Alexander Mitigation Project
Greene County, North Carolina

Year 5 Monitoring Report

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November 2007

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1.0 SUMMARY

The design for the Alexander Wetland Mitigation Site involved the restoration of a non-riverine, wet hardwood forest system as described by Schafale and Weakley (1990). Construction was completed in March 2003 and the first annual monitoring report was completed in November of 2003. It is estimated that wetland hydrology was restored to 18.5 acres, with an additional 0.9 acres of wetland created and 2.15 acres of wetland area preserved. Monitoring of this restoration project has taken place during the five growing seasons subsequent to construction completion. This Annual Report summarizes the groundwater and vegetation monitoring activities performed on the Alexander Wetland Mitigation Site during the fifth year after construction. All data included in this report correspond to results obtained from monitoring during the year 2007 growing season.

This Annual Report presents data from three wetland monitoring stations as specified in the approved Mitigation Plan for the site. Two of these stations are equipped with manual groundwater gauges (A-M1 and A-M2) and the remaining station is equipped with an automated groundwater gauge (A-A1) and a manual calibration gauge. Each groundwater gauge location also serves as a base point from which photographs are taken and referenced. Hydrologically, data collected during the fifth post-construction growing season at the Alexander Wetland Mitigation Site indicates it was a successful one. All three on-site groundwater monitoring gauges documented that the site experienced consecutive-day soil saturation within 12 inches of ground surface for over 7 % of the growing season (greater than 17 successive days) despite extreme drought over most of the state during the later part of the summer. Based on these results it is concluded that the site has achieved the hydrologic success criteria specified in the Mitigation Plan for the site.

Part of the monitoring effort for this project includes observation of the relationship between local climatic conditions and site groundwater levels. Weather data from the Snow Hill Weather Station are used in conjunction with data collected from an on-site manual rain gauge to document precipitation.

Per the approved site Mitigation Plan, four vegetation plots, each 0.1 acre in size, are being used to document the survival success of the trees planted throughout the mitigation site. Survival of trees in each vegetation plot is used to estimate the average survival of all trees planted across the site. Photos from the vegetation plots are provided in **Appendix C**.

The vegetation monitoring documented survival rates between 320 and 480 stems per acre with an average of 375 stems per acre. All plots meet the final vegetation survival criteria of 260 live stems per acre at the end of Year 5 growing season. Numerous trees re-generated in the spring of 2006, after the field fire of 2005, and all vegetation monitoring plots meet the final success criteria. The overall survival rate is greater than 67 % based on the initial planting count of 562 stems per acre. The hummock dynamic present is consistent with the targeted wetland system. Based on these results it is concluded that the site has achieved the vegetative success criteria specified in the Mitigation Plan for the site.

2.0 INTRODUCTION

2.1 PROJECT

The project site is located in Greene County, North Carolina, approximately five miles east of the town of Snow Hill, off Suggs Road (SR 1490; **Figure 1** and **Figure 2**). It is within Middle Neuse watershed (hydrologic unit 03020203) in the Neuse River Basin. **Appendix A** contains the As-Built survey for the Alexander Site. The site is expected to provide 18.5 acres of wetland

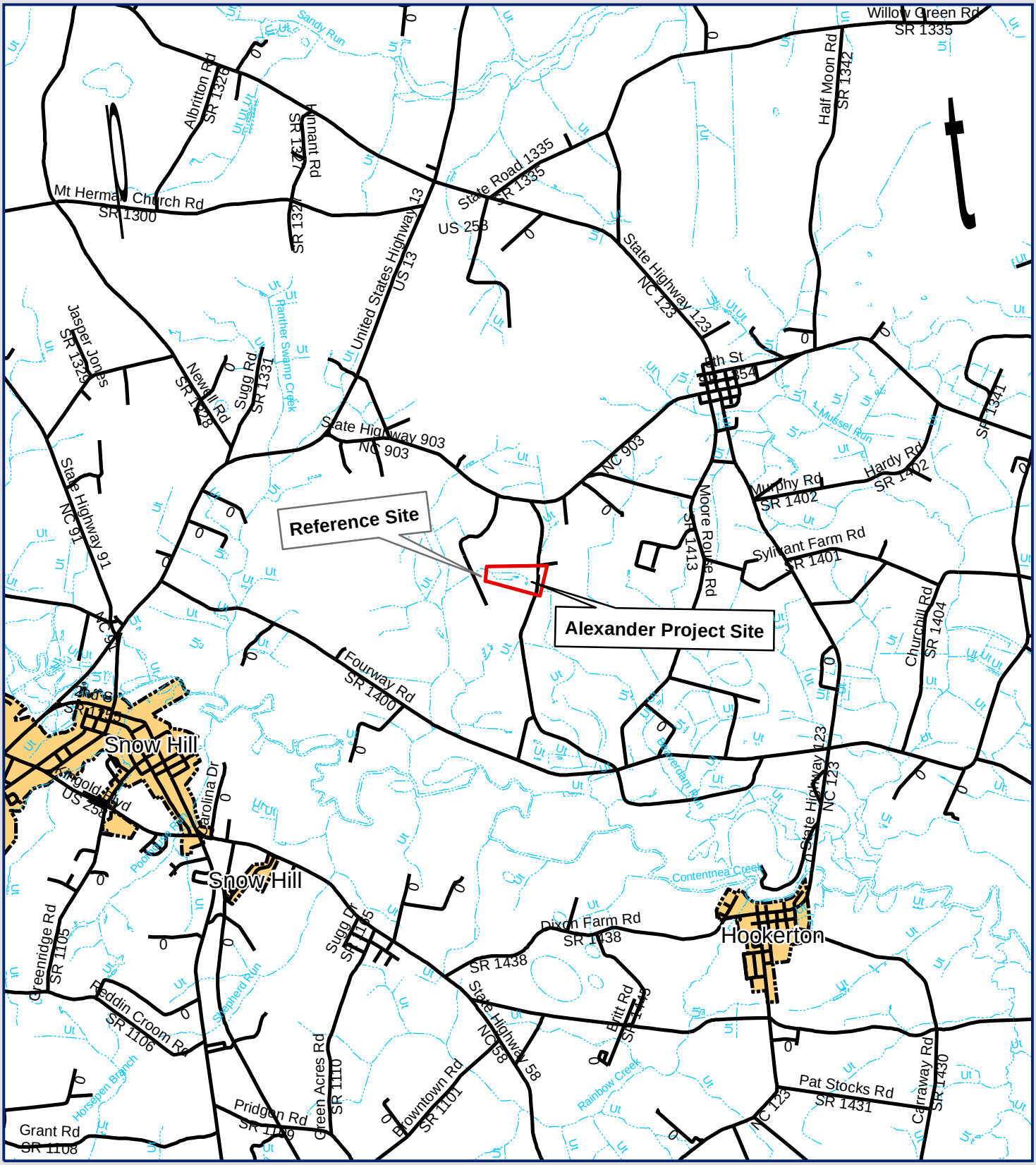


Figure 1.
Alexander Wetland MItigation Site
Vicinity Map
Greene County, NC

1 inch equals 5,280 feet

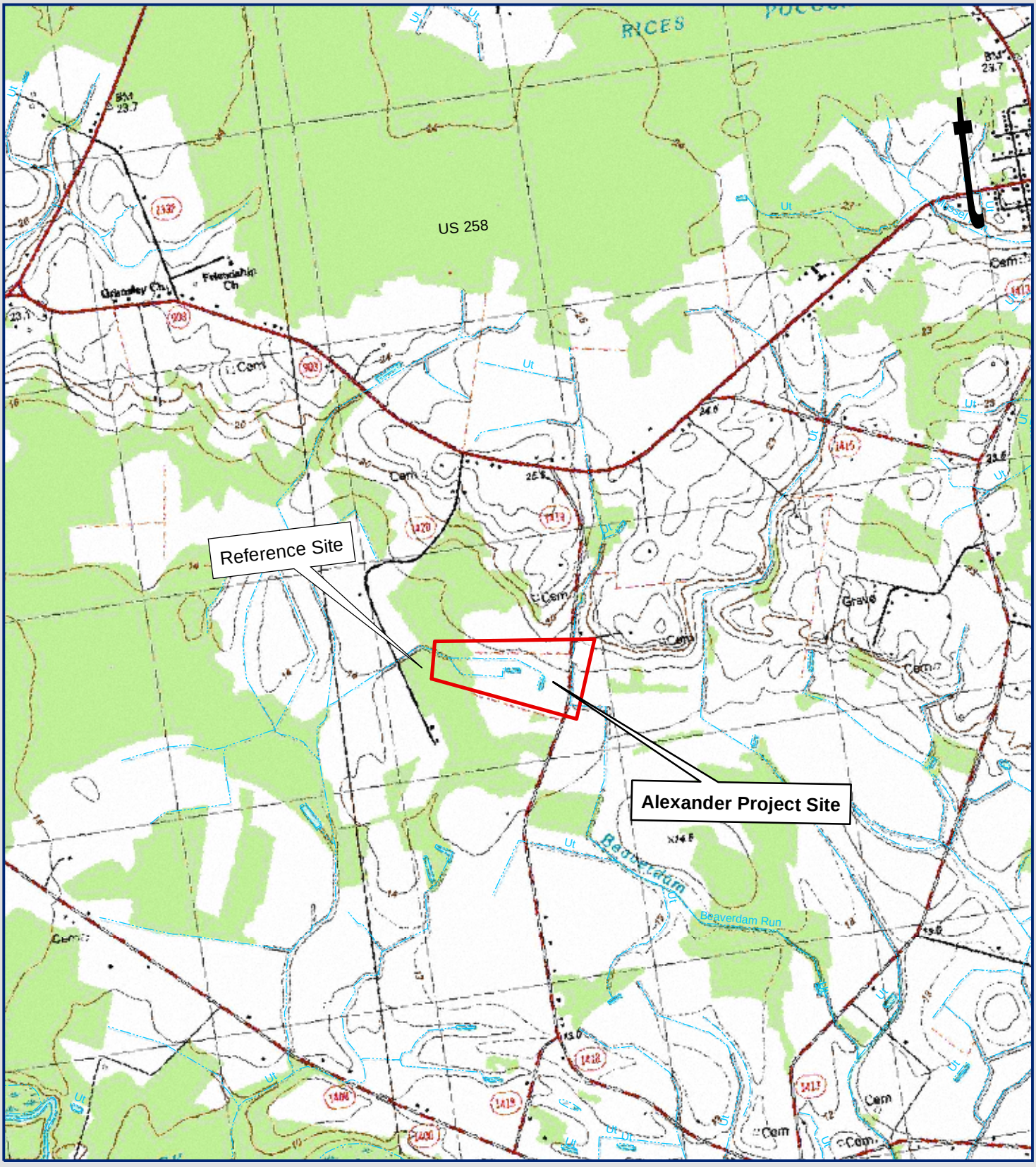


Figure 2.
Alexander Wetland MItigation Site
USGS Topographic Map
Greene County, NC

1 inch equals 2,000 feet

restoration, 0.9 acres of wetland creation and an additional 2.15 acres of wetlands preservation when the project is completed.

2.2 PROJECT PURPOSE

This project provides full-delivery compensatory mitigation for wetland impacts associated with North Carolina Department of Transportation (NCDOT) projects within the resident hydrologic unit. The Alexander Site was designed to restore a non-riverine, wet hardwood forest system as described by Schafale and Weakley (1990).

2.3 PROJECT HISTORY

Construction, planting, and installation of groundwater and rain gauge monitoring equipment were all completed in March 2003 (**Table 1**). The Mitigation Plan predicted that approximately 18.5 acres of wetland restoration and 2.4 acres of wetland creation were available on the site. Post-construction survey verified restoration practices were implemented on an area covering 18.5 acres, and showed the amount of created wetlands reached only 0.9 acres. Wet conditions during construction made it difficult to move fill material from one area of the site to another. For this reason, a non-hydric soil area at the lower southwestern corner of the site that required placement of hydric soils for wetland creation was left unconverted. This reduced the total created wetland area to only 0.9 acres instead of the targeted 2.4 acres. To compensate for this, an additional 2.15 acres of wetlands existing on the western side of the mitigation site were preserved through the establishment of a conservation easement surrounding the entire mitigation site.

