

Shepherds Tree Stream and Wetland Restoration

Project No. 333

2006 Monitoring Report: Year 2 of 5



March 2007

Submitted to: NCDENR-EEP
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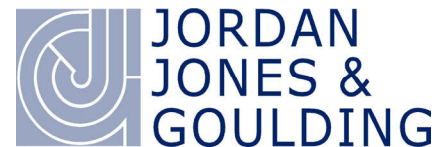


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EXECUTIVE SUMMARY

Executive Summary

The Shepherds Tree stream and wetland restoration site is located in Iredell County and is a mitigation project for the North Carolina Department of Transportation (NCDOT). The main goal of the Shepherds Tree stream and wetland restoration project was to re-establish an integrated wetland-stream complex which existed on the site before it was disturbed. This wetland-stream complex was proposed to restore ecosystem processes, structure, and composition to mitigate for wetland functions and values that have been lost as a result of human induced disturbances in the Yadkin River Basin. The proposed mitigation plan included stream, wetland and riparian restoration components.

The goals of the project were to establish the following:

1. Restoring approximately 9,900 linear feet of perennial stream which is a tributary to Third Creek.
2. Restore 800 linear feet of intermittent stream that is a tributary to the perennial stream.
3. Restore 91 acres of forested wetland.
4. Restore 5 acres of emergent wetland.

The majority of the stream construction consisted of relocating the stream channel (Priority 1) and constructing an E channel at the elevation of the historic floodplain. The reach was enhanced using vegetation and bank stabilization structures, such as single arm vanes, cross-vanes, J-hooks, and root wads. A sinuous, stable pattern, with riffle-pool bedform was constructed. Cross-vanes and J-hooks were installed to provide bank stabilization, habitat, and maintain grade control. Wetland restoration consisted of plugging and filling agricultural ditches and planting vegetation. Riparian areas were planted with native bare root seedlings and herbaceous cover to enhance the riparian areas, improve habitat, and stabilize streambanks.

Beaver activity had developed over the 2006 growing season and several dams were constructed, creating areas of inundation. The EEPs beaver management contractor, the United States Department of Agriculture (APHIS unit), was detailed to remove the beaver and the dams. The conditions at the site are apparently very attractive to beaver as the contractor was forced to make many site visits. Full removal was reported to the EEP by USDA in October 2006, permitting the completion of monitoring activities, but remnant impacts were still evident. Renewed beaver activity has been observed in early 2007, and the USDA was tasked by the EEP with another removal effort in February 2007.

Despite the beaver activity, the site appears relatively stable, but the channel characteristics are likely not what were proposed. The majority of project conditions reflect the as-built drawings. The pattern and profile of the restored channel appear stable, but the desired bed features (riffle, run, pool, and glide) of the profile have been affected by the backwater resulting in a continuous, stagnant run. The beaver activity has also negatively affected the flow and flooding dynamics of the channel.

In areas upstream of the beaver impoundments, structures are inundated, flow velocities are low, and typical channel flow is at the bankfull level or higher. Channel particle size throughout the stream is silt due to deposition. In-stream channel vegetation is also developing which also leads to backwater and inundation. In the areas downstream of the beaver activity, low flow conditions exist, which is likely due to the reduced hydrology as a result of the beaver impoundments upstream.

Approximately 91 acres of the site were planted with various native hardwood tree and shrub species for the Shepherds Tree wetland restoration. During the 2006 monitoring conducted by JIG, there were fourteen vegetative plots identified and monitored. Review of the stem count data indicates an average of 29 stems per monitoring plot. This number includes the four additional monitoring plots that were counted by JIG in May 2006. The overall stem density per acre resulted in approximately 580 stems; therefore, exceeding the required density of 320 stems/per acre for the 2nd year of five monitoring periods.

Eighteen groundwater monitoring gauges, one rain gauge, and three surface flow gauges are located on site. With the exception of gauges 2 and 5, all gauges did meet the success criteria for wetland hydrology. In total, 16 of 18 gauges met the success criteria. The overall success of the groundwater gauges in 2006 considerably improved from the previous 2005 monitoring report. In 2005, only 8 of 16 reported gauges met the success criteria. At this time, some areas have drained, while other areas have become more saturated.

This report serves as the 2nd year of the 5-year monitoring plan for the Shepherds Tree stream and wetland restoration site. Based on vegetation and monitoring gauge results, the site has met wetland success criteria for 2006. Due to the beaver activity and variability of the site conditions, stream flow dynamics were variable, but the stream is stable. Shepherds Tree restoration site has met mitigation goals for Monitoring Year 2. If beaver activity is totally eliminated from the site, it is possible that the designed conditions could be further achieved with some maintenance.

SECTION I

Project Background

SECTION I

Project Background

The project background information provided in the following sections summarizes the project location and settings, mitigation structure and objectives, history and background and the monitoring plan view. The Shepherds Tree mitigation plan (State Project No. 6.769001t) submitted by the NCDOT was used as a reference for the information provided in the project background.

Location and Setting

The Shepherds Tree stream and wetland restoration site is located in Iredell County, southeast of Statesville between Triplett Road (SR 2362) and Knox Farm Road (SR 2363) (Figure I). The Shepherds Tree stream is a first order tributary of Third Creek, located within the Yadkin River watershed (HUC 03040102). The site drains approximately 1.06 square miles (Figure I), occupying approximately 160 acres within the 2, 10 and 100 year floodplain of Third Creek.

To access site from Interstate 77, take exit 49A, Route 70, heading east. Drive approximately 6.0 miles to Triplett Road and turn right. Drive approximately 1.5 miles, at which point, look for a gravel parking spot on left just before Cornflower Road. The restoration project is located where Triplett Road crosses the stream.

Mitigation Structure and Objectives

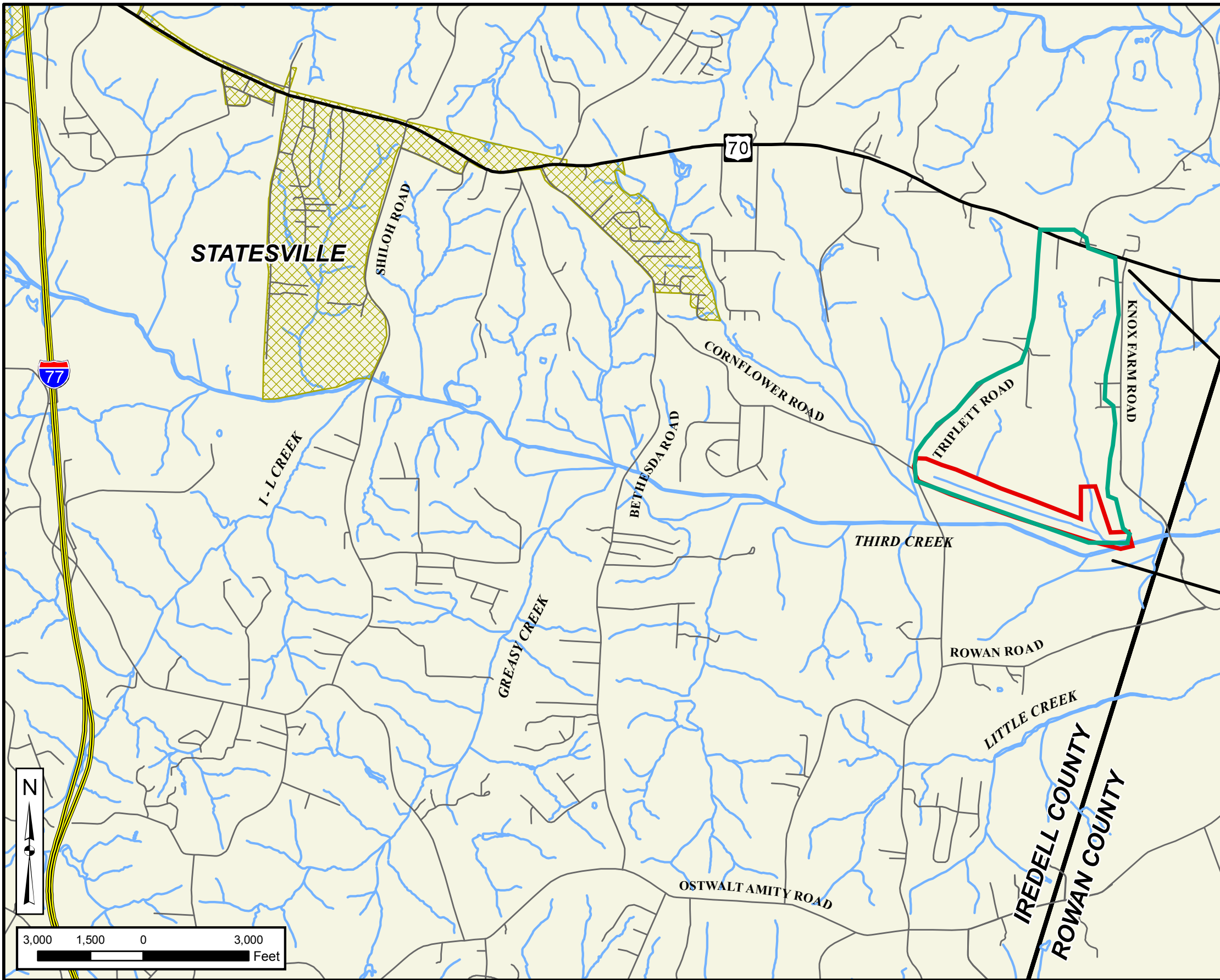
The Shepherds Tree stream and wetland mitigation site was developed as a NCDOT project. The restoration site is located within the northeastern Piedmont region of the Catawba River Basin (HUC 3050101). Historically, the site was utilized for agricultural activities and improvement projects through the Civilian Conservation Corps, resulting in the re-alignment, ditching and berming of Third Creek. Adjacent floodplains and streams were also cleared, drained, and ditched. These activities are thought to have inhibited stream and wetland functional stability within the site, resulting in a degraded riparian community.

The goal of the Shepherds Tree mitigation project was to re-establish a wetland-stream system to restore ecosystem processes, structure, and composition to mitigate for wetland functions and values that have been lost as a result of human induced disturbances in the 030703 sub-basin of the Yadkin River. The project consisted of restoring approximately 10,700 linear feet of stream, 91 acres of forested wetland, and 5 acres of emergent wetland.

The stream restoration component consisted of restoring approximately 9,900 linear feet of perennial stream and 800 linear feet of intermittent stream that is a tributary to the perennial stream.

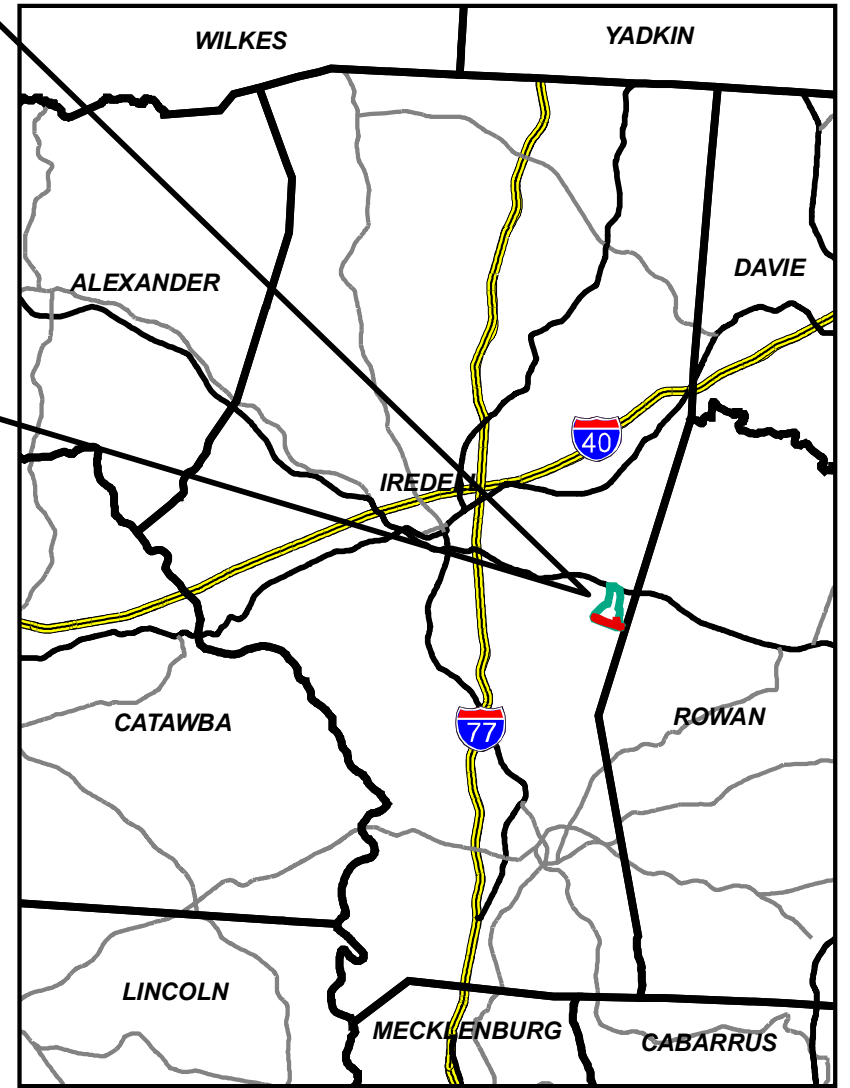
The majority of the stream construction consisted of relocating the stream channel (Priority 1) and constructing an E channel at the elevation of the historic floodplain. The reach was enhanced using vegetation and bank stabilization structures, such as single arm vanes, cross-vanes, J-hooks, and root wads. A sinuous, stable pattern, with riffle-pool bedform was constructed. Cross-vanes, J-hooks, and riffles were installed to provide bank stabilization, habitat, and maintain grade control.

Wetland restoration consisted of plugging and filling agricultural ditches and planting vegetation. Relocation of the ditched stream, filling of lateral drainage ditches, alteration of grade, and breaching the berm along Third Creek were executed to re-establish periodic overbank flooding and raising groundwater elevation. The riparian and wetland areas for the unnamed tributary of Third Creek were disked to facilitate plantings. Native bare root seedlings and herbaceous cover were installed to enhance the riparian areas and stabilize streambanks. Ninety-one acres of forested wetland and five acres of emergent wetland were restored.



LEGEND

- Project Site
- Project Drainage Area
- Stream
- City Limit
- County Boundary



Shepherds Tree Stream and Wetland Restoration Project
 Project Location and Watershed Map
 Iredell County, NC

Figure 1
 January 2007
 Project No: 3060001.05

Table I. Project Mitigation Structure and Objectives

Shepherds Tree/Project No. 333					
Segment/Reach	Mitigation Type	Approach	Linear Feet	Stationing (ft)	Comments
Perennial Reach	R	P1	9,900	0+00-99+00	Channel restoration, relocation with use of grade control and bank protection structures.
Intermittent Reach	R	P1	800	0+00-8+00	Channel restoration, relocation with use of grade control and bank protection structures.
Piedmont/Mountain Bottomland Hardwood Forest	R	-	48.56 acres	N/A	Restoration/Enhancement of bottomland hardwood communities by breaching channel berms, plugging drainage ditches and revegetation
	C	-	37.71 acres		
Piedmont/Mountain Swamp Hardwood Forest	R	-	5 acres	N/A	Restoration/Enhancement of swamp hardwood communities by breaching channel berms, plugging drainage ditches and revegetation
Low Elevation Seep	P	-	4.54 acres	N/A	Preservation of an existing levee forest

(R=Restoration, C=Creation, and P=Preservation)

Project History and Background

The stream and wetland enhancement/restoration was designed by KCI Associates of North Carolina, PA. Construction activities were completed in 2004. Monitoring has been conducted annually from 2005 to present. However, stream monitoring was not conducted in 2005. This report serves as the 2nd year of the 5-year monitoring plan for Shepherds Tree Stream and Wetland Restoration site. Tables II and III provide detailed project activity, history and contact information for this project. Table IV provides more in-depth watershed/site background for the project.

Table II. Project Activity and Reporting History

Shepherds Tree/Project No. 333			
Activity or Report	Scheduled Completion	Data Collection Completed	Actual Completion or Delivery
Restoration Plan	Unknown	Unknown	June 2001
Final Design-90%	Unknown	Unknown	Unknown
Construction	Summer 2001	Unknown	2004
Temporary S&E mix applied to entire project area	Fall 2001	Fall 2001	Fall 2001
Permanent seed mix applied to reach	Spring 2002	Spring 2002	Spring 2002
Mitigation Plan/ As-Built (Year 0 Monitoring)	June 2001	June 2001	June 2001
Year 1 Monitoring	2005	December 2005	February 2006
Year 2 Monitoring	2006	September 2006	January 2007
Year 3 Monitoring	2007	TBD	TBD
Year 4 Monitoring	2008	TBD	TBD
Year 5 Monitoring	2009	TBD	TBD

Table III. Project Contacts

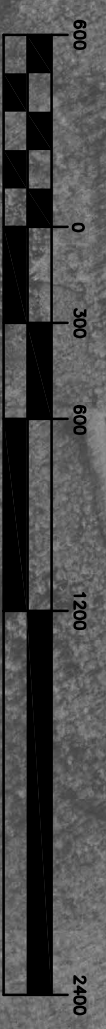
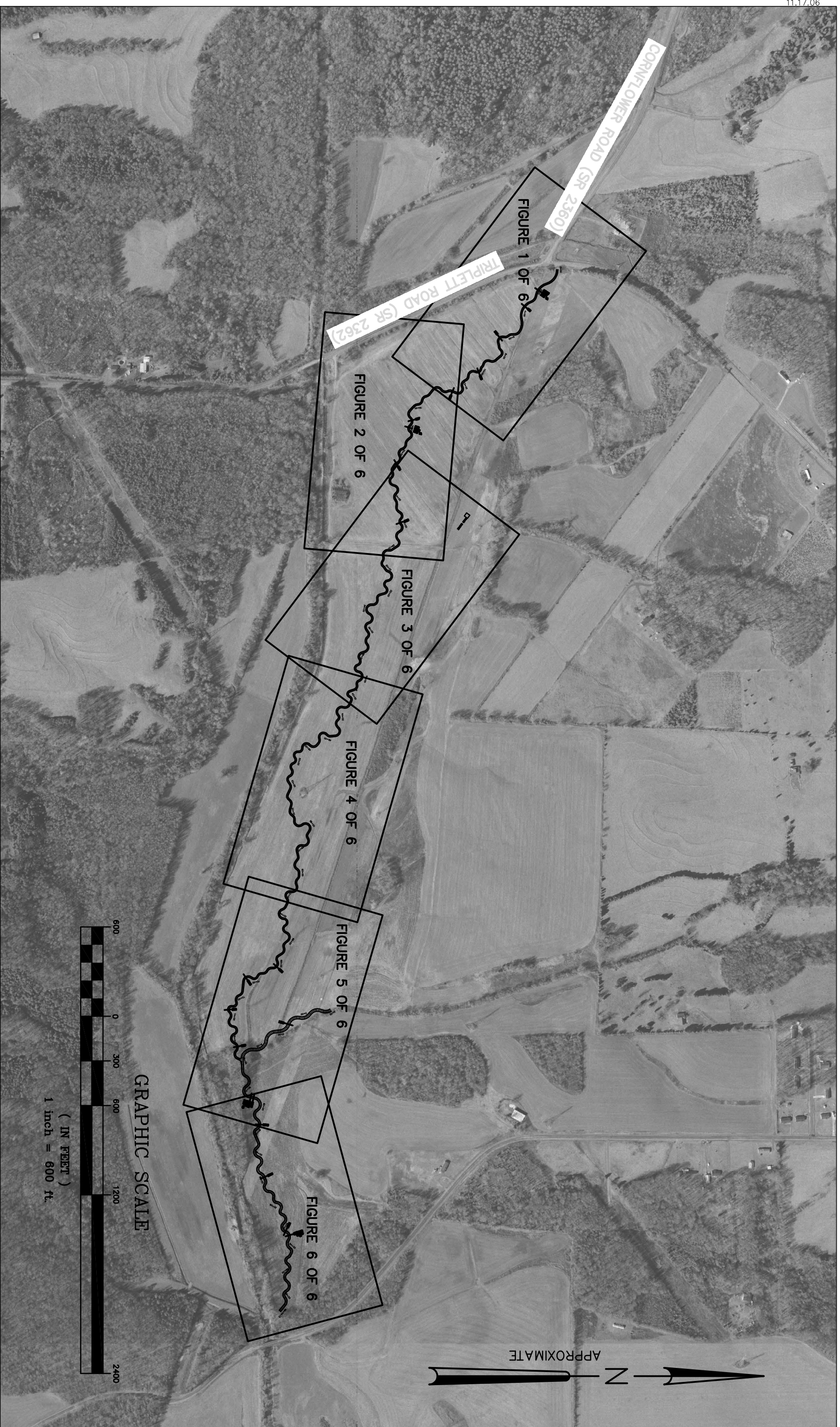
Shepherds Tree/Project No. 333	
Designer	KCI Associates of North Carolina, PA Suite 200 Landmark Center I 4601 Six Forks Rd Raleigh, NC 27609
Contractor's Name	Unknown
Planting Contractor	Unknown
Seeding Contractor	Unknown
Monitoring Performers	Jordan, Jones, and Goulding, Inc. 9101 Southern Pine Blvd., Suite 160 Charlotte, NC 28273
Stream Monitoring, POC	Dan Rice, 678-333-0457
Vegetation Monitoring, POC	Dan Rice, 678-333-0457

Table IV. Project Background

Shepherds Tree/Project No. 333	
Project County	Iredell, North Carolina
Drainage Area	1.06 sq mi
Drainage impervious cover estimate	~10%
Stream Order	First
Physiographic Region	Piedmont
Ecoregion	Southern Outer Piedmont
Rosgen Classification of As-built	E5
Cowardin Classification	R2UB34
Dominant soil types	Chewalca, Conagree
USGS HUC for Project and Reference	03040102
NCDWQ Sub-basin for Project and Reference	030706
NCDWQ classification for Project and Reference	C
Any portion of any project segment 303d list?	No
Any portion of any project segment upstream of a 303d listed segment?	No
Reason for 303d listing or stressor?	N/A
% of project easement fenced?	100%

Monitoring Plan View

The monitoring plan view map (Figure II) illustrates the location of the longitudinal profile stations, cross-section stations, vegetation plots, and photo points. A total of sixteen cross-sections were established within the stream and wetland restoration project. Approximately 3,300 linear feet of longitudinal profile was monitored. A total of ten previously established vegetation plots and four additional vegetation plots were monitored by JJG in 2006. Sixteen groundwater monitoring gauges and three surface water gauges were previously installed by NCDOT and downloaded on a monthly basis. Photographs were taken upstream and downstream at each cross-section and at existing photo points. Beaver activity within the stream and wetland site inhibited the geomorphic assessment in portions of the site.



GRAPHIC SCALE

- NOTES:
1. GENERAL SITE DATA PROVIDED BY NCEEP.
 2. ALL LOCATIONS ARE APPROXIMATE.

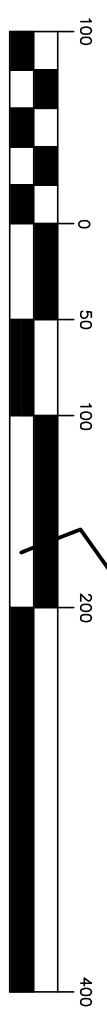


PROJECT NO. 333
 IREDELL COUNTY
 NORTH CAROLINA
 MONITORING
 YEAR 2 OF 5



NC ECOSYSTEM ENHANCEMENT PROGRAM
 SHEPHERDS TREE STREAM & WETLAND RESTORATION
 FIGURE II
 MONITORING PLAN VIEW MAP

DATE : MARCH 2007
 SCALE : 1"=600'
 JOB NO.: 03060-001
 FIGURE KEY



LEGEND	
	CHANNEL CENTERLINE
	BANK FULL
	PHOTO POINT
	CROSS VANE (CV)
	J-HOOK VANE (JV)
	STEP POOL (SSP)
	ROOT WAD
	WELL
	SURFACE GAUGE
	RAIN GAUGE
	VEGETATION PLOT

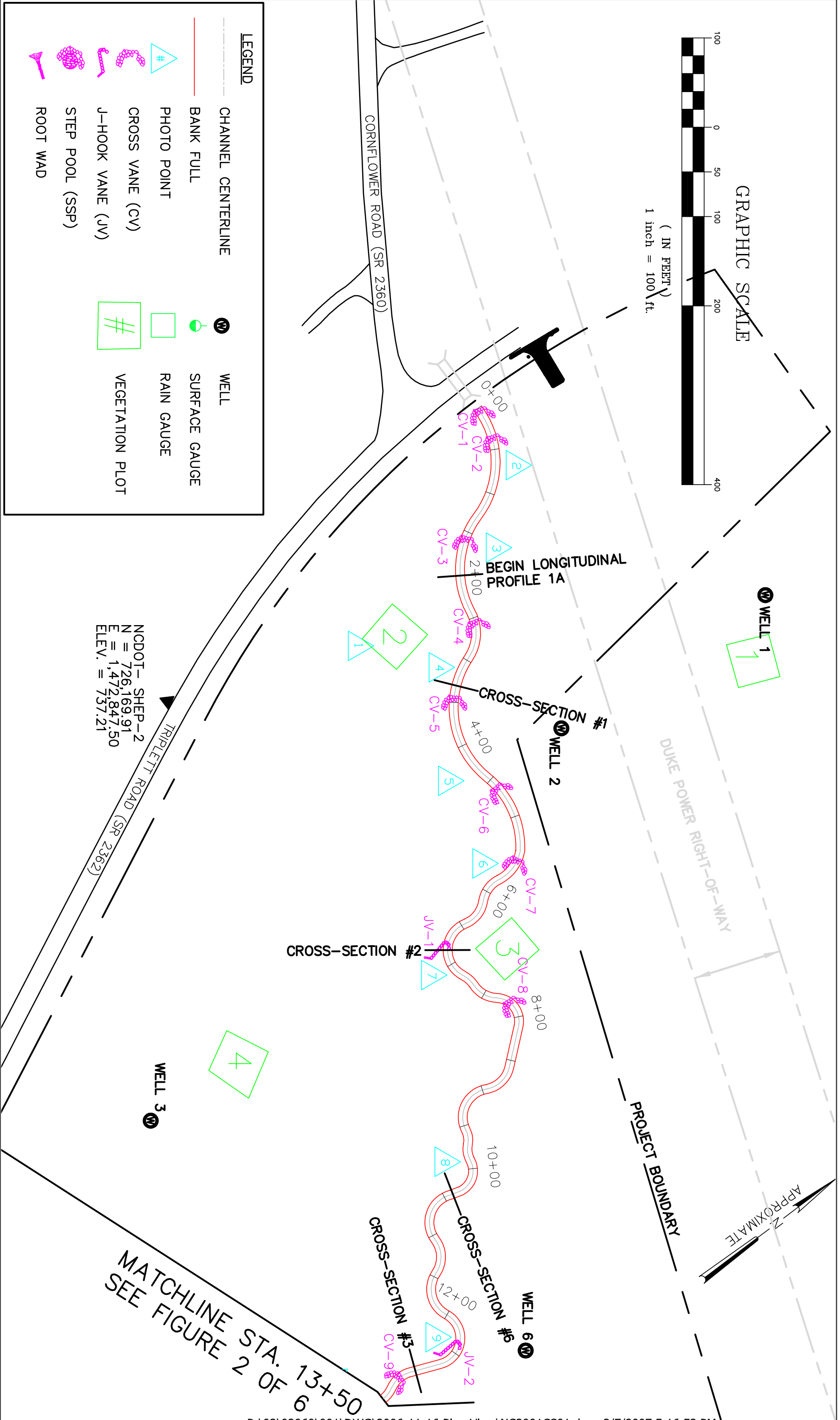
NOTES:
1. GENERAL SITE DATA PROVIDED BY NCEEP.
2. ALL LOCATIONS ARE APPROXIMATE.

PROJECT NO. 333
IREDELL COUNTY
NORTH CAROLINA
MONITORING
YEAR 2 OF 5



NC ECOSYSTEM ENHANCEMENT PROGRAM
SHEPHERDS TREE STREAM & WETLAND RESTORATION
FIGURE II
MONITORING PLAN VIEW MAP

DATE : MARCH 2007
SCALE : 1" = 100'
JOB NO.: 03060-001
FIGURE 1 OF 6





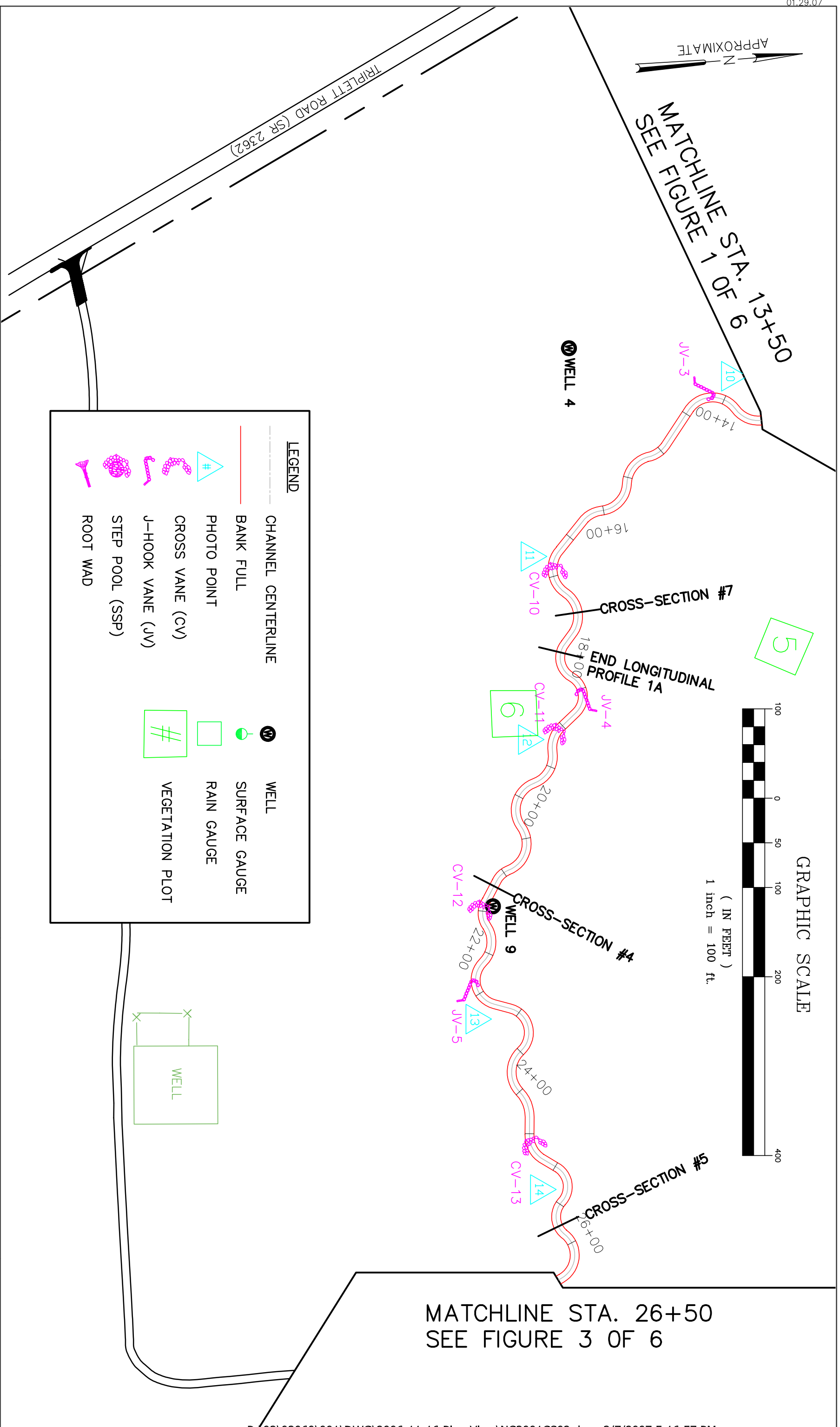
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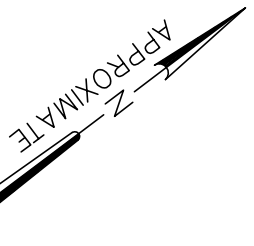
PROJECT NO. 333
IREDELL COUNTY
NORTH CAROLINA
MONITORING
YEAR 2 OF 5



NC ECOSYSTEM ENHANCEMENT PROGRAM
SHEPHERDS TREE STREAM & WETLAND RESTORATION
FIGURE II
MONITORING PLAN VIEW MAP

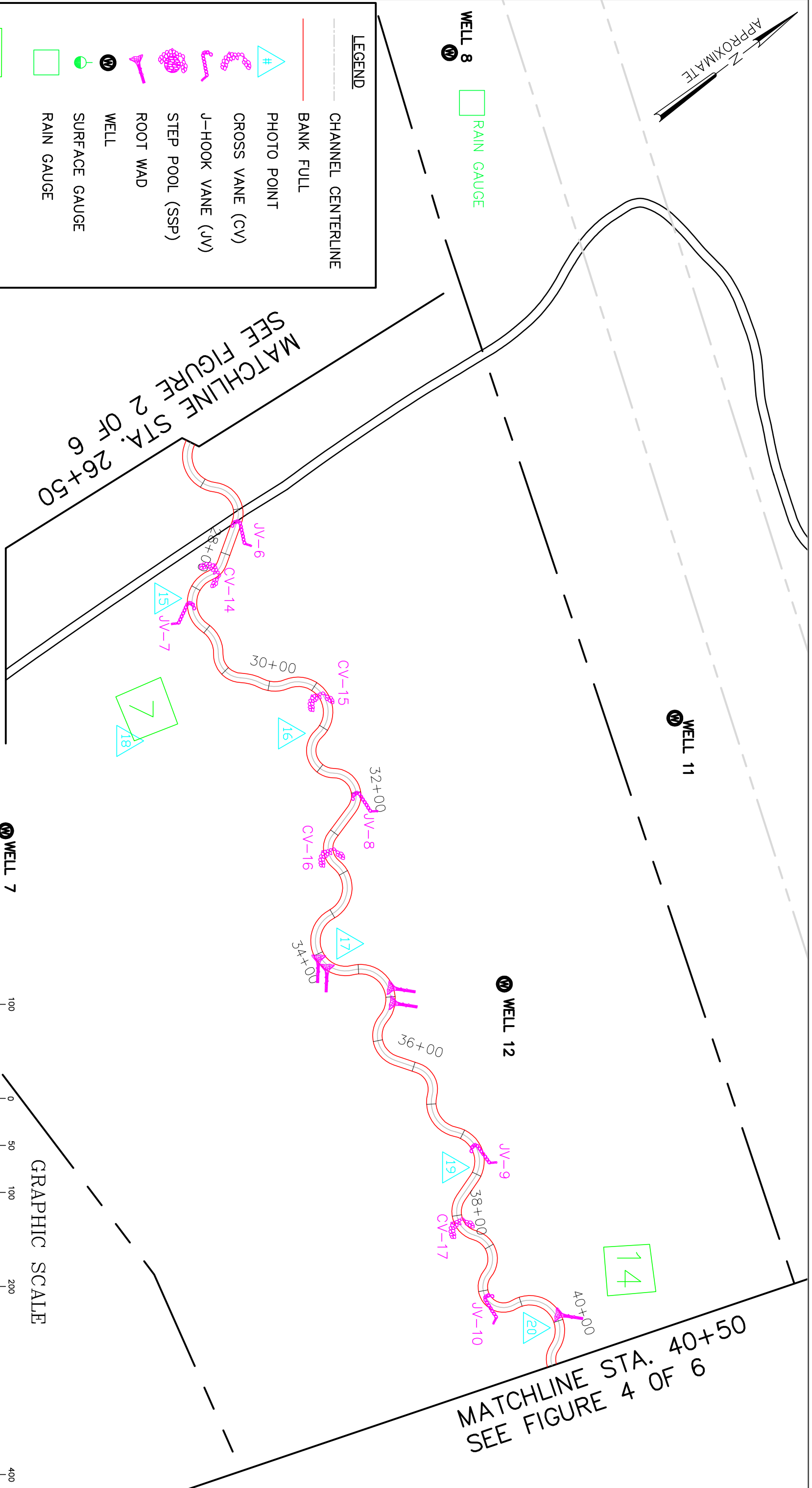
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JOB NO.: 03060-001
FIGURE 2 OF 6





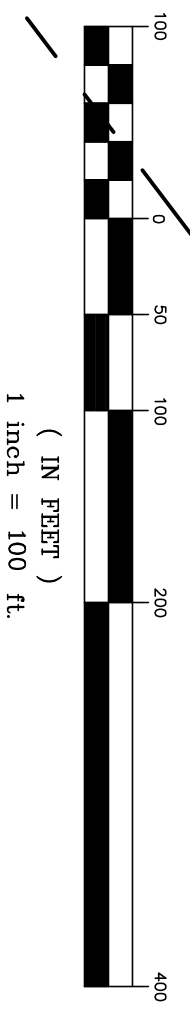
LEGEND

- CHANNEL CENTERLINE
- BANK FULL
- PHOTO POINT
- CROSS VANE (CV)
- J-HOOK VANE (JV)
- STEP POOL (SSP)
- ROOT WAD
- WELL
- SURFACE GAUGE
- RAIN GAUGE
- VEGETATION PLOT



NOTES:
1. GENERAL SITE DATA PROVIDED BY NCEEP.
2. ALL LOCATIONS ARE APPROXIMATE.

PROJECT NO. 333
IREDELL COUNTY
NORTH CAROLINA
MONITORING
YEAR 2 OF 5








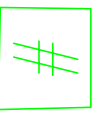





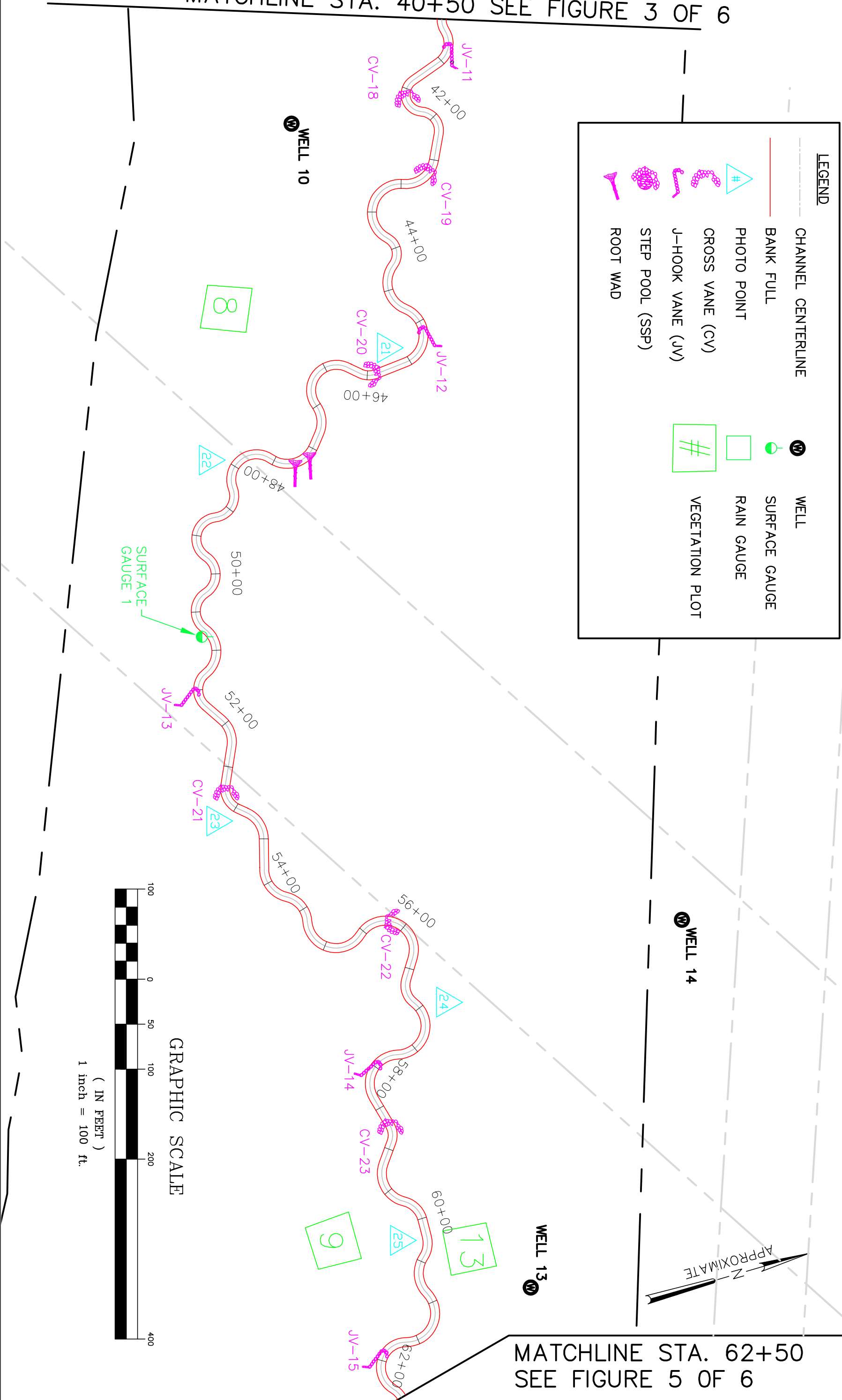
NC ECOSYSTEM ENHANCEMENT PROGRAM
SHEPHERDS TREE STREAM & WETLAND RESTORATION
FIGURE II
MONITORING PLAN VIEW MAP

DATE : MARCH 2007
SCALE : 1" = 100'
JOB NO.: 03060-001
FIGURE 3 OF 6

MATCHLINE STA. 40+50 SEE FIGURE 3 OF 6

LEGEND

	CHANNEL CENTERLINE		WELL
	BANK FULL		SURFACE GAUGE
	PHOTO POINT		RAIN GAUGE
	CROSS VANE (CV)		VEGETATION PLOT
	J-HOOK VANE (JV)		
	STEP POOL (SSP)		
	ROOT WAD		



MATCHLINE STA. 62+50
SEE FIGURE 5 OF 6



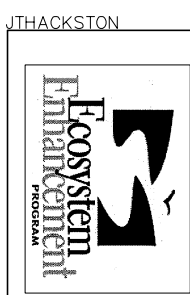
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PROJECT NO. 333
IREDELL COUNTY
NORTH CAROLINA
MONITORING
YEAR 2 OF 5



NC ECOSYSTEM ENHANCEMENT PROGRAM
SHEPHERDS TREE STREAM & WETLAND RESTORATION
FIGURE II
MONITORING PLAN VIEW MAP

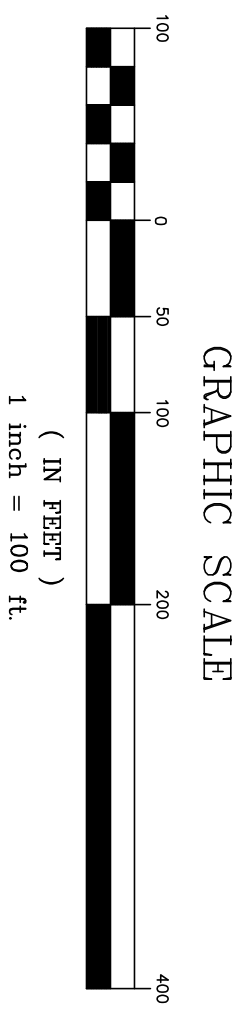
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FIGURE 4 OF 6



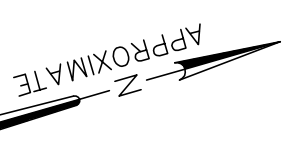
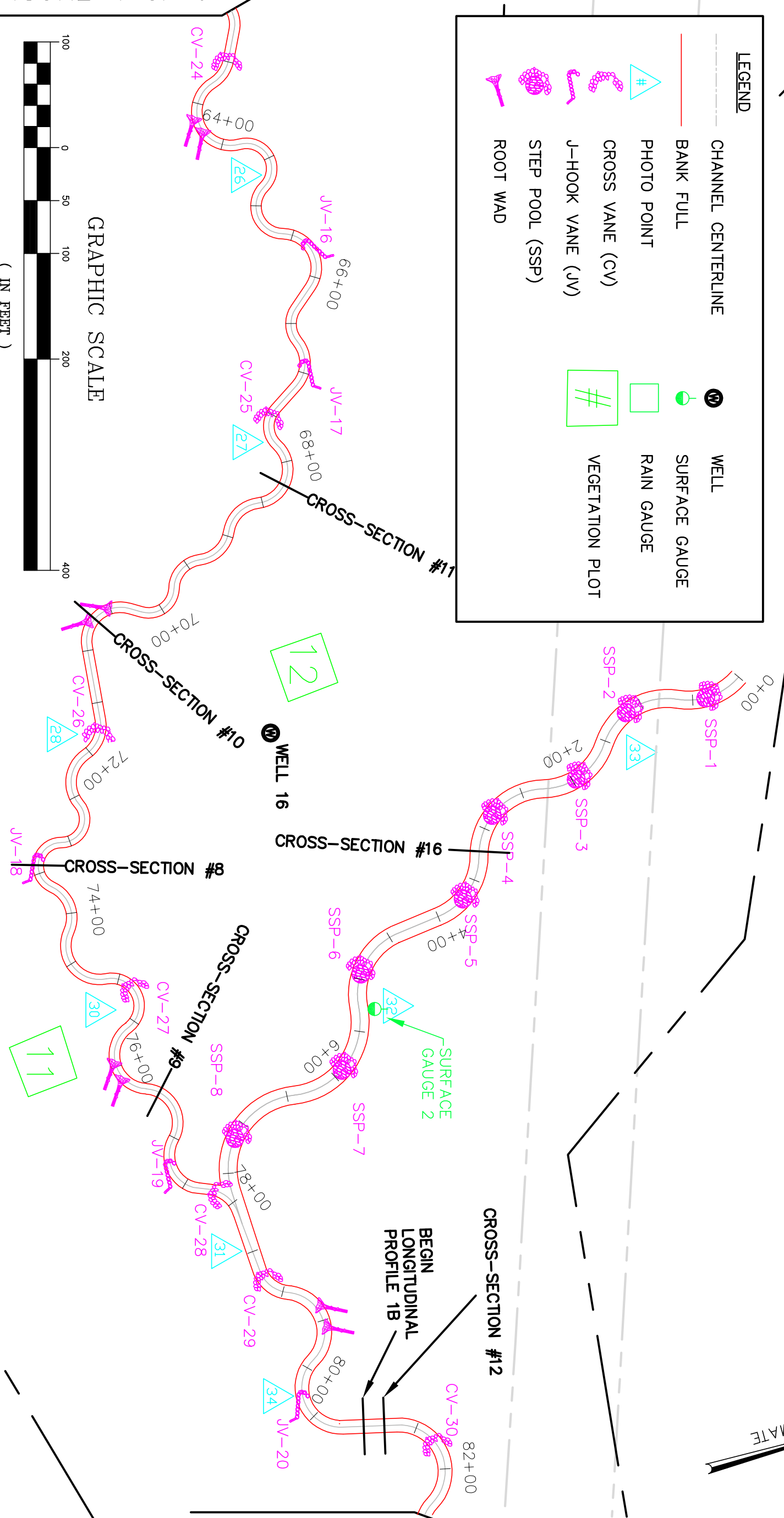
MATCHLINE STA. 63+00
SEE FIGURE 4 OF 6

LEGEND

- CHANNEL CENTERLINE
- BANK FULL
- PHOTO POINT
- CROSS VANE (CV)
- J-HOOK VANE (JV)
- STEP POOL (SSP)
- ROOT WAD
- WELL
- SURFACE GAUGE
- RAIN GAUGE
- VEGETATION PLOT



WELL 15



MATCHLINE STA. 82+50
SEE FIGURE 6 OF 6

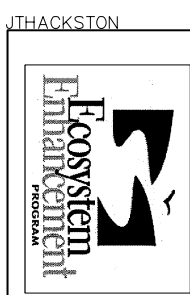
NOTES:
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PROJECT NO. 333
IREDELL COUNTY
NORTH CAROLINA
MONITORING
YEAR 2 OF 5



NC ECOSYSTEM ENHANCEMENT PROGRAM
SHEPHERDS TREE STREAM & WETLAND RESTORATION
FIGURE II
MONITORING PLAN VIEW MAP

DATE : MARCH 2007
SCALE : 1" = 100'
JOB NO.: 03060-001
FIGURE 5 OF 6



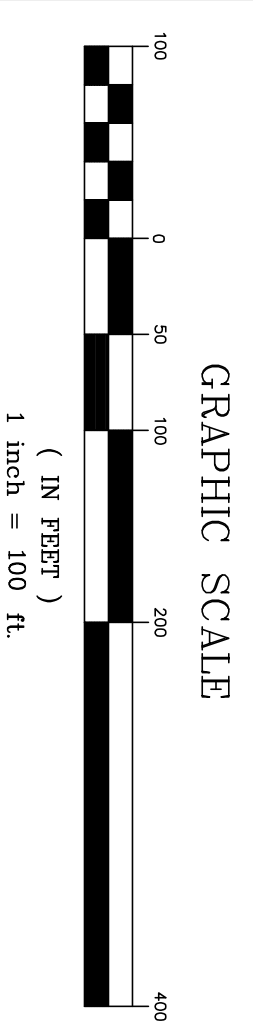
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PROJECT NO. 333
IREDELL COUNTY
NORTH CAROLINA
MONITORING
YEAR 2 OF 5



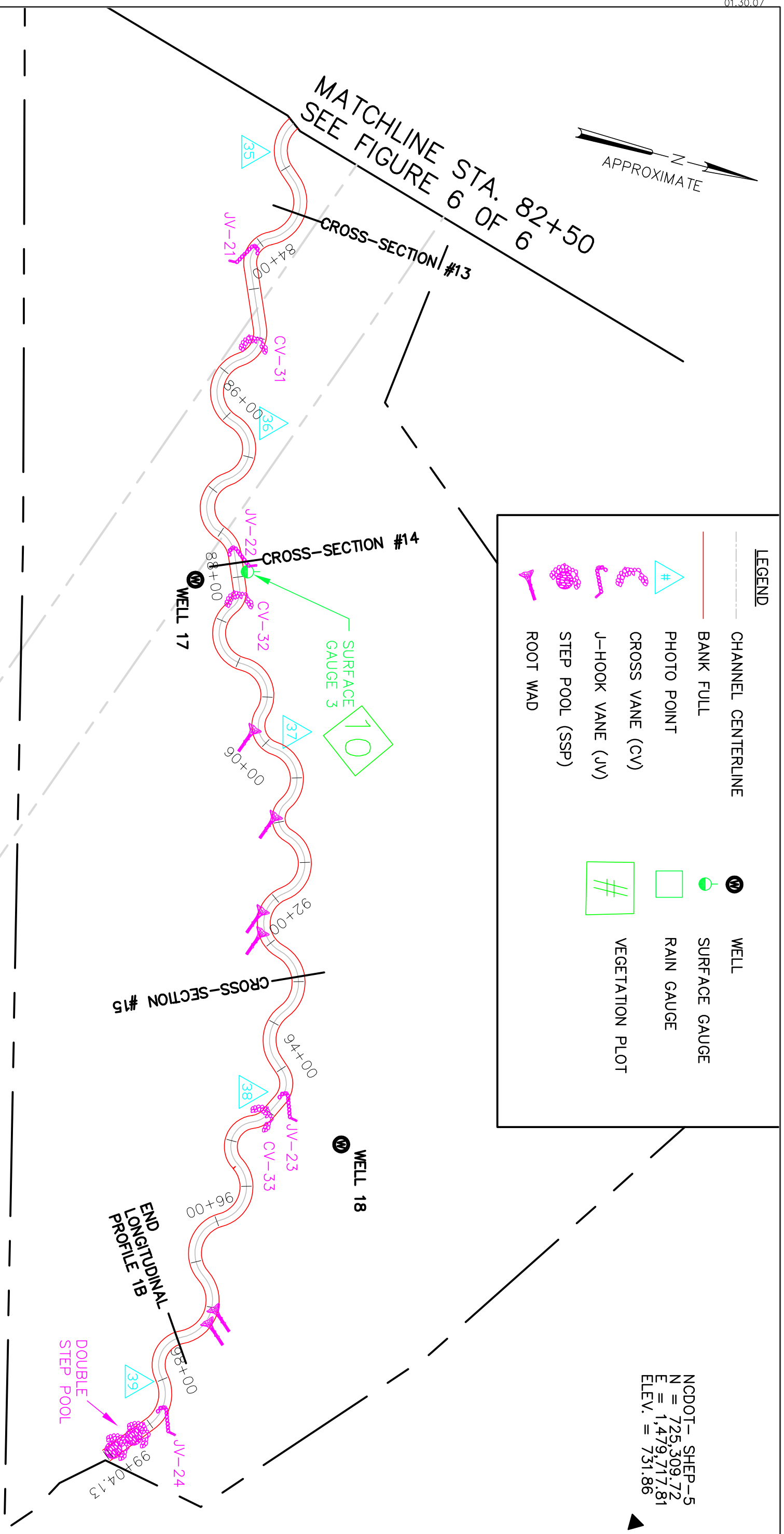
NC ECOSYSTEM ENHANCEMENT PROGRAM
SHEPHERDS TREE STREAM & WETLAND RESTORATION
FIGURE II
MONITORING PLAN VIEW MAP

DATE : MARCH 2007
SCALE : 1" = 100'
JOB NO.: 03060-001
FIGURE 6 OF 6



MATCHLINE STA. 82+50
SEE FIGURE 6 OF 6

LEGEND	
	CHANNEL CENTERLINE
	BANK FULL
	PHOTO POINT
	CROSS VANE (CV)
	J-HOOK VANE (JV)
	STEP POOL (SSP)
	ROOT WAD
	WELL
	SURFACE GAUGE
	RAIN GAUGE
	VEGETATION PLOT



NCDOT- SHEP-5
N = 725,309.72
E = 1,479,717.81
ELEV. = 731.86

SECTION II

Project Condition and Monitoring Results

SECTION II

Project Condition and Monitoring Results

The following vegetation and hydrology monitoring results are from the 2006 (year 2 of 5) survey completed in September 2006. Morphological monitoring results for 2006 (year 2 of 5) were completed from September 2006 through January 2007 due to beaver activities.

A. Vegetation Assessment

Approximately 91 acres were planted with various native hardwood tree and shrub species for the Shepherds Tree wetland restoration. Previous monitoring reports indicate that ten 50 ft by 50 ft monitoring plots were established by NCDOT for this project. During the 2006 monitoring conducted by JJG, there were fourteen vegetative plots identified and monitored. For the first three years of monitoring, the site must meet a success criterion of 320 live stems per acre. The site density must be 290 stems per acre at the end of year 4 and 260 stems per acre at the end of year 5. JJG counted the previously mentioned stems from the 2005 monitoring report as the planted stems. For those species that were not previously mentioned, JJG counted them as natural volunteers. When calculating stem density, natural volunteers increases the overall number greatly; therefore, indicating a greater success criterion.

