffer, overland flow, lack bank vegetation root mass	**P3**
	21+70 – 22+00	Lack of Riparian Buffer, overland flow, lack bank vegetation root mass	**P2**

3.2.4 Numbered issue photos section – Refer to B.2 for photos.

3.2.5 Fixed station photos – Refer to B.3 for photos.

3.2.6 Stability Assessment Table

Table XI. Categorical Stream Feature Visual Stability Assessment Project No. 180 (Hominy Swamp Creek)						
Feature	**Initial**	**MY-01**	**MY-02**	**MY-03**	**MY-04**	**MY-05**
A. Riffles	100%	NA	NA	NA	33%	33%
B. Pools	NA	NA	NA	NA	NA	NA
C. Thalweg	100%	NA	NA	NA	60%	60%
D. Meanders	100%	NA	NA	NA	67%	67%
E. Bed General	100%	NA	NA	NA	96%	96%
F. Vanes/J Hooks etc.	100%	NA	NA	NA	90%	90%
G. Wads and Boulders	100%	NA	NA	NA	93%	93%

3.2.7 Quantitative Measures Tables – Refer to the following pages for Table XII (Baseline Morphology and Hydraulic Summary) and Table XIII (Morphology and Hydraulic Monitoring Summary).

Table XII. Baseline Morphology and Hydraulic Summary
Project No. 180 (Hominy Swamp Creek)

Parameter	USGS Gauge Data			Regional Curve Interval			Pre-Existing Condition			Project Reference Stream			Design			As-Built		
Dimension	Min	Max	Med	Min	Max	Med	Min	Max	Med	Min	Max	Med	Min	Max	Med	Min	Max	Med
BF Width							n/a	n/a	25.5	n/a	n/a	11.9	n/a	n/a	20.2	21.7	24.8	23.3
Floodprone							n/a	n/a	>100	n/a	n/a	45	n/a	n/a	>100	n/a	n/a	>300
BF Cross							n/a	n/a	70	n/a	n/a	19.2	n/a	n/a	55	53.4	62.3	57.9
BF Mean							n/a	n/a	2.74	n/a	n/a	1.61	n/a	n/a	2.73	2.46	2.51	2.49
BF Max							n/a	n/a	4.68	n/a	n/a	2.11	n/a	n/a	4.3	3.6	3.8	3.7
Width/Depth							n/a	n/a	9.3	n/a	n/a	7.4	n/a	n/a	7.4	8.8	9.9	9.4
Entrenchmen							n/a	n/a	>4	n/a	n/a	>2.2	n/a	n/a	>5	12.1	13.9	13
Wetted																		
Hydraulic																		
Pattern																		
Channel							n/a	n/a	92	n/a	n/a	92	n/a	n/a	85	n/a	n/a	n/a
Radius of							43	135	n/a	27.35	36.9	n/a	46.5	62.6	n/a	n/a	n/a	n/a
Meander							114	170	n/a	107	150	n/a	182	255	n/a	n/a	n/a	n/a
Meander							n/a	n/a	3.6	n/a	n/a	7.7	n/a	n/a	4.2	n/a	n/a	n/a
Profile																		
Riffle length							n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Riffle slope							n/a	n/a	0.00016	n/a	n/a	0.0018	n/a	n/a	0.0015	n/a	n/a	n/a
Pool length							26	38	n/a	20	29	n/a	35	49	n/a	n/a	n/a	n/a
Pool spacing							n/a	n/a	167	n/a	n/a	69.56	91	127.5	n/a	n/a	n/a	n/a
Substrate																		
d50 (mm)							n/a	n/a	n/a	n/a	n/a	VFsand	n/a	n/a	0.25	n/a	n/a	0.26
d84 (mm)							n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Additional																		
Valley							n/a			n/a			1,850			1,850		
Channel							n/a			n/a			2,232			2,232		
Sinuosity							1.1			1.41			1.2			n/a		
Water							0.0015			0.0015			0.0014			n/a		
BF slope							n/a			n/a			n/a			n/a		
Rosgen							E5 (Modified)			E5			E5			n/a		
Number of																n/a		
Extent of BF							n/a			n/a			n/a			n/a		

Table XIII. Morphology and Hydraulic Monitoring Summary
Project No. 180 (Hominy Swamp Creek)

Parameter	Cross Section 1 Riffle					Cross Section 2 Riffle					Cross Section 3 Pool					Cross Section 4 Pool				
Dimension	**MY1**	**MY2**	**MY3**	**MY4**	**MY5**	**MY1**	**MY2**	**MY3**	**MY4**	**MY5**	**MY1**	**MY2**	**MY3**	**MY4**	**MY5**	**MY1**	**MY2**	**MY3**	**MY4**	**MY5**
BF Width (ft)	25	24.6	16.8	21.7	24.1	21.6	18.3	19	22.1	21.7	31.8	33.1	27.7	24	19.5	23.5	26.8	24.9	25.4	23.8
Floodprone Width (ft)	>300					>300					n/a					n/a				
BF Cross Sectional Area (ft^2)	62.3	87.2	52.7	73.9	73	53.1	53.9	59.8	60.7	58.8	76.3	64.9	54.3	61.8	55.5	88.3	107.5	113.8	119.5	109
BF Mean Depth (ft)	2.5	3.5	3.1	3.4	3	2.5	3	3.2	2.7	2.7	2.4	2	2	2.6	2.8	3.8	4	4.6	4.7	4.6
BF Max Depth (ft)	3.6	6.8	4.9	4.6	4.8	3.8	4.2	4.8	4.9	4.1	6	5.5	4.9	4.8	4.2	6	6.8	7.2	7.3	6.7
Width/Depth Ratio	9.9			6.4	8.0	8.79			8.2	8.0	n/a					n/a				
Entrenchment Ratio	12.08					13.85														
Substrate																				
d50 (mm)	0.54	0.29	0.58	1.55	0.51	0.2	0.17	0.26	1.64	0.63	0.22	0.26	1.88	n/a	n/a	0.17	0.22	0.27	n/a	n/a
d84 (mm)	2	0.58	1.88	1.6	1.5	0.63	0.49	0.67	1.8	1.9	13.65	5.88	17.73	n/a	n/a	3.74	0.62	0.75	n/a	n/a

Parameter	**MY-01 (2002)**				**MY-02 (2003)**				**MY-03 (2004)**				**MY-04&5 (2005&2006)**			
Pattern	**Min**	**Max**	**Med**		**Min**	**Max**	**Med**		**Min**	**Max**	**Med**		**Min**	**Max**	**Med**	
Channel Beltwidth (ft)					32	69	46		32	69	46		32	69	46	
Radius of Curvature (ft)					33	76	56		33	76	56		33	76	56	
Meander Wavelength (ft)					115	227	155		115	227	155		115	227	155	
Meander Width ratio					1.5	3.2	2.1		1.8	3.9	2.6		1.4	3.1	2.1	
Profile																
Riffle length (ft)					15	53	23		16	41	28					
Riffle slope (ft/ft)																
Pool length (ft)					30	73	52		32	115	53					
Pool spacing (ft)					64	178	107		45	165	108					

APPENDIX A – VEGETATION RAW DATA

A.1 VEGETATIVE PROBLEM AREA PLAN VIEW

NC Ecosystem Enhancement Program
Produced by: RK&K Engineers

Hominy Swamp Stream Restoration
EEP Project No: 180

Vegetation Problem Area Plan View

Monitoring Year 5 of 5

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A.2 VEGETATION PROBLEM AREAS PHOTOS

Hominy Swamp Vegetation Problem Area Photos

Vegetation Monitoring Plot 2

A.3 VEGETATION MONITORING PLOT PHOTOS

Hominy Swamp Vegetation Monitoring Plot Photos

Vegetation Monitoring Plot 1

Vegetation Monitoring Plot 2.

Vegetation Monitoring Plot 3.

Vegetation Monitoring Plot 4.

Vegetation Monitoring Plot 5.

Vegetation Monitoring Plot 6.

APPENDIX B – GEOMORPHOLOGIC RAW DATA

B.1 PROBLEM AREAS PLAN VIEW

P76 - Left Bank Erosion

P75 - Left Bank Erosion

P72 - Left Bank Erosion

P74 - Aggradation

P67 - Aggradation

P62 - Aggradation

P70 - Left Bank Erosion

P65 - Aggradation

P59 - Aggradation

P54 Left Bank Erosion

P58 - Aggradation

P42 - Aggradation

P40 - Aggradation

0+00
1+00
2+00
3+00
4+00
5+00
6+00
7+00
8+00
9+00
10+00
11+00
12+00

4

5

3

N
W
E
S

Legend

Feature Issues

- Aggradation - Concern
- Aggradation - High Concern
- Erosion - Concern
- Erosion - High Concern

Vegetation Monitoring

- Stem Count >= 260
- Stem Count < 260
- Vegetation Boundary
- Edge of Water (As-built)
- Thalweg (As-built)
- PAPV_matchline

0 50 100 200 Feet

Matchline to Sheet 2

SHEET 1

NC Ecosystem Enhancement Program
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Hominy Swamp Stream Restoration
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Problem Area Plan View

(Sheet 1 of 2)

Monitoring Year 5 of 5

January 2007 | Appendix B.1

Matchline to Sheet 1

11+00
12+00
13+00
14+00
15+00
16+00
17+00
18+00
19+00
20+00
21+00
22+00

3
2
6
1

P23 - Right Bank Erosion

P25 - Left Bank Erosion

P3 - Right Bank Erosion

P2 - Right Bank Erosion

N
W
E
S

Legend

Feature Issues

- Aggradation - Concern
- Aggradation - High Concern
- Erosion - Concern
- Erosion - High Concern

Vegetation Monitoring

- Stem Count >= 260
- Stem Count < 260
- Vegetation Boundary
- Edge of Water (As-built)
- Thalweg (As-built)
- PAPV_matchline

NC Ecosystem Enhancement Program
Produced by: RK&K Engineers

Hominy Swamp Stream Restoration
EEP Project No: 180

Problem Area Plan View

(Sheet 2 of 2)

Monitoring Year 5 of 5

January 2007	Appendix B.1

0 50 100 200 Feet

SHEET 2

B.2 STREAM PROBLEM AREAS PHOTOS

Stream Pictures Taken September 17, 2006 all facing upstream

P40

P42

P58

P59

P62

P65

P67

P74

Erosion Pictures

P2 – Right Bank Erosion

P3 – Right Bank Erosion

P5 – Left Bank Erosion

P23 – Right Bank Erosion

P25 – Left Bank Erosion

P54 – Left Bank Erosion

P70 – Left Bank Erosion

P72 – Left Bank Erosion

P75 – Left Bank Erosion

P76 – Left Bank Erosion

B.3 STREAM CROSS SECTION PHOTOS

Hominy Swamp Cross-section Photos

P69. Station 6+30. Cross-section 1.