Table 1. Project Activity and Reporting History

Date	Activity
May 2000	Pre-Restoration Monitoring Gauges Installed
March 2003	Approved Mitigation Plan Construction
March 2003	Began
March 2003	Construction Completed
March 2003	Post-Construction Monitoring Plots Established
March 2003	Planting Completed
April 2003	As-Built Report Submitted
November 2003	1st Annual Monitoring Report
November 2004	2nd Annual Monitoring Report
November 2005	3rd Annual Monitoring Report
November 2006	4th Annual Monitoring Report
November 2007	5th Annual Monitoring Report

3.0 HYDROLOGY

3.1 SUCCESS CRITERIA

The hydrologic success criteria for this site requires the groundwater table remain within 12 inches of the soil surface for at least 7 % of the growing season. The National Weather Service Wetlands Determination Tables (WETS) defines the growing season for Greene County as that 242-day period extending from March 16 to November 13 of each year.

The Mitigation Plan specifies that groundwater data are to be collected from manual and automated groundwater gauges. This plan further specifies that successful hydrologic data must demonstrate wetland conditions are present in normal or dryer than normal conditions. Monitoring data collected from the reference wetland system identified in the Mitigation Plan are included here to demonstrate the positive correlation between the sites's restored hydrology and the natural hydrology of the target system.

3.2 DESCRIPTION OF HYDROLOGIC MONITORING EFFORTS

Monitoring stations were established across the site to document the restoration of wetland hydrology. Two manual groundwater gauges (A-M1 and A-M2), one automated Infinities® groundwater gauge (A-A1), and one rain gauge were installed on-site to monitor hydrology (**Figure 3**). All manual and automated groundwater gauges were installed to a depth of at least 32 inches below the ground surface. The monitoring protocol for the site specifies that automated monitoring stations must be downloaded and checked for malfunctions on a monthly basis. During monthly site visits, manual groundwater gauges are read and rainfall totals are collected from the on-site rain gauge. Data from monitoring gauges are presented in **Appendix B**. Monitoring data collected to date indicate that a range of wetland hydrology conditions have been successfully restored to the Alexander Site.

Automated Gauges
Automatic groundwater gauges record water table elevations twice daily at 08:00 and 20:00. Infinities gauges employ pressure sensors that record water elevation above the bottom of the sensor (with atmospheric pressure compensation). Immediately adjacent to each automatic gauge is a manual calibration gauge. The calibration water table depth is recorded at monthly downloads. To determine wetland hydroperiods the automatically recorded data are compared to the calibration data to determine a standard correction factor between the calibration gauge and the automatic gauge for each location. The standard correction factor is applied to correct daily readings. The corrected daily readings are then used to determine wetland hydroperiods.

Manual Gauges
Water table depths are recorded monthly in the two manual groundwater gauges. Each manual gauge is correlated to an automatic gauge based on proximity, landscape position, and the relationship of their groundwater depth readings (i.e. if their readings are separated by a consistent value). To calculate wetland hydroperiods, interpolations are made between monthly readings by correlating twice daily readings from an automatic gauge. A correction factor is calculated for each monthly manual gauge reading. A daily rate of change between monthly correction factors is calculated to determine the daily correction factor. The daily correction factor is then applied to the automatic gauge readings to calculate an estimated daily water table depth for the manual gauge. These interpolated daily water levels are used to determine wetland hydroperiods for the manual gauges.

Data Interpretation
Wetland hydroperiods are calculated from twice daily water table depth recordings. A hydroperiod is calculated if the water table is equal to or less than 12 inches below ground surface for at least 24 hours. If a gauge falls below 12 inches for two consecutive readings (24 hours) then the hydroperiod ends at the last reading within 12 inches. If a gauge falls below -12 inches for only one reading then maintains a reading above -12 inches for a minimum of 24 hours then the hydroperiod is calculated continuously. This methodology accounts for minor technical malfunctions occasionally experienced by the automatic gauges.

WETLAND HYDROPERIOD

- > 7 %
- 5–7 %
- < 5 %

POWER POLE
N 5047.1502
E 5024.4340

TBM
N 5035.4492
E 4972.4261
EL 500

WIRE FENCE RUNS ALONG HEDGE ROW

AUTO WELL 1
PHOTO POINT

VEGETATION PLOT #4

VEGETATION PLOT #3

VEGETATION PLOT #2

VEGETATION PLOT #1

MANUAL WELL 2 AND
PHOTO POINT

MANUAL WELL 1 AND
PHOTO POINT

EXISTING
WETLAND
AREA

REFERENCE WELL

SR 1419 SUGGS ROAD 60' PUBLIC RIGHT-OF-WAY

SITE CONTROL
N 4183.2588
E 4694.633

SITE CONTROL
N 4161.4178
E 4654.986

Figure 3

Alexander

60 30 0 60 120

SCALE (FT)

3.3 RESULTS OF HYDROLOGY MONITORING

The following hydroperiod statistics were calculated for each monitoring station during the growing season: 1) most consecutive days that the water table was within twelve inches of the soil surface; 2) cumulative number of days that the water table was within twelve inches of the soil surface; and 3) number of times that the water table rose to within twelve inches of the soil surface. The results of these calculations are presented in **Table 2**.

The site was designed to function with rainfall as its primary hydrologic influence. Groundwater levels are closely related to local climatic conditions and monitoring shows the influence of rainfall on-site hydrology. The reference site is adjacent to the restoration site and is subject to the same climatic conditions. More detailed information on precipitation data is included in Section 3.3.2 of this report. **Appendix B** contains daily groundwater gauge data.

Table 2. Hydrologic Monitoring Results

2007 Max Hydroperiod (Growing Season 16-Mar through 13- Nov, 242 days)					
Gauge	Consecutive		Cumulative		Occurrences
	Days	Percent of Growing Season	Days	Percent of Growing Season	
AW1	16	7	37	15	6
MW1	19	8	44	18	4
MW2	18	7	34	14	3
REFAW1	20	8	42	17	6

All three on-site gauges meet the stated criteria of 7 % of the growing season. Because of drought conditions during the summer of 2007 the successful occurrences are only within the early portion of the growing season. The longest cumulative saturation during 2007 was 19 days for the mitigation site and 20 days for the reference well (REFMW1) compared to 27 days and 32 days recorded in 2006. The reference gauge results were very similar to the project site results again in 2007.

3.3.1 Reference Data

The approved Mitigation Plan states that if the rainfall data for any given year during the monitoring period is not normal the reference wetland data can be accessed to determine if there is a positive correlation between the performance of the restoration site and the natural hydrology of the reference site.

Automated gauge data during the 2007 monitoring season show the similarity of the natural hydrology of the reference site (REFAW1) to the restored hydrology across the Alexander Mitigation Site (**Figure 4**).

3.3.2 Climate Data

Historical precipitation for Greene County is compared to 2007 monthly rainfall totals. Data were collected between 1961 and 1990 for the Greene County area (**Table 4** and **Figure 5**). This local data is provided by the National Weather Service (NWS) Cooperative Observer Program (COOP), a national weather and climate observing network. Observed data presented were

collected approximately 5 miles west of the project site from an automated weather station in Snow Hill, Greene County (Station: 318060 - Snow Hill 2 SW). Monthly rainfall for October through and December 2007 were not available at the time of this report preparation.

2007 rain data collected from the automated gauge at Snow Hill show below normal rainfall for January through March, May, and August. Rainfall was within normal limits in June and July. April rainfall exceeded normal limits due to a tropical storm. **Appendix B** contains on-site rain gauge data and Snow Hill daily rain gauge data.

Table 4. Greene County Normal Rainfall and 2007 Year Observed Rainfall (Inches)

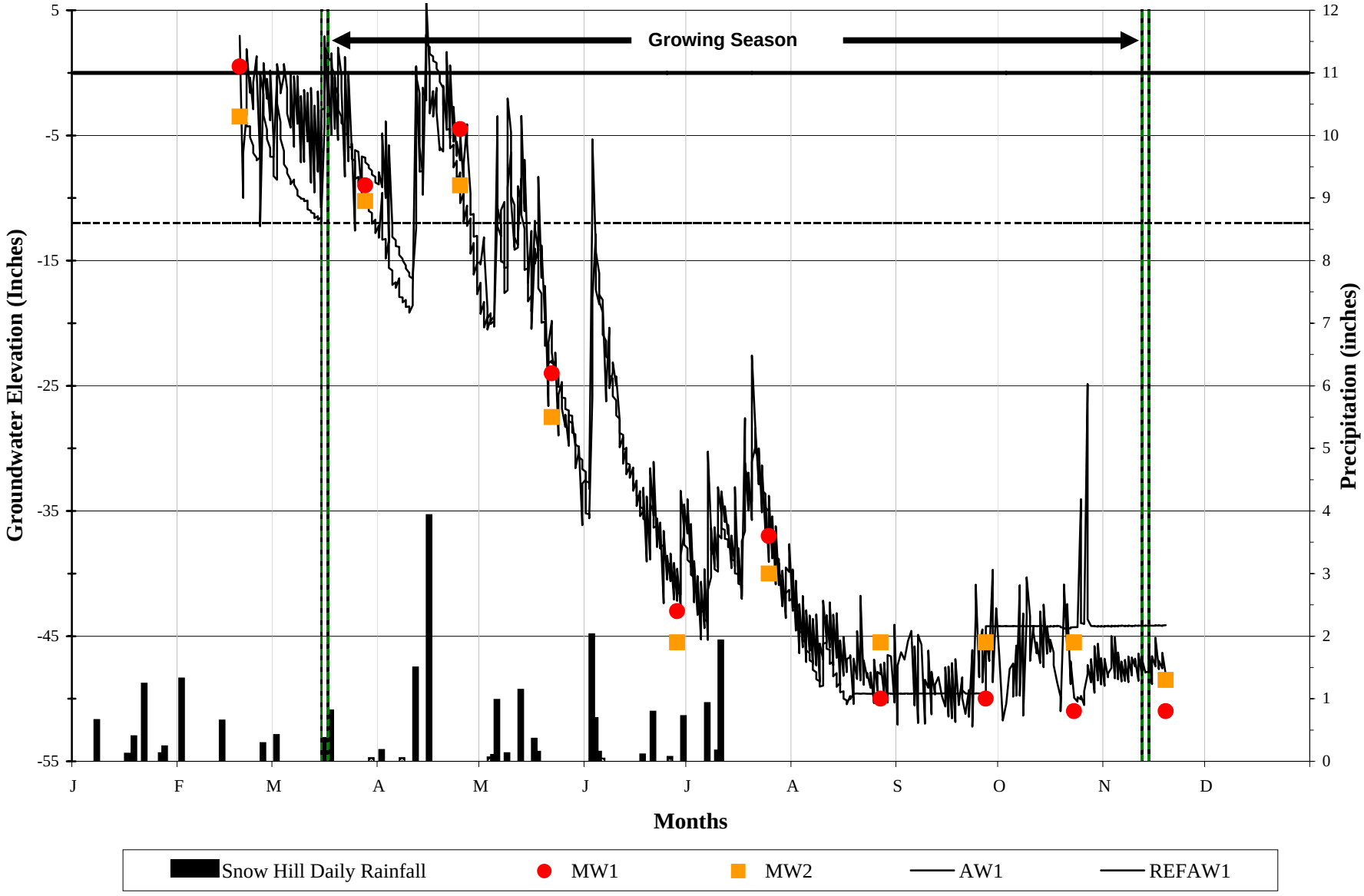
Month	Average	Normal Limits		Snow Hill Precipitation	On-Site Precipitation	Accumulated Average Rainfall Deficit
		30 Percent	70 Percent			
January	4.44	3.66	5.18	2.69*	---	-1.75
February	3.42	2.28	3.97	2.17	7.47	-3.00
March	4.26	3.18	5.07	1.53	1.79	-5.73
April	3.44	2.12	4.40	5.54	4.40	-3.63
May	4.10	2.98	4.89	2.71	2.40	-5.02
June	4.64	3.20	5.50	4.36	1.95	-5.30
July	5.88	4.33	7.43	4.34	5.35	-6.48
August	5.62	3.83	6.99	2.46	2.21	-10.00
September	5.45	2.88	6.53	2.11	2.30	-13.34
October	3.51	1.81	4.57	0.02	0.03	-16.83
November	2.85	2.08	3.55	---	3.13	---
December	3.56	2.33	4.41	---	---	---
Total	51.17	34.68	62.49	25.59	31.03	---

*Only 90.3% of the data for January was available for Snow Hill.