1. Soil Data

The Shepherds Tree restoration project is situated in the Inner Piedmont of the North Carolina Piedmont Physiographic Region. The soil types mapped within the riparian area adjacent to the project resemble those found in alluvial landforms of this physiographic region. The site has been historically disturbed; therefore, it is unlikely that the naturally occurring soils are on site. The two dominating soil mapping units that are located within the project are Chewacla (Cw) and Congaree (Cy) soils. These soils are fine loamy alluvial materials that are somewhat poorly drained. Both soils are listed on the *Hydric Soils of North Carolina* for Iredell County. Please refer to Table V for preliminary soil data for the project area. Please refer to Figure III for a soil map of the project area.

Table V. Preliminary Soil Data
Shepherds Tree Stream and Wetland Restoration
Project No: 333

Soil Series	Max Depth (inches)	% Clay on Surface	K Factor	T Factor	OM %
Chewacla (Cw)	60	10-35	0.28	5	1.0-4.0
Congaree (Cy)	70	10-25	0.37	5	1.0-4.0



Shepherds Tree Stream and Wetland Restoration Project
 Soils Map
 Iredell County, NC

Figure 3
 January 2007
 Proj. No. 3060001.05



2. Vegetative Problem Areas

Overall, the riparian and wetland areas appear to be developing as designed, and there are no major problems to report. There are indicators of surficial wetland hydrology within the wetland areas and the previous channel locations. Some of the observed wetland hydrology is a result of the beaver activity, and there are areas of inundation within the wetland areas. Within the vegetation plots, the combined number of recruitment specimens and surviving saplings exceeds the survival count from the previous year's monitoring. Recruitment species include sweet gum (*Liquidambar styraciflua*), box-elder (*Acer negundo*), red maple (*Acer rubrum*), cottonwood (*Populus deltoides*), sycamore (*Platanus occidentalis*). Woody species such as black willow (*Salix nigra*) planted along the stream bank are doing gauge providing both shade cover and bank stability. However, in areas of excessive beaver activity, some of these specimens have been removed. The following problems should continue to be monitored.

- As a result of beaver impoundments, isolated portions of wetlands are likely inundated for extended periods.

In areas of beaver activity, the black willows planted along the banks have been removed. Please refer to Table VI for noted vegetative problem areas on site.

**Table VI. Vegetative Problem Areas
Shepherds Tree Stream and Wetland Restoration
Project No: 333**

Problem Area	Station Number	Suspected Cause	Photo Reference
Loss of Stream Bank Vegetation	2+70 to 3+40	Beaver Activity	A1-1
Loss of Live Stakes	Along Restored Reach	Beaver Activity	A1-2
Beaver Pond	38+15 to 78+40	Beaver Activity	A1-3

3. Vegetative Problem Area Plan View

Please refer to Appendix A2 and B2 for photos of the vegetative problems onsite.

4. Stem Counts

JJG conducted the vegetation plot monitoring in May 2006. The previous monitoring report states that the following tree and shrub species were planted in the wetland restoration areas: *Salix nigra* (black willow), *Fraxinus pennsylvanica* (green ash), *Liriodendron tulipifera* (tulip poplar), *Platanus occidentalis* (American sycamore), *Quercus nigra* (water oak), *Acer negundo* (box-elder), *Quercus machauxii* (swamp chestnut oak), *Quercus pagoda* (cherrybark oak), *Quercus phellos* (willow oak), and *Cephalanthus occidentalis* (buttonbush). There were fourteen vegetative plots monitored during 2006. All plots were 50 ft by 50 ft and were identified by yellow NCDOT federal highway easement markers. The previous monitoring report indicates that ten plots were monitored and established by NCDOT.

Please refer to Table VIIA for the results of the plot monitoring. Please refer to Appendix A for the summary data table and photographs of the plots monitored.

Table VIIA.
Stem Counts for Each Species Arranged by Monitoring Plot
Shepherds Tree Stream and Wetland Restoration
Project No: 333

Planted Species	Plots Monitored 2005 and 2006										Totals for Plots 1-10		Additional Plots Monitored 2006				Totals for Plots 1-14	
	1	2	3	4	5	6	7	8	9	10	2005	2006	11	12	13	14	2006	
<i>Salix nigra</i>							10	1			11	11			2	4	17	
<i>Fraxinus pennsylvanica</i>	2		4	15	3	3	4		10	10	51	51	17	11	20	8	107	
<i>Liriodendron tulipifera</i>	1		1	12							14	14					14	
<i>Platanus occidentalis</i>			9			2	1	10	6		28	28	4	17	20	20	89	
<i>Quercus nigra</i>	1			2		2					5	5				3	8	
<i>Acer negundo</i>			1			4			2		7	7	7	11	15		40	
<i>Quercus machauxii</i>		2	4	1		2			4		13	13	3	15		4	35	
<i>Quercus pagoda</i>	12		3	2	4	8		3	4	2	38	38		4	10	4	56	
<i>Quercus phellos</i>	2	3				1					7	7	2		7	7	23	
<i>Cephalanthus occidentalis</i>	4	2	1	1	3		1	1			12	12	1			2	15	
Total Planted Stems Per Plot	22	7	23	33	10	22	16	15	26	12	186	186	34	58	74	52	404	
Percent (%) Survival												100						
Average Number of Stems per Plot 2005												19						
Average Number of Stems Per Plot 2006												29						
Live Stem Density Per Acre 2005												324						
Live Stem Density Per Acre 2006												580						

Table VIIB.
Stem Counts for Volunteer Species Arranged by Monitoring Plot
Shepherds Tree Stream and Wetland Restoration
Project No: 333

Volunteer Species	Monitoring Plots													
	1	2	3	4	5	6	7	8	9	10	11*	12*	13*	14*
SN (black willow)		5		7	2	14		7	4	2				
FP (green ash)	5	6	4	8	3	13		12		15				
LT (tulip poplar)	1			3										
PO (American sycamore)		8	2			1			15	10				
QN (water oak)	4		3							2				
AN (box elder)			2		2		10			20				
QM (swamp chestnut oak)	3	8	2	5			15			15				
QP (cherrybark oak)	2			5				2						
QP (willow oak)	8	3												
CO (button bush)					5					5				
NS (black gum)	3		3				9			4	2	1		
BN (river birch)		17						1		2		10		2
AS (tag alder)													10	1
LS (sweet gum)										8				
AR (red maple)	13	30	2	20	11	6	7		6		8		20	20
Total Volunteer Stems Per Plot 2006	39	77	18	48	23	34	41	22	25	83	10	11	30	23

* All species in these additional plots monitored were counted as planted.

There is an average of 29 stems per monitoring plot. This number includes the four additional monitoring plots that were counted by JJG in May 2006. The overall stem density per acre resulted in approximately 580 stems.

5. Vegetative Monitoring Plot Photographs

Please refer to Appendix A3 for photographs of each vegetation plot.

B. Stream Assessment

Stream dimension, pattern, profile and substrate were evaluated within 10,700 linear feet of the stream and wetland restoration site. The stream assessment included walking the entire stream reach and monitoring 3,300 linear feet of longitudinal profile and sixteen cross-sections. Please refer to Table VIII, IX, and X for the stability assessments and the as-built morphology and hydraulic summary, Table XI for monitoring years 2005-2006 morphology and hydraulic summary, and Appendix B for the problem area plan view map, stability assessment, stream photographs and raw data.

1. Problem Areas Plan View (Stream)

Please refer to Appendix B1 for the problem areas plan view map.

2. Problem Areas Table Summary

Table VIII below provides categorical feature issues by station, the suspected cause and denotes a representative photo of the condition, which is located in Appendix B2. The tables below are split into two separate assessments, April 2006 and January 2007, due to the attempts by USDA to trap and remove the beaver population and their dams.

Table VIII. Stream Problem Areas
(Please refer to Appendix B2 for photos)

Shepherds Tree/Project No. 333			
April 2006 Assessment			
Feature Issue	Station Numbers	Suspected Cause	Photo ID
Bank erosion - moderate	02+70 - 03+40	Inadequate bank cover- RB	B2.1
	04+20 - 04+60	Inadequate bank cover - RB	
Bank slump	01+30 - 01+65	Insufficient channel capacity - TOB LB	B2.2
	06+80 - 07+50	Formed inner berm - insufficient channel capacity - Both banks	
	20+20 - 20+80	Bank slump from TOB due to insufficient channel capacity - channel now over widened - Both banks	
	21+80 - 22+50	Bank slump from TOB due to insufficient channel capacity - channel now over widened - Both banks	
Beaver dam	57+10	Beaver	B2.3, B2.10, B2.11
Beaver impoundment	31+15 - 33+75	Beaver - channel inundated as it flows into beaver pond	B2.4, B2.8, B2.9, B2.12, B2.13
	36+90 - 38+80	Beaver pond	
	40+05 - 45+75	Beaver pond - channel inundated	
	65+60 - 67+50	Beaver pond - channel inundated	
	71+80 - 75+00	Beaver pond	
	76+60 - 78+40	Beaver pond	
	4+10 - 8+00 (side tributary)	Beaver pond - channel inundated as it flows into beaver pond	

In-stream wetland vegetation	10+60 - 11+00	Cattail (<i>Typha latifolia</i>) fills channel, channel over widened due to downstream beaver ponds	B2.5
	13+60 - 13+80	Cattail fills channel, channel over widened due to downstream beaver ponds	
	14+25 - 14+75	Cattail fills channel, channel over widened due to downstream beaver ponds	
	18+05 - 18+70	Cattail fills channel, channel over widened due to downstream beaver ponds	
	21+80 - 22+50	Cattail fills channel, channel over widened due to bank slump and downstream beaver ponds	
	62+20 - 62+40	Cattail fills channel, channel over widened due to downstream beaver ponds	
Mid-channel bar	03+60 - 04+10	Mid-channel bar due to bank slump - RB	B2.6
	05+50 - 05+60	Mid-channel bar due to bank slump - RB	
Vegetative cover - poor	86+00 - 86+40	Dead willow stakes and vegetation due to inadequate hydrology, coir matting exposed - Both banks	B2.7
	96+80 - 97+10	Dead willow stakes and vegetation due to inadequate hydrology, coir matting exposed - RB	

Shepherds Tree/Project No. 333 January 2007 Assessment			
Feature Issue	Station Numbers	Suspected Cause	Photo ID
Beaver dam	29+00	Beaver	B2.8
	46+00	Beaver	
	55+00	Beaver	
New Beaver Chews	8+00	Vegetation with fresh beaver chew markings and skat markings	B2.9
Beaver impoundment	8+50 - 11+25	Beaver - channel inundated: Not out of banks	B2.10
	12+00 - 16+50	Beaver - channel inundated: Not out of banks	
	25+00 - 35+00	Beaver - channel inundated: Not out of banks	
	35+00 - 46+00	Beaver - water ponding: Out of banks	
	47+00 - 51+50	Beaver - channel inundated: Not out of banks	
	51+50 - 55+00	Beaver - water ponding: Out of banks	

3. Numbered Issues Photo Section

Please refer to Appendix B2 for problem area plan view photos.

4. Fixed Photo Station Photos

Please refer to Appendix B3 for photo station photos.

5. Stability Assessment

Beaver activity has resulted in several impoundments along the stream which have affected the flow and flooding dynamics of the channel. A general overview is provided below from the initial stability assessment conducted in April 2006.

- As a result of beaver activity, there are several large impoundments along the stream. In these areas, the top of bank and most structures are inundated. The channel width is slightly wider than designed, and velocity and associated flow dynamics are much less than designed. Many of the planted willows have been removed, and herbaceous vegetation is minimal.
- Between these impoundments, the channel is typically inundated to the bankfull level, and flow velocities are reduced. Emergent wetland vegetation such as broad-leaved cattail (*Typha latifolia*) has begun to colonize shallower portions of the channel.
- In the upper portions of the channel (upstream of Station 25+00), there are some areas in which the bank has collapsed forming a bankfull bench within the channel. These areas appeared relatively stable, but the channel dimensions have likely changed from the designed cross-section. Typically, the slumped bank has formed a bench-type feature within the channel, and black willow (*Salix nigra*) is filling in these bench areas. The black willow was probably initially staked on the bank that has now slumped. In some areas, mid-channel bars are developing possibly as result of upstream bank slumping.
- Within the most downstream 2,000 feet of the channel, the channel appears to be slightly incised and less connected to its floodplain than upstream. Beaver activity is occurring within this area, but appears minimal compared to upstream activity.

Table IX. Categorical Stream Feature Visual Stability Assessment

Shepherds Tree/Project No. 333, Upper Reach (1a)			
Feature	As-Built	MY1 (2005)	MY2 (2006)
A. Riffles	-	-	0%*
B. Pools	-	-	0%*
C. Thalweg	-	-	*
D. Meanders	-	-	100%
E. Bed General	-	-	50%
F. Vanes/J Hooks, etc	-	-	0%*
G. Wads and Boulders	-	-	0%*
H. Bank Performance	-	-	98.25%

Shepherds Tree/Project No. 333, Lower Reach (1b)			
Feature	As-Built	MY1 (2005)	MY2 (2006)
A. Riffles	-	-	0%
B. Pools	-	-	90.28%
C. Thalweg	-	-	*
D. Meanders	-	-	100%
E. Bed General	-	-	50%
F. Vanes/J Hooks, etc	-	-	100%
G. Wads and Boulders	-	-	100%*
H. Bank Performance	-	-	100%

(Cells noted with a (*), features impacted by beaver activity; heavy sedimentation and backwater observed and cells noted with a (-), data was not collected in previous monitoring years)

Overall, the stream restoration components of the project look stable; however, the beaver dams along the stream have resulted in channel inundation upstream of the beaver activity and low flow conditions downstream of the beaver activity. The following results are from the stream monitoring assessments conducted from September 2006 through January 2007.

This report serves as the initial stream assessment for the Shepherds Tree stream and wetland restoration site. According to the Year 1 Monitoring Report prepared by Soil and Environmental Consultants, a stream assessment was not performed in the first monitoring year, nor was an as-built survey completed after construction. Since these surveys were not performed, the longitudinal profile and cross-section locations were established by JIG, with North Carolina Ecosystem Enhancement Program (NCEEP) approval. Fifteen cross-sections (7 riffle and 8 pool) were surveyed within the main reach of Shepherds Tree, and one riffle was surveyed on the tributary. However, due to the beaver activity, which resulted in site inundation in certain areas, several cross-section locations needed to be re-located. All cross-sectional data collected and analyzed was compared to the proposed cross-sections from the design plans provided by NCEEP.

The proposed and existing cross-section dimensions appear similar, although the existing values are slightly higher. The cross-sections evaluated on the stream that were not within the longitudinal profile appeared to show the greatest differences in bankfull widths. This may be due to the fact that these areas were inundated for a long period of time from beaver activity. On average, the existing bankfull width was 10.8 ft and the proposed was 10.2 ft. The cross-sectional area is 19.4 ft² compared to the design value of 18.7 ft², and the mean bankfull depth is 1.94 ft compared to the proposed 1.85 ft. The existing bankfull widths and depths lead to an average width/depth ratio of 6.1 which is characteristic of the proposed Rosgen E-type channel. Overall, the present stream dimension conditions in Shepherds Tree appear to be stable. However, the lack of riparian vegetation in some areas could eventually lead to severe bank erosion and create a stream system that is over-widened and unstable.

Two separate longitudinal profiles reaches were surveyed on Shepherds Tree for a total of 3,300 linear feet. The upstream reach (Longitudinal Profile 1a) has been negatively impacted by beaver activity, and the desired riffle and pool streambed features are not present. Backwater and extensive sediment deposition in the upper reach has resulted from beaver dams, creating a long continuous run bed feature with silty substrate in most of the reach surveyed. The average water surface slope and the average bankfull slope are similar for the upper reach, 0.0021 ft/ft and 0.0024 ft/ft respectively. The downstream reach (Longitudinal Profile 1b) illustrates more definable bed features than the upstream reach, but it has also been altered by the impoundments and does not resemble what would be expected in a stable E-type stream. The average water surface slope and the average bankfull slope were the same for lower reach, 0.0024 ft/ft. The existing slopes for upper and lower reach could not be compared to the proposed design slopes due to the lack of clarity in the mitigation report for proposed water slope ranges (0.0015-0.0017 ft/ft and 0.004ft/ft). Stabilization structures installed in the upper reach have been buried by backwater and sediment. Several structures in the downstream reach are also buried by backwater and sediment, but a few were able to be surveyed.

Beaver activity along the stream and wetland site has altered a large portion of the mitigation site. The site appears relatively stable but the characteristics are likely not what were proposed. The majority of project dimension and pattern reflect the proposed designed drawings. Due to the beaver activity and variability of the site conditions, JJG is unable to assess the overall stream stability. Please refer to Table VIII, IX, X, and Appendix B for detailed stream assessment problem area results.

6. Quantitative Measures Tables

Table XI displays morphological summary data from all monitoring years. Raw survey data can be found in Appendix B.

C. Wetland Assessment

Eighteen groundwater monitoring gauges, one rain gauge, and three surface flow gauges are located on site. The gauges are calibrated to collect depth to groundwater levels relative to the ground surface each day. The gauges are downloaded each month and exported to Microsoft Excel for review. The overall goal of the monitoring gauges is to collect data that verifies the soil saturation period during the growing season.

Success criterion for the wetland restoration requires that areas be inundated or saturated within 12" of the ground surface for approximately two weeks (15 days) during the growing season (April 14 to October 24) of Iredell County, North Carolina.

1. Problem Areas Plan View (Wetland)

The stability of the wetland areas was reviewed monthly during the gauge monitoring. Due to beaver activity, the overall stability of the wetland and stream restoration project is fair. A technical memo dated August 25, 2006 was submitted to Mr. Greg Melia (NCEEP) regarding the beaver activity and the drastic change in groundwater levels monitored. Previous monitoring reports indicate that eight gauges (2, 3, 5, 6, 7, 13, 15, 16) did not meet the hydrology threshold for wetland success; however, six of these gauges (3, 6, 7, 13, 15, and 16) all met the threshold for the 2006 monitoring period. This is likely due to the beaver activity throughout the site. An attempt to trap and remove the beavers on site was performed in order to return the site to its natural hydrologic regime. At this time, some areas have drained, while other areas have become more saturated. New beaver activity was observed January 12, 2006 during field monitoring. These areas were not previously altered by the beaver activity.

The four surface gauges on Shepherds Tree were inundated for the majority of the 2006 monitoring year due to beaver activity. Surface Gauges 2 and 3 were inundated and in accessible for the beginning of the monitoring year. Surface Gauge 1 and Gauge 9 (which acts as a surface gauge) reflect data in areas that were not inundated. For Surface Gauge 1, the gauge is below the area of most of the beaver activity, so water levels are relatively low. Surface gauge 4 (Gauge 9) is located in an area that exhibited a lot of variability due to beaver activity. Please refer to Appendix C for the data and plots from the gauges.

2. Wetland Criteria Attainment

Sixteen of the eighteen groundwater gauges on site achieved wetland success criteria of saturation for 15 days during the growing season. Gauge 2 and 5 did not meet the success criteria. Gauge 5 is situated in an upland area that has not presented indicators of soil saturation or surface inundation throughout the monitoring period. Gauge 2 is situated within an area that has presented indicators of soil saturation; however, none of the data indicates that groundwater levels were within 12-inches of the ground surface, so the gauge may be malfunctioning. The overall success of the groundwater gauges in 2006 considerably improved from the previous 2005 monitoring report. In 2005, only 8 of 16 reported gauges met the success criteria. At this time, some areas have drained, while other areas have become more saturated. Please refer to Table XII for a summary of wetland attainment for the restoration project. Please refer to Appendix C for the data and charts illustrating the water levels.

Table X. Baseline Morphology and Hydraulic As-Built Summary
Shepherds Tree/Project No. 333

DIMENSION	USGS Gage Data	Regional Curve Interval	Pre-Existing Condition	Project Reference Stream	Design	As-Built
Bankfull Width (ft)	-	-		6.8-7.4	10.2	-
Floodprone Width (ft)	-	-		>100	>100	-
Bankfull Cross-sectional Area	-	-		9.0-9.6	18.7	-
Bankfull Mean Depth	-	-		1.31	1.85	-
Bankfull Max Depth	-	-	*	1.63-1.79	2.7	-
Width/Depth Ratio	-	-		5.2-5.6	5.4	-
Entrenchment Ratio	-	-		>10.0	>5.0	-
Wetted Perimeter (ft)	-	-		-	-	-
Hydraulic Radius (ft)	-	-		-	-	-
Bank Height Ratio	-	-		-	1.0	-
PATTERN						
Channel Beltwidth (ft)	-	-		51-92	85	-
Radius of Curvature (ft)	-	-	*	13.1-22.3	19.5-30.6	-
Meander Wave Length (ft)	-	-		77-100.7	114-138	-
Meander Width Ratio	-	-		5.2-12.5	4.2	-
PROFILE						
Riffle Length (ft)	-	-		-	-	-
Riffle Slope (ft/ft)	-	-	*	0.006-0.02	0.006-0.02	-
Pool Length (ft)	-	-		13-22	20-29	-
Pool to Pool Spacing (ft)	-	-		26-65	57-69	-
SUBSTRATE						
D50 (mm)	-	-	*	-	-	-
D85 (mm)	-	-		-	-	-
ADDITIONAL REACH PARAMETERS						
Valley Length (ft)	-	-		-	-	-
Channel Length (ft)	-	-		-	-	-
Sinuosity	-	-	*	1.36	1.3-1.5	-
Water Surface Slope (ft/ft)	-	-		0.0049-0.0064	0.004	-
Bankfull Slope (ft/ft)	-	-		-	-	-
Rosgen Classification	-	-		E5	E5	-
Cell noted with a (*), NCDOT report did not provide data due to existing stream channel on site not having representative features due to extensive human disturbances						
Cell noted with a (-), data was not provided						

**Table XI. Morphology and Hydraulic Monitoring Summary
Shepherds Tree/Project No. 333**

DIMENSION	Cross-Section 1-Riffle		Cross-Section 2-Pool		Cross-Section 3-Riffle		Cross-Section 4-Riffle		Cross-Section 5-Pool		Cross-Section 6-Pool		Cross-Section 7-Pool		Cross-Section 8-Pool	
	2006		2006		2006		2006		2006		2006		2006		2006	
Bankfull Width (ft)	7.96		9.19		9.04		10.42		8.86		7.8		11.17		25.96	
Floodprone Width (ft)	>100		N/A		>100		>100		N/A		N/A		N/A		N/A	
Bankfull Cross-sectional Area	9.55		12.07		6.86		21.41		15.5		7.44		18.04		46.62	
Bankfull Mean Depth	1.20		1.31		0.76		2.05		1.75		0.95		1.61		1.8	
Bankfull Max Depth	2.43		2.64		1.45		2.92		2.42		1.59		2.65		3.9	
Width/Depth Ratio	6.63		7.02		11.89		5.08		5.06		8.21		6.94		14.42	
Entrenchment Ratio	>2.20		N/A		>2.20		>2.20		N/A		N/A		N/A		N/A	
Wetted Perimeter (ft)	9.96		12.23		9.88		12.75		11.02		8.86		12.84		27.33	
Hydraulic Radius (ft)	0.96		0.99		0.69		1.68		1.41		0.84		1.4		1.71	
Bank Height Ratio	1.00		1.00		1.00		1.00		1.0		1.0		1.0		1.0	
SUBSTRATE																
D50 (mm)	0.05		0.03		0.03		0.05		0.04		0.04		0.04		0.06	
D84 (mm)	0.10		0.06		0.05		0.09		0.07		0.06		0.08		0.11	
PATTERN																
Channel Beltwidth (ft)	Min		Max		Med											
Radius of Curvature (ft)	40		60		45											
Meander Wave Length (ft)	19		50		30											
Meander Width Ratio	90		140		120											
	7.06		10.99		9.42											
PROFILE																
Riffle Length (ft)	*		*		*											
Riffle Slope (ft/ft)	*		*		*											
Pool Length (ft)	8.00		75.00		28.00											
Pool to Pool Spacing (ft)	10.00		239.00		54.00											
ADDITIONAL REACH PARAMETERS																
Valley Length (ft)	1227															
Channel Length (ft)	1718															
Sinuosity	1.4															
Water Surface Slope (ft/ft)	0.0027															
Bankfull Slope (ft/ft)	0.0026															
Rosgen Classification	E6															
Cells noted with a (*), riffles were not definable within survey reach																
Cells noted with a (-), data was not collected in previous years																
Cells noted with a (N/A), data was not applicable																

Table XI. Morphology and Hydraulic Monitoring Summary Continued
Shepherds Tree/Project No. 333

DIMENSION	Cross-Section 9-Riffle	Cross-Section 10-Pool	Cross-Section 11-Pool	Cross-Section 12-Riffle	Cross-Section 13-Pool	Cross-Section 14-Riffle	Cross-Section 15-Pool	Cross-Section 16-Trib Riffle
	2006	2006	2006	2006	2006	2006	2006	2006
Bankfull Width (ft)	22.62	15.73	12.96	12.50	14.00	11.6	11.00	14.00
Floodprone Width (ft)	>100	N/A	N/A	>200	N/A	>200	N/A	>200
Bankfull Cross-sectional Area	38.46	22.52	20.39	25.81	32.40	20.2	22.12	6.7
Bankfull Mean Depth	1.7	1.43	1.57	2.06	2.31	1.74	2.01	0.48
Bankfull Max Depth	3.56	3.12	2.94	3.1	3.60	3.42	3.21	1.05
Width/Depth Ratio	13.31	11	8.25	6.07	6.06	6.67	5.47	29.17
Entrenchment Ratio	>2.20	N/A	N/A	>2.2	N/A	>2.2	N/A	>2.2
Wetted Perimeter (ft)	24.02	17.56	14.66	17.37	16.35	14.27	13.24	14.84
Hydraulic Radius (ft)	1.60	1.28	1.39	1.49	1.98	1.42	1.67	0.45
Bank Height Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.12
SUBSTRATE								
D50 (mm)	0.05	0.06	0.06	0.06	0.05	0.04	0.06	0.06
D84 (mm)	0.09	0.10	0.10	0.11	0.09	0.08	0.11	0.11
Cells noted with a (*), riffles were not definable within survey reach								
Cells noted with a (-), data was not collected in previous years								
Cells noted with a (N/A), data was not applicable								

**Table XII. Wetland Criteria Attainment
Shepherds Tree Stream and Wetland Restoration**

Project No: 333

Gauge ID	Hydrology Threshold Met (Y/N)		Vegetation Plot ID	Vegetation Survival Threshold Met (Y/N)
Gauge 1	Y		Plot 1	Y
Gauge 2	N		Plot 2	Y
Gauge 3	Y		Plot 3	Y
Gauge 4	Y		Plot 4	Y
Gauge 5	N		Plot 5	Y
Gauge 6	Y		Plot 6	Y
Gauge 7	Y		Plot 7	Y
Gauge 8	Y		Plot 8	Y
Gauge 10	Y		Plot 9	Y
Gauge 11	Y		Plot 10	Y
Gauge 12	Y		Plot 11	Y
Gauge 13	Y		Plot 12	Y
Gauge 14	Y		Plot 13	Y
Gauge 15	Y		Plot 14	Y
Gauge 16	Y			
Gauge 17	Y			
Gauge 18	Y			
<i>2/18 gauges did not meet success criteria</i>			<i>All Vegetation plots met survival threshold</i>	

7. Hydrologic Criteria

Verification of bankfull events are unknown for the 2006 monitoring year. This is due to inundation of surface gauges and stream throughout the reach. Evidence of overbank conditions were observed, however; it is unknown whether high water marks were a result of bankfull events or beaver activity.

D. Macroinvertebrate Assessment

Macroinvertebrate sampling was not conducted for the 2006 monitoring year due to inundation from beaver activity on the Shepherds Tree site. Removal of beaver dams did not occur until

Winter 2006, so sampling was not conducted in 2006. Winter 2006 sampling would not be comparable to Spring 2007. NCEEP was contacted to discuss 2007 sampling.

SECTION III
Methodology

SECTION III

Methodology

Methodology

Methods employed for the Shepherds Tree stream and wetland restoration project were a combination of those established by standard regulatory guidance and procedures documents (see below), the Shepherds Tree mitigation plan (state project no. 6.769001t) submitted by the NCDOT and the Soil and Environmental Consultants monitoring reports.

REFERENCES

References

USACOE (2003) *Stream Mitigation Guidelines*. USACOE, USEPA, NCWRC, NCDENR-DWQ

USACOE (1987) *Corps of Engineers Wetlands Delineation Manual*. Tech report Y-87-1. AD/A176

Rosgen, D L. (1996) *Applied River Morphology*. Wildland Hydrology Books, Pagosa Springs, CO.

APPENDIX A

Vegetation Raw Data*

- 1. Vegetation Survey Data Tables**
- 2. Vegetation Problem Area Photos**
- 3. Problem Monitoring Plot Photos**

Planted Species	Monitoring Plots													
	1	2	3	4	5	6	7	8	9	10	11	12	13	14
SN (black willow)							10	1					2	4
FP (green ash)	2		4	15	3	3	4	10		10	17	11	20	8
LT (tulip poplar)	1		1	12										
PO (American sycamore)			9			2	1	10	6		4	17	20	20
GN (water oak)	1			2		2								3
AN (box elder)			1			4		2			7	11	15	
QM (swamp chestnut oak)		2	4	1		2		4			3	15		4
QP (cherrybark oak)	12		3	2	4	8		3	4	2	4		10	4
QP (willow oak)	2	3				1					2		7	7
CO (button bush)	4	2	1	1	3		1	1			1			2
Totals	22	7	23	33	10	22	16	15	26	12	34	58	74	52

Volunteer Species	Monitoring Plots													
	1	2	3	4	5	6	7	8	9	10	11	12	13	14
SN (black willow)		5		7	2	14		7	4	2				
FP (green ash)	5	6	4	8	3	13		12		15				
LT (tulip poplar)	1			3										
PO (American sycamore)		8	2			1			15	10				
GN (water oak)	4		3							2				
AN (box elder)			2		2		10			20				
QM (swamp chestnut oak)	3	8	2	5			15			15				
QP (cherrybark oak)	2			5				2						
QP (willow oak)	8	3												
CO (button bush)					5					5				
NS (black gum)	3		3				9			4	2	1		
BN (river birch)		17						1		2		10		2
AS (tag alder)													10	1
LS (sweet gum)										8				
AR (red maple)	13	30	2	20	11	6	7		6		8		20	20
Totals	39	77	18	48	23	34	41	22	25	83	10	11	30	23

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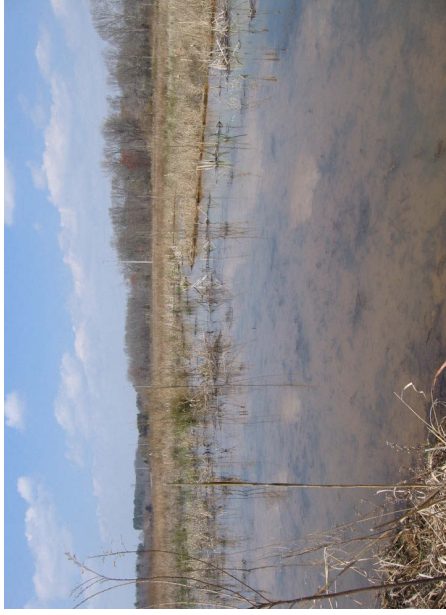
Date: March 2007
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Appendix A1. Vegetation Survey Data Tables



1. Bank Erosion – Vegetation Loss due to Beaver Activity



2. Beaver Pond Development



3. Beaver Dome

Photos taken during the initial site assessment conducted in May 2006

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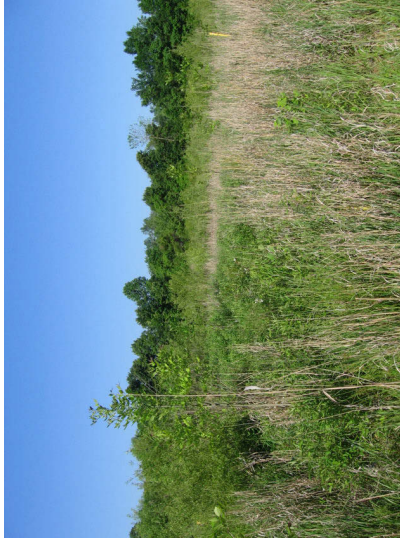
Appendix A2. Vegetation Problem Area Photos



Monitoring Plot 1



Monitoring Plot 2



Monitoring Plot 3



Monitoring Plot 4

Photos taken during the vegetation monitoring conducted in May 2006

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Appendix A3. Vegetation Monitoring Plot Photos





Monitoring Plot 5



Monitoring Plot 6



Monitoring Plot 7



Monitoring Plot 8

Photos taken during the vegetation monitoring conducted in May 2006

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Appendix A3. Vegetation Monitoring Plot Photos



Monitoring Plot 9



Monitoring Plot 10



Monitoring Plot 11



Monitoring Plot 12

Photos taken during the vegetation monitoring conducted in May 2006

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Appendix A3. Vegetation Monitoring Plot Photos





Monitoring Plot 13



Monitoring Plot 14

Photos taken during the vegetation monitoring conducted in May 2006

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Appendix A3. Vegetation Monitoring Plot Photos

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APPENDIX B

Geomorphic and Stream Stability Data*

- 1. Problem Area Plan View**
- 2. Representative Stream Problem Area Photos**
- 3. Stream Photo Station Photos**
- 4. Qualitative Visual Stability Assessment**
- 5. Cross-section Plots and Raw Data Tables**
- 6. Longitudinal Plots and Raw Data Tables**
- 7. Pebble Count Plots and Raw Data Tables**

*Raw data tables have been provided electronically.



1. Bank Erosion – Moderate 5/2006



2. Bank Slump 5/2006

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Appendix B2. Representative Stream Problem Area Photos



3. Beaver Dam 5/2006



4. Beaver Impoundment 5/2006

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Appendix B2. Representative Stream Problem Area Photos



5. In-Stream Wetland Vegetation 5/2006



6. Mid-Channel Bar 5/2006

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Appendix B2. Representative Stream Problem Area Photos



7. Vegetation Cover-Poor 5/2006

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Upstream

8. Beaver Impoundment: Station 73+50 ft 11/15/2006



Downstream



Upstream

9. Beaver Impoundment: Station 75+00 ft 11/15/2006



Downstream

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Appendix B2. Representative Stream Problem Area Photos



Looking Downstream at Beaver Dam

10. Beaver Dam: Station 78+25 ft 11/15/2006



Looking Upstream at Beaver Dam



Looking Upstream at Beaver Dam

11. Beaver Dam: Station 98+25 ft 11/15/2006



Downstream of Beaver Dam

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Appendix B2. Representative Stream Problem Area Photos



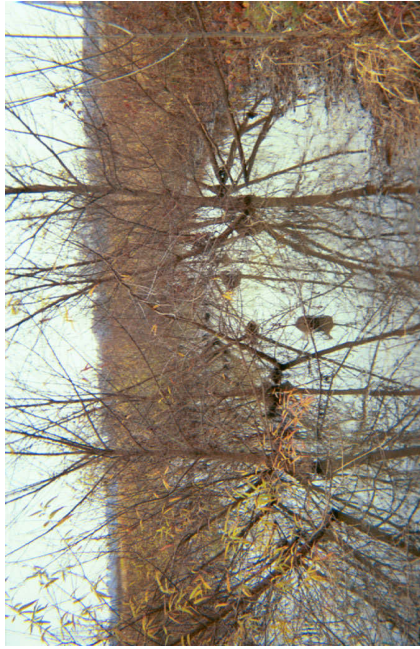


Upstream



Downstream

12. Beaver Impoundment: Station 3+25 ft Tributary to Shepherds Tree



Upstream



Downstream

13. Beaver Impoundment: Station 6+50 ft Confluence of Tributary to Shepherds Tree

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Appendix B2. Representative Stream Problem Area Photos

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Photo Point 1: Vegetation Plot-9/2006



Photo Point 2: Upstream-9/2006



Photo Point 2: Downstream-9/2006

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Appendix B3. Stream Photo Station Photos

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Photo Point 3: Upstream-9/2006



Photo Point 3: Downstream-9/2006



Photo Point 4: Upstream-9/2006



Photo Point 4: Downstream-9/2006

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Appendix B3. Stream Photo Station Photos



Photo Point 5: Upstream-9/2006



Photo Point 5: Downstream-9/2006



Photo Point 6: Upstream-9/2006



Photo Point 6: Downstream-9/2006

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Appendix B3. Stream Photo Station Photos



Photo Point 7: Upstream-9/2006



Photo Point 7: Downstream-9/2006



Photo Point 8: Upstream-9/2006



Photo Point 8: Downstream-9/2006

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Appendix B3. Stream Photo Station Photos



Photo Point 9: Upstream-9/2006



Photo Point 9: Downstream-9/2006



Photo Point 10: Upstream-9/2006



Photo Point 10: Downstream-9/2006

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Appendix B3. Stream Photo Station Photos



Photo Point 11: Upstream-9/2006



Photo Point 11: Downstream-9/2006



Photo Point 12: Upstream-9/2006



Photo Point 12: Downstream-9/2006

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Appendix B3. Stream Photo Station Photos





Photo Point 13: Upstream-9/2006



Photo Point 13: Downstream-9/2006



Photo Point 14: Upstream-9/2006



Photo Point 14: Downstream-9/2006

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Photo Point 15: Upstream-9/2006



Photo Point 15: Downstream-9/2006



Photo Point 16: Upstream-9/2006



Photo Point 16: Downstream-9/2006

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Appendix B3. Stream Photo Station Photos



Photo Point 17: Upstream-9/2006



Photo Point 17: Downstream-9/2006



Photo Point 18: Vegetation Plot-9/2006

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Prepared For:



Jordan
Jones &
Goulding
CONSULTANTS, INC.

Appendix B3. Stream Photo Station Photos



Photo Point 19: Upstream-9/2006



Photo Point 19: Downstream-9/2006



Photo Point 20: Upstream-9/2006

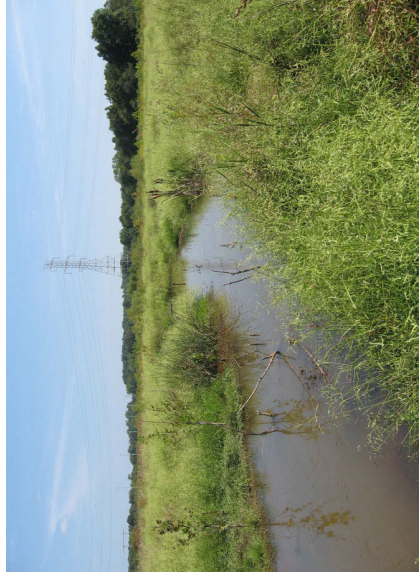


Photo Point 20: Downstream-9/2006

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Appendix B3. Stream Photo Station Photos



Photo Point 21: Upstream-9/2006



Photo Point 21: Downstream-9/2006



Photo Point 22: Upstream-9/2006



Photo Point 22: Downstream-9/2006

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Appendix B3. Stream Photo Station Photos



Photo Point 23: Upstream-9/2006



Photo Point 23: Downstream-9/2006



Photo Point 24: Upstream-9/2006



Photo Point 24: Downstream-9/2006

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Appendix B3. Stream Photo Station Photos



Photo Point 25: Upstream-9/2006



Photo Point 25: Downstream-9/2006



Photo Point 26: Upstream-9/2006



Photo Point 26: Downstream-9/2006

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Appendix B3. Stream Photo Station Photos



Photo Point 27: Upstream-4/2006



Photo Point 27: Downstream-4/2006

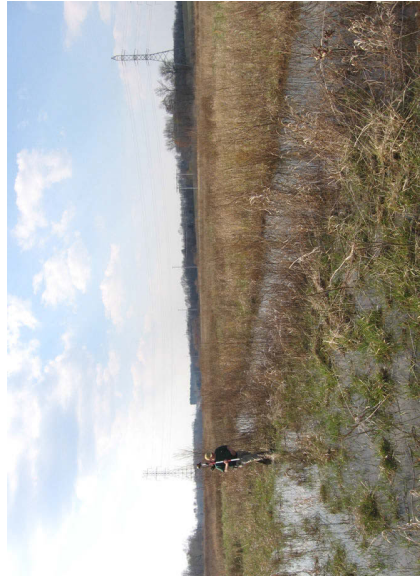


Photo Point 28: Upstream-4/2006



Photo Point 28: Downstream-4/2006

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Appendix B3. Stream Photo Station Photos



Photo Point 29: Upstream-4/2006



Photo Point 29: Downstream-4/2006



Photo Point 30: 4/2006

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Appendix B3. Stream Photo Station Photos



Photo Point 31: Upstream-9/2006



Photo Point 31: Downstream-9/2006



Photo Point 32: Upstream-9/2006



Photo Point 32: Downstream-9/2006

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Appendix B3. Stream Photo Station Photos



Photo Point 33: Upstream-9/2006



Photo Point 33: Downstream-9/2006



Photo Point 34: Upstream-9/2006



Photo Point 34: Downstream-9/2006

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Appendix B3. Stream Photo Station Photos





Photo Point 35: Upstream-9/2006



Photo Point 35: Downstream-9/2006



Photo Point 36: Upstream-9/2006



Photo Point 36: Downstream-9/2006

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Appendix B3. Stream Photo Station Photos



Photo Point 37: Upstream-9/2006



Photo Point 37: Downstream-9/2006



Photo Point 38: Upstream-9/2006

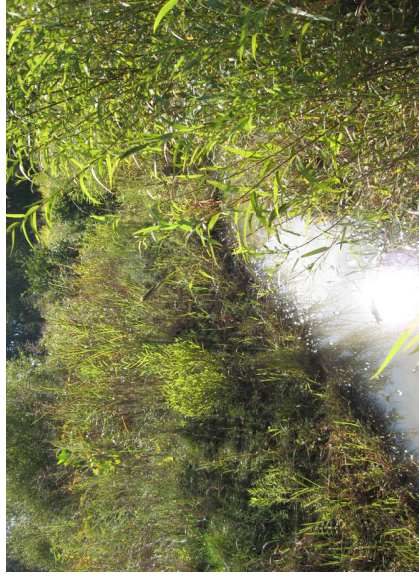


Photo Point 38: Downstream-9/2006

Prepared For:



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Appendix B3. Stream Photo Station Photos



Photo Point 39: Upstream-9/2006

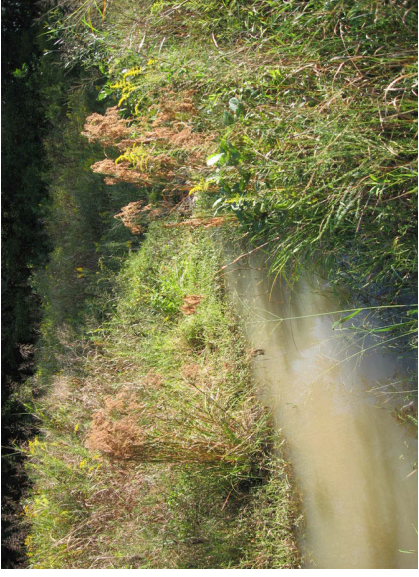


Photo Point 39: Downstream-9/2006

Prepared For:



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Appendix B3. Stream Photo Station Photos

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Shepherds Tree/Project No. 333

Upper Reach (1a)

Feature Category	(# Stable) Number Performing as Intended	Total Number assessed per 2006 survey	Total Number/feet in unstable state	% Perform in Stable Condition	Feature Perform Mean or Total
A. Ruffles	1. Present?				
	2. Armor Stable?				
	3. Facet grade appears stable?	*	N/A	*	0%
	4. Minimal evidence of embedding/fining?				
	5. Length appropriate?				
B. Pools	1. Present?	*		*	0%
	2. Sufficiently deep?				
	3. Length Appropriate?				
C. Thalweg	1. Upstream of meander bend centering?		*		
	2. Downstream of meander centering?				
D. Meanders	1. Outer bend in state of limited/controlled erosion?	19		100%	100%
	2. Of those eroding, # w/concomitant point bar formation?	N/A	N/A	N/A	
	3. Apparent Rc within spec?	19		100%	
	4. Sufficient floodplain access and relief?	19		100%	
E. Bed General	1. General channel bed aggradation areas (bar formation)?		9904/9904	0%	50%
	2. Channel bed degradation - areas of increasing down-cutting or head cutting?		0/9904	100%	
F. Vanes	1. Free of back or arm scour?				*
	2. Height appropriate?	*	N/A	*	
	3. Angle and geometry appear appropriate?				
	4. Free of piping or other structural failures?				
G. Wads/Boulders	1. Free of scour?	*	*	*	*
	2. Footing stable?				
H. Bank Performance	1. Actively eroding, wasting, or slumping bank	N/A	345/9904	98.25%	98.25%
Cells noted with a (N/A), data was not applicable					
Cells noted with a (*), features impacted by beaver activity, heavy sedimentation and backwater observed					

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Shepherds Tree Stream and Wetland Restoration
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Appendix B4. Qualitative Visual Stability Assessment



Shepherds Tree/Project No. 333

Lower Reach (1b)

Feature Category	(# Stable) Number Performing as Intended	Total Number assessed per 2006 survey	Total Number/feet in unstable state	% Perform in Stable Condition	Feature Perform Mean or Total
A. Ruffles	1. Present?				
	2. Armor Stable?				
	3. Facet grade appears stable?	0	N/A	0%	0%
	4. Minimal evidence of embedding/fining?				
B. Pools	5. Length appropriate?				
	1. Present?	24		100%	
	2. Sufficiently deep?	17	N/A	71%	90.28%
C. Thalweg	3. Length Appropriate?	24		100%	
	1. Upstream of meander bend centering?		*		
D. Meanders	2. Downstream of meander centering?				
	1. Outer bend in state of limited/controlled erosion?	17		100%	
	2. Of those eroding, # w/concomitant point bar formation?	N/A	N/A	100%	100%
	3. Apparent Rc within spec?	17		100%	
E. Bed General	4. Sufficient floodplain access and relief?	17		100%	
	1. General channel bed aggradation areas (bar formation)?	0	17	0%	50%
	2. Channel bed degradation - areas of increasing down-cutting or head cutting?	17	0	100%	
	1. Free of back or arm scour?	5		100%	
F. Vanes	2. Height appropriate?	-		-	100%
	3. Angle and geometry appear appropriate?	-	N/A	-	
	4. Free of piping or other structural failures?	5		100%	
	1. Free of scour?	4*	4*	0*	100%*
G. Wads/Boulders	2. Footing stable?				
H. Bank Performance	1. Actively eroding, wasting, or slumping bank	N/A	N/A	100.00%	100%
Cells noted with a (N/A), data was not applicable					
Cells noted with a (*), features impacted by beaver activity, heavy sedimentation and backwater observed					

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Appendix B4. Qualitative Visual Stability Assessment



Project Name: Shepherds Tree					
Cross-Section: 1					
Feature: Riffle					
		As Built		2006	
Station	Elevation	Notes	Station	Elevation	Notes
13.80	99.40		0.00	99.39	LEP, TOP
18.80	99.40		0.00	99.17	LEP, Ground
21.10	97.10		5.20	99.33	FP
23.80	96.70		15.30	99.28	FP
26.60	97.10		20.50	99.3	BKF
28.90	99.40		21.50	98.84	
33.90	99.40		22.50	97.81	
			22.50	97.51	SB
			23.20	96.97	SB
			24.10	96.85	TW
			24.60	97.14	SB
			24.90	97.45	SB
			25.40	98.2	Bench
			27.40	98.42	
			28.50	99.27	BKF
			33.00	99.38	
			40.00	99.21	
			49.00	99.37	REP, TOP
			49.00	99.53	REP, Ground

2006 Summary Data	
Bankfull Cross-Sectional Area	9.55
Bankfull Width	7.96
Bankfull Mean Depth	1.20
Bankfull Max Depth	2.43
Width/Depth Ratio	6.63
Entrenchment Ratio	>2.2

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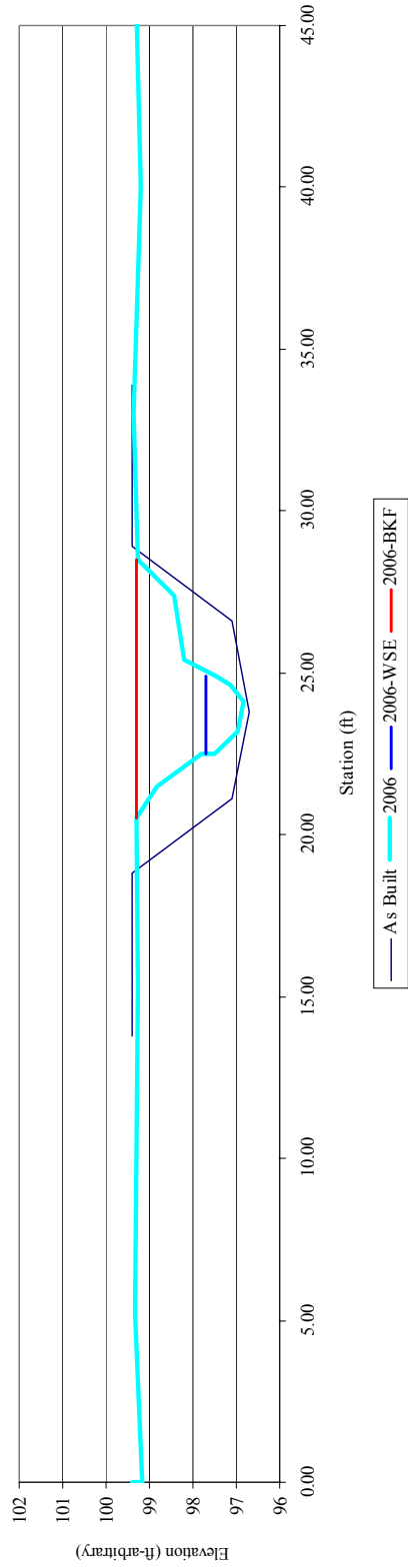
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Appendix B5. Cross-Section Plots and Raw Data Tables

Prepared For:




Cross-Section 1-Riffle
Shepherds Tree



Cross-Section #1 Riffle: Upstream 01/2007



Cross-Section #1 Riffle: Downstream 01/2007

Prepared For:



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Appendix B5. Cross-Section Plots and Raw Data Tables



Project Name: Shepherds Tree Cross-Section: 2 Feature: Pool		As Built		2006	
Station	Elevation	Notes	Station	Elevation	Notes
16.00	100.00		0.00	99.84	LEP, Ground
21.00	100.00		10.00	100.06	FP
24.10	96.90		18.00	100.28	FP
25.30	96.90		20.00	100.17	
29.60	97.70		21.80	100.04	BKF
31.90	100.00		22.40	99.16	
36.90	100.00		23.40	99.1	LEW
			24.70	97.39	SB
			25.60	98.1	SB
			27.00	98.54	SB
			27.80	98.01	SB
			28.10	99.12	REW
			30.00	99.05	
			31.00	100.01	BKF
			39.00	99.82	FP
			46.00	100.05	FP
			51.60	100.1	REP, TOP
			51.60	99.87	REP, Ground

2006 Summary Data	
Bankfull Cross-Sectional Area	12.07
Bankfull Width	9.19
Bankfull Mean Depth	1.31
Bankfull Max Depth	2.64
Width/Depth Ratio	7.02
Entrenchment Ratio	N/A

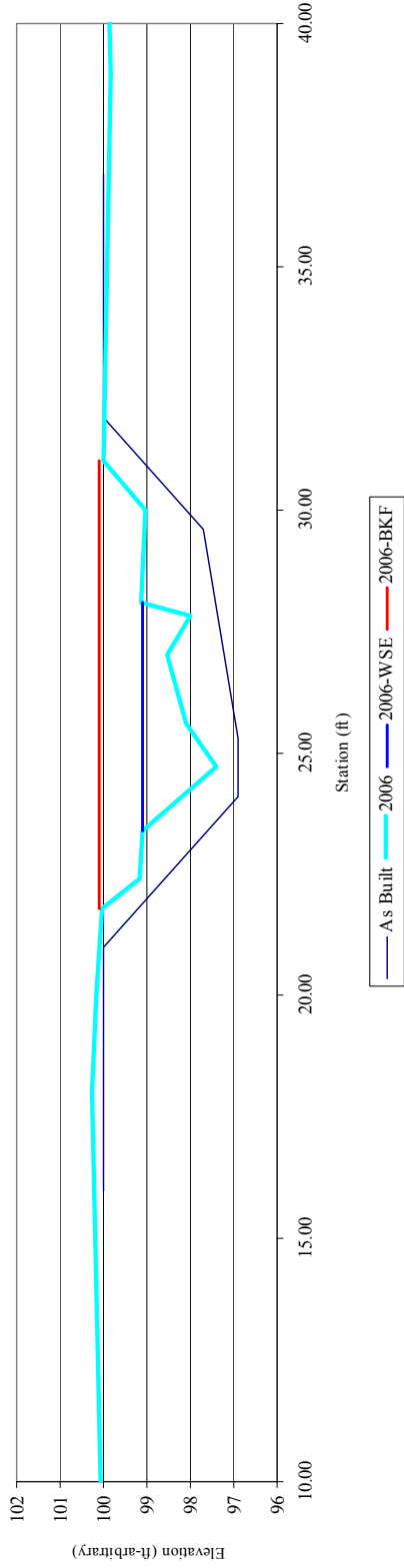
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Appendix B5. Cross-Section Plots and Raw Data Tables

Cross-Section 2-Pool
Shepherds Tree



Cross-Section #2 Pool: Upstream 01/2007



Cross-Section #2 Pool: Downstream 01/2007

Prepared For:



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Appendix B5. Cross-Section Plots and Raw Data Tables

Project Name: Shepherds Tree					
Cross-Section: 3					
Feature: Riffle					
		2006			
	As Built				
Station	Elevation	Notes	Station	Elevation	Notes
17.80	99.90		0.00	99.7	No pin
22.80	99.90		9.00	99.63	FP
25.10	97.60		19.40	99.92	FP
27.80	97.20		23.60	99.82	BKF
30.60	97.60		25.00	99.37	SB
32.90	99.90		27.70	98.49	TW
37.90	99.90		28.70	98.87	SB
			30.00	99.19	SB
			30.30	99.19	
			31.70	99.51	
			32.90	100.06	BKF
			34.70	100.07	FP
			38.30	99.48	FP
			42.00	100.04	FP
			54.00	99.86	REP, Ground
			54.10	100	REP, Top

2006 Summary Data	
Bankfull Cross-Sectional Area	6.86
Bankfull Width	9.04
Bankfull Mean Depth	0.76
Bankfull Max Depth	1.45
Width/Depth Ratio	11.89
Entrenchment Ratio	>2.2