P37. Station 14+10. Cross-section 3.

P41. Station 13+40. Cross-section 2.

P6. Station 19+90. Cross-section 4,

B.4 CROSS SECTION PLOTS AND RAW DATA TABLES

	Hominy Swamp Creek
Cross Section	#1
Feature	Riffle
Date	4/19/06
Crew	Cook, Stafford

2004
2004 Survey

Station	Elevation	Notes
-2.22	106.52	
0	106.4	
15.04	106.06	
29.3	103.95	
31.92	103.14	
34.12	98.68	
38.15	99.23	
39.31	99.76	
43.25	99.73	
46.13	101.85	
47.72	103.82	
49.53	104.16	
51.77	103.56	
55.23	104.18	BKF
77.16	104.99	
94.4	105.27	
94.94	105.01	

2002
2002 Survey

Station	Elevation	Notes
0	106.4	
10	106.29	
15	106.09	
20	105.42	
23	104.43	BKF
28	103.23	
30	102.42	
32	101.21	
33.2	100.8	
33.5	99.94	
36	99.93	
39	99.85	
42.8	99.68	
45	99.52	
46.3	99.66	
48	99.99	
48.3	100.49	
49.3	100.84	
49.5	101.32	
51.7	102.73	
53	103.16	
60	103.57	BKF
70	104.38	
90	105.06	

2003
2003 Survey

Station	Elevation	Notes
0	106.52	
12.4	105.79	
18.9	105.14	
22.55	104.65	
25.31	104.05	BKF
27.88	102.58	
30.03	99.64	
31	98.91	
32.24	97.99	
33.47	96.9	
35.45	96.38	
36.15	96.41	
37.39	96.65	
39.08	97.23	
42.9	98.33	
44.3	99.88	
47.0	102.65	
47.1	102.78	
59.1	103.7	
79.2	105.02	
89.3	105.01	
89.7	105.01	
89.8	105.04	BKF
97.4	105.07	

2005
2005 Survey

Station	Elevation	Notes
7.2	106.34	
16.68	106.00	
22.41	104.54	
29.79	103.71	BKF
33.07	99.77	
33.33	100.24	
35.12	99.36	
38.02	99.31	
41.5	99.16	
43.72	99.44	
45.33	99.84	
47.22	101.04	
49.5	101.07	
51.47	103.71	
86.19	105.11	

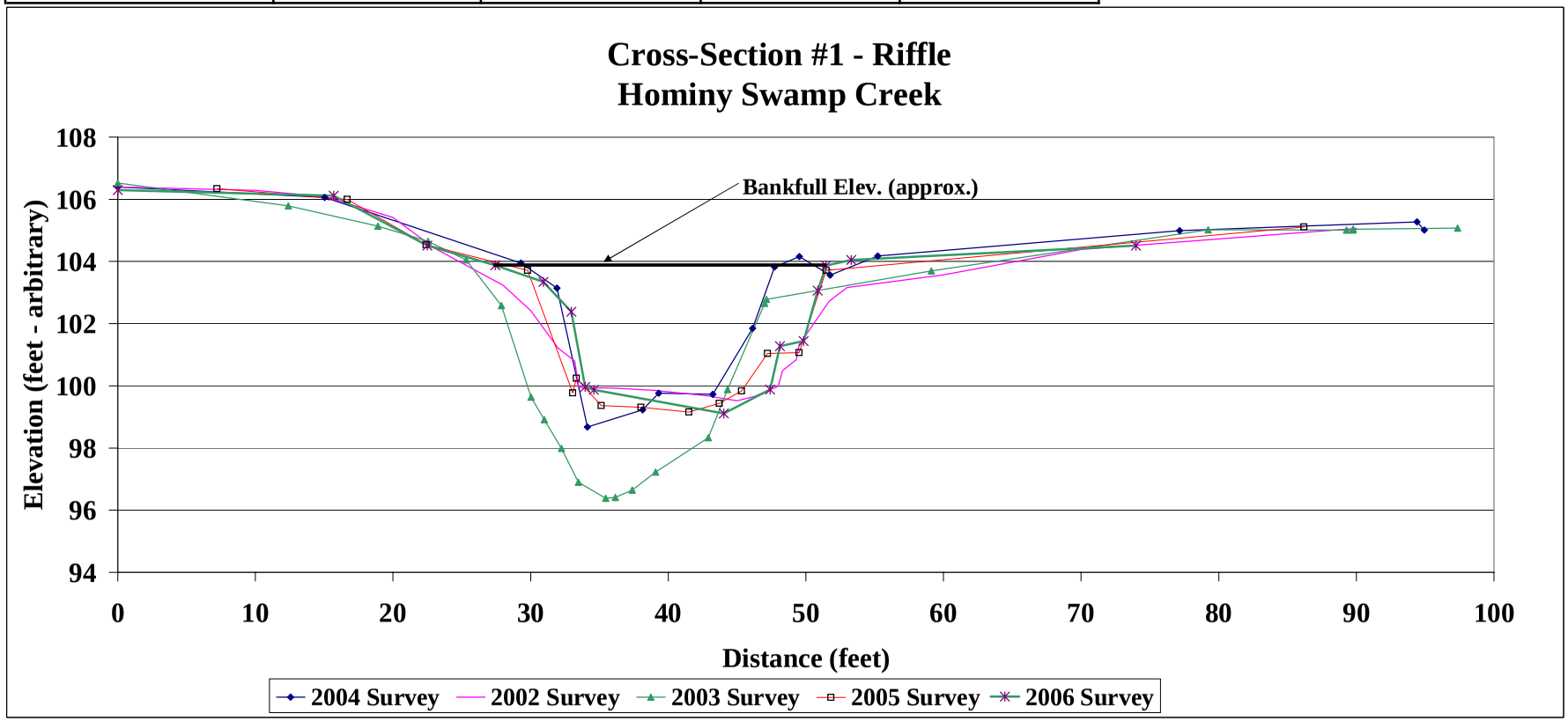
2006
2006 Survey

Station	Elevation	Notes
0.0	106.299	
15.7	106.117	
22.49	104.51	
27.42	103.88	BKF
30.93	103.34	
32.95	102.39	
33.97	99.97	
34.59	99.88	
44.03	99.11	
47.4	99.89	
48.12	101.28	
49.83	101.44	
50.86	103.07	
51.47	103.87	BKF
53.29	104.05	
73.98	104.51	

Cross-Section #1 location was moved in 2003

Photo of Cross-Section #1 - Looking Downstream

	2002	2003	2004	2005	2006
Area	62.3	87.2	52.7	73.9	73.0
Width	25.0	24.6	16.8	21.7	24.1
Mean Depth	2.5	3.5	3.1	3.4	3.0
Max Depth	3.6	6.8	4.9	4.6	4.8

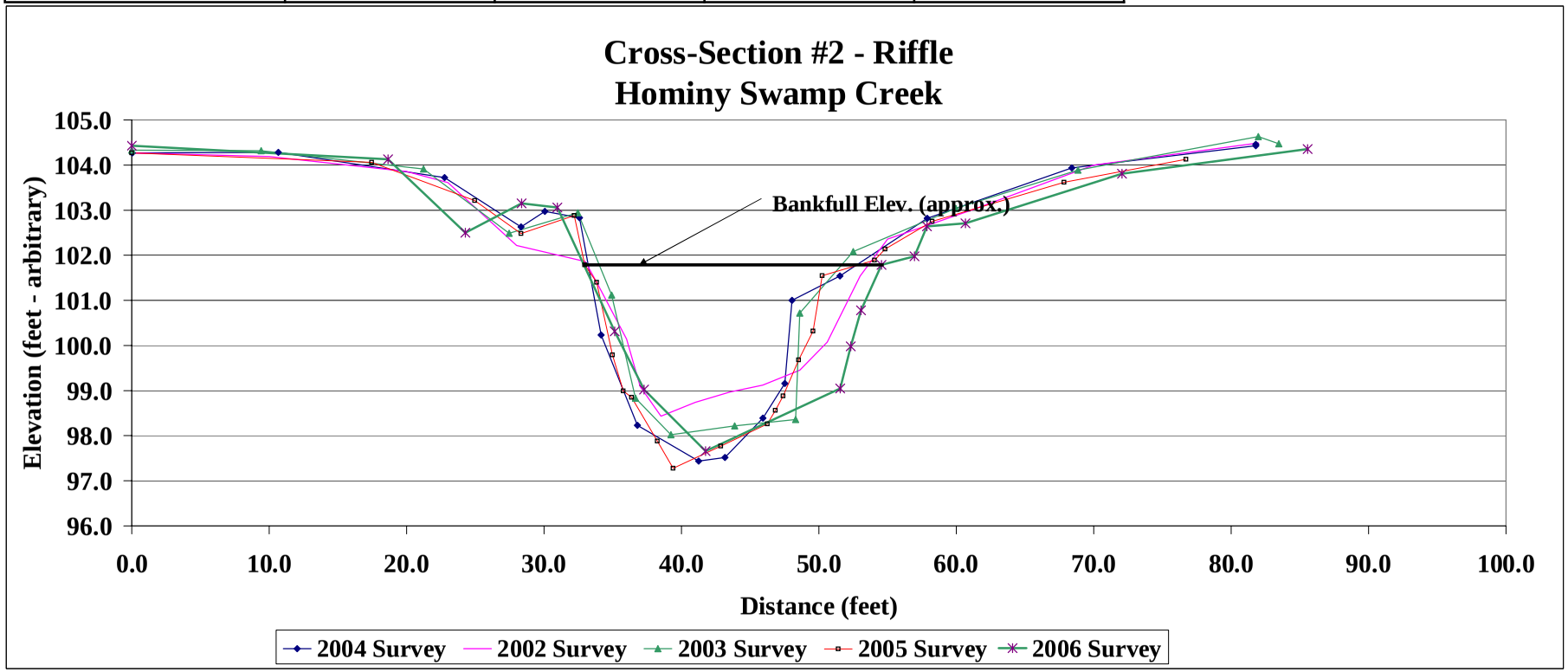


Project Name	Hominy Swamp Creek
Cross Section	#2
Feature	Riffle
Date	4/19/06
Crew	Cook, Stafford