The entire state of North Carolina experienced increasingly severe drought conditions throughout 2007, with some areas experiencing the lowest average stream flows on record. The first signs of drought began in February in the western part of the state. By early spring, abnormally dry conditions had spread across the state, and the western edge of the state began to see "moderate" drought conditions. From late spring through the summer, conditions steadily worsened. By August, 98 % of North Carolina's land area was designated as being in either "severe", "extreme", or "exceptional" drought. Additionally, lowest-ever average stream flows were recorded at 13 monitoring stations in August, including 9 in central North Carolina, 2 in the mountains, and 2 on the coastal plain. Nearly the entire state was categorized as experiencing "extreme" drought in September, with the southwest portion of the state categorized as experiencing "exceptional" drought. **Figure 6** depicts the increasing severity of the drought throughout the year.

The Alexander restoration site experienced drought conditions consistent with state-wide trends. The Snow Hill monitoring station, near the Alexander site, received less-than-normal precipitation from January through March (**Figure 6** and **Table 4**). In April, precipitation levels reached 5.54 inches, which is above the normal precipitation range for this site and time. Rainfall levels fluctuated around the lower limit of the normal range through most of the summer, and then dropped to 2.46 inches in August, 3.16 inches below the monthly average. The accumulated rainfall deficit - the difference between the long-term average and the observed monthly

Figure 4. 2007 Alexander Groundwater Gauges



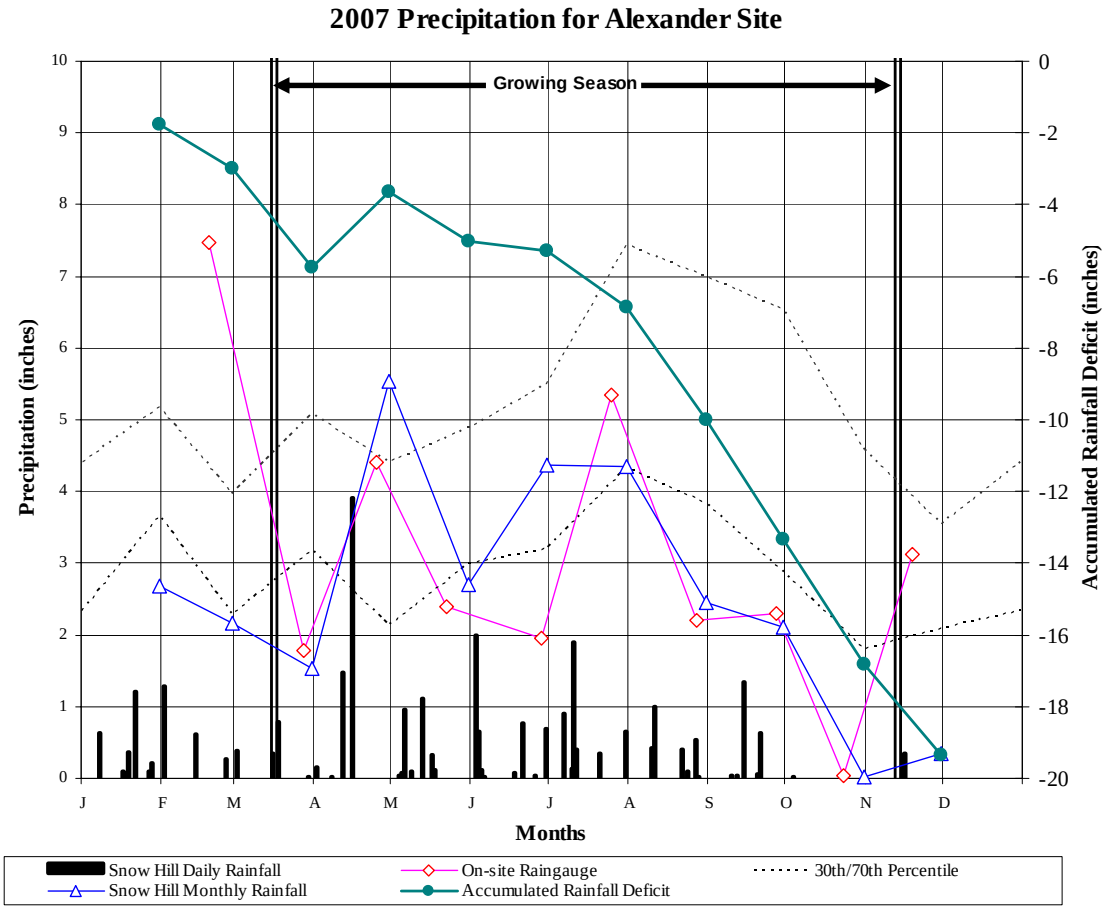


Figure 5. Year 5 Precipitation Data

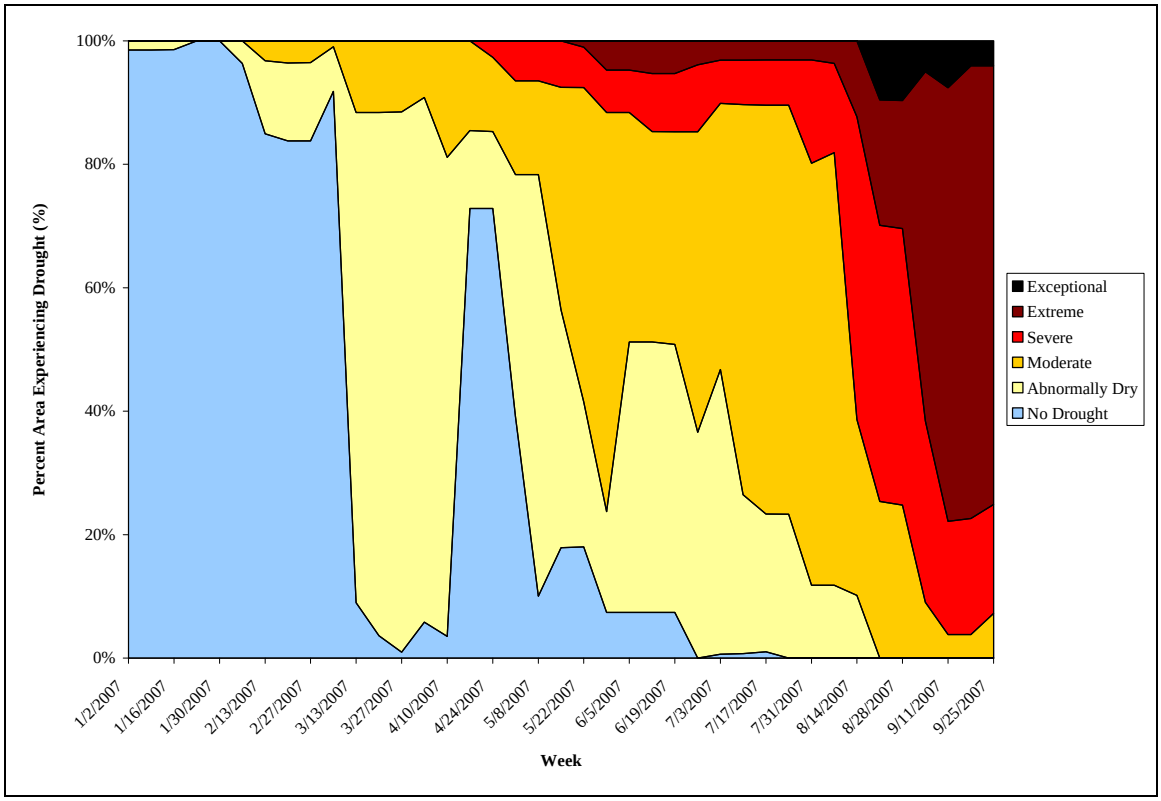


Figure 6. 2007 Drought Conditions Across North Carolina

precipitation levels, aggregated monthly - began at -1.75 inches in January, and fell to -5.73 inches in March (**Figure 5** and **Table 4**). The deficit began to recover in April, and then fell steadily through the summer, dropping to -16.83 inches by the end of October. Persistent and worsening drought conditions severely impacted the wetland hydroperiods at the Alexander restoration site.

3.4 HYDROLOGIC CONCLUSIONS

Data collected from all the groundwater monitoring gauges on the Alexander Mitigation Site indicate that hydrologic success criteria were met for all three monitoring gauges during the 2007 growing season. The cumulative saturated conditions ranged from 14 % to 18 % of the growing season. These data, together with the corresponding climatic data for the area, demonstrate that the site was able to meet the hydrologic success criteria for the 2007 growing season despite the drought conditions.

Table 5 presents the monitoring data for the Alexander Mitigation Site over the five-year monitoring period. Based on this data, it can be concluded that the site has achieved the success criteria specified in the Mitigation Plan, and that future hydrologic monitoring is not required.

Table 5. Five-Year Hydrologic Monitoring Data Summary

Well	Most Consecutive Days Meeting Criteria					Cumulative Days Meeting Criteria				
	Monitoring Year					Monitoring Year				
	2003	2004	2005	2006	2007	2003	2004	2005	2006	2007
AW1	11%	14%	18%	11%	7%	63%	44%	29%	61%	15%
MW1	11%	14%	18%	10%	8%	63%	44%	29%	(a)	18%
MW2	11%	14%	18%	9%	7%	63%	44%	29%	(a)	14%
Ref AW1	(a)	(a)	21%	13%	8%	(a)	(a)	34%	66%	17%

(a) Data not available

4.0 VEGETATION

4.1 SUCCESS CRITERIA

The interim measure of vegetative success for the Alexander Mitigation Site was the survival of at least 320 planted trees per acre at the end of year 3 of the monitoring period. The final vegetative success criterion is the survival of 260 five-year old planted trees per acre at the end of year 5 of the monitoring period. Up to 20% of the site species composition may be comprised of invaders. Remedial action may be required should these (i.e. loblolly pine (*Pinus strobes*), red maple (*Acer rubrum*), sweet gum (*Liquidambar styraciflua*,) etc.) present a problem and exceed 20% composition.

4.2 DESCRIPTION OF SPECIES AND MONITORING PROTOCOL

Table 6 details the tree species planted in the Wetland Restoration Area:

Table 6. Planted Tree Species

Common Name	Scientific Name	FAC Status
Green Ash	*Fraxinus pennsylvanica*	FACW
Swamp Tupelo	*Nyssa biflora*	OBL
Blackgum	*Nyssa sylvatica*	FAC
Laurel Oak	*Quercus laurifolia*	FACW
Swamp Chestnut Oak	*Quercus michauxii*	FACW-
Coastal Willow Oak	*Quercus phellos*	FACW-
Shumard Oak	*Quercus shumardii*	FACW-
Bald Cypress	*Taxodium distichum*	OBL

All of the planted stems inside the monitoring plots were flagged to mark them as the planted stems (vs. any colonizers) and to help in locating them in the future. Each stem was then tagged with a permanent, numbered, aluminum tag. During the 2004 growing season, a 3-foot section of half-inch PVC was installed adjacent to the planted trees. The PVC pipe was reinstalled in plot 1 and plot 2 in the fall of 2005 due to the damage incurred during a fire earlier in the year.

4.3 RESULTS OF VEGETATION MONITORING

The following tables present stem counts for each of the monitoring plots. Trees are flagged regularly before the flags degrade. Flags are utilized because they will not interfere with the growth of the tree. Volunteers are also flagged during this process.

Volunteer species were monitored throughout the five-year monitoring period. Species found within the Wetland Restoration Area are common native species (**Table 8**). The current volunteer count on the Alexander site is minimal. A few volunteers were seen in the vegetation monitoring plots, and they did not need to be counted toward the final stem count as more than the required amount of planted stems survived throughout the five-year monitoring period.

Table 7. 2007 Vegetation Monitoring Plot Species Composition

Plot	Green Ash	Swamp Tupelo	Blackgum	Laurel Oak	Swamp Chestnut Oak	Coastal Willow Oak	Shumard Oak	Bald Cypress	Total	Stem/acre
A1	13	1	3	0	0	0	0	15	32	320
A2	12	2	7	2	4	2	2	4	35	350
A3	6	1	4	1	10	4	6	3	35	350
A4	1	0	4	2	10	0	31	0	48	480

Average Stems/Acre: 375
Range of Stems/Acre: 320-480

Table 8. Volunteer Tree Species

Common Name	Species	FAC Status
Sweetgum	*Liquidambar styraciflua*	FAC+
Sycamore	*Platanus occidentalis*	FACW-
Red Maple	*Acer rubrum*	FAC
Hickory	*Carya* spp. (1)	(2)
Ash	*Fraxinus* spp. (1)	(2)

(1) Sapling; positive ID not possible
(2) Unknown until completely identified

4.4 GENERAL VEGETATION OBSERVATIONS AND CONCLUSIONS

After construction of the mitigation site, a permanent groundcover seed mixture of Virginia wild rye (*Elymus virginicus*), switch grass (*Panicum virgatum*), and fox sedge (*Carex vulpinoidea*) was broadcast on the site at a rate of 10 pounds per acre. These planted groundcover species, along with volunteering panic grass (*Dicanthelium* spp), rice cut grass (*Leersia* spp) and a bent grass (*Agrostis* spp), pose no threat to the survival or health of the planted or naturally occurring hydrophytic vegetation. Hydrophytic herbaceous vegetation, including rush (*Juncus effusus*), sedge (*Carex* sp. & *Cyperus* sp.), tear-thumb (*Polygonum sagittatum*), cat-tail (*Typha latifolia*), giant cane (*Arundinaria gigantea*), and spike-rush (*Eleocharis obtusa*), has widely volunteered across the site, and thickly volunteered in areas of inundation. The presence of these herbaceous wetland plants helps to confirm the presence of wetland hydrology on the site.

There are a few drier weedy species occurring on the perimeter of the site, though none seem to be posing any problems for the woody or herbaceous hydrophytic vegetation. The majority of the weedy species are annuals found on isolated hummocks and pose very little threat to survivability on the site. Weedy vegetation includes ragweed (*Ambrosia artemisiifolia*) and sedge (*Cyperus* spp.). The hummock dynamic present is consistent with the targeted wetland system.

4.5 VEGETATION CONCLUSIONS

The 2007 vegetation monitoring shows a tree density greater than the required 260 stems per acre at the end of the 5 year monitoring period for all vegetation monitoring plots (**Figure 9**). This site meets the vegetation success criteria at the end of Year 5 as specified in the Mitigation Plan for the site.

Table 9. Vegetation Monitoring Data Years 1 through 5.

	Stems Per Acre					
Plot	**Planted**	**2003**	**2004**	**2005**	**2006**	**2007**
A1	530	300	560	280	320	320
A2	600	510	450	350	360	350
A3	530	440	360	350	360	350
A4	590	520	520	510	490	480

5.0 OVERALL CONCLUSIONS AND RECOMMENDATIONS

5.1 HYDROLOGIC SUCCESS CRITERIA

Data collected from all the groundwater monitoring gauges on the Alexander Mitigation Site indicate that hydrologic success criteria were met for all three monitoring gauges during all five growing seasons. It can be concluded that the site has achieved the success criteria specified in the Mitigation Plan for the site, and that future hydrologic monitoring is not required.

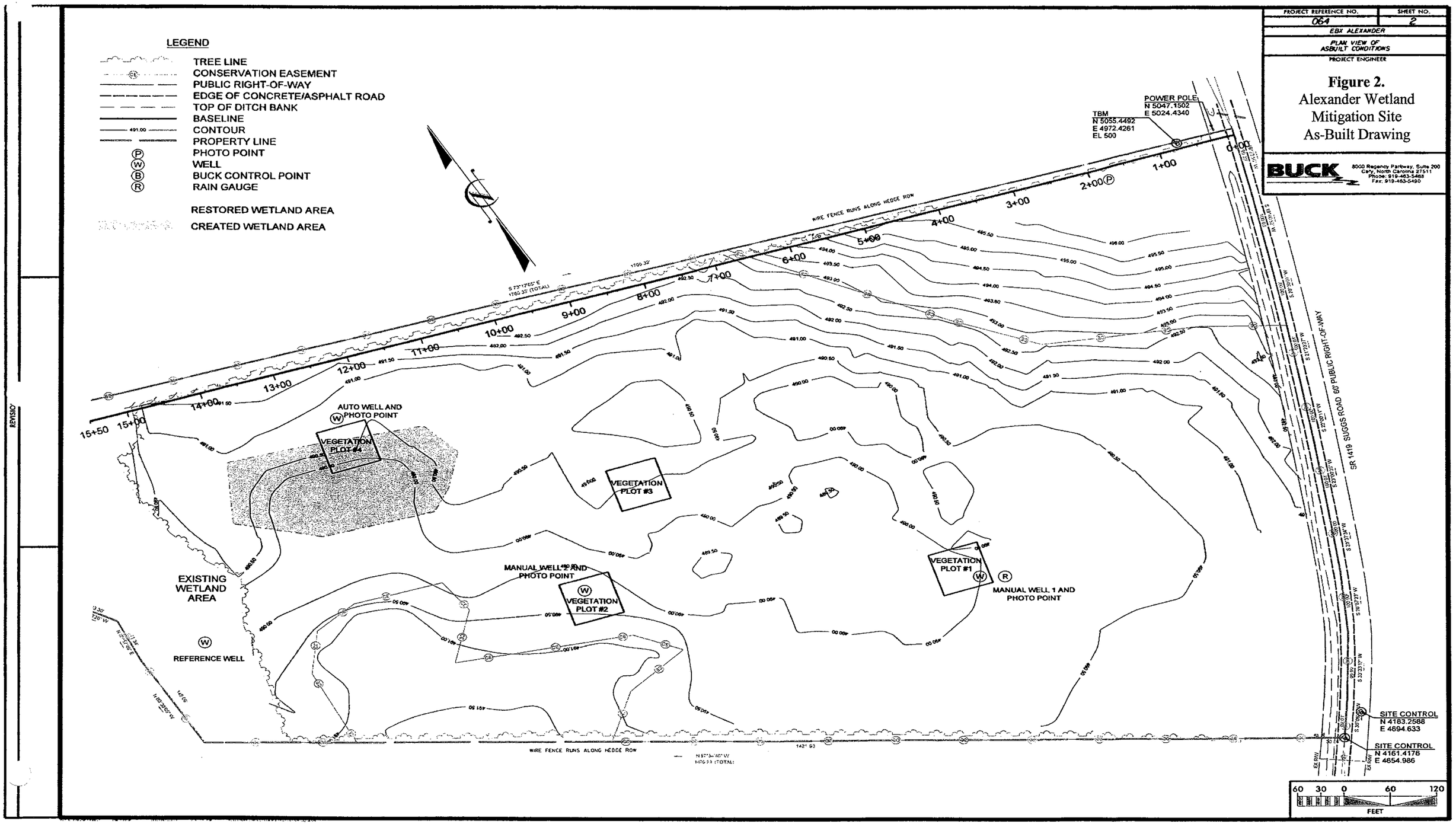
5.2 VEGETATIVE SUCCESS CRITERIA

Vegetation monitoring efforts have documented the average number of stems per acre on site to be 375 at the end of Year 5. This is an overall survival rate of greater than 67% based on the initial planting count of 562 stems per acre and well above the vegetative success criteria. Based on these results, it is concluded that the site has achieved the success criteria for vegetation as specified in the Mitigation Plan for the site, and that future vegetative monitoring is not required.

APPENDIX A

As-Built Survey

Figure 2. Alexander Wetland Mitigation Site As-Built Drawing.



APPENDIX B

Hydrology Data

Alexander Mitigation Site
DRAFT - Annual Monitoring Report for 2007 (Year 5)

							Weatherstation Rainfall Data	
Date	Time	Water Level (inches)				On-site Raingauge	Snow Hill Daily Rainfall	Snow Hill Monthly Rainfall
dd-mmm-yyyy	hh:mm:ss	AW1	REFAW1	MW1	MW2			
1-Jan-2007	08:00:00							
1-Jan-2007	20:00:00						0	
2-Jan-2007	08:00:00							
2-Jan-2007	20:00:00						0	
3-Jan-2007	08:00:00							
3-Jan-2007	20:00:00						0	
4-Jan-2007	08:00:00							
4-Jan-2007	20:00:00						0	
5-Jan-2007	08:00:00							
5-Jan-2007	20:00:00						0	
6-Jan-2007	08:00:00							
6-Jan-2007	20:00:00						0	
7-Jan-2007	08:00:00							
7-Jan-2007	20:00:00						0	
8-Jan-2007	08:00:00							
8-Jan-2007	20:00:00						0.63	
9-Jan-2007	08:00:00							
9-Jan-2007	20:00:00						0	
10-Jan-2007	08:00:00							
10-Jan-2007	20:00:00						0	
11-Jan-2007	08:00:00							
11-Jan-2007	20:00:00						0	
12-Jan-2007	08:00:00							
12-Jan-2007	20:00:00						0	
13-Jan-2007	08:00:00							
13-Jan-2007	20:00:00						0	
14-Jan-2007	08:00:00							
14-Jan-2007	20:00:00						0	
15-Jan-2007	08:00:00							
15-Jan-2007	20:00:00						0	
16-Jan-2007	08:00:00							
16-Jan-2007	20:00:00						0	

Alexander Mitigation Site
DRAFT - Annual Monitoring Report for 2007 (Year 5)

							Weatherstation Rainfall Data	
Date	Time	Water Level (inches)				On-site Raingauge	Snow Hill Daily Rainfall	Snow Hill Monthly Rainfall
dd-mmm-yyyy	hh:mm:ss	AW1	REFAW1	MW1	MW2			
17-Jan-2007	08:00:00							
17-Jan-2007	20:00:00						0.09	
18-Jan-2007	08:00:00							
18-Jan-2007	20:00:00						0.08	
19-Jan-2007	08:00:00							
19-Jan-2007	20:00:00						0.37	
20-Jan-2007	08:00:00							
20-Jan-2007	20:00:00						0	
21-Jan-2007	08:00:00							
21-Jan-2007	20:00:00						0	
22-Jan-2007	08:00:00							
22-Jan-2007	20:00:00						1.21	
23-Jan-2007	08:00:00							
23-Jan-2007	20:00:00						0	
24-Jan-2007	08:00:00							
24-Jan-2007	20:00:00						0	
25-Jan-2007	08:00:00							
25-Jan-2007	20:00:00						0	
26-Jan-2007	08:00:00							
26-Jan-2007	20:00:00						0	
27-Jan-2007	08:00:00							
27-Jan-2007	20:00:00						0.1	
28-Jan-2007	08:00:00							
28-Jan-2007	20:00:00						0.21	
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30-Jan-2007	20:00:00						0	
31-Jan-2007	08:00:00							
31-Jan-2007	20:00:00						0	2.69
1-Feb-2007	08:00:00							
1-Feb-2007	20:00:00						0	

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							Weatherstation Rainfall Data	
Date	Time	Water Level (inches)				On-site Raingauge	Snow Hill Daily Rainfall	Snow Hill Monthly Rainfall
dd-mmm-yyyy	hh:mm:ss	AW1	REFAW1	MW1	MW2			
2-Feb-2007	08:00:00							
2-Feb-2007	20:00:00						1.29	
3-Feb-2007	08:00:00							
3-Feb-2007	20:00:00						0	
4-Feb-2007	08:00:00							
4-Feb-2007	20:00:00						0	
5-Feb-2007	08:00:00							
5-Feb-2007	20:00:00						0	
6-Feb-2007	08:00:00							
6-Feb-2007	20:00:00						0	
7-Feb-2007	08:00:00							
7-Feb-2007	20:00:00						0	
8-Feb-2007	08:00:00							
8-Feb-2007	20:00:00						0	
9-Feb-2007	08:00:00							
9-Feb-2007	20:00:00						0	
10-Feb-2007	08:00:00							
10-Feb-2007	20:00:00						0	
11-Feb-2007	08:00:00							
11-Feb-2007	20:00:00						0	
12-Feb-2007	08:00:00							
12-Feb-2007	20:00:00						0	
13-Feb-2007	08:00:00							
13-Feb-2007	20:00:00						0	
14-Feb-2007	08:00:00							
14-Feb-2007	20:00:00						0.62	
15-Feb-2007	08:00:00							
15-Feb-2007	20:00:00						0	
16-Feb-2007	08:00:00							
16-Feb-2007	20:00:00						0	
17-Feb-2007	08:00:00							
17-Feb-2007	20:00:00						0	

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							Weatherstation Rainfall Data	
Date	Time	Water Level (inches)				On-site Raingauge	Snow Hill Daily Rainfall	Snow Hill Monthly Rainfall
dd-mmm-yyyy	hh:mm:ss	AW1	REFAW1	MW1	MW2			
18-Feb-2007	08:00:00							
18-Feb-2007	20:00:00						0	
19-Feb-2007	08:00:00							
19-Feb-2007	20:00:00	-3.68	2.95	0.5	-3.5	7.47	0	
20-Feb-2007	08:00:00	-3.68	-9.99					
20-Feb-2007	20:00:00	-3.74	-6.44				0	
21-Feb-2007	08:00:00	-3.97	-3.34					
21-Feb-2007	20:00:00	-4.28	1.89				0	
22-Feb-2007	08:00:00	-4.26	-1.58					
22-Feb-2007	20:00:00	-5.14	-0.37				0	
23-Feb-2007	08:00:00	-5.82	-2.91					
23-Feb-2007	20:00:00	-6.41	-0.78				0	
24-Feb-2007	08:00:00	-6.79	1.33					
24-Feb-2007	20:00:00	-7	0.1				0	
25-Feb-2007	08:00:00	-6.75	-6.87					
25-Feb-2007	20:00:00	-0.01	-12.25				0	
26-Feb-2007	08:00:00	-1.76	-0.32					
26-Feb-2007	20:00:00	-3.41	0.78				0.26	
27-Feb-2007	08:00:00	-4.53	-2.07					
27-Feb-2007	20:00:00	-5.28	-0.48				0	
28-Feb-2007	08:00:00	-6.01	-3.8					
28-Feb-2007	20:00:00	-6.7	0.19				0	2.17
01-Mar-2007	08:00:00	-6.71	-5.42					
01-Mar-2007	20:00:00	-6.37	-8.25				0	
02-Mar-2007	08:00:00	-0.3	-8.55					
02-Mar-2007	20:00:00	-2.45	0.71				0.39	
03-Mar-2007	08:00:00	-3.93	-1.05					
03-Mar-2007	20:00:00	-5.26	-1.63				0	
04-Mar-2007	08:00:00	-6.24	-0.23					
04-Mar-2007	20:00:00	-7.31	0.7				0	
05-Mar-2007	08:00:00	-7.68	-1.29					
05-Mar-2007	20:00:00	-8.01	-3.24				0	

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							Weatherstation Rainfall Data	
Date	Time	Water Level (inches)				On-site Raingauge	Snow Hill Daily Rainfall	Snow Hill Monthly Rainfall
dd-mmm-yyyy	hh:mm:ss	AW1	REFAW1	MW1	MW2			
06-Mar-2007	08:00:00	-8.55	-4.39					
06-Mar-2007	20:00:00	-8.9	-0.17				0	
07-Mar-2007	08:00:00	-8.53	-5.91					
07-Mar-2007	20:00:00	-8.92	-0.28				0	
08-Mar-2007	08:00:00	-9.39	-4.07					
08-Mar-2007	20:00:00	-9.79	-0.26				0	
09-Mar-2007	08:00:00	-9.99	-7.14					
09-Mar-2007	20:00:00	-10.05	-1.85				0	
10-Mar-2007	08:00:00	-10.08	-7.11					
10-Mar-2007	20:00:00	-10.25	-1.36				0	
11-Mar-2007	08:00:00	-10.21	-5.49					
11-Mar-2007	20:00:00	-10.89	-1.6				0	
12-Mar-2007	08:00:00	-11.02	-8.77					
12-Mar-2007	20:00:00	-11.16	-1.21				0	
13-Mar-2007	08:00:00	-11.25	-9.57					
13-Mar-2007	20:00:00	-11.6	-2.61				0	
14-Mar-2007	08:00:00	-11.45	-7.89					
14-Mar-2007	20:00:00	-11.74	-1.48				0	
15-Mar-2007	08:00:00	-11.55	-10.79					
15-Mar-2007	20:00:00	-12.05	-2.97				0	
16-Mar-2007	08:00:00	-4.25	-2.84					
16-Mar-2007	20:00:00	2.09	2.91				0.34	
17-Mar-2007	08:00:00	1.51	-2.46					
17-Mar-2007	20:00:00	1.23	0.09				0	
18-Mar-2007	08:00:00	0.91	-4.96					
18-Mar-2007	20:00:00	0.49	1.57				0.78	
19-Mar-2007	08:00:00	-0.16	-4.47					
19-Mar-2007	20:00:00	-0.93	-0.33				0	
20-Mar-2007	08:00:00	-1.7	-5.36					
20-Mar-2007	20:00:00	-2.93	2.01				0	
21-Mar-2007	08:00:00	-3.49	-0.23					
21-Mar-2007	20:00:00	-4.03	-1.31				0	

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							Weatherstation Rainfall Data	
Date	Time	Water Level (inches)				On-site Raingauge	Snow Hill Daily Rainfall	Snow Hill Monthly Rainfall
dd-mmm-yyyy	hh:mm:ss	AW1	REFAW1	MW1	MW2			
22-Mar-2007	08:00:00	-4.24	-8.28					
22-Mar-2007	20:00:00	-4.84	1.27				0	
23-Mar-2007	08:00:00	-5.02	-7.07					
23-Mar-2007	20:00:00	-5.93	0.05				0	
24-Mar-2007	08:00:00	-5.93	-6.16					
24-Mar-2007	20:00:00	-6.87	-5.63				0	
25-Mar-2007	08:00:00	-7.01	-12.6					
25-Mar-2007	20:00:00	-8.49	-6.16				0	
26-Mar-2007	08:00:00	-8.3	-6.3					
26-Mar-2007	20:00:00	-8.79	-6.37				0	
27-Mar-2007	08:00:00	-8.36	-9.58					
27-Mar-2007	20:00:00	-9.57	-6.67				0	
28-Mar-2007	08:00:00	-9.14	-6.78					
28-Mar-2007	20:00:00	-10.63	-7.15	-9	-10.25	1.79	0	
29-Mar-2007	08:00:00	-10.49	-7.39					
29-Mar-2007	20:00:00	-11.03	-7.61				0	
30-Mar-2007	08:00:00	-11.2	-7.82					
30-Mar-2007	20:00:00	-12.06	-8.13				0.02	
31-Mar-2007	08:00:00	-11.72	-8.3					
31-Mar-2007	20:00:00	-12.81	-8.76				0	1.53
01-Apr-2007	08:00:00	-12.19	-8.91					
01-Apr-2007	20:00:00	-13.18	-7.94				0	
02-Apr-2007	08:00:00	-9.59	-9.15					
02-Apr-2007	20:00:00	-13.33	-4.84				0.15	
03-Apr-2007	08:00:00	-13.28	-10					
03-Apr-2007	20:00:00	-14.84	-3.88				0	
04-Apr-2007	08:00:00	-13.38	-13.57					
04-Apr-2007	20:00:00	-15.58	-5.77				0	
05-Apr-2007	08:00:00	-15.79	-12.27					
05-Apr-2007	20:00:00	-16.94	-13.12				0	
06-Apr-2007	08:00:00	-16.73	-13.38					
06-Apr-2007	20:00:00	-17.18	-13.85				0	

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							Weatherstation Rainfall Data	
Date	Time	Water Level (inches)				On-site Raingauge	Snow Hill Daily Rainfall	Snow Hill Monthly Rainfall
dd-mmm-yyyy	hh:mm:ss	AW1	REFAW1	MW1	MW2			
07-Apr-2007	08:00:00	-16.42	-13.9					
07-Apr-2007	20:00:00	-17.9	-14.54				0	
08-Apr-2007	08:00:00	-17.95	-14.87					
08-Apr-2007	20:00:00	-18.34	-14.98				0.02	
09-Apr-2007	08:00:00	-18.15	-15.4					
09-Apr-2007	20:00:00	-18.7	-15.62				0	
10-Apr-2007	08:00:00	-18.65	-15.99					
10-Apr-2007	20:00:00	-19.17	-16.26				0	
11-Apr-2007	08:00:00	-18.58	-16.44					
11-Apr-2007	20:00:00	-17.54	-16.22				0	
12-Apr-2007	08:00:00	0.52	-12.41					
12-Apr-2007	20:00:00	-0.26	0.45				1.47	
13-Apr-2007	08:00:00	-1.63	-7.32					
13-Apr-2007	20:00:00	-5.89	-7.89				0	
14-Apr-2007	08:00:00	-8.14	-7.84					
14-Apr-2007	20:00:00	-9.74	-1.19				0	
15-Apr-2007	08:00:00	3.06	-2.19					
15-Apr-2007	20:00:00	2.29	5.89				0	
16-Apr-2007	08:00:00	2.07	-0.02					
16-Apr-2007	20:00:00	1.51	-3.25				3.9	
17-Apr-2007	08:00:00	1.31	-1.45					
17-Apr-2007	20:00:00	0.95	-3.5				0	
18-Apr-2007	08:00:00	0.8	-1.21					
18-Apr-2007	20:00:00	0.32	-3.15				0	
19-Apr-2007	08:00:00	-0.02	-6.19					
19-Apr-2007	20:00:00	-0.72	-5.96				0	
20-Apr-2007	08:00:00	-1.23	-6.28					
20-Apr-2007	20:00:00	-2.58	-1.03				0	
21-Apr-2007	08:00:00	-3.07	-4.43					
21-Apr-2007	20:00:00	-4.55	1.66				0	
22-Apr-2007	08:00:00	-4.44	-5.23					
22-Apr-2007	20:00:00	-6.04	0.6				0	

