"Simpson Tract"
Non-Riverine Wetland Restoration Project

Beaufort County, NC
Tar-Pamlico River Basin
(Cataloging Unit #03020104)

Annual Monitoring Report – Year 5
(Task 11)
NC EEP Contract #D05027-1

Prepared For:

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EXECUTIVE SUMMARY

Prior to project implementation, the Simpson Tract Property was managed for silvicultural production. The site consisted entirely of mono-culture pine stands with sparse hardwood colonization. Under contract with the EEP, Wetland Resource Center (WRC) restored 30.0 acres of non-riverine wetland which drain into the Pungo Creek (a tributary of the Pungo River) in Beaufort County, NC.

The entire 30.0 acre area has been planted with an appropriate mixture of tree and shrub species at an average density of 616 stems/acre. Planting was completed in February 2007. A total of fifteen (15) 0.10-acre permanent plots corresponding to a total of 1.5 acres (equivalent to 5% of the restoration area) were established throughout the project area. Annual monitoring has been conducted near the end of the growing season (September-November) for a period of five years. Per the approved restoration plan, vegetative planting is deemed successful if survivorship of plantings and volunteers of desirable species meets or exceeds a target stem density of 320 stems/acre. Based on Year 5 monitoring, the success criterion has been met.

Annual vegetative monitoring was conducted on November 26-27, 2012. During this monitoring event a total of 2,904 woody stems were counted across the fifteen plots. The observed stems represented either planted species or acceptable volunteers. The woody stem count correlates to an average of 1,936 stems per acre, which far exceeds a sufficient density to meet the stated success criteria. Hydrologic monitoring has been on-going since the initiation of restoration work. Per the approved restoration plan, the primary hydrologic success criterion is the establishment of a static water table at, or within, 12" of the soil surface for 12.5% of the growing season (equivalent to 32 days based upon SCS-established growing season dates) during periods of normal rainfall. Restoration of appropriate wetland hydrologic conditions has been achieved as indicated by all 6 wells exhibiting average hydroperiods (number of consecutive days with water table depths within 12" of the surface) exceeding 12.5% of the growing season. Four out of 6 wells registered sufficient hydroperiods for all 6 years of well monitoring. It should be noted that one well (well #5) that failed to exhibit wetland hydrology during 3 years missed meeting success criteria due to equipment malfunctions. Well #6 met success criteria during 5 out of 6 years. Note also that wells # 5 and # 6 exhibited wetland hydrology during Year 2 (during drought conditions).

The following monitoring report summarizes the project and includes more specific information related to the vegetative and hydrologic conditions throughout the site.

1.0 NARRATIVE

Introduction

As approved by the EEP, WRC implemented the restoration of 30.0 acres of non-riverine wetland habitat located at the headwaters of Pungo Creek, a fourth-order tributary of the Pungo River within the Tar-Pamlico River Basin (USGS 8-digit Hydrologic Unit 03020104; DWQ Subbasin 03-03-07). The project area is part of the "Simpson Tract" located approximately 10 miles south of Plymouth in Beaufort County, NC (refer to Figures 1-5). This tract was intensively managed for silvicultural production prior to implementation of restoration activities.

Mitigation Goals and Objectives

The proposed restoration project is intended to provide non-riverine wetland restoration as compensatory mitigation for wetland impacts authorized through the EEP. The objective of the project is to restore characteristic vegetation and wetland hydrology. Doing so will help to restore degraded and/or lost functions resulting from prior silvicultural practices. The primary functions of the restoration project are to provide surface water storage, nutrient uptake, and sediment retention. In addition, the project will provide ancillary benefits to wildlife by providing refuge for resident and migratory species via enhanced niche habitat and increased food-web support.

Pre-Construction Conditions

The 30-acre restoration area is part of a larger tract of land (1,391 acres). Approximately 950 acres have been determined to be non-jurisdictional ("non-wetlands") by the NRCS (USACE concurrence of this determination has also been provided in previous submittals to the EEP). The remaining acreage has been confirmed to be jurisdictional wetlands. The predominant land use of the tract (both jurisdictional and non-jurisdictional areas) is silvicultural production. Prior land use practices (including herbicide, pesticide, and fertilizer application) serve as potential contributors to decreased water quality of adjacent surface waters (i.e. ditches and 'blue-line' streams). The natural vegetative assemblage of the tract has been modified over the years via prescribed drainage improvements (i.e. ditching), bedding, and planting of loblolly pine (*Pinus taeda*). These silvicultural practices have resulted in a community dominated by pine in more mature stands outside of the proposed restoration area. Hardwood species characteristic of headwater swamp communities of the Coastal Plain are either absent entirely or occur only in sparse locations. Typical canopy species of an undisturbed area would include swamp tupelo (*Nyssa biflora*), bald cypress (*Taxodium distichum*), pond pine (*Pinus serotina*), and Atlantic white cedar (*Chamaecyparis thyoides*). Understory species typical of non-

riverine swamp forest communities include American titi (*Cyrilla racemiflora*), sweet bay (*Magnolia virginiana*), red bay (*Persea borbonia*), fetterbush (*Lyonia lucida*), red maple (*Acer rubrum*), and catbrier (*Smilax* species).

Project Implementation

Site preparation commenced in the fall of 2006. During this period, areas of invasive or non-target species were drum-chopped and bush-hogged. Following these activities, an herbicide was applied to reduce competition within the project area. A water soluble herbicide was used and applied by a licensed applicator to reduce impacts to the surrounding open water areas.

In order to re-establish the appropriate hydrologic conditions throughout the restoration area, a total of four (4) 50' long ditch plugs were installed in ditches draining from the project area. Prior to project construction, appropriate 401/404 authorization was received for placement of clay plugs within those ditches.

Earth work was conducted from February 20-21, 2007. Approximately 100 cubic yards of material was used to form the ditch plugs. Ditch plugs were installed at specified locations in accordance with the mitigation plan. Final grading was conducted in the plugged areas to allow for subsidence and compaction of the fill material. All areas that were disturbed by grading activities were seeded with an appropriate erosion control mix. Refer to the previously submitted mitigation plan for photographs of the initial post-construction conditions.

Site planting was completed on February 23, 2007. The planting of approximately 18,000 seedlings was supervised by LMG to ensure proper spacing and planting depths. LMG obtained a mix of hardwood and shrub seedlings which accurately represent the targeted headwater swamp community discussed in the approved restoration plan. Seedlings were planted on approximately 8' centers at a depth sufficient to cover the root collar throughout the project area. Following the planting activities, LMG inspected the project area to ensure that seedlings had been installed correctly. Table 1 provides additional information on the quantity and size of the planted species.

Supplemental planting was initiated in February 2009. This planting included approximately 15,000 bare root seedlings and 800 larger potted plants to offset mortality observed during Year 2 monitoring. Species such as bald cypress, black gum, and green ash were included within the supplemental planting. Table 2 provides additional information on the quantity and size of the planted species.

2.0 AS-BUILTS

As defined by the approved restoration plan, a total of fifteen (15) permanent monitoring plots were established, which corresponds to a total of 1.5 acres (equivalent to 5% of the restoration area). A total of six (6) automated wells (RDS, Inc. WM-40s) were also installed to monitor shallow groundwater hydrology and surface inundation within the restoration area. All six wells were paired with vegetation plots.

Two (2) additional wells were installed in reference areas located near the Van Swamp Gameland to the northeast of the project site. These reference sites were selected based on similarities in landscape position, hardwood species assemblages and soil types. Wells were installed in accordance with installation methods outlined in the Wetlands Regulatory Assistance Program (WRAP) Technical Note 00-02. Water levels are being recorded once daily. Data is downloaded from the wells every three months (i.e. once quarterly). Data from well downloads is compiled and graphically displayed to demonstrate the hydroperiods of monitored areas. Refer to the attached survey (Appendix D) of the wetland restoration area for the location and corresponding number of the permanent vegetative monitoring plots and paired hydrologic monitoring equipment on the site.

3.0 MONITORING PLAN

Annual monitoring has been conducted near the end of each growing season for a period of five years. Vegetative monitoring has been conducted at each of the fifteen (15) 0.10-acre permanent plots. Vegetative planting is deemed successful if survivorship of plantings and volunteers of desirable species[1] meets or exceeds a target stem density of 320 stems/acre. Hydrologic monitoring is deemed successful if static water table at, or within, 12" of the soil surface for 12.5% of the growing season (equivalent to 32 days based upon SCS-established growing season dates) during periods of normal rainfall. Data from reference wells has also been included. Monitoring reports have been submitted annually to the EEP (by January 1 of each year). These reports include results of vegetative monitoring and photographic documentation of site conditions. Monitoring reports have also identified contingency measures needed to remedy site deficiencies. For instance, supplemental planting was necessary in areas of reduced survivorship.

4.0 MONITORING RESULTS (YEAR 5)

Vegetation Monitoring

Monitoring of the on-site vegetation was conducted on November 26-27, 2012. A total of 2,927 stems were counted throughout the fifteen plots, which correlates to an average of 1,951 stems/acre within the project area (Table 3). Fetterbush (*Lyonia lucida*) was the most abundant planted woody species, with a total of 184 individuals. Other planted species such as red bay (*Persea borbonia*) and wax myrtle (*Morella cerifera*) were also prevalent within the monitored plots. Overall, each of the fifteen plots surpassed the minimum success criterion of 320 stems/acre during the Year 5 monitoring event. Stem density improved greatly from that observed during Year 4 monitoring.

In addition to the supplemental plantings, observed stem densities within the plots were supported by the success of acceptable volunteer species such as loblolly bay (*Gordonia lasianthus*), gallberry (*Ilex glabra*), highbush blueberry (*Vaccinium corymbosum*), and sweet pepperbush (*Clethra alnifolia*). Several of these individuals now exceed 3' in height and will likely continue develop as co-dominants within the shrub layer.

Refer to Appendix A for photographs of current site conditions and Appendix B for information regarding individual plot totals.

Hydrologic Monitoring

Monitoring of water table depths has been conducted throughout 2012 (Appendix C). Four of the six monitoring wells documented water tables within 12" of the surface for at least 34 consecutive days between March 14th and November 17th, 2012 (Table 4). This period represents 14% of the growing season in Beaufort County. Several of the wells exhibited water table depths within 12" of the surface for an even longer duration, with a maximum of 249 consecutive days (100% of the growing season). Data for well #5 is limited to the early part of the growing season due to well malfunction.

Per the approved restoration plan, the primary hydrologic success criterion is the establishment of a static water table at, or within, 12" of the soil surface for 12.5% of the growing season (equivalent to 32 days based upon SCS-established growing season dates) during periods of normal rainfall. Restoration of appropriate wetland hydrologic conditions has been achieved as indicated by all 6 wells exhibiting average hydroperiods (number of consecutive days with water table depths within 12" of the surface) exceeding 12.5% of the growing season. Four out of 6 wells registered sufficient hydroperiods for all 6 years of well monitoring. It

[1] Desirable species are considered as noninvasive species characteristic of non-riparian wetland.

should be noted that well #5 exhibited a mean hydroperiod of 21% during the 3 years in which a complete data set (i.e. for the entire length of the growing season) was collected. During the other three years, the data set was incomplete. Combining all six years of monitoring, the mean hydroperiod for well #5 was 15% of the growing season. Well #6 met success criteria during 5 out of 6 years. Note also that wells # 5 and # 6 exhibited wetland hydrology during Year 2 (during drought conditions). Refer to Table 4 for a summary of the hydrologic findings throughout the monitoring period.

As in previous years, groundwater levels exhibited a discernable increase following individual precipitation events greater than 0.25". Discharge rates following these events were found to be gradual, which is consistent with very poorly drained soil series. Note that precipitation totals during a large portion of the 2012 growing season (mid-March, April through early May, late June through early July) were below the 30% normal rainfall distribution provided in the WETS data tables. Below normal precipitation levels in the early growing season were also documented in NOAA's Palmer Hydrological Drought Index, which showed this region in a moderate drought from January to April 2012. Totals peaked above the normal levels briefly during early June and late July through early August, before returning normal in mid-August.

Reference monitoring well #11 exhibited a water table within 12" of the soil surface for 40 consecutive days during the late portion of the growing season of 2012, thus meeting jurisdictional hydrology criteria. This is consistent with the rainfall data that depict moderate drought during the early part of the growing season and relatively normal conditions during the latter part of the growing season. Given both the precipitation data and the response of the reference well (i.e. exhibiting wetland hydrology only during the latter portion of the growing season), it appears likely that moderate drought conditions influenced the results of well #5 during the early growing season. As mentioned in the Year 4 report, reference well #10 was destroyed by machinery sometime between September 29, 2011 and December 6, 2011. No data was collected from this monitoring well during 2012.

5.0 CONCLUSION

WRC has completed the implementation of 30.0 acres of non-riverine restoration located in TAR-7 of the lower Tar-Pamlico Basin. At the end of Year 5 monitoring, the vegetative success criterion has been met and species composition is consistent with the target headwater swamp forest community. Restoration of wetland hydroperiods have been demonstrated across the site. Based on the data collected, the mean hydroperiod for all wells over the six-year monitoring period is 38% of the growing season. Given the restoration of groundwater levels and vegetative species composition, and the protection of the site from any future impactive management practices (e.g. forestry) via the conservation easement deed, the site will

support the target wetland functions (including nutrient retention/removal) characteristic of non-riparian headwater wetlands.

TABLES

Table 1. Listed of Planted Species (February 2007)

Species	# planted	(% of total)
Bald cypress (*Taxodium distichum*)	4,000	21.6%
White Cedar (*Chamaemycyparis thyoides*)	2,500	13.5%
Black Gum (*Nyssa sylvatica*)	5,000	27.0%
Red Bay (*Persea borbonia*)	3,000	16.2%
Fetterbush (*Lyonia lucida*)	1,000	5.4%
Sweet Bay (*Magnolia virginiana*)	2,000	10.8%
Wax Myrtle (*Myrica cerifera*)	1,000	5.4%
Total Plants	**18,500**	

Table 2. Listed of Planted Species - Supplemental Planting (February 2009)

Non-Riverine Wetland	**Bare Root Seedlings**	
Species	**# planted**	**Size**
Bald cypress *(Taxodium distichum)*	4,500	1'-2'
Black Gum *(Nyssa sylvatica)*	4,500	1'-2'
Pond Pine *(Pinus serotina)*	3,000	1'-2'
Green Ash *(Fraxinus pennsylvanica)*	3,600	1'-2'
Total	**15,600**	
	Potted Trees	
Species	**# planted**	**Size**
Bald cypress *(Taxodium distichum)*	246	4'-6'
Sweet Bay *(Magnolia virginiana)*	130	2'-4'
White Cedar *(Chamaemycyparis thyoides)*	113	2'-5'
Green Ash *(Fraxinus pennsylvanica)*	329	2'-5'
Total	**818**	

TABLE 3. Monitoring Plot Comparison (Year 5)

Simpson Wetland Restoration

SPECIES	PLOT 1	PLOT 2	PLOT 3	PLOT 4	PLOT 5	PLOT 6	PLOT 7	PLOT 8	PLOT 9	PLOT 10	PLOT 11	PLOT 12	PLOT 13	PLOT 14	PLOT 15	TOTAL
Atlantic White Cedar					1					1						2
Bald Cypress	13		3	9	14	3	8		6	4	1				1	62
Fetterbush	10	7	10	9	7		6	24	15	5	31	29		20	11	184
Pond Pine	15	8	2	10	5	2	6		2		2	4			1	57
Red Bay	2	22	42	3	6	6	2	14	11	5	11	9			4	137
Wax Myrtle	28	13		27	1	19	4	2	12	3	1	2			15	127
American Holly	1	1		1	2							2				7
Galberry	7	32	27	13	12	7	22	8	12	29	16	10	250	196	12	653
Highbush Blueberry	14	39	16	25	15	7	18	32	11	21	27	42			5	272
Loblolly Bay	70	75	60	35	74	189	122	70	134	80	46	62	24	10	75	1126
Sweet Pepperbush		25	6	1	10			37	3	44	5	40	40	30	8	249
Zenobia										7				20	1	28
Red Maple	1	1	1	1						2			15			21
Sweet Gum	1														1	2
TOTAL	162	223	167	134	147	233	188	187	206	201	140	200	329	276	134	2927
Total Counted toward Success	160	222	166	133	147	233	188	187	206	199	140	200	314	276	133	2904
Stem Density (per ac)	1600	2220	1660	1330	1470	2330	1880	1870	2060	1990	1400	2000	3140	2760	1330	1936

Planted Species

Volunteer Species (Desirable)

Volunteer Species Not Counted toward Success Criteria

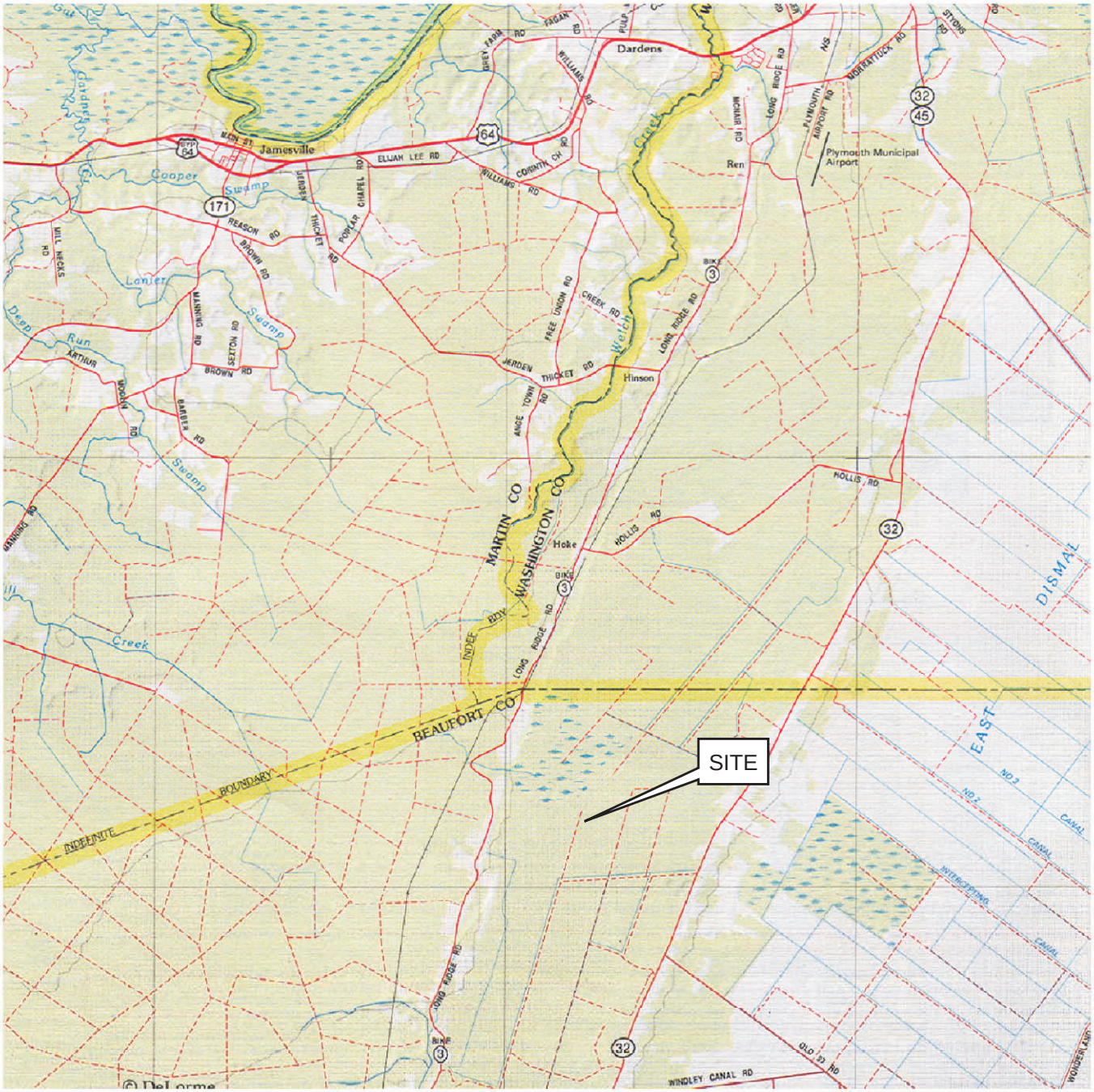
Table 4. Year 5 - Well Data Comparison - All Monitoring Years

Well Number	Monitoring Year	Number Of Consecutive Days Meeting Wetland Hydrology Criteria	Dates Meeting Wetland Hydrology Criteria	Percentage of Growing Season	12.5% Success Criteria (32 Days)	Average Hydroperiod (%)
1	Year 1 2007	214	3/14/07-10/13/07	86	Yes	47
	Year 2 2008	99	3/14/08-6/20/08	40	Yes	
	Year 3 2009	126	3/14/09-7/17/09	51	Yes	
	2010	96	3/14/10-6/17/10	39	Yes	
	Year 4 2011	62	3/14/11-5/14/11	25	Yes	
	Year 5 2012	97	3/14/12-6/18/12	39	Yes	
2	Year 1 2007	70	4/15/07-6/23/07	28	Yes	29
	Year 2 2008	86	3/14/08-6/7/08	35	Yes	
	Year 3 2009	126	3/14/09-7/17/09	51	Yes	
	2010	56	3/14/10-5/8/10	22	Yes	
	Year 4 2011	68	3/14/11-5/20/11	27	Yes	
	Year 5 2012	34	3/14/12-4/16/12	14	Yes	
3	Year 1 2007	105	3/14/07-6/26/07	42	Yes	31
	Year 2 2008	86	3/14/08-6/7/08	35	Yes	
	Year 3 2009	108	3/14/09-6/29/09	43	Yes	
	2010	51	9/28/10-11/17/10	20	Yes	
	Year 4 2011	66	3/14/11-5/18/11	27	Yes	
	Year 5 2012	52	3/14/12-5/4/12	21	Yes	
4	Year 1 2007	249	3/14/07-11/17/07	100	Yes	61
	Year 2 2008	100	3/14/08-6/21/08	40	Yes	
	Year 3 2009	126	3/14/09-7/17/09	51	Yes	
	2010	104	3/14/10-6/25/10	42	Yes	
	Year 4 2011	89	3/14/11-6/10/11	36	Yes	
	Year 5 2012	249	3/14/12-11/17/12	100	Yes	
5	Year 1 2007	44	4/15/07-5/28/07	18	Yes	15**
	Year 2 2008	63	4/5/08-6/6/08	25	Yes	
	Year 3 2009	16*	6/6/09-6/21/09*	6*	No*	
	2010	47	9/28/10-11/13/10	19	Yes	
	Year 4 2011	31*	4/11/11-5/11/11*	12*	No*	
	Year 5 2012	19*	5/23/12-6/10/12*	8*	No*	
6	Year 1 2007	214	3/14/07-10/13/07	86	Yes	40
	Year 2 2008	100	3/14/08-6/21/08	40	Yes	
	Year 3 2009	111	3/14/09-7/2/09	46	Yes	
	2010	92	3/14/10-6/13/10	37	Yes	
	Year 4 2011	62	3/14/11-5/14/11	25	Yes	
	Year 5 2012	21	3/22/12-4/11/12	8	No	

*Well malfunction / repair resulted in truncated data set.