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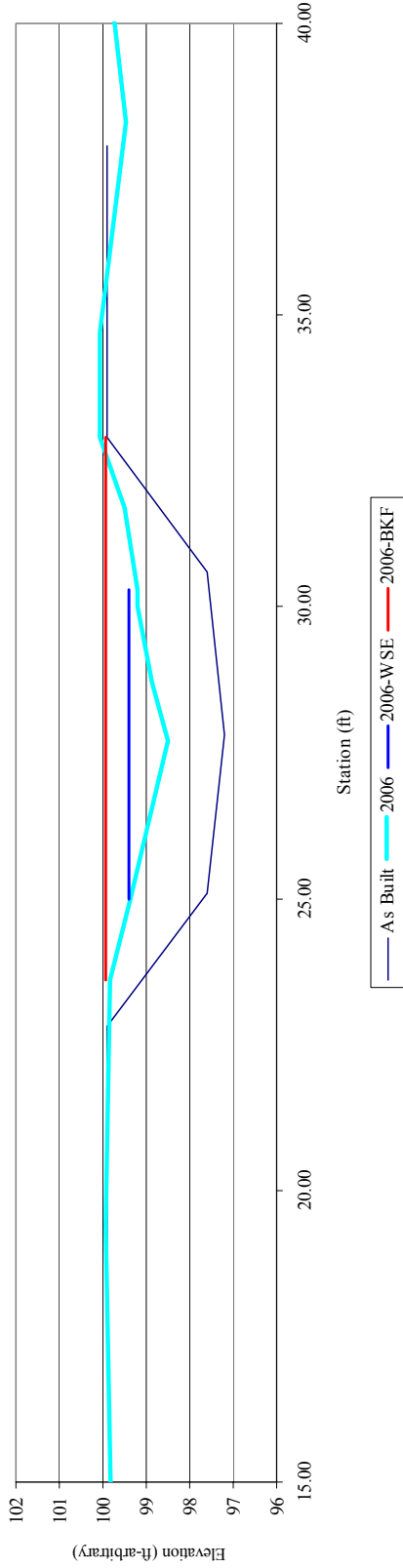
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Appendix B5. Cross-Section Plots and Raw Data Tables

Prepared For:



Cross-Section 3-Riffle
Shepherds Tree



Cross-Section #3 Riffle: Upstream 01/2007



Cross-Section #3 Riffle: Downstream 01/2007

Prepared For:



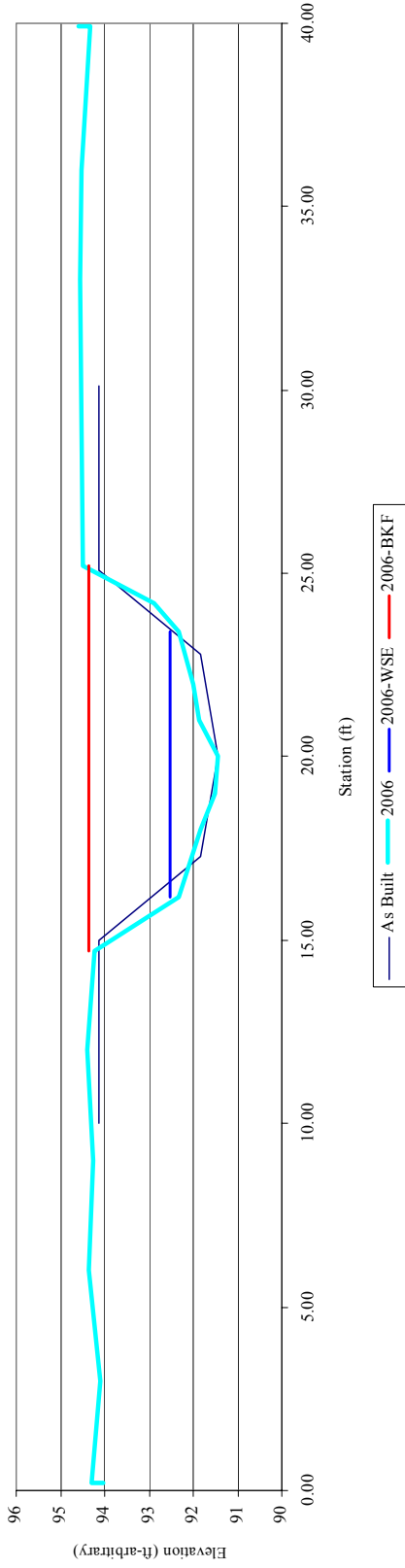
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Appendix B5. Cross-Section Plots and Raw Data Tables

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Cross-Section 4-Riffle
Shepherds Tree



Cross-Section #4 Riffle: Upstream 01/2007



Cross-Section #4 Riffle: Downstream 01/2007

Prepared For:



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Appendix B5. Cross-Section Plots and Raw Data Tables

Date: March 2007
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Project Name: Shepherds Tree							
Cross-Section: 5							
Feature: Pool							
As Built		2006					
Station	Elevation	Notes	Station	Elevation	Notes		
15.00	94.90		0.70	94.24	grd elev		
20.00	94.90		0.70	94.42	to pin		
22.30	92.60		3.00	94.26			
26.60	91.80		7.00	94.38			
27.80	91.80		11.00	94.5			
30.90	94.90		15.00	94.79			
35.90	94.90		18.00	94.83			
			21.00	94.57	tob		
			22.10	93.56	ws		
			24.00	92.63			
			25.00	92.21			
			26.00	92.02	tw		
			27.00	92.12			
			28.00	92.06			
			29.00	92.73			
			29.80	93.13			
			29.90	93.15			
			30.00	94.31	tob		
			34.00	94.41			
			38.00	94.35			
			42.00	94.49			
			46.00	94.40			
			50.30	94.11	grd elev		
			50.30	94.30			

2006 Summary Data	
Bankfull Cross-Sectional Area	15.5
Bankfull Width	8.86
Bankfull Mean Depth	1.75
Bankfull Max Depth	2.42
Width/Depth Ratio	5.06
Entrenchment Ratio	N/A

Date: March 2007
Project No.: 333



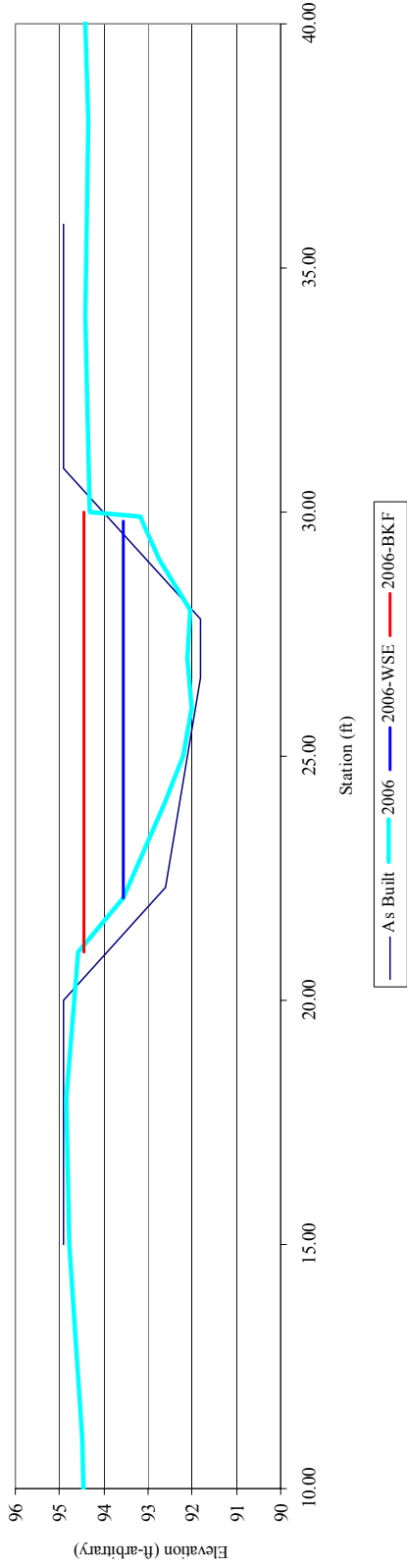
Shepherds Tree Stream and Wetland Restoration
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Appendix B5. Cross-Section Plots and Raw Data Tables

Prepared For:



Cross-Section 5--Pool
Shepherds Tree



Cross-Section #5 Pool: Upstream 01/2007



Cross-Section #5 Pool: Downstream 01/2007

Prepared For:



Shepherds Tree Stream and Wetland Restoration
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Appendix B5. Cross-Section Plots and Raw Data Tables

Date: March 2007
Project No.: 333



Project Name: Shepherds Tree							
Cross-Section: 6							
Feature: Pool							
As Built		2006					
Station	Elevation	Notes	Station	Elevation	Notes	grd elev	
14.00	94.70		1.00	94.42			
19.00	94.70		1.00	94.7			
21.30	92.40		4.00	94.49			
25.60	91.60		7.00	94.51			
26.80	91.60		10.00	94.58			
29.90	94.70		14.00	94.61			
34.90	94.70		17.00	94.63			
			20.00	94.37			
			21.60	93.94			
			23.00	93.56			
			24.00	93.07	tw		
			25.00	93.14			
			26.00	93.25			
			27.00	94.34			
			27.80	94.48			
			30.00	94.67			
			33.00	94.67			
			35.00	94.71			
			38.00	94.84			
			40.00	94.76			
			43.40	94.76		grd elev	
			43.40	94.95			

2006 Summary Data	
Bankfull Cross-Sectional Area	7.44
Bankfull Width	7.80
Bankfull Mean Depth	0.95
Bankfull Max Depth	1.59
Width/Depth Ratio	8.21
Entrenchment Ratio	N/A

Date: March 2007
Project No.: 333



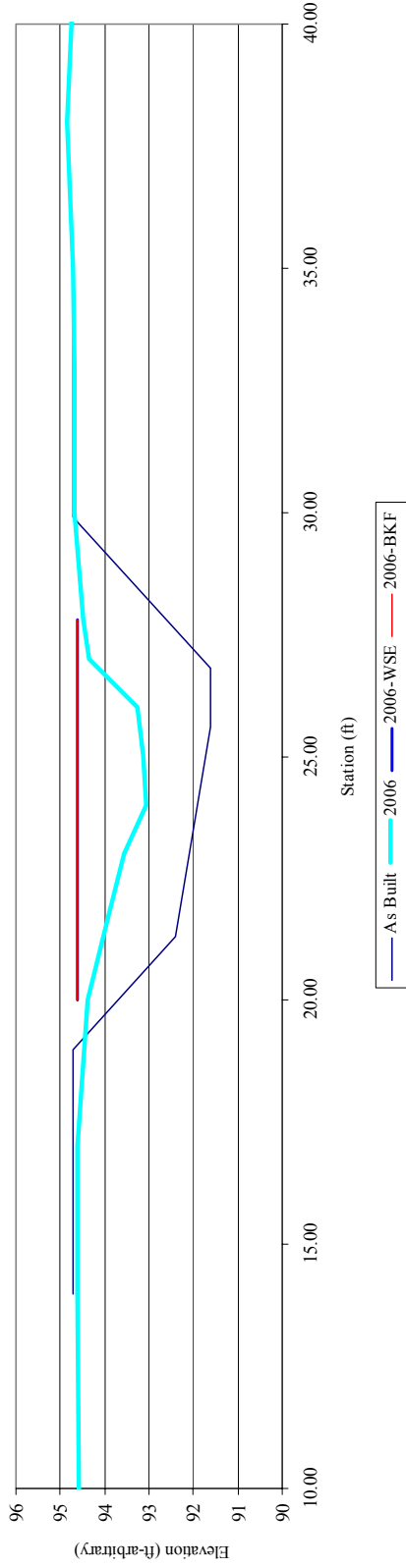
Shepherds Tree Stream and Wetland Restoration
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Appendix B5. Cross-Section Plots and Raw Data Tables

Prepared For:



Cross-Section 6-Pool
Shepherds Tree



Cross-Section #6 Pool: Upstream 01/2007



Cross-Section #6 Pool: Downstream 01/2007

Prepared For:



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Appendix B5. Cross-Section Plots and Raw Data Tables

Date: March 2007
Project No.: 333



Project Name: Shepherds Tree		2006	
Cross-Section: 7		Elevation	
Feature: Pool		Station	
As Built		2006	
Station	Elevation	Station	Elevation
12.80	94.50	0.50	93.97
17.80	94.50	0.50	94.13
20.90	91.40	3.00	94.05
22.10	91.40	7.00	94.15
26.40	92.20	11.00	94.39
28.70	94.50	14.00	94.26
33.70	94.50	17.00	94.33
		18.80	93.53
		19.70	92.71
		20.90	92.21
		22.00	91.79
		23.00	92.11
		25.00	92.25
		26.30	92.82
		28.30	94.55
		30.00	94.49
		33.00	94.41
		37.00	94.41
		39.00	94.53
		41.40	94.53
		41.40	94.75
			grd elev

2006 Summary Data	
Bankfull Cross-Sectional Area	18.04
Bankfull Width	11.17
Bankfull Mean Depth	1.61
Bankfull Max Depth	2.65
Width/Depth Ratio	6.94
Entrenchment Ratio	N/A

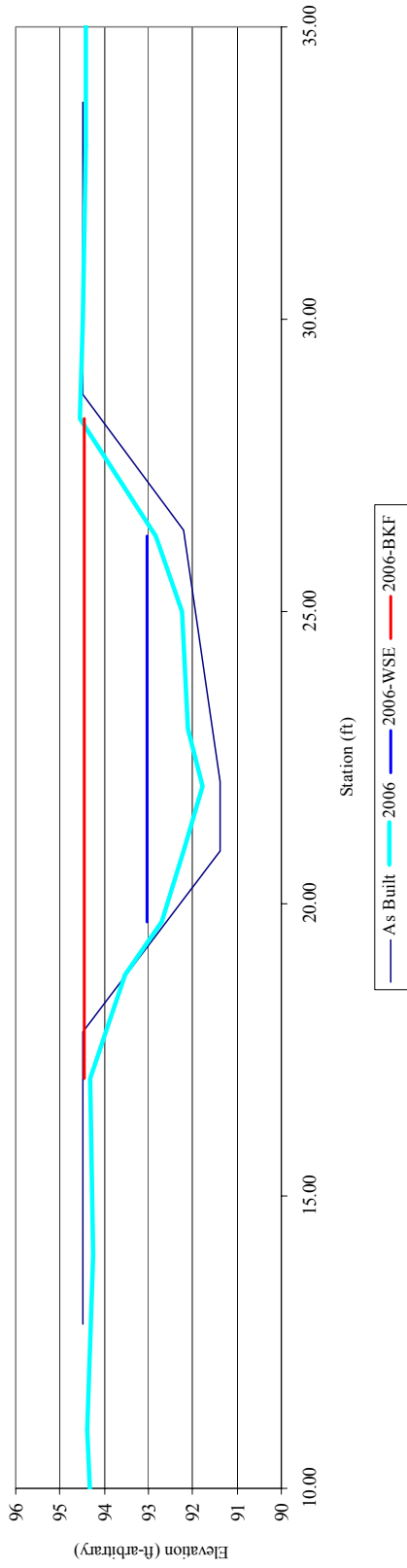
Date: March 2007
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Appendix B5. Cross-Section Plots and Raw Data Tables

Cross-Section 7-Pool
Shepherds Tree



Cross-Section #7 Pool: Upstream 12/2006



Cross-Section #7 Pool: Downstream 12/2006

Prepared For:



Shepherds Tree Stream and Wetland Restoration
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Appendix B5. Cross-Section Plots and Raw Data Tables

As Built		2006	
Station	Elevation	Station	Elevation
19.00	94.60	0.30	94.8
24.00	94.60	0.30	94.89
26.30	92.30	2.00	94.74
30.60	91.50	4.00	94.76
31.80	91.50	6.00	94.62
34.90	94.60	8.00	94.56
39.90	94.60	10.00	94.66
		12.00	94.6
		14.00	94.71
		16.00	94.52
		17.30	94.4
		18.00	94.12
		20.00	93.75
		22.00	93.25
		23.00	92.95
		24.00	92.72
		25.00	92.27
		26.00	91.84
		27.00	91.49
		29.00	90.94
		30.00	90.82
		32.00	91.26
		33.00	91.83
		34.70	92.71
		35.20	92.93
		36.00	93.30
		38.00	94.17
		40.00	94.73
		43.00	94.67
		44.00	94.71
		48.00	94.78
		50.00	94.79
		52.00	94.86
		54.00	94.83
		56.50	94.75
		56.50	94.92

2006 Summary Data	
Bankfull Cross-Sectional Area	46.62
Bankfull Width	23.96
Bankfull Mean Depth	1.80
Bankfull Max Depth	3.90
Width/Depth Ratio	14.42
Entrenchment Ratio	N/A

Date: March 2007
Project No.: 333

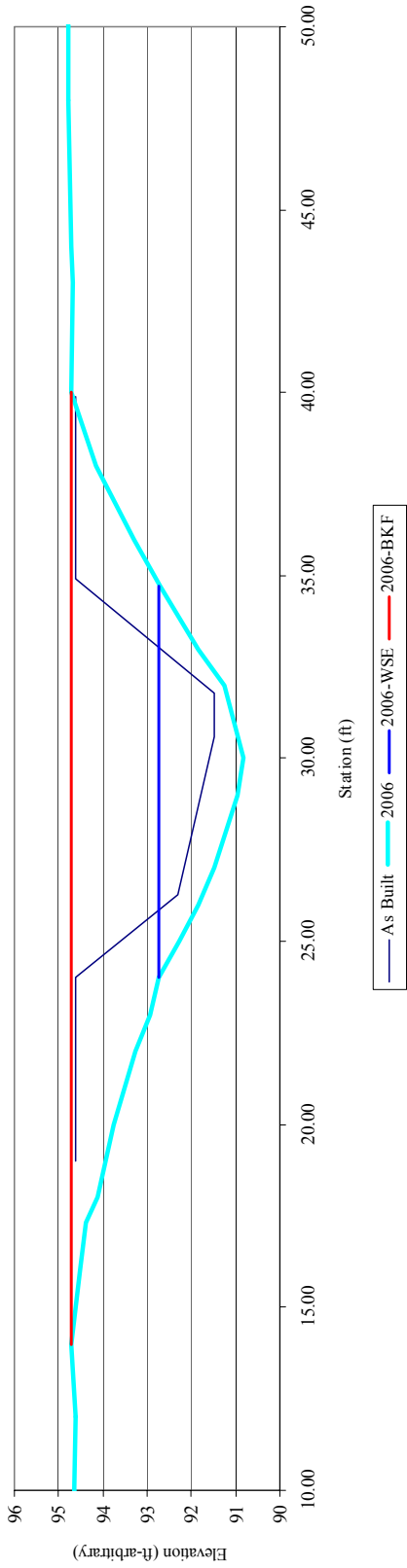
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Prepared For:

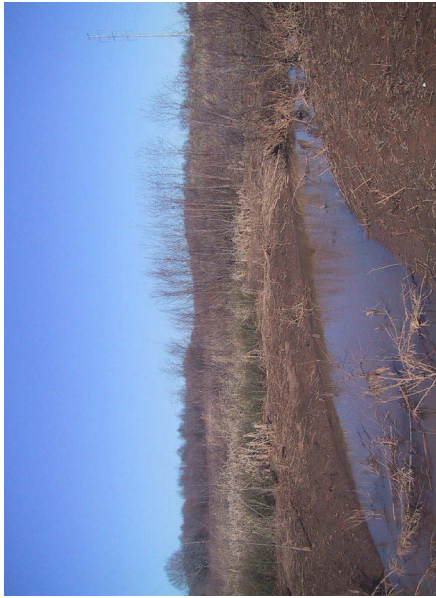



Appendix B5. Cross-Section Plots and Raw Data Tables

Cross-Section 8-Pool
Shepherds Tree



Cross-Section #8 Pool: Upstream 01/2007



Cross-Section #8 Pool: Downstream 01/2007

Prepared For:



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Date: March 2007
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Appendix B5. Cross-Section Plots and Raw Data Tables



Project Name: Shepherds Tree
 Cross-Section: 9
 Feature: Rfifle

As Built		2006	
Station	Elevation	Station	Elevation
12.00	93.90	0.70	95.02
17.00	93.90	0.70	94.88
19.30	91.60	3.00	94.87
22.00	91.20	5.00	94.7
24.80	91.60	7.00	94.7
27.10	93.90	9.00	94.58
32.10	93.90	11.00	94.39
		12.00	94.26
		14.00	93.85
		15.00	93.46
		16.60	92.69
		17.00	92.31
		19.00	91.44
		20.00	91.19
		21.00	90.95
		23.00	90.78
		24.00	90.99
		25.00	91.56
		26.00	91.98
		27.60	92.68
		28.20	92.97
		30.00	93.62
		32.00	94.15
		34.00	94.29
		38.00	94.63
		40.00	94.81
		42.00	94.83
		44.00	94.83
		47.00	95.01
		48.00	95.00
		50.00	95.04
		52.00	95.06
		52.70	94.93
		52.70	95.13

Notes

lpintoop
 lpingrd
 tob blkf
 rew-ws
 rew-ws
 tob blkf
 rpim grd

2006 Summary Data	
Bankfull Cross-Sectional Area	38.46
Bankfull Width	22.62
Bankfull Mean Depth	1.70
Bankfull Max Depth	3.56
Width/Depth Ratio	13.31
Entrenchment Ratio	>2.2

Prepared For:



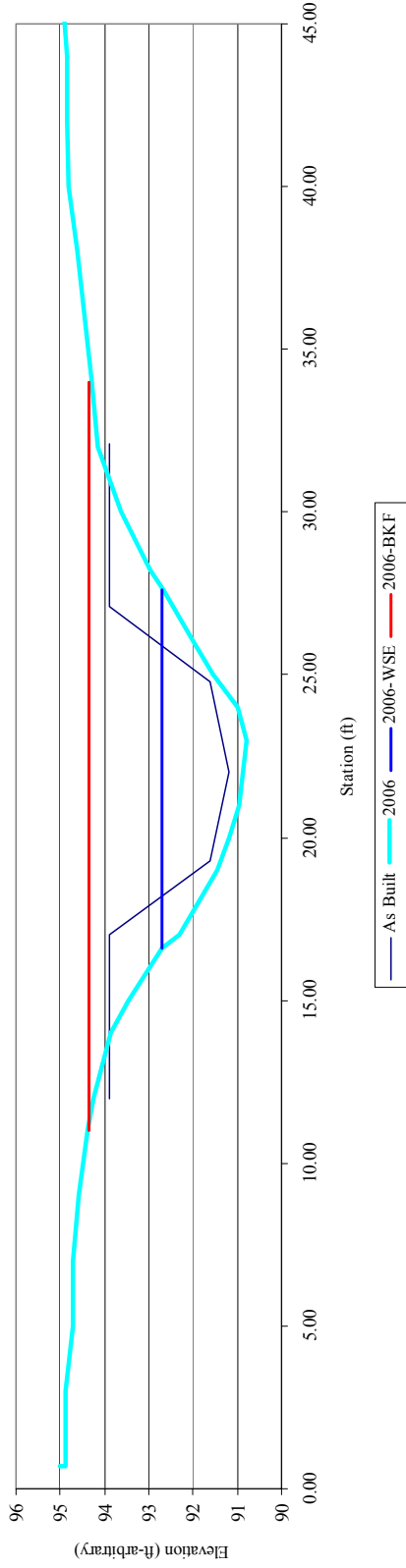
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Appendix B5. Cross-Section Plots and Raw Data Tables

Cross-Section 9-Riffle
Shepherds Tree



Cross-Section #9 Riffle: Upstream 01/2007



Cross-Section #9 Riffle: Downstream 01/2007

Prepared For:



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Appendix B5. Cross-Section Plots and Raw Data Tables

Date: March 2007
Project No.: 333



Project Name: Shepherds Tree					
Cross-Section: 10					
Feature: Pool					
		As Built		2006	
Station	Elevation	Notes	Station	Elevation	Notes
20.00	95.10		1.50	95.08	l pin grd
25.00	95.10		1.50	95.11	l pin top
27.30	92.80		3.00	95.24	
31.60	92.00		5.00	95.32	
32.80	92.00		6.00	94.89	
35.90	95.10		7.00	94.68	
40.90	95.10		9.00	94.72	
			11.00	94.86	
			13.00	95.04	
			15.00	94.92	
			17.00	95	
			19.00	94.98	
			20.50	95.01	
			22.00	95.16	
			24.00	95.16	ltob blkf
			25.50	94.8	
			26.90	93.32	lew-ws
			28.00	92.52	
			29.00	92.19	
			31.00	92.06	
			32.00	92.54	
			33.50	93.32	rew-ws
			35.70	94.88	
			40.00	95.20	rtob blkf
			44.00	95.25	
			50.00	94.75	
			55.00	94.90	
			60.00	95.25	rt pin top
			60.00	95.15	

2006 Summary Data	
Bankfull Cross-Sectional Area	22.52
Bankfull Width	15.73
Bankfull Mean Depth	1.43
Bankfull Max Depth	3.12
Width/Depth Ratio	11.00
Entrenchment Ratio	N/A

Date: March 2007
Project No.: 333



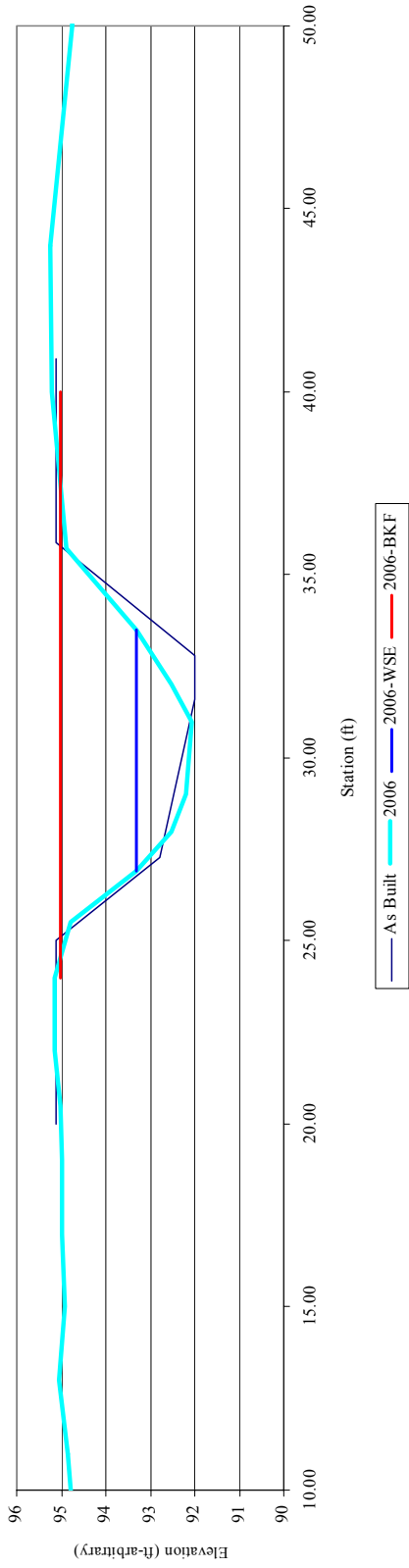
Shepherds Tree Stream and Wetland Restoration
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Appendix B5. Cross-Section Plots and Raw Data Tables

Prepared For:



Cross-Section #10-Pool
Shepherds Tree



Cross-Section #10 Pool: Upstream 01/2007



Cross-Section #10 Pool: Downstream 01/2007

Prepared For:



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Appendix B5. Cross-Section Plots and Raw Data Tables

Date: March 2007
Project No.: 333



Project Name: Shepherds Tree
 Cross-Section: 11
 Feature: Pool

As Built				2006			
Station	Elevation	Notes	Station	Elevation	Notes	Station	Elevation
1.10	95.10		0.50	94.88	ljoin grd		
6.10	95.10		0.50	95.03	ljoin top		
9.20	92.00		2.00	94.98			
10.40	92.00		4.00	95.04			
14.70	92.80		6.00	95.03	ltob		
17.00	95.10		7.00	94.47			
22.00	95.10		7.50	93.87			
			8.50	93.22	lew-ws		
			9.00	92.72			
			10.00	92.36			
			11.00	92.23			
			12.00	92.07			
			13.00	92.41	tw		
			14.00	92.7			
			14.70	93.22	rew-ws		
			15.00	93.43			
			16.00	94.1			
			17.20	94.87			
			19.00	94.99	rtob-blkf		
			21.00	95.01			
			23.00	94.86			
			25.00	95.15			
			27.00	95.08			
			29.00	94.99			
			31.00	94.90			
			32.70	94.97	rpingrd		
			32.70	95.09			

2006 Summary Data	
Bankfull Cross-Sectional Area	20.39
Bankfull Width	12.96
Bankfull Mean Depth	1.57
Bankfull Max Depth	2.94
Width/Depth Ratio	8.25
Entrenchment Ratio	N/A

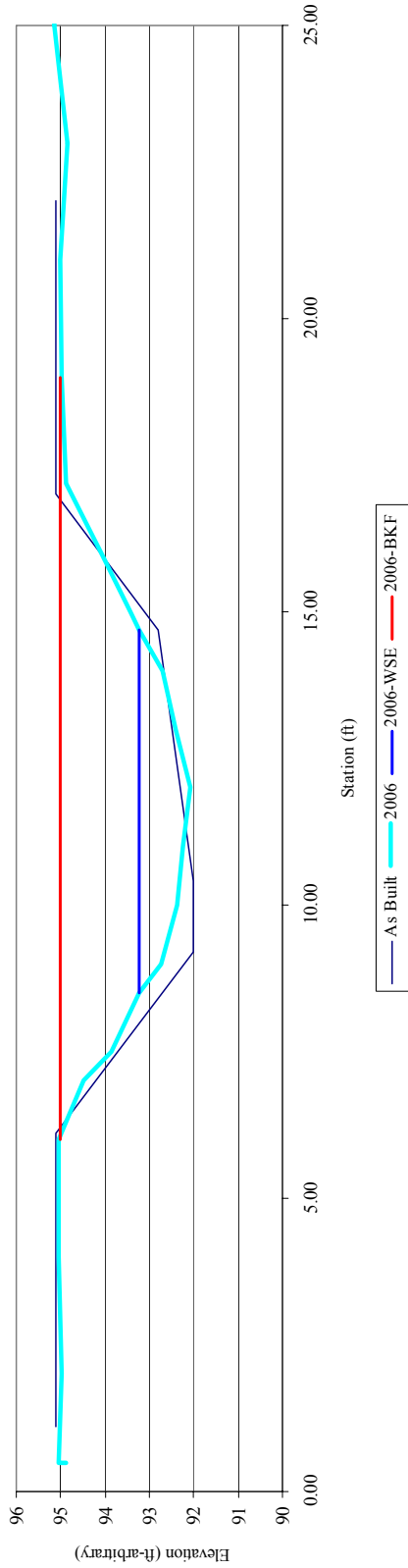
Prepared For:



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Appendix B5. Cross-Section Plots and Raw Data Tables

Cross-Section #11-Pool
Shepherds Tree



Cross-Section #11 Pool: Upstream 01/2007



Cross-Section #11 Pool: Downstream 01/2007

Prepared For:



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Appendix B5. Cross-Section Plots and Raw Data Tables

Project Name: Shepherds Tree
 Cross-Section: 12
 Feature: Riffle

As Built		2006	
Station	Elevation	Station	Elevation
22.00	99.66	0.00	99.92
27.00	99.66	1.00	99.86
30.50	96.86	6.00	99.86
33.50	96.46	10.00	99.80
36.50	96.86	15.00	99.67
40.30	99.66	20.00	99.57
43.30	99.66	23.50	99.55
		27.50	99.66
		28.00	99.35
		29.50	97.73
		30.00	97.52
		30.50	97.06
		31.30	96.80
		32.00	96.81
		33.00	96.75
		34.00	96.67
		35.00	96.56
		35.10	96.70
		36.50	96.98
		37.30	97.52
		37.60	97.84
		38.10	98.35
		39.00	98.97
		40.00	99.66
		42.00	99.84
		47.00	99.81
		50.00	99.87
		55.00	100.18
		58.00	100.15
		60.00	100.19
		62.00	100.27
		64.00	100.32
		66.00	100.34
		68.00	100.33
		70.00	100.35
		75.60	100.19
		75.60	100.32

2006 Summary Data	
Bankfull Cross-Sectional Area	25.81
Bankfull Width	12.50
Bankfull Mean Depth	2.06
Bankfull Max Depth	3.10
Width/Depth Ratio	6.07
Entrenchment Ratio	>2.2

Prepared For:



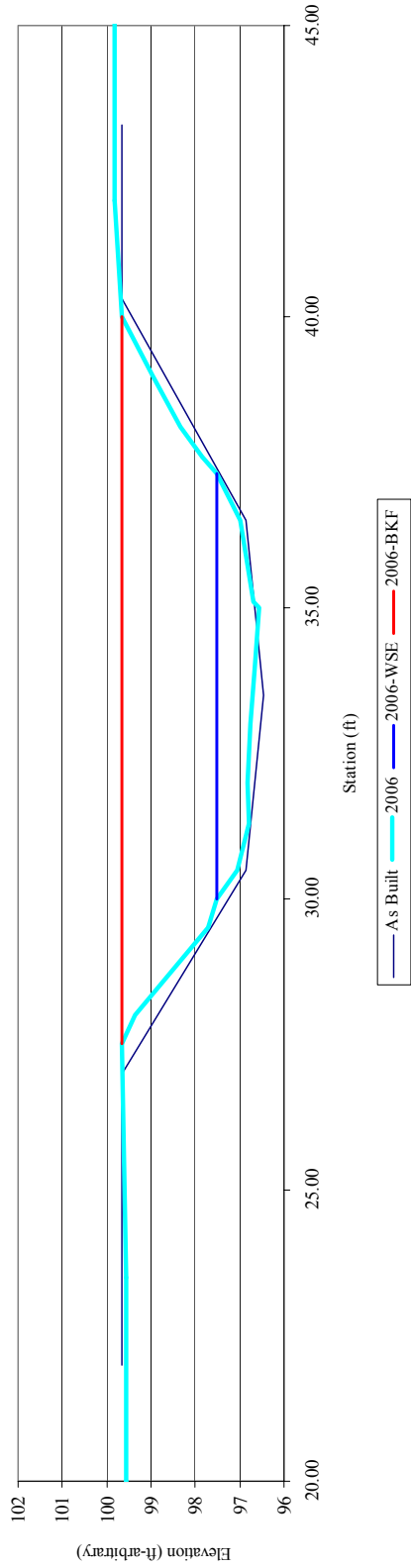
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Appendix B5. Cross-Section Plots and Raw Data Tables



Cross-Section 12-Riffle
Shepherds Tree



Cross-Section #12 Riffle: Upstream 9/2006



Cross-Section #12 Riffle: Downstream 9/2006

Prepared For:



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Appendix B5. Cross-Section Plots and Raw Data Tables

Date: March 2007
Project No.: 333



Project Name: Shepherds Tree
 Cross-Section: 13
 Feature: Pool

As Built		2006	
Station	Elevation	Station	Elevation
17.00	98.30	0.60	99.89
22.00	98.30	2.00	99.89
25.70	94.60	4.00	99.82
26.80	94.60	5.00	99.63
32.70	95.90	7.00	99.58
35.70	98.30	9.00	99.54
40.70	98.30	11.00	99.43
		13.00	99.17
		15.00	98.99
		17.00	98.92
		19.00	98.82
		20.00	98.75
		22.00	98.53
		23.00	97.47
		23.90	96.87
		24.80	95.73
		25.30	95.33
		26.30	95.20
		27.50	95.09
		29.00	94.93
		30.00	95.12
		31.00	95.65
		32.00	95.97
		33.00	96.74
		33.60	96.87
		34.20	97.33
		35.00	97.85
		36.00	98.53
		37.00	98.44
		39.00	98.65
		41.00	98.56
		43.00	98.58
		45.00	98.68
		47.00	98.75
		49.00	98.65
		53.00	98.65
		56.00	98.78
		58.00	99.01
		60.00	99.05
		62.00	98.98
		63.70	98.81
		63.70	99.11
			lpg:top
			ltob/bkf
			lew/wrs
			rew/wrs
			rtob/bkf
			rpin.g

2006 Summary Data	
Bankfull Cross-Sectional Area	32.40
Bankfull Width	14.00
Bankfull Mean Depth	2.31
Bankfull Max Depth	3.60
Width/Depth Ratio	6.06
Entrenchment Ratio	N/A

Prepared For:



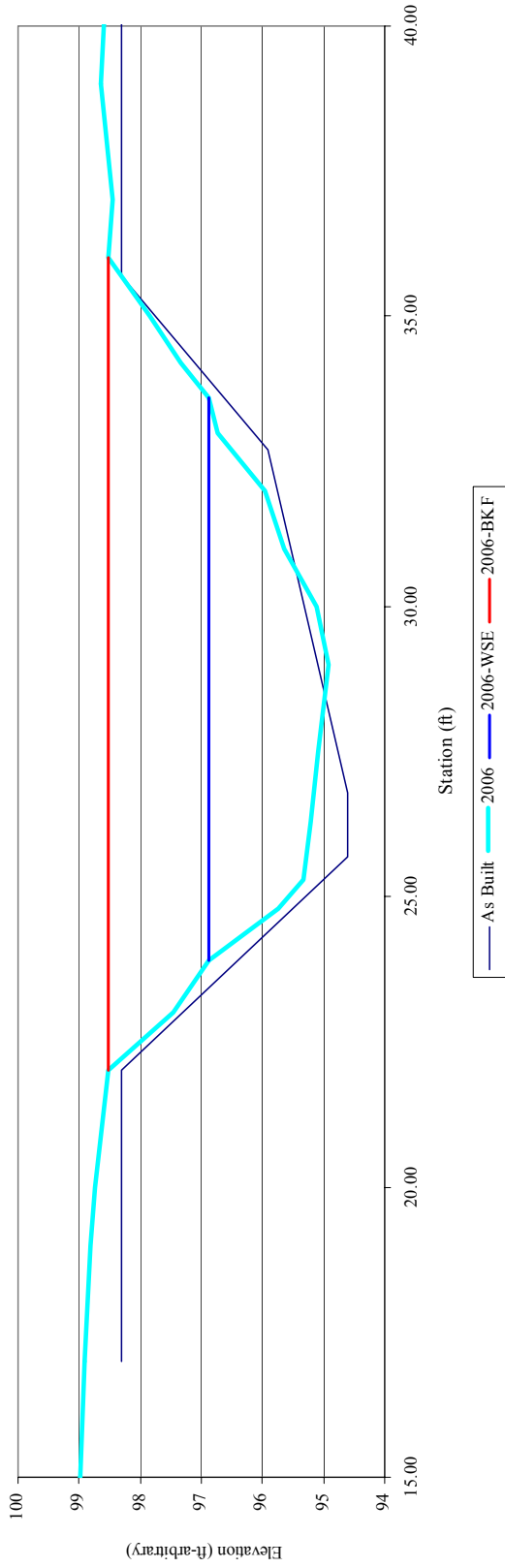
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Appendix B5. Cross-Section Plots and Raw Data Tables



Cross-Section 13-Pool
Shepherds Tree



Cross-Section #13 Pool: Upstream 9/2006

Cross-Section #13 Pool: Downstream 9/2006

Prepared For:



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Appendix B5. Cross-Section Plots and Raw Data Tables



Project Name: Shepherds Tree
 Cross-Section: 14
 Feature: Ruffie

As Built		2006	
Station	Elevation	Station	Elevation
31.40	102.2	0.40	103.39
36.40	102.20	0.40	103.58
39.90	99.40	2.00	103.45
42.90	99.00	5.00	103.34
45.90	99.40	8.00	103.20
49.70	102.2	11.00	103.13
52.70	102.2	13.00	103.11
		15.00	104.08
		17.00	103.03
		19.00	103.02
		21.00	103.20
		23.00	103.11
		25.00	102.96
		27.00	102.86
		29.00	102.82
		31.00	102.82
		34.00	102.82
		35.00	102.43
		36.40	102.20
		37.00	101.76
		38.00	101.38
		38.70	100.92
		39.00	100.83
		40.00	100.41
		41.00	100.02
		41.50	99.88
		41.60	99.52
		42.00	98.83
		43.00	98.78
		44.00	98.84
		44.90	99.52
		45.10	100.25
		46.00	101.14
		47.10	101.95
		48.00	102.20
		49.00	102.20
		51.00	102.34
		53.00	102.38
		55.00	102.50
		57.00	102.56
		59.00	102.48
		60.00	102.74
		62.00	102.77
		63.00	102.61
		65.00	102.61
		66.60	102.51
		67.00	102.40
		68.00	102.61
		70.00	102.76
		72.00	102.76
		73.90	102.82
		73.90	103.03

2006 Summary Data	
Bankfull Cross-Sectional Area	20.2
Bankfull Width	11.6
Bankfull Mean Depth	1.74
Bankfull Max Depth	3.42
Width/Depth Ratio	6.67
Entrenchment Ratio	>2.2

Prepared For:

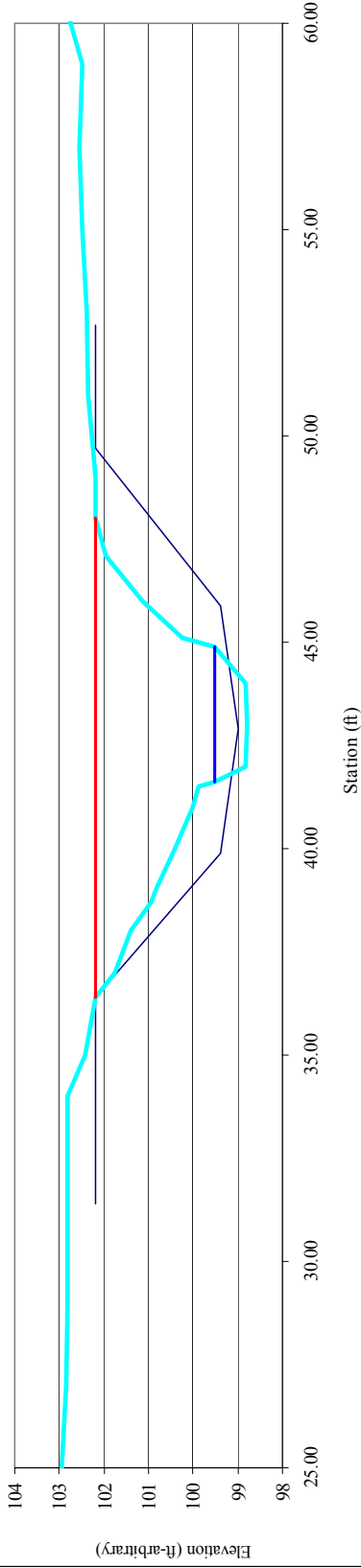

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Appendix B5. Cross-Section Plots and Raw Data Tables



Cross-Section #14-Riffle
Shepherds Tree



Cross-Section #14 Riffle: Upstream 9/2006



Cross-Section #14 Riffle: Downstream 9/2006

Prepared For:



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Appendix B5. Cross-Section Plots and Raw Data Tables



Project Name: Shepherds Tree
 Cross-Section: 15
 Feature: Pool

As Built			2006		
Station	Elevation	Notes	Station	Elevation	Notes
37.00	98.78		0.70	100	lpt
42.00	98.78		0.80	100.1	lpg
45.70	95.08		4.00	99.88	
46.80	95.08		6.00	99.75	
52.70	96.38		10.00	99.86	
55.70	98.78		15.00	99.87	
60.70	98.78		19.00	99.83	
			30.00	99.9	
			36.00	99.21	
			39.00	99.01	
			41.00	98.98	
			42.00	98.78	lolkf
			43.00	97.97	
			43.60	97.57	
			44.00	96.98	
			44.60	96.38	lew/ws
			45.00	95.85	
			46.00	95.67	
			46.80	95.57	
			48.00	95.65	
			48.70	95.94	
			49.90	96.58	rew/ws
			50.50	96.9	
			51.20	97.32	
			52.00	97.85	
			53.00	98.78	rtokf
			54.00	98.72	
			57.00	98.79	
			60.00	99.02	
			63	99.37	
			66	99.4	
			69	99.47	
			73	99.49	
			76	99.53	
			78	100.4	
			81	99.84	
			83.7	99.94	lpg
			83.7	100.06	

2006 Summary Data	
Bankfull Cross-Sectional Area	22.12
Bankfull Width	11.00
Bankfull Mean Depth	2.01
Bankfull Max Depth	3.21
Width/Depth Ratio	5.47
Entrenchment Ratio	N/A

Prepared For:



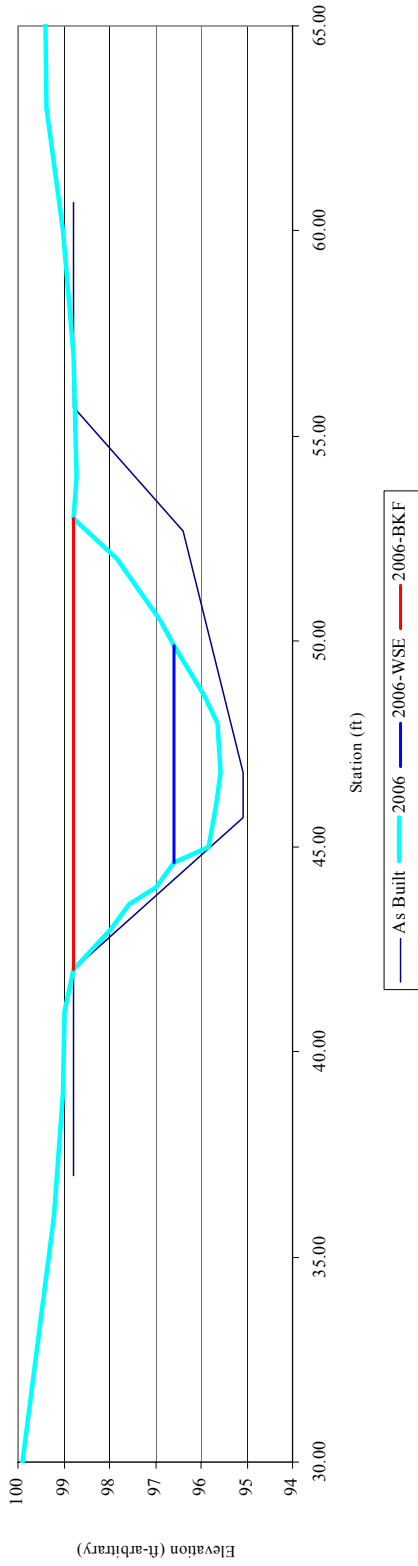
Shepherds Tree Stream and Wetland Restoration
 Year 2 of 5

Date: March 2007
 Project No.: 333

Appendix B5. Cross-Section Plots and Raw Data Tables



Cross-Section 15-Pool
Shepherds Tree



Cross-Section #15 Pool: Upstream 9/2006



Cross-Section #15 Pool: Downstream 9/2006

Prepared For:



Shepherds Tree Stream and Wetland Restoration
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Appendix B5. Cross-Section Plots and Raw Data Tables

Project Name: Shepherds Tree
 Cross-Section: 16
 Feature: Riffle

As Built		2006	
Station	Elevation	Station	Elevation
		1.00	95.38
		1.70	95.4
		4.00	95.44
		7.00	95.24
		9.00	94.9
		11.00	94.56
		13.00	94.1
		14.00	93.79
		16.00	93.55
		18.00	93.54
		20.00	93.42
		22.00	93.48
		23.00	92.9
		23.00	92.7
		24.00	92.79
		25.00	92.63
		26.00	92.43
		26.70	92.49
		26.70	92.90
		27.40	92.83
		29.00	92.96
		30.00	93.01
		31.00	93.17
		34.00	93.27
		36.00	93.48
		37.00	93.78
		38.00	94.29
		39.00	94.60
		41.00	94.80
		43.00	95.01
		45.00	94.96
		47.00	95.01
		48.50	95.09
		48.50	95.03
		50.00	95.13

Notes
 Itop
 Itob
 blf
 lew-ws
 tw
 rew-ws

2006 Summary Data	
Bankfull Cross-Sectional Area	6.70
Bankfull Width	14.00
Bankfull Mean Depth	0.48
Bankfull Max Depth	1.05
Width/Depth Ratio	29.17
Entrenchment Ratio	1.97



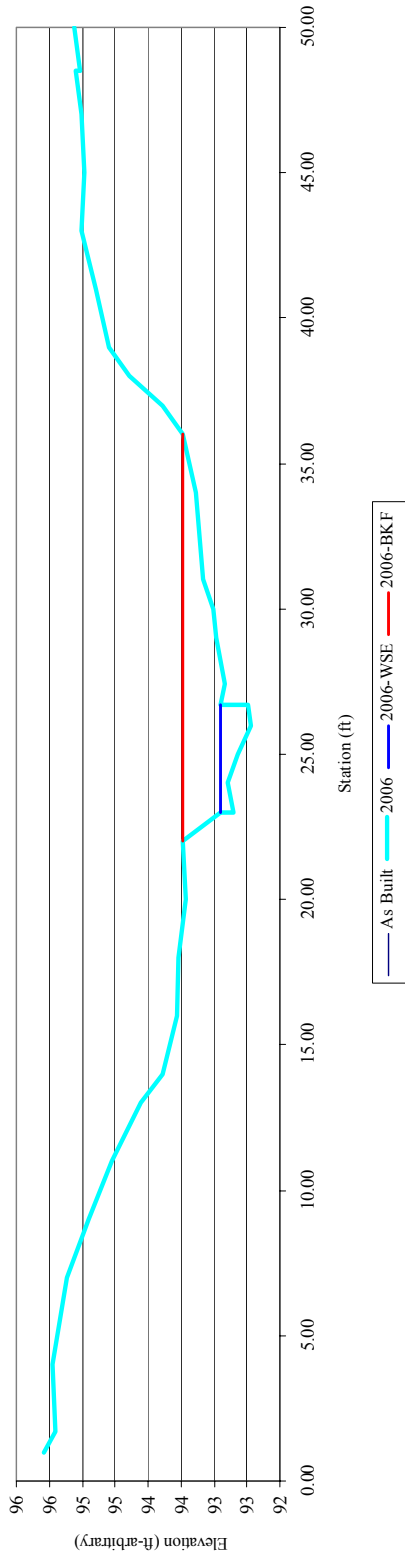
Prepared For: Shepherds Tree Stream and Wetland Restoration
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Appendix B5. Cross-Section Plots and Raw Data Tables

Cross-Section 16-Riffle
Shepherds Tree



Cross-Section #16 Trib Riffle: Upstream 9/2006



Cross-Section #16 Trib Riffle: Downstream 9/2006

Prepared For:



Shepherds Tree Stream and Wetland Restoration
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Appendix B5. Cross-Section Plots and Raw Data Tables

Date: March 2007
Project No.: 333



Reach 1

2006

Station	TW-2006	WS-2006	BKF/TOB-2006	Notes
0	98.47	98.88	100.18	
14.6	98.14	98.9		
18.5	97.77	98.9	100.04	
23	98.07	98.9		
44	97.7	98.87		
65	98.36	98.84		
94	98.36	98.82		U/S 8 ft of dam, 1 ft of sed dep
100.8	98.12	98.72		Buried CV Invert at TW (Beaver dam)
107	97.06	98.02	99.21	
134	96.85	97.72	99.27	
157	97.18	97.57	99.28	
181	96.79	97.52		
200	96.83	97.42	98.84	
226	96.74	97.48	98.92	
251	96.84	97.29	98.68	
272	96.36	97.25	98.63	Max Pool
290	96.74	97.23	98.42	
308	96.56	97.23	98.1	
327	96.6	97.22	98.39	
352	96.64	97.14	98.33	
378	95.78	97.23	98.24	
410	95.72	96.74	97.99	
435	95.73	96.78	97.93	
487	95.83	96.73	97.72	
507	95.84	96.53	97.56	
596	95.65	96.48	97.2	
633	95.47	96.46	97.05	
681	94.93	96.44	96.97	
709	95.12	96.44		
725	95.88	96.41		Head of Riffle (Former beaver dam with notch cut in it)
736.5	95.69	96.3	96.8	End of Riffle
759	95.49	96.23	96.72	
791	95.3	96.2	96.72	
820	95.19	96.19	96.62	
864.5	95.34	96.13	96.5	
900	95.39	96.1	96.47	Cat tails are growing abundantly in stream.
917	95.24	96.1	96.73	
956	95.1	96.04	96.53	
999	95.04	96	96.59	

Date: March 2007
Project No.: 333



Shepherds Tree Stream and Wetland Restoration Year 2 of 5

Appendix B6. Longitudinal Plots and Raw Data Tables

Prepared For:



Reach 1

2006				
Station	TW-2006	WS-2006	BKF/TOB-2006	Notes
1030	94.96	95.94	96.5	
1064	95.06	95.94	96.46	
1104.4	95.01	95.91	96.38	Cat-tails
1130	94.69	95.86	96.02	Buried CV, Sed dep on CV.
1182	95.01	95.84	96.38	
1215	95.01	95.81	96.42	Buried CV, Can see arms through.
1240	95.01	95.8	96.61	
1268.5	94.38	95.71	96.44	
1302	94.31	95.7	96.18	Max Pool
1347	94.77	95.64	96.36	
1393	94.78	95.63	96.48	
1424	94.69	95.63	96.36	
1468	94.68	95.56	96.59	
1490	94.73	95.56		
1516	94.68	95.56	96.91	
1571	94.63	95.48	96.24	
1600	94.6	95.48	96.37	

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Shepherds Tree Stream and Wetland Restoration
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Appendix B6. Longitudinal Plots and Raw Data Tables



Reach 2

2006

Station	TW-2006	WS-2006	BKF-2006	Notes	Station	TW-2006	WS-2006	BKF-2006	Notes
0.00	96.57	97.75	99.26	run	213.00	96.20	97.54	99.08	
7.00	96.52	97.72			220.00	95.93	97.54		pool
15.00	96.40	97.70		run	225.00	95.82	97.54		
25.00	96.19	97.67	99.57	pool	231.00	95.72	97.54	98.90	max pool
34.00	96.16	97.64			242.00	95.97	97.54	99.07	
45.00	95.95	97.64	99.46	max pool	248.00	95.95	97.54		glide
57.00	95.99	97.64	99.46		255.00	95.65	97.54		
60.00	96.12	97.64		glide	260.00	95.63	97.53		run
68.00	96.22	97.64			267.00	95.65	97.53		
75.00	96.29	97.64	99.22		272.00	95.70	97.53		
82.00	96.45	97.63	99.17		280.00	95.67	97.53		
85.00	96.40	97.63		crossvane	288.00	95.82	97.53		
88.00	96.15	97.63		head of pool	295.00	96.00	97.52		run
92.00	95.78	97.62		pool	300.00	95.81	97.52		
96.00	95.64	97.62	98.94		305.00	95.87	97.52		
99.00	95.51	97.62	98.94	max pool	311.00	96.07	97.51		head pool
103.00	95.78	97.62		glide	316.00	95.98	97.51		
107.00	96.15	97.62	99.27	pool	322.00	95.58	97.51	98.90	max pool
109.00	96.04	97.62	99.27	max pool	326.00	95.90	97.51		invert
110.00	96.16	97.62			334.00	95.52	97.50		pool
115.00	96.04	97.62	99.23	glide	340.00	97.46	97.49		beaver dam
117.00	96.22	97.60		run	352.00	95.88	96.78	98.80	run
120.00	96.25	97.59			361.00	95.78	96.76		
133.00	96.38	97.59		pool	367.00	95.64	96.76		
138.00	96.20	97.59			374.00	95.70	96.76		
143.00	95.97	97.57	99.18		380.00	95.70	96.75		
150.00	96.03	97.57			389.00	95.69	96.74		
157.00	96.03	97.57			400.00	95.34	96.74		
160.00	96.03	97.57			410.00	95.82	96.74		
165.00	95.90	97.57	99.10		415.00	96.60	96.73	98.78	invert
172.00	95.68	97.57	99.10	max pool	420.00	95.28	96.72	98.78	max scour pool
177.00	95.88	97.57			425.00	95.58	96.68		
183.00	95.82	97.57			435.00	96.09	96.65	98.75	
187.00	95.87	97.56		glide	450.00	96.16	96.64		head pool
190.00	96.01	97.56	99.01	pool	456.00	95.53	96.63		
195.00	95.75	97.56	99.01	max pool	462.00	95.48	96.60	98.51	max pool
200.00	95.80	97.56			470.00	95.03	96.60		
205.00	95.96	97.55		glide	475.00	95.45	96.60		glide
209.00	96.21	97.55		run	477.50	95.72	96.57	98.36	run
					496.50	96.23	96.55		rock xsing