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							Weatherstation Rainfall Data	
Date	Time	Water Level (inches)				On-site Raingauge	Snow Hill Daily Rainfall	Snow Hill Monthly Rainfall
dd-mmm-yyyy	hh:mm:ss	AW1	REFAW1	MW1	MW2			
23-Apr-2007	08:00:00	-5.73	-5.5					
23-Apr-2007	20:00:00	-7.57	-2.71				0	
24-Apr-2007	08:00:00	-7.04	-6.64					
24-Apr-2007	20:00:00	-8.77	-5.5				0	
25-Apr-2007	08:00:00	-7.95	-6.99	-4.5	-9	4.4		
25-Apr-2007	20:00:00	-10.4	-4.76				0	
26-Apr-2007	08:00:00	-9.63	-8.94					
26-Apr-2007	20:00:00	-11.96	-7.34				0	
27-Apr-2007	08:00:00	-10.6	-4.11					
27-Apr-2007	20:00:00	-12.23	-5.61				0	
28-Apr-2007	08:00:00	-11.63	-9.6					
28-Apr-2007	20:00:00	-14.46	-11.34				0	
29-Apr-2007	08:00:00	-13.59	-11.27					
29-Apr-2007	20:00:00	-16.11	-13.09				0	
30-Apr-2007	08:00:00	-15.21	-13.02					
30-Apr-2007	20:00:00	-17.68	-15.19				0	5.54
01-May-2007	08:00:00	-16.77	-15.11					
01-May-2007	20:00:00	-19.26	-15.31				0	
02-May-2007	08:00:00	-18.3	-13.13					
02-May-2007	20:00:00	-20.33	-13.95				0	
03-May-2007	08:00:00	-19.51	-18.79					
03-May-2007	20:00:00	-20.52	-19.64				0	
04-May-2007	08:00:00	-19.68	-19.21					
04-May-2007	20:00:00	-20.06	-19.8				0.03	
05-May-2007	08:00:00	-19.82	-19.48					
05-May-2007	20:00:00	-20.11	-20.27				0.07	
06-May-2007	08:00:00	-3.46	-10.6					
06-May-2007	20:00:00	-10.78	-12.27				0.95	
07-May-2007	08:00:00	-12.12	-13.06					
07-May-2007	20:00:00	-15.06	-10.98				0	
08-May-2007	08:00:00	-15.2	-10.3					
08-May-2007	20:00:00	-15.58	-17.6				0	

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							Weatherstation Rainfall Data	
Date	Time	Water Level (inches)				On-site Raingauge	Snow Hill Daily Rainfall	Snow Hill Monthly Rainfall
dd-mmm-yyyy	hh:mm:ss	AW1	REFAW1	MW1	MW2			
09-May-2007	08:00:00	-15.53	-17.38					
09-May-2007	20:00:00	-2.04	-9.16				0.1	
10-May-2007	08:00:00	-4.74	-6.37					
10-May-2007	20:00:00	-9.81	-10.22				0	
11-May-2007	08:00:00	-10.57	-13.96					
11-May-2007	20:00:00	-14.14	-13.15				0	
12-May-2007	08:00:00	-13.96	-13.77					
12-May-2007	20:00:00	-13.14	-9.06				0	
13-May-2007	08:00:00	-8.43	-10.44					
13-May-2007	20:00:00	-11.34	-3.43				1.11	
14-May-2007	08:00:00	-12.44	-11.06					
14-May-2007	20:00:00	-15.75	-6.93				0	
15-May-2007	08:00:00	-15.61	-15.57					
15-May-2007	20:00:00	-18.26	-16.76				0	
16-May-2007	08:00:00	-17.79	-12.62					
16-May-2007	20:00:00	-20.45	-19.07				0	
17-May-2007	08:00:00	-14.04	-11.82					
17-May-2007	20:00:00	-15.25	-12.4				0.33	
18-May-2007	08:00:00	-14.06	-14.21					
18-May-2007	20:00:00	-17.21	-8.31				0.12	
19-May-2007	08:00:00	-17.63	-16.37					
19-May-2007	20:00:00	-19.97	-13.78				0	
20-May-2007	08:00:00	-19.87	-19.71					
20-May-2007	20:00:00	-21.82	-17.03				0	
21-May-2007	08:00:00	-21.67	-26.62					
21-May-2007	20:00:00	-23.21	-21.6				0	
22-May-2007	08:00:00	-22.99	-19.81	-24	-27.5	2.4		
22-May-2007	20:00:00	-23.18	-22.36				0	
23-May-2007	08:00:00	-23.10	-24.41					
23-May-2007	20:00:00	-24.19	-22.34				0	
24-May-2007	08:00:00	-24.19	-28.98					
24-May-2007	20:00:00	-25.09	-25.73				0	

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							Weatherstation Rainfall Data	
Date	Time	Water Level (inches)				On-site Raingauge	Snow Hill Daily Rainfall	Snow Hill Monthly Rainfall
dd-mmm-yyyy	hh:mm:ss	AW1	REFAW1	MW1	MW2			
25-May-2007	08:00:00	-25.02	-24.70					
25-May-2007	20:00:00	-25.93	-26.82				0	
26-May-2007	08:00:00	-25.99	-28.29					
26-May-2007	20:00:00	-26.86	-27.30				0	
27-May-2007	08:00:00	-26.98	-29.79					
27-May-2007	20:00:00	-27.82	-27.32				0	
28-May-2007	08:00:00	-27.97	-27.41					
28-May-2007	20:00:00	-28.74	-27.75				0	
29-May-2007	08:00:00	-28.88	-29.88					
29-May-2007	20:00:00	-29.70	-31.59				0	
30-May-2007	08:00:00	-29.88	-30.24					
30-May-2007	20:00:00	-30.70	-29.84				0	
31-May-2007	08:00:00	-30.91	-36.14					
31-May-2007	20:00:00	-31.67	-32.79				0	2.71
01-Jun-2007	08:00:00	-31.86	-32.50					
01-Jun-2007	20:00:00	-32.61	-35.19				0	
02-Jun-2007	08:00:00	-32.75	-35.26					
02-Jun-2007	20:00:00	-33.23	-35.58				0	
03-Jun-2007	08:00:00	-9.63	-25.90					
03-Jun-2007	20:00:00	-5.31	-17.99				2	
04-Jun-2007	08:00:00	-14.05	-12.90					
04-Jun-2007	20:00:00	-14.30	-17.33				0.66	
05-Jun-2007	08:00:00	-16.01	-18.49					
05-Jun-2007	20:00:00	-18.27	-17.72				0.12	
06-Jun-2007	08:00:00	-19.11	-18.14					
06-Jun-2007	20:00:00	-20.91	-18.44				0.01	
07-Jun-2007	08:00:00	-21.42	-26.25					
07-Jun-2007	20:00:00	-22.68	-25.28				0	
08-Jun-2007	08:00:00	-22.93	-20.36					
08-Jun-2007	20:00:00	-24.15	-25.18				0	
09-Jun-2007	08:00:00	-24.42	-23.88					
09-Jun-2007	20:00:00	-25.83	-23.13				0	

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							Weatherstation Rainfall Data	
Date	Time	Water Level (inches)				On-site Raingauge	Snow Hill Daily Rainfall	Snow Hill Monthly Rainfall
dd-mmm-yyyy	hh:mm:ss	AW1	REFAW1	MW1	MW2			
10-Jun-2007	08:00:00	-26.16	-24.98					
10-Jun-2007	20:00:00	-27.37	-24.25				0	
11-Jun-2007	08:00:00	-27.63	-27.74					
11-Jun-2007	20:00:00	-28.78	-29.92				0	
12-Jun-2007	08:00:00	-28.92	-29.09					
12-Jun-2007	20:00:00	-30.01	-31.22				0	
13-Jun-2007	08:00:00	-30.07	-29.94					
13-Jun-2007	20:00:00	-31.17	-32.07				0	
14-Jun-2007	08:00:00	-31.28	-31.42					
14-Jun-2007	20:00:00	-31.86	-32.34				0	
15-Jun-2007	08:00:00	-32.00	-31.53					
15-Jun-2007	20:00:00	-32.93	-33.38				0	
16-Jun-2007	08:00:00	-33.03	-32.56					
16-Jun-2007	20:00:00	-33.76	-34.61				0	
17-Jun-2007	08:00:00	-33.90	-33.41					
17-Jun-2007	20:00:00	-34.67	-35.41				0	
18-Jun-2007	08:00:00	-34.82	-35.02					
18-Jun-2007	20:00:00	-35.63	-33.14				0.08	
19-Jun-2007	08:00:00	-35.82	-39.04					
19-Jun-2007	20:00:00	-36.62	-33.83				0	
20-Jun-2007	08:00:00	-36.78	-38.89					
20-Jun-2007	20:00:00	-34.45	-31.58				0	
21-Jun-2007	08:00:00	-35.10	-35.38					
21-Jun-2007	20:00:00	-36.33	-31.07				0.76	
22-Jun-2007	08:00:00	-36.20	-37.89					
22-Jun-2007	20:00:00	-37.17	-35.59				0	
23-Jun-2007	08:00:00	-37.17	-38.00					
23-Jun-2007	20:00:00	-37.68	-35.91				0	
24-Jun-2007	08:00:00	-37.83	-42.38					
24-Jun-2007	20:00:00	-38.51	-36.58				0	
25-Jun-2007	08:00:00	-38.68	-40.50					
25-Jun-2007	20:00:00	-39.16	-38.56				0	

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							Weatherstation Rainfall Data	
Date	Time	Water Level (inches)				On-site Raingauge	Snow Hill Daily Rainfall	Snow Hill Monthly Rainfall
dd-mmm-yyyy	hh:mm:ss	AW1	REFAW1	MW1	MW2			
26-Jun-2007	08:00:00	-39.26	-40.60					
26-Jun-2007	20:00:00	-39.84	-38.40				0.04	
27-Jun-2007	08:00:00	-40.02	-42.09					
27-Jun-2007	20:00:00	-40.63	-39.13				0	
28-Jun-2007	08:00:00	-40.82	-42.17	-43	-45.5			
28-Jun-2007	20:00:00	-41.46	-39.61			1.95	0	
29-Jun-2007	08:00:00	-41.69	-42.63					
29-Jun-2007	20:00:00	-33.38	-38.54				0	
30-Jun-2007	08:00:00	-36.43	-36.88					
30-Jun-2007	20:00:00	-37.68	-34.46				0.69	4.36
01-Jul-2007	08:00:00	-37.98	-36.81					
01-Jul-2007	20:00:00	-38.91	-34.06				0	
02-Jul-2007	08:00:00	-39.17	-39.45					
02-Jul-2007	20:00:00	-40.10	-36.03				0	
03-Jul-2007	08:00:00	-40.30	-42.29					
03-Jul-2007	20:00:00	-41.31	-39.00				0	
04-Jul-2007	08:00:00	-41.42	-43.29					
04-Jul-2007	20:00:00	-42.28	-40.19				0	
05-Jul-2007	08:00:00	-42.38	-45.27					
05-Jul-2007	20:00:00	-42.94	-40.64				0	
06-Jul-2007	08:00:00	-43.13	-44.36					
06-Jul-2007	20:00:00	-43.67	-39.64				0	
07-Jul-2007	08:00:00	-43.87	-45.30					
07-Jul-2007	20:00:00	-30.25	-41.30				0.9	
08-Jul-2007	08:00:00	-36.60	-40.29					
08-Jul-2007	20:00:00	-38.14	-36.36				0	
09-Jul-2007	08:00:00	-38.67	-39.43					
09-Jul-2007	20:00:00	-39.64	-36.30				0	
10-Jul-2007	08:00:00	-39.84	-39.51					
10-Jul-2007	20:00:00	-33.09	-36.87				0.14	
11-Jul-2007	08:00:00	-35.23	-37.20					
11-Jul-2007	20:00:00	-36.39	-33.42				1.9	

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							Weatherstation Rainfall Data	
Date	Time	Water Level (inches)				On-site Raingauge	Snow Hill Daily Rainfall	Snow Hill Monthly Rainfall
dd-mmm-yyyy	hh:mm:ss	AW1	REFAW1	MW1	MW2			
12-Jul-2007	08:00:00	-36.50	-35.87					
12-Jul-2007	20:00:00	-37.21	-34.62				0.4	
13-Jul-2007	08:00:00	-37.27	-36.87					
13-Jul-2007	20:00:00	-37.89	-36.10				0	
14-Jul-2007	08:00:00	-37.96	-39.57					
14-Jul-2007	20:00:00	-38.88	-36.95				0	
15-Jul-2007	08:00:00	-38.98	-39.44					
15-Jul-2007	20:00:00	-39.98	-33.10				0	
16-Jul-2007	08:00:00	-40.04	-40.69					
16-Jul-2007	20:00:00	-40.81	-37.96				0	
17-Jul-2007	08:00:00	-40.93	-42.03					
17-Jul-2007	20:00:00	-41.83	-37.42				0	
18-Jul-2007	08:00:00	-27.58	-36.61					
18-Jul-2007	20:00:00	-31.56	-31.15				0	
19-Jul-2007	08:00:00	-32.62	-34.98					
19-Jul-2007	20:00:00	-33.89	-31.94				0	
20-Jul-2007	08:00:00	-34.25	-35.73					
20-Jul-2007	20:00:00	-22.58	-31.06				0	
21-Jul-2007	08:00:00	-28.33	-29.92					
21-Jul-2007	20:00:00	-30.25	-28.36				0.35	
22-Jul-2007	08:00:00	-30.81	-32.87					
22-Jul-2007	20:00:00	-31.90	-29.99				0	
23-Jul-2007	08:00:00	-32.24	-35.11					
23-Jul-2007	20:00:00	-33.34	-31.35				0	
24-Jul-2007	08:00:00	-33.63	-36.65					
24-Jul-2007	20:00:00	-34.72	-34.03				0	
25-Jul-2007	08:00:00	-34.99	-39.05	-37	-40	5.35		
25-Jul-2007	20:00:00	-36.03	-33.77				0	
26-Jul-2007	08:00:00	-36.30	-38.78					
26-Jul-2007	20:00:00	-37.36	-35.43				0	
27-Jul-2007	08:00:00	-37.59	-40.86					
27-Jul-2007	20:00:00	-38.69	-36.21				0	

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							Weatherstation Rainfall Data	
Date	Time	Water Level (inches)				On-site Raingauge	Snow Hill Daily Rainfall	Snow Hill Monthly Rainfall
dd-mmm-yyyy	hh:mm:ss	AW1	REFAW1	MW1	MW2			
28-Jul-2007	08:00:00	-38.84	-40.93					
28-Jul-2007	20:00:00	-40.08	-39.15				0	
29-Jul-2007	08:00:00	-40.23	-42.62					
29-Jul-2007	20:00:00	-41.47	-39.76				0	
30-Jul-2007	08:00:00	-41.55	-43.55					
30-Jul-2007	20:00:00	-41.56	-39.52				0	
31-Jul-2007	08:00:00	-41.29	-39.86					
31-Jul-2007	20:00:00	-42.16	-37.65				0.65	4.34
01-Aug-2007	08:00:00	-41.96	-42.72					
01-Aug-2007	20:00:00	-42.96	-39.67				0	
02-Aug-2007	08:00:00	-42.85	-44.55					
02-Aug-2007	20:00:00	-43.94	-40.58				0	
03-Aug-2007	08:00:00	-43.92	-46.37					
03-Aug-2007	20:00:00	-44.63	-42.44				0	
04-Aug-2007	08:00:00	-44.72	-45.88					
04-Aug-2007	20:00:00	-45.35	-41.79				0	
05-Aug-2007	08:00:00	-45.51	-47.06					
05-Aug-2007	20:00:00	-46.13	-42.93				0	
06-Aug-2007	08:00:00	-46.36	-46.19					
06-Aug-2007	20:00:00	-46.93	-43.33				0	
07-Aug-2007	08:00:00	-47.09	-47.24					
07-Aug-2007	20:00:00	-47.70	-43.62				0	
08-Aug-2007	08:00:00	-47.87	-47.35					
08-Aug-2007	20:00:00	-48.44	-43.25				0	
09-Aug-2007	08:00:00	-48.59	-48.65					
09-Aug-2007	20:00:00	-49.03	-45.57				0	
10-Aug-2007	08:00:00	-48.95	-46.88					
10-Aug-2007	20:00:00	-42.17	-45.62				0.42	
11-Aug-2007	08:00:00	-45.33	-45.49					
11-Aug-2007	20:00:00	-46.00	-43.31				0.99	
12-Aug-2007	08:00:00	-46.09	-45.90					
12-Aug-2007	20:00:00	-47.22	-42.30				0	

							Weatherstation Rainfall Data	
Date	Time	Water Level (inches)				On-site Raingauge	Snow Hill Daily Rainfall	Snow Hill Monthly Rainfall
dd-mmm-yyyy	hh:mm:ss	AW1	REFAW1	MW1	MW2			
13-Aug-2007	08:00:00	-47.03	-47.35					
13-Aug-2007	20:00:00	-48.20	-43.27				0	
14-Aug-2007	08:00:00	-47.95	-46.73					
14-Aug-2007	20:00:00	-49.05	-43.17				0	
15-Aug-2007	08:00:00	-48.72	-48.91					
15-Aug-2007	20:00:00	-49.49	-45.34				0	
16-Aug-2007	08:00:00	-49.40	-48.17					
16-Aug-2007	20:00:00	-49.99	-45.07				0	
17-Aug-2007	08:00:00	-50.13	-47.88					
17-Aug-2007	20:00:00	-50.44	-46.81				0	
18-Aug-2007	08:00:00	-49.78	-46.69					
18-Aug-2007	20:00:00	-50.04	-46.52				0	
19-Aug-2007	08:00:00	-49.60	-50.42					
19-Aug-2007	20:00:00	-49.60	-46.79				0	
20-Aug-2007	08:00:00	-49.59	-48.42					
20-Aug-2007	20:00:00	-49.59	-44.60				0	
21-Aug-2007	08:00:00	-49.61	-48.53					
21-Aug-2007	20:00:00	-49.60	-41.76				0	
22-Aug-2007	08:00:00	-49.59	-48.90					
22-Aug-2007	20:00:00	-49.59	-46.93				0.4	
23-Aug-2007	08:00:00	-49.61	-48.32					
23-Aug-2007	20:00:00	-49.60	-47.93				0	
24-Aug-2007	08:00:00	-49.60	-49.13					
24-Aug-2007	20:00:00	-49.61	-47.89				0.1	
25-Aug-2007	08:00:00	-49.60	-50.35					
25-Aug-2007	20:00:00	-49.59	-46.87				0	
26-Aug-2007	08:00:00	-49.61	-49.36					
26-Aug-2007	20:00:00	-49.59	-47.85				0	
27-Aug-2007	08:00:00	-49.59	-48.04	-50	-45.5	2.21		
27-Aug-2007	20:00:00	-49.60	-47.24				0.54	
28-Aug-2007	08:00:00	-49.61	-49.59					
28-Aug-2007	20:00:00	-49.60	-47.10				0.01	

							Weatherstation Rainfall Data	
Date	Time	Water Level (inches)				On-site Raingauge	Snow Hill Daily Rainfall	Snow Hill Monthly Rainfall
dd-mmm-yyyy	hh:mm:ss	AW1	REFAW1	MW1	MW2			
29-Aug-2007	08:00:00	-49.59	-50.30					
29-Aug-2007	20:00:00	-49.59	-46.49				0	
30-Aug-2007	08:00:00	-49.59						
30-Aug-2007	20:00:00	-49.60	-46.62				0	
31-Aug-2007	08:00:00	-49.60	-50.30					
31-Aug-2007	20:00:00	-49.61	-44.09				0	2.46
01-Sep-2007	08:00:00	-49.59	-52.07					
01-Sep-2007	20:00:00	-49.60	-47.35					
02-Sep-2007	08:00:00	-49.59						
02-Sep-2007	20:00:00	-49.60	-46.28					
03-Sep-2007	08:00:00	-49.60						
03-Sep-2007	20:00:00	-49.59	-46.88					
04-Sep-2007	08:00:00	-49.59						
04-Sep-2007	20:00:00	-49.60	-45.39					
05-Sep-2007	08:00:00	-49.60						
05-Sep-2007	20:00:00	-49.59	-44.57					
06-Sep-2007	08:00:00	-49.59	-50.55					
06-Sep-2007	20:00:00	-49.60	-45.81					
07-Sep-2007	08:00:00	-49.59	-51.94					
07-Sep-2007	20:00:00	-49.59	-44.89					
08-Sep-2007	08:00:00	-49.59						
08-Sep-2007	20:00:00	-49.59	-45.68					
09-Sep-2007	08:00:00	-49.59	-52.00					
09-Sep-2007	20:00:00	-49.60	-48.48				0	
10-Sep-2007	08:00:00	-49.59	-49.12					
10-Sep-2007	20:00:00	-49.59	-46.15				0.04	
11-Sep-2007	08:00:00	-49.58	-51.24					
11-Sep-2007	20:00:00	-49.59	-47.84				0	
12-Sep-2007	08:00:00	-49.59	-49.66					
12-Sep-2007	20:00:00	-49.59	-48.90				0.04	
13-Sep-2007	08:00:00	-49.59						
13-Sep-2007	20:00:00	-49.59	-48.26				0	

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							Weatherstation Rainfall Data	
Date	Time	Water Level (inches)				On-site Raingauge	Snow Hill Daily Rainfall	Snow Hill Monthly Rainfall
dd-mmm-yyyy	hh:mm:ss	AW1	REFAW1	MW1	MW2			
14-Sep-2007	08:00:00	-49.59						
14-Sep-2007	20:00:00	-49.59	-49.78				0	
15-Sep-2007	08:00:00	-49.56	-50.61					
15-Sep-2007	20:00:00	-49.57	-47.48				1.35	
16-Sep-2007	08:00:00	-49.59	-51.42					
16-Sep-2007	20:00:00	-49.58	-47.43				0	
17-Sep-2007	08:00:00	-49.59	-51.57					
17-Sep-2007	20:00:00	-49.59	-47.15				0	
18-Sep-2007	08:00:00	-49.59	-51.86					
18-Sep-2007	20:00:00	-49.59	-46.84				0	
19-Sep-2007	08:00:00	-49.59	-50.51					
19-Sep-2007	20:00:00	-49.59	-50.38				0	
20-Sep-2007	08:00:00	-49.58	-48.28					
20-Sep-2007	20:00:00	-49.32	-49.95				0.05	
21-Sep-2007	08:00:00	-49.57	-51.20					
21-Sep-2007	20:00:00	-49.59					0.63	
22-Sep-2007	08:00:00	-49.61	-49.31					
22-Sep-2007	20:00:00	-49.59	-51.44					
23-Sep-2007	08:00:00	-49.59	-46.11					
23-Sep-2007	20:00:00	-49.59	-52.22					
24-Sep-2007	08:00:00	-49.59	-43.17					
24-Sep-2007	20:00:00	-49.57	-40.88					
25-Sep-2007	08:00:00	-49.58	-48.28					
25-Sep-2007	20:00:00	-49.59	-45.82					
26-Sep-2007	08:00:00	-49.59	-44.46					
26-Sep-2007	20:00:00	-49.60	-48.69					
27-Sep-2007	08:00:00	-49.59	-45.04	-50	-45.5	2.3		
27-Sep-2007	20:00:00	-44.21						
28-Sep-2007	08:00:00	-44.21	-46.98					
28-Sep-2007	20:00:00	-44.21	-46.62				0	
29-Sep-2007	08:00:00	-44.20	-39.69					
29-Sep-2007	20:00:00	-44.22	-48.67					