**Includes years with data gaps. Average hydroperiod is 21% for years with complete data set.

FIGURES



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SCALE: 1" = 2 miles

Simpson Tract
Tar-Pamlico River Basin
HUC: 03020104
Subbasin:03-03-07

Figure 1.
Vicinity Map

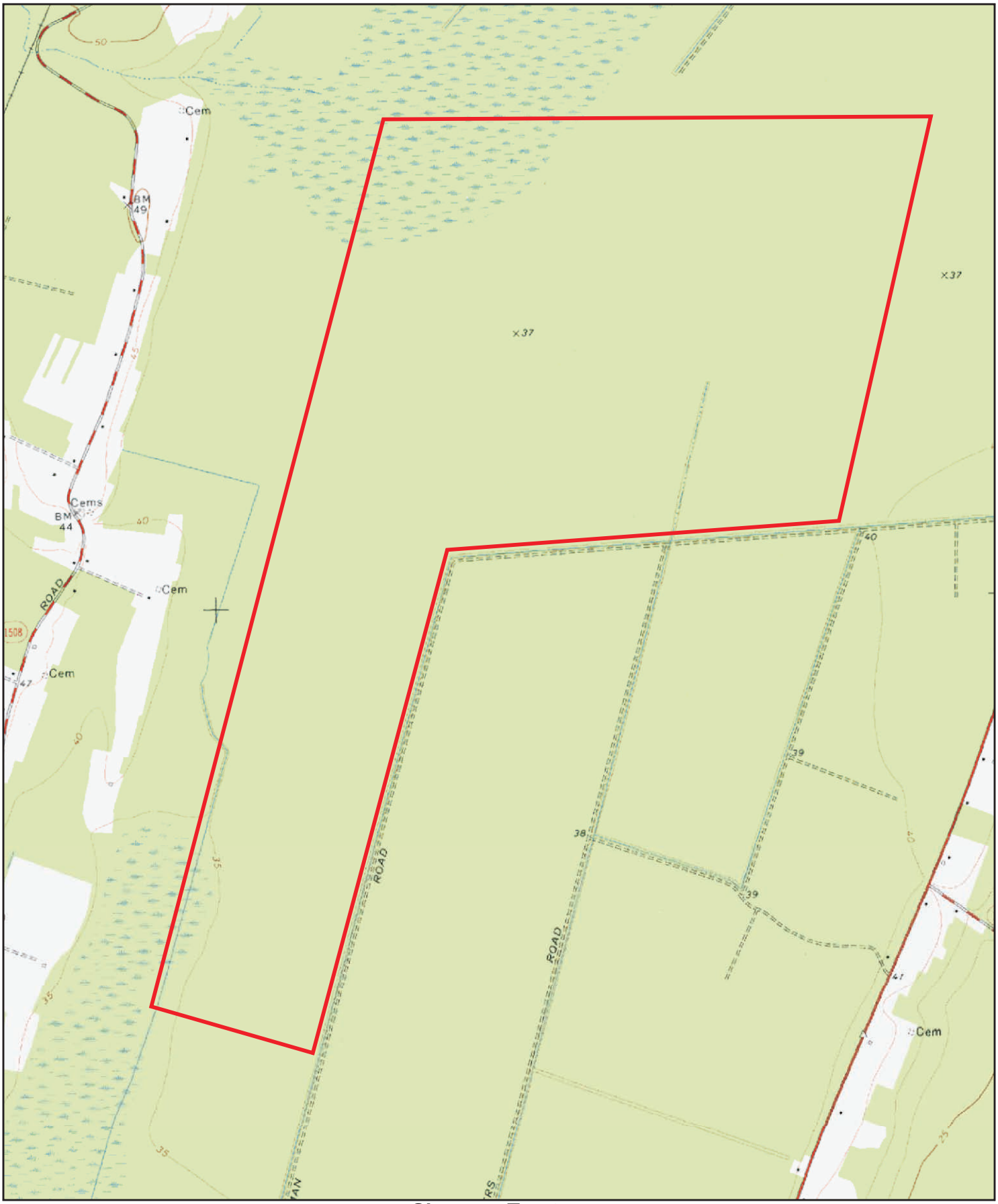
Delorme Gazetteer

Land Management Group, Inc.

Simpson Tract
Tar-Pamlico River Basin
HUC: 03020104
Subbasin:03-03-07

Figure 2.
USDA Soil Survey

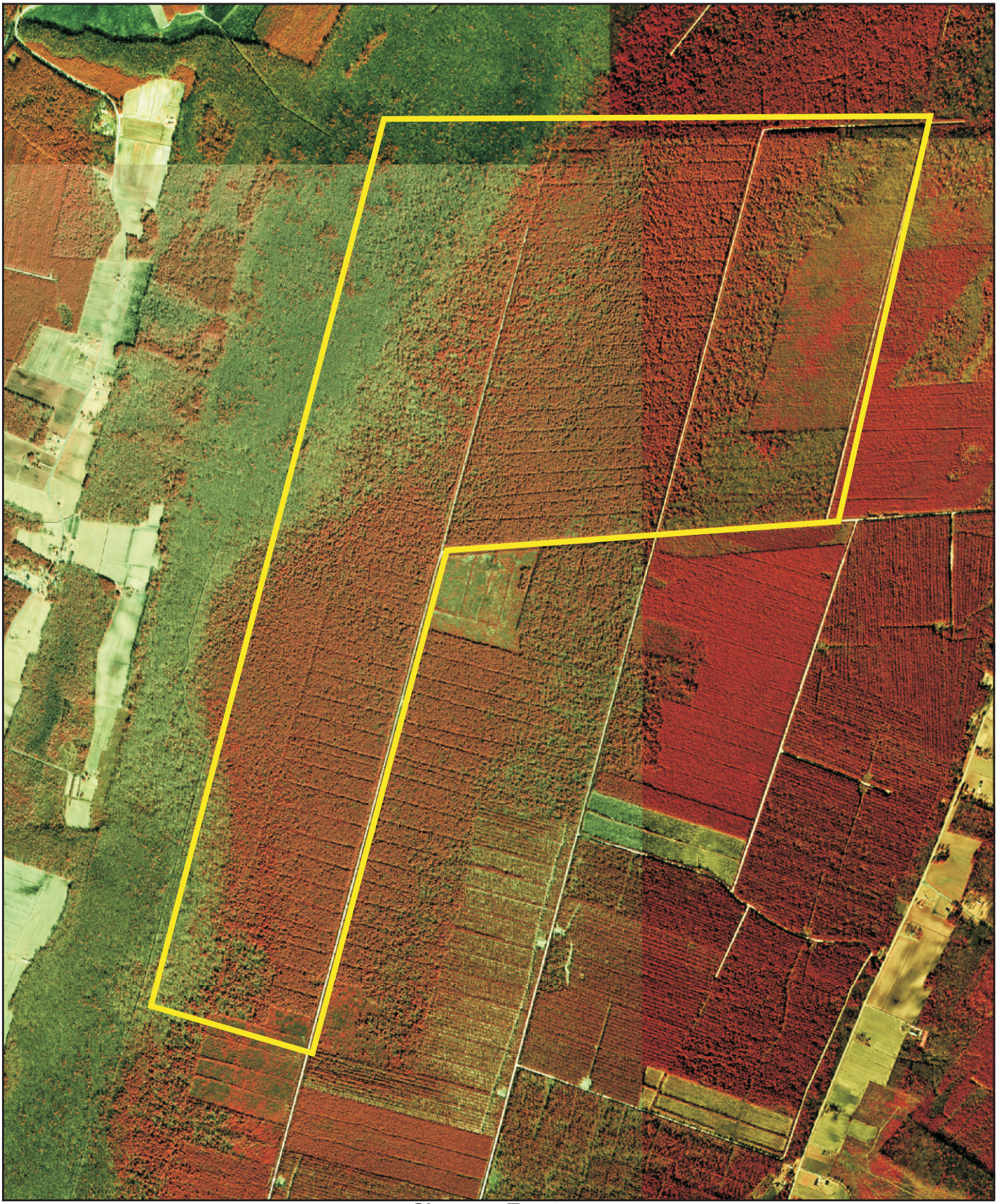
Beaufort County
Land Management Group, Inc.



Simpson Tract
Tar-Pamlico River Basin
HUC: 03020104
Subbasin:03-03-07

Figure 3.
USGS Topographic Map
Hoke, NC

Land Management Group, Inc.



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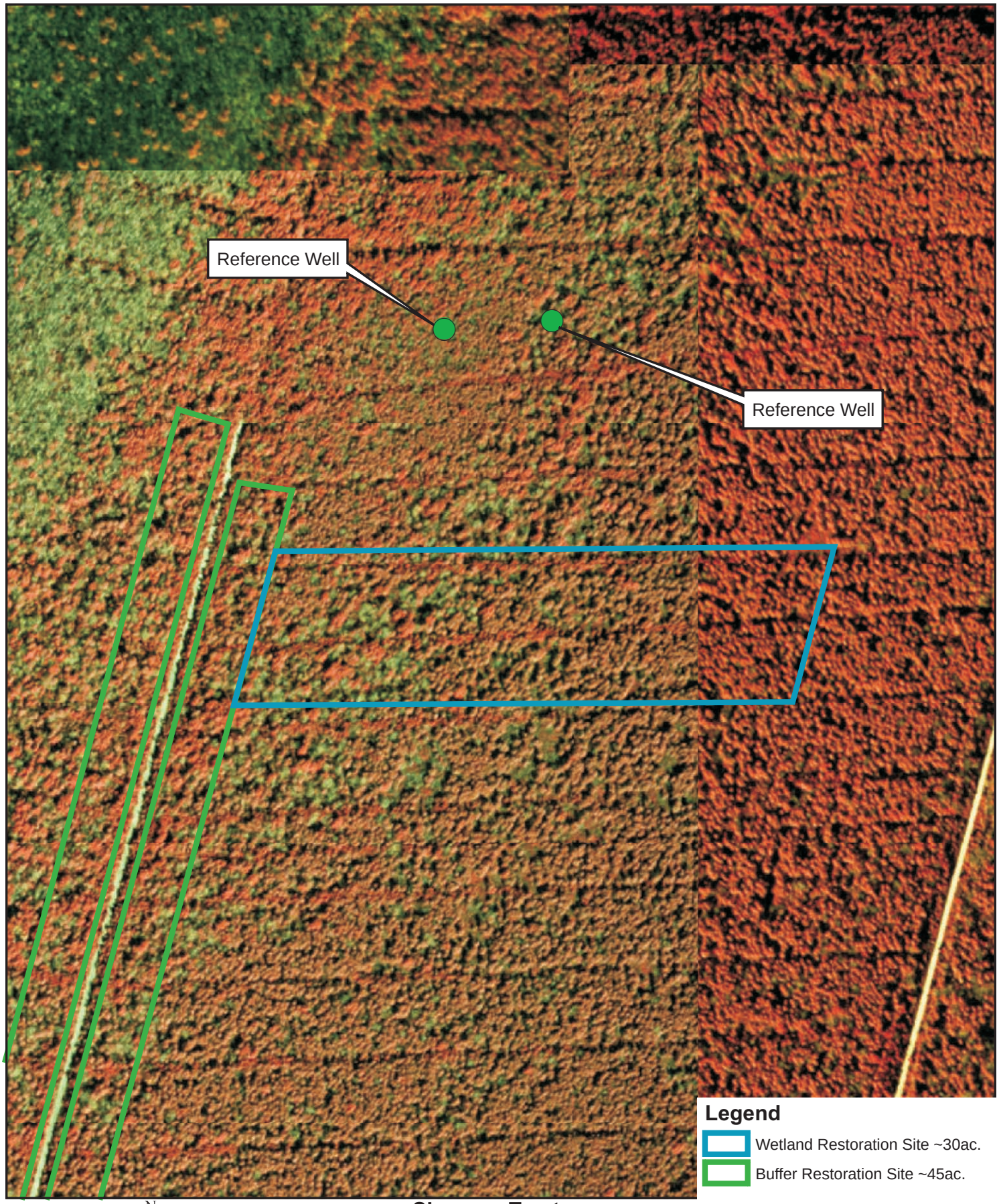
0 2,000 4,000 ft

Simpson Tract
Tar-Pamlico River Basin
HUC: 03020104
Subbasin:03-03-07

Figure 4.
1998 Aerial Photography

Land Management Group, Inc.



Simpson Tract
Tar-Pamlico River Basin
HUC: 03020104
Subbasin:03-03-07

Figure 5.
Wetland and Buffer
Restoration Plan

Land Management Group, Inc.

APPENDIX A. SITE PHOTOGRAPHS (2012)

(1)View of planted red bay in Plot 2

(2) View of planted bald cypress at Plot 9

Simpson Tract
Wetland Restoration
Beaufort County, NC

LMG
LAND MANAGEMENT GROUP INC.
Environmental Consultants

Site Photographs
2012
(Annual Monitoring Year 5 of 5)

(3) View of planted pond pine and volunteers at Plot 9

(4) View of current conditions at Plot 12

(5) View of ponded water in restoration area during growing season

(6) View of groundwater monitoring well

APPENDIX B.
INDIVIDUAL PLOT DATA SHEETS

SIMPSON FARM RESTORATION WETLAND SITE
ANNUAL MONITORING DATA SHEET - VEGETATION PLOTS
YEAR 5 - 2012
PLOT NUMBER 1

SPECIES	STRATUM (T, SA, or SH)	Number of Individuals	HEIGHT (feet)	Planted vs. Volunteer Species	Number of Individuals Counted toward Success Criteria
Bald Cypress	T/SA	4	1	Planted	4
Bald Cypress	T/SA	3	2	Planted	3
Bald Cypress	T/SA	3	4	Planted	3
Bald Cypress	T/SA	2	6	Planted	2
Bald Cypress	T/SA	1	7	Planted	1
Wax Myrtle	SH	3	2	Planted	3
Wax Myrtle	SH	3	3	Planted	3
Wax Myrtle	SH	1	4	Planted	1
Wax Myrtle	SH	3	5	Planted	3
Wax Myrtle	SH	4	7	Planted	4
Wax Myrtle	SH	9	8	Planted	9
Wax Myrtle	SH	3	10	Planted	3
Wax Myrtle	SH	2	12	Planted	2
Loblolly Bay	SH	5	1	Volunteer	5
Loblolly Bay	SH	27	2	Volunteer	27
Loblolly Bay	SH	15	3	Volunteer	15
Loblolly Bay	SH	3	5	Volunteer	3
Loblolly Bay	SH	8	6	Volunteer	8
Loblolly Bay	SH	5	8	Volunteer	5
Loblolly Bay	SH	4	10	Volunteer	4
Loblolly Bay	SH	3	15	Volunteer	3
Fetterbush	SH	3	2	Planted	3
Fetterbush	SH	4	3	Planted	4
Fetterbush	SH	3	4	Planted	3
Red Maple	T/SA	1	4	Volunteer	0
Pond Pine	T/SA	2	1	Planted	2
Pond Pine	T/SA	2	2	Planted	2
Pond Pine	T/SA	1	3	Planted	1
Pond Pine	T/SA	3	4	Planted	3
Pond Pine	T/SA	4	5	Planted	4
Pond Pine	T/SA	3	6	Planted	3
Red Bay	SH	1	4	Planted	1
Red Bay	SH	1	8	Planted	1
Sweet Gum	T/SA	1	6	Volunteer	0
Blueberry	SH	3	4	Volunteer	3
Blueberry	SH	11	6	Volunteer	11
American Holly	SH	1	2	Volunteer	1
Gallberry	SH	4	2	Volunteer	4
Gallberry	SH	3	3	Volunteer	3
	TOTAL SHRUBS	132		OBSERVED DENSITY (PER PLOT)	160
	TOTAL TREES OF PLANTED SPECIES	28		OBSERVED DENSITY (PER ACRE)	1600
	TOTAL TREES OF VOLUNTEER SPECIES	2			
	TOTAL INDIVIDUALS	162			

SIMPSON FARM RESTORATION WETLAND SITE
ANNUAL MONITORING DATA SHEET - VEGETATION PLOTS
YEAR 5 - 2012
PLOT NUMBER 2

SPECIES	STRATUM (T, SA, or SH)	Number of Individuals	HEIGHT (feet)	Planted vs. Volunteer Species	Number of Individuals Counted toward Success Criteria
Wax Myrtle	SH	1	1	Planted	1
Wax Myrtle	SH	3	3	Planted	3
Wax Myrtle	SH	1	4	Planted	1
Wax Myrtle	SH	2	6	Planted	2
Wax Myrtle	SH	4	8	Planted	4
Wax Myrtle	SH	1	10	Planted	1
Wax Myrtle	SH	1	12	Planted	1
Loblolly Bay	SH	35	1	Volunteer	35
Loblolly Bay	SH	30	2	Volunteer	30
Loblolly Bay	SH	10	3	Volunteer	10
Gallberry	SH	11	2	Volunteer	11
Gallberry	SH	15	3	Volunteer	15
Gallberry	SH	5	4	Volunteer	5
Gallberry	SH	1	6	Volunteer	1
Fetterbush	SH	3	2	Planted	3
Fetterbush	SH	4	3	Planted	4
Red Bay	SH	2	1	Planted	2
Red Bay	SH	2	3	Planted	2
Red Bay	SH	2	4	Planted	2
Red Bay	SH	1	5	Planted	1
Red Bay	SH	2	6	Planted	2
Red Bay	SH	1	8	Planted	1
Red Bay	SH	1	9	Planted	1
Red Bay	SH	4	10	Planted	4
Red Bay	SH	3	12	Planted	3
Red Bay	SH	4	14	Planted	4
Blueberry	SH	2	2	Volunteer	2
Blueberry	SH	11	3	Volunteer	11
Blueberry	SH	12	4	Volunteer	12
Blueberry	SH	6	5	Volunteer	6
Blueberry	SH	6	6	Volunteer	6
Blueberry	SH	2	8	Volunteer	2
Red Maple	T/SA	1	6	Volunteer	0
Pond Pine	T/SA	1	1	Planted	1
Pond Pine	T/SA	1	2	Planted	1
Pond Pine	T/SA	2	3	Planted	2
Pond Pine	T/SA	2	6	Planted	2
Pond Pine	T/SA	2	10	Planted	2
American Holly	SH	1	1	Volunteer	1
Sweet Pepperbush	SH	1	1	Volunteer	1
Sweet Pepperbush	SH	4	2	Volunteer	4
Sweet Pepperbush	SH	15	3	Volunteer	15
Sweet Pepperbush	SH	3	4	Volunteer	3
Sweet Pepperbush	SH	2	6	Volunteer	2
	TOTAL SHRUBS	214		OBSERVED DENSITY (PER ACRE)	222
	TOTAL TREES OF PLANTED SPECIES	8		OBSERVED DENSITY (PER ACRE)	2220
	TOTAL TREES OF VOLUNTEER SPECIES	1			
	TOTAL INDIVIDUALS	223			

SIMPSON FARM RESTORATION WETLAND SITE
ANNUAL MONITORING DATA SHEET - VEGETATION PLOTS
YEAR 5 - 2012
PLOT NUMBER 3

SPECIES	STRATUM (T, SA, or SH)	Number of Individuals	HEIGHT (feet)	Planted vs. Volunteer Species	Number of Individuals Counted toward Success Criteria
Bald Cypress	T/SA	3	1	Planted	3
Loblolly Bay	SH	20	1	Volunteer	20
Loblolly Bay	SH	26	2	Volunteer	26
Loblolly Bay	SH	14	3	Volunteer	14
Fetterbush	SH	1	2	Planted	1
Fetterbush	SH	7	3	Planted	7
Fetterbush	SH	2	4	Planted	2
Red Bay	SH	1	1	Planted	1
Red Bay	SH	3	4	Planted	3
Red Bay	SH	7	6	Planted	7
Red Bay	SH	5	7	Planted	5
Red Bay	SH	10	8	Planted	10
Red Bay	SH	9	10	Planted	9
Red Bay	SH	5	12	Planted	5
Red Bay	SH	2	15	Planted	2
Blueberry	SH	1	2	Volunteer	1
Blueberry	SH	2	3	Volunteer	2
Blueberry	SH	6	4	Volunteer	6
Blueberry	SH	2	5	Volunteer	2
Blueberry	SH	5	6	Volunteer	5
Gallberry	SH	1	1	Volunteer	1
Gallberry	SH	8	2	Volunteer	8
Gallberry	SH	6	3	Volunteer	6
Gallberry	SH	5	4	Volunteer	5
Gallberry	SH	3	5	Volunteer	3
Gallberry	SH	2	6	Volunteer	2
Gallberry	SH	1	7	Volunteer	1
Gallberry	SH	1	8	Volunteer	1
Sweet Pepperbush	SH	2	1	Volunteer	2
Sweet Pepperbush	SH	2	2	Volunteer	2
Sweet Pepperbush	SH	1	3	Volunteer	1
Sweet Pepperbush	SH	1	4	Volunteer	1
Pond Pine	T/SA	1	1	Planted	1
Pond Pine	T/SA	1	2	Planted	1
Red Maple	T/SA	1	4	Volunteer	0
	TOTAL SHRUBS	161		OBSERVED DENSITY (PER PLOT)	166
	TOTAL TREES OF PLANTED SPECIES	5		OBSERVED DENSITY (PER ACRE)	1660
	TOTAL TREES OF VOLUNTEER SPECIES	1			
	TOTAL INDIVIDUALS	167			