Prepared For:



Shepherds Tree Stream and Wetland Restoration Year 2 of 5

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Appendix B6. Longitudinal Plots and Raw Data Tables

Reach 2

2006

Station	TW-2006	WS-2006	BKF-2006	Notes	Station	TW-2006	WS-2006	BKF-2006	Notes
515.00	96.12	96.48			923.00	93.96	94.66		run
527.00	94.57	95.29		run	933.00	93.96	94.66	96.60	
542.00	94.19	95.29	98.05		942.00	93.80	94.66		
545.00	94.25	95.25			950.00	93.85	94.66		
555.00	94.60	95.25		run-veg on bottom	961.00	93.77	94.65		
567.00	94.80	95.22	98.03		968.00	93.53	94.65		
595.00	94.46	94.90		run/pool	975.00	93.79	94.64	96.56	
600.00	94.46	94.90			984.00	93.39	94.64		
607.00	94.46	94.83		glide	990.00	93.82	94.63		run/pool
614.00	94.27	94.83		run	1009.00	93.77	94.62		
636.00	94.31	94.83			1037.00	93.69	94.62	96.60	max pool
653.00	94.27	94.81			1052.00	93.76	94.61		glide
657.00	94.24	94.81			1055.00	93.92	94.61		run
661.00	94.25	94.79			1070.00	93.87	94.61		
671.00	94.07	94.79	97.84		1081.00	93.59	94.61		pool
675.00	94.26	94.79	97.96	water gauge-eep	1092.00	93.45	94.61	96.72	max pool
685.00	94.81			x-vane invert	1103.00	93.86	94.60		glide
701.00	93.61	94.76	97.58	max pool	1108.00	93.76	94.60		run
709.00	93.80	94.76		glide	1122.00	93.75	94.59		
716.00	94.00	94.76		run	1140.00	93.70	94.58	96.63	pool
731.00	94.10	94.75		pool	1150.00	93.57	94.58		
742.00	93.95	94.75	97.32	max pool	1167.00	93.22	94.58	96.57	pool-max
752.00	93.86	94.75		glide	1176.00	93.59	94.58		glide
756.00	94.21	94.75		run	1182.00	93.85	94.57		run
765.00	94.37	94.75			1196.00	93.86	94.57		
767.00	94.17	94.75		pool?	1200.00	93.78	94.56	96.50	pool
776.00	93.98	94.75	97.11		1210.00	93.57	94.56	96.44	pool-max
784.00	93.98	94.75		run	1219.00	93.64	94.56		glide
800.00	93.95	94.75			1239.00	93.64	94.55		run
811.00	93.75	94.75	97.00	pool-max	1256.00	93.76	94.54		pool
829.00	94.03	94.74		glide	1269.00	93.42	94.54	96.50	max-pool
831.00	93.96	94.74	96.78	run	1288.00	93.11	94.54		glide
851.00	93.99	94.74			1295.00	93.29	94.53		run
857.00	93.81	94.74		pool	1300.00	93.10	94.53		
863.00	93.58	94.73	96.67	max pool	1305.00	93.16	94.53		
871.00	93.86	94.73			1315.00	93.36	94.52		head pool
884.00	93.73	94.73	96.52	glide	1316.00	93.27	94.52		
888.00	93.96	94.72		run	1322.00	92.87	94.52	96.47	max pool
900.00	93.76	94.70			1326.00	93.19	94.50		invert
917.00	93.73	94.67			1335.00	92.81	94.46	96.45	max pool

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Shepherds Tree Stream and Wetland Restoration Year 2 of 5

Appendix B6. Longitudinal Plots and Raw Data Tables

Prepared For:



Reach 2

Station	2006			Notes
	TW-2006	WS-2006	BKF-2006	
1340.00	94.15	94.46		beaver dam
1352.00	93.17	94.12	96.45	run
1361.00	93.07	94.10		
1367.00	92.93	94.10		
1374.00	92.99	94.09		
1380.00	92.99	94.07		glide
1389.00	92.98	94.07		
1400.00	92.63	94.07		
1410.00	93.11	94.07		
1415.00	93.89	94.07		invert
1429.00	92.57	94.06	96.07	max scour pool
1425.00	92.87	94.05		
1435.00	93.38	94.02		
1450.00	93.45	94.01		head pool
1456.00	92.82	94.00		
1462.00	92.77	93.97		
1470.00	92.32	93.97	95.74	max pool
1475.00	92.74	93.97		glide
1477.50	93.01	93.96	95.72	run
1492.00	93.52	93.96		rock xsing
1515.00	93.41	93.96		
1537.00	93.50	93.95		run
1542.00	93.12	93.95	95.78	
1545.00	93.18	93.95		
1555.00	93.53	93.94		run-veg on bottom
1567.00	93.73	93.93	95.65	
1595.00	93.39	93.90		
1600.00	93.39	93.90		
1607.00	93.39	93.88		
1614.00	93.20	93.76		run
1636.00	93.24	93.76		
1653.00	93.20	93.74		pool
1657.00	93.17	93.74	95.55	max pool
1661.00	93.16	93.73		glide
1671.00	93.00	93.73	95.59	
1675.00	93.19	93.73	95.46	water gauge-EEP
1685.00	93.66	93.70		x-varie invert
1701.00	92.54	93.69	95.17	max pool
1708.00	92.73	93.69		glide
1718.00	92.93	93.68		run

Prepared For:



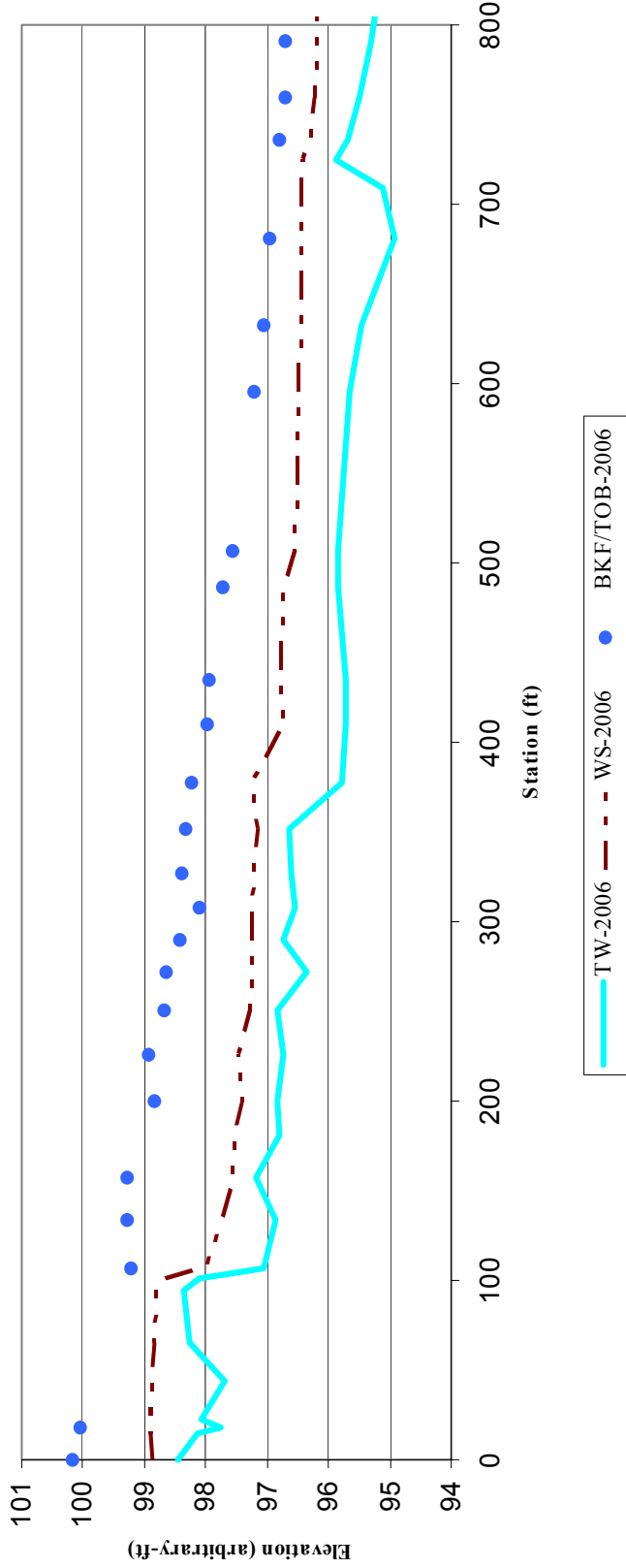
Shepherds Tree Stream and Wetland Restoration
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Appendix B6. Longitudinal Plots and Raw Data Tables

Shepherds Tree
 Longitudinal Profile
 Reach 1
 2006 Monitoring Year



Date: March 2007
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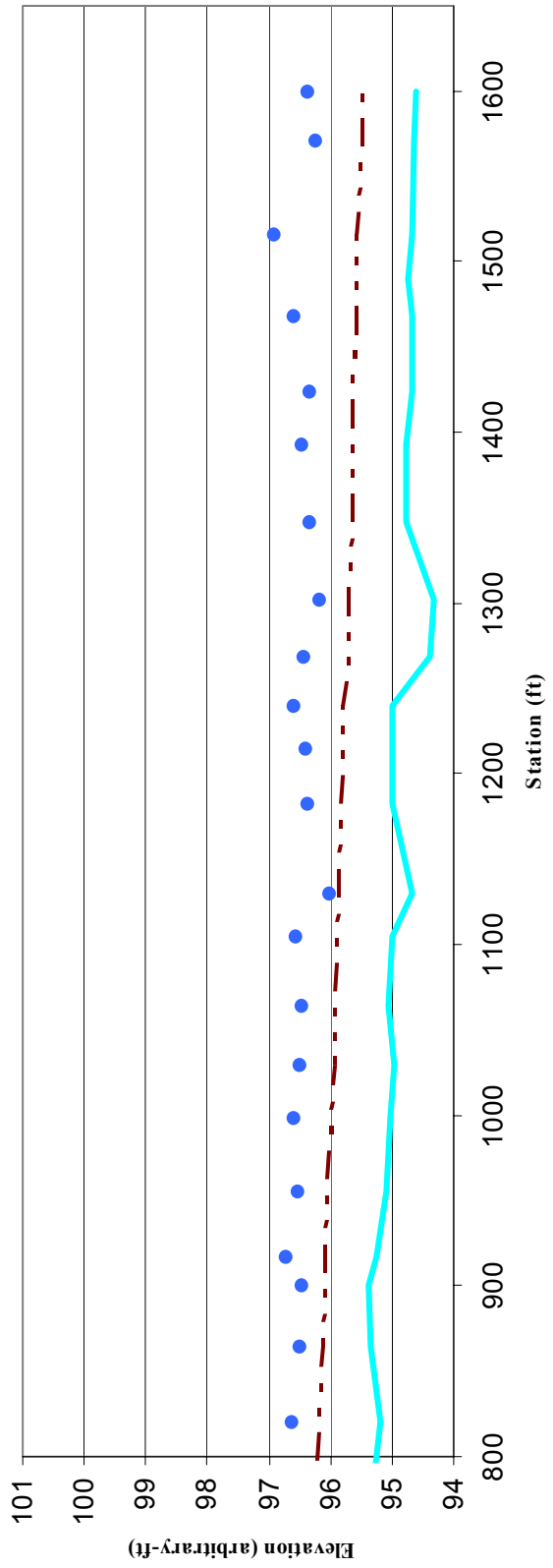
Shepherds Tree Stream and Wetland Restoration
 Year 2 of 5

Appendix B6. Longitudinal Plots and Raw Data Tables

Prepared For:



Shepherds Tree
 Longitudinal Profile
 Reach 1
 2006 Monitoring Year



Date: March 2007
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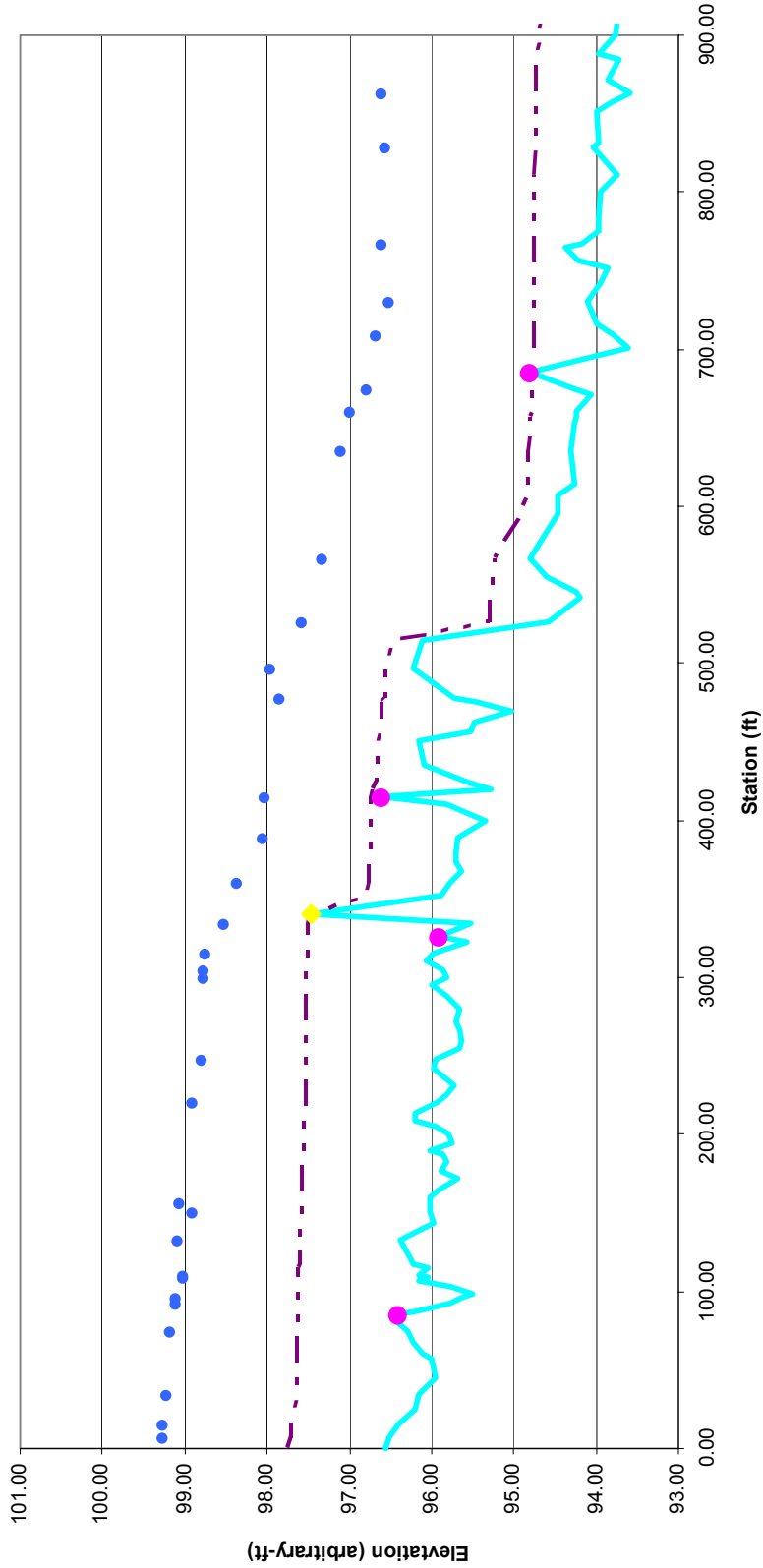
Shepherds Tree Stream and Wetland Restoration
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Appendix B6. Longitudinal Plots and Raw Data Tables

Prepared For:



Shepherds Tree
 Longitudinal Profile
 Reach 2
 2006 Monitoring Year



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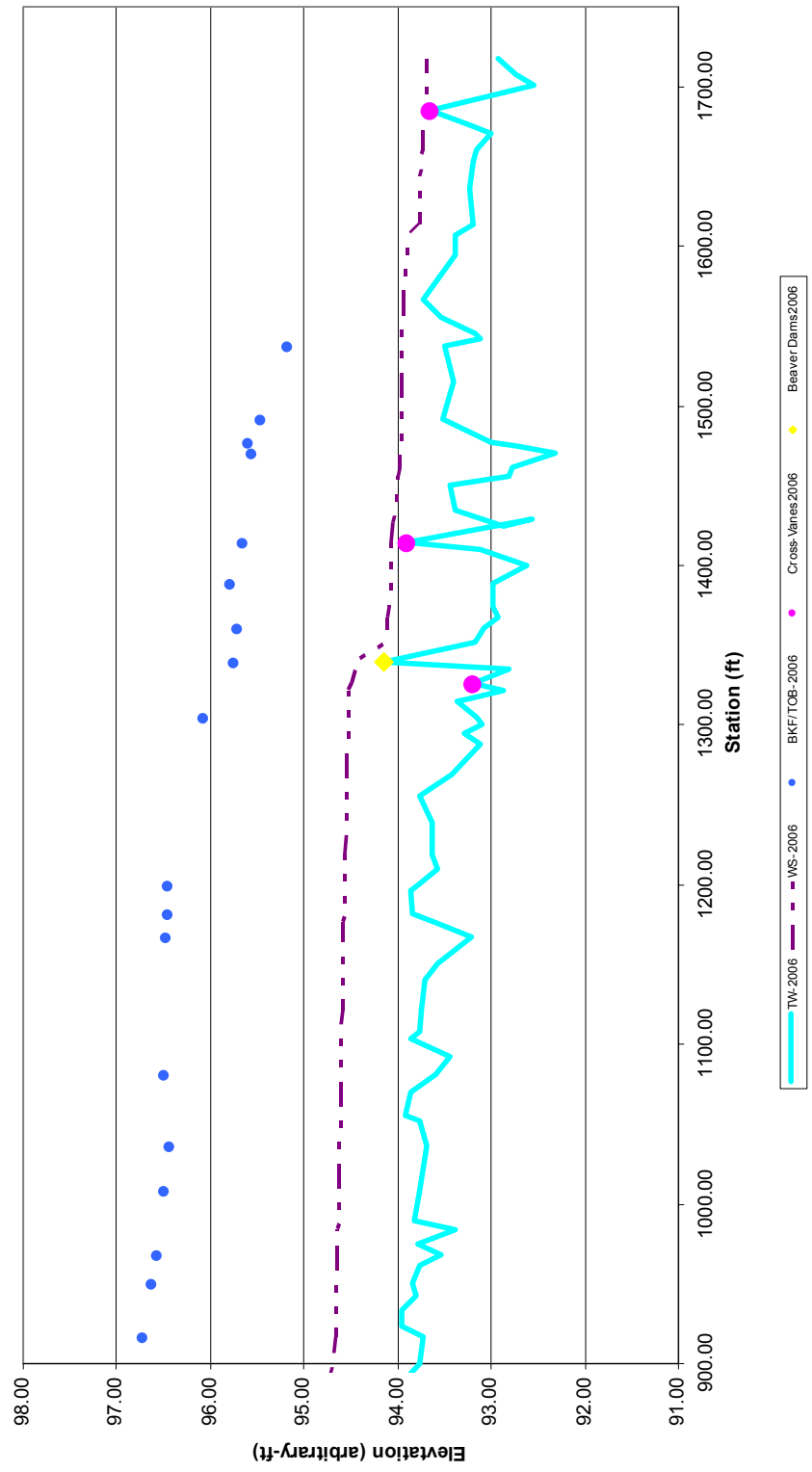
Shepherds Tree Stream and Wetland Restoration
 Year 2 of 5

Appendix B6. Longitudinal Plots and Raw Data Tables

Prepared For:



Shepherds Tree
 Longitudinal Profile
 Reach 2
 2006 Monitoring Year



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Shepherds Tree Stream and Wetland Restoration
 Year 2 of 5

Appendix B6. Longitudinal Plots and Raw Data Tables

Prepared For:



Project Name: Shepherds Tree					
Pool Spacing					
Reach 1					

There were no definable features noted as pools in the December 2006 survey

Project Name: Shepherds Tree					
Pool Length					
Reach 1					

There were no definable features noted as pools in the December 2006 survey

Project Name: Shepherds Tree					
Rifle Slope					
Reaches 1 & 2					

There were no definable features noted as riffles in the September 2006 or December 2006 survey

Prepared For:



Shepherds Tree Stream and Wetland Restoration
Year 2 of 5

Date: March 2007
Project No.: 333



Appendix B6. Longitudinal Plots and Raw Data Tables

Project Name: Shepherds Tree		
Pool Spacing		
Reach 2	Station (ft)	Spacing (ft)
	45.00	
	99.00	54.00
	109.00	10.00
	172.00	63.00
	195.00	23.00
	231.00	36.00
	322.00	91.00
	420.00	98.00
	462.00	42.00
	701.00	239.00
	742.00	41.00
	811.00	69.00
	863.00	52.00
	1037.00	174.00
	1092.00	55.00
	1167.00	75.00
	1210.00	43.00
	1269.00	59.00
	1322.00	53.00
	1335.00	13.00
	1429.00	94.00
	1470.00	41.00
	1657.00	187.00
	1701.00	44.00

Project Name: Shepherds Tree			
Pool Length			
Station (ft)	Length (ft)	Station (ft)	Length (ft)
25.00		857.00	
60.00	35.00	888.00	31.00
85.00		990.00	
103.00	18.00	1055.00	65.00
107.00		1081.00	
117.00	10.00	1108.00	27.00
133.00		1140.00	
187.00	54.00	1182.00	42.00
190.00		1200.00	
209.00	19.00	1239.00	39.00
220.00		1256.00	
248.00	28.00	1295.00	39.00
311.00		1315.00	
326.00	15.00	1326.00	11.00
340.00		1340.00	
415.00	75.00	1415.00	75.00
450.00		1450.00	
477.50	27.50	1475.00	25.00
685.00		1653.00	
716.00	31.00	1661.00	8.00
731.00		1685.00	
756.00	25.00	1718.00	33.00
767.00			
784.00	17.00		

Prepared For:



Shepherds Tree Stream and Wetland Restoration
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Appendix B6. Longitudinal Plots and Raw Data Tables



Project Name: Shepherds Tree

Pattern Measurements

	Meander Wavelength (Lm)	Radius of Curvature (Rc)	Channel Belwidth (Wblt)	MWR
	130	19	50	10.20
	110	50	50	8.63
	120	47	60	9.42
	130	30	50	10.20
	140	30	40	10.99
	90	19	50	7.06
	130	33	40	10.20
	110	31	40	8.63
	130	35	50	10.20
	120	30	40	9.42
	110	35	40	8.63
		33	40	
		33	45	
		25		
		27		
		28		
		25		
		29		
		31		
		32		
		21		
		20		
		19		
		19		
		19		
		19		
Min	90	19	40	7
Max	140	50	60	11
Median	120	30	45	9

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Shepherds Tree Stream and Wetland Restoration
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Appendix B6. Longitudinal Plots and Raw Data Tables

Project Name: Shepherds Tree					
Cross-Section: 1					
Feature: Riffle					
Cross-Section # 1					
Description	Material	Size (mm)	Total #	Item %	Cum %
Silt/Clay	silt/clay	0-0.062	66	66%	66%
	very fine sand	0.062-0.125	34	34%	100%
Sand	fine sand	0.125-0.25	0	0%	100%
	medium sand	0.25-0.50	0	0%	100%
	coarse sand	0.50-1.0	0	0%	100%
	very coarse sand	1.0-2.0	0	0%	100%
	very fine gravel	2.0-4.0	0	0%	100%
G r a v e l	fine gravel	4.0-5.7	0	0%	100%
	fine gravel	5.7-8.0	0	0%	100%
	medium gravel	8.0-11.3	0	0%	100%
	medium gravel	11.3-16.0	0	0%	100%
	course gravel	16.0-22.6	0	0%	100%
	course gravel	22.6-32.0	0	0%	100%
	very coarse gravel	32-45	0	0%	100%
	very coarse gravel	45-64	0	0%	100%
	small cobble	64-90	0	0%	100%
	medium cobble	90-128	0	0%	100%
Cobble	large cobble	128-180	0	0%	100%
	very large cobble	180-256	0	0%	100%
	small boulder	256-362	0	0%	100%
Boulder	small boulder	362-512	0	0%	100%
	medium boulder	512-1024	0	0%	100%
Bedrock	large boulder	1024-2048	0	0%	100%
	bedrock	40096	0	0%	100%
TOTAL/% of whole count			100	100%	100%

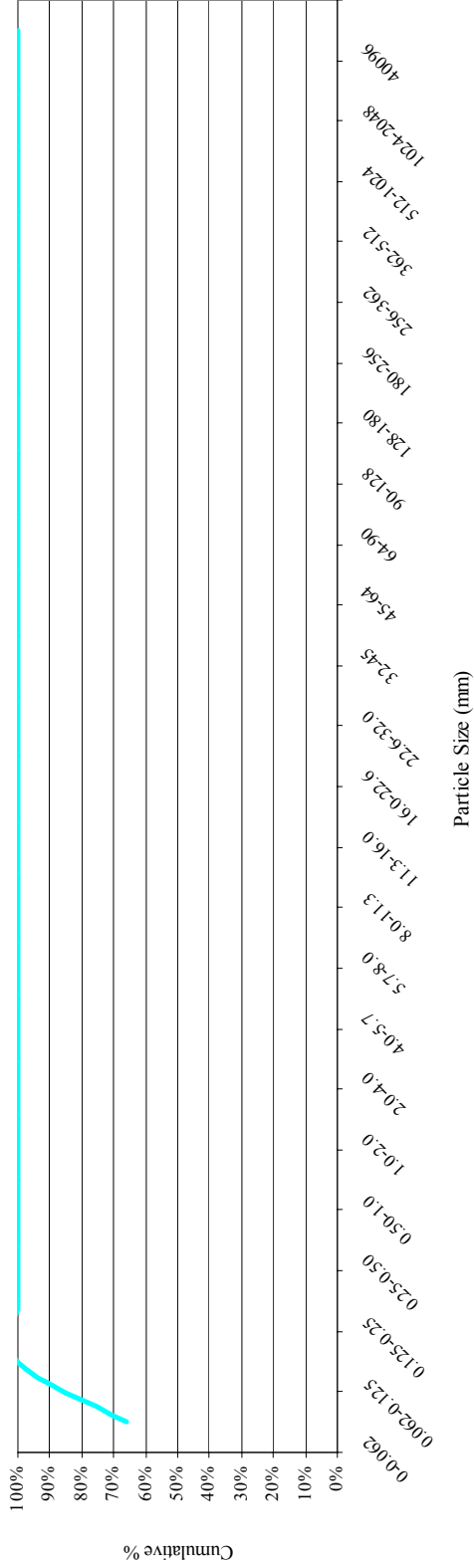
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Shepherds Tree Stream and Wetland Restoration
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Appendix B7. Pebble Counts and Raw Data Tables

Cross-Section 1-Rifle
Shepherds Tree



Project Name: Shepherds Tree					
Cross-Section: 2					
Feature: Pool					
Cross-Section # 2				2006	
Description	Material	Size (mm)	Total #	Item %	Cum %
Sand	silt/clay	0-0.062	90	90%	90%
	very fine sand	0.062-0.125	10	10%	100%
	fine sand	0.125-0.25	0	0%	100%
	medium sand	0.25-0.50	0	0%	100%
	coarse sand	0.50-1.0	0	0%	100%
	very coarse sand	1.0-2.0	0	0%	100%
	very fine gravel	2.0-4.0	0	0%	100%
	fine gravel	4.0-5.7	0	0%	100%
	fine gravel	5.7-8.0	0	0%	100%
	medium gravel	8.0-11.3	0	0%	100%
G r a v e l	medium gravel	11.3-16.0	0	0%	100%
	course gravel	16.0-22.6	0	0%	100%
	course gravel	22.6-32.0	0	0%	100%
	very coarse gravel	32-45	0	0%	100%
	very coarse gravel	45-64	0	0%	100%
	small cobble	64-90	0	0%	100%
	medium cobble	90-128	0	0%	100%
	large cobble	128-180	0	0%	100%
	very large cobble	180-256	0	0%	100%
	small boulder	256-362	0	0%	100%
Boulder	small boulder	362-512	0	0%	100%
	medium boulder	512-1024	0	0%	100%
Bedrock	large boulder	1024-2048	0	0%	100%
	bedrock	40096	0	0%	100%
TOTAL/% of whole count			100	100%	100%

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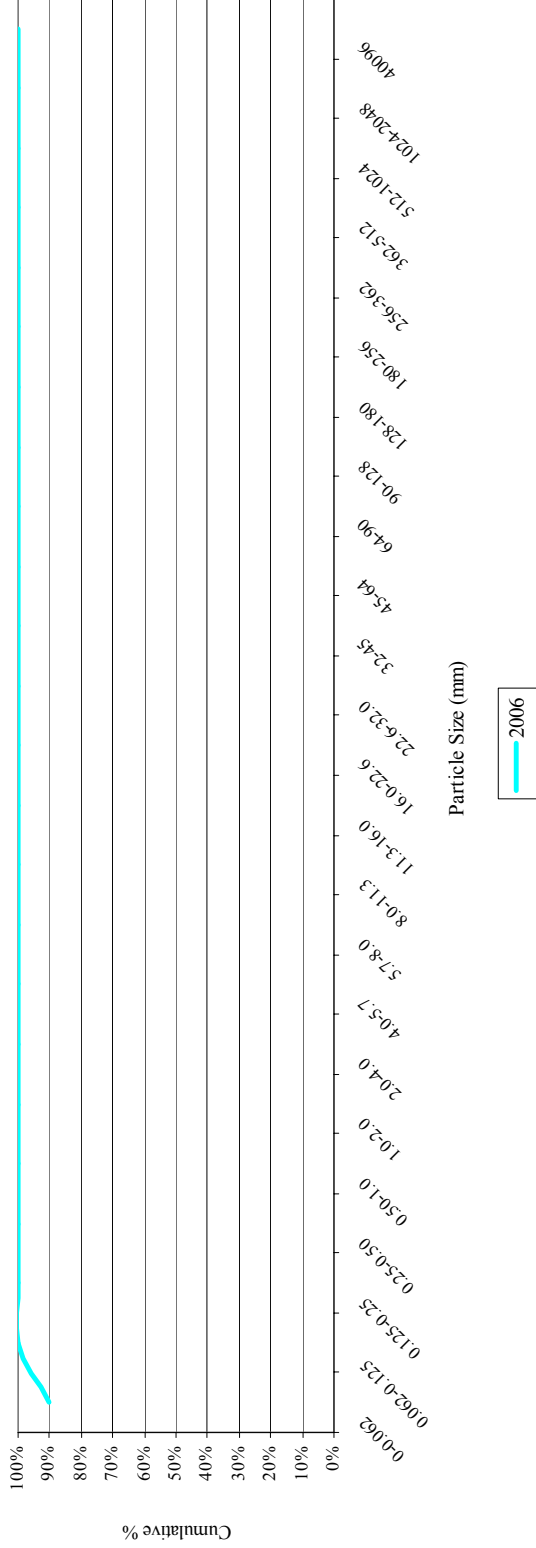
Shepherds Tree Stream and Wetland Restoration
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Appendix B7. Pebble Counts and Raw Data Tables

Prepared For:



Cross-Section 2-Pool
Shepherds Tree



Year	d16	d35	d50	d84	d95	d100
2006	0.01	0.02	0.03	0.06	0.09	0.12

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Shepherds Tree Stream and Wetland Restoration
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Prepared For:



Appendix B7. Pebble Counts and Raw Data Tables



Project Name: Shepherds Tree					
Cross-Section: 3					
Feature: Riffle					
Cross-Section # 3					
Description	Material	Size (mm)	Total #	Item %	Cum %
Silt/Clay	silt/clay	0-0.062	100	100%	100%
	very fine sand	0.062-0.125	0	0%	100%
Sand	fine sand	0.125-0.25	0	0%	100%
	medium sand	0.25-0.50	0	0%	100%
	coarse sand	0.50-1.0	0	0%	100%
	very coarse sand	1.0-2.0	0	0%	100%
	very fine gravel	2.0-4.0	0	0%	100%
G r a v e l	fine gravel	4.0-5.7	0	0%	100%
	fine gravel	5.7-8.0	0	0%	100%
	medium gravel	8.0-11.3	0	0%	100%
	medium gravel	11.3-16.0	0	0%	100%
	course gravel	16.0-22.6	0	0%	100%
	course gravel	22.6-32.0	0	0%	100%
	very coarse gravel	32-45	0	0%	100%
	very coarse gravel	45-64	0	0%	100%
	small cobble	64-90	0	0%	100%
	medium cobble	90-128	0	0%	100%
Cobble	large cobble	128-180	0	0%	100%
	very large cobble	180-256	0	0%	100%
	small boulder	256-362	0	0%	100%
Boulder	small boulder	362-512	0	0%	100%
	medium boulder	512-1024	0	0%	100%
	large boulder	1024-2048	0	0%	100%
Bedrock	bedrock	40096	0	0%	100%
TOTAL/% of whole count			100	100%	100%

Date: March 2007
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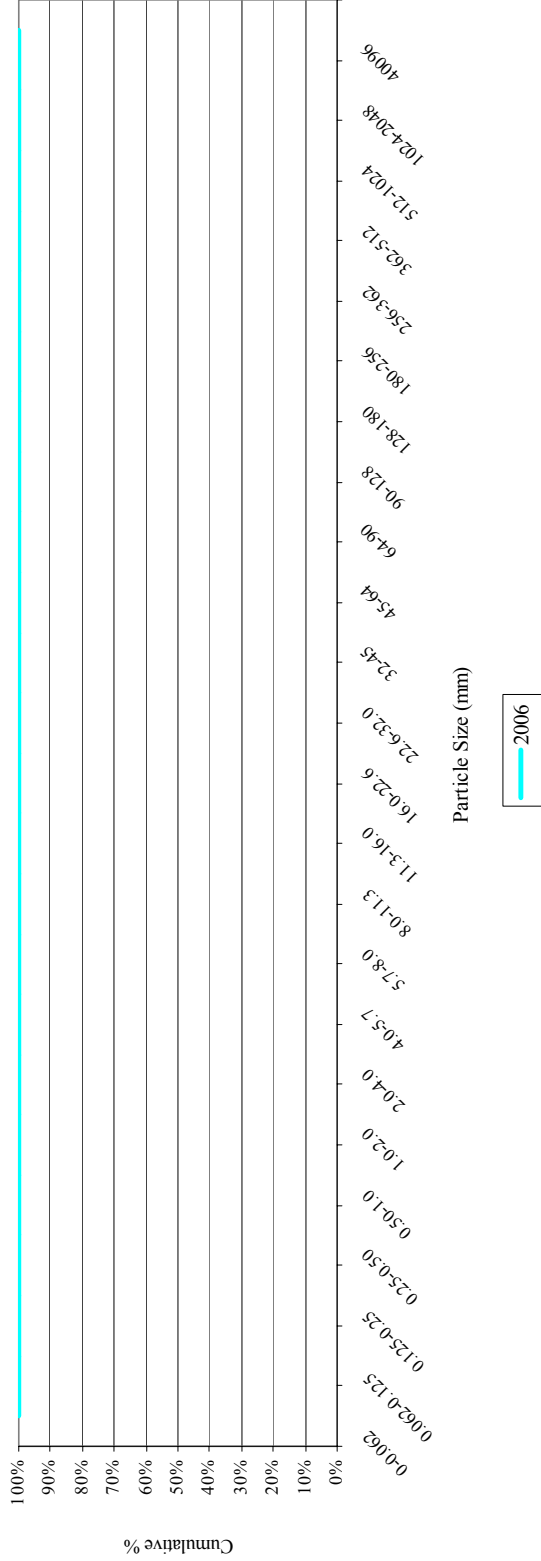


Shepherds Tree Stream and Wetland Restoration
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Appendix B7. Pebble Counts and Raw Data Tables

Cross-Section 3-Rifle
Shepherds Tree



2006	d16	d35	d50	d84	d95	d100
	0.01	0.02	0.03	0.05	0.06	0.06

Prepared For:



Shepherds Tree Stream and Wetland Restoration
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Appendix B7. Pebble Counts and Raw Data Tables

Project Name: Shepherds Tree					
Cross-Section: 4					
Feature: Riffle					
Cross-Section # 4					
Description	Material	Size (mm)	Total #	Item %	Cum %
Silt/Clay	silt/clay	0-0.062	69	69%	69%
	very fine sand	0.062-0.125	31	31%	100%
Sand	fine sand	0.125-0.25	0	0%	100%
	medium sand	0.25-0.50	0	0%	100%
	coarse sand	0.50-1.0	0	0%	100%
	very coarse sand	1.0-2.0	0	0%	100%
	very fine gravel	2.0-4.0	0	0%	100%
G r a v e l	fine gravel	4.0-5.7	0	0%	100%
	fine gravel	5.7-8.0	0	0%	100%
	medium gravel	8.0-11.3	0	0%	100%
	medium gravel	11.3-16.0	0	0%	100%
	course gravel	16.0-22.6	0	0%	100%
	course gravel	22.6-32.0	0	0%	100%
	very coarse gravel	32-45	0	0%	100%
	very coarse gravel	45-64	0	0%	100%
	small cobble	64-90	0	0%	100%
	medium cobble	90-128	0	0%	100%
Cobble	large cobble	128-180	0	0%	100%
	very large cobble	180-256	0	0%	100%
	small boulder	256-362	0	0%	100%
Boulder	small boulder	362-512	0	0%	100%
	medium boulder	512-1024	0	0%	100%
	large boulder	1024-2048	0	0%	100%
Bedrock	bedrock	40096	0	0%	100%
TOTAL/% of whole count			100	100%	100%

Date: March 2007
Project No.: 333



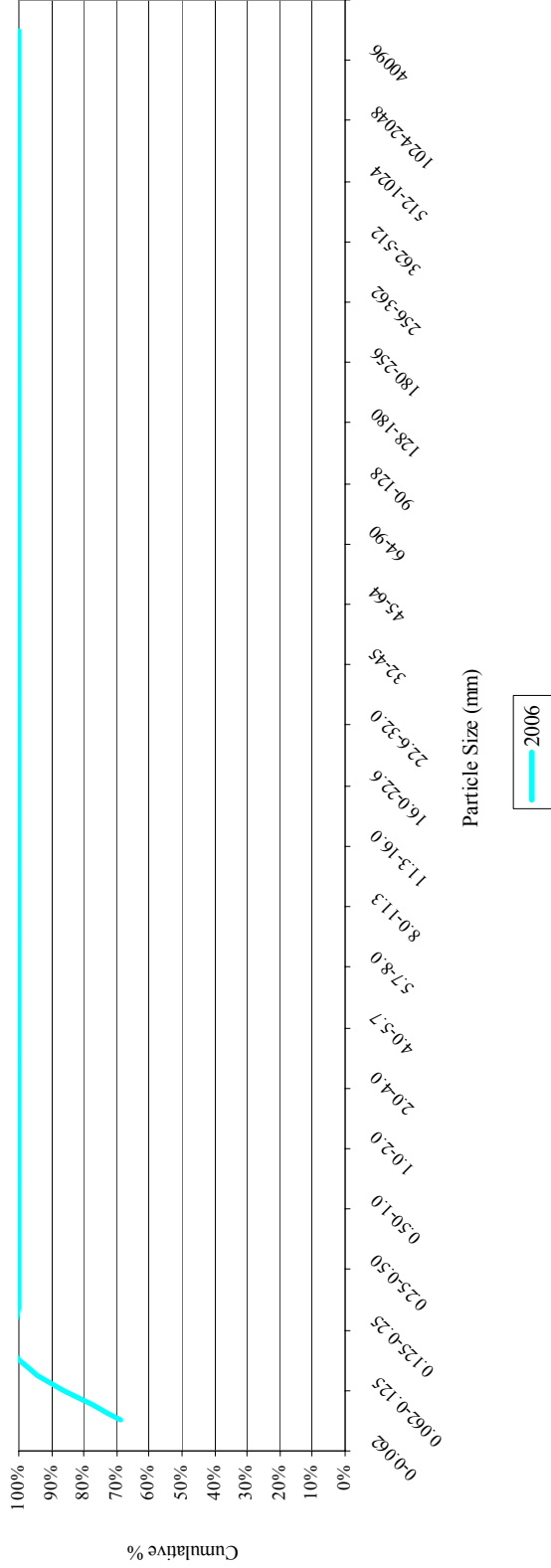
Shepherds Tree Stream and Wetland Restoration
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Appendix B7. Pebble Counts and Raw Data Tables

Prepared For:



Cross-Section 4-Riffle
Shepherds Tree



Year	d16	d35	d50	d84	d95	d100
2006	0.02	0.03	0.05	0.09	0.11	0.12

Prepared For:



Shepherds Tree Stream and Wetland Restoration
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Appendix B7. Pebble Counts and Raw Data Tables

Project Name: Shepherds Tree					
Cross-Section: 5					
Feature: Pool					
Cross-Section # 5					
Description	Material	Size (mm)	Total #	Item %	Cum %
Silt/Clay	silt/clay	0-0.062	83	83%	83%
	very fine sand	0.062-0.125	17	17%	100%
Sand	fine sand	0.125-0.25	0	0%	100%
	medium sand	0.25-0.50	0	0%	100%
	coarse sand	0.50-1.0	0	0%	100%
	very coarse sand	1.0-2.0	0	0%	100%
	very fine gravel	2.0-4.0	0	0%	100%
G r a v e l	fine gravel	4.0-5.7	0	0%	100%
	fine gravel	5.7-8.0	0	0%	100%
	medium gravel	8.0-11.3	0	0%	100%
	medium gravel	11.3-16.0	0	0%	100%
	course gravel	16.0-22.6	0	0%	100%
	course gravel	22.6-32.0	0	0%	100%
	very coarse gravel	32-45	0	0%	100%
	very coarse gravel	45-64	0	0%	100%
	small cobble	64-90	0	0%	100%
	medium cobble	90-128	0	0%	100%
Cobble	large cobble	128-180	0	0%	100%
	very large cobble	180-256	0	0%	100%
	small boulder	256-362	0	0%	100%
Boulder	small boulder	362-512	0	0%	100%
	medium boulder	512-1024	0	0%	100%
	large boulder	1024-2048	0	0%	100%
Bedrock	bedrock	40096	0	0%	100%
TOTAL/% of whole count			100	100%	100%

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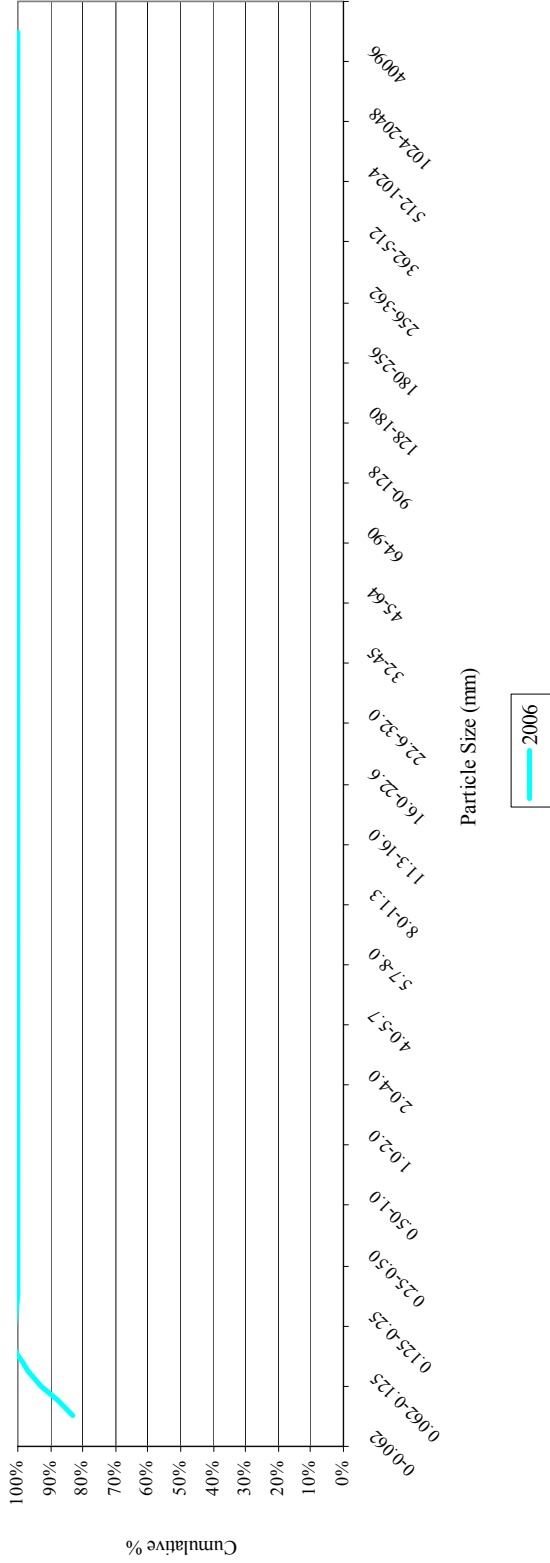
Shepherds Tree Stream and Wetland Restoration
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Appendix B7. Pebble Counts and Raw Data Tables

Prepared For:



Cross-Section 5-Pool
Shepherds Tree



Year	d16	d35	d50	d84	d95	d100
2006	0.01	0.03	0.04	0.07	0.11	0.12

Prepared For:



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Appendix B7. Pebble Counts and Raw Data Tables

Project Name: Shepherds Tree					
Cross-Section: 6					
Feature: Pool					
Cross-Section # 6					
Description	Material	Size (mm)	Total #	Item %	Cum %
Silt/Clay	silt/clay	0-0.062	89	89%	89%
	very fine sand	0.062-0.125	11	11%	100%
Sand	fine sand	0.125-0.25	0	0%	100%
	medium sand	0.25-0.50	0	0%	100%
	coarse sand	0.50-1.0	0	0%	100%
	very coarse sand	1.0-2.0	0	0%	100%
	very fine gravel	2.0-4.0	0	0%	100%
G r a v e l	fine gravel	4.0-5.7	0	0%	100%
	fine gravel	5.7-8.0	0	0%	100%
	medium gravel	8.0-11.3	0	0%	100%
	medium gravel	11.3-16.0	0	0%	100%
	course gravel	16.0-22.6	0	0%	100%
	course gravel	22.6-32.0	0	0%	100%
	very coarse gravel	32-45	0	0%	100%
	very coarse gravel	45-64	0	0%	100%
	small cobble	64-90	0	0%	100%
	medium cobble	90-128	0	0%	100%
Cobble	large cobble	128-180	0	0%	100%
	very large cobble	180-256	0	0%	100%
	small boulder	256-362	0	0%	100%
Boulder	small boulder	362-512	0	0%	100%
	medium boulder	512-1024	0	0%	100%
	large boulder	1024-2048	0	0%	100%
Bedrock	bedrock	40096	0	0%	100%
TOTAL/% of whole count			100	100%	100%

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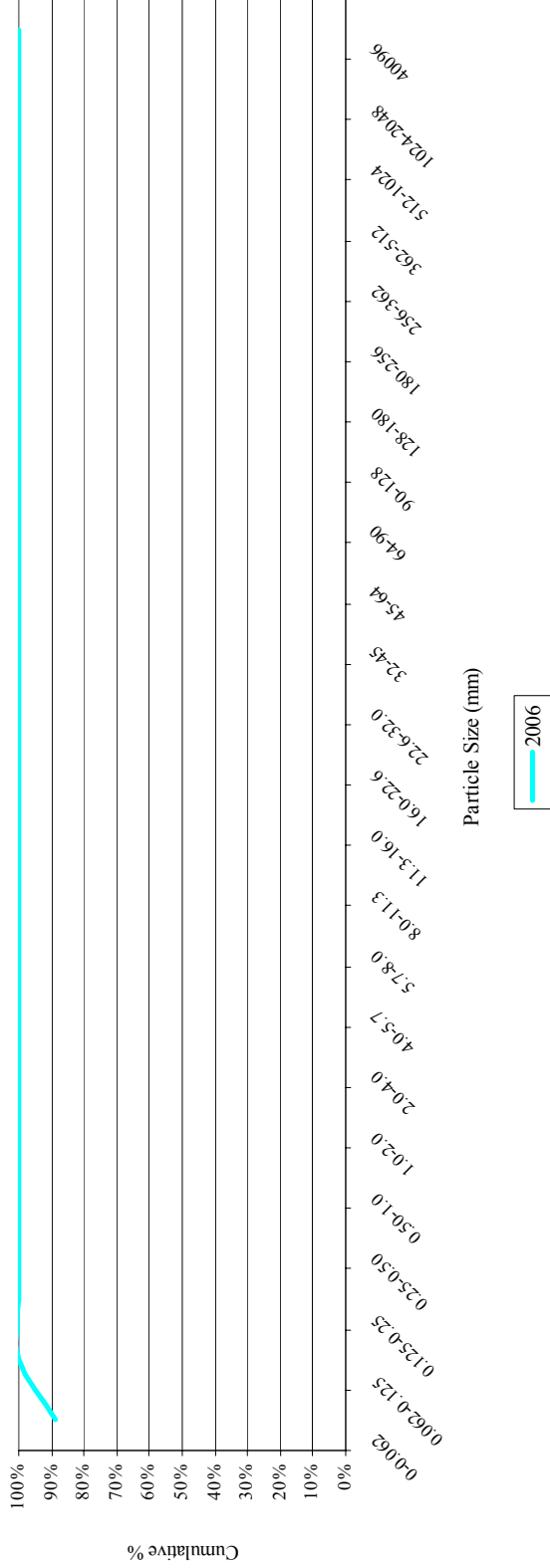
Shepherds Tree Stream and Wetland Restoration
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Appendix B7. Pebble Counts and Raw Data Tables

Prepared For:



Cross-Section 6-Pool
Shepherds Tree



2006	d16	d35	d50	d84	d95	d100
	0.01	0.02	0.04	0.06	0.10	0.12

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Appendix B7. Pebble Counts and Raw Data Tables

Project Name: Shepherds Tree					
Cross-Section: 7					
Feature: Pool					
Cross-Section # 7					
Description	Material	Size (mm)	Total #	Item %	Cum %
Silt/Clay	silt/clay	0-0.062	76	76%	76%
	very fine sand	0.062-0.125	24	24%	100%
Sand	fine sand	0.125-0.25	0	0%	100%
	medium sand	0.25-0.50	0	0%	100%
	coarse sand	0.50-1.0	0	0%	100%
	very coarse sand	1.0-2.0	0	0%	100%
	very fine gravel	2.0-4.0	0	0%	100%
G r a v e l	fine gravel	4.0-5.7	0	0%	100%
	fine gravel	5.7-8.0	0	0%	100%
	medium gravel	8.0-11.3	0	0%	100%
	medium gravel	11.3-16.0	0	0%	100%
	course gravel	16.0-22.6	0	0%	100%
	course gravel	22.6-32.0	0	0%	100%
	very coarse gravel	32-45	0	0%	100%
	very coarse gravel	45-64	0	0%	100%
	small cobble	64-90	0	0%	100%
	medium cobble	90-128	0	0%	100%
Cobble	large cobble	128-180	0	0%	100%
	very large cobble	180-256	0	0%	100%
	small boulder	256-362	0	0%	100%
Boulder	small boulder	362-512	0	0%	100%
	medium boulder	512-1024	0	0%	100%
	large boulder	1024-2048	0	0%	100%
Bedrock	bedrock	40096	0	0%	100%
TOTAL/% of whole count			100	100%	100%

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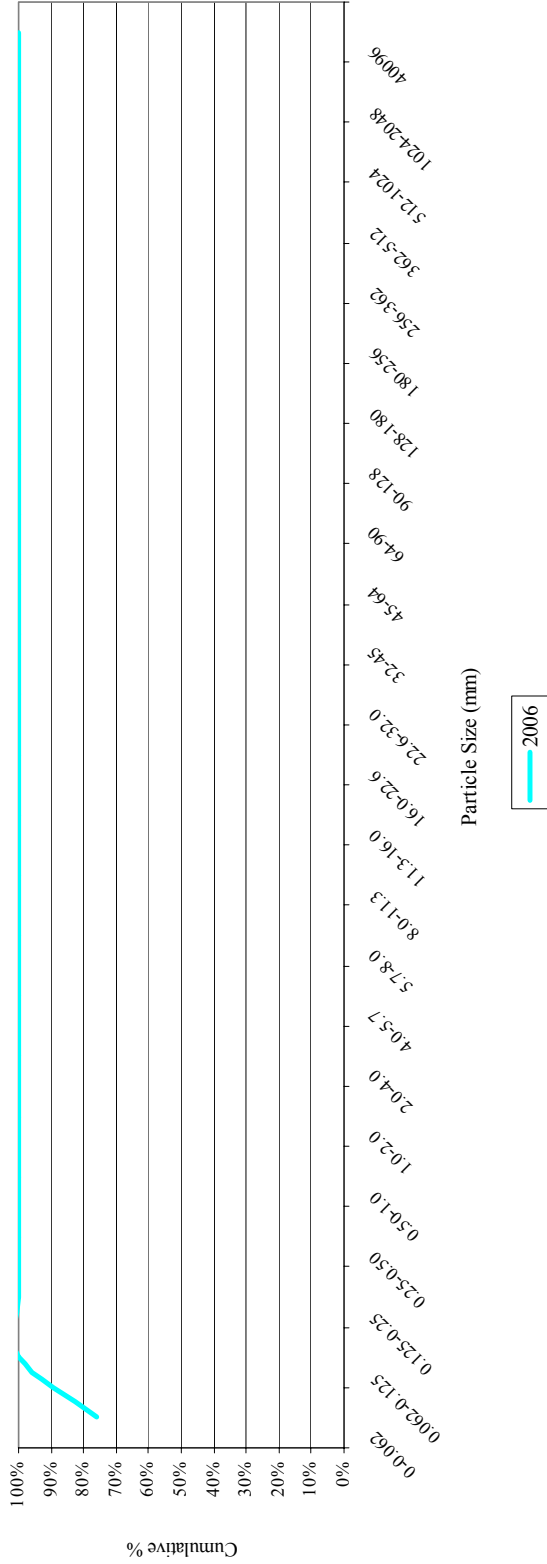
Shepherds Tree Stream and Wetland Restoration
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Appendix B7. Pebble Counts and Raw Data Tables