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							Weatherstation Rainfall Data	
Date	Time	Water Level (inches)				On-site Raingauge	Snow Hill Daily Rainfall	Snow Hill Monthly Rainfall
dd-mmm-yyyy	hh:mm:ss	AW1	REFAW1	MW1	MW2			
30-Sep-2007	08:00:00	-44.21	-42.76					
30-Sep-2007	20:00:00	-44.20					0	2.11
1-Oct-2007	08:00:00	-44.19	-46.66					
1-Oct-2007	20:00:00	-44.20					0	
2-Oct-2007	08:00:00	-44.20	-51.73					
2-Oct-2007	20:00:00	-44.20					0	
3-Oct-2007	08:00:00	-44.19	-50.39					
3-Oct-2007	20:00:00	-44.21					0	
4-Oct-2007	08:00:00	-44.21	-47.62					
4-Oct-2007	20:00:00	-44.21					0.02	
5-Oct-2007	08:00:00	-44.20	-47.18					
5-Oct-2007	20:00:00	-44.19	-49.83				0	
6-Oct-2007	08:00:00	-44.21	-45.75					
6-Oct-2007	20:00:00	-44.20	-49.76				0	
7-Oct-2007	08:00:00	-44.21	-40.92					
7-Oct-2007	20:00:00	-44.20	-49.76				0	
8-Oct-2007	08:00:00	-44.19	-43.19					
8-Oct-2007	20:00:00	-44.20	-51.34				0	
9-Oct-2007	08:00:00	-44.21	-43.52					
9-Oct-2007	20:00:00	-44.20	-40.29				0	
10-Oct-2007	08:00:00	-44.21	-43.42					
10-Oct-2007	20:00:00	-44.19	-46.97				0	
11-Oct-2007	08:00:00	-44.20	-44.25					
11-Oct-2007	20:00:00	-44.19	-44.62				0	
12-Oct-2007	08:00:00	-44.20	-46.38					
12-Oct-2007	20:00:00	-44.20	-45.49				0	
13-Oct-2007	08:00:00	-44.19	-47.14					
13-Oct-2007	20:00:00	-44.19	-43.03				0	
14-Oct-2007	08:00:00	-44.19	-47.48					
14-Oct-2007	20:00:00	-44.19	-42.48				0	
15-Oct-2007	08:00:00	-44.27	-46.39					
15-Oct-2007	20:00:00	-44.20	-44.25				0	

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							Weatherstation Rainfall Data	
Date	Time	Water Level (inches)				On-site Raingauge	Snow Hill Daily Rainfall	Snow Hill Monthly Rainfall
dd-mmm-yyyy	hh:mm:ss	AW1	REFAW1	MW1	MW2			
16-Oct-2007	08:00:00	-44.25	-46.25					
16-Oct-2007	20:00:00	-44.19	-45.29				0	
17-Oct-2007	08:00:00	-44.25	-46.32					
17-Oct-2007	20:00:00	-44.18	-47.33				0	
18-Oct-2007	08:00:00	-44.21	-48.67					
18-Oct-2007	20:00:00	-44.17	-48.68				0	
19-Oct-2007	08:00:00	-44.22	-49.83					
19-Oct-2007	20:00:00	-44.28	-50.99				0	
20-Oct-2007	08:00:00	-44.34	-42.30					
20-Oct-2007	20:00:00	-44.40	-40.87				0	
21-Oct-2007	08:00:00	-44.39	-46.09					
21-Oct-2007	20:00:00	-44.38	-42.44				0	
22-Oct-2007	08:00:00	-44.38	-48.83					
22-Oct-2007	20:00:00	-44.30	-47.00				0	
23-Oct-2007	08:00:00	-44.29	-49.82	-51	-45.5	0.03		
23-Oct-2007	20:00:00	-44.29	-49.91				0	
24-Oct-2007	08:00:00	-44.29	-50.23					
24-Oct-2007	20:00:00	-44.29	-49.87				0	
25-Oct-2007	08:00:00	-34.05	-50.06					
25-Oct-2007	20:00:00	-43.97	-49.77				0	
26-Oct-2007	08:00:00	-44.02	-50.50					
26-Oct-2007	20:00:00	-44.03	-49.40				0	
27-Oct-2007	08:00:00	-24.86	-48.02					
27-Oct-2007	20:00:00	-43.66	-47.31				0	
28-Oct-2007	08:00:00	-44.18	-48.70					
28-Oct-2007	20:00:00	-44.18	-46.83				0	
29-Oct-2007	08:00:00	-44.20	-49.52					
29-Oct-2007	20:00:00	-44.18	-45.80				0	
30-Oct-2007	08:00:00	-44.24	-48.53					
30-Oct-2007	20:00:00	-44.18	-45.59				0	
31-Oct-2007	08:00:00	-44.24	-48.86					
31-Oct-2007	20:00:00	-44.19	-46.76				0	0.02

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							Weatherstation Rainfall Data	
Date	Time	Water Level (inches)				On-site Raingauge	Snow Hill Daily Rainfall	Snow Hill Monthly Rainfall
dd-mmm-yyyy	hh:mm:ss	AW1	REFAW1	MW1	MW2			
1-Nov-2007	08:00:00	-44.24	-48.97					
1-Nov-2007	20:00:00	-44.18	-46.79				0	
2-Nov-2007	08:00:00	-44.21	-48.29					
2-Nov-2007	20:00:00	-44.16	-47.99				0	
3-Nov-2007	08:00:00	-44.24	-47.54					
3-Nov-2007	20:00:00	-44.17	-44.99				0	
4-Nov-2007	08:00:00	-44.23	-48.37					
4-Nov-2007	20:00:00	-44.16	-45.09				0	
5-Nov-2007	08:00:00	-44.22	-48.45					
5-Nov-2007	20:00:00	-44.16	-46.31				0	
6-Nov-2007	08:00:00	-44.18	-48.62					
6-Nov-2007	20:00:00	-44.15	-47.03				0	
7-Nov-2007	08:00:00	-44.21	-48.57					
7-Nov-2007	20:00:00	-44.17	-46.89				0	
8-Nov-2007	08:00:00	-44.21	-48.68					
8-Nov-2007	20:00:00	-44.15	-46.62				0	
9-Nov-2007	08:00:00	-44.20	-48.14					
9-Nov-2007	20:00:00	-44.18	-46.71				0	
10-Nov-2007	08:00:00	-44.19	-47.43					
10-Nov-2007	20:00:00	-44.14	-46.79				0	
11-Nov-2007	08:00:00	-44.18	-48.58					
11-Nov-2007	20:00:00	-44.15	-46.38				0	
12-Nov-2007	08:00:00	-44.19	-48.12					
12-Nov-2007	20:00:00	-44.15	-46.80				0	
13-Nov-2007	08:00:00	-44.19	-47.92					
13-Nov-2007	20:00:00	-44.15	-47.83				0	
14-Nov-2007	08:00:00	-44.18	-47.90					
14-Nov-2007	20:00:00	-44.15	-45.78				0	
15-Nov-2007	08:00:00	-44.16	-48.84					
15-Nov-2007	20:00:00	-44.16	-46.60				0	
16-Nov-2007	08:00:00	-44.17	-47.42					
16-Nov-2007	20:00:00	-44.13	-45.13				0.35	

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							Weatherstation Rainfall Data	
Date	Time	Water Level (inches)				On-site Raingauge	Snow Hill Daily Rainfall	Snow Hill Monthly Rainfall
dd-mmm-yyyy	hh:mm:ss	AW1	REFAW1	MW1	MW2			
17-Nov-2007	08:00:00	-44.16	-47.64					
17-Nov-2007	20:00:00	-44.13	-46.96				0	
18-Nov-2007	08:00:00	-44.19	-47.57					
18-Nov-2007	20:00:00	-44.14	-46.33				0	
19-Nov-2007	08:00:00	-44.12	-48.06	-51	-48.5	3.13		
19-Nov-2007	20:00:00						0	
20-Nov-2007	08:00:00							
20-Nov-2007	20:00:00							
21-Nov-2007	08:00:00							
21-Nov-2007	20:00:00							
22-Nov-2007	08:00:00							
22-Nov-2007	20:00:00							
23-Nov-2007	08:00:00							
23-Nov-2007	20:00:00							
24-Nov-2007	08:00:00							
24-Nov-2007	20:00:00							
25-Nov-2007	08:00:00							
25-Nov-2007	20:00:00							
26-Nov-2007	08:00:00							
26-Nov-2007	20:00:00							
27-Nov-2007	08:00:00							
27-Nov-2007	20:00:00							
28-Nov-2007	08:00:00							
28-Nov-2007	20:00:00							
29-Nov-2007	08:00:00							
29-Nov-2007	20:00:00							
30-Nov-2007	08:00:00							
30-Nov-2007	20:00:00							
1-Dec-2007	08:00:00							
1-Dec-2007	20:00:00							
2-Dec-2007	08:00:00							
2-Dec-2007	20:00:00							

							Weatherstation Rainfall Data	
Date	Time	Water Level (inches)				On-site Raingauge	Snow Hill Daily Rainfall	Snow Hill Monthly Rainfall
dd-mmm-yyyy	hh:mm:ss	AW1	REFAW1	MW1	MW2			
3-Dec-2007	08:00:00							
3-Dec-2007	20:00:00							
4-Dec-2007	08:00:00							
4-Dec-2007	20:00:00							
5-Dec-2007	08:00:00							
5-Dec-2007	20:00:00							
6-Dec-2007	08:00:00							
6-Dec-2007	20:00:00							
7-Dec-2007	08:00:00							
7-Dec-2007	20:00:00							
8-Dec-2007	08:00:00							
8-Dec-2007	20:00:00							
9-Dec-2007	08:00:00							
9-Dec-2007	20:00:00							
10-Dec-2007	08:00:00							
10-Dec-2007	20:00:00							
11-Dec-2007	08:00:00							
11-Dec-2007	20:00:00							
12-Dec-2007	08:00:00							
12-Dec-2007	20:00:00							
13-Dec-2007	08:00:00							
13-Dec-2007	20:00:00							
14-Dec-2007	08:00:00							
14-Dec-2007	20:00:00							
15-Dec-2007	08:00:00							
15-Dec-2007	20:00:00							
16-Dec-2007	08:00:00							
16-Dec-2007	20:00:00							
17-Dec-2007	08:00:00							
17-Dec-2007	20:00:00							
18-Dec-2007	08:00:00							
18-Dec-2007	20:00:00							

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							Weatherstation Rainfall Data	
Date	Time	Water Level (inches)				On-site Raingauge	Snow Hill Daily Rainfall	Snow Hill Monthly Rainfall
dd-mmm-yyyy	hh:mm:ss	AW1	REFAW1	MW1	MW2			
19-Dec-2007	08:00:00							
19-Dec-2007	20:00:00							
20-Dec-2007	08:00:00							
20-Dec-2007	20:00:00							
21-Dec-2007	08:00:00							
21-Dec-2007	20:00:00							
22-Dec-2007	08:00:00							
22-Dec-2007	20:00:00							
23-Dec-2007	08:00:00							
23-Dec-2007	20:00:00							
24-Dec-2007	08:00:00							
24-Dec-2007	20:00:00							
25-Dec-2007	08:00:00							
25-Dec-2007	20:00:00							
26-Dec-2007	08:00:00							
26-Dec-2007	20:00:00							
27-Dec-2007	08:00:00							
27-Dec-2007	20:00:00							
28-Dec-2007	08:00:00							
28-Dec-2007	20:00:00							
29-Dec-2007	08:00:00							
29-Dec-2007	20:00:00							
30-Dec-2007	08:00:00							
30-Dec-2007	20:00:00							
31-Dec-2007	08:00:00							

APPENDIX C

2007 Site Photos

Alexander Vegetation Plot Photos

Photo 1. Alexander Vegetation Plot 1.

Photo 2. Alexander Vegetation Plot 2.

Photo 3. Alexander Vegetation Plot 3.

Photo 4. Alexander Vegetation Plot 4.