2004 Survey			2002 Survey			2003 Survey			2005 Survey			2006 Survey		
Station	**Elevation**	**Notes**	**Station**	**Elevation**	**Notes**	**Station**	**Elevation**	**Notes**	**Station**	**Elevation**	**Notes**	**Station**	**Elevation**	**Notes**
0.0	104.3		0.0	104.3		0.0	104.3		0.0	104.27		0.0	104.43	
10.7	104.3		10.0	104.2		9.4	104.3		17.5	104.06		18.6	104.13	
22.8	103.7		20.0	103.9		21.2	103.9		25.0	103.21		24.3	102.50	
28.3	102.6	BKF	23.0	103.6		27.5	102.5	BKF	28.3	102.48		28.4	103.15	
30.1	103.0		28.0	102.2	BKF	32.5	102.9		32.2	102.88		31.0	103.06	
32.6	102.8		33.0	101.9		34.9	101.1		33.0	101.79		35.1	100.31	
34.2	100.2		34.0	101.3		36.7	98.8		33.8	101.40		37.3	99.02	
36.8	98.2		36.0	100.1		39.2	98.0		34.98	99.79		41.8	97.66	
41.2	97.4		37.0	99.1		43.9	98.2		35.8	98.99		51.6	99.05	
43.2	97.5		38.5	98.4		48.3	98.4		36.4	98.85		52.31	99.98	
45.9	98.4		41.0	98.7		48.6	100.7		38.3	97.88		53.1	100.78	
47.5	99.2		43.5	99.0		52.5	102.1		39.4	97.28		54.6	101.79	BKF
48.1	101.0		45.9	99.1		60.0	103.0		42.9	97.77		57.0	101.98	
51.5	101.5		48.6	99.5		68.9	103.9		46.2	98.26		57.9	102.64	
57.9	102.8		50.6	100.1		82.0	104.6		46.8	98.56		60.7	102.71	
68.4	103.9		53.0	101.5		83.5	104.5		47.4	98.88		72.1	103.81	
81.8	104.4		55.0	102.4	BKF				48.5	99.68		85.6	104.35	
81.8	104.5		61.0	103.0					49.6	100.32				
			70.0	104.0					50.2	101.55				
			82.0	104.5					54.1	101.89				
									54.8	102.14	BKF			
									58.2	102.75				
									67.9	103.62				
									76.7	104.13				

Photo of Cross-Section #2 - Looking Upstream

	2002	2003	2004	2005	2006
Area	53.1	53.9	59.8	60.7	58.8
Width	21.6	18.3	19.0	22.1	21.7
Mean Depth	2.5	3.0	3.2	2.7	2.7
Max Depth	3.8	4.2	4.8	4.9	4.1

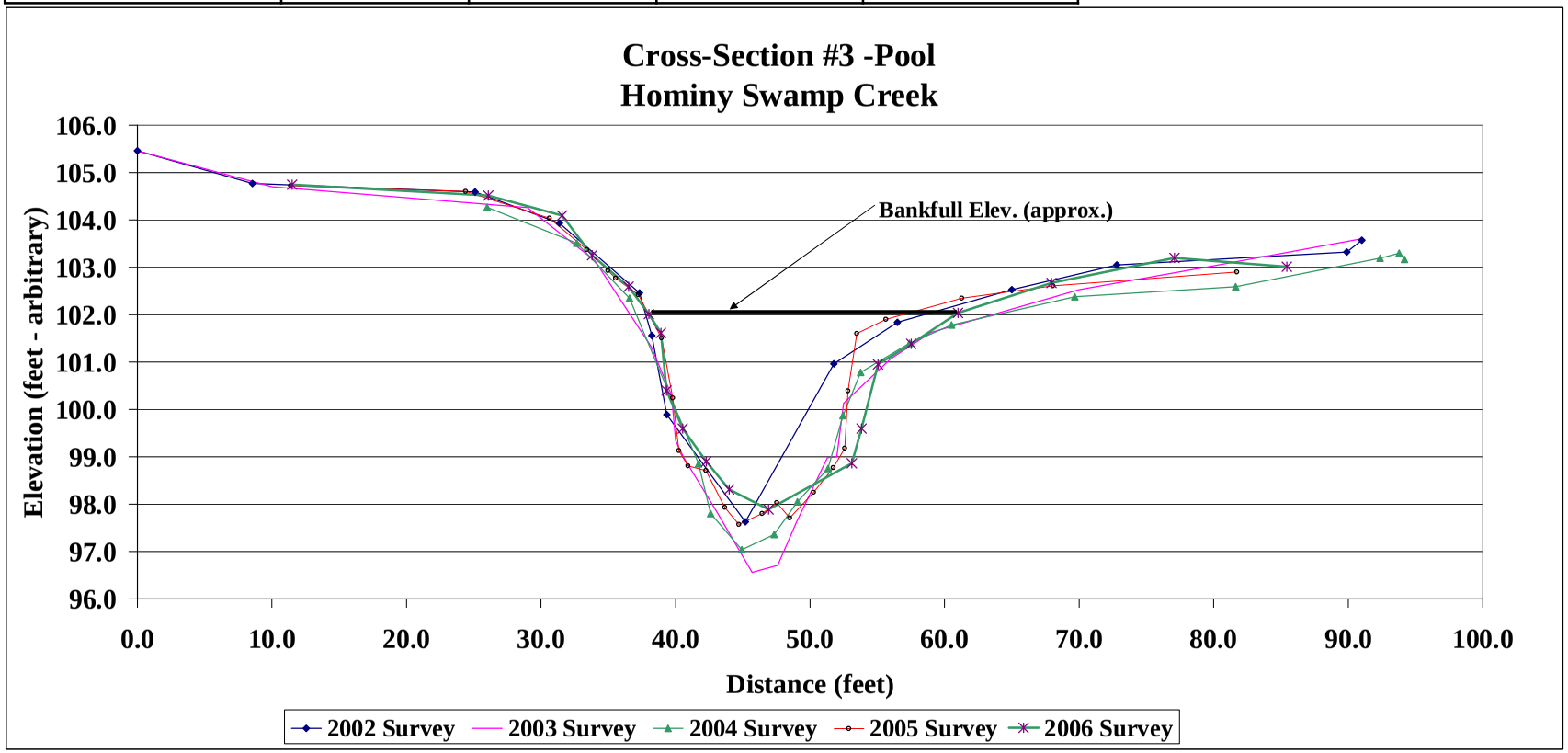


Project Name	Hominy Swamp Creek
Cross Section	#3
Feature	Pool
Date	4/19/06
Crew	Cook, Stafford

2002 Survey			2003 Survey			2004 Survey			2005 Survey			2006 Survey		
Station	**Elv.**	**Notes**	**Station**	**Elv.**	**Notes**	**Station**	**Elv.**	**Notes**	**Station**	**Elv.**	**Notes**	**Station**	**Elv.**	**Notes**
0.0	105.5		0.0	105.5		26.0	104.3		11.4	104.72		11.5	104.7	
8.6	104.8		10.0	104.7		32.7	103.5		24.4	104.6		26.1	104.5	
25.1	104.6		29.0	104.3		36.6	102.4		30.6	104.04		31.6	104.1	
31.4	103.9		34.0	103.1		41.7	98.9		33.4	103.37		33.8	103.3	
37.3	102.5		38.2	101.3		42.6	97.8		35.0	102.93		36.5	102.6	
38.2	101.6		39.7	100.3		44.9	97.0		35.5	102.77		38.0	102.0	BKF
39.4	99.9		40.0	99.3		47.3	97.4		37.2	102.42		38.9	101.6	
45.2	97.6		40.6	99.0		49.1	98.1		38.97	101.51		39.3	100.4	
51.8	101.0		43.0	97.9		51.3	98.8		39.8	100.2		40.5	99.6	
56.5	101.8		45.7	96.6		52.4	99.9		40.3	99.1		42.3	98.9	
65.0	102.5	BKF	47.6	96.7		53.8	100.8		40.9	98.8		44.0	98.3	
72.8	103.1		49.0	97.6		57.4	101.4		42.3	98.7		46.9	97.9	
89.9	103.3		51.3	99.0		60.5	101.8		43.7	97.9		53.11	98.864	
91.0	103.6		52.0	99.0		69.7	102.4		44.7	97.6		53.8	99.594	
			52.5	100.1		81.6	102.6	BKF	46.4	97.8		55.1	100.952	
			56.0	101.1		92.4	103.2		47.5	98.0		57.5	101.383	
			59.0	101.6		93.8	103.3		48.5	97.7		61.0	102.039	BKF
			70.0	102.5	BKF	94.2	103.2		50.3	98.3		68.0	102.668	
			80.0	103.0					51.7	98.8		77.08	103.198	
			91.0	103.6					52.6	99.2		85.45	103.015	
									52.8	100.4				
									53.5	101.6				
									55.6	101.9				
									61.3	102.4	BKF			
									68.1	102.6				
									81.7	102.9				

Photo of Cross-Section #3 - Looking Downstream

	2002	2003	2004	2005	2006
Area	76.3	64.9	54.3	61.8	55.5
Width	31.8	33.1	27.7	24.0	19.5
Mean Depth	2.4	2.0	2.0	2.6	2.8
Max Depth	6.0	5.5	4.9	4.8	4.2