Prepared For:



Cross-Section 7-Pool
Shepherds Tree



	d16	d35	d50	d84	d95	d100
2006	0.01	0.03	0.04	0.08	0.11	0.12

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Shepherds Tree Stream and Wetland Restoration
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Appendix B7. Pebble Counts and Raw Data Tables

Prepared For:

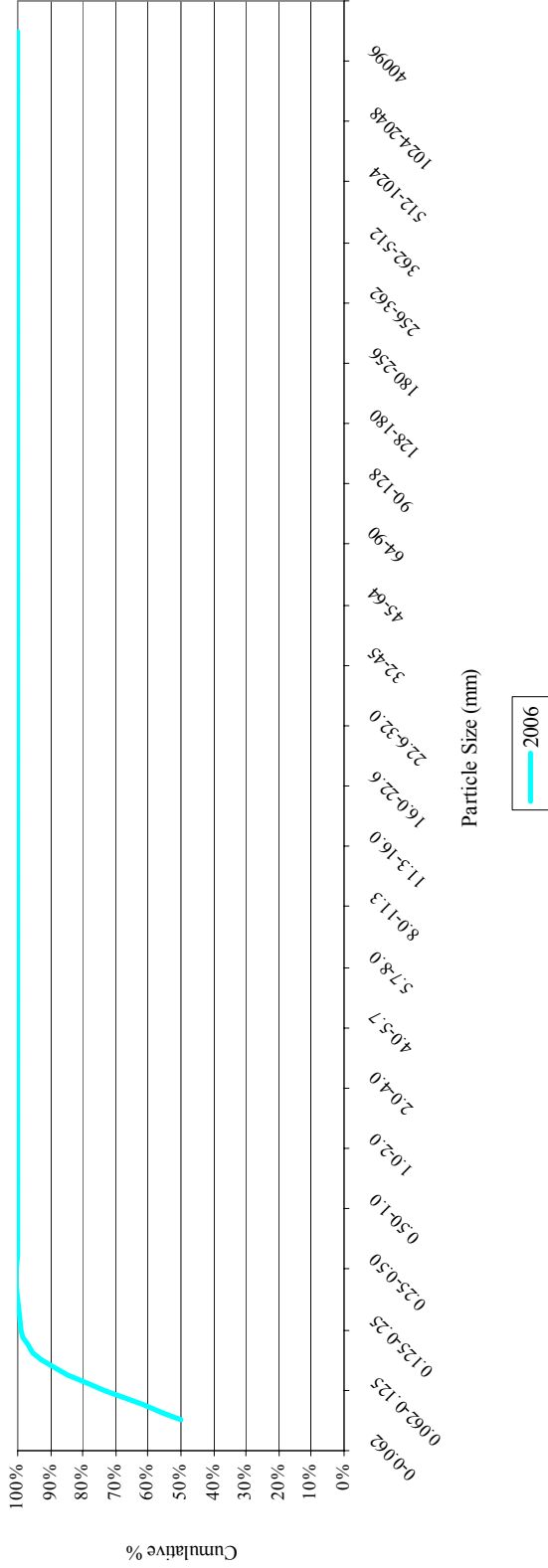


Project Name: Shepherds Tree				
Cross-Section: 8				
Feature: Pool				
Cross-Section # 8				2006
Description	Material	Size (mm)	Total #	Item %
Silt/Clay	silt/clay	0-0.062	50	50%
	very fine sand	0.062-0.125	43	43%
	fine sand	0.125-0.25	7	7%
	medium sand	0.25-0.50	0	0%
Sand	coarse sand	0.50-1.0	0	0%
	very coarse sand	1.0-2.0	0	0%
G r a v e l	very fine gravel	2.0-4.0	0	0%
	fine gravel	4.0-5.7	0	0%
	fine gravel	5.7-8.0	0	0%
	medium gravel	8.0-11.3	0	0%
	medium gravel	11.3-16.0	0	0%
	course gravel	16.0-22.6	0	0%
	course gravel	22.6-32.0	0	0%
	very coarse gravel	32-45	0	0%
	very coarse gravel	45-64	0	0%
	Cobble	small cobble	64-90	0
medium cobble		90-128	0	0%
large cobble		128-180	0	0%
very large cobble		180-256	0	0%
small boulder		256-362	0	0%
Boulder	small boulder	362-512	0	0%
	medium boulder	512-1024	0	0%
Bedrock	large boulder	1024-2048	0	0%
	bedrock	40096	0	0%
TOTAL/% of whole count			100	100%

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Shepherds Tree Stream and Wetland Restoration
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Cross-Section 8-Pool
Shepherds Tree



	d16	d35	d50	d84	d95	d100
2006	0.02	0.04	0.06	0.11	0.16	0.25

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Appendix B7. Pebble Counts and Raw Data Tables

Project Name: Shepherds Tree					
Cross-Section: 9					
Feature: Raffle					
Cross-Section # 9				2006	
Description	Material	Size (mm)	Total #	Item %	Cum %
Silt/Clay	silt/clay	0-0.062	69	69%	69%
Sand	very fine sand	0.062-0.125	31	31%	100%
	fine sand	0.125-0.25	0	0%	100%
	medium sand	0.25-0.50	0	0%	100%
	coarse sand	0.50-1.0	0	0%	100%
G r a v e l	very coarse sand	1.0-2.0	0	0%	100%
	very fine gravel	2.0-4.0	0	0%	100%
	fine gravel	4.0-5.7	0	0%	100%
	fine gravel	5.7-8.0	0	0%	100%
	medium gravel	8.0-11.3	0	0%	100%
	medium gravel	11.3-16.0	0	0%	100%
	course gravel	16.0-22.6	0	0%	100%
	course gravel	22.6-32.0	0	0%	100%
	very coarse gravel	32-45	0	0%	100%
	very coarse gravel	45-64	0	0%	100%
Cobble	small cobble	64-90	0	0%	100%
	medium cobble	90-128	0	0%	100%
	large cobble	128-180	0	0%	100%
	very large cobble	180-256	0	0%	100%
Boulder	small boulder	256-362	0	0%	100%
	small boulder	362-512	0	0%	100%
	medium boulder	512-1024	0	0%	100%
Bedrock	large boulder	1024-2048	0	0%	100%
	bedrock	40096	0	0%	100%
TOTAL/% of whole count			100	100%	100%

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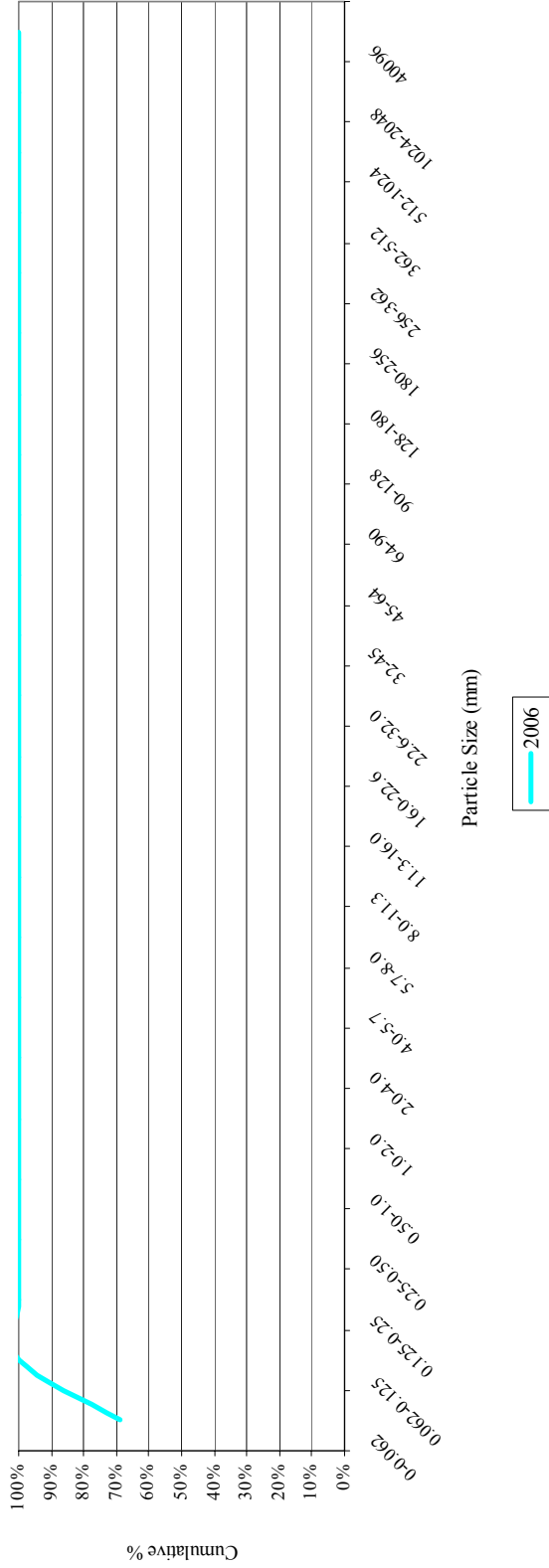
Shepherds Tree Stream and Wetland Restoration
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Appendix B7. Pebble Counts and Raw Data Tables

Prepared For:



Cross-Section 9-Riffle
Shepherds Tree



	d16	d35	d50	d84	d95	d100
2006	0.02	0.03	0.05	0.09	0.11	0.12

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Appendix B7. Pebble Counts and Raw Data Tables

Prepared For:



Project Name: Shepherds Tree					
Cross-Section: 10					
Feature: Pool					
Cross-Section # 10					2006
Description	Material	Size (mm)	Total #	Item %	Cum %
Silt/Clay	silt/clay	0-0.062	55	55%	55%
	very fine sand	0.062-0.125	45	45%	100%
Sand	fine sand	0.125-0.25	0	0%	100%
	medium sand	0.25-0.50	0	0%	100%
	coarse sand	0.50-1.0	0	0%	100%
	very coarse sand	1.0-2.0	0	0%	100%
G r a v e l	very fine gravel	2.0-4.0	0	0%	100%
	fine gravel	4.0-5.7	0	0%	100%
	fine gravel	5.7-8.0	0	0%	100%
	medium gravel	8.0-11.3	0	0%	100%
	medium gravel	11.3-16.0	0	0%	100%
	course gravel	16.0-22.6	0	0%	100%
	course gravel	22.6-32.0	0	0%	100%
	very coarse gravel	32-45	0	0%	100%
	very coarse gravel	45-64	0	0%	100%
	Cobble	small cobble	64-90	0	0%
medium cobble		90-128	0	0%	100%
large cobble		128-180	0	0%	100%
very large cobble		180-256	0	0%	100%
Boulder	small boulder	256-362	0	0%	100%
	small boulder	362-512	0	0%	100%
	medium boulder	512-1024	0	0%	100%
Bedrock	large boulder	1024-2048	0	0%	100%
	bedrock	40096	0	0%	100%
TOTAL/% of whole count			100	100%	100%

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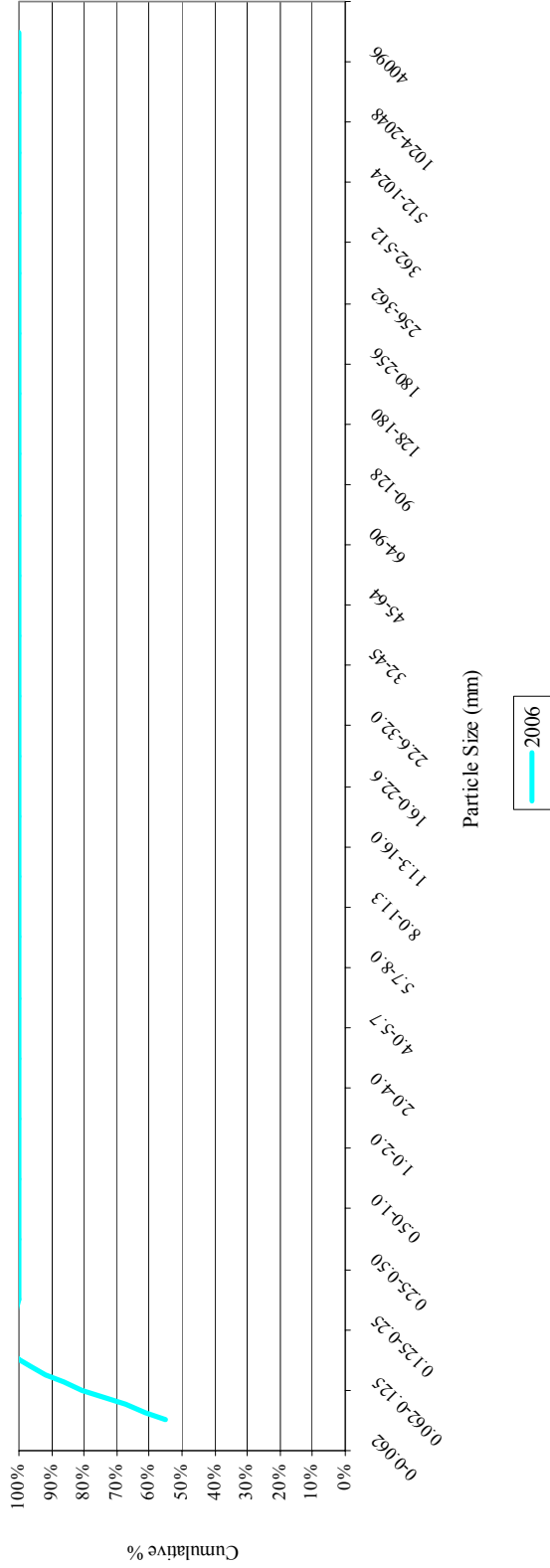
Shepherds Tree Stream and Wetland Restoration
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Appendix B7. Pebble Counts and Raw Data Tables

Prepared For:



Cross-Section 10-Pool
Shepherds Tree



	d16	d35	d50	d84	d95	d100
2006	0.02	0.04	0.06	0.10	0.12	0.12

Prepared For:



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Appendix B7. Pebble Counts and Raw Data Tables



Project Name: Shepherds Tree					
Cross-Section: 11					
Feature: Pool					
Cross-Section # 11					
Description	Material	Size (mm)	Total #	Item %	Cum %
Silt/Clay	silt/clay	0-0.062	56	57%	57%
	very fine sand	0.062-0.125	42	43%	100%
Sand	fine sand	0.125-0.25	0	0%	100%
	medium sand	0.25-0.50	0	0%	100%
	coarse sand	0.50-1.0	0	0%	100%
	very coarse sand	1.0-2.0	0	0%	100%
	very fine gravel	2.0-4.0	0	0%	100%
G r a v e l	fine gravel	4.0-5.7	0	0%	100%
	fine gravel	5.7-8.0	0	0%	100%
	medium gravel	8.0-11.3	0	0%	100%
	medium gravel	11.3-16.0	0	0%	100%
	course gravel	16.0-22.6	0	0%	100%
	course gravel	22.6-32.0	0	0%	100%
	very coarse gravel	32-45	0	0%	100%
	very coarse gravel	45-64	0	0%	100%
	small cobble	64-90	0	0%	100%
	medium cobble	90-128	0	0%	100%
Cobble	large cobble	128-180	0	0%	100%
	very large cobble	180-256	0	0%	100%
	small boulder	256-362	0	0%	100%
Boulder	small boulder	362-512	0	0%	100%
	medium boulder	512-1024	0	0%	100%
	large boulder	1024-2048	0	0%	100%
Bedrock	bedrock	40096	0	0%	100%
TOTAL/% of whole count			98	100%	100%

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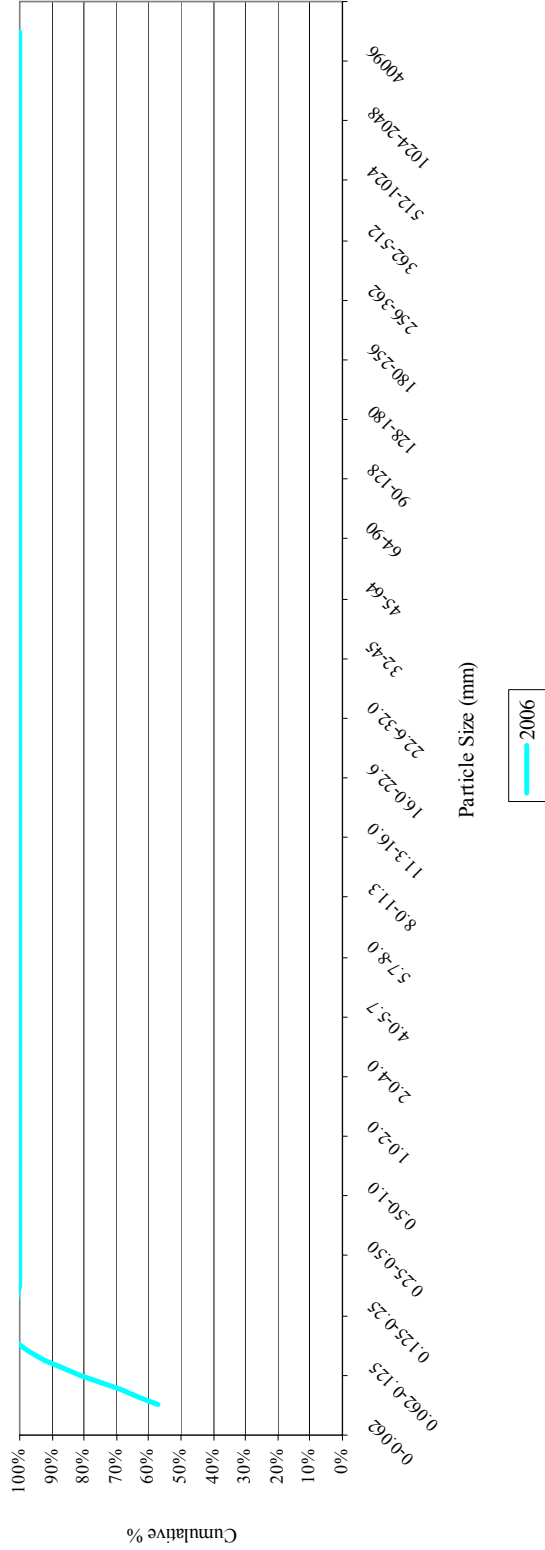
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Appendix B7. Pebble Counts and Raw Data Tables

Prepared For:



Cross-Section 11-Pool
Shepherds Tree



2006	d16	d35	d50	d84	d95	d100
	0.02	0.04	0.06	0.10	0.12	0.25

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Appendix B7. Pebble Counts and Raw Data Tables

Project Name: Shepherds Tree					
Cross-Section: 12					
Feature: Raffle					
Cross-Section # 12				2006	
Description	Material	Size (mm)	Total #	Item %	Cum %
Silt/Clay	silt/clay	0-0.062	53	53%	53%
	very fine sand	0.062-0.125	38	38%	91%
	fine sand	0.125-0.25	9	9%	100%
Sand	medium sand	0.25-0.50	0	0%	100%
	coarse sand	0.50-1.0	0	0%	100%
	very coarse sand	1.0-2.0	0	0%	100%
	very fine gravel	2.0-4.0	0	0%	100%
	fine gravel	4.0-5.7	0	0%	100%
	fine gravel	5.7-8.0	0	0%	100%
	medium gravel	8.0-11.3	0	0%	100%
	medium gravel	11.3-16.0	0	0%	100%
	course gravel	16.0-22.6	0	0%	100%
	course gravel	22.6-32.0	0	0%	100%
	very coarse gravel	32-45	0	0%	100%
	very coarse gravel	45-64	0	0%	100%
	small cobble	64-90	0	0%	100%
	medium cobble	90-128	0	0%	100%
	large cobble	128-180	0	0%	100%
	very large cobble	180-256	0	0%	100%
	small boulder	256-362	0	0%	100%
	small boulder	362-512	0	0%	100%
	medium boulder	512-1024	0	0%	100%
	large boulder	1024-2048	0	0%	100%
Bedrock	bedrock	40096	0	0%	100%
TOTAL/% of whole count			100	100%	100%

Date: March 2007
Project No.: 333



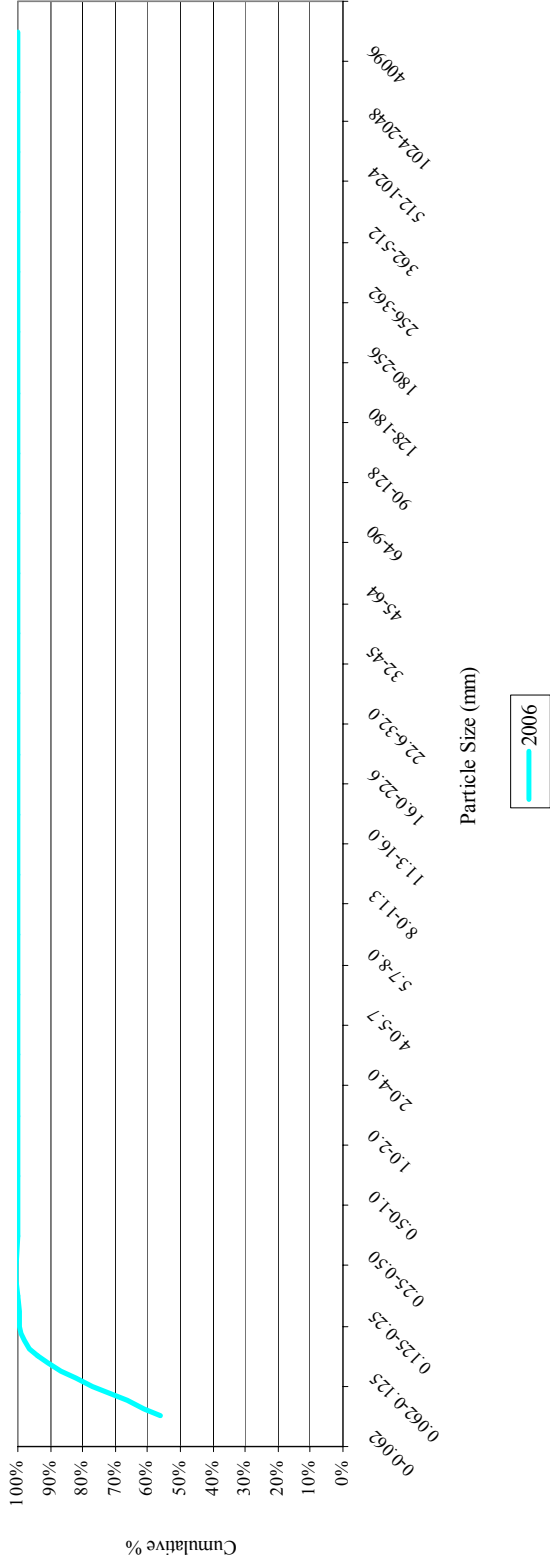
Shepherds Tree Stream and Wetland Restoration
Year 2 of 5

Appendix B7. Pebble Counts and Raw Data Tables

Prepared For:



Cross-Section 12-Riffle
Shepherds Tree



2006	d16	d35	d50	d84	d95	d100
	0.02	0.04	0.06	0.11	0.18	0.25

Prepared For:



Shepherds Tree Stream and Wetland Restoration
Year 2 of 5

Date: March 2007
Project No.: 333

Appendix B7. Pebble Counts and Raw Data Tables



Project Name: Shepherds Tree					
Cross-Section: 13					
Feature: Pool					
Cross-Section # 13					
Description	Material	Size (mm)	Total #	Item %	Cum %
Silt/Clay	silt/clay	0-0.062	68	68%	68%
	very fine sand	0.062-0.125	32	32%	100%
Sand	fine sand	0.125-0.25	0	0%	100%
	medium sand	0.25-0.50	0	0%	100%
	coarse sand	0.50-1.0	0	0%	100%
	very coarse sand	1.0-2.0	0	0%	100%
	very fine gravel	2.0-4.0	0	0%	100%
G r a v e l	fine gravel	4.0-5.7	0	0%	100%
	fine gravel	5.7-8.0	0	0%	100%
	medium gravel	8.0-11.3	0	0%	100%
	medium gravel	11.3-16.0	0	0%	100%
	course gravel	16.0-22.6	0	0%	100%
	course gravel	22.6-32.0	0	0%	100%
	very coarse gravel	32-45	0	0%	100%
	very coarse gravel	45-64	0	0%	100%
	small cobble	64-90	0	0%	100%
	medium cobble	90-128	0	0%	100%
Cobble	large cobble	128-180	0	0%	100%
	very large cobble	180-256	0	0%	100%
	small boulder	256-362	0	0%	100%
Boulder	small boulder	362-512	0	0%	100%
	medium boulder	512-1024	0	0%	100%
	large boulder	1024-2048	0	0%	100%
Bedrock	bedrock	40096	0	0%	100%
TOTAL/% of whole count			100	100%	100%

Date: March 2007
Project No.: 333



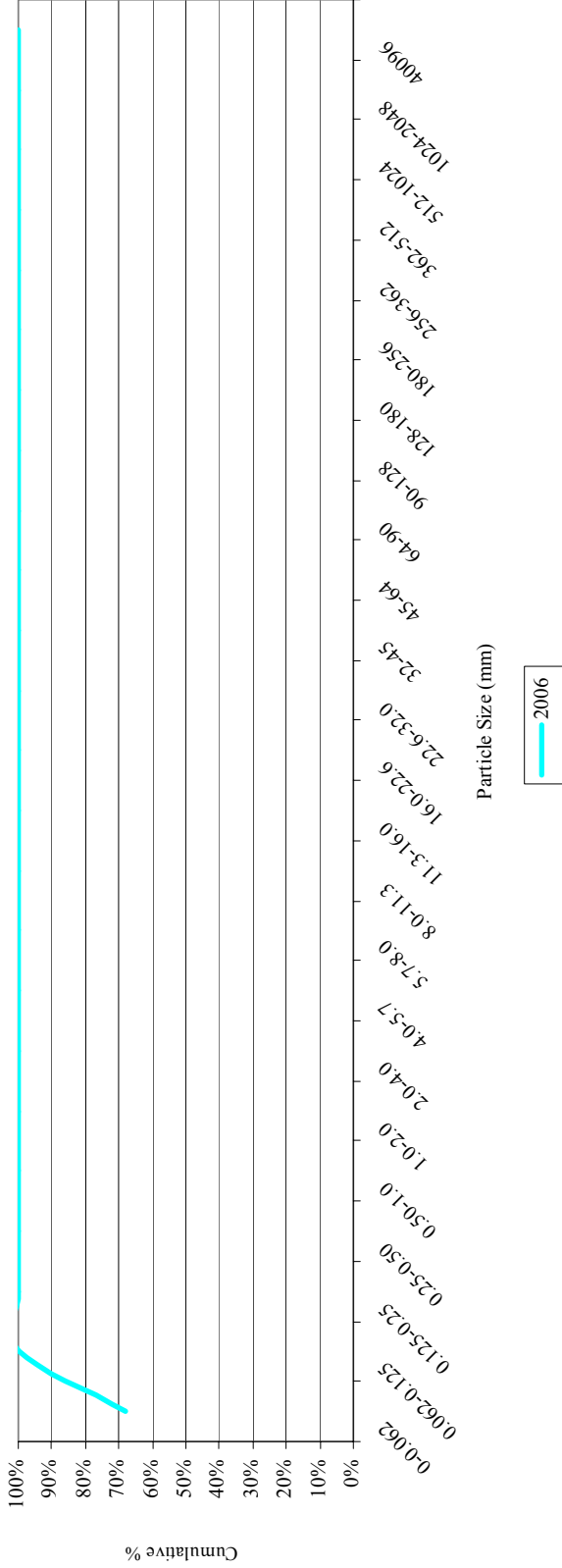
Shepherds Tree Stream and Wetland Restoration
Year 2 of 5

Appendix B7. Pebble Counts and Raw Data Tables

Prepared For:



Cross-Section 13-Pool
Shepherds Tree



2006	d16	d35	d50	d84	d95	d100
	0.02	0.03	0.05	0.09	0.12	0.12

Date: March 2007
Project No.: 333

Shepherds Tree Stream and Wetland Restoration
Year 2 of 5

Prepared For:



Appendix B7. Pebble Counts and Raw Data Tables



Project Name: Shepherds Tree					
Cross-Section: 14					
Feature: Riffle					
Cross-Section # 14					
Description	Material	Size (mm)	Total #	Item %	Cum %
Silt/Clay	silt/clay	0-0.062	77	77%	77%
	very fine sand	0.062-0.125	20	20%	97%
Sand	fine sand	0.125-0.25	0	0%	97%
	medium sand	0.25-0.50	0	0%	97%
	coarse sand	0.50-1.0	0	0%	97%
	very coarse sand	1.0-2.0	3	3%	100%
	very fine gravel	2.0-4.0	0	0%	100%
G r a v e l	fine gravel	4.0-5.7	0	0%	100%
	fine gravel	5.7-8.0	0	0%	100%
	medium gravel	8.0-11.3	0	0%	100%
	medium gravel	11.3-16.0	0	0%	100%
	course gravel	16.0-22.6	0	0%	100%
	course gravel	22.6-32.0	0	0%	100%
	very coarse gravel	32-45	0	0%	100%
	very coarse gravel	45-64	0	0%	100%
	small cobble	64-90	0	0%	100%
	medium cobble	90-128	0	0%	100%
Cobble	large cobble	128-180	0	0%	100%
	very large cobble	180-256	0	0%	100%
	small boulder	256-362	0	0%	100%
Boulder	small boulder	362-512	0	0%	100%
	medium boulder	512-1024	0	0%	100%
	large boulder	1024-2048	0	0%	100%
Bedrock	bedrock	40096	0	0%	100%
TOTAL/% of whole count			100	100%	100%

Date: March 2007
Project No.: 333

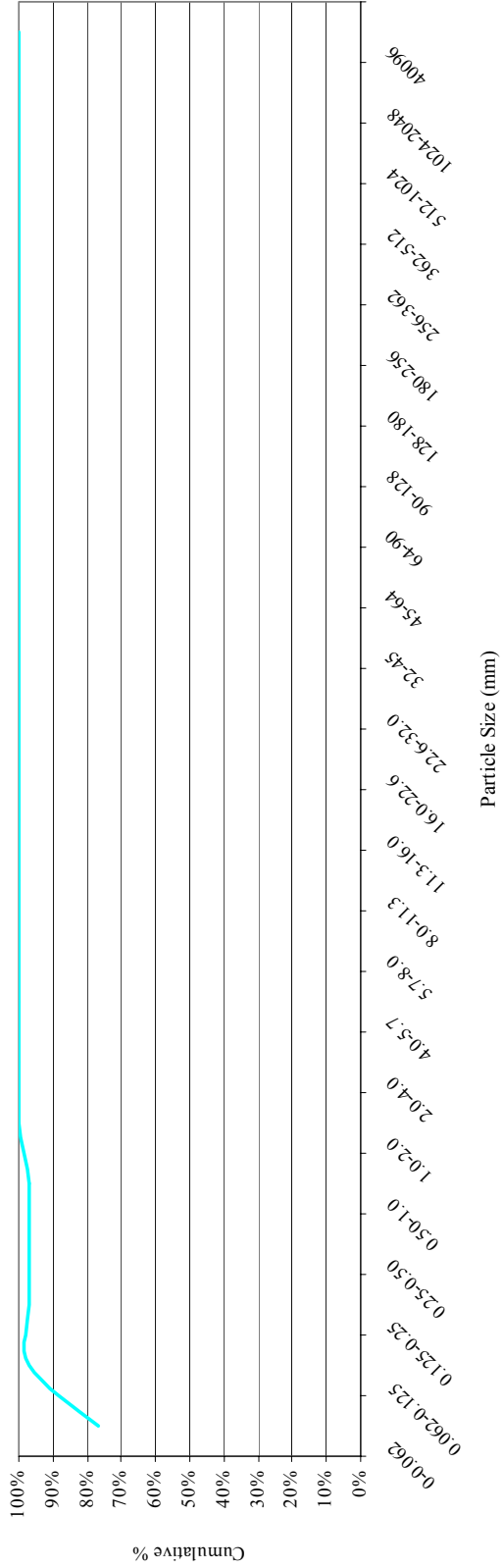


Shepherds Tree Stream and Wetland Restoration
Year 2 of 5

Prepared For:
 Ecosystem Enhancement

Appendix B7. Pebble Counts and Raw Data Tables

Cross-Section 14-Riffle
Shepherds Tree



	d16	d35	d50	d84	d95	d100
2006	0.01	0.03	0.04	0.08	0.12	2.00

Date: March 2007
Project No.: 333

Shepherds Tree Stream and Wetland Restoration
Year 2 of 5

Prepared For:




Appendix B7. Pebble Counts and Raw Data Tables

Project Name: Shepherds Tree					
Cross-Section: 15					
Feature: Pool					
Cross-Section # 15				2006	
Description	Material	Size (mm)	Total #	Item %	Cum %
Silt/Clay	silt/clay	0-0.062	56	56%	56%
	very fine sand	0.062-0.125	38	38%	94%
Sand	fine sand	0.125-0.25	6	6%	100%
	medium sand	0.25-0.50	0	0%	100%
	coarse sand	0.50-1.0	0	0%	100%
	very coarse sand	1.0-2.0	0	0%	100%
G r a v e l	very fine gravel	2.0-4.0	0	0%	100%
	fine gravel	4.0-5.7	0	0%	100%
	fine gravel	5.7-8.0	0	0%	100%
	medium gravel	8.0-11.3	0	0%	100%
	medium gravel	11.3-16.0	0	0%	100%
	course gravel	16.0-22.6	0	0%	100%
	course gravel	22.6-32.0	0	0%	100%
	very coarse gravel	32-45	0	0%	100%
	very coarse gravel	45-64	0	0%	100%
	Cobble	small cobble	64-90	0	0%
medium cobble		90-128	0	0%	100%
large cobble		128-180	0	0%	100%
very large cobble		180-256	0	0%	100%
Boulder	small boulder	256-362	0	0%	100%
	small boulder	362-512	0	0%	100%
	medium boulder	512-1024	0	0%	100%
Bedrock	large boulder	1024-2048	0	0%	100%
	bedrock	40096	0	0%	100%
TOTAL/% of whole count			100	100%	100%

Date: March 2007
Project No.: 333



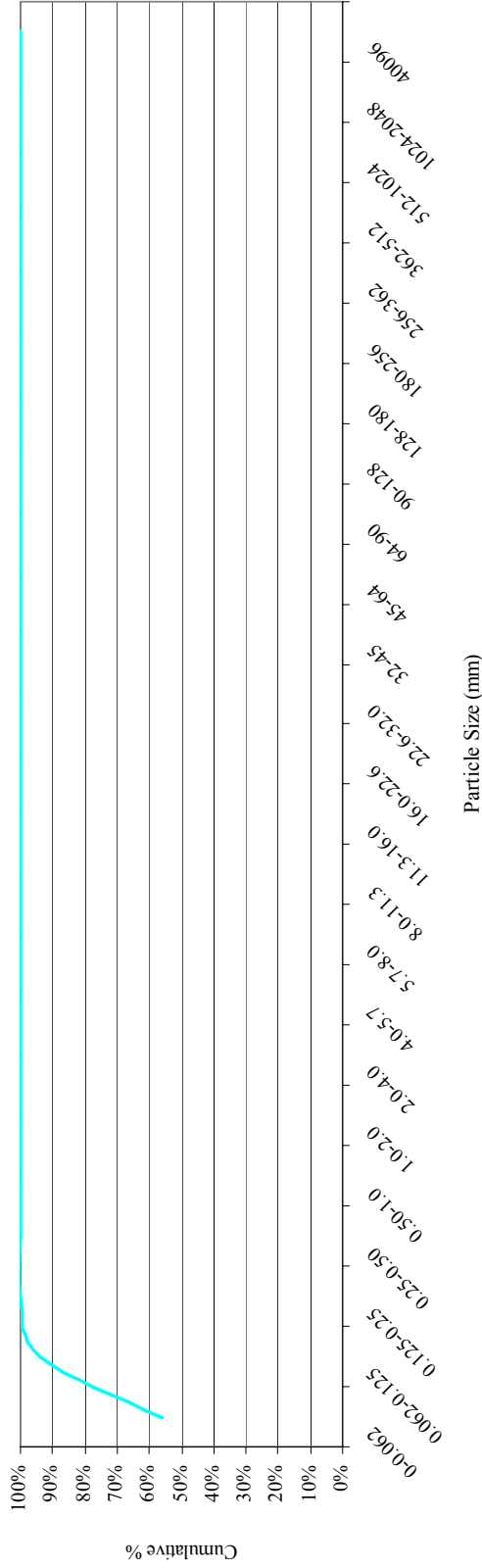
Shepherds Tree Stream and Wetland Restoration
Year 2 of 5

Appendix B7. Pebble Counts and Raw Data Tables

Prepared For:



Cross-Section 15-Pool
Shepherds Tree



	d16	d35	d50	d84	d95	d100
2006	0.02	0.04	0.06	0.11	0.15	0.25

Date: March 2007
Project No.: 333

Shepherds Tree Stream and Wetland Restoration
Year 2 of 5

Prepared For:



Appendix B7. Pebble Counts and Raw Data Tables



Project Name: Shepherds Tree						
Cross-Section: 16						
Feature: Trib Riffle						
Cross-Section # 16						
Description	Material	Size (mm)	Total #	Item %	Cum %	
Silt/Clay	silt/clay	0-0.062	51	51%	51%	
	very fine sand	0.062-0.125	40	40%	91%	
	fine sand	0.125-0.25	9	9%	100%	
	medium sand	0.25-0.50	0	0%	100%	
Sand	coarse sand	0.50-1.0	0	0%	100%	
	very coarse sand	1.0-2.0	0	0%	100%	
G r a v e l	very fine gravel	2.0-4.0	0	0%	100%	
	fine gravel	4.0-5.7	0	0%	100%	
	fine gravel	5.7-8.0	0	0%	100%	
	medium gravel	8.0-11.3	0	0%	100%	
	medium gravel	11.3-16.0	0	0%	100%	
	course gravel	16.0-22.6	0	0%	100%	
	course gravel	22.6-32.0	0	0%	100%	
	very coarse gravel	32-45	0	0%	100%	
	very coarse gravel	45-64	0	0%	100%	
	Cobble	small cobble	64-90	0	0%	100%
		medium cobble	90-128	0	0%	100%
		large cobble	128-180	0	0%	100%
very large cobble		180-256	0	0%	100%	
Boulder	small boulder	256-362	0	0%	100%	
	small boulder	362-512	0	0%	100%	
	medium boulder	512-1024	0	0%	100%	
	large boulder	1024-2048	0	0%	100%	
Bedrock	bedrock	40096	0	0%	100%	
TOTAL/% of whole count			100	100%	100%	

Date: March 2007
Project No.: 333



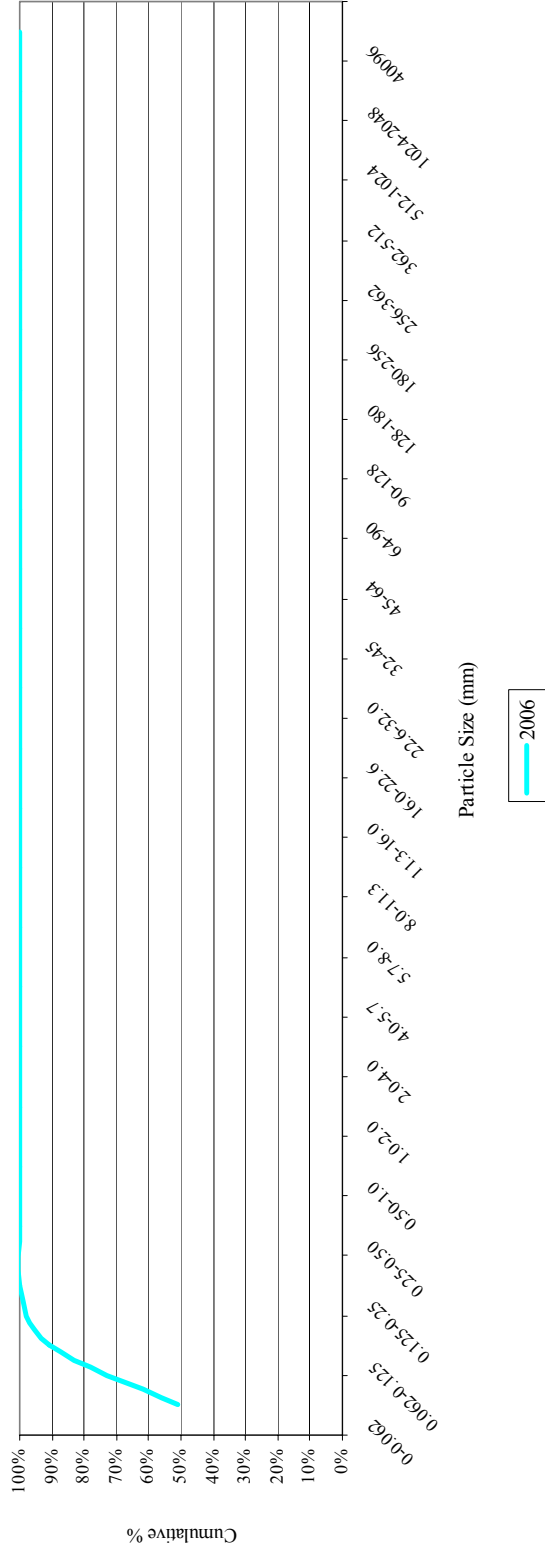
Shepherds Tree Stream and Wetland Restoration
Year 2 of 5

Appendix B7. Pebble Counts and Raw Data Tables

Prepared For:



Cross-Section 16-Trib Riffle
Shepherds Tree



Year	d16	d35	d50	d84	d95	d100
2006	0.02	0.04	0.06	0.11	0.18	0.25

Date: March 2007
Project No.: 333



Shepherds Tree Stream and Wetland Restoration
Year 2 of 5



Appendix B7. Pebble Counts and Raw Data Tables

Appendix C
(Click here)

APPENDIX C

Wetland Raw Data*

1. Data Tables for Hydrological Data
2. Precipitation – Water Level Plots for Well

*Raw data tables have been provided electronically.

Well 1	Well 2	Well 3	Well 4	Well 5	Well 6
-1.3 07.00.00	15.9 07.00.00	07.00.00	-2.3 07.00.00	-35.9 07.00.00	-2.9 07.00.00
0.0 07.00.00	17.6 07.00.00	07.00.00	-4.5 07.00.00	0.0 07.00.00	0.0 07.00.00
-3.9 07.00.00	-17.6 07.00.00	07.00.00	-6.4 07.00.00	0.0 07.00.00	0.0 07.00.00
-5.2 07.00.00	-18.8 07.00.00	07.00.00	-7.7 07.00.00	0.0 07.00.00	0.0 07.00.00
-6.5 07.00.00	-19.2 07.00.00	07.00.00	-8.5 07.00.00	0.0 07.00.00	0.0 07.00.00
-5.4 07.00.00	-18.9 07.00.00	07.00.00	-13.0 07.00.00	0.0 07.00.00	0.0 07.00.00
-0.2 07.00.00	-15.4 07.00.00	07.00.00	-17.0 07.00.00	0.0 07.00.00	0.0 07.00.00
0.0 07.00.00	-15.6 07.00.00	07.00.00	-11.0 07.00.00	0.0 07.00.00	0.0 07.00.00
-1.3 07.00.00	-17.3 07.00.00	07.00.00	-7.8 07.00.00	0.0 07.00.00	0.0 07.00.00
-3.5 07.00.00	-17.3 07.00.00	07.00.00	-5.9 07.00.00	0.0 07.00.00	0.0 07.00.00
-4.8 07.00.00	-18.0 07.00.00	07.00.00	-6.8 07.00.00	0.0 07.00.00	0.0 07.00.00
-9.5 07.00.00	-22.2 07.00.00	07.00.00	-11.8 07.00.00	0.0 07.00.00	0.0 07.00.00
-10.2 07.00.00	-23.3 07.00.00	07.00.00	-14.3 07.00.00	0.0 07.00.00	0.0 07.00.00
-12.3 07.00.00	-24.9 07.00.00	07.00.00	-20.3 07.00.00	0.0 07.00.00	0.0 07.00.00
-12.5 07.00.00	-24.9 07.00.00	07.00.00	-11.9 07.00.00	0.0 07.00.00	0.0 07.00.00
-8.2 07.00.00	-18.0 07.00.00	07.00.00	-11.8 07.00.00	0.0 07.00.00	0.0 07.00.00
-9.5 07.00.00	-19.4 07.00.00	07.00.00	-11.9 07.00.00	0.0 07.00.00	0.0 07.00.00
-14.0 07.00.00	-24.5 07.00.00	07.00.00	-21.4 07.00.00	0.0 07.00.00	0.0 07.00.00
-12.3 07.00.00	-24.5 07.00.00	07.00.00	-19.5 07.00.00	0.0 07.00.00	0.0 07.00.00
-15.4 07.00.00	-26.8 07.00.00	07.00.00	-21.4 07.00.00	0.0 07.00.00	0.0 07.00.00
-16.6 07.00.00	-26.8 07.00.00	07.00.00	-25.2 07.00.00	0.0 07.00.00	0.0 07.00.00
-16.4 07.00.00	-28.5 07.00.00	07.00.00	-27.4 07.00.00	0.0 07.00.00	0.0 07.00.00
-18.5 07.00.00	-31.1 07.00.00	07.00.00	-29.3 07.00.00	0.0 07.00.00	0.0 07.00.00
-19.5 07.00.00	-32.4 07.00.00	07.00.00	-2.6 07.00.00	0.0 07.00.00	0.0 07.00.00
-5.6 07.00.00	-14.6 07.00.00	07.00.00	-4.7 07.00.00	0.0 07.00.00	0.0 07.00.00
-9.7 07.00.00	-15.9 07.00.00	07.00.00	-10.5 07.00.00	0.0 07.00.00	0.0 07.00.00
-11.4 07.00.00	-20.1 07.00.00	07.00.00	-13.7 07.00.00	0.0 07.00.00	0.0 07.00.00
-12.5 07.00.00	-23.3 07.00.00	07.00.00	-20.3 07.00.00	0.0 07.00.00	0.0 07.00.00
-14.9 07.00.00	-26.9 07.00.00	07.00.00	-0.9 07.00.00	0.0 07.00.00	0.0 07.00.00
-0.4 07.00.00	-19.8 07.00.00	07.00.00	0.0 07.00.00	0.0 07.00.00	0.0 07.00.00
2.6 07.00.00	-13.7 07.00.00	07.00.00	-3.8 07.00.00	0.0 07.00.00	0.0 07.00.00
0.0 07.00.00	-18.4 07.00.00	07.00.00	-5.3 07.00.00	0.0 07.00.00	0.0 07.00.00
-6.6 07.00.00	-23.7 07.00.00	07.00.00	-17.3 07.00.00	0.0 07.00.00	0.0 07.00.00
-12.1 07.00.00	-25.6 07.00.00	07.00.00	-22.5 07.00.00	0.0 07.00.00	0.0 07.00.00
-15.3 07.00.00	-26.6 07.00.00	07.00.00	-2.6 07.00.00	0.0 07.00.00	0.0 07.00.00
-16.7 07.00.00	-30.4 07.00.00	07.00.00	0.2 07.00.00	0.0 07.00.00	0.0 07.00.00
-2.8 07.00.00	-12.9 07.00.00	07.00.00	0.9 07.00.00	0.0 07.00.00	0.0 07.00.00
3.0 07.00.00	-13.1 07.00.00	07.00.00	1.0 07.00.00	0.0 07.00.00	0.0 07.00.00
3.0 07.00.00	-13.7 07.00.00	07.00.00	-1.9 07.00.00	0.0 07.00.00	0.0 07.00.00
0.9 07.00.00	-15.2 07.00.00	07.00.00	-6.2 07.00.00	0.0 07.00.00	0.0 07.00.00
-5.2 07.00.00	-23.9 07.00.00	07.00.00	-16.6 07.00.00	0.0 07.00.00	0.0 07.00.00
-11.2 07.00.00	-26.8 07.00.00	07.00.00	-4.5 07.00.00	0.0 07.00.00	0.0 07.00.00
-10.4 07.00.00	-15.8 07.00.00	07.00.00	-4.5 07.00.00	0.0 07.00.00	0.0 07.00.00
-3.9 07.00.00	-17.6 07.00.00	07.00.00	-12.2 07.00.00	0.0 07.00.00	0.0 07.00.00
-6.7 07.00.00	-24.1 07.00.00	07.00.00	-19.9 07.00.00	0.0 07.00.00	0.0 07.00.00
-10.2 07.00.00	-26.6 07.00.00	07.00.00	-24.9 07.00.00	0.0 07.00.00	0.0 07.00.00
-11.4 07.00.00	-28.4 07.00.00	07.00.00	-28.9 07.00.00	0.0 07.00.00	0.0 07.00.00
-15.8 07.00.00	-30.2 07.00.00	07.00.00	-28.9 07.00.00	0.0 07.00.00	0.0 07.00.00
-16.2 07.00.00	-30.2 07.00.00	07.00.00	-28.9 07.00.00	0.0 07.00.00	0.0 07.00.00
-16.4 07.00.00	-30.2 07.00.00	07.00.00	-28.9 07.00.00	0.0 07.00.00	0.0 07.00.00
-20.8 07.00.00	-30.2 07.00.00	07.00.00	-28.9 07.00.00	0.0 07.00.00	0.0 07.00.00
-22.1 07.00.00	-29.4 07.00.00	07.00.00	-28.9 07.00.00	0.0 07.00.00	0.0 07.00.00
-22.3 07.00.00	-30.4 07.00.00	07.00.00	-28.9 07.00.00	0.0 07.00.00	0.0 07.00.00
-22.0 07.00.00	-30.2 07.00.00	07.00.00	-28.9 07.00.00	0.0 07.00.00	0.0 07.00.00
-22.2 07.00.00	-30.2 07.00.00	07.00.00	-28.9 07.00.00	0.0 07.00.00	0.0 07.00.00
-22.1 07.00.00	-30.4 07.00.00	07.00.00	-28.9 07.00.00	0.0 07.00.00	0.0 07.00.00
-21.8 07.00.00	-30.2 07.00.00	07.00.00	-28.9 07.00.00	0.0 07.00.00	0.0 07.00.00
-22.2 07.00.00	-30.2 07.00.00	07.00.00	-28.9 07.00.00	0.0 07.00.00	0.0 07.00.00

Date: January 2007
 Project No.: 333

Shepherds Tree Stream and Wetland Restoration
 Year 2 of 5

Prepared For:



Well 1

Table with 3 columns: Date (01-Aug-06 to 31-Oct-06), Value (e.g., -22.1, -22.1, -22.1), and Unit (e.g., 02-Aug-06, 03-Aug-06, 04-Aug-06).

Well 2

Table with 3 columns: Date (01-Aug-06 to 31-Oct-06), Value (e.g., -30.2, -30.2, -30.2), and Unit (e.g., 02-Aug-06, 03-Aug-06, 04-Aug-06).

Well 3

Table with 3 columns: Date (01-Aug-06 to 31-Oct-06), Value (e.g., 07.0000, 07.0000, 07.0000), and Unit (e.g., 02-Aug-06, 03-Aug-06, 04-Aug-06).

Well 4

Table with 3 columns: Date (01-Aug-06 to 31-Oct-06), Value (e.g., -30.3, -30.3, -30.3), and Unit (e.g., 02-Aug-06, 03-Aug-06, 04-Aug-06).

Well 5

Table with 3 columns: Date (01-Aug-06 to 31-Oct-06), Value (e.g., -35.5, -35.5, -35.5), and Unit (e.g., 02-Aug-06, 03-Aug-06, 04-Aug-06).

Well 6

Table with 3 columns: Date (01-Aug-06 to 31-Oct-06), Value (e.g., -24.7, -24.7, -24.7), and Unit (e.g., 02-Aug-06, 03-Aug-06, 04-Aug-06).