SIMPSON FARM RESTORATION WETLAND SITE
ANNUAL MONITORING DATA SHEET - VEGETATION PLOTS
YEAR 5 - 2012
PLOT NUMBER 4

SPECIES	STRATUM (T, SA, or SH)	Number of Individuals	HEIGHT (feet)	Planted vs. Volunteer Species	Number of Individuals Counted toward Success Criteria
Bald Cypress	T/SA	1	1	Planted	1
Bald Cypress	T/SA	6	2	Planted	6
Bald Cypress	T/SA	2	3	Planted	2
Wax Myrtle	SH	5	4	Planted	5
Wax Myrtle	SH	2	5	Planted	2
Wax Myrtle	SH	5	6	Planted	5
Wax Myrtle	SH	1	7	Planted	1
Wax Myrtle	SH	9	8	Planted	9
Wax Myrtle	SH	1	9	Planted	1
Wax Myrtle	SH	3	10	Planted	3
Wax Myrtle	SH	1	12	Planted	1
Loblolly Bay	SH	15	2	Volunteer	15
Loblolly Bay	SH	8	4	Volunteer	8
Loblolly Bay	SH	8	6	Volunteer	8
Loblolly Bay	SH	2	10	Volunteer	2
Loblolly Bay	SH	2	14	Volunteer	2
American Holly	SH	1	1	Volunteer	1
Fetterbush	SH	2	2	Planted	2
Fetterbush	SH	5	3	Planted	5
Fetterbush	SH	2	4	Planted	2
Red Bay	SH	2	2	Planted	2
Red Bay	SH	1	3	Planted	1
Pond Pine	T/SA	1	1	Planted	1
Pond Pine	T/SA	6	2	Planted	6
Pond Pine	T/SA	3	3	Planted	3
Red Maple	T/SA	1	2	Volunteer	0
Blueberry	SH	3	2	Volunteer	3
Blueberry	SH	3	3	Volunteer	3
Blueberry	SH	7	4	Volunteer	7
Blueberry	SH	2	5	Volunteer	2
Blueberry	SH	9	6	Volunteer	9
Blueberry	SH	1	8	Volunteer	1
Gallberry	SH	1	2	Volunteer	1
Gallberry	SH	7	3	Volunteer	7
Gallberry	SH	3	4	Volunteer	3
Gallberry	SH	1	5	Volunteer	1
Gallberry	SH	1	6	Volunteer	1
Sweet Pepperbush	SH	1	3	Volunteer	1
	TOTAL SHRUBS	114		OBSERVED DENSITY (PER PLOT)	133
	TOTAL TREES OF PLANTED SPECIES	19		OBSERVED DENSITY (PER ACRE)	1330
	TOTAL TREES OF VOLUNTEER SPECIES	1			
	TOTAL INDIVIDUALS	134			

SIMPSON FARM RESTORATION WETLAND SITE
ANNUAL MONITORING DATA SHEET - VEGETATION PLOTS
YEAR 5 - 2012
PLOT NUMBER 5

SPECIES	STRATUM (T, SA, or SH)	Number of Individuals	HEIGHT (feet)	Planted vs. Volunteer Species	Number of Individuals Counted toward Success Criteria
Bald Cypress	T/SA	7	1	Planted	7
Bald Cypress	T/SA	4	2	Planted	4
Bald Cypress	T/SA	1	3	Planted	1
Bald Cypress	T/SA	2	7	Planted	2
Atlantic White Cedar	T/SA	1	6	Planted	1
Red Bay	SH	1	1	Planted	1
Red Bay	SH	1	2	Planted	1
Red Bay	SH	2	4	Planted	2
Red Bay	SH	1	6	Planted	1
Red Bay	SH	1	7	Planted	1
Loblolly Bay	SH	24	2	Volunteer	24
Loblolly Bay	SH	25	4	Volunteer	25
Loblolly Bay	SH	16	6	Volunteer	16
Loblolly Bay	SH	7	10	Volunteer	7
Loblolly Bay	SH	2	14	Volunteer	2
Gallberry	SH	2	2	Volunteer	2
Gallberry	SH	2	3	Volunteer	2
Gallberry	SH	3	4	Volunteer	3
Gallberry	SH	2	5	Volunteer	2
Gallberry	SH	2	6	Volunteer	2
Gallberry	SH	1	10	Volunteer	1
Sweet Pepperbush	SH	5	3	Volunteer	5
Sweet Pepperbush	SH	5	4	Volunteer	5
Pond Pine	T/SA	3	1	Planted	3
Pond Pine	T/SA	1	2	Planted	1
Pond Pine	T/SA	1	10	Planted	1
Fetterbush	SH	1	1	Planted	1
Fetterbush	SH	1	2	Planted	1
Fetterbush	SH	3	3	Planted	3
Fetterbush	SH	2	4	Planted	2
Blueberry	SH	1	2	Volunteer	1
Blueberry	SH	2	3	Volunteer	2
Blueberry	SH	5	4	Volunteer	5
Blueberry	SH	3	5	Volunteer	3
Blueberry	SH	4	6	Volunteer	4
Wax Myrtle	SH	1	1	Planted	1
American Holly	SH	1	1	Volunteer	1
American Holly	SH	1	2	Volunteer	1
	TOTAL SHRUBS	127		OBSERVED DENSITY (PER PLOT)	147
	TOTAL TREES OF PLANTED SPECIES	20		OBSERVED DENSITY (PER ACRE)	1470
	TOTAL TREES OF VOLUNTEER SPECIES	0			
	TOTAL INDIVIDUALS	147			

SIMPSON FARM RESTORATION WETLAND SITE
ANNUAL MONITORING DATA SHEET - VEGETATION PLOTS
YEAR 5 - 2012
PLOT NUMBER 6

SPECIES	STRATUM (T, SA, or SH)	Number of Individuals	HEIGHT (feet)	Planted vs. Volunteer Species	Number of Individuals Counted toward Success Criteria
Bald Cypress	T/SA	2	1	Planted	2
Bald Cypress	T/SA	1	2	Planted	1
Wax Myrtle	SH	2	2	Planted	2
Wax Myrtle	SH	1	3	Planted	1
Wax Myrtle	SH	1	4	Planted	1
Wax Myrtle	SH	5	6	Planted	5
Wax Myrtle	SH	4	8	Planted	4
Wax Myrtle	SH	5	10	Planted	5
Wax Myrtle	SH	1	12	Planted	1
Red Bay	SH	3	3	Volunteer	3
Red Bay	SH	1	4	Volunteer	1
Red Bay	SH	1	8	Volunteer	1
Red Bay	SH	1	10	Volunteer	1
Loblolly Bay	SH	35	1	Volunteer	35
Loblolly Bay	SH	45	2	Volunteer	45
Loblolly Bay	SH	41	3	Volunteer	41
Loblolly Bay	SH	32	4	Volunteer	32
Loblolly Bay	SH	23	5	Volunteer	23
Loblolly Bay	SH	5	10	Volunteer	5
Loblolly Bay	SH	4	12	Volunteer	4
Loblolly Bay	SH	2	15	Volunteer	2
Loblolly Bay	SH	2	20	Volunteer	2
Pond Pine	T/SA	1	1	Planted	1
Pond Pine	T/SA	1	3	Planted	1
Gallberry	SH	3	2	Volunteer	3
Gallberry	SH	4	3	Volunteer	4
Blueberry	SH	3	2	Volunteer	3
Blueberry	SH	1	3	Volunteer	1
Blueberry	SH	2	4	Volunteer	2
Blueberry	SH	1	6	Volunteer	1
	TOTAL SHRUBS	228		OBSERVED DENSITY (PER ACRE)	233
	TOTAL TREES OF PLANTED SPECIES	5		OBSERVED DENSITY (PER ACRE)	2330
	TOTAL TREES OF VOLUNTEER SPECIES	0			
	TOTAL INDIVIDUALS	233			

SIMPSON FARM RESTORATION WETLAND SITE
ANNUAL MONITORING DATA SHEET - VEGETATION PLOTS
YEAR 5 - 2012
PLOT NUMBER 7

SPECIES	STRATUM (T, SA, or SH)	Number of Individuals	HEIGHT (feet)	Planted vs. Volunteer Species	Number of Individuals Counted toward Success Criteria
Bald Cypress	T/SA	3	1	Planted	3
Bald Cypress	T/SA	5	2	Planted	5
Wax Myrtle	SH	1	5	Planted	1
Wax Myrtle	SH	2	6	Planted	2
Wax Myrtle	SH	1	10	Planted	1
Loblolly Bay	SH	46	2	Volunteer	46
Loblolly Bay	SH	34	4	Volunteer	34
Loblolly Bay	SH	31	6	Volunteer	31
Loblolly Bay	SH	6	10	Volunteer	6
Loblolly Bay	SH	3	14	Volunteer	3
Loblolly Bay	SH	2	18	Volunteer	2
Gallberry	SH	5	1	Volunteer	5
Gallberry	SH	4	2	Volunteer	4
Gallberry	SH	2	3	Volunteer	2
Gallberry	SH	7	4	Volunteer	7
Gallberry	SH	4	6	Volunteer	4
Red Bay	SH	2	1	Planted	2
Pond Pine	T/SA	3	2	Planted	3
Pond Pine	T/SA	1	3	Planted	1
Pond Pine	T/SA	2	4	Planted	2
Blueberry	SH	1	2	Volunteer	1
Blueberry	SH	3	3	Volunteer	3
Blueberry	SH	6	4	Volunteer	6
Blueberry	SH	3	5	Volunteer	3
Blueberry	SH	4	6	Volunteer	4
Blueberry	SH	1	7	Volunteer	1
Fetterbush	SH	1	1	Planted	1
Fetterbush	SH	1	2	Planted	1
Fetterbush	SH	1	3	Planted	1
Fetterbush	SH	3	4	Planted	3
	TOTAL SHRUBS	174		OBSERVED DENSITY (PER PLOT)	188
	TOTAL TREES OF PLANTED SPECIES	14		OBSERVED DENSITY (PER ACRE)	1880
	TOTAL TREES OF VOLUNTEER SPECIES	0			
	TOTAL INDIVIDUALS	188			

SIMPSON FARM RESTORATION WETLAND SITE
ANNUAL MONITORING DATA SHEET - VEGETATION PLOTS
YEAR 5 - 2012
PLOT NUMBER 8

SPECIES	STRATUM (T, SA, or SH)	Number of Individuals	HEIGHT (feet)	Planted vs. Volunteer Species	Number of Individuals Counted toward Success Criteria
Wax Myrtle	SH	1	4	Planted	1
Wax Myrtle	SH	1	8	Planted	1
Loblolly Bay	SH	22	2	Volunteer	22
Loblolly Bay	SH	24	4	Volunteer	24
Loblolly Bay	SH	18	6	Volunteer	18
Loblolly Bay	SH	2	8	Volunteer	2
Loblolly Bay	SH	2	10	Volunteer	2
Loblolly Bay	SH	1	12	Volunteer	1
Loblolly Bay	SH	1	14	Volunteer	1
Red Bay	SH	1	1	Volunteer	1
Red Bay	SH	1	2	Volunteer	1
Red Bay	SH	3	3	Volunteer	3
Red Bay	SH	1	5	Volunteer	1
Red Bay	SH	2	6	Volunteer	2
Red Bay	SH	1	8	Volunteer	1
Red Bay	SH	1	10	Volunteer	1
Red Bay	SH	3	12	Volunteer	3
Red Bay	SH	1	14	Volunteer	1
Fetterbush	SH	4	2	Planted	4
Fetterbush	SH	10	3	Planted	10
Fetterbush	SH	7	4	Planted	7
Fetterbush	SH	2	5	Planted	2
Fetterbush	SH	1	6	Planted	1
Sweet Pepperbush	SH	4	1	Volunteer	4
Sweet Pepperbush	SH	13	2	Volunteer	13
Sweet Pepperbush	SH	10	3	Volunteer	10
Sweet Pepperbush	SH	4	4	Volunteer	4
Sweet Pepperbush	SH	2	5	Volunteer	2
Sweet Pepperbush	SH	3	6	Volunteer	3
Sweet Pepperbush	SH	1	7	Volunteer	1
Blueberry	SH	6	3	Volunteer	6
Blueberry	SH	5	4	Volunteer	5
Blueberry	SH	5	5	Volunteer	5
Blueberry	SH	15	6	Volunteer	15
Blueberry	SH	1	7	Volunteer	1
Gallberry	SH	1	1	Volunteer	1
Gallberry	SH	1	2	Volunteer	1
Gallberry	SH	2	3	Volunteer	2
Gallberry	SH	2	4	Volunteer	2
Gallberry	SH	2	6	Volunteer	2
	TOTAL SHRUBS	187		OBSERVED DENSITY (PER PLOT)	187
	TOTAL TREES OF PLANTED SPECIES	0		OBSERVED DENSITY (PER ACRE)	1870
	TOTAL TREES OF VOLUNTEER SPECIES	0			
	TOTAL INDIVIDUALS	187			

SIMPSON FARM RESTORATION WETLAND SITE
ANNUAL MONITORING DATA SHEET - VEGETATION PLOTS
YEAR 5 - 2012
PLOT NUMBER 9

SPECIES	STRATUM (T, SA, or SH)	Number of Individuals	HEIGHT (feet)	Planted vs. Volunteer Species	Number of Individuals Counted toward Success Criteria
Bald Cypress	T/SA	2	1	Planted	2
Bald Cypress	T/SA	3	2	Planted	3
Bald Cypress	T/SA	1	6	Planted	1
Wax Myrtle	SH	2	3	Planted	2
Wax Myrtle	SH	2	4	Planted	2
Wax Myrtle	SH	1	5	Planted	1
Wax Myrtle	SH	3	6	Planted	3
Wax Myrtle	SH	2	7	Planted	2
Wax Myrtle	SH	2	12	Planted	2
Loblolly Bay	SH	29	2	Volunteer	29
Loblolly Bay	SH	50	4	Volunteer	50
Loblolly Bay	SH	46	6	Volunteer	46
Loblolly Bay	SH	7	10	Volunteer	7
Loblolly Bay	SH	2	14	Volunteer	2
Red Bay	SH	5	1	Planted	5
Red Bay	SH	1	3	Planted	1
Red Bay	SH	1	4	Planted	1
Red Bay	SH	1	8	Planted	1
Red Bay	SH	3	10	Planted	3
Fetterbush	SH	4	1	Planted	4
Fetterbush	SH	5	2	Planted	5
Fetterbush	SH	4	3	Planted	4
Fetterbush	SH	1	4	Planted	1
Fetterbush	SH	1	5	Planted	1
Pond Pine	T/SA	1	2	Planted	1
Pond Pine	T/SA	1	4	Planted	1
Blueberry	SH	1	2	Volunteer	1
Blueberry	SH	1	3	Volunteer	1
Blueberry	SH	4	4	Volunteer	4
Blueberry	SH	2	5	Volunteer	2
Blueberry	SH	3	6	Volunteer	3
Sweet Pepperbush	SH	2	2	Volunteer	2
Sweet Pepperbush	SH	1	3	Volunteer	1
Gallberry	SH	3	2	Volunteer	3
Gallberry	SH	2	3	Volunteer	2
Gallberry	SH	5	4	Volunteer	5
Gallberry	SH	1	6	Volunteer	1
Gallberry	SH	1	7	Volunteer	1
	TOTAL SHRUBS	198		OBSERVED DENSITY (PER PLOT)	206
	TOTAL TREES OF PLANTED SPECIES	8		OBSERVED DENSITY (PER ACRE)	2060
	TOTAL TREES OF VOLUNTEER SPECIES	0			
	TOTAL INDIVIDUALS	206			

SIMPSON FARM RESTORATION WETLAND SITE
ANNUAL MONITORING DATA SHEET - VEGETATION PLOTS
YEAR 5 - 2012
PLOT NUMBER 10

SPECIES	STRATUM (T, SA, or SH)	Number of Individuals	HEIGHT (feet)	Planted vs. Volunteer Species	Number of Individuals Counted toward Success Criteria
Atlantic White Cedar	T/SA	1	3	Planted	1
Bald Cypress	T/SA	2	1	Planted	2
Bald Cypress	T/SA	2	2	Planted	2
Wax Myrtle	SH	1	4	Planted	1
Wax Myrtle	SH	1	7	Planted	1
Wax Myrtle	SH	1	8	Planted	1
Gallberry	SH	1	1	Volunteer	1
Gallberry	SH	6	2	Volunteer	6
Gallberry	SH	7	3	Volunteer	7
Gallberry	SH	8	4	Volunteer	8
Gallberry	SH	1	5	Volunteer	1
Gallberry	SH	6	6	Volunteer	6
Sweet Pepperbush	SH	4	1	Volunteer	4
Sweet Pepperbush	SH	13	2	Volunteer	13
Sweet Pepperbush	SH	13	3	Volunteer	13
Sweet Pepperbush	SH	10	4	Volunteer	10
Sweet Pepperbush	SH	4	5	Volunteer	4
Loblolly Bay	SH	20	2	Volunteer	20
Loblolly Bay	SH	31	4	Volunteer	31
Loblolly Bay	SH	24	6	Volunteer	24
Loblolly Bay	SH	3	10	Volunteer	3
Loblolly Bay	SH	2	15	Volunteer	2
Red Bay	SH	2	3	Planted	2
Red Bay	SH	2	6	Planted	2
Red Bay	SH	1	7	Planted	1
Red Maple	T/SA	2	1	Volunteer	0
Fetterbush	SH	3	2	Planted	3
Fetterbush	SH	2	3	Planted	2
Blueberry	SH	4	2	Volunteer	4
Blueberry	SH	2	3	Volunteer	2
Blueberry	SH	7	4	Volunteer	7
Blueberry	SH	3	5	Volunteer	3
Blueberry	SH	5	6	Volunteer	5
Zenobia	SH	2	3	Volunteer	2
Zenobia	SH	4	4	Volunteer	4
Zenobia	SH	1	6	Volunteer	1
	TOTAL SHRUBS	194		OBSERVED DENSITY (PER PLOT)	199
	TOTAL TREES OF PLANTED SPECIES	5		OBSERVED DENSITY (PER ACRE)	1990
	TOTAL TREES OF VOLUNTEER SPECIES	2			
	TOTAL INDIVIDUALS	201			

SIMPSON FARM RESTORATION WETLAND SITE
ANNUAL MONITORING DATA SHEET - VEGETATION PLOTS
YEAR 5 - 2012
PLOT NUMBER 11

SPECIES	STRATUM (T, SA, or SH)	Number of Individuals	HEIGHT (feet)	Planted vs. Volunteer Species	Number of Individuals Counted toward Success Criteria
Bald Cypress	T/SA	1	1	Planted	1
Loblolly Bay	SH	9	1	Volunteer	9
Loblolly Bay	SH	5	2	Volunteer	5
Loblolly Bay	SH	4	3	Volunteer	4
Loblolly Bay	SH	7	4	Volunteer	7
Loblolly Bay	SH	4	5	Volunteer	4
Loblolly Bay	SH	9	6	Volunteer	9
Loblolly Bay	SH	1	7	Volunteer	1
Loblolly Bay	SH	6	8	Volunteer	6
Loblolly Bay	SH	1	10	Volunteer	1
Red Bay	SH	1	1	Planted	1
Red Bay	SH	2	3	Planted	2
Red Bay	SH	1	4	Planted	1
Red Bay	SH	1	5	Planted	1
Red Bay	SH	3	6	Planted	3
Red Bay	SH	2	7	Planted	2
Red Bay	SH	1	8	Planted	1
Blueberry	SH	6	2	Volunteer	6
Blueberry	SH	7	3	Volunteer	7
Blueberry	SH	10	4	Volunteer	10
Blueberry	SH	2	5	Volunteer	2
Blueberry	SH	2	6	Volunteer	2
Gallberry	SH	1	1	Volunteer	1
Gallberry	SH	6	2	Volunteer	6
Gallberry	SH	5	3	Volunteer	5
Gallberry	SH	2	4	Volunteer	2
Gallberry	SH	2	6	Volunteer	2
Sweet Pepperbush	SH	2	1	Volunteer	2
Sweet Pepperbush	SH	1	2	Volunteer	1
Sweet Pepperbush	SH	2	3	Volunteer	2
Wax Myrtle	SH	1	6	Planted	1
Fetterbush	SH	2	1	Planted	2
Fetterbush	SH	10	2	Planted	10
Fetterbush	SH	15	3	Planted	15
Fetterbush	SH	4	4	Planted	4
Pond Pine	T/SA	2	2	Planted	2
	TOTAL SHRUBS	137		OBSERVED DENSITY (PER PLOT)	140
	TOTAL TREES OF PLANTED SPECIES	3		OBSERVED DENSITY (PER ACRE)	1400
	TOTAL TREES OF VOLUNTEER SPECIES	0			
	TOTAL INDIVIDUALS	140			