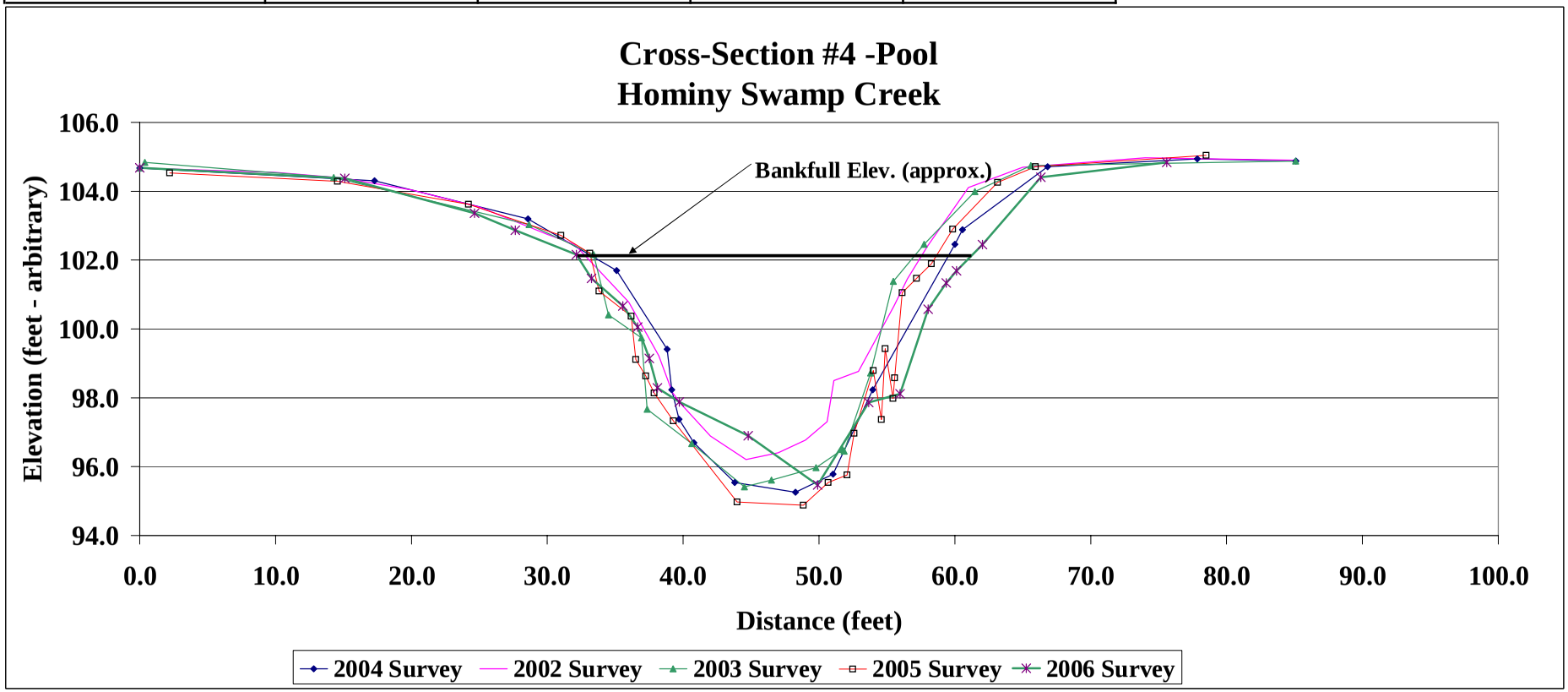


Project Name	Hominy Swamp Creek
Cross Section	#4
Feature	Pool
Date	4/19/06
Crew	Cook, Stafford

2004 Survey			2002 Survey			2003 Survey			2005 Survey			2006 Survey		
Station	**Elevation**	**Notes**	**Station**	**Elevation**	**Notes**	**Station**	**Elevation**	**Notes**	**Station**	**Elevation**	**Notes**	**Station**	**Elevation**	**Notes**
0.0	104.7		0.0	104.7		0.0	104.7		2.2	104.53		0.0	104.7	
17.3	104.3		10.0	104.6		0.4	104.8		14.6	104.29		15.1	104.375	
28.6	103.2		15.0	104.4		14.3	104.4		24.2	103.62		24.6	103.364	
35.1	101.7		20.0	104.0		28.7	103.0		31.01	102.72		27.64	102.864	
38.8	99.4		25.0	103.5		33.4	102.2		33.1	102.2	BKF	32.14	102.163	BKF
39.2	98.2		30.0	102.8		34.5	100.4		33.82	101.1		33.3	101.472	
39.7	97.4		32.0	102.5	BKF	36.9	99.7		36.17	100.37		35.56	100.664	
40.8	96.7		36.0	100.8		37.4	97.7		36.5	99.11		36.65	100.052	
43.8	95.5		38.2	99.2		40.6	96.7		37.3	98.6		37.5	99.141	
48.3	95.3		39.2	98.2		44.5	95.4		37.9	98.1		38.1	98.3	
51.0	95.8		39.8	97.8		46.5	95.6		39.3	97.3		39.7	97.9	
54.0	98.2		42.0	96.9		49.8	96.0		44.0	95.0		44.8	96.9	
60.0	102.5	BKF	44.6	96.2		51.7	96.5		48.8	94.9		49.9	95.5	
60.6	102.9		47.0	96.4		51.9	96.5		50.7	95.5		53.7	97.9	
66.8	104.7		49.0	96.8		53.8	98.7		52.1	95.8		56.0	98.1	
77.8	104.9		50.6	97.3		55.5	101.4		52.6	97.0		58.0	100.6	
85.1	104.9		51.1	98.5		57.7	102.5	BKF	54.0	98.8		59.4	101.3	
			52.9	98.8		61.5	104.0		54.6	97.4		60.1	101.7	
			55.5	100.7		65.6	104.7		54.9	99.4		62.0	102.5	
			56.5	101.5		85.1	104.9		55.5	98.0		66.3	104.4	
			58.0	102.4	BKF				55.6	98.6		75.6	104.8	
			61.0	104.1					56.1	101.1		91.1	104.6	
			65.0	104.7					57.2	101.5				
			74.0	105.0					58.3	101.9				
			85.0	104.9					59.8	102.9				
									63.1	104.3				
									65.9	104.7				
									78.5	105.0				

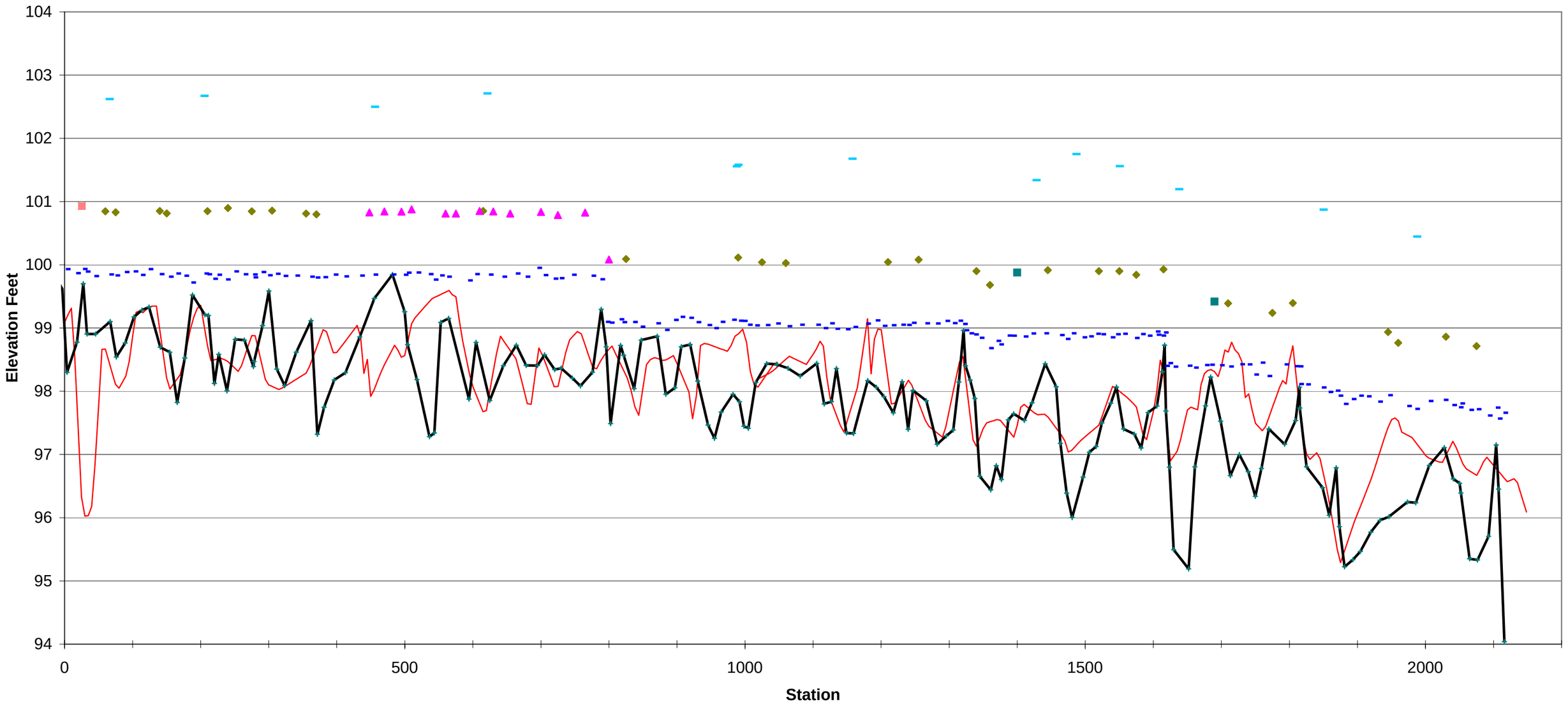
Photo of Cross-Section #4 - Looking Upstream

	2002	2003	2004	2005	2006
Area	88.3	107.5	113.8	119.5	109.0
Width	23.5	26.8	24.9	25.4	23.8
Mean Depth	3.8	4.0	4.6	4.7	4.6
Max Depth	6.0	6.8	7.2	7.3	6.7



B.5 LONGITUDINAL PLOTS AND RAW DATA TABLES

Hominy Swamp 2006 Longitudinal Profile



2006 Survey
Hominy Swamp - EEP Project No. 180

TWG		WS		BKF	
Station	**Elevation**	**Station**	**Elevation**	**Station**	**Elevation**
3.64	98.3	2.90	99.93	66.38	102.62
18.24	98.776	18.05	99.868	205.75	102.671
27.57	99.701	27.94	99.933	456.19	102.499
32.90	98.905	32.16	99.893	621.62	102.709
45.64	98.905	44.69	99.822	988.02	101.557
67.08	99.101	66.66	99.847	990.29	101.58
75.98	98.54	75.72	99.83	1158.10	101.676
89.01	98.762	89.45	99.886	1428.43	101.337
102.13	99.175	102.43	99.895	1487.08	101.751
113.65	99.282	113.14	99.838	1550.78	101.56
124.09	99.332	124.53	99.931	1638.20	101.195
140.65	98.696	140.83	99.852	1850.28	100.872
154.58	98.617	154.26	99.812	1987.85	100.445
165.49	97.821	165.29	99.862		
176.74	98.525	177.00	99.827		
187.93	99.522	187.26	99.72		
206.14	99.21	206.46	99.861		
211.44	99.2	210.96	99.849		
220.27	98.124	219.49	99.777		
226.65	98.584	225.67	99.842		
238.64	98.006	238.27	99.767		
250.77	98.822	250.54	99.896		
264.29	98.81	264.23	99.85		
277.55	98.391	277.86	99.847		
278.43	98.47	278.60	99.8		
290.97	99.039	290.62	99.884		
300.21	99.586	300.07	99.833		
311.70	98.351	311.51	99.857		
323.46	98.089	322.93	99.824		
340.54	98.618	340.31	99.829		
362.17	99.117	362.03	99.81		
371.39	97.321	370.15	99.798		
381.39	97.748	381.54	99.802		
396.27	98.178	396.57	99.844		
412.58	98.293	412.26	99.816		
433.83	98.856	435.35	99.829		
455.31	99.469	455.15	99.843		
481.77	99.846	481.77	99.846		
499.70	99.258	499.49	99.842		
504.15	98.737	504.14	99.875		
517.70	98.185	518.30	99.877		
536.34	97.282	536.19	99.851		
543.43	97.34	543.65	99.765		
552.78	99.09	552.91	99.832		
564.35	99.153	563.33	99.811		
594.32	97.876	594.11	99.753		
604.80	98.773	604.44	99.851		
624.74	97.852	624.57	99.844		
645.04	98.405	644.47	99.811		
663.78	98.726	664.18	99.861		
678.33	98.408	678.46	99.811		
694.98	98.405	695.76	99.95		

705.40	98.577	705.18	99.837		
720.13	98.342	719.68	99.78		
729.67	98.364	728.80	99.787		
746.34	98.206	746.82	99.842		
758.16	98.085	775.40	99.825		
775.93	98.301	788.45	99.77		
788.57	99.296	796.46	99.096		
796.03	98.701	802.46	99.084		
802.34	97.489	816.52	99.138		
816.97	98.724	820.81	99.092		
821.45	98.568	836.41	99.094		
836.95	98.042	847.71	99.021		
847.42	98.809	870.49	99.073		
870.94	98.87	883.31	98.97		
883.53	97.951	896.71	99.127		
896.88	98.053	906.31	99.175		
906.44	98.703	919.11	99.16		
919.27	98.74	929.78	99.091		
930.54	98.162	945.89	99.046		
945.63	97.465	955.78	98.997		
955.08	97.257	965.34	99.097		
964.93	97.671	982.09	99.129		
982.37	97.953	991.98	99.114		
991.76	97.836	997.86	99.111		
998.42	97.446	1005.39	99.05		
1004.84	97.414	1015.89	99.041		
1015.71	98.139	1031.64	99.047		
1031.93	98.436	1046.71	99.072		
1046.52	98.426	1063.54	99.027		
1063.35	98.362	1081.92	99.051		
1081.17	98.239	1105.57	99.052		
1105.49	98.442	1116.53	98.997		
1116.26	97.8	1126.04	99.075		
1126.99	97.838	1133.77	98.987		
1134.24	98.361	1149.20	98.979		
1148.99	97.34	1160.37	99.015		
1159.42	97.333	1179.05	99.069		
1180.15	98.169	1192.93	99.121		
1192.96	98.061	1203.43	99.034		
1204.11	97.913	1216.71	99.044		
1217.87	97.66	1230.73	99.05		
1230.83	98.15	1239.17	99.049		
1239.73	97.398	1246.26	99.081		
1246.78	98.012	1265.86	99.075		
1266.55	97.849	1281.70	99.072		
1282.35	97.162	1295.67	99.113		
1295.87	97.293	1306.39	99.077		
1306.07	97.385	1314.75	99.115		
1314.18	98.147	1321.47	99.065		
1321.23	98.964	1323.64	98.965		
1323.87	98.403	1330.84	98.917		
1330.93	98.177	1337.76	98.899		
1337.68	97.887	1345.94	98.845		
1345.07	96.654	1359.70	98.682		
1361.07	96.441	1370.64	98.795		
1369.19	96.822	1374.67	98.74		
1376.81	96.603	1386.99	98.881		
1386.99	97.548	1393.55	98.878		

1394.78	97.643	1410.54	98.865		
1410.28	97.54	1422.06	98.913		
1421.69	97.816	1441.00	98.916		
1441.19	98.433	1457.68	89.891		
1457.17	98.073	1463.94	98.889		
1463.44	97.178	1472.39	98.827		
1472.73	96.389	1481.17	98.916		
1480.83	96.001	1497.08	98.852		
1496.75	96.642	1506.82	98.867		
1506.16	97.037	1517.22	98.908		
1515.89	97.127	1524.69	98.9		
1524.49	97.502	1538.37	98.853		
1537.49	97.811	1546.34	98.901		
1545.79	98.067	1556.67	98.909		
1556.23	97.404	1574.00	98.841		
1572.21	97.323	1583.07	98.903		
1581.97	97.102	1593.03	98.878		
1592.53	97.665	1604.77	98.945		
1605.25	97.765	1605.94	98.894		
1613.40	98.308	1613.15	98.881		
1616.62	98.731	1616.69	98.928		
1618.55	97.687	1618.42	98.402		
1623.82	96.8	1623.16	98.443		
1629.98	95.494	1630.81	98.387		
1651.97	95.19	1651.67	98.404		
1661.02	96.804	1660.92	98.374		
1676.79	97.769	1676.98	98.414		
1684.37	98.224	1684.66	98.419		
1698.96	97.526	1699.12	98.412		
1713.21	96.665	1712.51	98.391		
1726.58	96.998	1728.94	98.427		
1739.46	96.728	1739.69	98.423		
1749.86	96.339	1749.33	98.264		
1758.80	96.779	1758.82	98.451		
1769.77	97.403	1768.95	98.239		
1792.96	97.162	1793.88	98.425		
1809.03	97.537	1809.12	98.396		
1814.88	98.064	1814.90	98.393		
1815.26	97.735	1815.46	98.113		
1825.26	96.804	1825.72	98.107		
1848.67	96.476	1848.68	98.059		
1858.70	96.038	1858.53	97.987		
1868.76	96.79	1869.20	98.009		
1873.49	95.859	1873.15	97.928		
1881.02	95.223	1881.09	97.799		
1893.40	95.337	1892.68	97.876		
1904.23	95.467	1903.54	97.929		
1919.75	95.771	1914.88	97.919		
1933.12	95.957	1931.61	97.834		
1946.45	96.018	1946.21	97.936		
1973.40	96.248	1974.18	97.766		
1985.64	96.237	1985.86	97.721		
2005.58	96.827	2005.92	97.844		
2027.68	97.109	2027.85	97.863		
2040.95	96.614	2040.47	97.782		
2050.22	96.544	2050.09	97.746		
2051.92	96.391	2052.30	97.808		
2064.86	95.351	2065.62	97.705		

2076.39	95.331	2076.45	97.714		
2092.83	95.705	2092.65	97.615		
2103.89	97.151	2104.25	97.741		
2107.54	96.452	2107.54	97.566		
2116.04	94.039	2115.41	97.659		

B.6 PEBBLE COUNT PLOTS AND RAW DATA TABLES

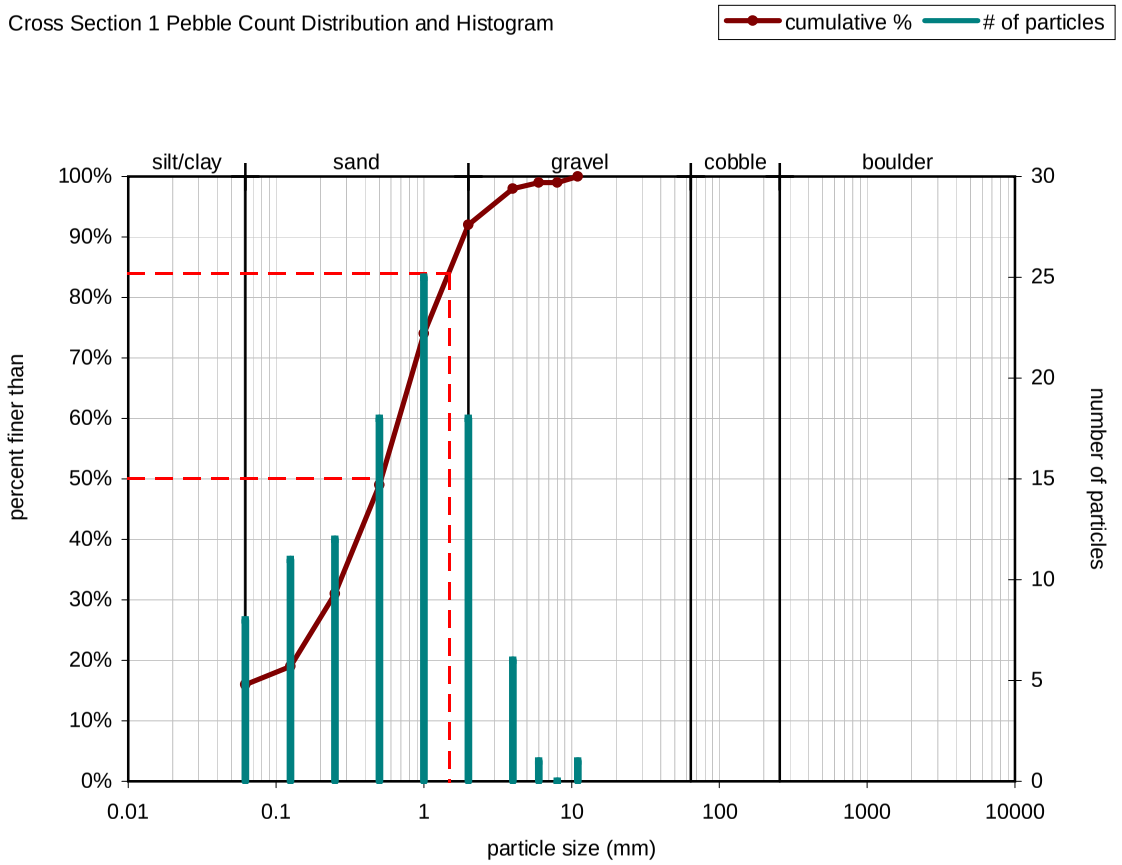
Year 5 Monitoring, Pebble Count Cross Section 1 Riffle

Hominy Swamp Creek Stream Restoration Project — Pebble Count Data Sheet
Project No: D050515 — Cross Section 1
11/1/2006 — Station 15+60

Materia	Size Range (mm)	Count	% Range	%Cum.
silt/clay	0 - 0.062	8	8%	18%
very fine sand	0.062 - 0.125	11	11%	24%
fine sand	0.125 - 0.25	12	12%	36%
medium sand	0.25 - 0.5	18	18%	54%
coarse sand	0.5 - 1	25	25%	79%
very coarse sand	1 - 2	18	18%	97%
very fine gravel	2 - 4	6	6%	98%
fine gravel	4 - 6	1	1%	99%
fine gravel	6 - 8	0	0%	99%
medium gravel	8 - 11	1	1%	100%
medium gravel	11 - 16		0%	100%
coarse gravel	16 - 22		0%	100%
coarse gravel	22 - 32		0%	100%
very coarse gravel	32 - 45		0%	100%
very coarse gravel	45 - 64		0%	100%
small cobble	64 - 90		0%	100%
medium cobble	90 - 128		0%	100%
large cobble	128 - 180		0%	100%
very large cobble	180 - 256		0%	100%
small boulder	256 - 362		0%	100%
small boulder	362 - 512		0%	100%
medium boulder	512 - 1024		0%	100%
large boulder	1024 - 2048		0%	100%
very large boulder	2048 - 4096		0%	100%
total particle count:		100	100%	

bedrock	
clay hardpan	
detritus/wood	
artificial	
total count:	100

Note: Cross-X1



Size (mm)	
D16	0.062
D35	0.29
D50	0.51
D65	0.78
D84	1.5
D95	2.8

Size Distribution	
mean	0.3
dispersion	5.6
skewness	-0.19

Type	
silt/clay	8%
sand	84%
gravel	8%
cobble	0%
boulder	0%

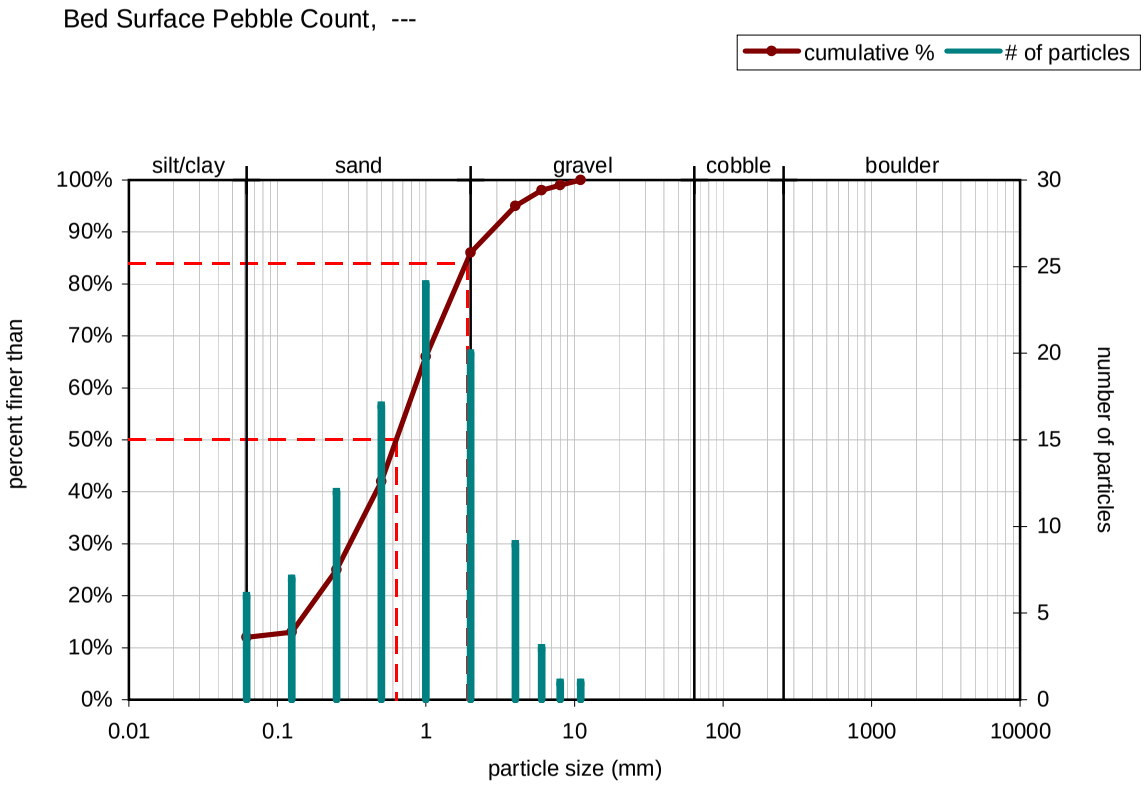
Year 5 Monitoring, Pebble Count Cross Section 2 Riffle

Hominy Swamp Creek Stream Restoration Project — Pebble Count Data Sheet
Project No: D050515 — Cross Section 2
11/1/2006 — Station 14+41

Materia	Size Range (mm)		Count	% Range	%Cum.
silt/clay	0	- 0.062	6	6%	13%
very fine sand	0.062	- 0.125	7	7%	14%
fine sand	0.125	- 0.25	12	12%	26%
medium sand	0.25	- 0.5	17	17%	43%
coarse sand	0.5	- 1	24	24%	67%
very coarse sand	1	- 2	20	20%	87%
very fine gravel	2	- 4	9	9%	97%
fine gravel	4	- 6	3	3%	98%
fine gravel	6	- 8	1	1%	99%
medium gravel	8	- 11	1	1%	100%
medium gravel	11	- 16		0%	100%
coarse gravel	16	- 22		0%	100%
coarse gravel	22	- 32		0%	100%
very coarse gravel	32	- 45		0%	100%
very coarse gravel	45	- 64		0%	100%
small cobble	64	- 90		0%	100%
medium cobble	90	- 128		0%	100%
large cobble	128	- 180		0%	100%
very large cobble	180	- 256		0%	100%
small boulder	256	- 362		0%	100%
small boulder	362	- 512		0%	100%
medium boulder	512	- 1024		0%	100%
large boulder	1024	- 2048		0%	100%
very large boulder	2048	- 4096		0%	100%
total particle count:			100	100%	

bedrock	----------
clay hardpan	----------
detritus/wood	----------
artificial	----------
total count:	100

Note: Cross-X2



Size (mm)	
D16	0.15
D35	0.38
D50	0.63
D65	0.97
D84	1.9
D95	4

Size Distribution	
mean	0.5
dispersion	3.6
skewness	-0.07

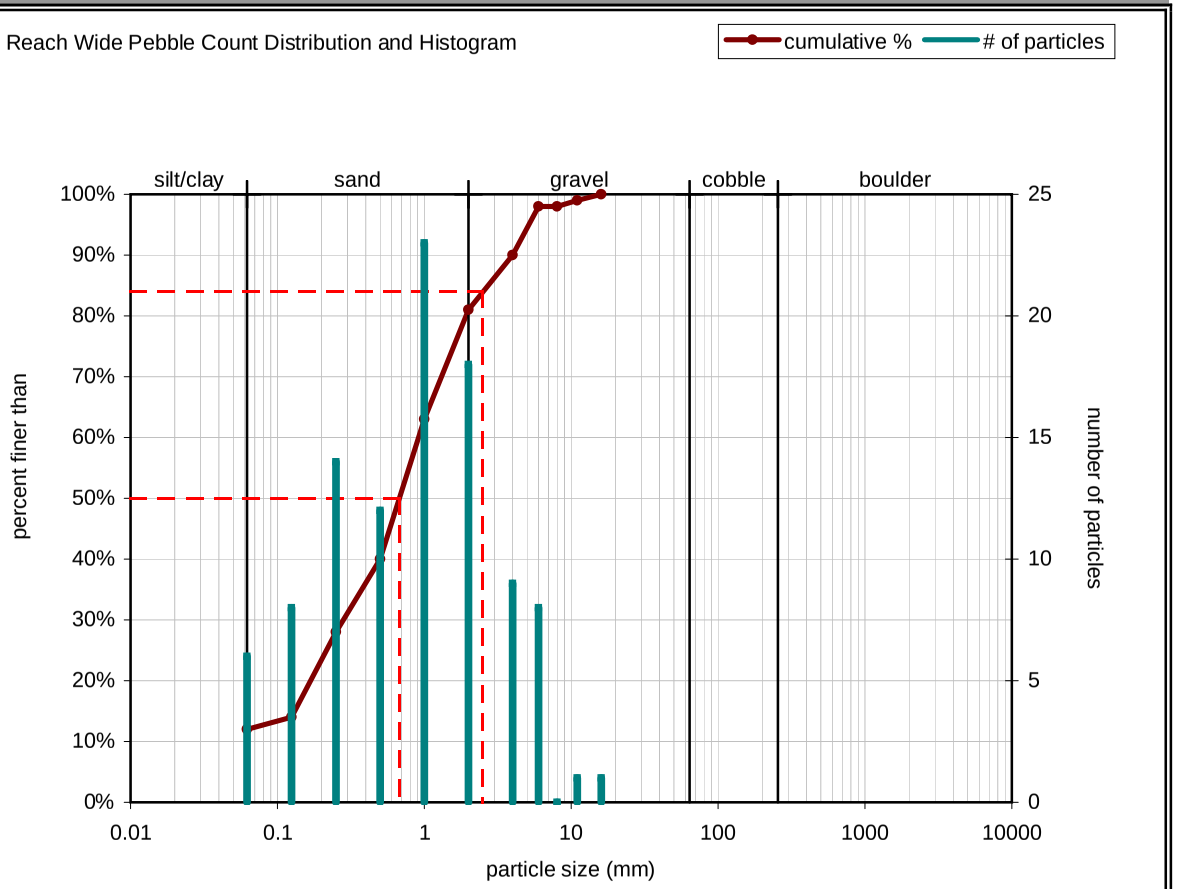
Type	
silt/clay	6%
sand	80%
gravel	14%
cobble	0%
boulder	0%

Year 5 Monitoring, Pebble Count Reach Wide

Hominy Swamp Creek Stream Restoration Project — Pebble Count Data Sheet
Project No: D050515 — Reach Wide Pebble Count
11/1/2006

Materia	Size Range (mm)		Count	% Range	%Cum.
silt/clay	0	- 0.062	6	6%	13%
very fine sand	0.062	- 0.125	8	8%	18%
fine sand	0.125	- 0.25	14	14%	32%
medium sand	0.25	- 0.5	12	12%	44%
coarse sand	0.5	- 1	23	23%	67%
very coarse sand	1	- 2	18	18%	85%
very fine gravel	2	- 4	9	9%	94%
fine gravel	4	- 6	8	8%	99%
fine gravel	6	- 8	0	0%	99%
medium gravel	8	- 11	1	1%	99%
medium gravel	11	- 16	1	1%	100%
coarse gravel	16	- 22		0%	100%
coarse gravel	22	- 32		0%	100%
very coarse gravel	32	- 45		0%	100%
very coarse gravel	45	- 64		0%	100%
small cobble	64	- 90		0%	100%
medium cobble	90	- 128		0%	100%
large cobble	128	- 180		0%	100%
very large cobble	180	- 256		0%	100%
small boulder	256	- 362		0%	100%
small boulder	362	- 512		0%	100%
medium boulder	512	- 1024		0%	100%
large boulder	1024	- 2048		0%	100%
very large boulder	2048	- 4096		0%	100%
total particle count:			100	100%	
bedrock	----------				
clay hardpan	----------				
detritus/wood	----------				
artificial	----------				
total count:			100		

Note: Reach Wide



Size (mm)	
D16	0.14
D35	0.37
D50	0.68
D65	1.1
D84	2.5
D95	5.2

Size Distribution	
mean	0.6
dispersion	4.3
skewness	-0.05

Type	
silt/clay	6%
sand	75%
gravel	19%
cobble	0%
boulder	0%

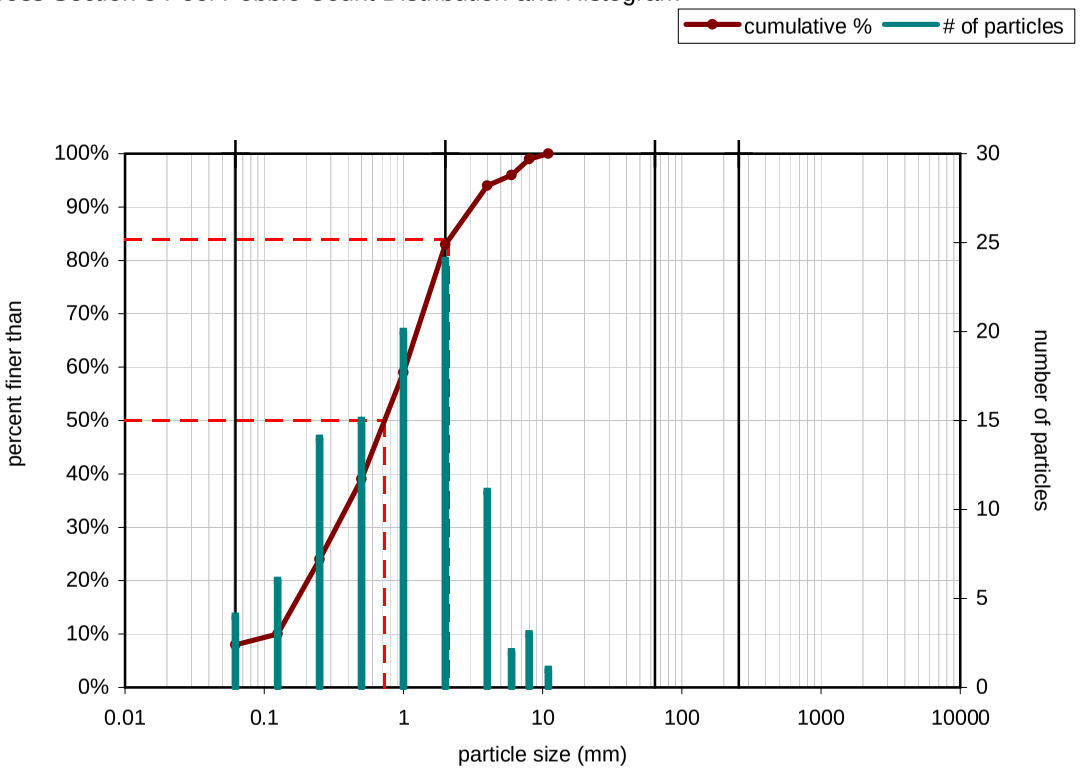
Year 4 Monitoring, Pebble Count Cross Section 2 Riffle

Hominy Swamp Creek Stream Restoration Project — Pebble Count Data Sheet
Project No: D050515 — Cross Section 3
12/1/2005 — Station 14+41

Materia	Size Range (mm)		Count	% Range	%Cum.
silt/clay	0	- 0.062	4	4%	9%
very fine sand	0.062	- 0.125	6	6%	14%
fine sand	0.125	- 0.25	14	14%	28%
medium sand	0.25	- 0.5	15	15%	43%
coarse sand	0.5	- 1	20	20%	63%
very coarse sand	1	- 2	24	24%	87%
very fine gravel	2	- 4	11	11%	98%
fine gravel	4	- 6	2	2%	99%
fine gravel	6	- 8	3	3%	99%
medium gravel	8	- 11	1	1%	99%
medium gravel	11	- 16		0%	100%
coarse gravel	16	- 22		0%	100%
coarse gravel	22	- 32		0%	100%
very coarse gravel	32	- 45		0%	100%
very coarse gravel	45	- 64		0%	100%
small cobble	64	- 90		0%	100%
medium cobble	90	- 128		0%	100%
large cobble	128	- 180		0%	100%
very large cobble	180	- 256		0%	100%
small boulder	256	- 362		0%	100%
small boulder	362	- 512		0%	100%
medium boulder	512	- 1024		0%	100%
large boulder	1024	- 2048		0%	100%
very large boulder	2048	- 4096		0%	100%
total particle count:			100	100%	
bedrock	----------				
clay hardpan	----------				
detritus/wood	----------				
artificial	----------				
total count:			100		

Note: Cross-X2

Cross Section 3 Pool Pebble Count Distribution and Histogram



Size (mm)	
D16	0.17
D35	0.42
D50	0.73
D65	1.2
D84	2.1
D95	4.9

Size Distribution	
mean	0.6
dispersion	3.6
skewness	-0.08

Type	
silt/clay	4%
sand	79%
gravel	17%
cobble	0%
boulder	0%

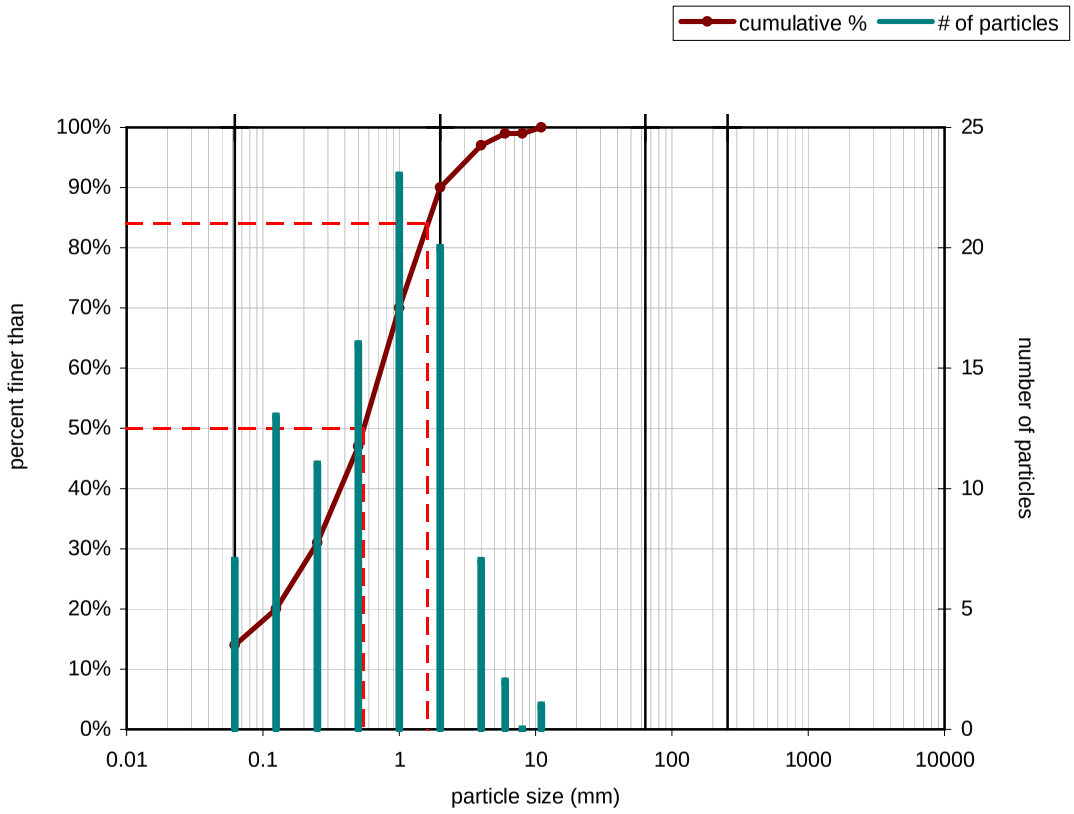
Year 4 Monitoring, Pebble Count Cross Section 1 Riffle

Hominy Swamp Creek Stream Restoration Project — Pebble Count Data Sheet
Project No: D050515 — Cross Section 1
12/1/2005 — Station 15+60

Materia	Size Range (mm)		Count	% Range	%Cum.
silt/clay	0	- 0.062	7	7%	14%
very fine sand	0.062	- 0.125	13	13%	20%
fine sand	0.125	- 0.25	11	11%	31%
medium sand	0.25	- 0.5	16	16%	47%
coarse sand	0.5	- 1	23	23%	70%
very coarse sand	1	- 2	20	20%	90%
very fine gravel	2	- 4	7	7%	97%
fine gravel	4	- 6	2	2%	99%
fine gravel	6	- 8	0	0%	99%
medium gravel	8	- 11	1	1%	100%
medium gravel	11	- 16		0%	100%
coarse gravel	16	- 22		0%	100%
coarse gravel	22	- 32		0%	100%
very coarse gravel	32	- 45		0%	100%
very coarse gravel	45	- 64		0%	100%
small cobble	64	- 90		0%	100%
medium cobble	90	- 128		0%	100%
large cobble	128	- 180		0%	100%
very large cobble	180	- 256		0%	100%
small boulder	256	- 362		0%	100%
small boulder	362	- 512		0%	100%
medium boulder	512	- 1024		0%	100%
large boulder	1024	- 2048		0%	100%
very large boulder	2048	- 4096		0%	100%
total particle count:			100	100%	
bedrock					
clay hardpan					
detritus/wood					
artificial					
total count:			100		

Note: Cross-X1

Cross Section 1 Riffle Pebble Count Distribution and Histogram



Size (mm)	
D16	0.078
D35	0.3
D50	0.55
D65	0.86
D84	1.6
D95	3.3

Size Distribution	
mean	0.4
dispersion	5.0
skewness	-0.17

Type	
silt/clay	7%
sand	83%
gravel	10%
cobble	0%
boulder	0%

Year 4 Monitoring, Pebble Count Reach Wide

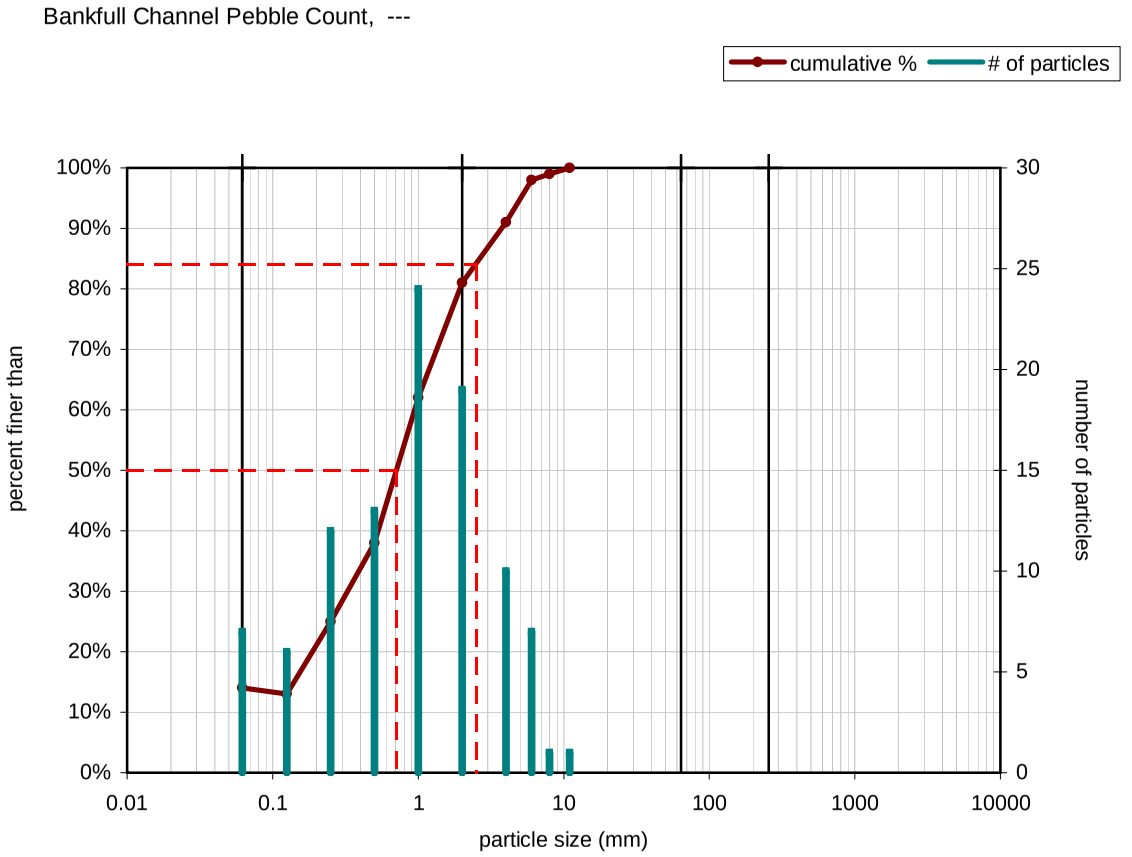
Hominy Swamp Creek Stream Restoration Project — Pebble Count Data Sheet
Project No: D050515 — Reach Wide Pebble Count
12/1/2005

Materia	Size Range (mm)		Count	% Range	%Cum.
silt/clay	0	- 0.062	7	7%	14%
very fine sand	0.062	- 0.125	6	6%	20%
fine sand	0.125	- 0.25	12	12%	31%
medium sand	0.25	- 0.5	13	13%	47%
coarse sand	0.5	- 1	24	24%	70%
very coarse sand	1	- 2	19	19%	90%
very fine gravel	2	- 4	10	10%	97%
fine gravel	4	- 6	7	7%	99%
fine gravel	6	- 8	1	1%	99%
medium gravel	8	- 11	1	1%	100%
medium gravel	11	- 16		0%	100%
coarse gravel	16	- 22		0%	100%
coarse gravel	22	- 32		0%	100%
very coarse gravel	32	- 45		0%	100%
very coarse gravel	45	- 64		0%	100%
small cobble	64	- 90		0%	100%
medium cobble	90	- 128		0%	100%
large cobble	128	- 180		0%	100%
very large cobble	180	- 256		0%	100%
small boulder	256	- 362		0%	100%
small boulder	362	- 512		0%	100%
medium boulder	512	- 1024		0%	100%
large boulder	1024	- 2048		0%	100%
very large boulder	2048	- 4096		0%	100%
total particle count:			100	100%	

bedrock	----------
clay hardpan	----------
detritus/wood	----------
artificial	----------

total count: 100

Note: Reach Wide



Size (mm)	
D16	0.15
D35	0.43
D50	0.71
D65	1.1
D84	2.5
D95	5

Size Distribution	
mean	0.6
dispersion	4.1
skewness	-0.06

Type	
silt/clay	7%
sand	74%
gravel	19%
cobble	0%
boulder	0%

B.7 Table B.1 Categorical Stream Feature Visual Stability Assessment

Table B1. Visual Morphological Stability Assessment Project No. 180 (Hominy Swamp Creek)						
Feature Category	Metric (per As-built and reference baselines)	(# Stable) Number Performing as Intended	Total number per As-built	Total Number /feet in unstable state	% Perform in Stable Condition	Feature Perform. Mean or Total
A. Riffles	1. Present?	2	6	NA	33	
	2. Armor stable(e.g. no displacement)?	2	6	NA	33	
	3. Facet grade appears stable?	2	6	NA	33	
	4. Minimal evidence of embedding/fining?	2	6	NA	33	
	5. Length appropriate?	2	6	NA	33	33%
B. Pools	1. Present? (e.g. not subject to severe aggradation or migration?	NA*	NA*	NA*	NA*	
	2. Sufficiently deep (Max Pool D:Mean Bkf>1.6)	NA*	NA*	NA*	NA*	
	3. Length Appropriate?	NA*	NA*	NA*	NA*	NA*
C. Thalweg	1. Upstream of meander bend (run/inflection) centering?	12	20	NA	60	
	2. Downstream of meander (glide/inflection) centering?	12	20	NA	60	60%
D. Meanders	1. Outer bend in state of limited/controlled erosion?	11	20	NA	55	
	2. Of those eroding, # w/concomitant point bar formation?	2	9	NA	22	
	3. Apparent Rc within spec?	20	20	NA	100	
	4. Sufficient floodplain access and relief?	18	20	NA	90	67%
E. Bed General	1. General channel bed aggradation areas (bar formation)	NA	NA	5/85	NA	96%
	2. Channel bed degradation-areas of increasing downcutting or head cutting?	NA	NA	0	NA	NA
F. Vanes	1. Free of back or arm scour?	25	31	NA	81	
	2. Height appropriate?	28	31	NA	90	
	3. Angle and geometry appear appropriate?	28	31	NA	90	
	4. Free of piping or other structural failures?	31	31	NA	100	90%
G. Wads/Boulders	1. Free of scour?	11	13	NA	85	
	2. Footing stable?	13	13	NA	100	93%

**It is not clear in the as-built plans the total number of constructed pools. The channel is comprised mostly of pool sections, holding grade, and performing adequately.*

APPENDIX C – ADDITIONAL SITE PHOTOS

C.1 BEAVER INFESTATION PHOTOS

Hominy Swamp Beaver Damage Photos

Beaver Damage Photo 1

Beaver Damage Photo 2.

Beaver Damage Photo 3.

Beaver Damage Photo 4.

Beaver Damage Photo 5.

Beaver Damage Photo 6.