Prepared For:



Shepherds Tree Stream and Wetland Restoration Year 2 of 5

Date: January 2007
Project No.: 333



Appendix C1. Data Tables for Hydrological Data

Well 1

-1.3	07.0000	01-Nov-06
-1.5	07.0000	02-Nov-06
-3.8	07.0000	03-Nov-06
-4.5	07.0000	04-Nov-06
-5.1	07.0000	05-Nov-06
-5.3	07.0000	06-Nov-06
-3.8	07.0000	07-Nov-06
-3.7	07.0000	08-Nov-06
-3.2	07.0000	09-Nov-06
-3.5	07.0000	10-Nov-06
-3.8	07.0000	11-Nov-06
-3.7	07.0000	12-Nov-06
-3.3	07.0000	13-Nov-06
-3.4	07.0000	14-Nov-06
-3.8	07.0000	15-Nov-06
-3.8	07.0000	16-Nov-06
-3.0	07.0000	17-Nov-06
-2.6	07.0000	18-Nov-06
-2.4	07.0000	19-Nov-06
-2.5	07.0000	20-Nov-06
-2.4	07.0000	21-Nov-06
-2.4	07.0000	22-Nov-06
-2.5	07.0000	23-Nov-06
-2.4	07.0000	24-Nov-06
-2.4	07.0000	25-Nov-06
-2.4	07.0000	26-Nov-06
-2.4	07.0000	27-Nov-06
-2.4	07.0000	28-Nov-06
-2.6	07.0000	29-Nov-06
-2.6	07.0000	30-Nov-06
-2.3	07.0000	01-Dec-06
-2.1	07.0000	02-Dec-06
-2.6	07.0000	03-Dec-06
-2.7	07.0000	04-Dec-06
-2.7	07.0000	05-Dec-06
-2.9	07.0000	06-Dec-06
-2.8	07.0000	07-Dec-06
-2.9	07.0000	08-Dec-06
-2.4	07.0000	09-Dec-06
-2.4	07.0000	10-Dec-06
-2.4	07.0000	11-Dec-06
-2.5	07.0000	12-Dec-06
-2.4	07.0000	13-Dec-06
-2.4	07.0000	14-Dec-06
-2.4	07.0000	15-Dec-06
-2.2	07.0000	16-Dec-06
-2.2	07.0000	17-Dec-06
-2.2	07.0000	18-Dec-06
-2.3	07.0000	19-Dec-06

Well 2

-40.1	07.0000	1-Nov-06
-41	07.0000	2-Nov-06
-41.3	07.0000	3-Nov-06
-41.4	07.0000	4-Nov-06
-40.6	07.0000	5-Nov-06
-3.8	07.0000	6-Nov-06
-3.7	07.0000	7-Nov-06
-3.2	07.0000	8-Nov-06
-3.5	07.0000	9-Nov-06
-3.8	07.0000	10-Nov-06
-3.7	07.0000	11-Nov-06
-3.3	07.0000	12-Nov-06
-3.4	07.0000	13-Nov-06
-3.3	07.0000	14-Nov-06
-3.8	07.0000	15-Nov-06
-3.8	07.0000	16-Nov-06
-3.0	07.0000	17-Nov-06
-2.6	07.0000	18-Nov-06
-2.4	07.0000	19-Nov-06
-2.5	07.0000	20-Nov-06
-2.4	07.0000	21-Nov-06
-2.4	07.0000	22-Nov-06
-2.4	07.0000	23-Nov-06
-2.4	07.0000	24-Nov-06
-2.4	07.0000	25-Nov-06
-2.4	07.0000	26-Nov-06
-2.4	07.0000	27-Nov-06
-2.4	07.0000	28-Nov-06
-2.6	07.0000	29-Nov-06
-2.6	07.0000	30-Nov-06
-2.3	07.0000	01-Dec-06
-2.1	07.0000	02-Dec-06
-2.6	07.0000	03-Dec-06
-2.7	07.0000	04-Dec-06
-2.7	07.0000	05-Dec-06
-2.9	07.0000	06-Dec-06
-2.8	07.0000	07-Dec-06
-2.9	07.0000	08-Dec-06
-2.4	07.0000	09-Dec-06
-2.4	07.0000	10-Dec-06
-2.4	07.0000	11-Dec-06
-2.5	07.0000	12-Dec-06
-2.4	07.0000	13-Dec-06
-2.4	07.0000	14-Dec-06
-2.4	07.0000	15-Dec-06
-2.2	07.0000	16-Dec-06
-2.2	07.0000	17-Dec-06
-2.2	07.0000	18-Dec-06
-2.3	07.0000	19-Dec-06

Well 3

-41.5	07.0000	01-Nov-06
-41.5	07.0000	02-Nov-06
-41.5	07.0000	03-Nov-06
-41.5	07.0000	04-Nov-06
-41.5	07.0000	05-Nov-06
-41.5	07.0000	06-Nov-06
-41.5	07.0000	07-Nov-06
-41.5	07.0000	08-Nov-06
-41.5	07.0000	09-Nov-06
-41.5	07.0000	10-Nov-06
-41.5	07.0000	11-Nov-06
-41.5	07.0000	12-Nov-06
-41.5	07.0000	13-Nov-06
-41.5	07.0000	14-Nov-06
-41.5	07.0000	15-Nov-06
-41.5	07.0000	16-Nov-06
-41.5	07.0000	17-Nov-06
-41.5	07.0000	18-Nov-06
-41.5	07.0000	19-Nov-06
-41.5	07.0000	20-Nov-06
-41.5	07.0000	21-Nov-06
-41.5	07.0000	22-Nov-06
-41.5	07.0000	23-Nov-06
-41.5	07.0000	24-Nov-06
-41.5	07.0000	25-Nov-06
-41.5	07.0000	26-Nov-06
-41.5	07.0000	27-Nov-06
-41.5	07.0000	28-Nov-06
-41.5	07.0000	29-Nov-06
-41.5	07.0000	30-Nov-06
-41.5	07.0000	01-Dec-06
-41.5	07.0000	02-Dec-06
-41.5	07.0000	03-Dec-06
-41.5	07.0000	04-Dec-06
-41.5	07.0000	05-Dec-06
-41.5	07.0000	06-Dec-06
-41.5	07.0000	07-Dec-06
-41.5	07.0000	08-Dec-06
-41.5	07.0000	09-Dec-06
-41.5	07.0000	10-Dec-06
-41.5	07.0000	11-Dec-06
-41.5	07.0000	12-Dec-06
-41.5	07.0000	13-Dec-06
-41.5	07.0000	14-Dec-06
-41.5	07.0000	15-Dec-06
-41.5	07.0000	16-Dec-06
-41.5	07.0000	17-Dec-06
-41.5	07.0000	18-Dec-06
-41.5	07.0000	19-Dec-06

Well 4

-1.3	07.0000	01-Nov-06
-1.5	07.0000	02-Nov-06
-4.5	07.0000	03-Nov-06
-4.8	07.0000	04-Nov-06
-5.1	07.0000	05-Nov-06
-5.3	07.0000	06-Nov-06
-5.3	07.0000	07-Nov-06
-5.3	07.0000	08-Nov-06
-5.3	07.0000	09-Nov-06
-5.3	07.0000	10-Nov-06
-5.3	07.0000	11-Nov-06
-5.3	07.0000	12-Nov-06
-5.3	07.0000	13-Nov-06
-5.3	07.0000	14-Nov-06
-5.3	07.0000	15-Nov-06
-5.3	07.0000	16-Nov-06
-5.3	07.0000	17-Nov-06
-5.3	07.0000	18-Nov-06
-5.3	07.0000	19-Nov-06
-5.3	07.0000	20-Nov-06
-5.3	07.0000	21-Nov-06
-5.3	07.0000	22-Nov-06
-5.3	07.0000	23-Nov-06
-5.3	07.0000	24-Nov-06
-5.3	07.0000	25-Nov-06
-5.3	07.0000	26-Nov-06
-5.3	07.0000	27-Nov-06
-5.3	07.0000	28-Nov-06
-5.3	07.0000	29-Nov-06
-5.3	07.0000	30-Nov-06
-5.3	07.0000	01-Dec-06
-5.3	07.0000	02-Dec-06
-5.3	07.0000	03-Dec-06
-5.3	07.0000	04-Dec-06
-5.3	07.0000	05-Dec-06
-5.3	07.0000	06-Dec-06
-5.3	07.0000	07-Dec-06
-5.3	07.0000	08-Dec-06
-5.3	07.0000	09-Dec-06
-5.3	07.0000	10-Dec-06
-5.3	07.0000	11-Dec-06
-5.3	07.0000	12-Dec-06
-5.3	07.0000	13-Dec-06
-5.3	07.0000	14-Dec-06
-5.3	07.0000	15-Dec-06
-5.3	07.0000	16-Dec-06
-5.3	07.0000	17-Dec-06
-5.3	07.0000	18-Dec-06
-5.3	07.0000	19-Dec-06

Well 5

-35.9	07.0000	01-Nov-06
-35.9	07.0000	02-Nov-06
-35.9	07.0000	03-Nov-06
-36.1	07.0000	04-Nov-06
-35.9	07.0000	05-Nov-06
-36.1	07.0000	06-Nov-06
-35.9	07.0000	07-Nov-06
-35.9	07.0000	08-Nov-06
-35.9	07.0000	09-Nov-06
-35.9	07.0000	10-Nov-06
-36.1	07.0000	11-Nov-06
-35.9	07.0000	12-Nov-06
-35.7	07.0000	13-Nov-06
-35.7	07.0000	14-Nov-06
-35.9	07.0000	15-Nov-06
-34.1	07.0000	16-Nov-06
-35.9	07.0000	17-Nov-06
-36.1	07.0000	18-Nov-06
-36.1	07.0000	19-Nov-06
-36.1	07.0000	20-Nov-06
-36.1	07.0000	21-Nov-06
-22.1	07.0000	22-Nov-06
-35.7	07.0000	23-Nov-06
-36.1	07.0000	24-Nov-06
-36.1	07.0000	25-Nov-06
-36.1	07.0000	26-Nov-06
-36.3	07.0000	27-Nov-06
-36.3	07.0000	28-Nov-06
-36.3	07.0000	29-Nov-06
-36.3	07.0000	30-Nov-06
-36.3	07.0000	01-Dec-06
-36.1	07.0000	02-Dec-06
-36.3	07.0000	03-Dec-06
-36.3	07.0000	04-Dec-06
-36.3	07.0000	05-Dec-06
-36.3	07.0000	06-Dec-06
-36.3	07.0000	07-Dec-06
-36.3	07.0000	08-Dec-06
-36.3	07.0000	09-Dec-06
-36.3	07.0000	10-Dec-06
-36.3	07.0000	11-Dec-06
-36.3	07.0000	12-Dec-06
-36.3	07.0000	13-Dec-06
-36.3	07.0000	14-Dec-06
-36.3	07.0000	15-Dec-06
-36.3	07.0000	16-Dec-06
-36.3	07.0000	17-Dec-06
-36.3	07.0000	18-Dec-06
-36.3	07.0000	19-Dec-06

Well 6

-0.6	07.0000	01-Nov-06
0	07.0000	02-Nov-06
-1.5	07.0000	03-Nov-06
-2.3	07.0000	04-Nov-06
-2.7	07.0000	05-Nov-06
-2.7	07.0000	06-Nov-06
-0.2	07.0000	07-Nov-06
0.2	07.0000	08-Nov-06
0	07.0000	09-Nov-06
0	07.0000	10-Nov-06
0	07.0000	11-Nov-06
2.9	07.0000	12-Nov-06
0	07.0000	13-Nov-06
0	07.0000	14-Nov-06
-0.2	07.0000	15-Nov-06
0	07.0000	16-Nov-06
2.9	07.0000	17-Nov-06
1.3	07.0000	18-Nov-06
0.4	07.0000	19-Nov-06
0	07.0000	20-Nov-06
0.2	07.0000	21-Nov-06
0.2	07.0000	22-Nov-06
2.9	07.0000	23-Nov-06
2.1	07.0000	24-Nov-06
0.6	07.0000	25-Nov-06
0	07.0000	26-Nov-06
0	07.0000	27-Nov-06
0	07.0000	28-Nov-06
0.4	07.0000	29-Nov-06
1	07.0000	30-Nov-06
1.3	07.0000	01-Dec-06
-0.2	07.0000	02-Dec-06
0	07.0000	03-Dec-06
-0.4	07.0000	04-Dec-06
-0.8	07.0000	05-Dec-06
-0.8	07.0000	06-Dec-06
-0.6	07.0000	07-Dec-06
-1.9	07.0000	08-Dec-06
-3.1	07.0000	09-Dec-06
-3.1	07.0000	10-Dec-06
-1.9	07.0000	11-Dec-06
-2.1	07.0000	12-Dec-06
-1.3	07.0000	13-Dec-06
-1.2	07.0000	14-Dec-06
-0.8	07.0000	15-Dec-06
-1.5	07.0000	16-Dec-06
-1.5	07.0000	17-Dec-06
-1.5	07.0000	18-Dec-06
-1.5	07.0000	19-Dec-06

Prepared For: 

Shepherds Tree Stream and Wetland Restoration
Year 2 of 5

Appendix C1. Data Tables for Hydrological Data

Date: January 2007
Project No.: 333



Serial # - 006054 (10) Well 7

-7.3	07.00.00	01-Mar-06
-7.6	07.00.00	02-Mar-06
-12.6	07.00.00	04-Mar-06
-10.5	07.00.00	05-Mar-06
-6.7	07.00.00	07-Mar-06
-10.7	07.00.00	09-Mar-06
-11.5	07.00.00	10-Mar-06
-5.7	07.00.00	12-Mar-06
-6.7	07.00.00	13-Mar-06
-12.8	07.00.00	15-Mar-06
-18.5	07.00.00	17-Mar-06
-19	07.00.00	18-Mar-06
-2.3	07.00.00	20-Mar-06
-3.8	07.00.00	21-Mar-06
-5.6	07.00.00	23-Mar-06
-5.4	07.00.00	24-Mar-06
-6.1	07.00.00	25-Mar-06
-6.1	07.00.00	26-Mar-06
-6.5	07.00.00	28-Mar-06
-6.5	07.00.00	29-Mar-06
-7.7	07.00.00	31-Mar-06
-8.4	07.00.00	01-Apr-06
-4.8	07.00.00	03-Apr-06
-7.5	07.00.00	04-Apr-06
-13.6	07.00.00	05-Apr-06
-10	07.00.00	06-Apr-06
-12.1	07.00.00	09-Apr-06
-18.6	07.00.00	11-Apr-06
-22.6	07.00.00	12-Apr-06
-24.9	07.00.00	14-Apr-06
-26.9	07.00.00	15-Apr-06
-27.8	07.00.00	17-Apr-06
-28.1	07.00.00	18-Apr-06
-29.1	07.00.00	19-Apr-06
-13.2	07.00.00	20-Apr-06
-2.9	07.00.00	22-Apr-06
-4	07.00.00	23-Apr-06
-3.3	07.00.00	25-Apr-06
-3.6	07.00.00	26-Apr-06
-3.4	07.00.00	30-Apr-06
-4.6	07.00.00	01-May-06
-5.5	07.00.00	03-May-06
-6.5	07.00.00	04-May-06
-10	07.00.00	06-May-06
-9.6	07.00.00	06-May-06
-4.8	07.00.00	09-May-06
-4.5	07.00.00	11-May-06
-7.5	07.00.00	12-May-06
-15.9	07.00.00	14-May-06
-18.4	07.00.00	15-May-06
-24.9	07.00.00	17-May-06
-26.5	07.00.00	18-May-06
-29.3	07.00.00	20-May-06
-16.5	07.00.00	22-May-06
-20.9	07.00.00	23-May-06
-28.2	07.00.00	25-May-06
-31.2	07.00.00	26-May-06
-33.3	07.00.00	30-May-06
-33.3	07.00.00	31-May-06

Serial # - 041596E5 / Well 8

1.5	07.00.00	01-Mar-06
1.6	07.00.00	02-Mar-06
-0.8	07.00.00	04-Mar-06
1.1	07.00.00	06-Mar-06
1.9	07.00.00	07-Mar-06
2.6	07.00.00	10-Mar-06
2.5	07.00.00	11-Mar-06
3	07.00.00	13-Mar-06
2.8	07.00.00	15-Mar-06
-0.2	07.00.00	17-Mar-06
-1.1	07.00.00	18-Mar-06
-1.7	07.00.00	20-Mar-06
3.2	07.00.00	21-Mar-06
2.1	07.00.00	23-Mar-06
2.5	07.00.00	24-Mar-06
1.7	07.00.00	25-Mar-06
1.7	07.00.00	26-Mar-06
1.1	07.00.00	28-Mar-06
0	07.00.00	31-Mar-06
0.4	07.00.00	01-Apr-06
2.1	07.00.00	03-Apr-06
1.2	07.00.00	04-Apr-06
0.2	07.00.00	05-Apr-06
1.5	07.00.00	09-Apr-06
-0.6	07.00.00	11-Apr-06
-1.3	07.00.00	12-Apr-06
-2.1	07.00.00	14-Apr-06
-2.8	07.00.00	15-Apr-06
-4.9	07.00.00	17-Apr-06
-6.4	07.00.00	18-Apr-06
2.6	07.00.00	20-Apr-06
3.4	07.00.00	23-Apr-06
3.6	07.00.00	25-Apr-06
3.4	07.00.00	26-Apr-06
2.6	07.00.00	30-Apr-06
1.3	07.00.00	01-May-06
-1.5	07.00.00	03-May-06
-2.8	07.00.00	04-May-06
-3.4	07.00.00	06-May-06
-3.9	07.00.00	07-May-06
3	07.00.00	09-May-06
3.4	07.00.00	11-May-06
9.9	07.00.00	12-May-06
-1.3	07.00.00	14-May-06
-3.6	07.00.00	15-May-06
-5.5	07.00.00	17-May-06
-5.8	07.00.00	18-May-06
-4.5	07.00.00	20-May-06
-1.3	07.00.00	22-May-06
-2.5	07.00.00	23-May-06
-5.9	07.00.00	25-May-06
-7.7	07.00.00	26-May-06
-8.7	07.00.00	28-May-06
-10.7	07.00.00	30-May-06
-13.6	07.00.00	31-May-06

Serial # - 0404 TE6 / Well 10

2.8	07.00.00	01-Mar-06
0.9	07.00.00	02-Mar-06
0.9	07.00.00	04-Mar-06
2.3	07.00.00	06-Mar-06
2.8	07.00.00	07-Mar-06
2.6	07.00.00	10-Mar-06
2.8	07.00.00	11-Mar-06
2.8	07.00.00	12-Mar-06
2.9	07.00.00	13-Mar-06
0.8	07.00.00	15-Mar-06
0.9	07.00.00	17-Mar-06
0.2	07.00.00	18-Mar-06
0.4	07.00.00	20-Mar-06
2.6	07.00.00	21-Mar-06
2.8	07.00.00	23-Mar-06
7.4	07.00.00	24-Mar-06
0.8	07.00.00	25-Mar-06
0.2	07.00.00	26-Mar-06
0.2	07.00.00	28-Mar-06
0.2	07.00.00	29-Mar-06
0.2	07.00.00	31-Mar-06
0.4	07.00.00	01-Apr-06
1.3	07.00.00	03-Apr-06
1.3	07.00.00	04-Apr-06
-0.8	07.00.00	05-Apr-06
-6	07.00.00	06-Apr-06
-0.2	07.00.00	09-Apr-06
-1.1	07.00.00	11-Apr-06
-0.9	07.00.00	12-Apr-06
-0.8	07.00.00	14-Apr-06
-0.6	07.00.00	15-Apr-06
-0.9	07.00.00	17-Apr-06
2.8	07.00.00	18-Apr-06
2.4	07.00.00	20-Apr-06
2.8	07.00.00	23-Apr-06
2.8	07.00.00	25-Apr-06
2.8	07.00.00	26-Apr-06
2.8	07.00.00	28-Apr-06
2.8	07.00.00	30-Apr-06
2.1	07.00.00	01-May-06
1.1	07.00.00	03-May-06
0.4	07.00.00	04-May-06
-4.5	07.00.00	06-May-06
2.9	07.00.00	07-May-06
2.8	07.00.00	09-May-06
2.8	07.00.00	11-May-06
-0.2	07.00.00	12-May-06
-4.5	07.00.00	15-May-06
-2.6	07.00.00	17-May-06
-2.6	07.00.00	18-May-06
-2.1	07.00.00	20-May-06
1.7	07.00.00	22-May-06
-2.3	07.00.00	23-May-06
-1.9	07.00.00	25-May-06
-1.9	07.00.00	26-May-06
-2.3	07.00.00	28-May-06
-2.4	07.00.00	30-May-06
-3.6	07.00.00	31-May-06

Serial # - 041596E5 / Well 11

3	07.00.00	01-Mar-06
3	07.00.00	02-Mar-06
3	07.00.00	04-Mar-06
3	07.00.00	06-Mar-06
3	07.00.00	07-Mar-06
3	07.00.00	10-Mar-06
3	07.00.00	11-Mar-06
3	07.00.00	12-Mar-06
3	07.00.00	13-Mar-06
3	07.00.00	15-Mar-06
3	07.00.00	17-Mar-06
3	07.00.00	18-Mar-06
3	07.00.00	20-Mar-06
3	07.00.00	21-Mar-06
3	07.00.00	23-Mar-06
3	07.00.00	24-Mar-06
3	07.00.00	25-Mar-06
3	07.00.00	26-Mar-06
3	07.00.00	28-Mar-06
3	07.00.00	29-Mar-06
3	07.00.00	31-Mar-06
3	07.00.00	01-Apr-06
3	07.00.00	03-Apr-06
3	07.00.00	04-Apr-06
3	07.00.00	05-Apr-06
3	07.00.00	06-Apr-06
3	07.00.00	08-Apr-06
3	07.00.00	09-Apr-06
3	07.00.00	11-Apr-06
3	07.00.00	12-Apr-06
3	07.00.00	14-Apr-06
3	07.00.00	15-Apr-06
3	07.00.00	17-Apr-06
3	07.00.00	18-Apr-06
3	07.00.00	20-Apr-06
3	07.00.00	23-Apr-06
3	07.00.00	25-Apr-06
3	07.00.00	26-Apr-06
3	07.00.00	28-Apr-06
3	07.00.00	30-Apr-06
3	07.00.00	01-May-06
3	07.00.00	03-May-06
3	07.00.00	04-May-06
3	07.00.00	06-May-06
3	07.00.00	07-May-06
3	07.00.00	09-May-06
3	07.00.00	11-May-06
3	07.00.00	12-May-06
3	07.00.00	14-May-06
3	07.00.00	15-May-06
3	07.00.00	17-May-06
3	07.00.00	18-May-06
3	07.00.00	20-May-06
3	07.00.00	22-May-06
3	07.00.00	23-May-06
3	07.00.00	25-May-06
3	07.00.00	26-May-06
3	07.00.00	28-May-06
3	07.00.00	30-May-06
3	07.00.00	31-May-06

Serial # - 05EFS306 / Well 12

-3.3	07.00.00	01-Mar-06
-3.1	07.00.00	02-Mar-06
-3.7	07.00.00	04-Mar-06
-2.7	07.00.00	06-Mar-06
-3.5	07.00.00	07-Mar-06
-3.9	07.00.00	09-Mar-06
-3.7	07.00.00	10-Mar-06
-3.3	07.00.00	12-Mar-06
-3.2	07.00.00	13-Mar-06
-4	07.00.00	15-Mar-06
-3.9	07.00.00	17-Mar-06
-3.9	07.00.00	18-Mar-06
-4	07.00.00	20-Mar-06
-2.5	07.00.00	21-Mar-06
-3.5	07.00.00	23-Mar-06
-3.3	07.00.00	24-Mar-06
-3.7	07.00.00	25-Mar-06
-3.5	07.00.00	26-Mar-06
-3.5	07.00.00	28-Mar-06
-3.3	07.00.00	29-Mar-06
-3.1	07.00.00	31-Mar-06
-3.5	07.00.00	01-Apr-06
-2.9	07.00.00	03-Apr-06
-3.5	07.00.00	04-Apr-06
-3.5	07.00.00	05-Apr-06
-3.5	07.00.00	06-Apr-06
-2.3	07.00.00	08-Apr-06
-3.5	07.00.00	09-Apr-06
-3.3	07.00.00	11-Apr-06
-3.3	07.00.00	12-Apr-06
-3.3	07.00.00	14-Apr-06
-3.5	07.00.00	15-Apr-06
-3.3	07.00.00	17-Apr-06
-3.5	07.00.00	18-Apr-06
-2.9	07.00.00	20-Apr-06
-2.1	07.00.00	23-Apr-06
-2.7	07.00.00	25-Apr-06
-2.9	07.00.00	26-Apr-06
-1.3	07.00.00	28-Apr-06
-2.1	07.00.00	29-Apr-06
-2.6	07.00.00	30-Apr-06
-3.3	07.00.00	01-May-06
-3.7	07.00.00	03-May-06
-4.2	07.00.00	04-May-06
-3.7	07.00.00	06-May-06
-3.3	07.00.00	07-May-06
-3.9	07.00.00	09-May-06
-3.9	07.00.00	11-May-06
-3.9	07.00.00	12-May-06
-4.4	07.00.00	14-May-06
-4.6	07.00.00	15-May-06
-3.5	07.00.00	17-May-06
-3.7	07.00.00	18-May-06
-3.2	07.00.00	20-May-06
-3.3	07.00.00	22-May-06
-3.5	07.00.00	23-May-06
-3.9	07.00.00	25-May-06
-3.9	07.00.00	26-May-06
-3.9	07.00.00	28-May-06
-3.9	07.00.00	30-May-06
-4	07.00.00	31-May-06

Prepared For:



Shepherds Tree Stream and Wetland Restoration
Appendix C1. Data Tables for Hydrological Data
Year 2 of 5

Date: January 2007
Project No.: 333



Well 7

53.5	07:00:00	01-Jun-06
-35.1	07:00:00	02-Jun-06
-3.6	07:00:00	03-Jun-06
0.6	07:00:00	04-Jun-06
-6.3	07:00:00	05-Jun-06
-1.0	07:00:00	06-Jun-06
-7.7	07:00:00	07-Jun-06
-19.2	07:00:00	08-Jun-06
-25.1	07:00:00	09-Jun-06
-29.6	07:00:00	10-Jun-06
-8.7	07:00:00	11-Jun-06
-1.9	07:00:00	12-Jun-06
-3.4	07:00:00	13-Jun-06
-4.4	07:00:00	14-Jun-06
-15.7	07:00:00	15-Jun-06
-23.2	07:00:00	16-Jun-06
-3.1	07:00:00	17-Jun-06
-1.7	07:00:00	18-Jun-06
-2.5	07:00:00	19-Jun-06
-4.2	07:00:00	20-Jun-06
-8.2	07:00:00	21-Jun-06
-21.8	07:00:00	22-Jun-06
-6.7	07:00:00	23-Jun-06
-12.8	07:00:00	24-Jun-06
-27.6	07:00:00	25-Jun-06
-25.1	07:00:00	26-Jun-06
-29.5	07:00:00	27-Jun-06
-31.0	07:00:00	28-Jun-06
-32.6	07:00:00	29-Jun-06
-33.7	07:00:00	30-Jun-06
-36.2	07:00:00	31-Aug-06

Well 8

-15.7	07:00:00	01-Jun-06
-3.6	07:00:00	02-Jun-06
0.6	07:00:00	03-Jun-06
-6.3	07:00:00	04-Jun-06
-1.0	07:00:00	05-Jun-06
-7.7	07:00:00	06-Jun-06
-19.2	07:00:00	07-Jun-06
-25.1	07:00:00	08-Jun-06
-29.6	07:00:00	09-Jun-06
-8.7	07:00:00	10-Jun-06
-1.9	07:00:00	11-Jun-06
-3.4	07:00:00	12-Jun-06
-4.4	07:00:00	13-Jun-06
-15.7	07:00:00	14-Jun-06
-23.2	07:00:00	15-Jun-06
-3.1	07:00:00	16-Jun-06
-1.7	07:00:00	17-Jun-06
-2.5	07:00:00	18-Jun-06
-4.2	07:00:00	19-Jun-06
-8.2	07:00:00	20-Jun-06
-21.8	07:00:00	21-Jun-06
-6.7	07:00:00	22-Jun-06
-12.8	07:00:00	23-Jun-06
-27.6	07:00:00	24-Jun-06
-25.1	07:00:00	25-Jun-06
-29.5	07:00:00	26-Jun-06
-31.0	07:00:00	27-Jun-06
-32.6	07:00:00	28-Jun-06
-33.7	07:00:00	29-Jun-06
-36.2	07:00:00	30-Jun-06
-38.7	07:00:00	31-Aug-06

Well 10

-9.6	07:00:00	01-Jun-06
-2.8	07:00:00	02-Jun-06
0.6	07:00:00	03-Jun-06
-6.8	07:00:00	04-Jun-06
-2.6	07:00:00	05-Jun-06
-3.9	07:00:00	06-Jun-06
-7.5	07:00:00	07-Jun-06
-2.6	07:00:00	08-Jun-06
-5.6	07:00:00	09-Jun-06
-2.8	07:00:00	10-Jun-06
-2.8	07:00:00	11-Jun-06
-4.3	07:00:00	12-Jun-06
-10.7	07:00:00	13-Jun-06
-2.8	07:00:00	14-Jun-06
-2.1	07:00:00	15-Jun-06
-2.8	07:00:00	16-Jun-06
-2.8	07:00:00	17-Jun-06
-2.8	07:00:00	18-Jun-06
-2.8	07:00:00	19-Jun-06
-2.8	07:00:00	20-Jun-06
-2.8	07:00:00	21-Jun-06
-2.8	07:00:00	22-Jun-06
-2.8	07:00:00	23-Jun-06
-2.8	07:00:00	24-Jun-06
-2.8	07:00:00	25-Jun-06
-2.8	07:00:00	26-Jun-06
-2.8	07:00:00	27-Jun-06
-2.8	07:00:00	28-Jun-06
-2.8	07:00:00	29-Jun-06
-2.8	07:00:00	30-Jun-06
-2.8	07:00:00	31-Aug-06

Well 11

3	07:00:00	02-Jun-06
3	07:00:00	03-Jun-06
3	07:00:00	04-Jun-06
3	07:00:00	05-Jun-06
3	07:00:00	06-Jun-06
3	07:00:00	07-Jun-06
3	07:00:00	08-Jun-06
3	07:00:00	09-Jun-06
3	07:00:00	10-Jun-06
3	07:00:00	11-Jun-06
3	07:00:00	12-Jun-06
3	07:00:00	13-Jun-06
3	07:00:00	14-Jun-06
3	07:00:00	15-Jun-06
3	07:00:00	16-Jun-06
3	07:00:00	17-Jun-06
3	07:00:00	18-Jun-06
3	07:00:00	19-Jun-06
3	07:00:00	20-Jun-06
3	07:00:00	21-Jun-06
3	07:00:00	22-Jun-06
3	07:00:00	23-Jun-06
3	07:00:00	24-Jun-06
3	07:00:00	25-Jun-06
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3	07:00:00	30-Jun-06
3	07:00:00	01-Jul-06
3	07:00:00	02-Jul-06
3	07:00:00	03-Jul-06
3	07:00:00	04-Jul-06
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3	07:00:00	08-Jul-06
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3	07:00:00	12-Jul-06
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3	07:00:00	14-Jul-06
3	07:00:00	15-Jul-06
3	07:00:00	16-Jul-06
3	07:00:00	17-Jul-06
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3	07:00:00	19-Jul-06
3	07:00:00	20-Jul-06
3	07:00:00	21-Jul-06
3	07:00:00	22-Jul-06
3	07:00:00	23-Jul-06
3	07:00:00	24-Jul-06
3	07:00:00	25-Jul-06
3	07:00:00	26-Jul-06
3	07:00:00	27-Jul-06
3	07:00:00	28-Jul-06
3	07:00:00	29-Jul-06
3	07:00:00	30-Jul-06
1	07:00:00	31-Aug-06

Well 12

-4	07:00:00	01-Jun-06
0	07:00:00	02-Jun-06
-2.3	07:00:00	03-Jun-06
-3.3	07:00:00	04-Jun-06
-4	07:00:00	05-Jun-06
-3.7	07:00:00	06-Jun-06
-3.1	07:00:00	07-Jun-06
-3.3	07:00:00	08-Jun-06
-3.3	07:00:00	09-Jun-06
-1.9	07:00:00	10-Jun-06
-1.2	07:00:00	11-Jun-06
-2.5	07:00:00	12-Jun-06
-2.9	07:00:00	13-Jun-06
-2.9	07:00:00	14-Jun-06
-2.7	07:00:00	15-Jun-06
-2.9	07:00:00	16-Jun-06
-2.9	07:00:00	17-Jun-06
-2.9	07:00:00	18-Jun-06
-2.9	07:00:00	19-Jun-06
-2.9	07:00:00	20-Jun-06
-2.9	07:00:00	21-Jun-06
-2.9	07:00:00	22-Jun-06
-2.9	07:00:00	23-Jun-06
-2.9	07:00:00	24-Jun-06
-0.8	07:00:00	25-Jun-06
-0.8	07:00:00	26-Jun-06
-1.5	07:00:00	27-Jun-06
-1.9	07:00:00	28-Jun-06
-2.1	07:00:00	29-Jun-06
-2.1	07:00:00	30-Jun-06
-2.7	07:00:00	01-Jul-06
-2.7	07:00:00	02-Jul-06
-2.5	07:00:00	03-Jul-06
-2.5	07:00:00	04-Jul-06
-2.5	07:00:00	05-Jul-06
-2.5	07:00:00	06-Jul-06
-2.5	07:00:00	07-Jul-06
-4	07:00:00	08-Jul-06
-4	07:00:00	09-Jul-06
-4.8	07:00:00	10-Jul-06
-7.7	07:00:00	11-Jul-06
-7.7	07:00:00	12-Jul-06
-9.4	07:00:00	13-Jul-06
-9.4	07:00:00	14-Jul-06
-15	07:00:00	15-Jul-06
-15	07:00:00	16-Jul-06
-20.2	07:00:00	17-Jul-06
-20.2	07:00:00	18-Jul-06
-20.3	07:00:00	19-Jul-06
-20.3	07:00:00	20-Jul-06
-16	07:00:00	21-Jul-06
-7.6	07:00:00	22-Jul-06
-9.6	07:00:00	23-Jul-06
-15.8	07:00:00	24-Jul-06
-23.5	07:00:00	25-Jul-06
-23.5	07:00:00	26-Jul-06
-27.3	07:00:00	27-Jul-06
-33.9	07:00:00	28-Jul-06
-33.9	07:00:00	29-Jul-06
-33.9	07:00:00	30-Jul-06
-33.9	07:00:00	31-Aug-06

Prepared For:



Shepherds Tree Stream and Wetland Restoration

Appendix C1. Data Tables for Hydrological Data

Year 2 of 5

Date: January 2007

Project No.: 333



Serial # - 04CFE46 / Well 13	Serial # - 049418D / Well 14	Serial # - 051C06F / Well 15	Serial # - 0570CF7 / Well 16	Serial # - 051BDD1 / Well 17	Serial # - 03173A9 / Well 18
1 070000 01-Mar-06	1.1 070000 01-Mar-06	-8.3 070000 01-Mar-06	1.1 070000 01-Mar-06	-17.6 070000 01-Mar-06	-8.4 070000 01-Mar-06
1 070000 02-Mar-06	3.8 070000 02-Mar-06	-8.5 070000 02-Mar-06	-1.1 070000 02-Mar-06	-18.4 070000 02-Mar-06	-8.2 070000 02-Mar-06
0.6 070000 03-Mar-06	0.4 070000 03-Mar-06	-10.8 070000 03-Mar-06	-1.1 070000 03-Mar-06	-19.9 070000 03-Mar-06	-10.8 070000 03-Mar-06
0.2 070000 04-Mar-06	2.6 070000 04-Mar-06	-12.5 070000 04-Mar-06	-2.8 070000 04-Mar-06	-21.8 070000 04-Mar-06	-14.4 070000 04-Mar-06
1.1 070000 05-Mar-06	3.8 070000 05-Mar-06	-12.9 070000 05-Mar-06	-4 070000 05-Mar-06	-22.8 070000 05-Mar-06	-16.6 070000 05-Mar-06
1.1 070000 06-Mar-06	2.1 070000 06-Mar-06	-12.9 070000 06-Mar-06	-1.3 070000 06-Mar-06	-22.6 070000 06-Mar-06	-17.2 070000 06-Mar-06
0.8 070000 07-Mar-06	2.5 070000 07-Mar-06	-7.9 070000 07-Mar-06	1.3 070000 07-Mar-06	-23 070000 07-Mar-06	-8.9 070000 07-Mar-06
0.8 070000 08-Mar-06	1.3 070000 08-Mar-06	-10.2 070000 08-Mar-06	-0.8 070000 08-Mar-06	-22.8 070000 08-Mar-06	-9.3 070000 08-Mar-06
0.8 070000 09-Mar-06	1.7 070000 09-Mar-06	-10.4 070000 09-Mar-06	-0.9 070000 09-Mar-06	-22.8 070000 09-Mar-06	-11.9 070000 09-Mar-06
1.7 070000 10-Mar-06	1.7 070000 10-Mar-06	-10.4 070000 10-Mar-06	-0.9 070000 10-Mar-06	-22.8 070000 10-Mar-06	-11.9 070000 10-Mar-06
1.7 070000 11-Mar-06	2.1 070000 11-Mar-06	-13.3 070000 11-Mar-06	-2.5 070000 11-Mar-06	-22.2 070000 11-Mar-06	-15.9 070000 11-Mar-06
1.5 070000 12-Mar-06	2.8 070000 12-Mar-06	-6.7 070000 12-Mar-06	2.7 070000 12-Mar-06	-14 070000 12-Mar-06	-4.2 070000 12-Mar-06
1.3 070000 13-Mar-06	1.5 070000 13-Mar-06	-6.9 070000 13-Mar-06	2.7 070000 13-Mar-06	-15 070000 13-Mar-06	-4.9 070000 13-Mar-06
0.8 070000 14-Mar-06	1.5 070000 14-Mar-06	-8.3 070000 14-Mar-06	0.9 070000 14-Mar-06	-15.6 070000 14-Mar-06	-7.1 070000 14-Mar-06
0.6 070000 15-Mar-06	1.3 070000 15-Mar-06	-12.1 070000 15-Mar-06	-2.3 070000 15-Mar-06	-17.6 070000 15-Mar-06	-13.5 070000 15-Mar-06
0.8 070000 16-Mar-06	2.3 070000 16-Mar-06	-13.3 070000 16-Mar-06	-3.2 070000 16-Mar-06	-17.5 070000 16-Mar-06	-15.5 070000 16-Mar-06
1.1 070000 17-Mar-06	2.3 070000 17-Mar-06	-14.4 070000 17-Mar-06	3.6 070000 17-Mar-06	-18 070000 17-Mar-06	-17.2 070000 17-Mar-06
0.6 070000 18-Mar-06	2.1 070000 18-Mar-06	-15.8 070000 18-Mar-06	3.6 070000 18-Mar-06	-22.2 070000 18-Mar-06	-19 070000 18-Mar-06
0.6 070000 19-Mar-06	1.5 070000 19-Mar-06	-10.8 070000 19-Mar-06	3.6 070000 19-Mar-06	-22.8 070000 19-Mar-06	-20.3 070000 19-Mar-06
0.6 070000 20-Mar-06	1.5 070000 20-Mar-06	0.6 070000 20-Mar-06	3.6 070000 20-Mar-06	-23.3 070000 20-Mar-06	-21 070000 20-Mar-06
1.7 070000 21-Mar-06	2.8 070000 21-Mar-06	4.2 070000 21-Mar-06	3.6 070000 21-Mar-06	-23.3 070000 21-Mar-06	-21 070000 21-Mar-06
1.7 070000 22-Mar-06	2.8 070000 22-Mar-06	4.2 070000 22-Mar-06	3.6 070000 22-Mar-06	-21 070000 22-Mar-06	0 070000 22-Mar-06
1.7 070000 23-Mar-06	3.6 070000 23-Mar-06	3.9 070000 23-Mar-06	3.6 070000 23-Mar-06	-9.1 070000 23-Mar-06	-1.3 070000 23-Mar-06
1.1 070000 24-Mar-06	2.1 070000 24-Mar-06	4.2 070000 24-Mar-06	3.6 070000 24-Mar-06	-11.8 070000 24-Mar-06	-1.8 070000 24-Mar-06
1.1 070000 25-Mar-06	2.1 070000 25-Mar-06	4.2 070000 25-Mar-06	3.6 070000 25-Mar-06	-13.9 070000 25-Mar-06	-2.4 070000 25-Mar-06
0.6 070000 26-Mar-06	2.1 070000 26-Mar-06	3.9 070000 26-Mar-06	3.6 070000 26-Mar-06	-15.9 070000 26-Mar-06	-4.2 070000 26-Mar-06
0.6 070000 27-Mar-06	0.6 070000 27-Mar-06	4 070000 27-Mar-06	3.6 070000 27-Mar-06	-18.2 070000 27-Mar-06	-5.8 070000 27-Mar-06
0.8 070000 28-Mar-06	1.5 070000 28-Mar-06	4.2 070000 28-Mar-06	3.6 070000 28-Mar-06	-18.8 070000 28-Mar-06	-8.2 070000 28-Mar-06
1 070000 29-Mar-06	1.1 070000 29-Mar-06	4.2 070000 29-Mar-06	3.6 070000 29-Mar-06	-19.9 070000 29-Mar-06	-11 070000 29-Mar-06
1 070000 30-Mar-06	1.1 070000 30-Mar-06	4.2 070000 30-Mar-06	3.6 070000 30-Mar-06	-20.9 070000 30-Mar-06	-13.7 070000 30-Mar-06
1 070000 31-Mar-06	-1.1 070000 31-Mar-06	4.2 070000 31-Mar-06	3.6 070000 31-Mar-06	-21.6 070000 31-Mar-06	-15.7 070000 31-Mar-06
1 070000 02-Apr-06	-2.8 070000 02-Apr-06	4.2 070000 02-Apr-06	3.6 070000 02-Apr-06	-21.6 070000 02-Apr-06	-15.7 070000 02-Apr-06
1.7 070000 03-Apr-06	0.2 070000 03-Apr-06	4.2 070000 03-Apr-06	3.6 070000 03-Apr-06	-19.9 070000 03-Apr-06	-17.3 070000 03-Apr-06
1.5 070000 04-Apr-06	-1.3 070000 04-Apr-06	4.2 070000 04-Apr-06	3.6 070000 04-Apr-06	-22.2 070000 04-Apr-06	-16.3 070000 04-Apr-06
0.8 070000 05-Apr-06	1.3 070000 05-Apr-06	4.2 070000 05-Apr-06	3.6 070000 05-Apr-06	-23.1 070000 05-Apr-06	-12.1 070000 05-Apr-06
0.8 070000 06-Apr-06	-0.8 070000 06-Apr-06	4.2 070000 06-Apr-06	3.6 070000 06-Apr-06	-23.5 070000 06-Apr-06	-15 070000 06-Apr-06
0.8 070000 07-Apr-06	-0.9 070000 07-Apr-06	4.2 070000 07-Apr-06	3.6 070000 07-Apr-06	-23.9 070000 07-Apr-06	-17.3 070000 07-Apr-06
1.5 070000 08-Apr-06	-2.5 070000 08-Apr-06	4.2 070000 08-Apr-06	3.6 070000 08-Apr-06	-24.7 070000 08-Apr-06	-18.6 070000 08-Apr-06
0.8 070000 09-Apr-06	2.7 070000 09-Apr-06	4.2 070000 09-Apr-06	3.6 070000 09-Apr-06	-25.4 070000 09-Apr-06	-19.2 070000 09-Apr-06
0.8 070000 10-Apr-06	2.7 070000 10-Apr-06	4.2 070000 10-Apr-06	3.6 070000 10-Apr-06	-27.7 070000 10-Apr-06	-20.8 070000 10-Apr-06
0.8 070000 11-Apr-06	0.9 070000 11-Apr-06	4.2 070000 11-Apr-06	3.6 070000 11-Apr-06	-28.8 070000 11-Apr-06	-21.4 070000 11-Apr-06
0.8 070000 12-Apr-06	0.9 070000 12-Apr-06	4.2 070000 12-Apr-06	3.6 070000 12-Apr-06	-30.2 070000 12-Apr-06	-22.5 070000 12-Apr-06
0.8 070000 13-Apr-06	-3.2 070000 13-Apr-06	4.2 070000 13-Apr-06	3.6 070000 13-Apr-06	-31.5 070000 13-Apr-06	-24.1 070000 13-Apr-06
0.8 070000 14-Apr-06	3.6 070000 14-Apr-06	4.2 070000 14-Apr-06	3.6 070000 14-Apr-06	-32.3 070000 14-Apr-06	-24.8 070000 14-Apr-06
1 070000 15-Apr-06	3.6 070000 15-Apr-06	4.2 070000 15-Apr-06	3.6 070000 15-Apr-06	-32.6 070000 15-Apr-06	-26.8 070000 15-Apr-06
0.8 070000 16-Apr-06	3.6 070000 16-Apr-06	4.2 070000 16-Apr-06	3.6 070000 16-Apr-06	-33.2 070000 16-Apr-06	-28.7 070000 16-Apr-06
0.8 070000 17-Apr-06	3.6 070000 17-Apr-06	4.2 070000 17-Apr-06	3.6 070000 17-Apr-06	-33.6 070000 17-Apr-06	-27.6 070000 17-Apr-06
0.6 070000 18-Apr-06	3.6 070000 18-Apr-06	4.2 070000 18-Apr-06	3.6 070000 18-Apr-06	-34 070000 18-Apr-06	-28.9 070000 18-Apr-06
0.8 070000 19-Apr-06	3.6 070000 19-Apr-06	4.2 070000 19-Apr-06	3.6 070000 19-Apr-06	-34.4 070000 19-Apr-06	-29.6 070000 19-Apr-06
1.5 070000 20-Apr-06	3.6 070000 20-Apr-06	4.2 070000 20-Apr-06	3.6 070000 20-Apr-06	-35.2 070000 20-Apr-06	-30 070000 20-Apr-06
1.1 070000 21-Apr-06	3.6 070000 21-Apr-06	4.2 070000 21-Apr-06	3.6 070000 21-Apr-06	-33.8 070000 21-Apr-06	-30.5 070000 21-Apr-06
2.5 070000 22-Apr-06	3.6 070000 22-Apr-06	4.2 070000 22-Apr-06	3.6 070000 22-Apr-06	-11.5 070000 22-Apr-06	-1.9 070000 22-Apr-06
1.5 070000 23-Apr-06	3.6 070000 23-Apr-06	4.2 070000 23-Apr-06	3.6 070000 23-Apr-06	-17.1 070000 23-Apr-06	-7.3 070000 23-Apr-06
1.5 070000 24-Apr-06	3.6 070000 24-Apr-06	4.2 070000 24-Apr-06	3.6 070000 24-Apr-06	-17.1 070000 24-Apr-06	-7.3 070000 24-Apr-06
1.5 070000 25-Apr-06	3.6 070000 25-Apr-06	4.2 070000 25-Apr-06	3.6 070000 25-Apr-06	-19.7 070000 25-Apr-06	-10.7 070000 25-Apr-06
3.4 070000 26-Apr-06	3.6 070000 26-Apr-06	4.2 070000 26-Apr-06	3.6 070000 26-Apr-06	-1.5 070000 26-Apr-06	0.7 070000 26-Apr-06
4.2 070000 27-Apr-06	3.6 070000 27-Apr-06	4.2 070000 27-Apr-06	3.6 070000 27-Apr-06	1.3 070000 27-Apr-06	2 070000 27-Apr-06
2.3 070000 28-Apr-06	3.6 070000 28-Apr-06	4.2 070000 28-Apr-06	3.6 070000 28-Apr-06	-1.3 070000 28-Apr-06	-0.4 070000 28-Apr-06
1.7 070000 30-Apr-06	3.6 070000 30-Apr-06	4.2 070000 30-Apr-06	3.6 070000 30-Apr-06	-11 070000 30-Apr-06	-2.6 070000 30-Apr-06

Prepared For:



Shepherds Tree Stream and Wetland Restoration
Year 2 of 5

Date: January 2007
Project No.: 333

Appendix C1. Data Tables for Hydrologic Data



Well 13

1.5	07/00/00	01-May-06
1.1	07/00/00	02-May-06
1.5	07/00/00	03-May-06
1.1	07/00/00	04-May-06
1.1	07/00/00	05-May-06
1.1	07/00/00	06-May-06
1.1	07/00/00	07-May-06
1.9	07/00/00	08-May-06
1.7	07/00/00	09-May-06
1.7	07/00/00	10-May-06
1.7	07/00/00	11-May-06
1.1	07/00/00	12-May-06
1.1	07/00/00	13-May-06
1.1	07/00/00	14-May-06
0.8	07/00/00	15-May-06
0.8	07/00/00	16-May-06
0.8	07/00/00	17-May-06
0.8	07/00/00	18-May-06
1.1	07/00/00	19-May-06
1.7	07/00/00	21-May-06
1.3	07/00/00	22-May-06
1.1	07/00/00	23-May-06
1.1	07/00/00	24-May-06
1.3	07/00/00	25-May-06
1.1	07/00/00	26-May-06
1.3	07/00/00	27-May-06
1.1	07/00/00	28-May-06
0.8	07/00/00	29-May-06
0.6	07/00/00	30-May-06
0.4	07/00/00	31-May-06
0.4	07/00/00	01-Jun-06
4.2	07/00/00	02-Jun-06
4.2	07/00/00	03-Jun-06
2.8	07/00/00	04-Jun-06
1.9	07/00/00	05-Jun-06
1.7	07/00/00	06-Jun-06
1.3	07/00/00	07-Jun-06
1.3	07/00/00	08-Jun-06
1.1	07/00/00	09-Jun-06
1.1	07/00/00	10-Jun-06
0.8	07/00/00	11-Jun-06
2.5	07/00/00	13-Jun-06
4.2	07/00/00	15-Jun-06
4.2	07/00/00	16-Jun-06
3.4	07/00/00	17-Jun-06
2.7	07/00/00	18-Jun-06
2.5	07/00/00	19-Jun-06
2.1	07/00/00	20-Jun-06
1.9	07/00/00	21-Jun-06
1.5	07/00/00	22-Jun-06
1.3	07/00/00	23-Jun-06
1.1	07/00/00	24-Jun-06
4.2	07/00/00	25-Jun-06
4.2	07/00/00	26-Jun-06
3.2	07/00/00	28-Jun-06
4.2	07/00/00	29-Jun-06
1.5	07/00/00	30-Jun-06

Well 16

3.6	07/00/00	01-May-06
3.6	07/00/00	02-May-06
3.6	07/00/00	03-May-06
3.6	07/00/00	04-May-06
3.6	07/00/00	05-May-06
3.6	07/00/00	06-May-06
3.6	07/00/00	07-May-06
3.6	07/00/00	08-May-06
3.6	07/00/00	09-May-06
3.6	07/00/00	10-May-06
3.6	07/00/00	11-May-06
3.6	07/00/00	12-May-06
3.6	07/00/00	13-May-06
3.6	07/00/00	14-May-06
3.6	07/00/00	15-May-06
3.6	07/00/00	16-May-06
3.6	07/00/00	17-May-06
3.6	07/00/00	18-May-06
3.6	07/00/00	19-May-06
3.6	07/00/00	20-May-06
3.6	07/00/00	21-May-06
3.6	07/00/00	22-May-06
3.6	07/00/00	23-May-06
3.6	07/00/00	24-May-06
3.6	07/00/00	25-May-06
3.6	07/00/00	26-May-06
3.6	07/00/00	27-May-06
3.6	07/00/00	28-May-06
3.6	07/00/00	29-May-06
3.6	07/00/00	30-May-06
3.6	07/00/00	31-May-06
3.6	07/00/00	01-Jun-06
3.6	07/00/00	02-Jun-06
3.6	07/00/00	03-Jun-06
3.6	07/00/00	04-Jun-06
3.6	07/00/00	05-Jun-06
3.6	07/00/00	06-Jun-06
3.6	07/00/00	07-Jun-06
3.6	07/00/00	08-Jun-06
3.6	07/00/00	09-Jun-06
3.6	07/00/00	10-Jun-06
3.6	07/00/00	11-Jun-06
3.6	07/00/00	13-Jun-06
3.6	07/00/00	15-Jun-06
3.6	07/00/00	16-Jun-06
3.6	07/00/00	17-Jun-06
3.6	07/00/00	18-Jun-06
3.6	07/00/00	19-Jun-06
3.6	07/00/00	20-Jun-06
3.6	07/00/00	21-Jun-06
3.6	07/00/00	22-Jun-06
3.6	07/00/00	23-Jun-06
3.6	07/00/00	24-Jun-06
3.6	07/00/00	25-Jun-06
3.6	07/00/00	26-Jun-06
3.6	07/00/00	28-Jun-06
3.6	07/00/00	29-Jun-06
3.6	07/00/00	30-Jun-06

Well 17

-16.5	07/00/00	01-May-06
-18.4	07/00/00	02-May-06
-19.5	07/00/00	03-May-06
-21.1	07/00/00	04-May-06
-22.4	07/00/00	05-May-06
-22.6	07/00/00	06-May-06
-24.9	07/00/00	07-May-06
-20.9	07/00/00	08-May-06
-22.2	07/00/00	09-May-06
-22.8	07/00/00	10-May-06
-23.1	07/00/00	11-May-06
-25	07/00/00	12-May-06
-26	07/00/00	13-May-06
-27.8	07/00/00	14-May-06
-28.9	07/00/00	15-May-06
-30	07/00/00	16-May-06
-31.7	07/00/00	17-May-06
-32.3	07/00/00	18-May-06
-34.5	07/00/00	19-May-06
-34.8	07/00/00	20-May-06
-36.1	07/00/00	21-May-06
-37.4	07/00/00	22-May-06
-38.2	07/00/00	23-May-06
-38.5	07/00/00	24-May-06
-39.8	07/00/00	25-May-06
-35.5	07/00/00	26-May-06
-35.7	07/00/00	27-May-06
-35.9	07/00/00	28-May-06
-35.9	07/00/00	29-May-06
-35.9	07/00/00	30-May-06
-35.9	07/00/00	31-May-06
-35.7	07/00/00	01-Jun-06
-35.9	07/00/00	02-Jun-06
-10.1	07/00/00	03-Jun-06
-21.6	07/00/00	04-Jun-06
-27.1	07/00/00	05-Jun-06
-30.5	07/00/00	06-Jun-06
-33.2	07/00/00	07-Jun-06
-34.9	07/00/00	08-Jun-06
-35.5	07/00/00	09-Jun-06
-35.9	07/00/00	10-Jun-06
-36.2	07/00/00	11-Jun-06
-37.9	07/00/00	13-Jun-06
-39.1	07/00/00	15-Jun-06
-41.5	07/00/00	17-Jun-06
-42.5	07/00/00	19-Jun-06
-43.2	07/00/00	21-Jun-06
-43.2	07/00/00	22-Jun-06
-43.2	07/00/00	23-Jun-06
-43.2	07/00/00	24-Jun-06
-43.2	07/00/00	25-Jun-06
-43.2	07/00/00	26-Jun-06
-43.2	07/00/00	28-Jun-06
-43.2	07/00/00	29-Jun-06
-43.2	07/00/00	30-Jun-06

Well 18

-4.6	07/00/00	01-May-06
-8.9	07/00/00	02-May-06
-13.1	07/00/00	03-May-06
-16.3	07/00/00	04-May-06
-18.1	07/00/00	05-May-06
-19.2	07/00/00	06-May-06
-20.6	07/00/00	07-May-06
-3.7	07/00/00	08-May-06
-5.5	07/00/00	09-May-06
-9.9	07/00/00	10-May-06
-12.8	07/00/00	11-May-06
-15.9	07/00/00	12-May-06
-18.3	07/00/00	13-May-06
-19.9	07/00/00	14-May-06
-21.2	07/00/00	15-May-06
-22.6	07/00/00	16-May-06
-23.9	07/00/00	17-May-06
-25.2	07/00/00	18-May-06
-26.7	07/00/00	19-May-06
-28.3	07/00/00	20-May-06
-29.1	07/00/00	21-May-06
-29.4	07/00/00	22-May-06
-29.4	07/00/00	23-May-06
-29.4	07/00/00	24-May-06
-29.4	07/00/00	25-May-06
-29.6	07/00/00	26-May-06
-30.5	07/00/00	27-May-06
-31.4	07/00/00	28-May-06
-32.3	07/00/00	29-May-06
-33.6	07/00/00	30-May-06
-34	07/00/00	31-May-06
-34.2	07/00/00	01-Jun-06
-34.2	07/00/00	02-Jun-06
-4	07/00/00	03-Jun-06
-16.1	07/00/00	04-Jun-06
-20.8	07/00/00	05-Jun-06
-24.3	07/00/00	06-Jun-06
-27.9	07/00/00	07-Jun-06
-30.5	07/00/00	08-Jun-06
-33.2	07/00/00	09-Jun-06
-34.3	07/00/00	10-Jun-06
-34.3	07/00/00	11-Jun-06
-34.3	07/00/00	13-Jun-06
-34.3	07/00/00	14-Jun-06
-34.3	07/00/00	15-Jun-06
-34.3	07/00/00	16-Jun-06
-34.3	07/00/00	17-Jun-06
-34.3	07/00/00	18-Jun-06
-34.3	07/00/00	19-Jun-06
-34.3	07/00/00	20-Jun-06
-34.3	07/00/00	21-Jun-06
-34.3	07/00/00	22-Jun-06
-34.3	07/00/00	23-Jun-06
-34.3	07/00/00	24-Jun-06
-34.3	07/00/00	25-Jun-06
-34.3	07/00/00	26-Jun-06
-34.3	07/00/00	28-Jun-06
-34.3	07/00/00	29-Jun-06
-34.3	07/00/00	30-Jun-06