SIMPSON FARM RESTORATION WETLAND SITE
ANNUAL MONITORING DATA SHEET - VEGETATION PLOTS
YEAR 5 - 2012
PLOT NUMBER 12

SPECIES	STRATUM (T, SA, or SH)	Number of Individuals	HEIGHT (feet)	Planted vs. Volunteer Species	Number of Individuals Counted toward Success Criteria
Wax Myrtle	SH	2	6	Planted	2
Loblolly Bay	SH	1	1	Volunteer	1
Loblolly Bay	SH	6	2	Volunteer	6
Loblolly Bay	SH	1	3	Volunteer	1
Loblolly Bay	SH	12	4	Volunteer	12
Loblolly Bay	SH	5	5	Volunteer	5
Loblolly Bay	SH	12	6	Volunteer	12
Loblolly Bay	SH	1	7	Volunteer	1
Loblolly Bay	SH	7	8	Volunteer	7
Loblolly Bay	SH	15	10	Volunteer	15
Loblolly Bay	SH	2	12	Volunteer	2
Sweet Pepperbush	SH	4	1	Volunteer	4
Sweet Pepperbush	SH	5	2	Volunteer	5
Sweet Pepperbush	SH	21	3	Volunteer	21
Sweet Pepperbush	SH	9	4	Volunteer	9
Sweet Pepperbush	SH	1	6	Volunteer	1
Blueberry	SH	2	1	Volunteer	2
Blueberry	SH	1	2	Volunteer	1
Blueberry	SH	6	3	Volunteer	6
Blueberry	SH	16	4	Volunteer	16
Blueberry	SH	6	5	Volunteer	6
Blueberry	SH	9	6	Volunteer	9
Blueberry	SH	2	8	Volunteer	2
Gallberry	SH	2	2	Volunteer	2
Gallberry	SH	6	3	Volunteer	6
Gallberry	SH	2	4	Volunteer	2
Red Bay	SH	1	1	Planted	1
Red Bay	SH	1	2	Planted	1
Red Bay	SH	1	3	Planted	1
Red Bay	SH	1	4	Planted	1
Red Bay	SH	1	6	Planted	1
Red Bay	SH	2	8	Planted	2
Red Bay	SH	1	10	Planted	1
Red Bay	SH	1	12	Planted	1
Fetterbush	SH	1	1	Planted	1
Fetterbush	SH	6	2	Planted	6
Fetterbush	SH	14	3	Planted	14
Fetterbush	SH	6	4	Planted	6
Fetterbush	SH	2	5	Planted	2
Pond Pine	T/SA	1	2	Planted	1
Pond Pine	T/SA	1	3	Planted	1
Pond Pine	T/SA	2	5	Planted	2
American Holly	SH	2	1	Volunteer	2
	TOTAL SHRUBS	196		OBSERVED DENSITY (PER PLOT)	200
	TOTAL TREES OF PLANTED SPECIES	4		OBSERVED DENSITY (PER ACRE)	2000
	TOTAL TREES OF VOLUNTEER SPECIES	0			
	TOTAL INDIVIDUALS	200			

SIMPSON FARM RESTORATION WETLAND SITE
ANNUAL MONITORING DATA SHEET - VEGETATION PLOTS
YEAR 5 - 2012
PLOT NUMBER 13

SPECIES	STRATUM (T, SA, or SH)	Number of Individuals	HEIGHT (feet)	Planted vs. Volunteer Species	Number of Individuals Counted toward Success Criteria
Sweet Pepperbush	SH	21	3	Volunteer	21
Sweet Pepperbush	SH	19	4	Volunteer	19
Loblolly Bay	SH	4	4	Volunteer	4
Loblolly Bay	SH	7	6	Volunteer	7
Loblolly Bay	SH	4	8	Volunteer	4
Loblolly Bay	SH	9	10	Volunteer	9
Gallberry	SH	20	2	Volunteer	20
Gallberry	SH	10	3	Volunteer	10
Gallberry	SH	80	4	Volunteer	80
Gallberry	SH	80	6	Volunteer	80
Gallberry	SH	40	8	Volunteer	40
Gallberry	SH	20	10	Volunteer	20
Red Maple	T/SA	5	4	Volunteer	0
Red Maple	T/SA	5	5	Volunteer	0
Red Maple	T/SA	5	10	Volunteer	0
	TOTAL SHRUBS	314		OBSERVED DENSITY (PER PLOT)	314
	TOTAL TREES OF PLANTED SPECIES	0		OBSERVED DENSITY (PER ACRE)	3140
	TOTAL TREES OF VOLUNTEER SPECIES	15			
	TOTAL INDIVIDUALS	329			

SIMPSON FARM RESTORATION WETLAND SITE
ANNUAL MONITORING DATA SHEET - VEGETATION PLOTS
YEAR 5 - 2012
PLOT NUMBER 14

SPECIES	STRATUM (T, SA, or SH)	Number of Individuals	HEIGHT (feet)	Planted vs. Volunteer Species	Number of Individuals Counted toward Success Criteria
Loblolly Bay	SH	3	2	Volunteer	3
Loblolly Bay	SH	2	3	Volunteer	2
Loblolly Bay	SH	2	4	Volunteer	2
Loblolly Bay	SH	1	5	Volunteer	1
Loblolly Bay	SH	1	6	Volunteer	1
Loblolly Bay	SH	1	7	Volunteer	1
Gallberry	SH	35	2	Volunteer	35
Gallberry	SH	50	3	Volunteer	50
Gallberry	SH	32	4	Volunteer	32
Gallberry	SH	28	5	Volunteer	28
Gallberry	SH	25	6	Volunteer	25
Gallberry	SH	26	8	Volunteer	26
Fetterbush	SH	15	2	Planted	15
Fetterbush	SH	5	3	Planted	5
Sweet Pepperbush	SH	17	3	Volunteer	17
Sweet Pepperbush	SH	13	4	Volunteer	13
Zenobia	SH	7	1	Volunteer	7
Zenobia	SH	6	2	Volunteer	6
Zenobia	SH	7	3	Volunteer	7
	TOTAL SHRUBS	276		OBSERVED DENSITY (PER PLOT)	276
	TOTAL TREES OF PLANTED SPECIES	0		OBSERVED DENSITY (PER ACRE)	2760
	TOTAL TREES OF VOLUNTEER SPECIES	0			
	TOTAL INDIVIDUALS	276			

SIMPSON FARM RESTORATION WETLAND SITE
ANNUAL MONITORING DATA SHEET - VEGETATION PLOTS
YEAR 5 - 2012
PLOT NUMBER 15

SPECIES	STRATUM (T, SA, or SH)	Number of Individuals	HEIGHT (feet)	Planted vs. Volunteer Species	Number of Individuals Counted toward Success Criteria
Bald Cypress	T/SA	1	1	Planted	1
Wax Myrtle	SH	1	1	Planted	1
Wax Myrtle	SH	2	2	Planted	2
Wax Myrtle	SH	3	3	Planted	3
Wax Myrtle	SH	1	4	Planted	1
Wax Myrtle	SH	3	5	Planted	3
Wax Myrtle	SH	2	6	Planted	2
Wax Myrtle	SH	1	7	Planted	1
Wax Myrtle	SH	1	8	Planted	1
Wax Myrtle	SH	1	10	Planted	1
Fetterbush	SH	4	2	Planted	4
Fetterbush	SH	5	3	Planted	5
Fetterbush	SH	2	4	Planted	2
Loblolly Bay	SH	40	1	Volunteer	40
Loblolly Bay	SH	18	2	Volunteer	18
Loblolly Bay	SH	10	3	Volunteer	10
Loblolly Bay	SH	4	4	Volunteer	4
Loblolly Bay	SH	2	6	Volunteer	2
Loblolly Bay	SH	1	10	Volunteer	1
Gallberry	SH	3	2	Volunteer	3
Gallberry	SH	3	3	Volunteer	3
Gallberry	SH	1	4	Volunteer	1
Gallberry	SH	1	5	Volunteer	1
Gallberry	SH	4	6	Volunteer	4
Sweet Pepperbush	SH	2	1	Volunteer	2
Sweet Pepperbush	SH	1	2	Volunteer	1
Sweet Pepperbush	SH	2	3	Volunteer	2
Sweet Pepperbush	SH	2	4	Volunteer	2
Sweet Pepperbush	SH	1	6	Volunteer	1
Blueberry	SH	3	2	Volunteer	3
Blueberry	SH	1	3	Volunteer	1
Blueberry	SH	1	4	Volunteer	1
Zenobia	SH	1	4	Volunteer	1
Red Bay	SH	2	2	Planted	2
Red Bay	SH	1	4	Planted	1
Red Bay	SH	1	6	Planted	1
Pond Pine	T/SA	1	1	Planted	1
Sweet Gum	T/SA	1	6	Volunteer	0
	TOTAL SHRUBS	131		OBSERVED DENSITY (PER PLOT)	133
	TOTAL TREES OF PLANTED SPECIES	2		OBSERVED DENSITY (PER ACRE)	1330
	TOTAL TREES OF VOLUNTEER SPECIES	1			
	TOTAL INDIVIDUALS	134			

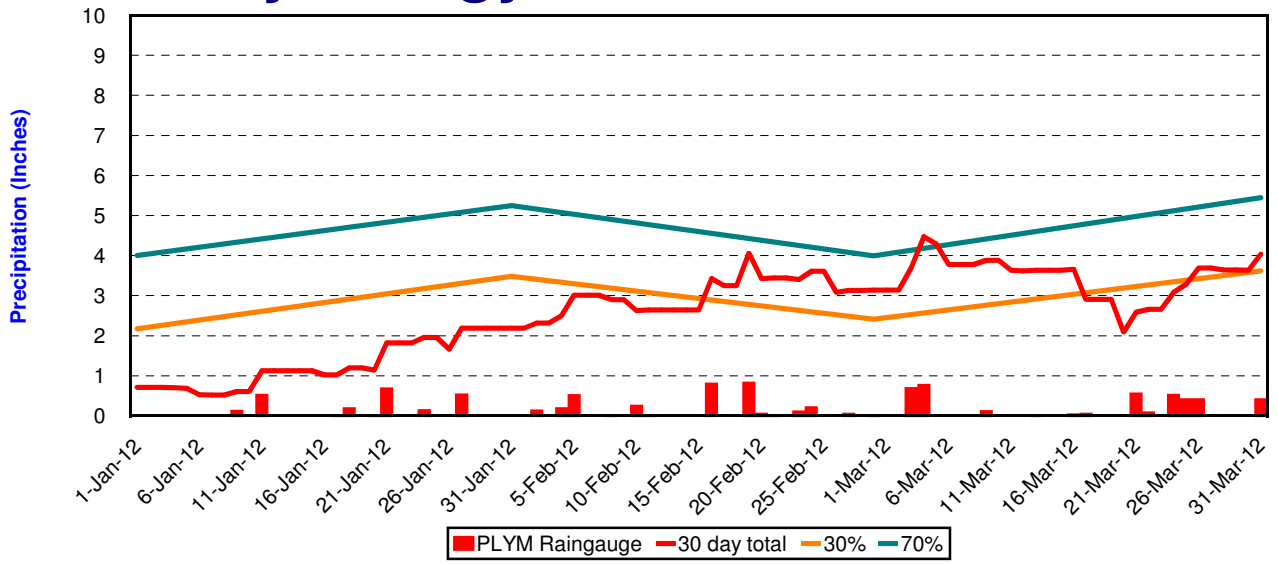
APPENDIX C.
2012 HYDROGRAPHS

Hydrology Assessment

March, 2012

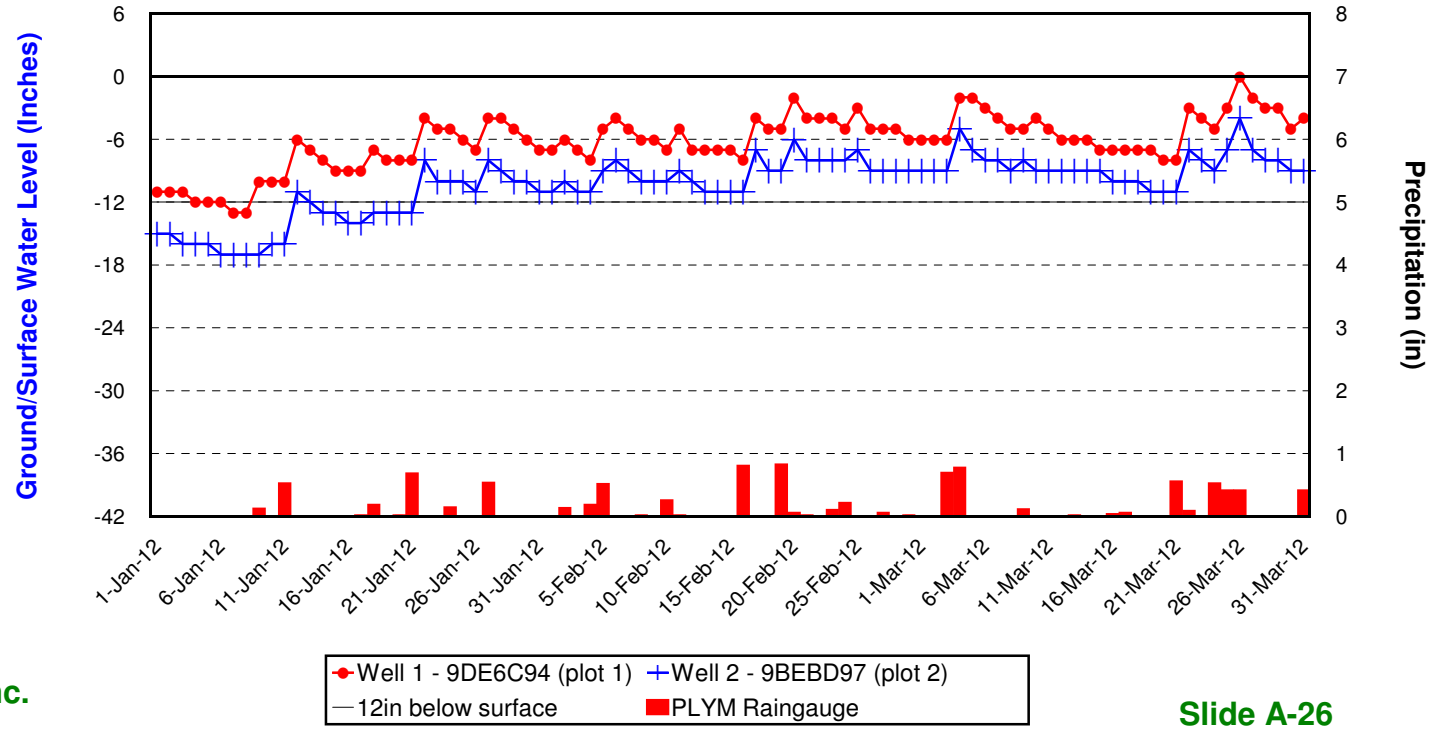
Precipitation data obtained from: station PLYM (www.nc-climate.ncsu.edu)

30% & 70% precipitation data obtained from: WETS Station : PLYMOUTH 5 E, NC6853 (wcc.nrcs.usda.gov)



Monitoring Well Record

- Simpson Restoration
- Washington County, NC
- 40-05-624
- Wells 1 & 2
- Ecotone - WM 40
- January 1, 2012-
- March 31, 2012
- One reading per day
- at 7:00am



Hydrology Assessment

June, 2012

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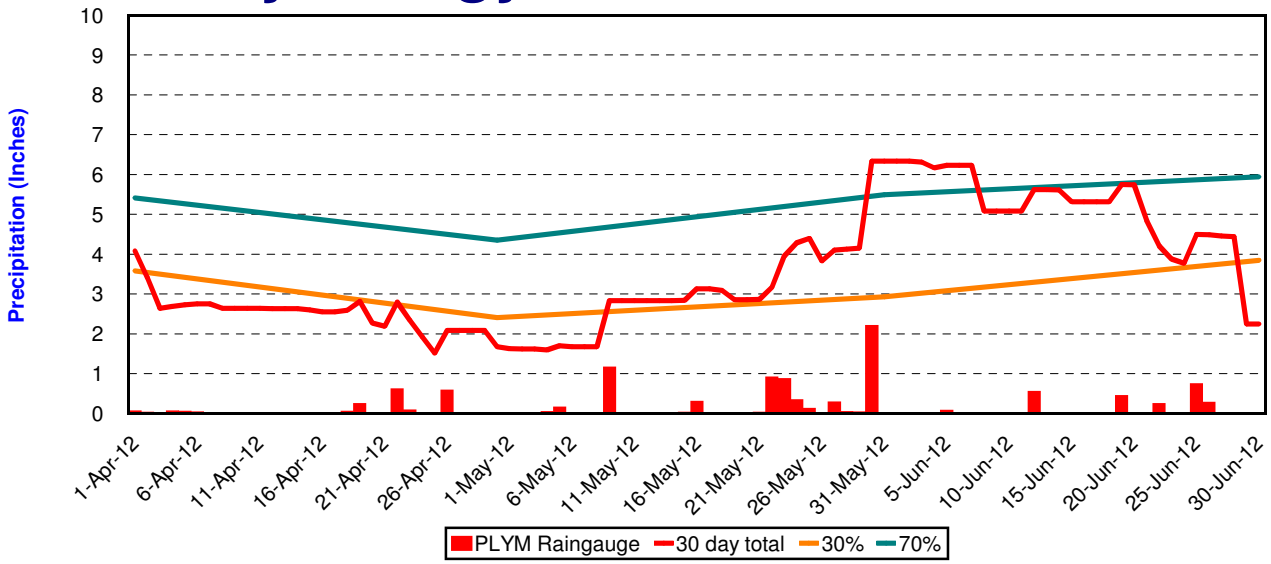

Monitoring Well Record

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- 40-05-624
- Wells 1 & 2
- Ecotone - WM 40
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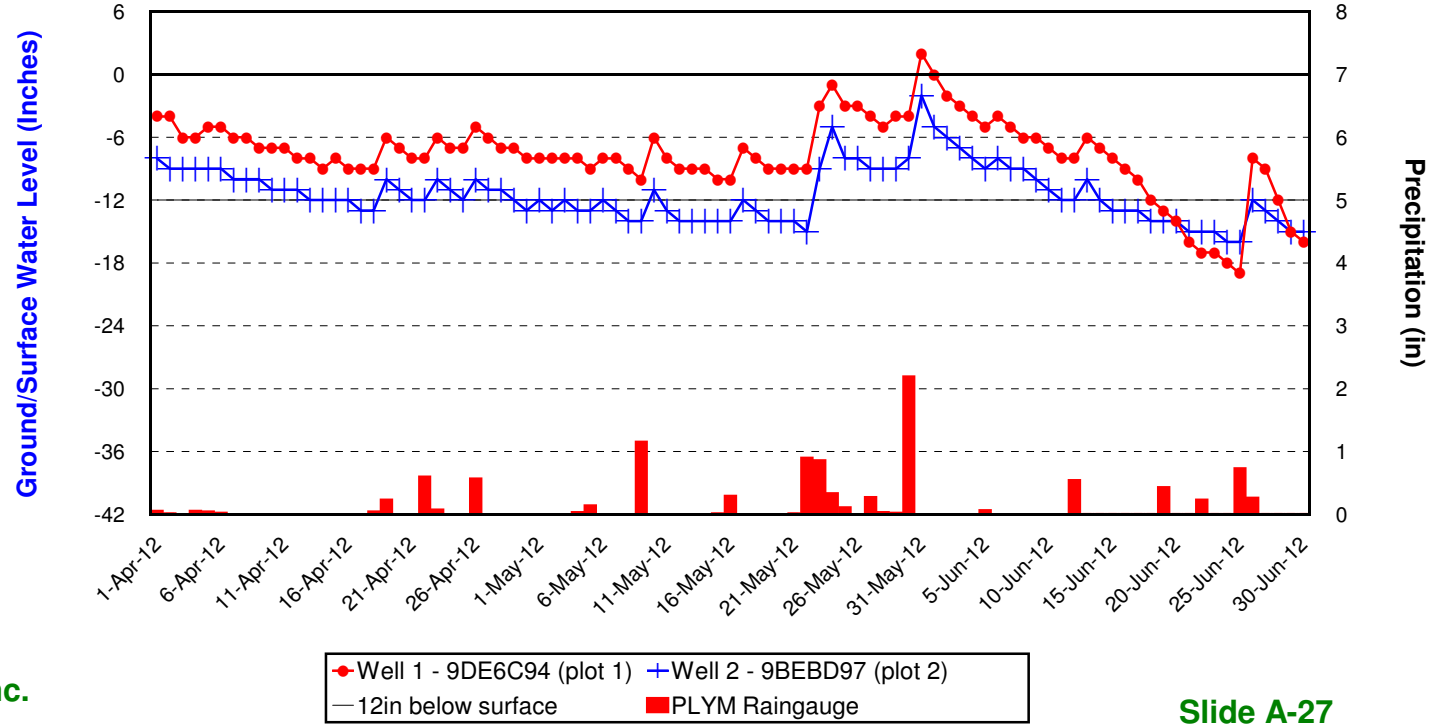
- One reading per day
- at 7:00am



Hydrology Assessment

September, 2012

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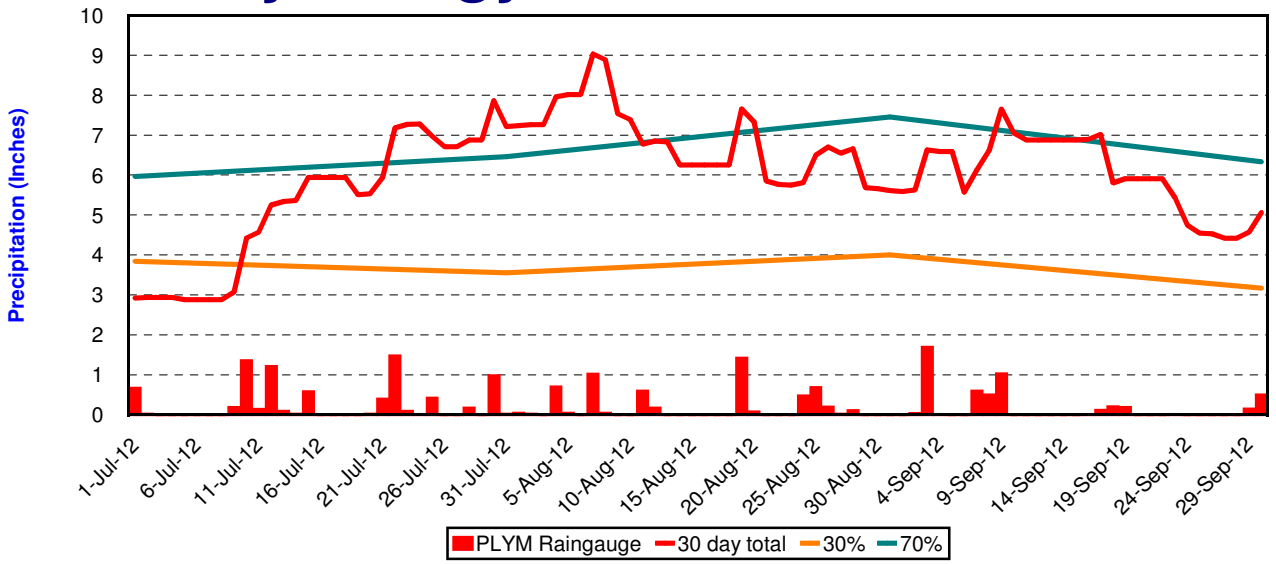

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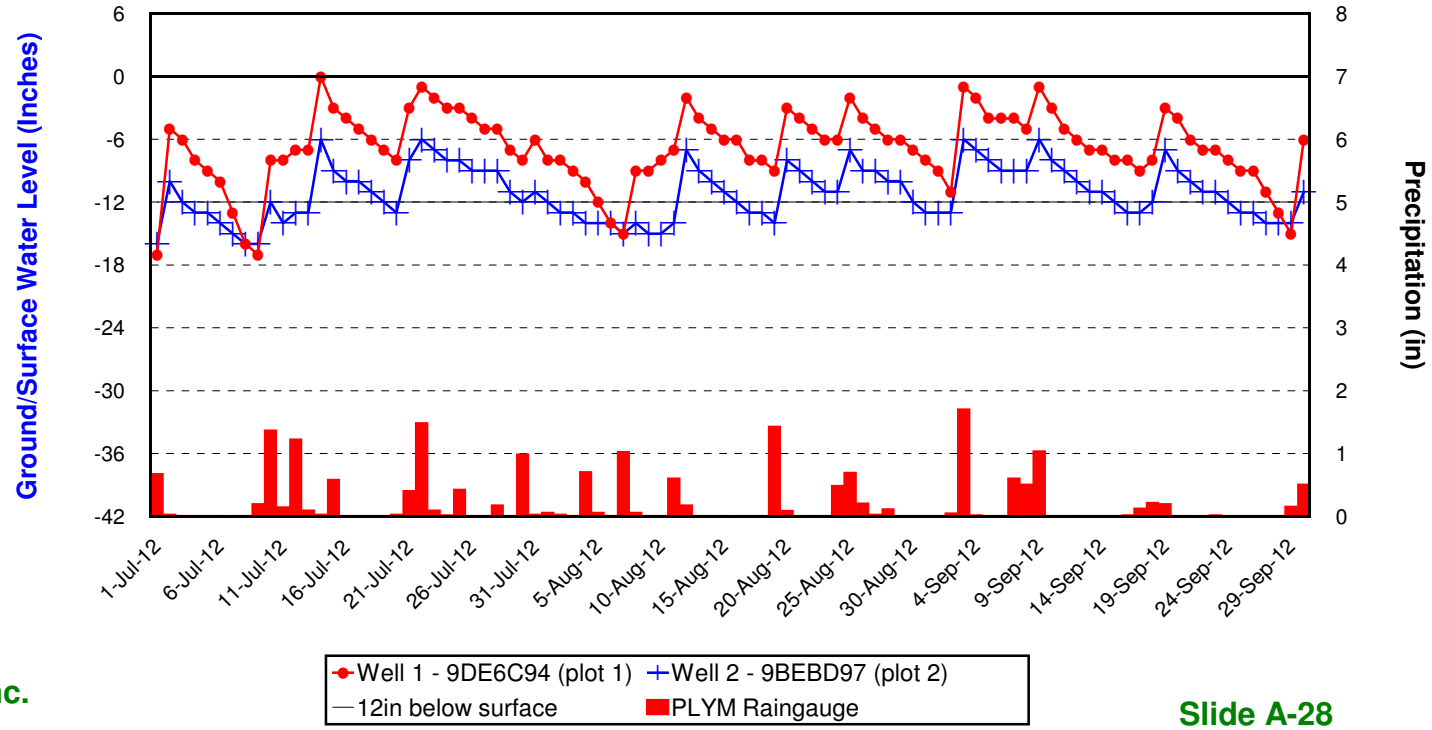

Hydrology Assessment

December, 2012

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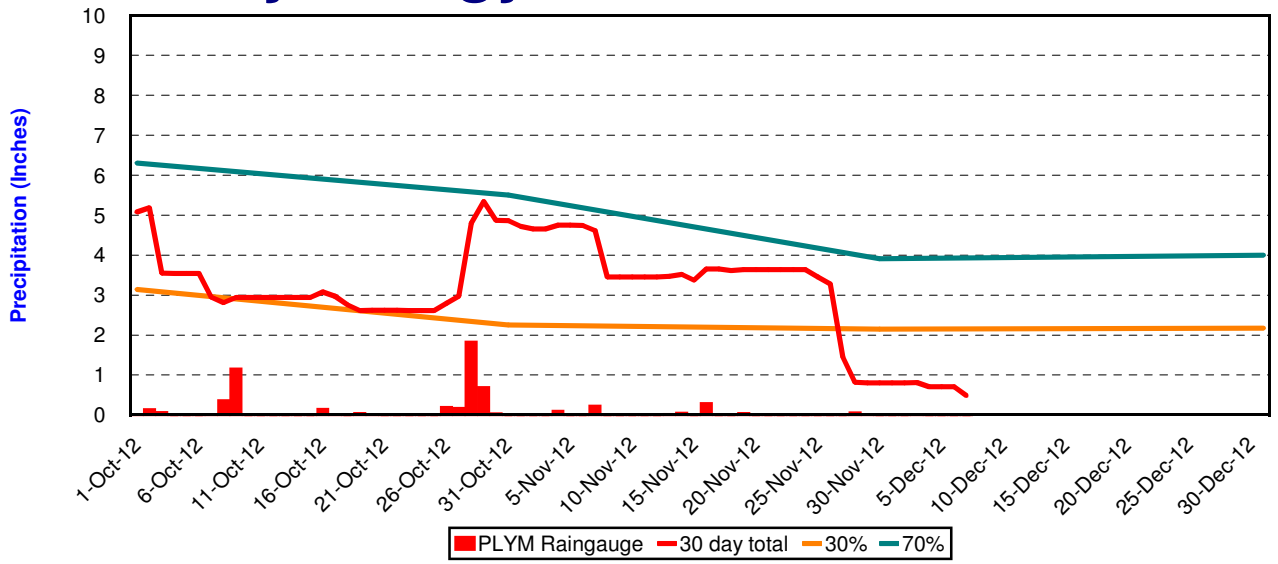

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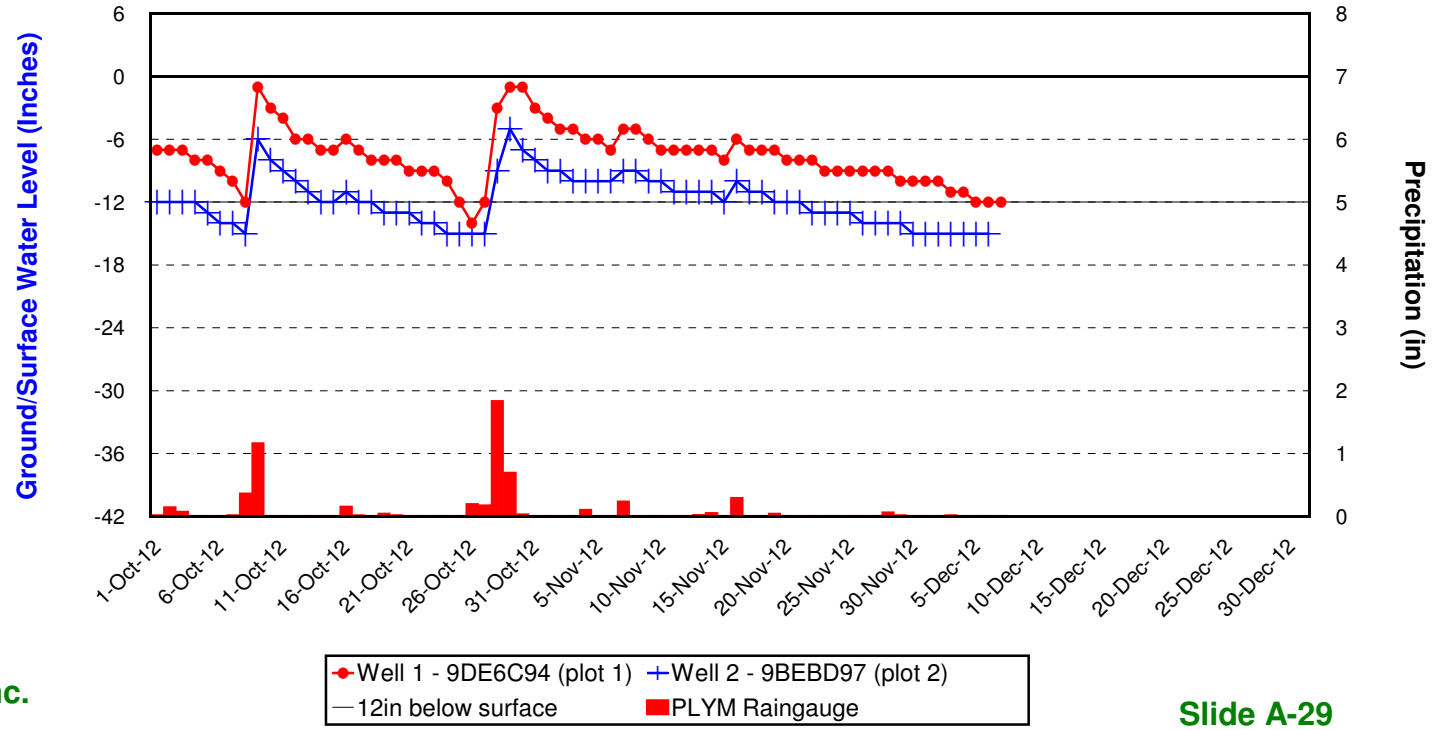

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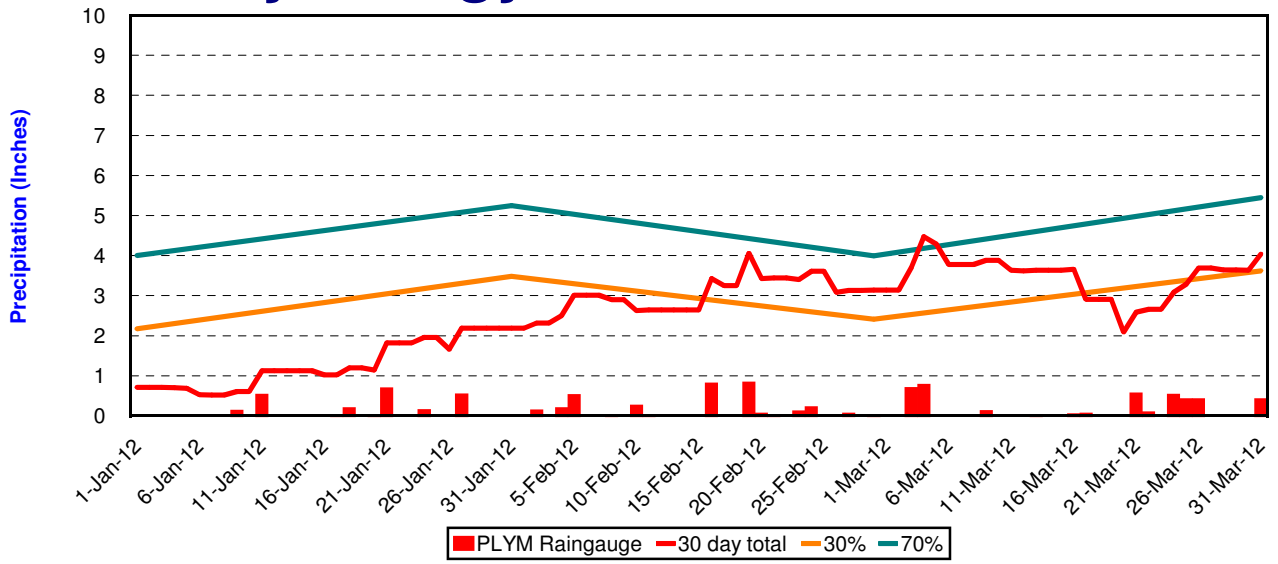

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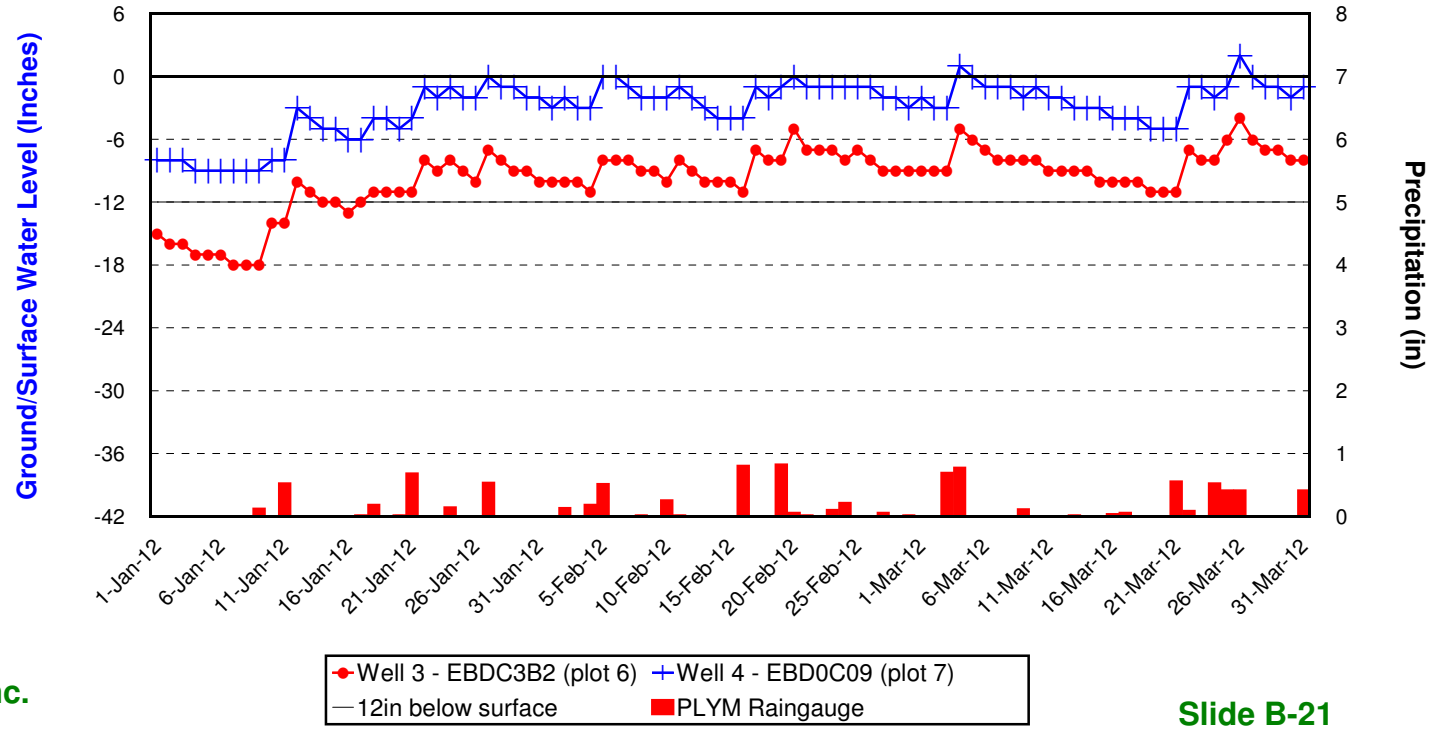

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Hydrology Assessment

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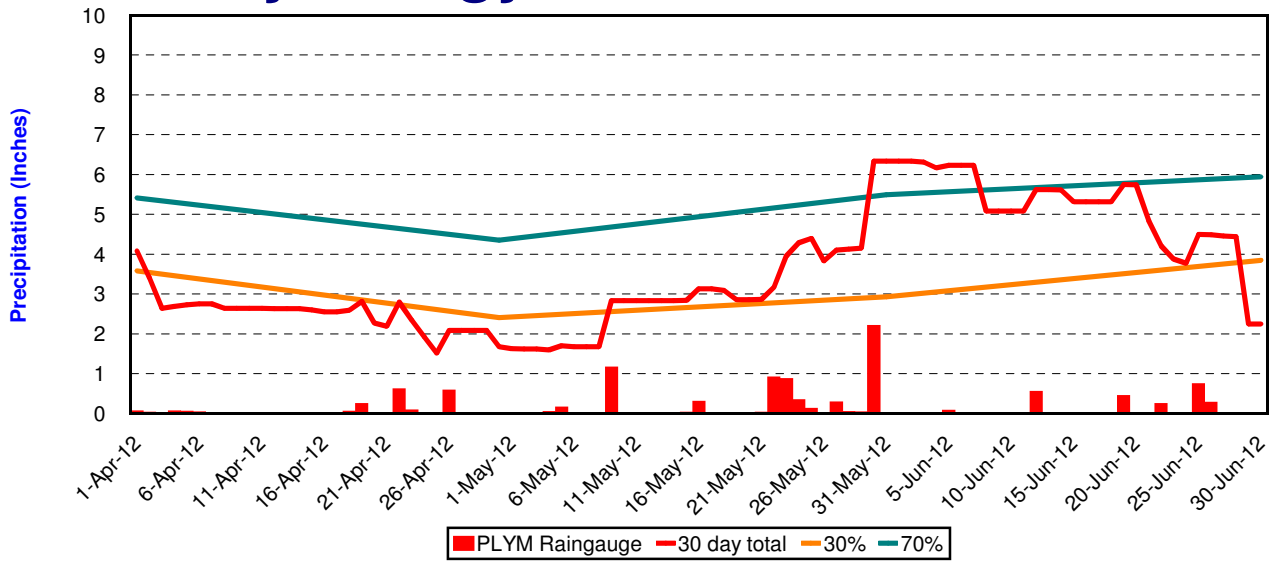

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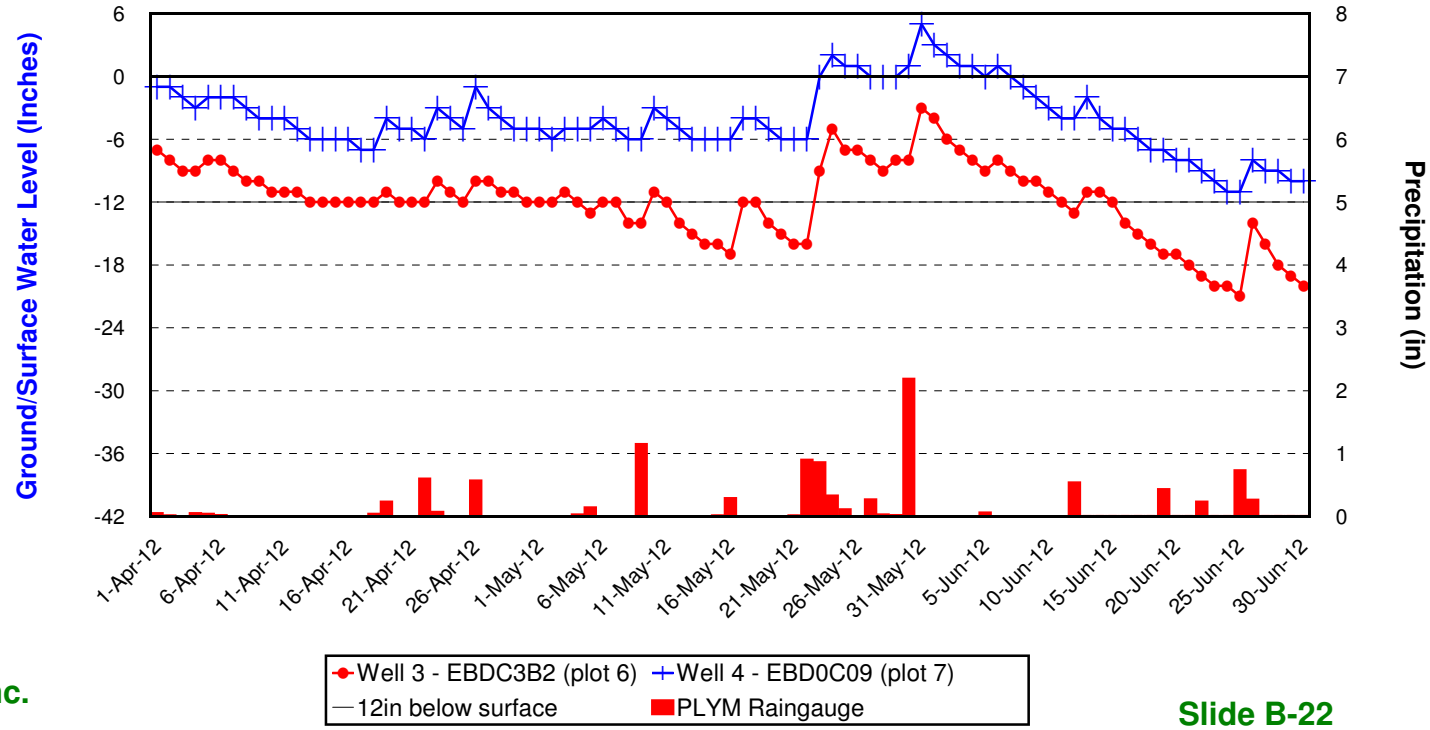

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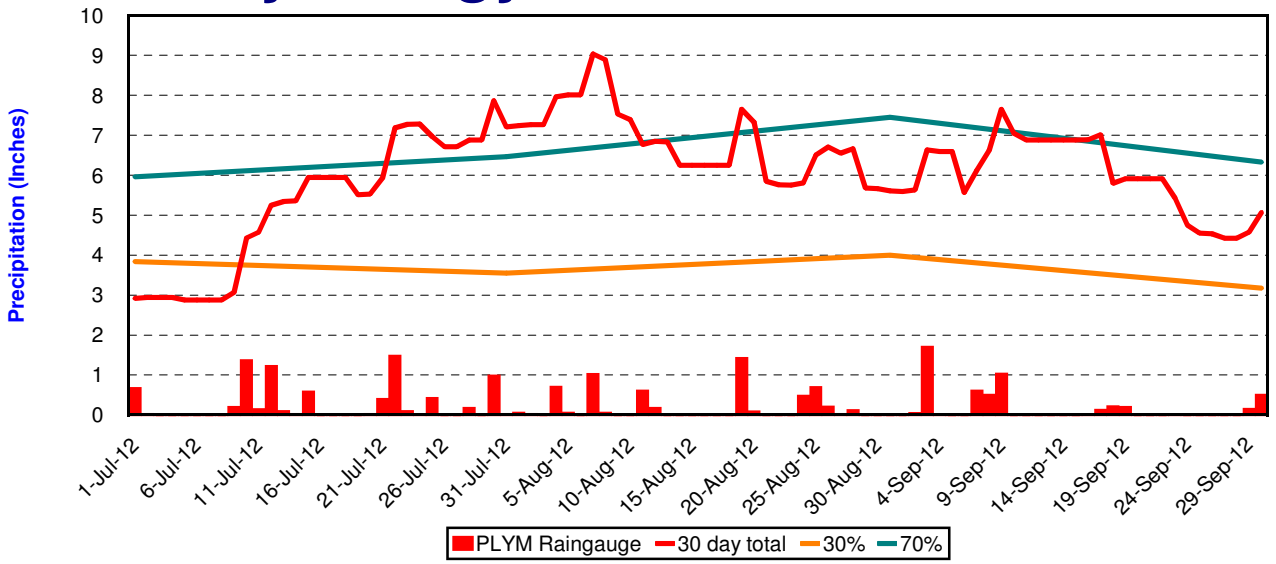

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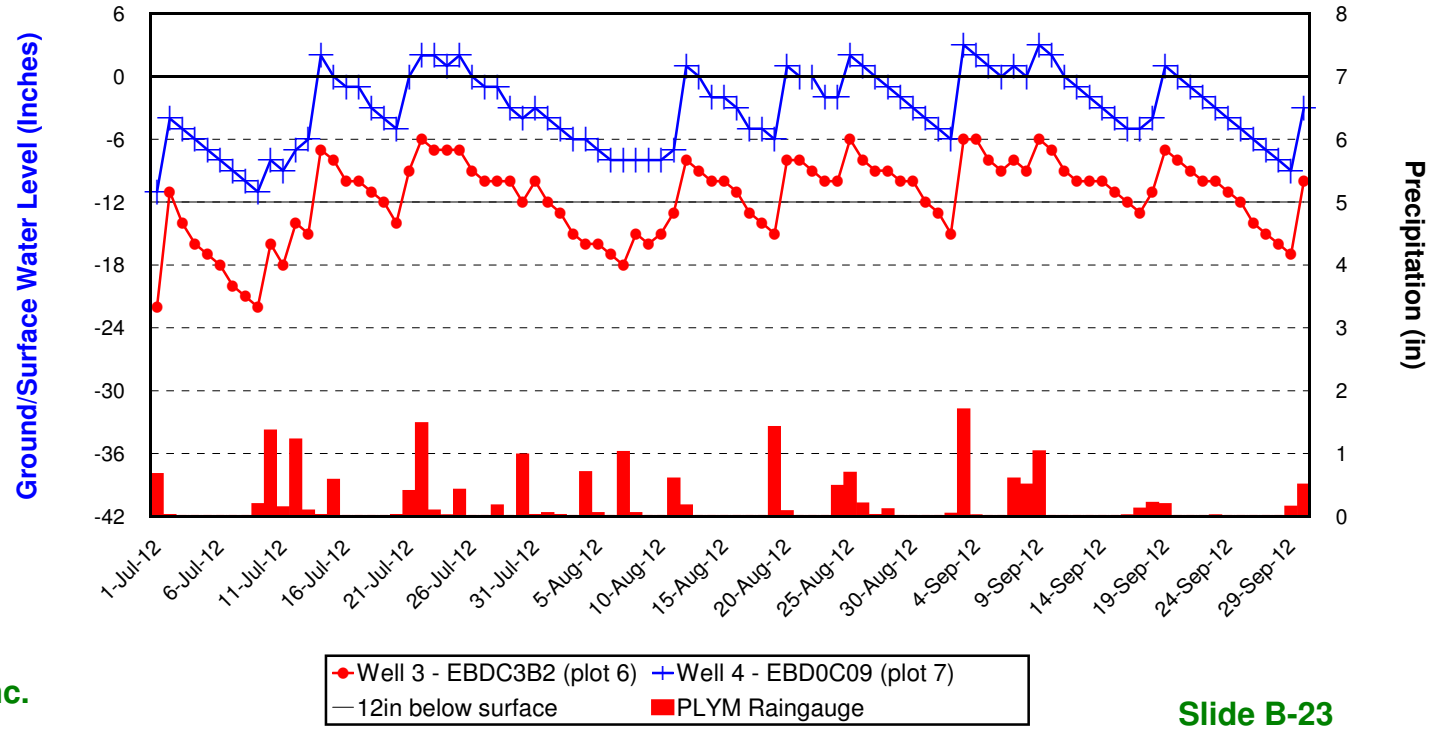

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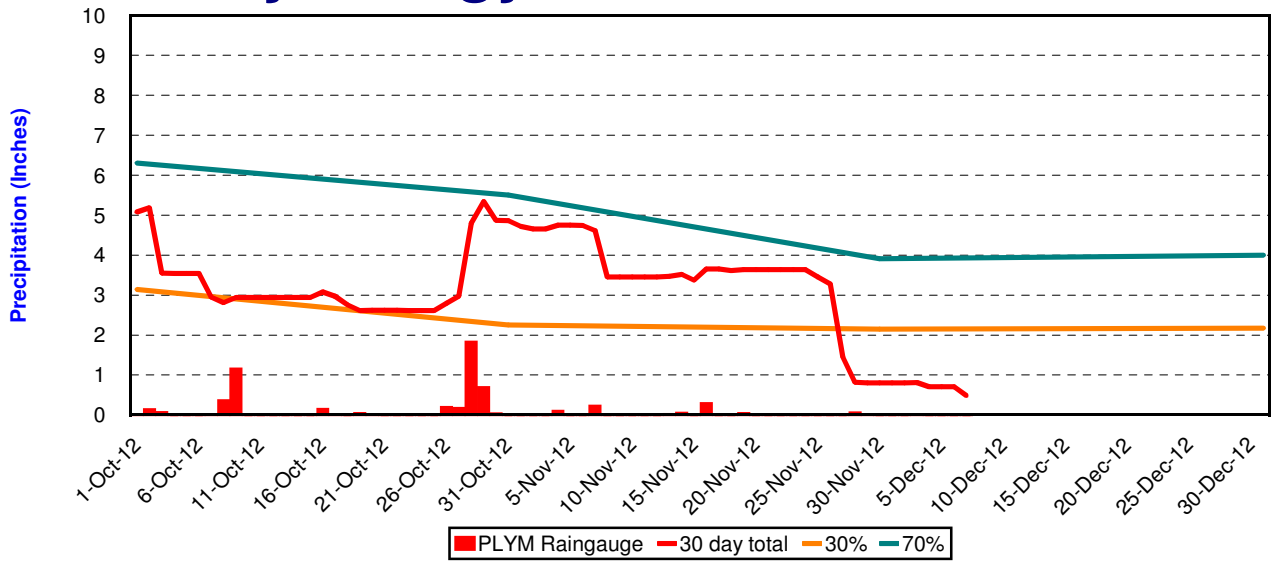

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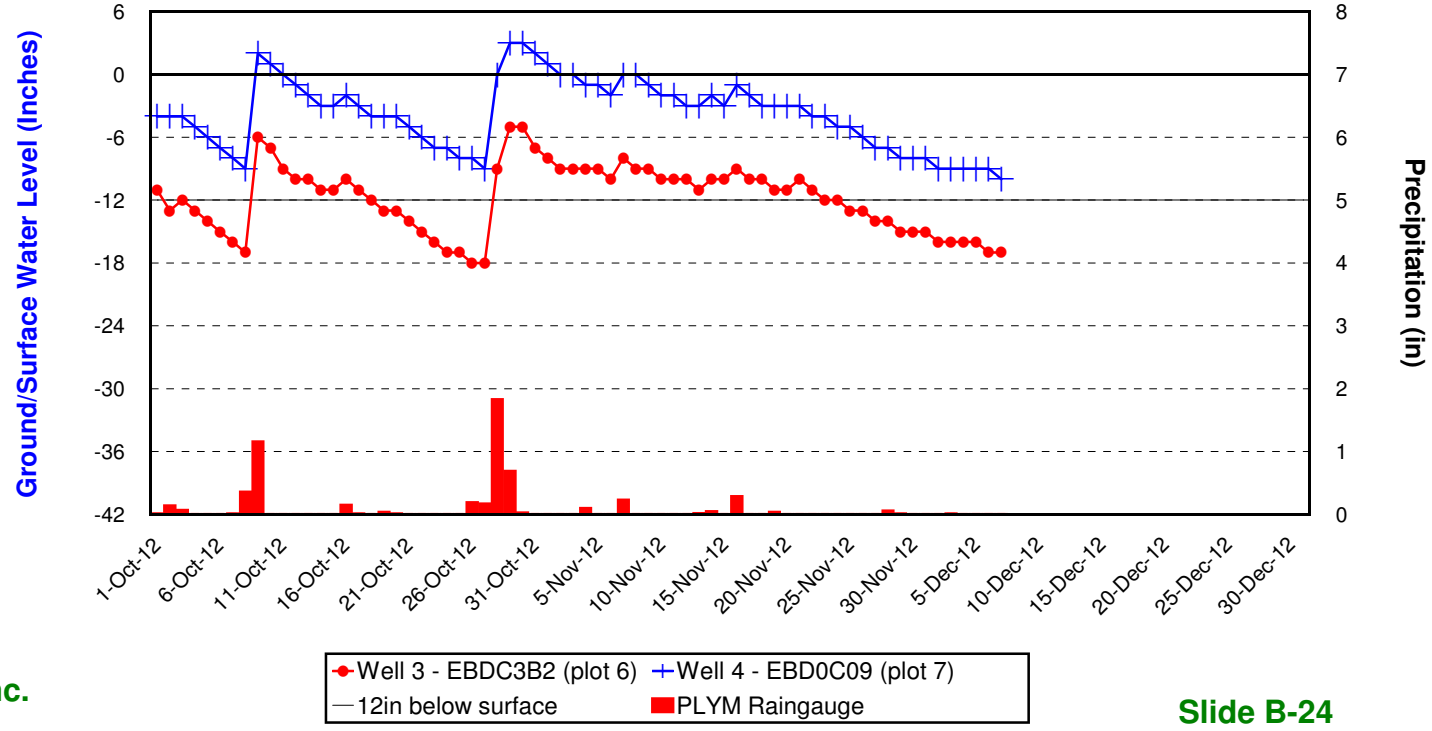

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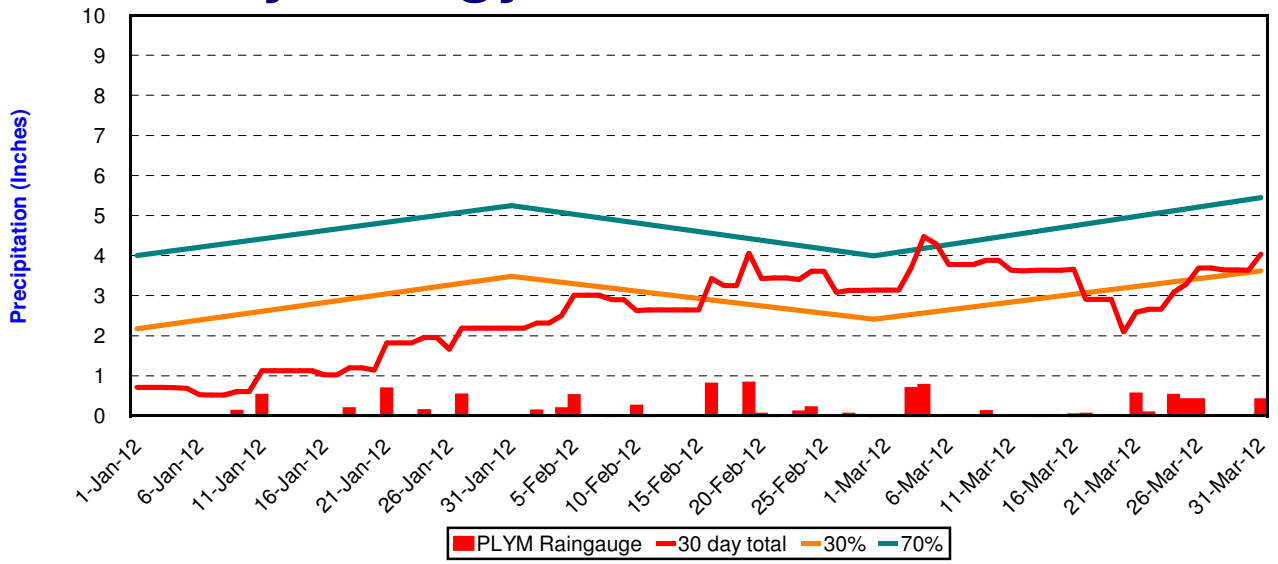

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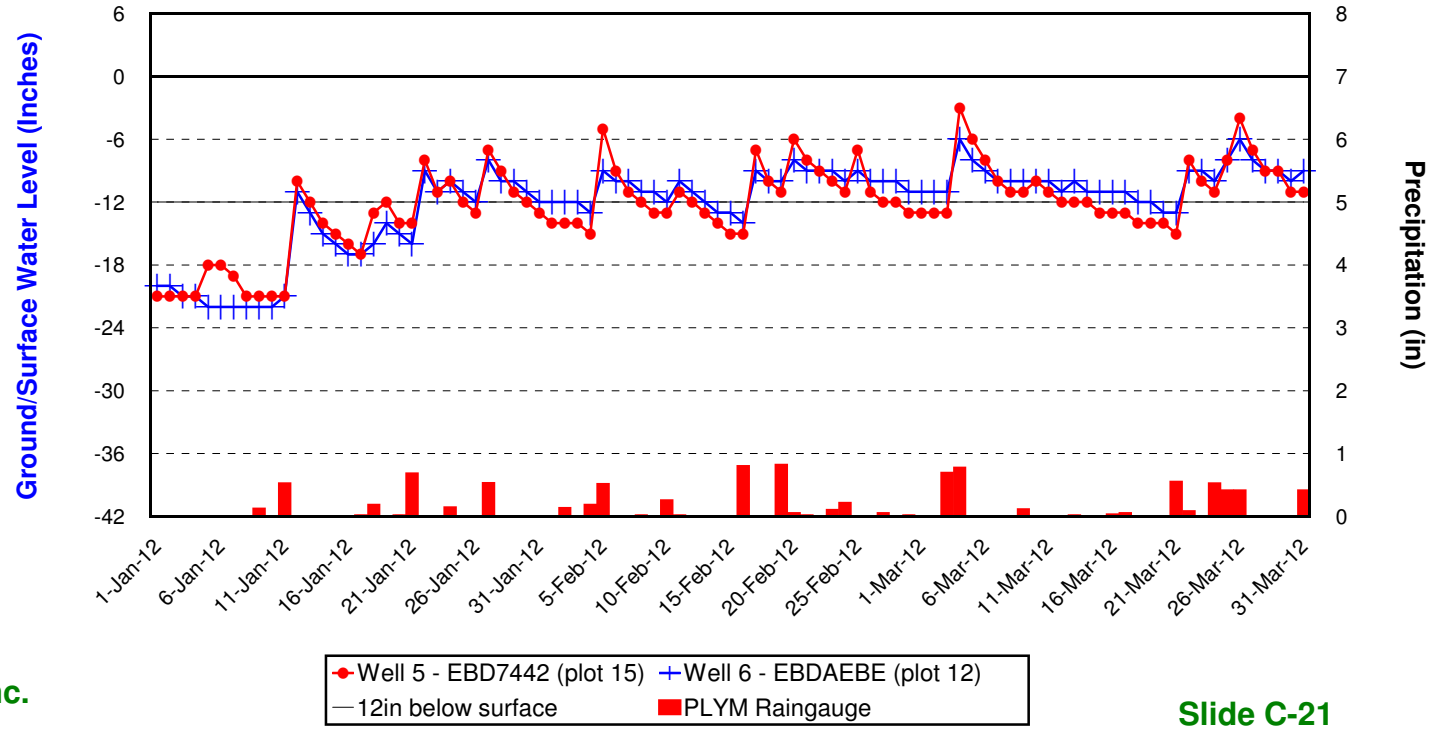

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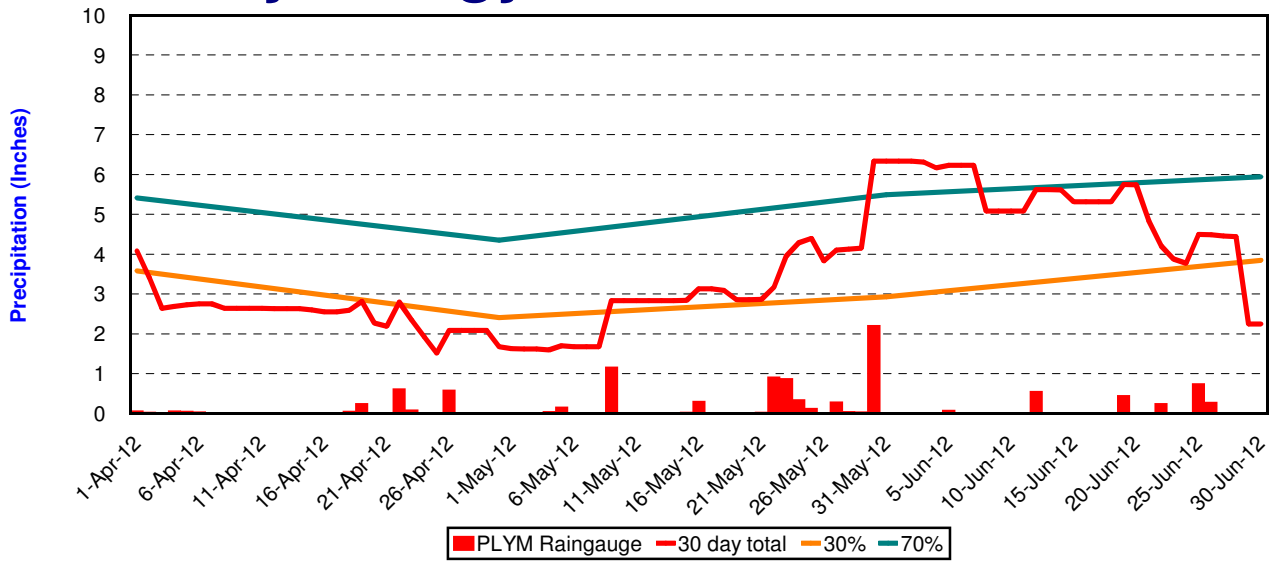

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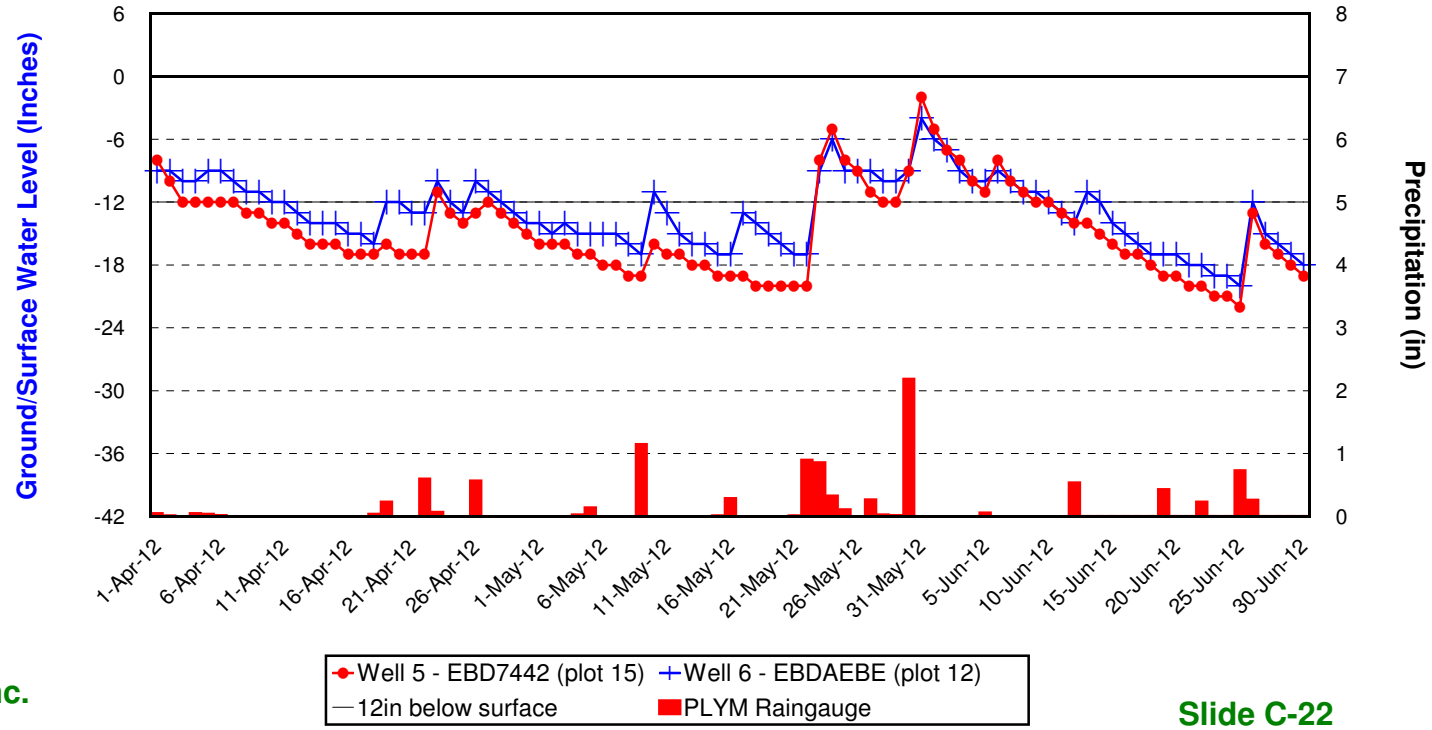

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Hydrology Assessment

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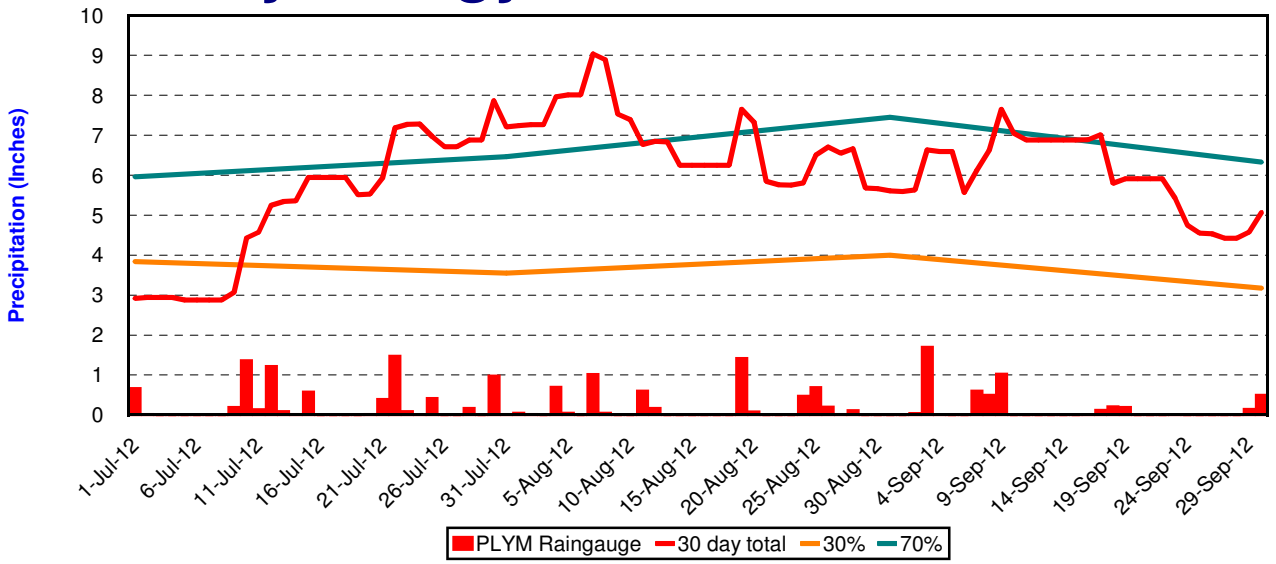

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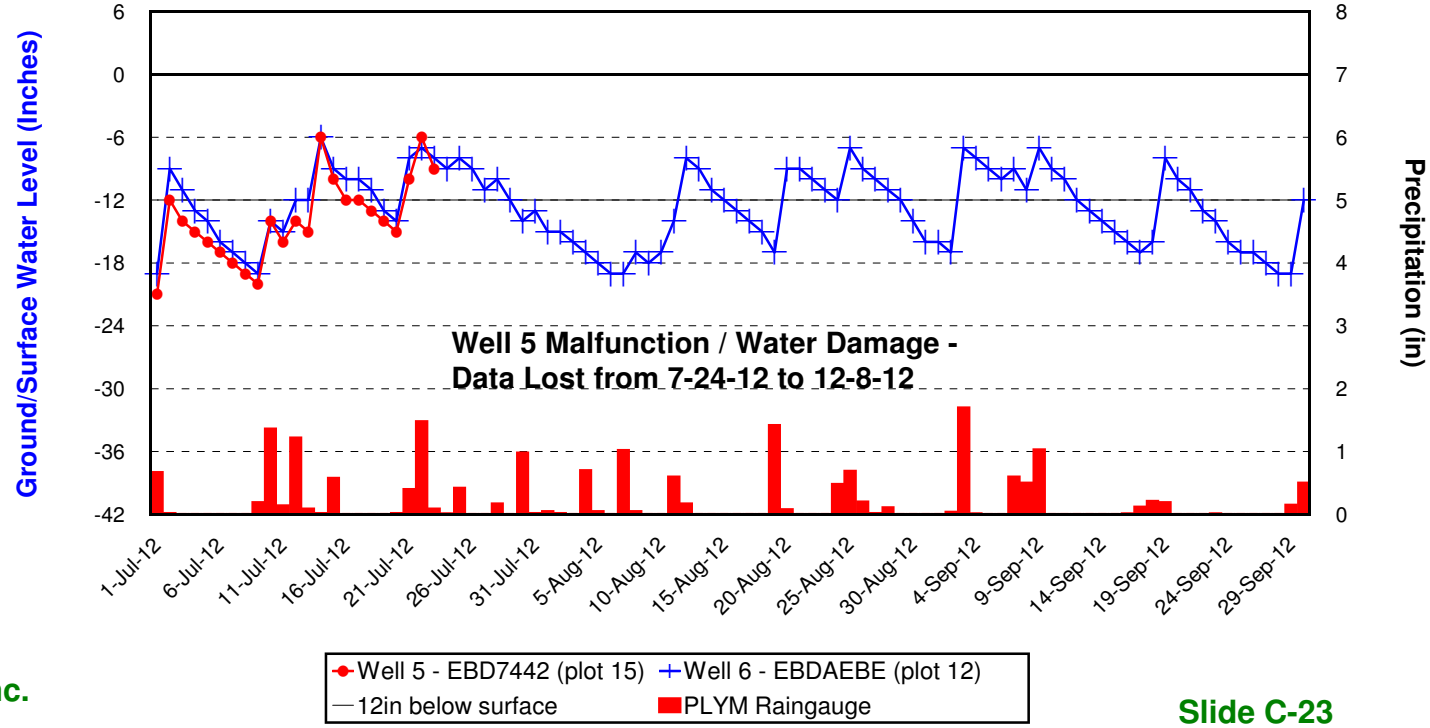

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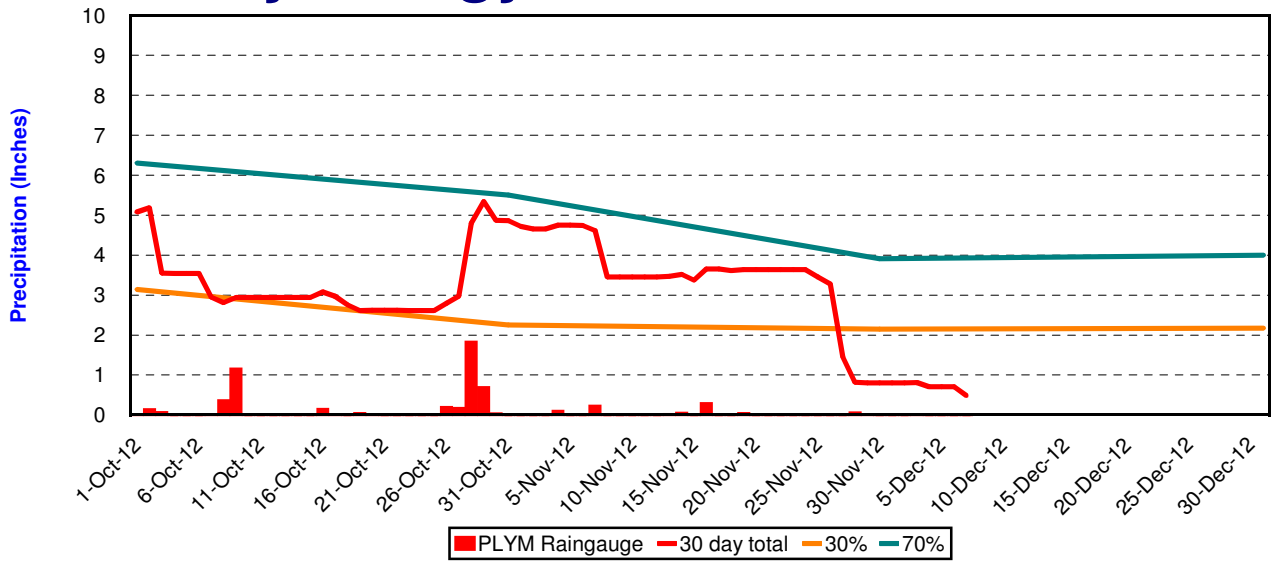

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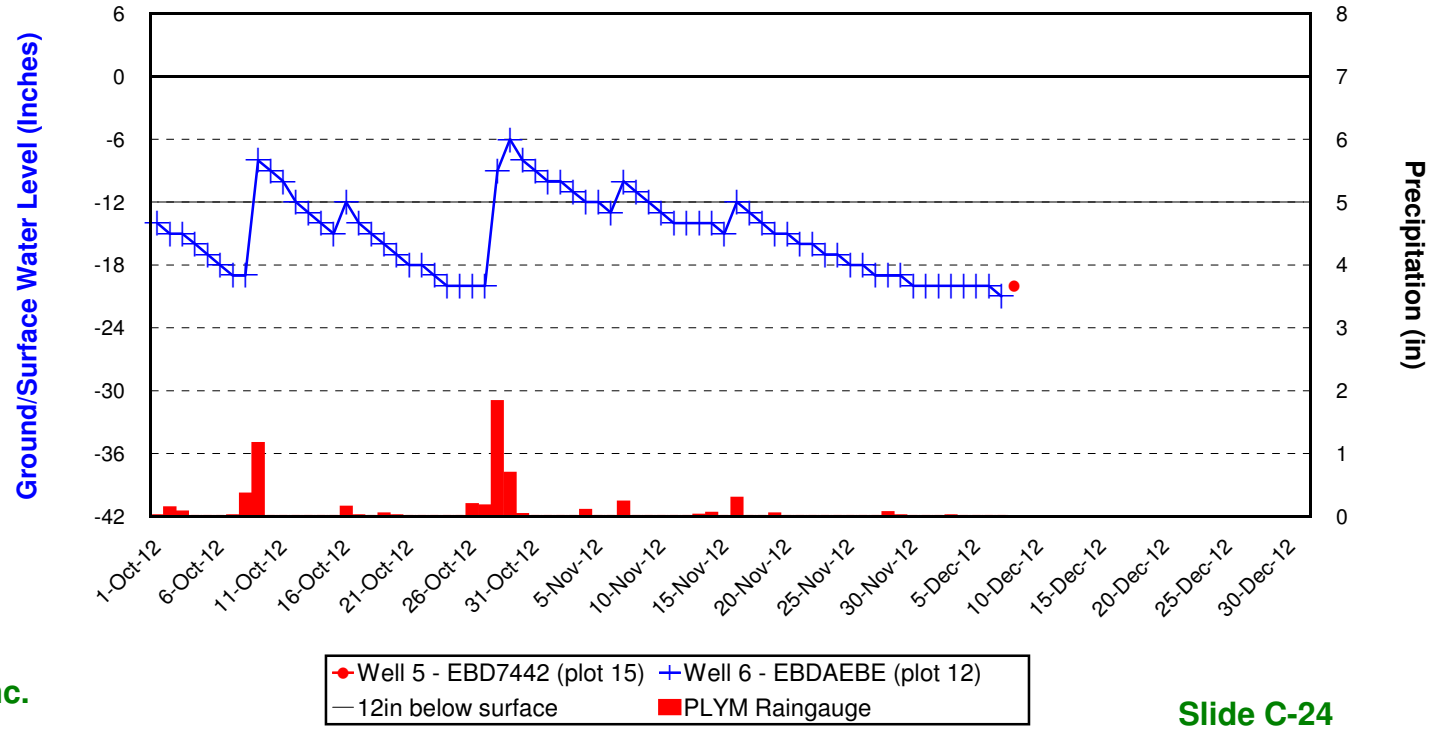

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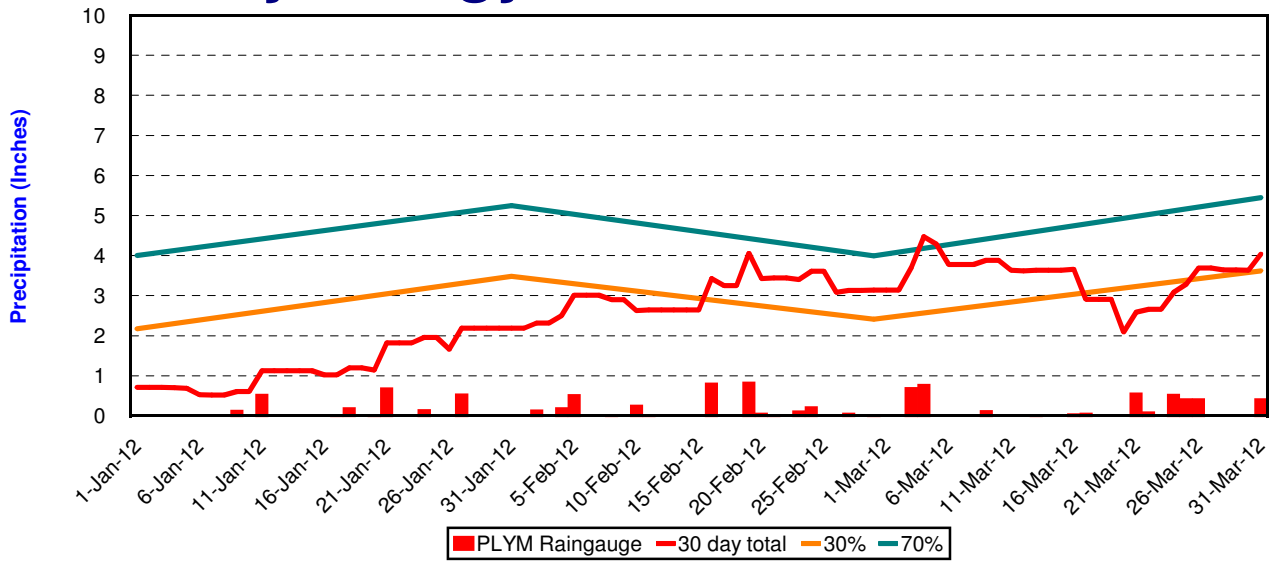

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- Well 11 (wet ref)
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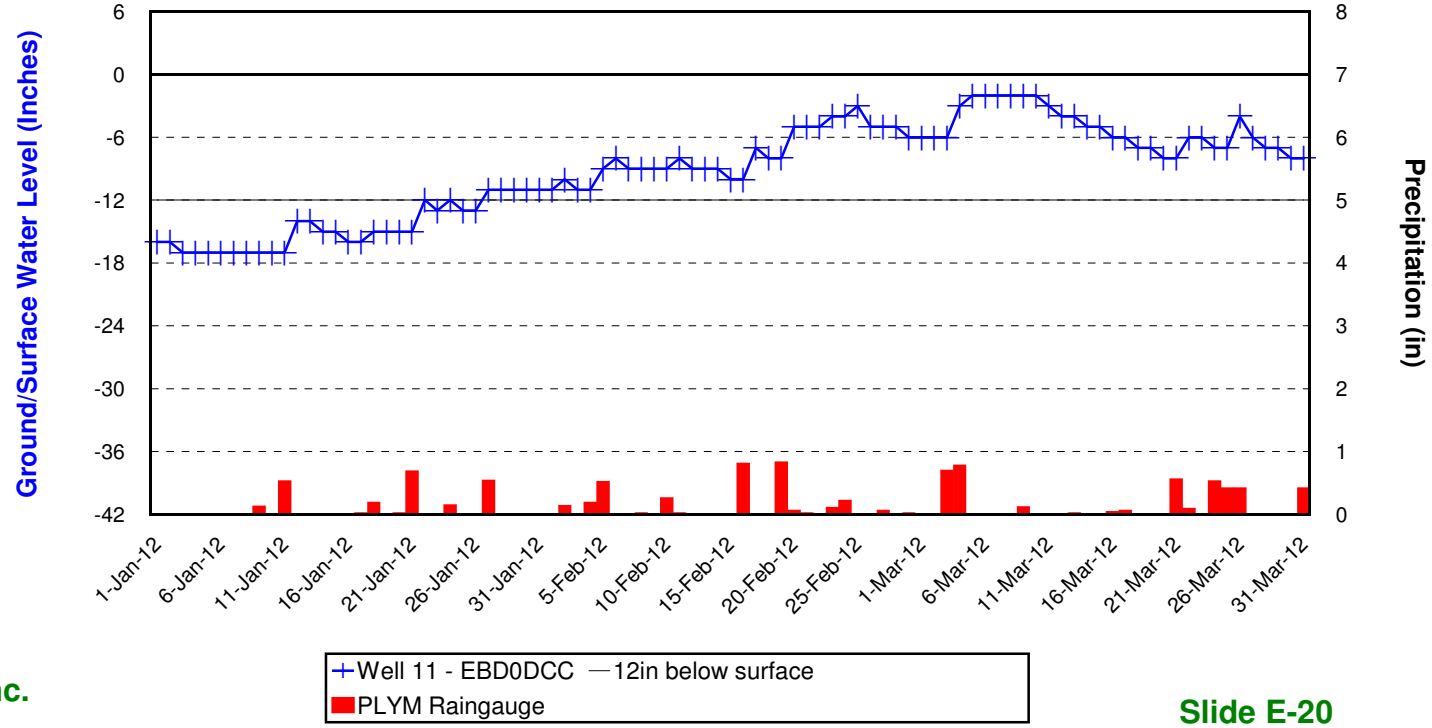

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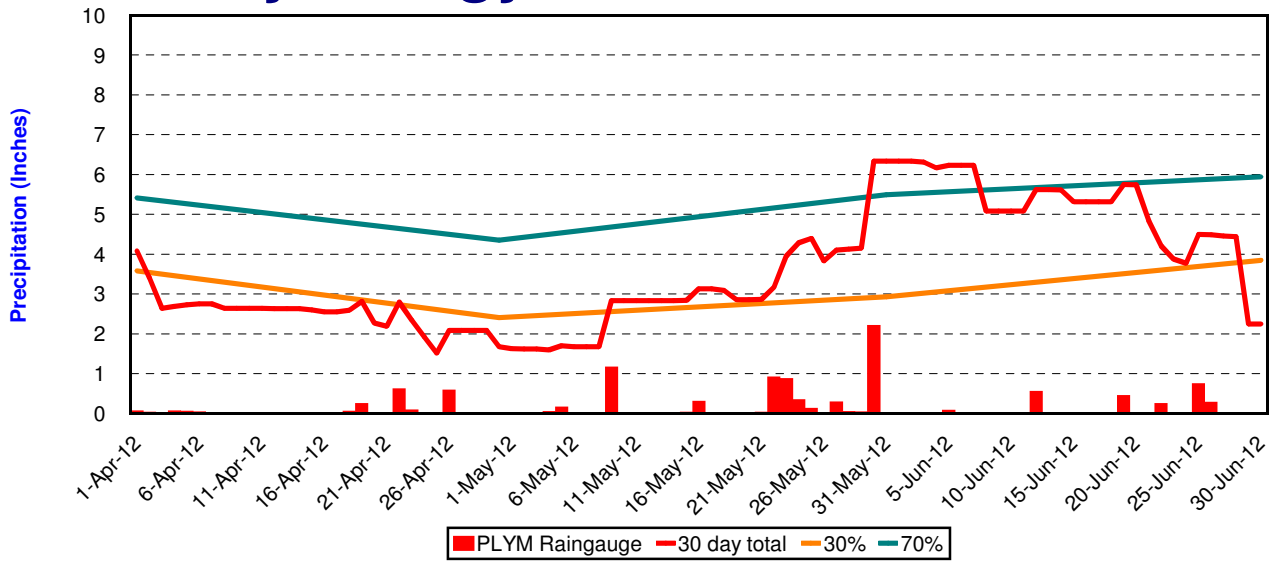

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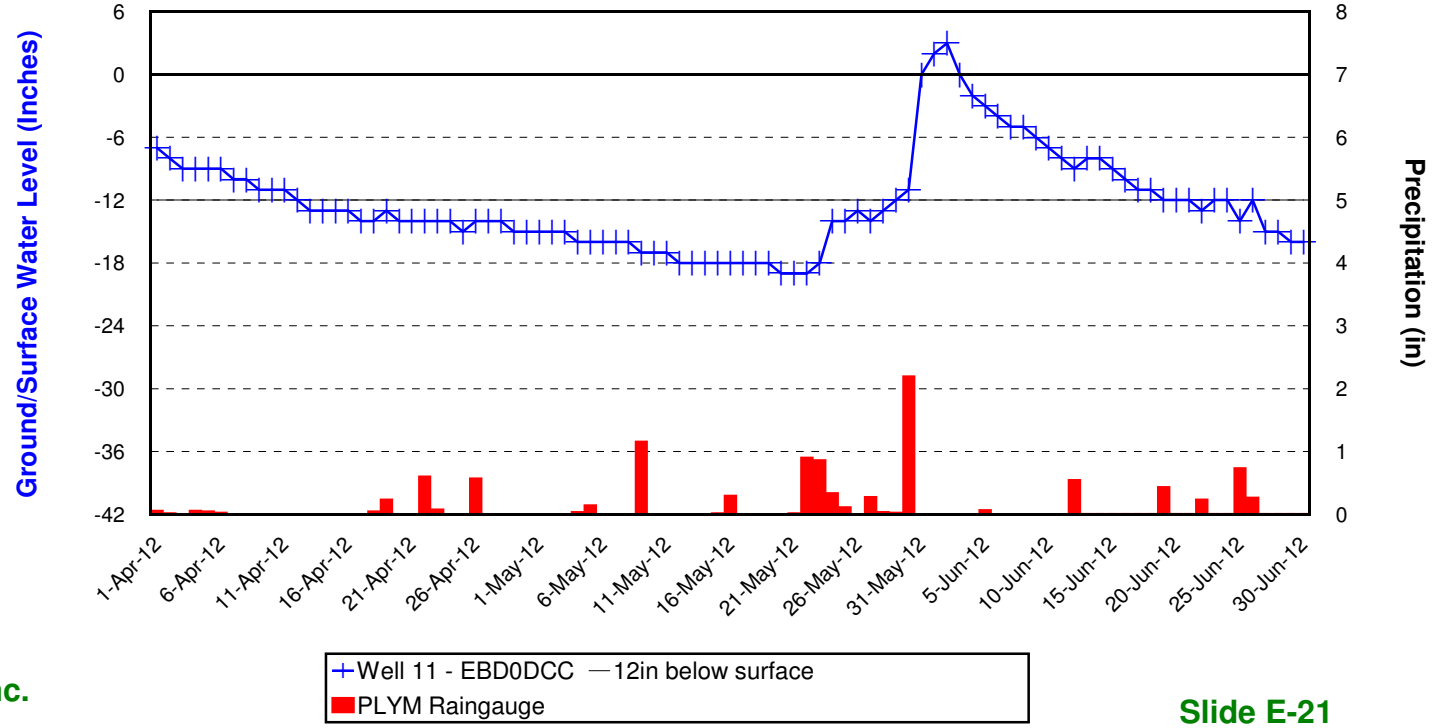

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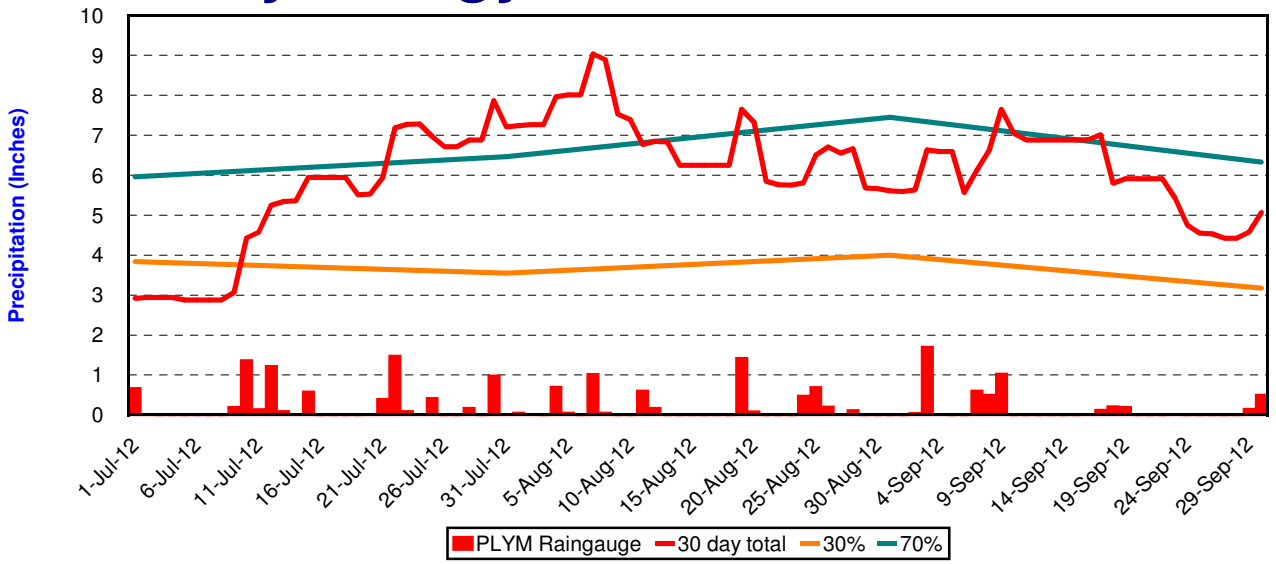

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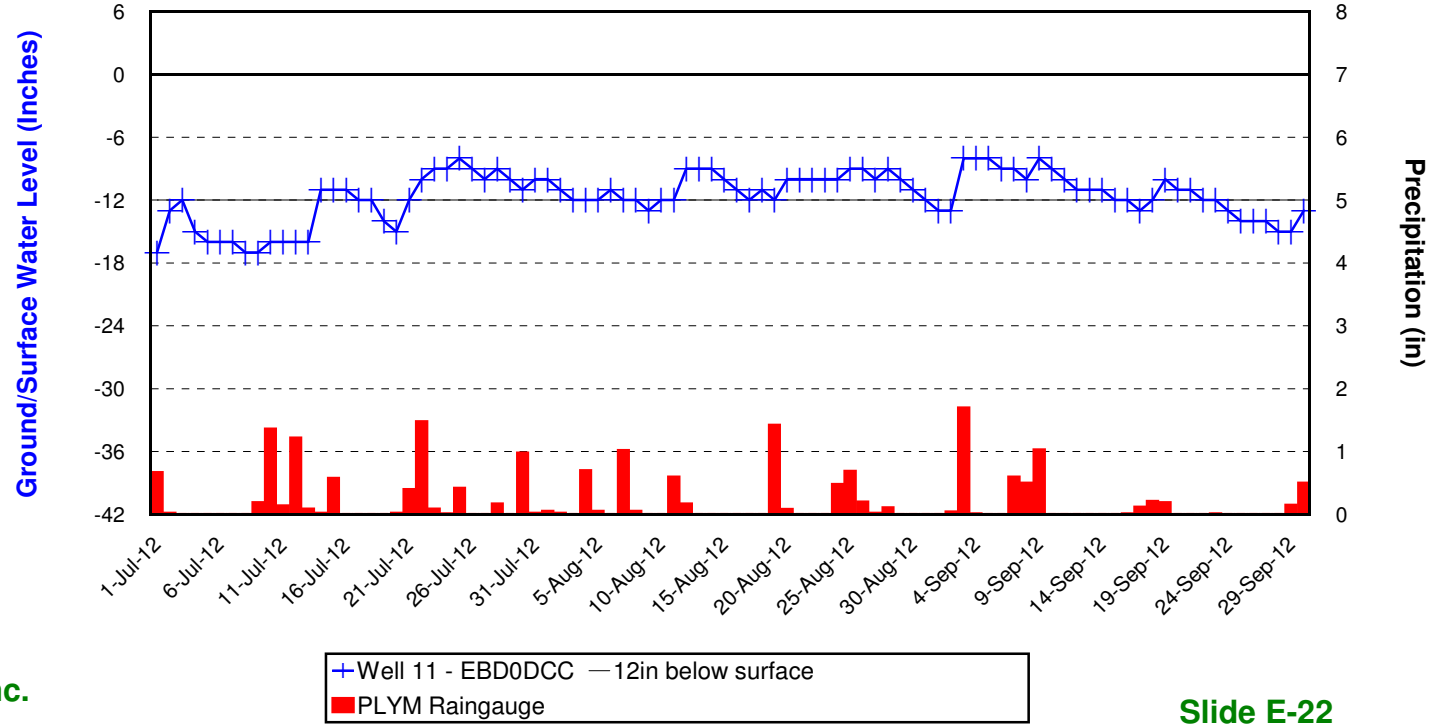
- One reading per day
- at 7:00am

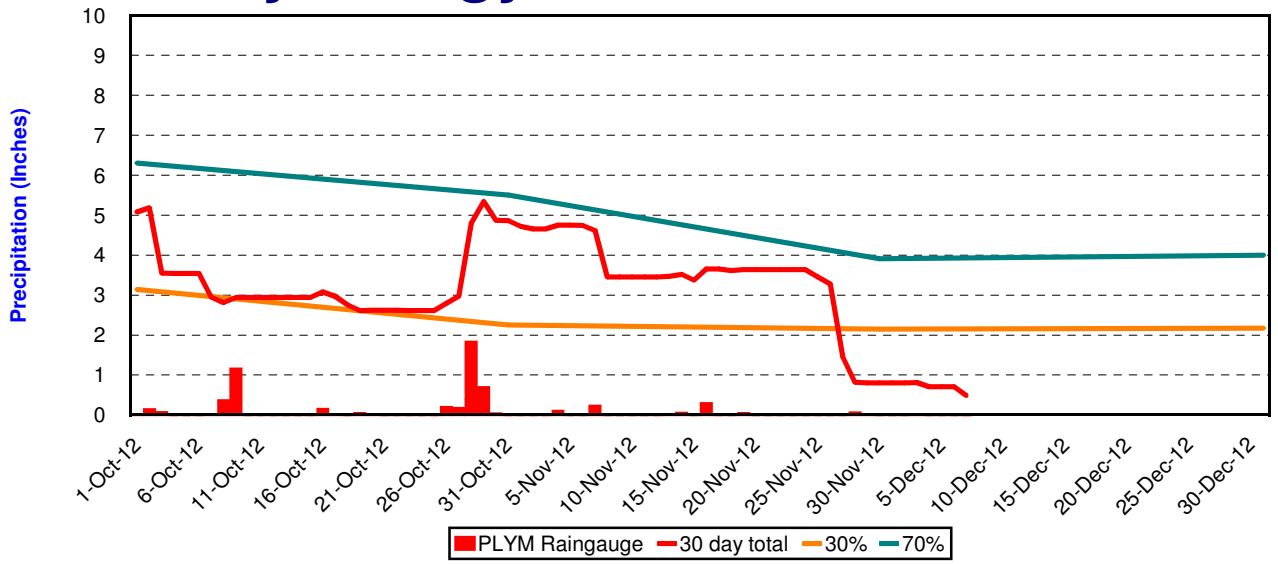


Hydrology Assessment

December, 2012

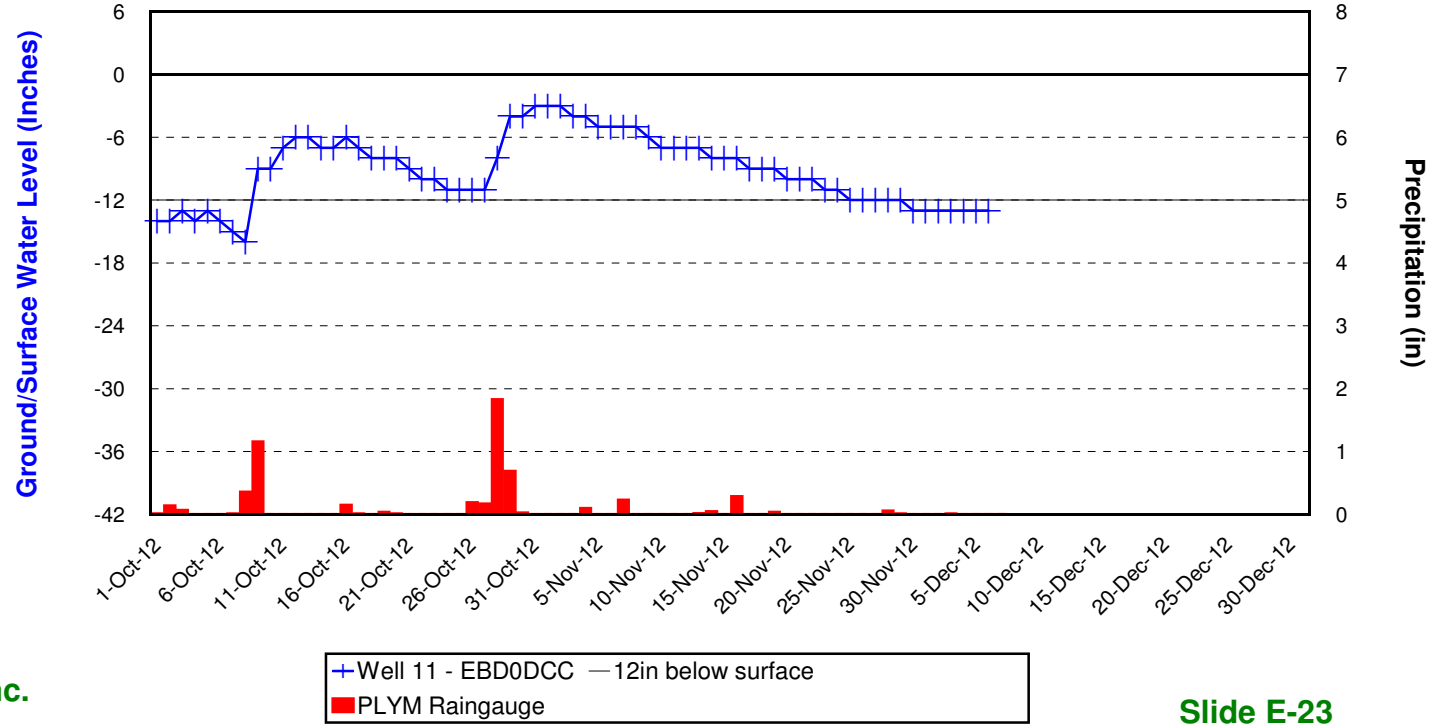
Precipitation data obtained from: station PLYM (www.nc-climate.ncsu.edu)

30% & 70% precipitation data obtained from: WETS Station : PLYMOUTH 5 E, NC6853 (wcc.nrcs.usda.gov)

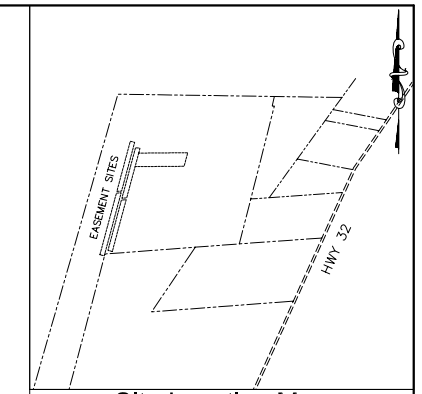


Monitoring Well Record

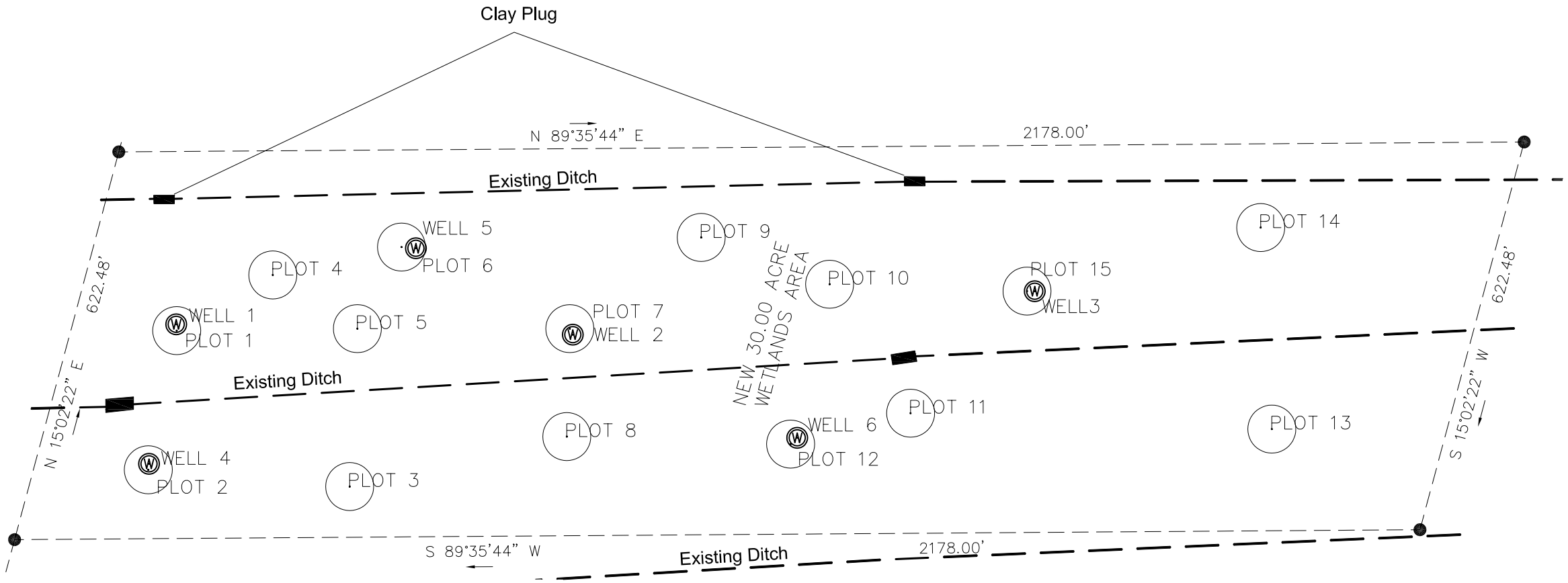
- Simpson Restoration
- Washington County, NC
- 40-05-624
- Well 11 (wet ref)
- Ecotone - WM 40
- October 1, 2012-
- December 31, 2012
- One reading per day
- at 7:00am

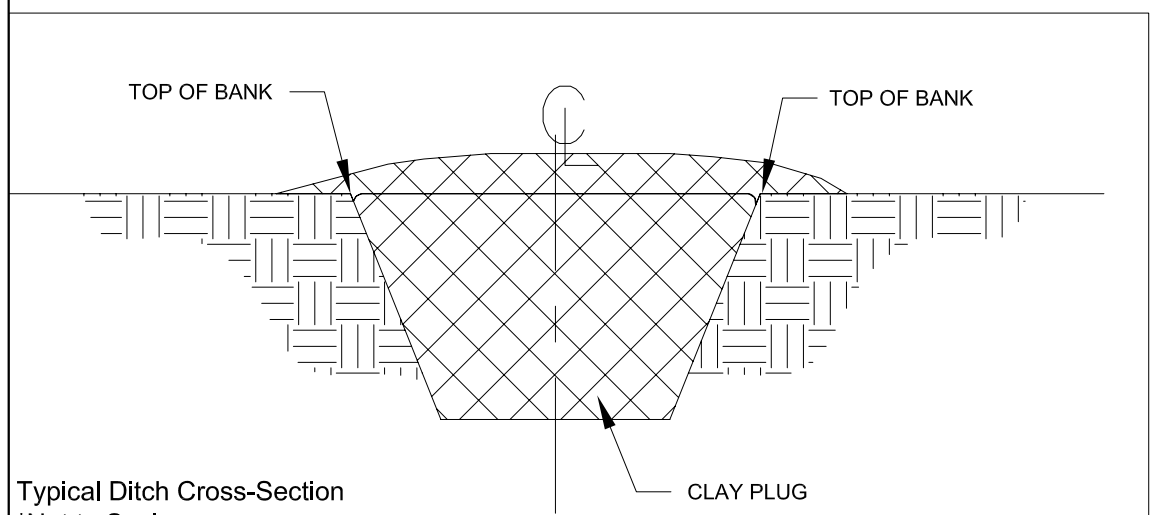


APPENDIX D.
CONSERVATION EASEMENT MAP
& PLOT LOCATIONS



Site Location Map
NTS





Typical Ditch Cross-Section
*Not to Scale

0 50 100 200 400

LAND MANAGEMENT IS NOT RESPONSIBLE FOR LOCATING, OR THE LOCATION OF, UTILITIES. ANY UTILITIES SHOWN ON THIS PLAN HAVE BEEN PROVIDED BY THIRD PARTIES AND ARE FOR GENERAL REFERENCE PURPOSES ONLY. IT IS THE RESPONSIBILITY OF THE OWNER/APPLICANT AND/OR CONTRACTOR TO CONTACT A PROFESSIONAL UTILITY LOCATING COMPANY.

THIS MAP IS BASED ON ORIGIANL DRAWINGS AND/OR SURVEY INFORMATION FROM:

THE EAST GROUP
. Engineering . Architecture Surveying Technology

LAND MANAGEMENT IS NOT RESPONSIBLE FOR THE ACCURACY OF SAID INFORMATION

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Telephone: 910-452-0001

Project: Simpson Wetland Restoration	Date: 4/17/07	Revision Date:
Applicant:	Scale: 1"=200'	Job Number: 40-05-624
Title:	Drawn By: GSF	Sheet Number: Appendix D.

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