Prepared For:



Shepherds Tree Stream and Wetland Restoration

Year 2 of 5

Appendix C1. Data Tables for Hydrological Data

Date: January 2007

Project No.: 333



Well 13

2.5	07/00/00	1-Nov-06
3	07/00/00	2-Nov-06
3	07/00/00	3-Nov-06
1.7	07/00/00	4-Nov-06
1.3	07/00/00	5-Nov-06
1.1	07/00/00	6-Nov-06
1	07/00/00	7-Nov-06
1.5	07/00/00	8-Nov-06
4.2	07/00/00	9-Nov-06
2.8	07/00/00	10-Nov-06
2.1	07/00/00	11-Nov-06
1.9	07/00/00	12-Nov-06
2.5	07/00/00	13-Nov-06
2.3	07/00/00	14-Nov-06
1.9	07/00/00	15-Nov-06
2.1	07/00/00	16-Nov-06
4.2	07/00/00	17-Nov-06
4.2	07/00/00	18-Nov-06
1.9	07/00/00	19-Nov-06
1.5	07/00/00	20-Nov-06
1.7	07/00/00	21-Nov-06
1.3	07/00/00	22-Nov-06
4	07/00/00	23-Nov-06
4	07/00/00	24-Nov-06
1.9	07/00/00	25-Nov-06
1.7	07/00/00	26-Nov-06
1.7	07/00/00	27-Nov-06
1.5	07/00/00	28-Nov-06
1.7	07/00/00	29-Nov-06
2.8	07/00/00	30-Nov-06
3.2	07/00/00	01-Dec-06
2.5	07/00/00	02-Dec-06
1.3	07/00/00	03-Dec-06
1.5	07/00/00	04-Dec-06
1.3	07/00/00	05-Dec-06
1	07/00/00	06-Dec-06
1	07/00/00	07-Dec-06
1.3	07/00/00	08-Dec-06
0.8	07/00/00	09-Dec-06
0.2	07/00/00	10-Dec-06
0.4	07/00/00	11-Dec-06
0.6	07/00/00	12-Dec-06
0.6	07/00/00	13-Dec-06
1.1	07/00/00	14-Dec-06
1.3	07/00/00	15-Dec-06
1.7	07/00/00	16-Dec-06
1.3	07/00/00	17-Dec-06
1.1	07/00/00	18-Dec-06
1.3	07/00/00	19-Dec-06

Well 14

3.2	07/00/00	1-Nov-06
3.2	07/00/00	2-Nov-06
3.2	07/00/00	3-Nov-06
3.2	07/00/00	4-Nov-06
3.2	07/00/00	5-Nov-06
3.2	07/00/00	6-Nov-06
3.2	07/00/00	7-Nov-06
3.2	07/00/00	8-Nov-06
3.2	07/00/00	9-Nov-06
3.2	07/00/00	10-Nov-06
3.2	07/00/00	11-Nov-06
3.2	07/00/00	12-Nov-06
3.2	07/00/00	13-Nov-06
3.2	07/00/00	14-Nov-06
3.2	07/00/00	15-Nov-06
3.2	07/00/00	16-Nov-06
3.2	07/00/00	17-Nov-06
3.2	07/00/00	18-Nov-06
3.2	07/00/00	19-Nov-06
3.2	07/00/00	20-Nov-06
3.2	07/00/00	21-Nov-06
3.2	07/00/00	22-Nov-06
3.2	07/00/00	23-Nov-06
3.2	07/00/00	24-Nov-06
3.2	07/00/00	25-Nov-06
3.2	07/00/00	26-Nov-06
3.2	07/00/00	27-Nov-06
3.2	07/00/00	28-Nov-06
3.2	07/00/00	29-Nov-06
3.2	07/00/00	30-Nov-06
3.2	07/00/00	01-Dec-06
3.2	07/00/00	02-Dec-06
3.2	07/00/00	03-Dec-06
3.2	07/00/00	04-Dec-06
3.2	07/00/00	05-Dec-06
3.2	07/00/00	06-Dec-06
3.2	07/00/00	07-Dec-06
3.2	07/00/00	08-Dec-06
3.2	07/00/00	09-Dec-06
3.2	07/00/00	10-Dec-06
3.2	07/00/00	11-Dec-06
3.2	07/00/00	12-Dec-06
3.2	07/00/00	13-Dec-06
3.2	07/00/00	14-Dec-06
3.2	07/00/00	15-Dec-06
3.2	07/00/00	16-Dec-06
3.2	07/00/00	17-Dec-06
3.2	07/00/00	18-Dec-06
3.2	07/00/00	19-Dec-06

Well 15

1.2	07/00/00	1-Nov-06
2.4	07/00/00	2-Nov-06
-2.7	07/00/00	3-Nov-06
-6.1	07/00/00	4-Nov-06
-8.7	07/00/00	5-Nov-06
-2.4	07/00/00	6-Nov-06
0	07/00/00	7-Nov-06
0.9	07/00/00	8-Nov-06
0.9	07/00/00	9-Nov-06
-2.5	07/00/00	10-Nov-06
-2.4	07/00/00	11-Nov-06
1.9	07/00/00	12-Nov-06
-1.6	07/00/00	13-Nov-06
-2.2	07/00/00	14-Nov-06
-2.5	07/00/00	15-Nov-06
3.7	07/00/00	16-Nov-06
4.2	07/00/00	17-Nov-06
4.2	07/00/00	18-Nov-06
4.2	07/00/00	19-Nov-06
4.2	07/00/00	20-Nov-06
4.2	07/00/00	21-Nov-06
4.2	07/00/00	22-Nov-06
4.2	07/00/00	23-Nov-06
4.2	07/00/00	24-Nov-06
2.3	07/00/00	25-Nov-06
2.7	07/00/00	26-Nov-06
4.2	07/00/00	27-Nov-06
4.2	07/00/00	28-Nov-06
3.2	07/00/00	29-Nov-06
2.7	07/00/00	30-Nov-06
2.5	07/00/00	01-Dec-06
3	07/00/00	02-Dec-06
1.7	07/00/00	03-Dec-06
1.3	07/00/00	04-Dec-06
1.1	07/00/00	05-Dec-06
1.1	07/00/00	06-Dec-06
1.5	07/00/00	07-Dec-06
4.2	07/00/00	08-Dec-06
2.8	07/00/00	09-Dec-06
2.8	07/00/00	10-Dec-06
1.9	07/00/00	11-Dec-06
2.5	07/00/00	12-Dec-06
2.3	07/00/00	13-Dec-06
2.3	07/00/00	14-Dec-06
2.1	07/00/00	15-Dec-06
2.1	07/00/00	16-Dec-06
4.2	07/00/00	17-Dec-06
4.2	07/00/00	18-Dec-06
1.9	07/00/00	19-Dec-06

Well 16

3.6	07/00/00	1-Nov-06
3.6	07/00/00	2-Nov-06
3.6	07/00/00	3-Nov-06
3.6	07/00/00	4-Nov-06
3.6	07/00/00	5-Nov-06
3.6	07/00/00	6-Nov-06
3.6	07/00/00	7-Nov-06
3.6	07/00/00	8-Nov-06
3.6	07/00/00	9-Nov-06
3.6	07/00/00	10-Nov-06
3.6	07/00/00	11-Nov-06
3.6	07/00/00	12-Nov-06
3.6	07/00/00	13-Nov-06
3.6	07/00/00	14-Nov-06
3.6	07/00/00	15-Nov-06
3.6	07/00/00	16-Nov-06
3.6	07/00/00	17-Nov-06
3.6	07/00/00	18-Nov-06
3.6	07/00/00	19-Nov-06
3.6	07/00/00	20-Nov-06
3.6	07/00/00	21-Nov-06
3.6	07/00/00	22-Nov-06
3.6	07/00/00	23-Nov-06
3.6	07/00/00	24-Nov-06
3.6	07/00/00	25-Nov-06
3.6	07/00/00	26-Nov-06
3.6	07/00/00	27-Nov-06
3.6	07/00/00	28-Nov-06
3.6	07/00/00	29-Nov-06
3.6	07/00/00	30-Nov-06
3.6	07/00/00	01-Dec-06
3.6	07/00/00	02-Dec-06
3.6	07/00/00	03-Dec-06
3.6	07/00/00	04-Dec-06
3.6	07/00/00	05-Dec-06
3.6	07/00/00	06-Dec-06
3.6	07/00/00	07-Dec-06
3.6	07/00/00	08-Dec-06
3.6	07/00/00	09-Dec-06
3.6	07/00/00	10-Dec-06
3.6	07/00/00	11-Dec-06
3.6	07/00/00	12-Dec-06
3.6	07/00/00	13-Dec-06
3.6	07/00/00	14-Dec-06
3.6	07/00/00	15-Dec-06
3.6	07/00/00	16-Dec-06
3.6	07/00/00	17-Dec-06
3.6	07/00/00	18-Dec-06
3.6	07/00/00	19-Dec-06

Well 17

-14	07/00/00	1-Nov-06
-184	07/00/00	2-Nov-06
-214	07/00/00	3-Nov-06
-233	07/00/00	4-Nov-06
-254	07/00/00	5-Nov-06
-269	07/00/00	6-Nov-06
-277	07/00/00	7-Nov-06
23	07/00/00	8-Nov-06
-09	07/00/00	9-Nov-06
-112	07/00/00	10-Nov-06
2.1	07/00/00	11-Nov-06
2.1	07/00/00	12-Nov-06
-2.1	07/00/00	13-Nov-06
-7	07/00/00	14-Nov-06
-11	07/00/00	15-Nov-06
3.6	07/00/00	16-Nov-06
3.6	07/00/00	17-Nov-06
3.6	07/00/00	18-Nov-06
-2.5	07/00/00	19-Nov-06
-7.2	07/00/00	20-Nov-06
-10.4	07/00/00	21-Nov-06
-13.5	07/00/00	22-Nov-06
2.7	07/00/00	23-Nov-06
2.1	07/00/00	24-Nov-06
-1.1	07/00/00	25-Nov-06
-9.9	07/00/00	26-Nov-06
-12.5	07/00/00	27-Nov-06
-14	07/00/00	28-Nov-06
-15	07/00/00	29-Nov-06
-15.7	07/00/00	30-Nov-06
-15.2	07/00/00	01-Dec-06
-17.6	07/00/00	02-Dec-06
-18.2	07/00/00	03-Dec-06
-18.9	07/00/00	04-Dec-06
-19.2	07/00/00	05-Dec-06
-21.4	07/00/00	06-Dec-06
-22.6	07/00/00	07-Dec-06
-22.8	07/00/00	08-Dec-06
-25.2	07/00/00	09-Dec-06
-28.2	07/00/00	10-Dec-06
-27.3	07/00/00	11-Dec-06
-28.5	07/00/00	12-Dec-06
-30.2	07/00/00	13-Dec-06
-31.5	07/00/00	14-Dec-06
-31.5	07/00/00	15-Dec-06
-33.4	07/00/00	16-Dec-06
-34.9	07/00/00	17-Dec-06
-34.9	07/00/00	18-Dec-06
-38.2	07/00/00	19-Dec-06

Well 18

-8	07/00/00	1-Nov-06
-13	07/00/00	2-Nov-06
-16.1	07/00/00	3-Nov-06
-18.5	07/00/00	4-Nov-06
-21.4	07/00/00	5-Nov-06
-23.2	07/00/00	6-Nov-06
-24.8	07/00/00	7-Nov-06
-25.2	07/00/00	8-Nov-06
0.7	07/00/00	9-Nov-06
-0.2	07/00/00	10-Nov-06
-1.5	07/00/00	11-Nov-06
-2.4	07/00/00	12-Nov-06
0.5	07/00/00	13-Nov-06
-0.4	07/00/00	14-Nov-06
-1.1	07/00/00	15-Nov-06
-2	07/00/00	16-Nov-06
2.2	07/00/00	17-Nov-06
0	07/00/00	18-Nov-06
-0.4	07/00/00	19-Nov-06
-1.1	07/00/00	20-Nov-06
-1.6	07/00/00	21-Nov-06
-3.1	07/00/00	22-Nov-06
0.9	07/00/00	23-Nov-06
0.5	07/00/00	24-Nov-06
-0.2	07/00/00	25-Nov-06
-0.9	07/00/00	26-Nov-06
-1.6	07/00/00	27-Nov-06
-2.6	07/00/00	28-Nov-06
-3.3	07/00/00	29-Nov-06
-3.8	07/00/00	30-Nov-06
-4	07/00/00	01-Dec-06
-3.5	07/00/00	02-Dec-06
-5.5	07/00/00	03-Dec-06
-8	07/00/00	04-Dec-06
-10.2	07/00/00	05-Dec-06
-13.7	07/00/00	06-Dec-06
-16.3	07/00/00	07-Dec-06
-17.2	07/00/00	08-Dec-06
-18.4	07/00/00	09-Dec-06
-20.6	07/00/00	10-Dec-06
-21.7	07/00/00	11-Dec-06
-22.8	07/00/00	12-Dec-06
-23.9	07/00/00	13-Dec-06
-24.5	07/00/00	14-Dec-06
-25.9	07/00/00	15-Dec-06
-26.5	07/00/00	16-Dec-06
-27.2	07/00/00	17-Dec-06
-28.5	07/00/00	18-Dec-06
-29	07/00/00	19-Dec-06

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Appendix C1. Data Tables for Hydrologic Data

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Date: January 2007

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Surface Gauge 1	
6/21/2006	-41.5
6/22/2006	-42
6/23/2006	-42
6/24/2006	-42
6/25/2006	-42
6/26/2006	-42
6/27/2006	-42
6/28/2006	-41.9
6/29/2006	-41.9
6/30/2006	-41.9
7/1/2006	-41.9
7/2/2006	-41.9
7/3/2006	-41.9
7/4/2006	-41.9
7/5/2006	-41.9
7/6/2006	-41.9
7/7/2006	-41.9
7/8/2006	-41.9
7/9/2006	-41.9
7/10/2006	-41.9
7/11/2006	-41.9
7/12/2006	-41.9
7/13/2006	-41.9
7/14/2006	-41.9
7/15/2006	-41.9
7/16/2006	-41.9
7/17/2006	-41.9
7/18/2006	-41.9
7/19/2006	-41.9
7/20/2006	-34.7
7/21/2006	-33.2
7/22/2006	-33.2
7/23/2006	-34
7/24/2006	-34.2
7/25/2006	-34.3
7/26/2006	-34.4
7/27/2006	-34.4
7/28/2006	-35.8
7/29/2006	-37.9
7/30/2006	-36.8
7/31/2006	-36.7
8/1/2006	-36.6
8/2/2006	-36.6
8/3/2006	-36.5
8/4/2006	-36.8
8/5/2006	-35.3
8/6/2006	-36.4
8/7/2006	-36.4
8/8/2006	-37.8
8/9/2006	-38
8/10/2006	-37.9
8/11/2006	-39.3
8/12/2006	-37.8
8/13/2006	-37.8
8/14/2006	-38.5
8/15/2006	-38.5
8/16/2006	-38.7
8/17/2006	-40.4
8/18/2006	-40.4
8/19/2006	-40.9
8/20/2006	-40.7
8/21/2006	-40.7
8/22/2006	-40.6
8/23/2006	-40.7
8/24/2006	-40.5
8/25/2006	-40.9
8/26/2006	-40.2
8/27/2006	-40.3
8/28/2006	-40.4
8/29/2006	-40.4
8/30/2006	-40.4
8/31/2006	-36.4

Surface Gauge 2	
6/21/2006	0.2
6/22/2006	0.4
6/23/2006	1.7
6/24/2006	0.2
6/25/2006	0
6/26/2006	0
6/27/2006	0.2
6/28/2006	0.2
6/29/2006	1.5
6/30/2006	0.2
7/1/2006	0.2
7/2/2006	0
7/3/2006	1.7
7/4/2006	0.2
7/5/2006	3.2
7/6/2006	3.2
7/7/2006	3.2
7/8/2006	3.2
7/9/2006	3.2
7/10/2006	3.2
7/11/2006	3.2
7/12/2006	3.2
7/13/2006	3
7/14/2006	2.8
7/15/2006	3.2
7/16/2006	3.2
7/17/2006	3.2
7/18/2006	2.5
7/19/2006	2.5
7/20/2006	2.6
7/21/2006	3.2
7/22/2006	3.2
7/23/2006	3.2
7/24/2006	3.2
7/25/2006	3.2
7/26/2006	3.2
7/27/2006	3.2
7/28/2006	3.2
7/29/2006	3.2
7/30/2006	3.2
7/31/2006	3.2
8/1/2006	3.2
8/2/2006	3.2
8/3/2006	3.2
8/4/2006	3.2
8/5/2006	3.2
8/6/2006	3.2
8/7/2006	3.2
8/8/2006	3.2
8/9/2006	3.2
8/10/2006	3.2
8/11/2006	3.2
8/12/2006	3.2
8/13/2006	3.2
8/14/2006	3.2
8/15/2006	3.2
8/16/2006	3.2
8/17/2006	3.2
8/18/2006	1.9
8/19/2006	1.1
8/20/2006	1.1
8/21/2006	2.1
8/22/2006	1.7
8/23/2006	1.7
8/24/2006	0.9
8/25/2006	0.8
8/26/2006	0
8/27/2006	0.8
8/28/2006	1.2
8/29/2006	2.5
8/30/2006	3.2
8/31/2006	3.2

Surface Gauge 3	
6/21/2006	NA
6/22/2006	NA
6/23/2006	NA
6/24/2006	NA
6/25/2006	NA
6/26/2006	NA
6/27/2006	NA
6/28/2006	NA
6/29/2006	NA
6/30/2006	NA
7/1/2006	NA
7/2/2006	NA
7/3/2006	NA
7/4/2006	NA
7/5/2006	NA
7/6/2006	NA
7/7/2006	NA
7/8/2006	NA
7/9/2006	NA
7/10/2006	NA
7/11/2006	NA
7/12/2006	NA
7/13/2006	NA
7/14/2006	NA
7/15/2006	NA
7/16/2006	NA
7/17/2006	NA
7/18/2006	NA
7/19/2006	NA
7/20/2006	NA
7/21/2006	NA
7/22/2006	NA
7/23/2006	NA
7/24/2006	NA
7/25/2006	NA
7/26/2006	NA
7/27/2006	NA
7/28/2006	NA
7/29/2006	NA
7/30/2006	NA
7/31/2006	NA
8/1/2006	NA
8/2/2006	NA
8/3/2006	NA
8/4/2006	NA
8/5/2006	NA
8/6/2006	NA
8/7/2006	NA
8/8/2006	NA
8/9/2006	NA
8/10/2006	NA
8/11/2006	NA
8/12/2006	NA
8/13/2006	NA
8/14/2006	NA
8/15/2006	NA
8/16/2006	NA
8/17/2006	NA
8/18/2006	NA
8/19/2006	NA
8/20/2006	NA
8/21/2006	NA
8/22/2006	NA
8/23/2006	NA
8/24/2006	NA
8/25/2006	NA
8/26/2006	NA
8/27/2006	NA
8/28/2006	NA
8/29/2006	NA
8/30/2006	NA
8/31/2006	NA

Well 9 = SFC G	
6/21/2006	-41.8
6/22/2006	-41.8
6/23/2006	-41.8
6/24/2006	-41.9
6/25/2006	-41.9
6/26/2006	-41.9
6/27/2006	-41.8
6/28/2006	-41.9
6/29/2006	-41.8
6/30/2006	-41.8
7/1/2006	-41.8
7/2/2006	-41.8
7/3/2006	-41.8
7/4/2006	-41.8
7/5/2006	-41.8
7/6/2006	-41.8
7/7/2006	-41.8
7/8/2006	-41.8
7/9/2006	-41.8
7/10/2006	-41.8
7/11/2006	-41.8
7/12/2006	-41.8
7/13/2006	-41.8
7/14/2006	-41.8
7/15/2006	-41.8
7/16/2006	-41.8
7/17/2006	-41.8
7/18/2006	-41.8
7/19/2006	-3.3
7/20/2006	-3.3
7/21/2006	-2.5
7/22/2006	-2.5
7/23/2006	-1.6
7/24/2006	-1.6
7/25/2006	-1.5
7/26/2006	-1.4
7/27/2006	-1.3
7/28/2006	-1.3
7/29/2006	-1.3
7/30/2006	-1.3
7/31/2006	-1.2
8/1/2006	-1.3
8/2/2006	-1.3
8/3/2006	-1.6
8/4/2006	-1.8
8/5/2006	-2
8/6/2006	-2
8/7/2006	-2
8/8/2006	-2.1
8/9/2006	-2.4
8/10/2006	-1.9
8/11/2006	-1.5
8/12/2006	-1.3
8/13/2006	-1.3
8/14/2006	-0.6
8/15/2006	-0.5
8/16/2006	-0.5
8/17/2006	-0.5
8/18/2006	-0.6
8/19/2006	-0.6
8/20/2006	-0.5
8/21/2006	-0.6
8/22/2006	-0.5
8/23/2006	-0.5
8/24/2006	-0.6
8/25/2006	-0.6
8/26/2006	-0.9
8/27/2006	-1
8/28/2006	-1.1
8/29/2006	-1.1
8/30/2006	-1.1
8/31/2006	-1.1
9/1/2006	-0.9

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Appendix C1. Data Tables for Hydrologic Data

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Surface Gauge 1

9/11/2006	-39
9/12/2006	-39.2
9/13/2006	-39.2
9/14/2006	-39.2
9/15/2006	-38.8
9/16/2006	-39.2
9/17/2006	-39.2
9/18/2006	-39.2
9/19/2006	-39.2
9/110/2006	-39.2
9/111/2006	-38.6
9/112/2006	-39.1
9/113/2006	-39.1
9/114/2006	-27.1
9/115/2006	-37.7
9/116/2006	-38.1
9/117/2006	-38.2
9/118/2006	-38.2
9/119/2006	-36.5
9/20/2006	-38.3
9/21/2006	-38.3
9/22/2006	-38.1
9/23/2006	-38.2
9/24/2006	-37.8
9/25/2006	-37.9
9/26/2006	-38.1
9/27/2006	-38
9/28/2006	-37.2
9/29/2006	-37.9
9/30/2006	-37.7
10/1/2006	-37.7
10/2/2006	-36.1
10/3/2006	-36.1
10/4/2006	-35.9
10/4/2006	-36.2
10/5/2006	-35.9
10/6/2006	-35.9
10/7/2006	-35.7
10/8/2006	-35.6
10/9/2006	-35.7
10/10/2006	-35.7
10/11/2006	-35.7
10/12/2006	-35.6
10/13/2006	-35.3
10/14/2006	-35.6
10/15/2006	-35.6
10/16/2006	-35.6
10/17/2006	-34.6
10/18/2006	-29.6
10/19/2006	-33.4
10/20/2006	-32.7
10/21/2006	-33.7
10/22/2006	-34.1
10/23/2006	-33.7
10/24/2006	-34
10/25/2006	-34.1
10/26/2006	-34
10/27/2006	-33.9
10/28/2006	-28.4
10/29/2006	-32
10/30/2006	-33.1
10/31/2006	-33.4

Surface Gauge 2

9/11/2006	3.2
9/12/2006	3.2
9/13/2006	3.2
9/14/2006	3.2
9/15/2006	3.2
9/16/2006	3.2
9/17/2006	2.6
9/18/2006	2.3
9/19/2006	0.8
9/110/2006	0.2
9/111/2006	0
9/112/2006	0.4
9/113/2006	0.4
9/114/2006	0.2
9/115/2006	0.2
9/116/2006	3.2
9/117/2006	3.2
9/118/2006	2.6
9/119/2006	3.2
9/20/2006	3.2
9/21/2006	3.2
9/22/2006	3.2
9/23/2006	2.5
9/24/2006	3.2
9/25/2006	3.2
9/26/2006	3.2
9/27/2006	3.2
9/28/2006	3.2
9/29/2006	3.2
9/30/2006	3.2
10/1/2006	3.2
10/2/2006	3.2
10/3/2006	3.2
10/4/2006	3.2
10/4/2006	2.3
10/5/2006	3.2
10/6/2006	3.2
10/7/2006	0.8
10/8/2006	1.5
10/9/2006	1.9
10/10/2006	3
10/11/2006	1.5
10/12/2006	2.1
10/13/2006	1.9
10/14/2006	3.2
10/15/2006	3.2
10/16/2006	3.2
10/17/2006	3.2
10/18/2006	3.2
10/19/2006	3.2
10/20/2006	3.2
10/21/2006	3.2
10/22/2006	3.2
10/23/2006	3.2
10/24/2006	3.2
10/25/2006	3.2
10/26/2006	3.2
10/27/2006	3.2
10/28/2006	3.2
10/29/2006	3.2
10/30/2006	3.2
10/31/2006	3.2

Surface Gauge 3

9/11/2006	NA
9/12/2006	NA
9/13/2006	NA
9/14/2006	NA
9/15/2006	NA
9/16/2006	NA
9/17/2006	NA
9/18/2006	NA
9/19/2006	NA
9/110/2006	NA
9/111/2006	NA
9/112/2006	NA
9/113/2006	NA
9/114/2006	NA
9/115/2006	NA
9/116/2006	NA
9/117/2006	NA
9/118/2006	NA
9/119/2006	NA
9/20/2006	NA
9/21/2006	NA
9/22/2006	NA
9/23/2006	NA
9/24/2006	NA
9/25/2006	NA
9/26/2006	NA
9/27/2006	NA
9/28/2006	NA
9/29/2006	NA
9/30/2006	NA
10/1/2006	NA
10/2/2006	NA
10/3/2006	NA
10/4/2006	NA
10/4/2006	NA
10/5/2006	NA
10/6/2006	NA
10/7/2006	NA
10/8/2006	NA
10/9/2006	NA
10/10/2006	NA
10/11/2006	NA
10/12/2006	NA
10/13/2006	NA
10/14/2006	NA
10/15/2006	NA
10/16/2006	NA
10/17/2006	NA
10/18/2006	NA
10/19/2006	NA
10/20/2006	NA
10/21/2006	NA
10/22/2006	NA
10/23/2006	NA
10/24/2006	NA
10/25/2006	NA
10/26/2006	-41.7
10/27/2006	-41.7
10/28/2006	-37.6
10/29/2006	-41.7
10/30/2006	-41.7
10/31/2006	-41.7

Well 9 = Surface Gauge

9/2/2006	-0.6
9/3/2006	-0.6
9/4/2006	-0.2
9/5/2006	-0.2
9/6/2006	-0.1
9/7/2006	-0.2
9/8/2006	-0.1
9/9/2006	-0.2
9/10/2006	-0.2
9/11/2006	-0.2
9/12/2006	-0.2
9/13/2006	-0.3
9/14/2006	2.6
9/15/2006	2.2
9/16/2006	1.5
9/17/2006	1.4
9/18/2006	1.3
9/19/2006	1.6
9/20/2006	1.3
9/21/2006	1.2
9/22/2006	1.3
9/23/2006	1.8
9/24/2006	1.4
9/25/2006	1.5
9/26/2006	1.2
9/27/2006	1.2
9/28/2006	1
9/29/2006	1
9/30/2006	0.9
10/1/2006	1
10/2/2006	0.8
10/3/2006	0.7
10/4/2006	0.7
10/4/2006	0.6
10/5/2006	0.6
10/6/2006	0.6
10/7/2006	0.6
10/8/2006	0.7
10/9/2006	0.7
10/10/2006	0.7
10/11/2006	1.4
10/12/2006	0.6
10/13/2006	0.4
10/14/2006	0.4
10/15/2006	0.2
10/16/2006	0.2
10/17/2006	0.7
10/18/2006	2.6
10/19/2006	2.2
10/20/2006	2.4
10/21/2006	2
10/22/2006	2.2
10/23/2006	2.2
10/24/2006	2.1
10/25/2006	2
10/26/2006	-9.4
10/27/2006	-10.3
10/28/2006	-8.8
10/29/2006	-10.8
10/30/2006	-10.7
10/31/2006	-10.7
11/1/2006	-10.6

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Date: January 2007
Project No.: 333



Appendix C1. Data Tables for Hydrologic Data

Surface Gauge 1

11/17/2006	-33.4
11/22/2006	-33.5
11/30/2006	-33.9
11/31/2006	-34
11/5/2006	-34.1
11/6/2006	-34.7
11/8/2006	-28.3
11/9/2006	-31
11/11/2006	-32.7
11/12/2006	-28.4
11/13/2006	-31.2
11/14/2006	-32.4
11/15/2006	-26.5
11/16/2006	-30.6
11/18/2006	-31.4
11/21/2006	-32.1
11/22/2006	-29
11/23/2006	-30.2
11/25/2006	-31.7
11/26/2006	-32.1
11/29/2006	-32.8
11/29/2006	-5.3
12/1/2006	-32.7
12/11/2006	-33.5
12/12/2006	-33.6
12/14/2006	-34
12/15/2006	-32.9
12/18/2006	-32.9
12/19/2006	-33.4
12/21/2006	-32.9
12/21/2006	-33.9
12/22/2006	-33
12/23/2006	-33.1
12/24/2006	-33.1
12/25/2006	-32.7
12/27/2006	-32.5
12/28/2006	-32.8
12/29/2006	-32.7
12/30/2006	-30.1
12/30/2006	-32.2
12/31/2006	-30.1
1/2/2007	-30.8
1/4/2007	-29.1
1/5/2007	-30.8
1/9/2007	-30.9
1/8/2007	-28.7
1/9/2007	-30.1
1/11/2007	-30.5
1/12/2007	-30.3
1/14/2007	-30.2
1/15/2007	-30.3
1/17/2007	-30.6
1/18/2007	-30.7
1/19/2007	-31.4
1/21/2007	-29.6
1/24/2007	-30.6
1/25/2007	-30.9

Surface Gauge 2

11/17/2006	3.2
11/22/2006	3.2
11/30/2006	3.2
11/31/2006	3.2
11/5/2006	3.2
11/6/2006	3.2
11/8/2006	3.2
11/9/2006	3.2
11/11/2006	3.2
11/12/2006	3.2
11/13/2006	3.2
11/14/2006	3.2
11/15/2006	3.2
11/16/2006	3.2
11/18/2006	3.2
11/19/2006	3.2
11/21/2006	3.2
11/22/2006	2.6
11/23/2006	2.6
11/24/2006	3
11/25/2006	3.2
11/26/2006	3.2
11/29/2006	3.2
11/29/2006	3.2
11/30/2006	3.2
12/1/2006	3.2
12/11/2006	3.2
12/12/2006	2.6
12/14/2006	2.6
12/15/2006	3.2
12/16/2006	3.2
12/17/2006	3.2
12/18/2006	3.2
12/19/2006	3.2
12/21/2006	3.2
12/22/2006	3.2
12/23/2006	2.6
12/24/2006	2.6
12/25/2006	3
12/26/2006	3.2
12/29/2006	3.2
12/30/2006	0.4
12/31/2006	0.4
1/2/2007	3.2
1/4/2007	3.2
1/5/2007	2.6
1/9/2007	3.2
1/8/2007	3.2
1/9/2007	3.2
1/11/2007	3.2
1/12/2007	3.2
1/14/2007	3.2
1/15/2007	3.2
1/17/2007	3.2
1/18/2007	3.2
1/19/2007	3.2
1/21/2007	3.2
1/22/2007	3.2
1/24/2007	3.2
1/25/2007	3.2

Surface Gauge 3

11/17/2006	-41.8
11/22/2006	-41.7
11/30/2006	-41.9
11/31/2006	-41.7
11/5/2006	-41.8
11/6/2006	-41.8
11/8/2006	-41.7
11/9/2006	-41.8
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11/12/2006	-41.7
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11/16/2006	1.6
11/18/2006	-29.9
11/19/2006	-30.5
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11/25/2006	-30.3
11/26/2006	-30.7
11/29/2006	-31.1
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12/17/2006	-38.2
12/18/2006	-38.3
12/19/2006	-38.3
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12/23/2006	-37.6
12/24/2006	-37.5
12/25/2006	-21.6
12/26/2006	-33.1
12/27/2006	-36.5
12/29/2006	-37
12/30/2006	-36.9
12/31/2006	-36.9
1/2/2007	5.6
1/4/2007	-33.8
1/5/2007	-33.4
1/9/2007	-33.4
1/8/2007	-34.5
1/9/2007	-33.3
1/11/2007	-34.2
1/12/2007	-34.6
1/14/2007	-34.6
1/15/2007	-34.5
1/17/2007	-34.7
1/18/2007	-34.9
1/19/2007	-35.5
1/21/2007	-36.3
1/22/2007	-36.3
1/24/2007	-33.9
1/25/2007	-34.9

Well 9 = Surface Gauge

11/22/2006	-10.4
11/30/2006	-11.8
11/31/2006	-11.9
11/5/2006	-7.7
11/6/2006	-6.2
11/8/2006	-6.6
11/9/2006	-8.8
11/11/2006	-5.9
11/12/2006	-5.9
11/13/2006	-5.9
11/14/2006	-5.9
11/15/2006	-12.2
11/17/2006	-10.7
11/18/2006	-10.6
11/20/2006	-10.6
11/23/2006	-9.2
11/23/2006	-6.4
11/24/2006	-10.9
11/25/2006	-11.1
11/26/2006	-11.1
11/27/2006	-10.6
11/29/2006	-10.4
11/30/2006	-11.6
12/1/2006	-11.6
12/15/2006	-18.7
12/16/2006	-18.8
12/17/2006	-17.1
12/18/2006	-18.1
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12/23/2006	-26.9
12/23/2006	-10.9
12/24/2006	-11.5
12/25/2006	-10.3
12/26/2006	-10.9
12/27/2006	-10.7
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1/5/2007	-10.3
1/9/2007	-11.1
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1/9/2007	-11.1
1/11/2007	-11.6
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1/15/2007	-11.3
1/17/2007	-12.3
1/18/2007	-11.9
1/19/2007	-13.9
1/21/2007	-11.0
1/22/2007	-11.1
1/24/2007	-11.8
1/25/2007	-11.9

Prepared For:



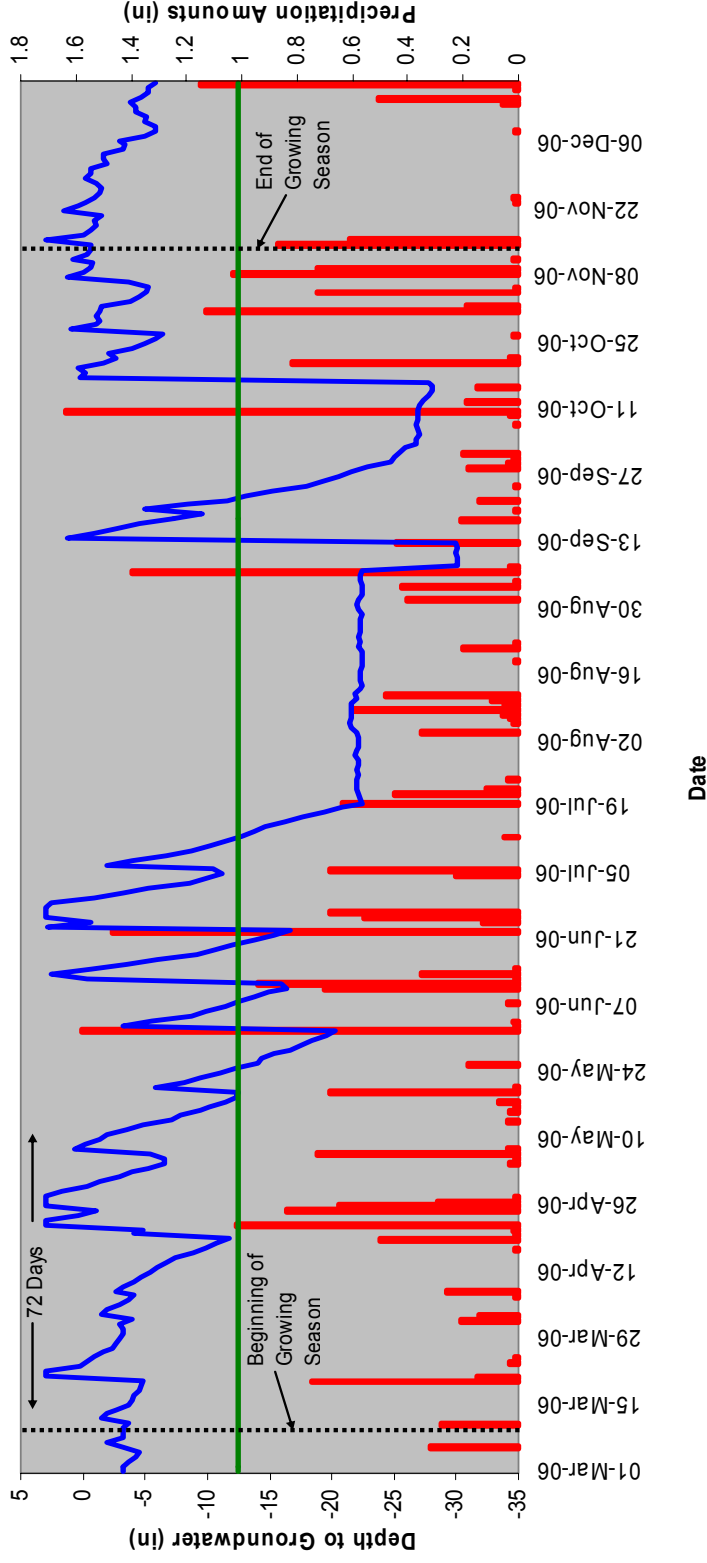
Shepherds Tree Stream and Wetland Restoration
Year 2 of 5

Date: January 2007
Project No.: 333



Appendix C1. Data Tables for Hydrologic Data

Shepherds Tree Hydrology Monitoring
Iredell County, North Carolina
Groundwater Gauge 1



Legend:
█ Rainfall Amount
— ST-WLG1 04D0222
— Required Depth

Date: March 2007
 Project No.: 333

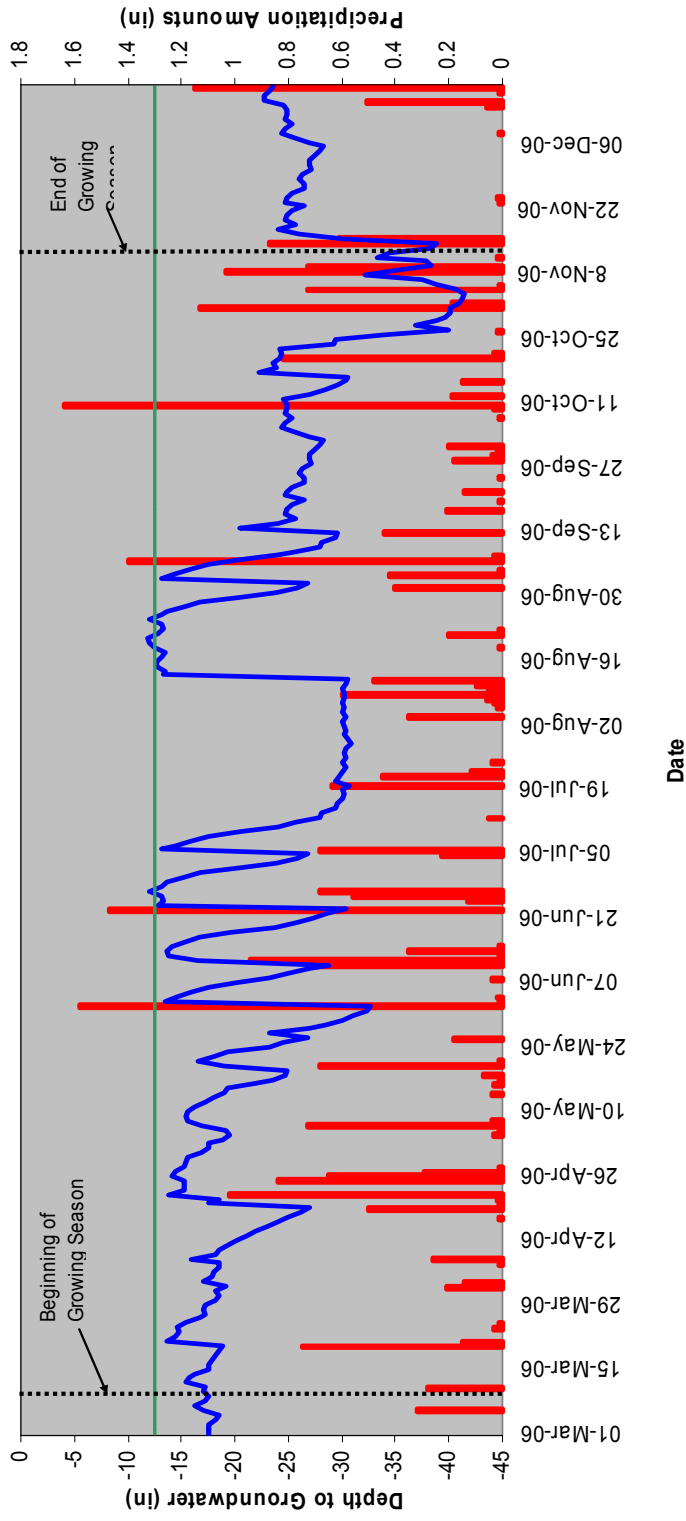


Shepherds Tree Stream and Wetland Restoration
 Year 2 of 5

Appendix C2. Precipitation – Water Level Plots



**Shepherds Tree Hydrology Monitoring
Iredell County, North Carolina
Groundwater Gauge 2**



■ Rainfall Amount
 — ST-WLG2 04D00E5
 — Required Ground Water Depth



Prepared For:

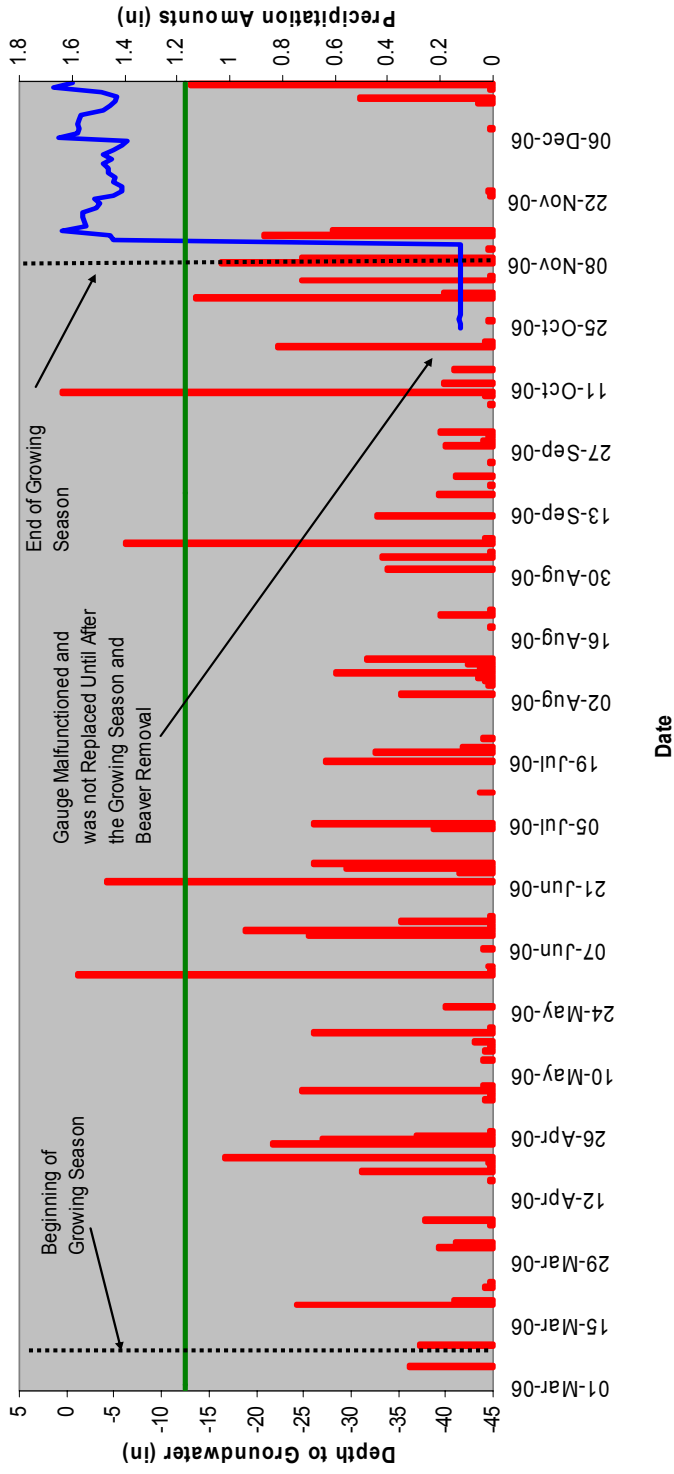
Shepherds Tree Stream and Wetland Restoration
Year 2 of 5

Date: March 2007
Project No.: 333



Appendix C2. Precipitation – Water Level Plots

**Shepherds Tree Hydrology Monitoring
Iredell County, North Carolina
Groundwater Gauge 3**



■ Rainfall Amount
 — ST-WLG3 05044BD
 — Required Depth

Date: March 2007
 Project No.: 333



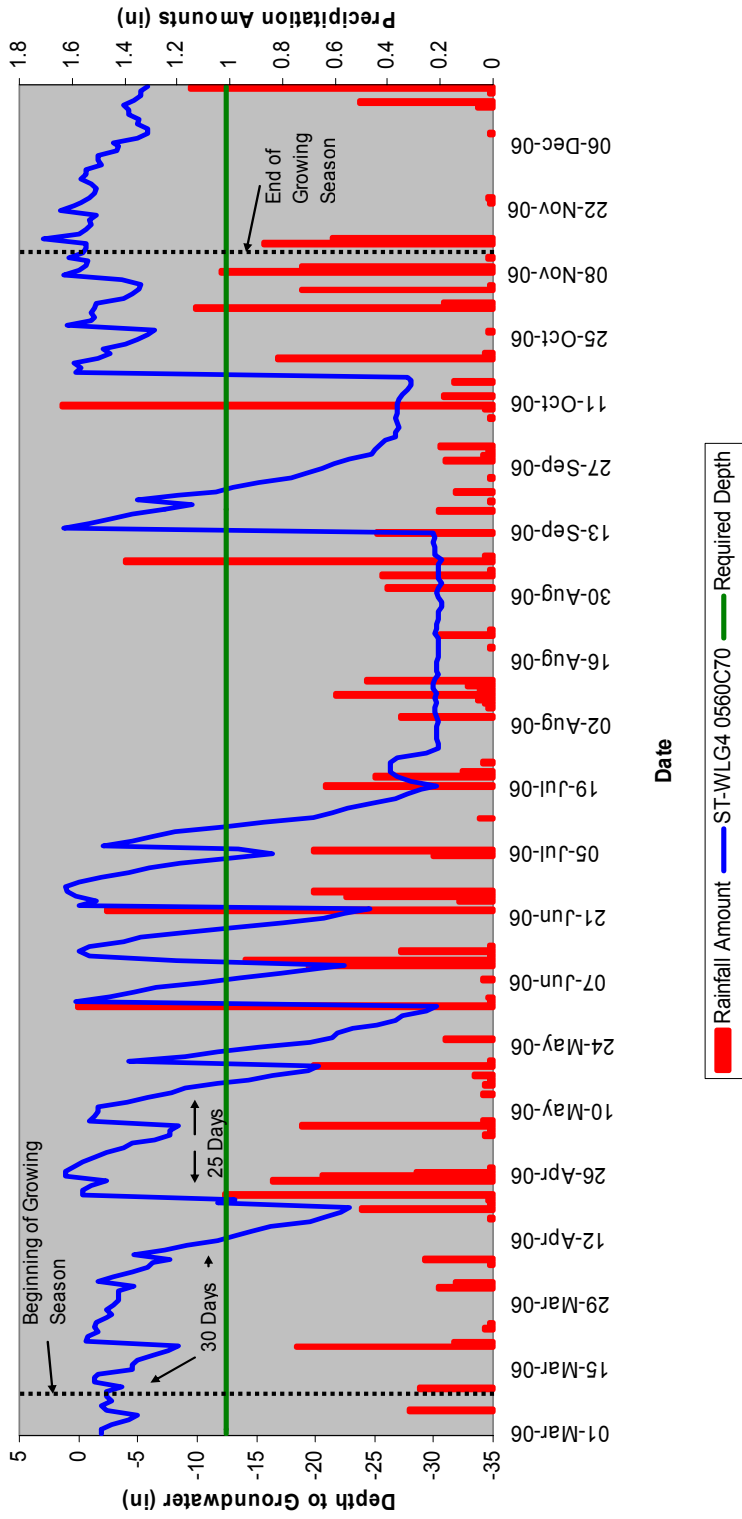
Shepherds Tree Stream and Wetland Restoration
Year 2 of 5

Appendix C2. Precipitation – Water Level Plots

Prepared For:

Ecosystem
Enhancement
PROGRAM

Shepherds Tree Hydrology Monitoring
Iredell County, North Carolina
Groundwater Gauge 4



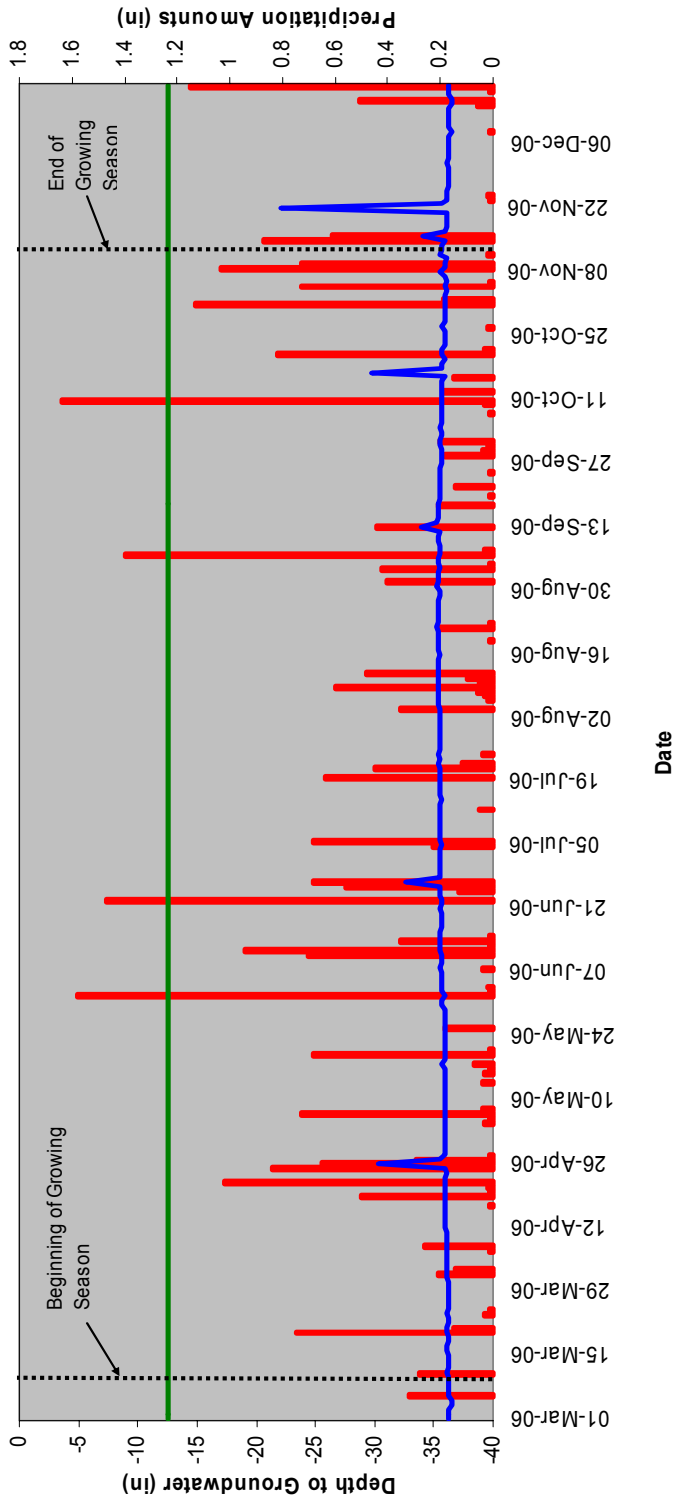
Prepared For: Jordan Jones & Goulding
Date: March 2007
Project No.: 333

Shepherds Tree Stream and Wetland Restoration
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Appendix C2. Precipitation – Water Level Plots

**Shepherds Tree Hydrology Monitoring
Iredell County, North Carolina
Groundwater Gauge 5**



■ Rainfall Amount
 — ST-WLG5 049418D
 — Required Depth

Date: March 2007
 Project No.: 333

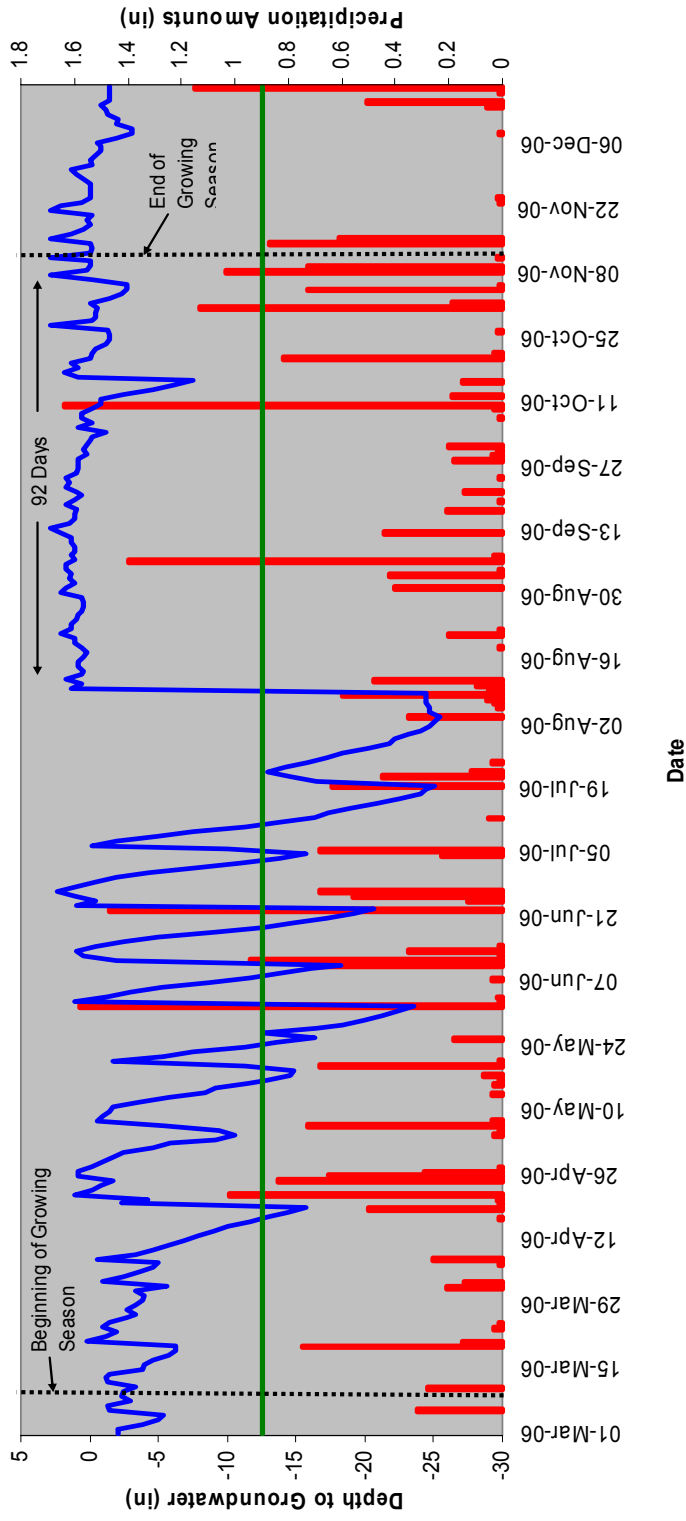


Shepherds Tree Stream and Wetland Restoration
 Year 2 of 5

Appendix C2. Precipitation – Water Level Plots

Prepared For:

**Shepherds Tree Hydrology Monitoring
Iredell County, North Carolina
Groundwater Gauge 6**



■ Rainfall Amount
 — ST WLG6 0562DBE
 — Required Depth

Date: March 2007
 Project No.: 333

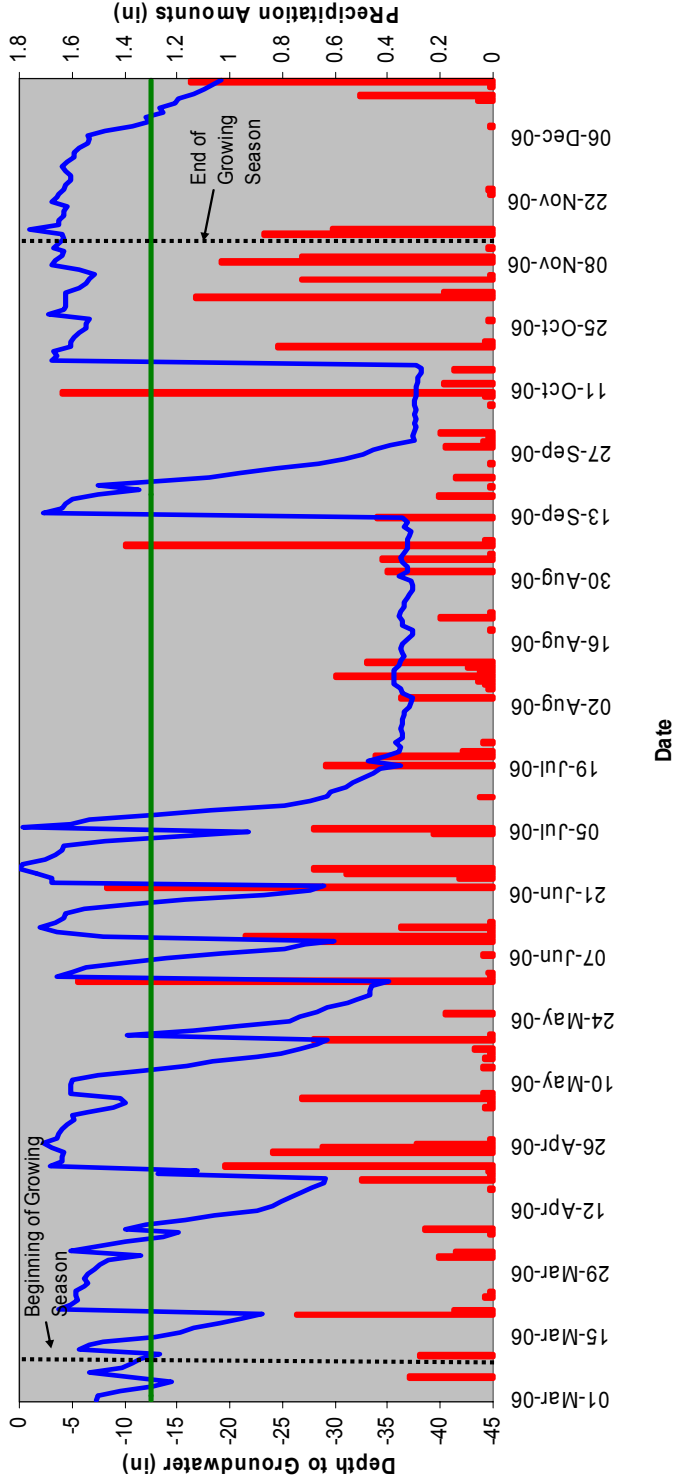


Shepherds Tree Stream and Wetland Restoration
 Year 2 of 5

Appendix C2. Precipitation – Water Level Plots

Prepared For:

**Shepherds Tree Hydrology Monitoring
Iredell County, North Carolina
Groundwater Gauge 7**



Date

■ Rainfall Amount
— ST-WLG7 0504410
— Required Depth

Prepared For:



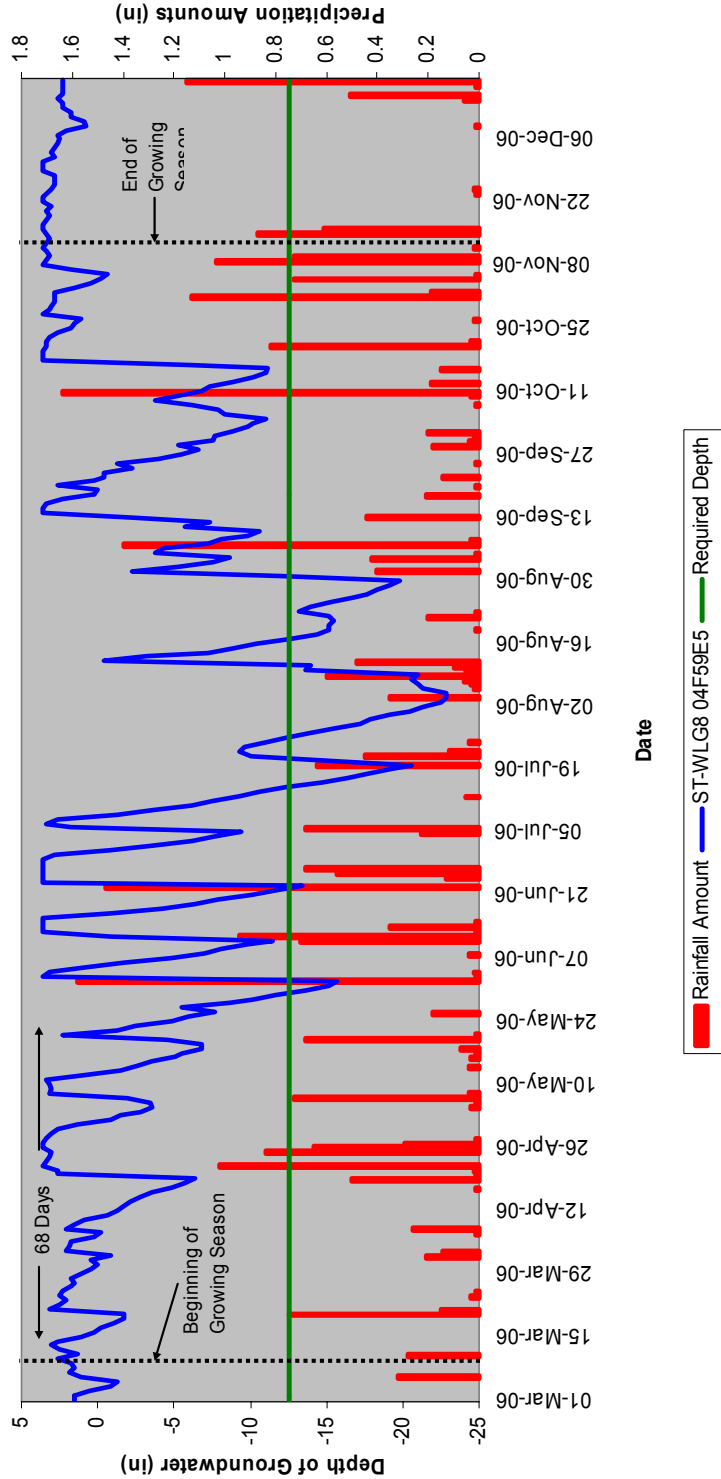
Shepherds Tree Stream and Wetland Restoration
Year 2 of 5


Date: March 2007
Project No.: 333



Appendix C2. Precipitation – Water Level Plots

**Shepherds Tree Hydrology Monitoring
Iredell County, North Carolina
Groundwater Gauge 8**



Prepared For:  Jordan Jones & Goulding

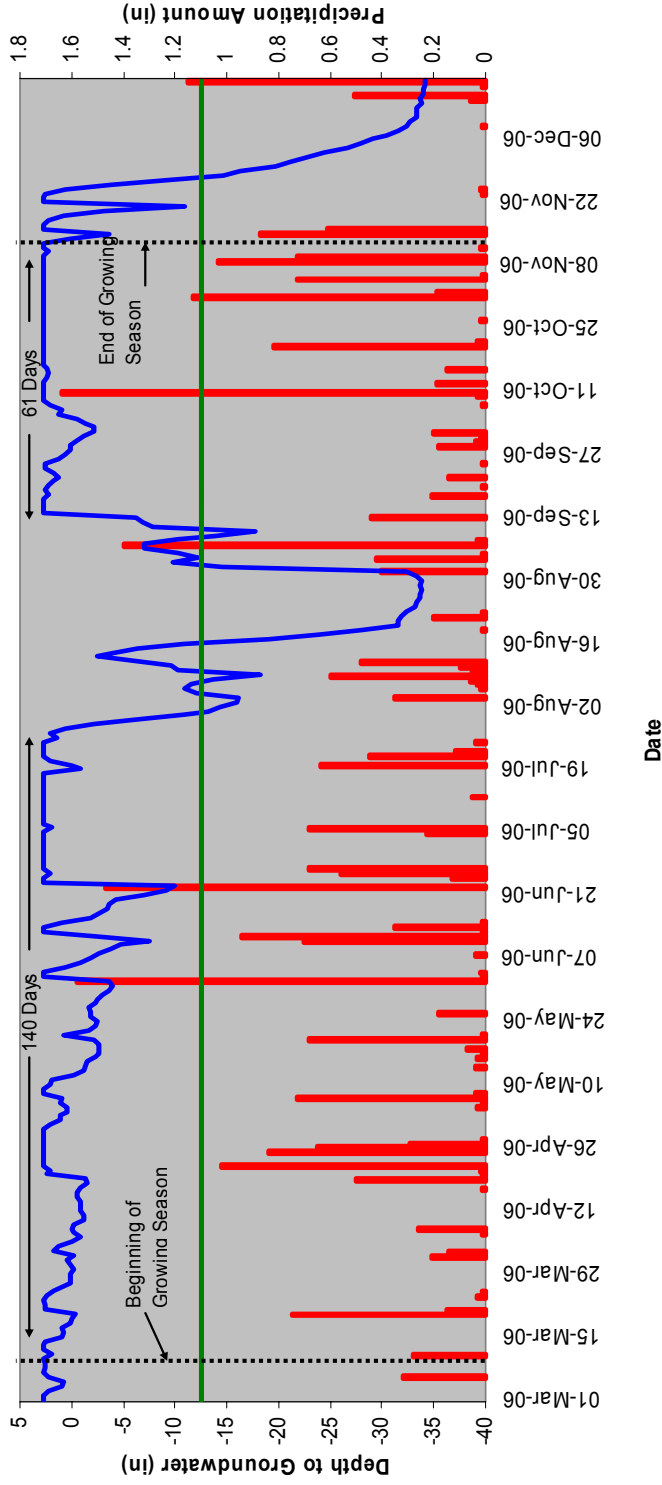
Shepherds Tree Stream and Wetland Restoration
Year 2 of 5

Date: March 2007
Project No.: 333




Appendix C2. Precipitation – Water Level Plots

**Shepherds Tree Hydrology Monitoring
Iredell County, North Carolina
Groundwater Gauge 10**



■ Rainfall Amount
 — ST-WLG10 04941E6
 — Required Depth

Prepared For:  Ecosystem Enhancement PROGRAM

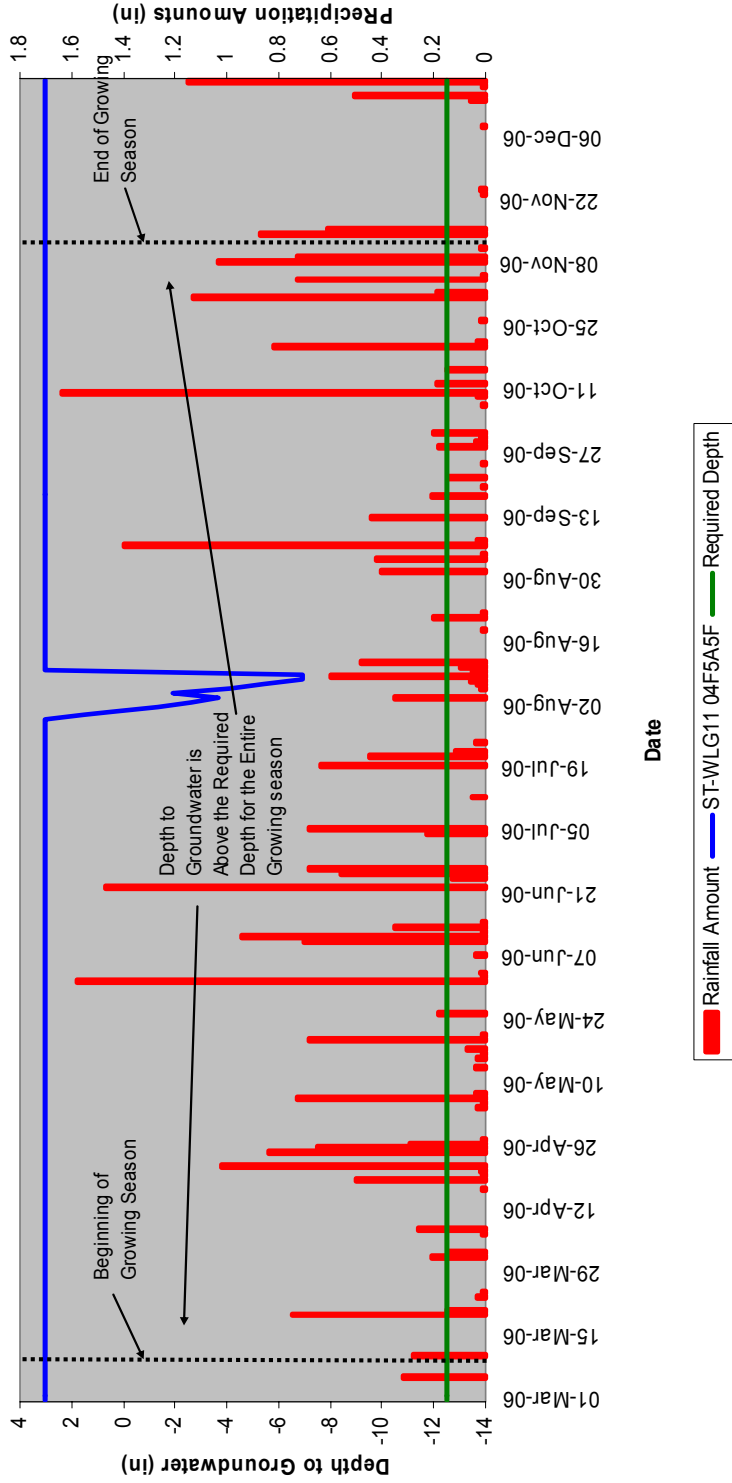
Shepherds Tree Stream and Wetland Restoration
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Appendix C2. Precipitation – Water Level Plots

**Shepherds Tree Hydrology Monitoring
Iredell County, North Carolina
Groundwater Gauge 11**



Prepared For:  Jordan Jones & Goulding

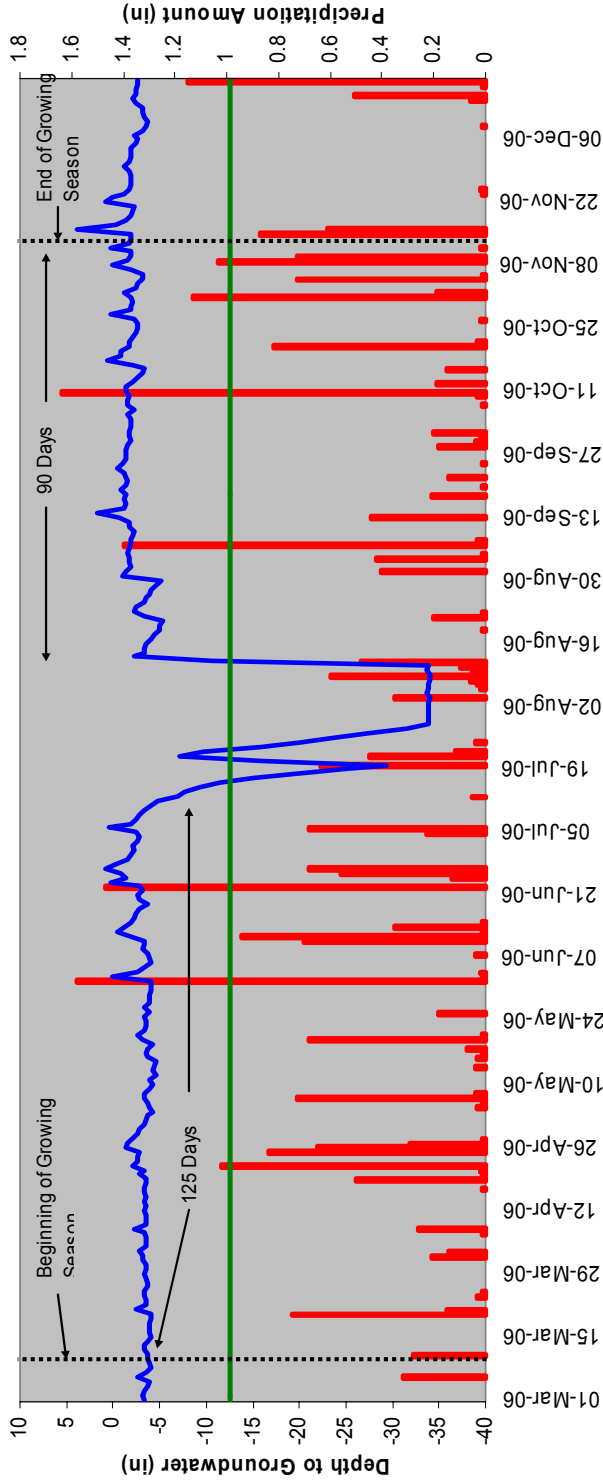
Shepherds Tree Stream and Wetland Restoration
Year 2 of 5

Date: March 2007
Project No.: 333

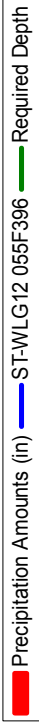


Appendix C2. Precipitation – Water Level Plots

**Shepherds Tree Hydrology Monitoring
Iredell County, North Carolina
Groundwater Gauge 12**



Date



Prepared For:



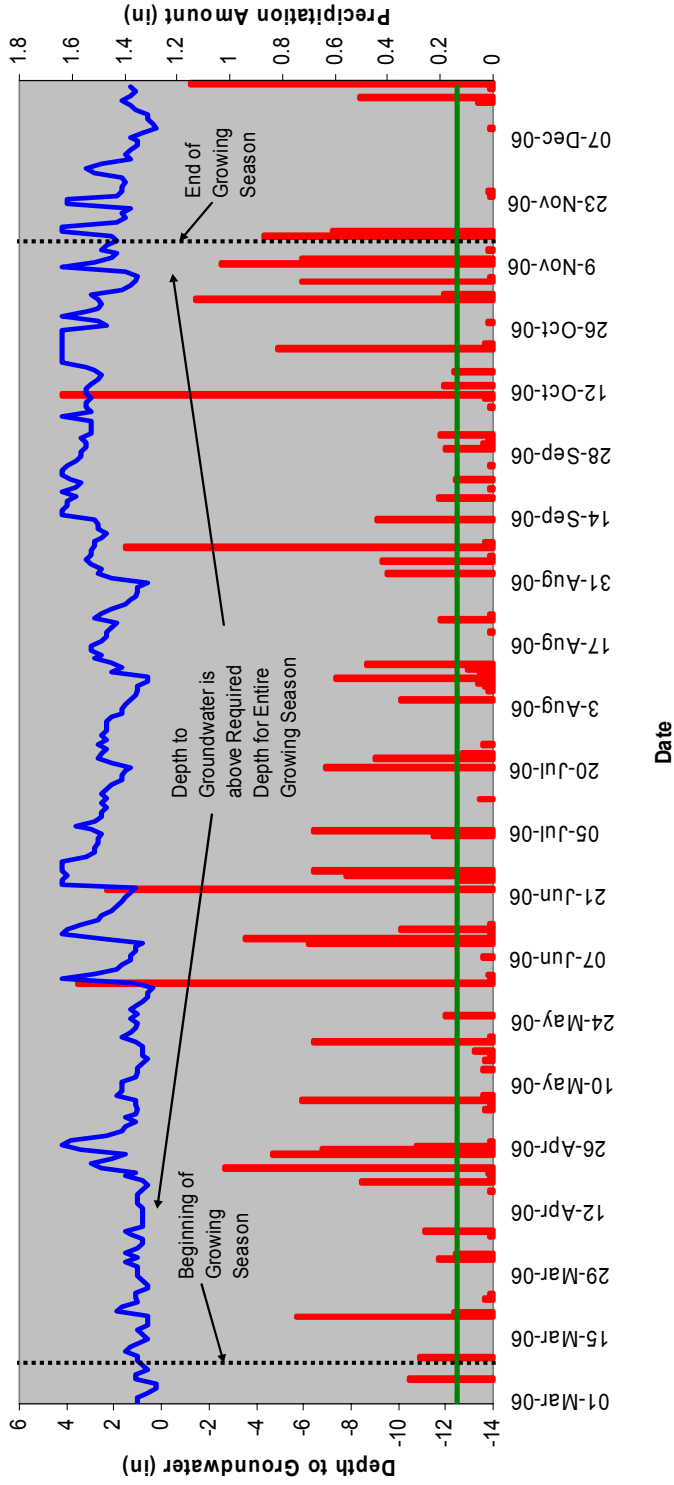
Shepherds Tree Stream and Wetland Restoration
Year 2 of 5

Date: March 2007
 Project No.: 333



Appendix C2. Precipitation – Water Level Plots

**Shepherds Tree Hydrology Monitoring
Iredell County, North Carolina
Groundwater Gauge 13**



■ Rainfall Amount
 — ST-WLG13 04CFE45
 — Required Depth

Date: March 2007
 Project No.: 333

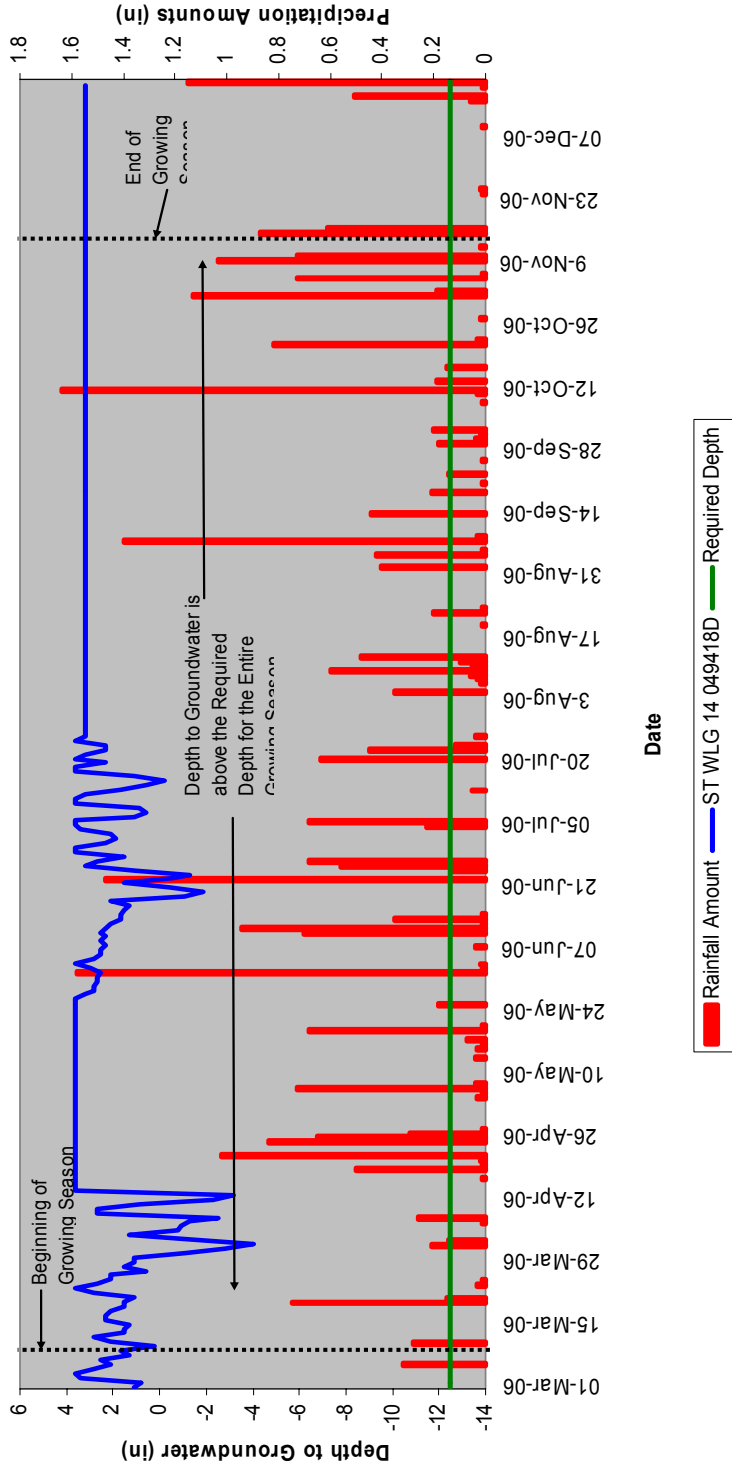



Shepherds Tree Stream and Wetland Restoration
Year 2 of 5

Appendix C2. Precipitation – Water Level Plots

Prepared For:

**Shepherds Tree Hydrology Monitoring
Iredell County, North Carolina
Groundwater Gauge 14**



Prepared For:  Jordan Jones & Goulding

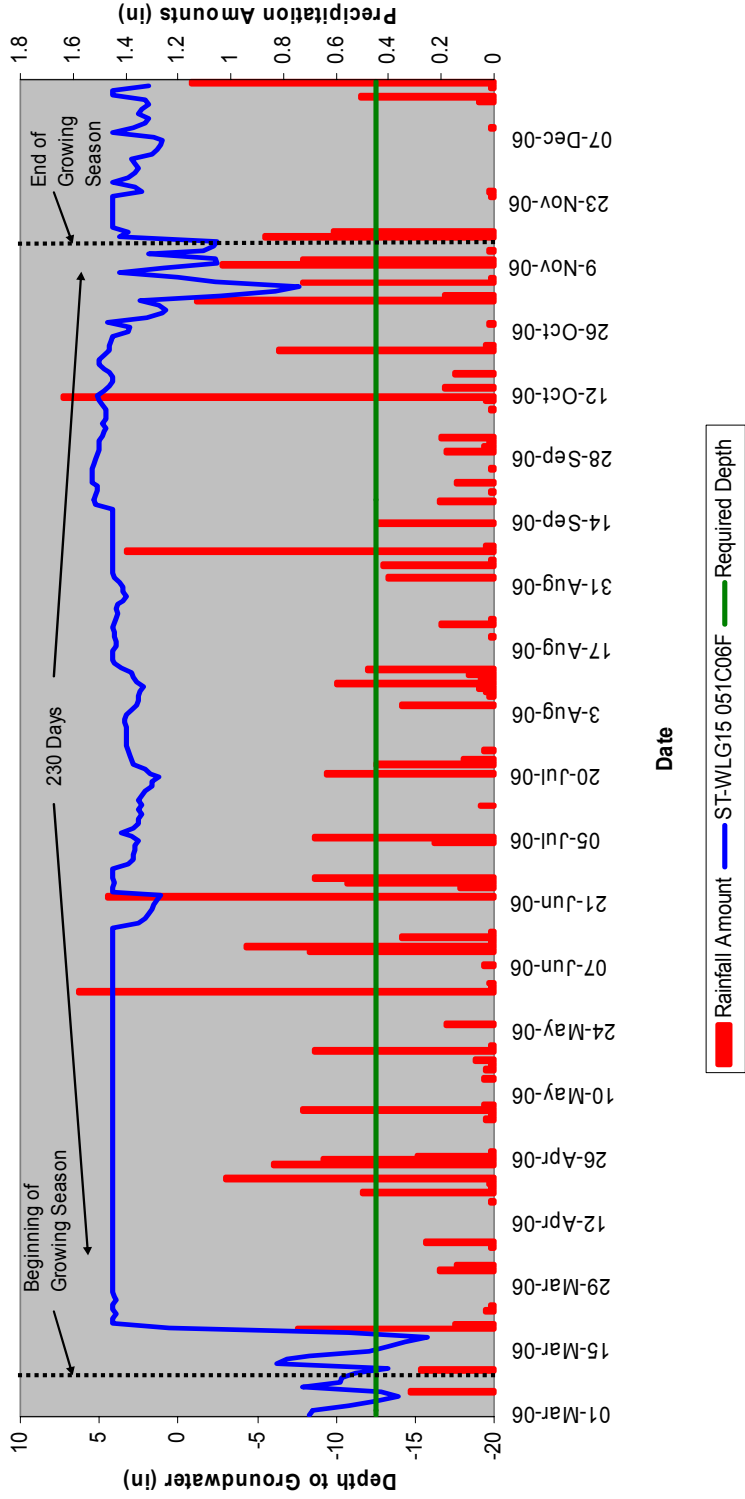
Shepherds Tree Stream and Wetland Restoration
Year 2 of 5


Date: March 2007
Project No.: 333



Appendix C2. Precipitation – Water Level Plots

**Shepherds Tree Hydrology Monitoring
Iredell County, North Carolina
Groundwater Gauge 15**



Prepared For:  Jordan Jones & Goulding

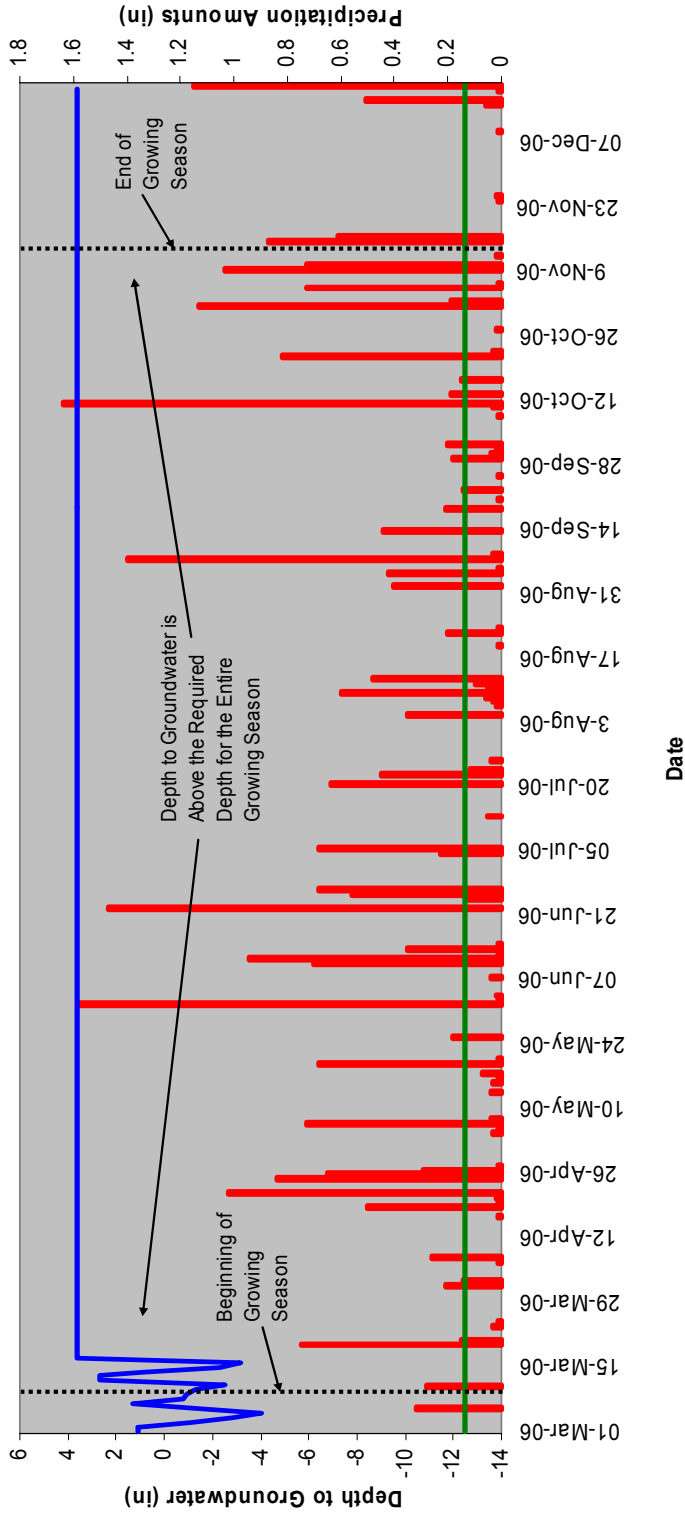
Shepherds Tree Stream and Wetland Restoration
Year 2 of 5

Date: March 2007
Project No.: 333



Appendix C2. Precipitation – Water Level Plots

Shepherds Tree Hydrology Monitoring
 Iredell County, North Carolina
 Groundwater Gauge 16



Prepared For:



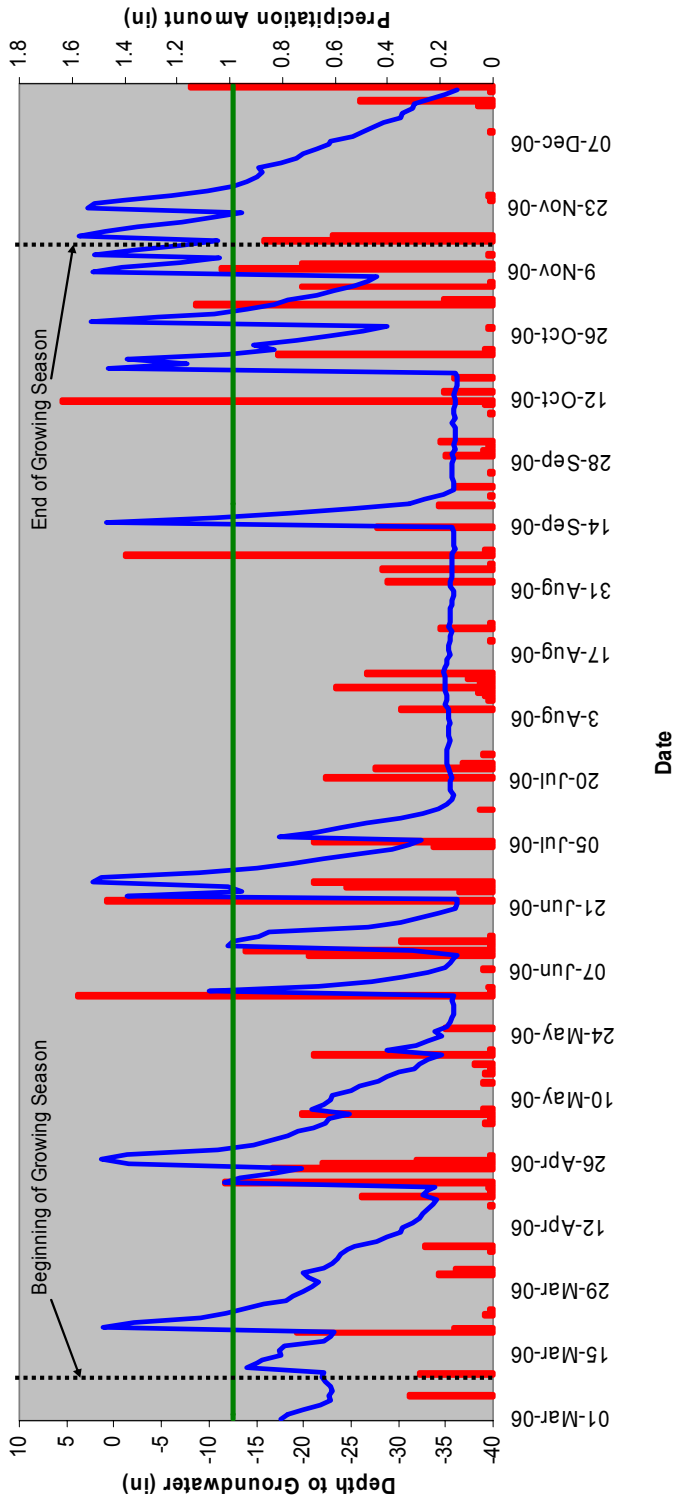
Shepherds Tree Stream and Wetland Restoration
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Date: March 2007
 Project No.: 333



Appendix C2. Precipitation – Water Level Plots

**Shepherds Tree Hydrology Monitoring
Iredell County, North Carolina
Groundwater Gauge 17**



■ Precipitation Amount (in)
 — ST-WLG17 051BDD1
 — Required Depth

Date: March 2007
 Project No.: 333

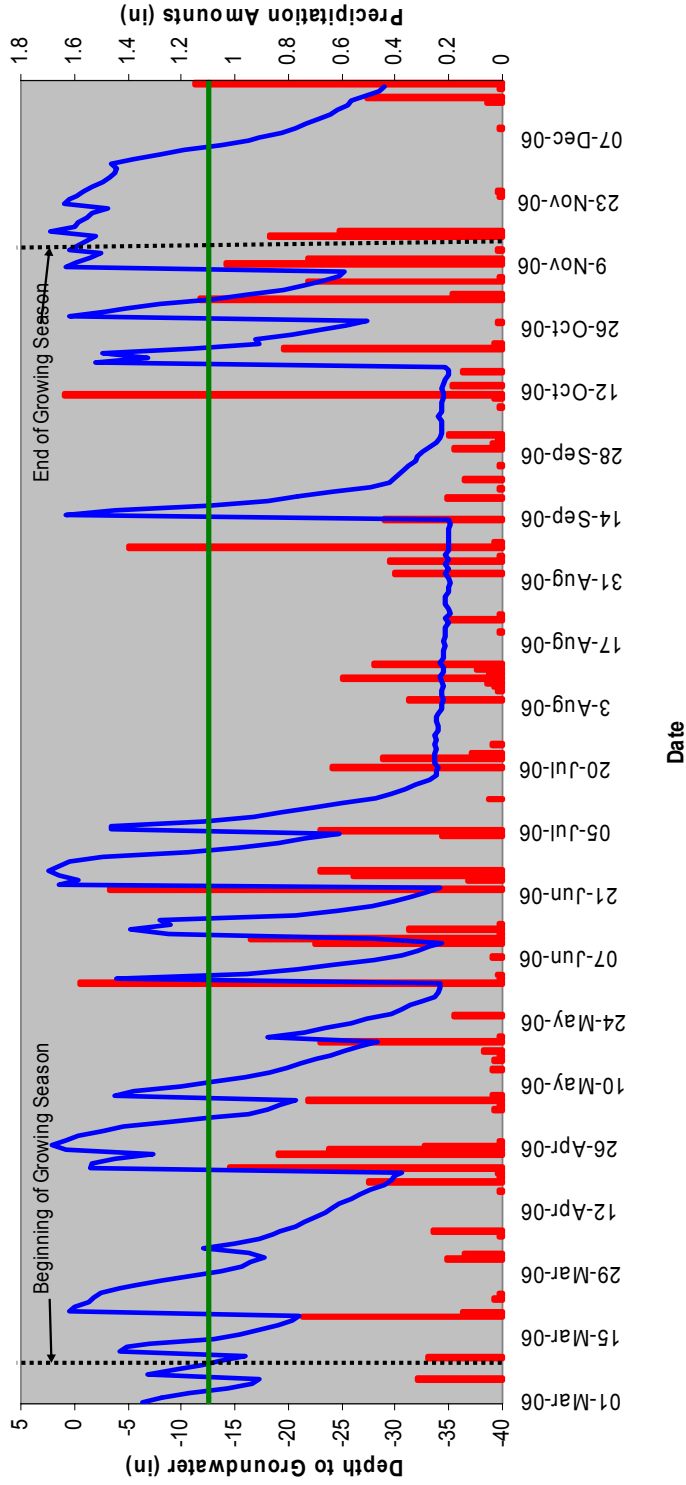


Shepherds Tree Stream and Wetland Restoration
 Year 2 of 5

Appendix C2. Precipitation – Water Level Plots

Prepared For:

Shepherds Tree Hydrology Monitoring
 Iredell county, North Carolina
 Groundwater Gauge 18



Legend:
 ■ Rainfall Amount
 — ST-WLG18 03173A9
 — Required Depth

Date: March 2007
 Project No.: 333

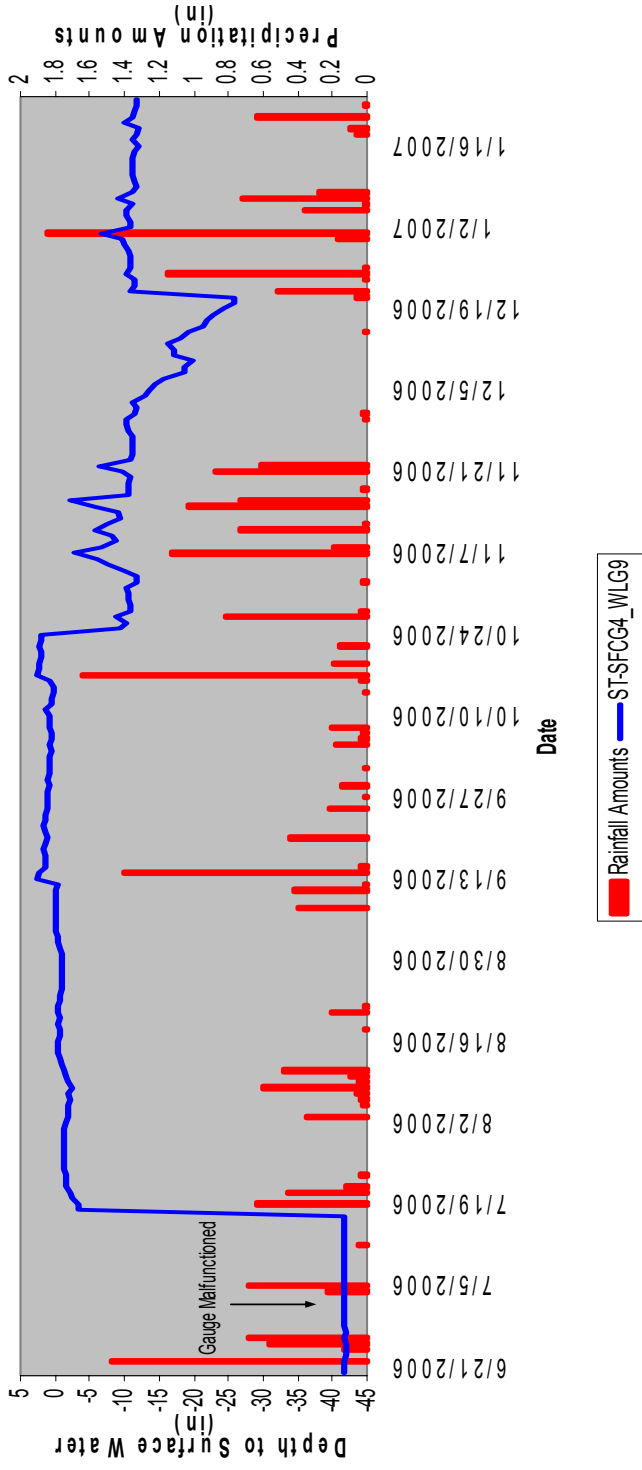



Shepherds Tree Stream and Wetland Restoration
 Year 2 of 5

Appendix C2. Precipitation – Water Level Plots

Prepared For: 

Shepherds Tree Hydrology Monitoring
 Iredell County, North Carolina
 Surface Gauge 4 - WLG9



Prepared For:  Jordan Jones & Goulding

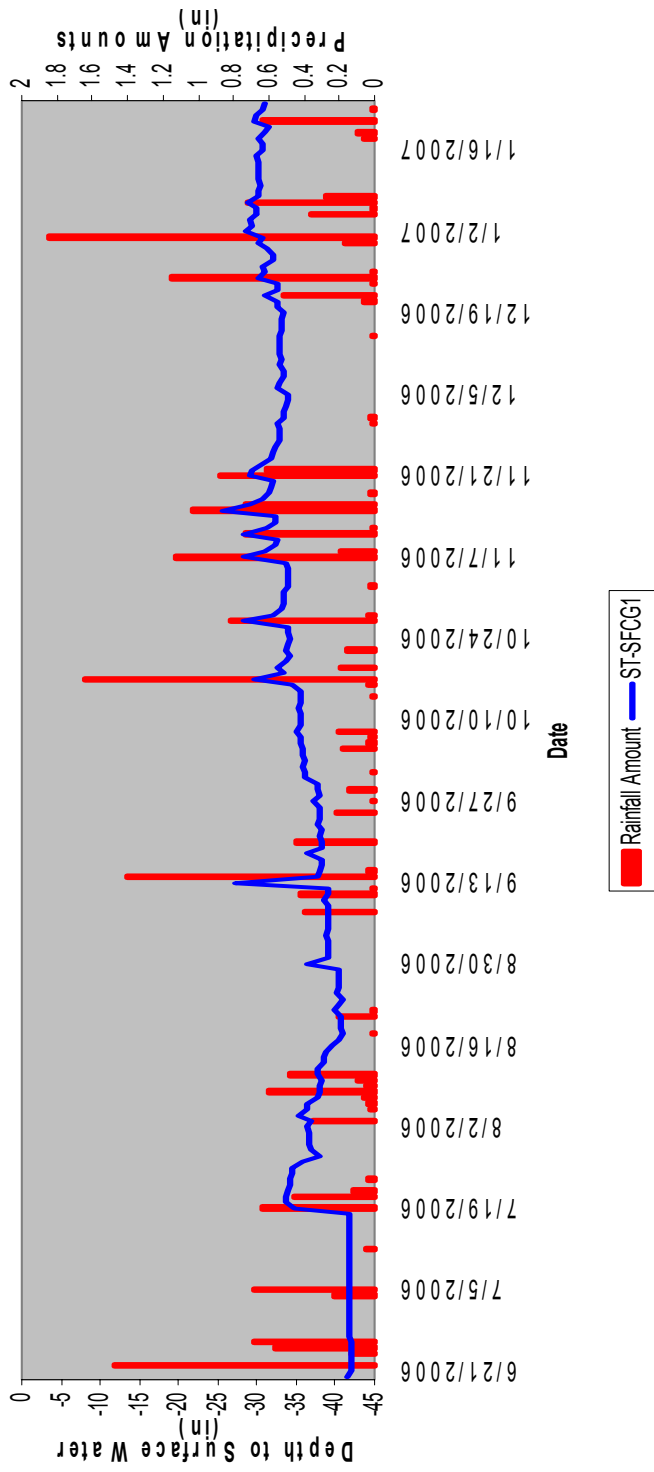
Shepherds Tree Stream and Wetland Restoration
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Date: March 2007
 Project No.: 333



Appendix C2. Precipitation – Water Level Plots

Shepherds Tree Hydrology Monitoring
 Iredell County, North Carolina
 Surface Gauge 1



Date: March 2007
 Project No.: 333

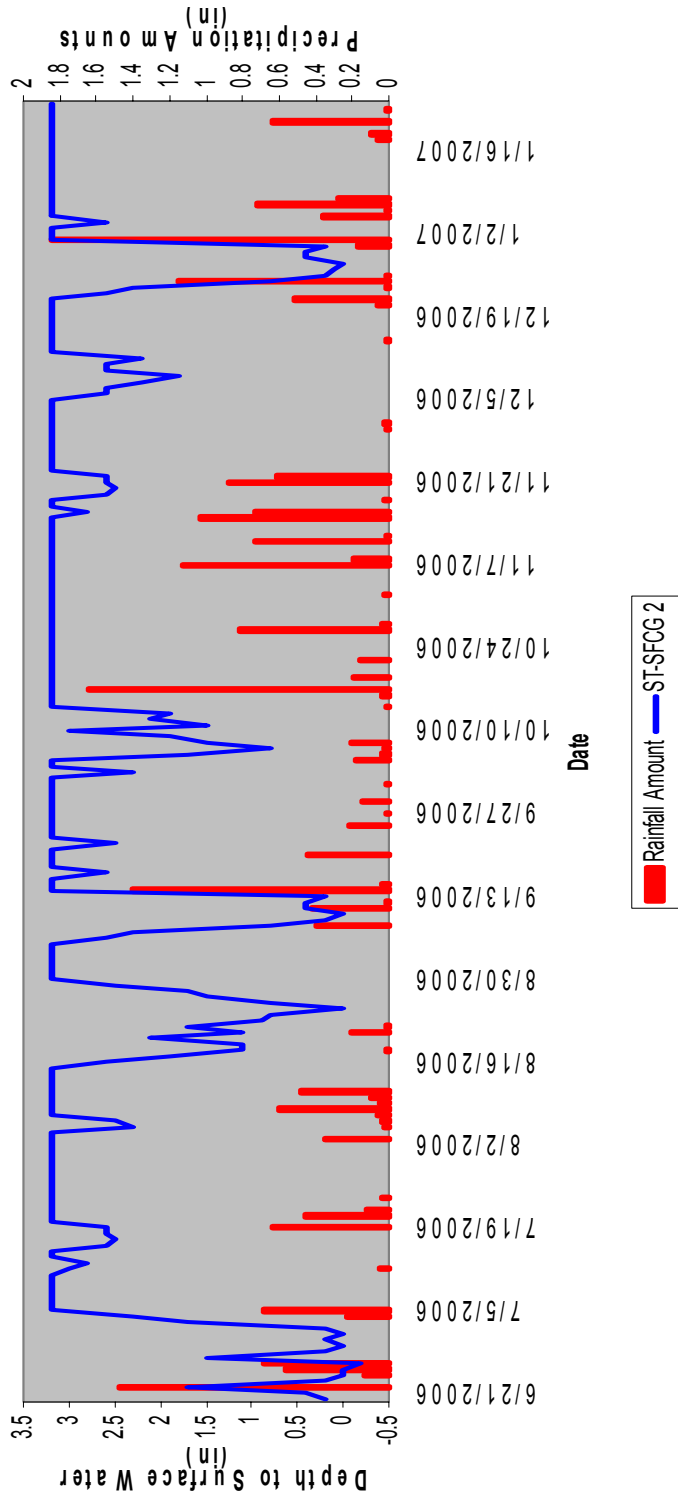



Shepherds Tree Stream and Wetland Restoration
 Year 2 of 5

Appendix C2. Precipitation – Water Level Plots

Prepared For:

**Shepherds Tree Hydrology Monitoring
Iredell County, North Carolina
Surface Gauge 2**



Prepared For:  Jordan Jones & Goulding

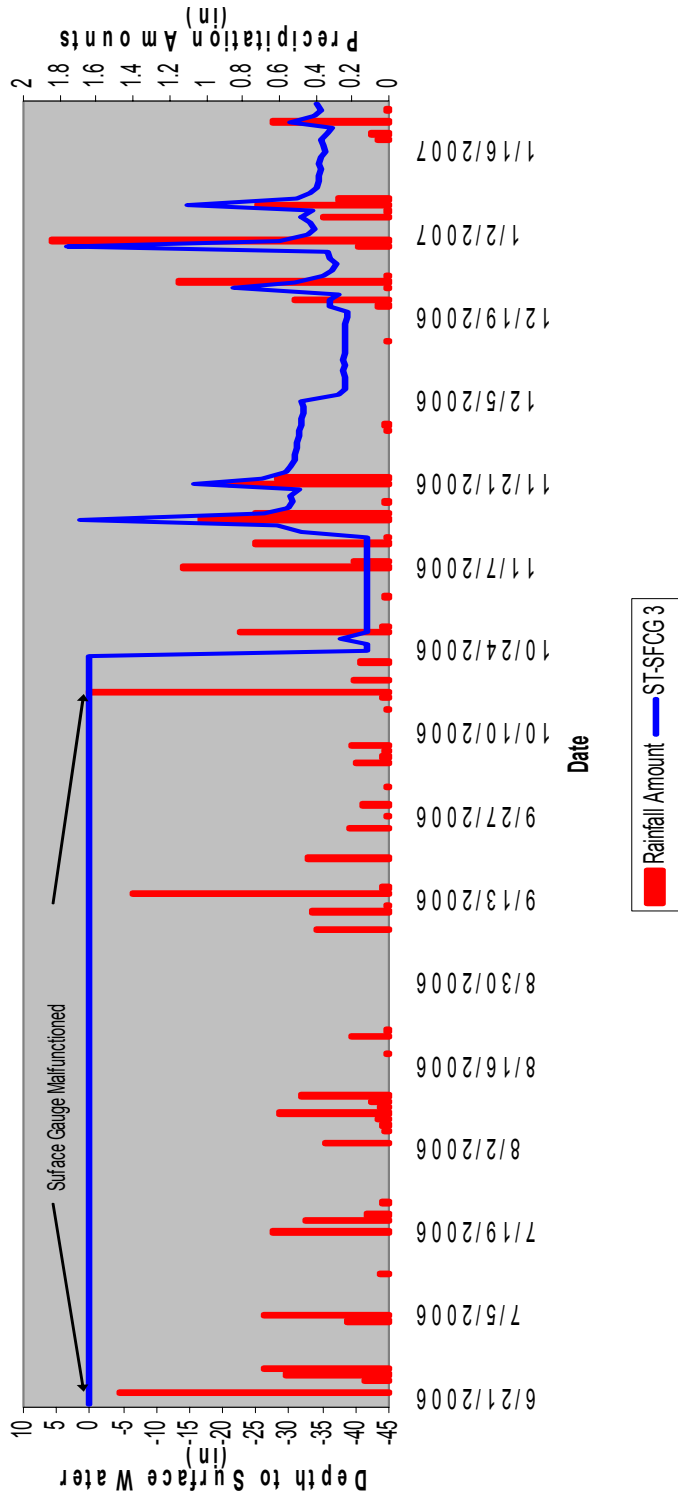
Shepherds Tree Stream and Wetland Restoration
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Appendix C2. Precipitation – Water Level Plots

Shepherds Tree Hydrology Monitoring
 Iredell County, North Carolina
 Surface Gauge 3



Date: March 2007
 Project No.: 333



Shepherds Tree Stream and Wetland Restoration
 Year 2 of 5

Appendix C2. Precipitation – Water Level Plots

Prepared For: