Monitoring Report
Hofler Property
Monitoring Year 1

DMS Project ID #: 95355
DMS Contract #: 004628
USACE AID# SAW-2012-01393
Gates County, North Carolina
Submitted November, 2015

NC Department of Environment and Natural Resources
Division of Mitigation Services
1652 Mail Service Center
Raleigh, NC 27699-1652

Submitted by:
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1.0: PROJECT SUMMARY

1.1: Project Goals

The project goals of the Hofler property per the approved mitigation plan are as follows:

- Reduce sediment and nutrient loading from agricultural runoff
- Improve downstream anadromous fish habitat and onsite wildlife habitat
- Restore groundwater and surface water hydrology in heavily ditched areas
- Restore natural drainage patterns where appropriate

1.2: Project Success Criteria

Wetland hydrology data must consistently document the appropriate hydroperiod has been restored for all areas proposed for wetland mitigation. The targeted hydroperiod for the Hofler Property is 6% or greater. Planted vegetation will be considered successful if at least 320 three year-old planted stems/acre are present after year three. At year five, density must be no less than 260 five year-old planted stems/acre. At year 7, density must be no less than 210 seven year-old planted stems/acre. Additionally, planted vegetation must average 10 feet in height in each plot at year 7. Per the recommendations of the NCIRT, the following understory species were incorporated in the planting schedule on the condition they be exempted from the minimum 10-foot height criterion and exempted from the calculation of average height as a measure of that success criterion: Button bush (*C. occidentalis*), Sweet bay (*M. virginiana*), Wax myrtle (*M. cerifera*), and Laurel oak (*Q. laurifolia*). These species will be included in the calculations for the survival criterion. All vegetative monitoring will follow CVS-EEP Protocol for Recording Vegetation-Version 4.0.

Additionally, the project will strive to establish a variety of hydrologic regimes ranging from shallow inundated areas to intermittently saturated conditions, restoring diffuse flow patterns through what will ultimately be a forested wetland. The successful establishment of these conditions, mimicking nearby reference wetlands will help determine the overall success of the project.

1.3: Project Setting

The Hofler property consists of +/- 345 acres, of which 27 acres have been designated for this project. The site consisted of a rectangular tract of land primarily being used for cotton and small grain production. The prior converted wetlands on the site had been extensively ditched and drained, lowering the local water table and diminishing aquatic habitat and water quality. The site drained from south to north to an unnamed tributary of Lassiter Swamp and Bennets Creek upstream of Merchants Mill Pond. The project site along with the surrounding areas has undergone expansive hydrologic alterations and excessive sediment and nutrient inputs from agricultural production resulting in overall water quality

degradation. The vicinity map is included with the CCPV in Appendix B. Table 4 in Appendix A contains additional information regarding the project's location and attributes.

1.4: Mitigation Components

The mitigation components are 23 acres of non-riparian wetland restoration with a credit ratio of 1:1 (Restoration:WMU), please refer to Table 1 for more information.

1.5: Project Timeline

Construction commenced on August 12th, 2014 with the installation of recommended erosion control practices and was completed on Oct. 14th, 2014. Planting was officially concluded on May 6th, 2015 (Table 2). Refer to Table 2 in Appendix A for the Project History and Reporting Timeline.

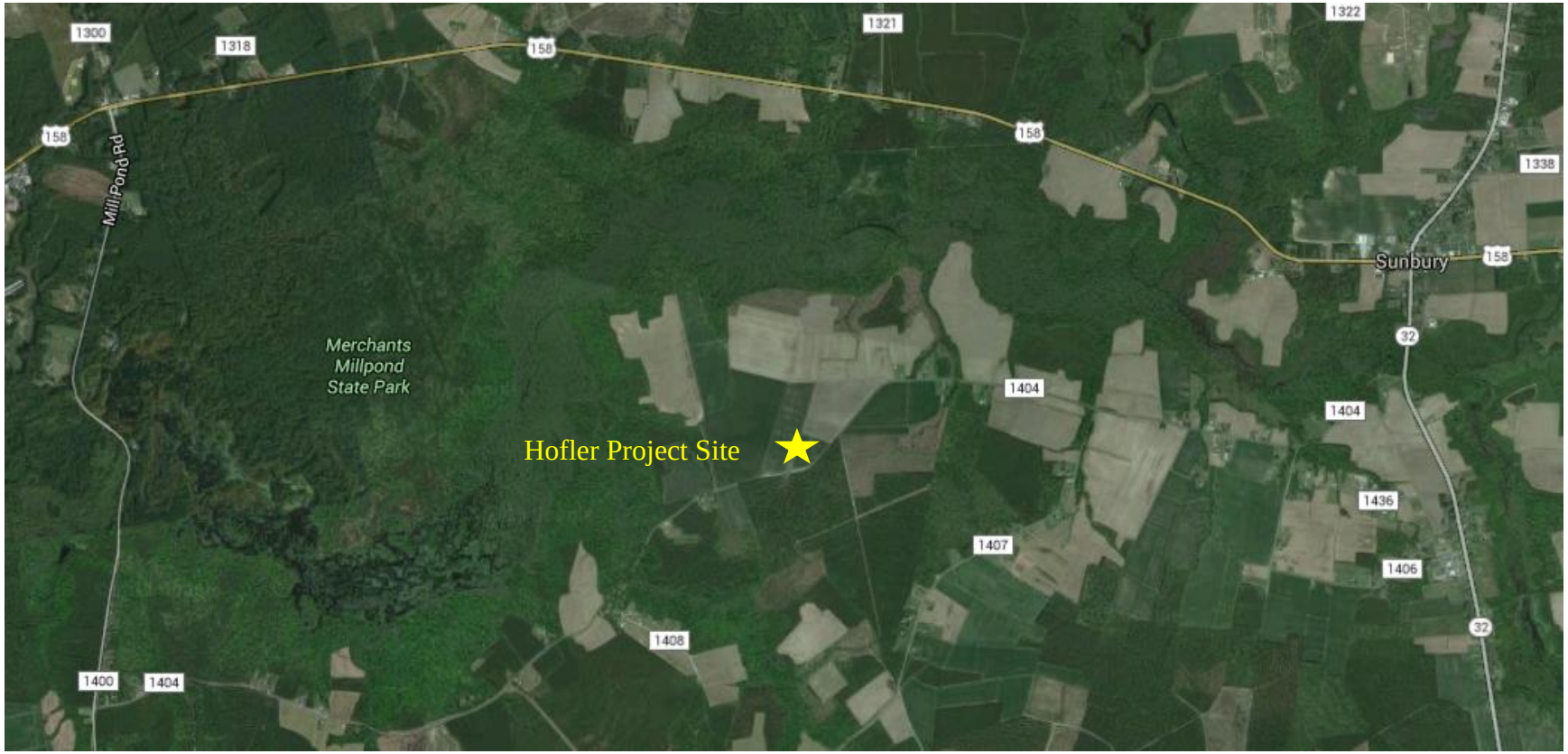
1.6: Design Approach

A natural design approach focused on mimicking nearby wetlands, including non-riparian hardwood flats and swamp forests both in hydrologic regime and vegetative diversity. Grading was specifically formulated to provide storage for overland flow while creating densely vegetated plots interspersed with shallow diffuse flows. All of these features contribute to nutrient and sediment attenuation, improving downstream habitat and promoting diversity of ecological communities. The reference area for this project is a nearby mature pine/hardwood flat with the same soils and topography and similar hydrologic function.

1.7: Project Performance

Rainfall for the period of April through November, 2015 totaled 32.03 inches which was slightly above the median of 30.52 inches for the 30 – 70 percent range during the same period. Hydrology within the project area was successful with an average across all nine monitoring gauges of 15.1% of the growing season. In order to meet the ten-foot height requirement, some older, taller trees were planted but many of them suffered top dieback or mortality possibly due to the fact that they were potted and not open grown, bare root stock. Wet site conditions may have put too much stress on these larger, root-bound trees. Future monitoring will determine the extent of the damage, but gains in height to meet the requirement were lost regardless of it. With the exception of plot 11, all the plots met or exceeded the success criterion for stems per acre. The site is covered with very heavy herbaceous vegetation and some stems that were not found during monitoring this year may well resprout and show up in subsequent years so stocking on that particular plot is not cause for concern just yet and is not noted on the CCPV.

Vicinity Map



1.8: Methods and References

Monitoring methodology did not differ from the approved Mitigation Plan. Vegetation assessment was done according to the level 2 protocol specified by the Carolina Vegetation Survey. Hydrology monitoring wells were installed per ERDC TN-WRAP-00-02 "Installing Monitoring Wells/Piezometers in Wetlands" dated 2000. Groundwater levels were recorded using the U20-001-01 water level data loggers manufactured by Onset Computer. The loggers were installed in the wells per the manufacturer's instructions.

Appendix A: Background Tables

Table 1. Project Components and Mitigation Credits						
Hofler Project #95355, Contract #004628						
Mitigation Credit Summations						
	Stream	Riparian Wetland	Non-riparian Wetland	Buffer	Nitrogen Nutrient Offset	Phosphorous Nutrient Offset
Overall Credit			23			

Project Components								
Project Component -or- Reach	Stationing	Existing Footage or Acreage	Restoration Footage or Acreage	Restoration Level	Restoration or Rest. Equiv.	Mitigation Ratio	Mitigation Credits	Notes
Wetland 1		23	23		Restoration	1:1	23	

Length and Area Summations						
Restoration Level	Stream (Linear Feet)	Riparian Wetland (acres)		Non-riparian Wetland (acres)	Buffer (square feet)	Upland (acres)
		Riverine	Non-Riverine			
Restoration			23			
Enhancement						
Enhancement I						
Enhancement II						
Creation						
Preservation						
High Quality Preservation						

BMP Elements			
Element	Location	Purpose/Function	Notes

Table 2. Project Activity and Reporting History Hofler Property Wetland Mitigation Project #95355		
Activity, Deliverable or Milestone	**Data Collection Complete**	**Actual Completion or Delivery**
Project Institution	N/A	May-12
Mitigation Plan	May 2014	July 2014
Permits Issued	May 2014	July 2014
Final Design Construction Plans	May 2014	July 2014
Construction	N/A	October 2014
Temporary S & E mix applied to entire project area	N/A	N/A
Permanent seed mix applied to entire project area	N/A	October 2014
Containerized and BR Planting over entire project area	N/A	May 2015
Baseline Monitoring Document (Year 0 Monitoring-baseline)	May 2015	Sept. 2015
Year 1 monitoring	November 2015	November 2015
Year 2 monitoring		
Year 3 monitoring		
Year 4 monitoring		
Year 5 monitoring		

Table 3. Project Contacts Hofler Property Wetland Mitigation Project #95355	
Designer Primary Project design POC	Ecotone, Inc. Scott McGill (410) 420-2600 2120 High Point Rd, Forest Hill, MD 21050
Construction Contractor Construction contractor POC	Jennings Land Development Rodney Jennings (252) 202-6954 156 Trotman Rd. Camden, NC 2791
Planting Contractor Planting contractor POC	Carolina Silvics, Inc. Mary-Margaret McKinney (252-482-8491) 908 Indian Trail Road Edenton, NC 27932
Seeding Contractor Seed planting contractor POC	Woods, Water and Wildlife, Inc. Ed Temple (252) 333-0249 P. O. Box 176, Fairfield, NC 27826
Seed mix sources	Earnst Conservation Seeds, LLP, Meadville, PA
Nursery stock suppliers	Carolina Silvics (from various sources)
Monitoring Performers Wetland and Vegetation POC	Woods, Water and Wildlife, Inc. Ashby Brown (757) 651-3162 P. O. Box 176, Fairfield, NC 27826

Table 4. Project Information and Attributes

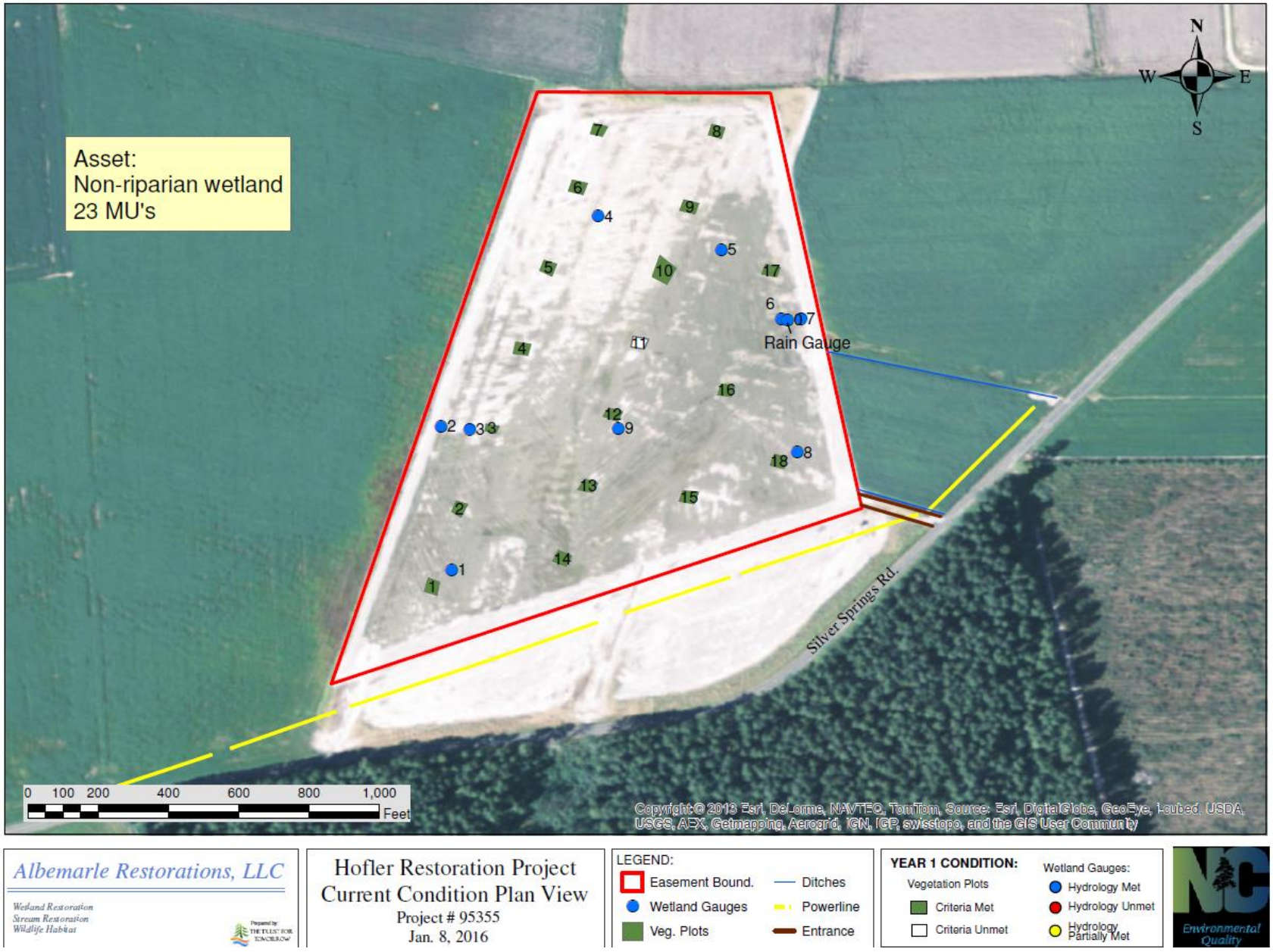
Project name	HOFLER PROPERTY		
County	GATES		
Project Area (ac)	27.0 AC		
Project Coordinates (Lat and Long)	+36˚ 25' 48.44", -76˚ 39' 10.91"		
4.1 Project Watershed Summary Information			
Physiographic province	INNER COASTAL PLAIN		
River basin	CHOWAN RIVER BASIN		
USGS Hydrologic Unit 8-digit: 03010203	USGS Hydrologic Unit 14-digit: 03010203040040		
DWQ Sub-basin	BENNETTS CREEK LOCAL WATERSHED		
Project Drainage Area (acres)	103.8		
Project Drainage Area Percentage of Impervious Area	5%		
CGIA Land Use Classification	2.01.01.07 Annual Row Crop Rotation		
4.2 Wetland Summary Information			
Parameters	Wetland 1	Wetland 2	Wetland 3
Size of Wetland (acres)	23.0		
Wetland Type (non-riparian, riparian riverine or riparian non-riverine)	Non-riparian		
Mapped Soil Series	BnA & PnA		
Drainage Class	Poorly drained & very poorly drained		
Soil Hydric Status	Hydric		
Source of Hydrology	Surface and Ground		
Hydrologic Impairment	44.8' to 155.2'		
Native Vegetation Community			
Percent Composition of Exotic Invasive Vegetation	N/A		
4.3 Regulatory Considerations			
Regulation	Applicable?	Resolved?	Supporting Documents
Waters of the United States – Section 404	N	N/A	Appendix F
Waters of the United States – Section 401	N	N/A	Appendix F
Endangered Species Act	N	Y	
Historic Preservation Act	N	Y	
Coastal Zone Management Act (CZMA)/ Coastal Area Management Act (CAMA)	N	Y	
FEMA Floodplain Compliance	N	Y	
Essential Fisheries Habitat	N	Y	

Appendix B:

Current Condition Plan View

Table 5. Vegetation Condition Assessment Table

Site Photos



Albemarle Restorations, LLC

Wetland Restoration
Stream Restoration
Wildlife Habitat

Hofler Restoration Project
Current Condition Plan View
Project # 95355
Jan. 8, 2016

LEGEND:
- Easement Bound.
- Wetland Gauges
- Veg. Plots
- Ditches
- Powerline
- Entrance

YEAR 1 CONDITION:
Vegetation Plots
- Criteria Met
- Criteria Unmet

Wetland Gauges:
- Hydrology Met
- Hydrology Unmet
- Hydrology Partially Met

NC Environmental Quality

Table 5 Vegetation Condition Assessment

Planted Acreage[1] **23**

Vegetation Category	Definitions	Mapping Threshold	CCPV Depiction	Number of Polygons	Combined Acreage	% of Planted Acreage
1. Bare Areas	Very limited cover of both woody and herbaceous material.	0.1 acres	None	0	0.00	0.0%
2. Low Stem Density Areas	Woody stem densities clearly below target levels based on MY3, 4, or 5 stem count criteria.	0.1 acres	None	0	0.00	0.0%
			Total	0	0.00	0.0%
3. Areas of Poor Growth Rates or Vigor	Areas with woody stems of a size class that are obviously small given the monitoring year.	0.25 acres	None	0	0.00	0.0%
			Cumulative Total	0	0.00	0.0%

Easement Acreage[2] **27**

Vegetation Category	Definitions	Mapping Threshold	CCPV Depiction	Number of Polygons	Combined Acreage	% of Easement Acreage
4. Invasive Areas of Concern[4]	Areas or points (if too small to render as polygons at map scale).	1000 SF	None	0	0.00	0.0%
5. Easement Encroachment Areas[3]	Areas or points (if too small to render as polygons at map scale).	none	None	0	0.00	0.0%

No areas of concern are noted with the exception of plot 11 which had only five planted stems after the end of the first growing season (202 stems per acre). Due to excessively thick herbaceous vegetation, the stems may be found during the next survey in 2016 so plot 11 is not yet considered a problem area.

Photo 1**:** Vegetation in July, typical of entire site. A planted cypress on right.

Photo 2: A row of oaks, heavy herbaceous vegetation.

Photo 3: Looking across the site to the south.

Photo 4: Some tall water oaks that eventually suffered top dieback.

Appendix C

Vegetation Plot Data

Table 6.

Project Code 95355. Project Name: Hofler			Current Plot Data (MY1 2015)														
			95355-ab-0001			95355-ab-0002			95355-ab-0003			95355-ab-0004			95355-ab-0005		
Scientific Name	**Common Name**	**Species Type**	**PnoLS**	**P-all**	**T**	**PnoLS**	**P-all**	**T**	**PnoLS**	**P-all**	**T**	**PnoLS**	**P-all**	**T**	**PnoLS**	**P-all**	**T**
Celtis occidentalis	common hackberry	Tree															
Cephalanthus occidentalis	common buttonbush	Shrub										4	4	4			
Magnolia virginiana	sweetbay	Tree							1	1	1	2	2	2	3	3	3
Myrica	sweetgale	shrub				1	1	1				3	3	3			
Quercus bicolor	swamp white oak	Tree	2	2	2	3	3	3									
Quercus laurifolia	laurel oak	Tree							1	1	1				1	1	1
Quercus michauxii	swamp chestnut oak	Tree	4	4	4	4	4	4	4	4	4	4	4	4	5	5	5
Quercus nigra	water oak	Tree	2	2	2	1	1	1	2	2	2	2	2	2	1	1	1
Quercus phellos	willow oak	Tree	3	3	3	3	3	3							1	1	1
Taxodium distichum	bald cypress	Tree	1	1	1				1	1	1				1	1	1
		Stem count	12	12	12	12	12	12	9	9	9	15	15	15	12	12	12
		size (ares)	1			1			1			1			1		
		size (ACRES)	0.02			0.02			0.02			0.02			0.02		
		Species count	5	5	5	5	5	5	5	5	5	5	5	5	6	6	6
		Stems per ACRE	485.62	486	486	485.62	486	485.62	364.22	364	364.22	607.03	607	607.03	485.62	486	485.62

Table 6, continued.

Project Code 95355. Project Name: Hofler			Current Plot Data (MY1 2015)														
			95355-ab-0006			95355-ab-0007			95355-ab-0008			95355-ab-0009			95355-ab-0010		
Scientific Name	Common Name	Species Type	PnoLS	P-all	T	PnoLS	P-all	T	PnoLS	P-all	T	PnoLS	P-all	T	PnoLS	P-all	T
Celtis occidentalis	common hackberry	Tree															
Cephalanthus occidentalis	common buttonbush	Shrub	2	2	2												
Magnolia virginiana	sweetbay	Tree	1	1	1												
Myrica	sweetgale	shrub				2	2	2	2	2	2	3	3	3	2	2	2
Quercus bicolor	swamp white oak	Tree	4	4	4	2	2	2	1	1	1	1	1	1	1	1	1
Quercus laurifolia	laurel oak	Tree							1	1	1						
Quercus michauxii	swamp chestnut oak	Tree	3	3	3	2	2	2	1	1	1	2	2	2	1	1	1
Quercus nigra	water oak	Tree	1	1	1				2	2	2						
Quercus phellos	willow oak	Tree				4	4	4	5	5	5	4	4	4	2	2	2
Taxodium distichum	bald cypress	Tree	3	3	3	1	1	1	2	2	2	3	3	3	3	3	3
		Stem count	14	14	14	11	11	11	14	14	14	13	13	13	9	9	9
		size (ares)	1			1			1			1			1		
		size (ACRES)	0.02			0.02			0.02			0.02			0.02		
		Species count	6	6	6	5	5	5	7	7	7	5	5	5	5	5	5
		Stems per ACRE	566.56	567	566.56	445.15	445	445.15	566.56	567	566.56	526.09	526	526.09	364.22	364	364.22

Table 6, continued.

Project Code 95355. Project Name: Hofler			Current Plot Data (MY1 2015)														
			95355-ab-0011			95355-ab-0012			95355-ab-0013			95355-ab-0014			95355-ab-0015		
Scientific Name	**Common Name**	**Species Type**	**PnoLS**	**P-all**	**T**	**PnoLS**	**P-all**	**T**	**PnoLS**	**P-all**	**T**	**PnoLS**	**P-all**	**T**	**PnoLS**	**P-all**	**T**
Celtis occidentalis	common hackberry	Tree															
Cephalanthus occidentalis	common buttonbush	Shrub				2	2	2									
Magnolia virginiana	sweetbay	Tree															
Myrica	sweetgale	shrub	1	1	1												
Quercus bicolor	swamp white oak	Tree							2	2	2	2	2	2	1	1	1
Quercus laurifolia	laurel oak	Tree										1	1	1			
Quercus michauxii	swamp chestnut oak	Tree	3	3	3	2	2	2	1	1	1	2	2	2	3	3	3
Quercus nigra	water oak	Tree	1	1	1	3	3	3	2	2	2	2	2	2	2	2	2
Quercus phellos	willow oak	Tree				1	1	1							1	1	1
Taxodium distichum	bald cypress	Tree				1	1	1	3	3	3	2	2	2	3	3	3
		Stem count	5	5	5	9	9	9	8	8	8	9	9	9	10	10	10
		size (ares)	1			1			1			1			1		
		size (ACRES)	0.02			0.02			0.02			0.02			0.02		
		Species count	3	3	3	5	5	5	4	4	4	5	5	5	5	5	5
		Stems per ACRE	202.34	202	202.34	364.22	364	364.22	323.75	324	323.75	364.22	364	364.22	404.69	405	404.69

Table 6, continued.

Project Code 95355. Project Name: Hofler			Current Plot Data (MY1 2015)									Annual Means					
			95355-ab-0016			95355-ab-0017			95355-ab-0018			MY1 (2015)			MY0 (2015)		
Scientific Name	**Common Name**	**Species Type**	**PnoLS**	**P-all**	**T**	**PnoLS**	**P-all**	**T**	**PnoLS**	**P-all**	**T**	**PnoLS**	**P-all**	**T**	**PnoLS**	**P-all**	**T**
Celtis occidentalis	common hackberry	Tree													1	1	1
Cephalanthus occidentalis	common buttonbush	Shrub	1	1	1							9	9	9	8	8	8
Magnolia virginiana	sweetbay	Tree				1	1	1				8	8	8	9	9	9
Myrica	sweetgale	shrub	1	1	1							15	15	15	15	15	15
Quercus bicolor	swamp white oak	Tree	2	2	2	1	1	1	3	3	3	25	25	25	36	36	36
Quercus laurifolia	laurel oak	Tree	1	1	1							5	5	5	7	7	7
Quercus michauxii	swamp chestnut oak	Tree	4	4	4	2	2	2	2	2	2	49	49	49	55	55	55
Quercus nigra	water oak	Tree	1	1	1	1	1	1				23	23	23	34	34	34
Quercus phellos	willow oak	Tree				2	2	2				26	26	26	30	30	30
Taxodium distichum	bald cypress	Tree	1	1	1	2	2	2	4	4	4	31	31	31	35	35	35
		Stem count	11	11	11	9	9	9	9	9	9	191	191	191	230	230	230
		size (ares)	1			1			1			18			18		
		size (ACRES)	0.02			0.02			0.02			0.44			0.44		
		Species count	7	7	7	6	6	6	3	3	3	9	9	9	10	10	10
		Stems per ACRE	445.15	445	445.15	364.22	364	364.22	364.22	364	364.22	429.42	429	429.42	517.1	517	517.1

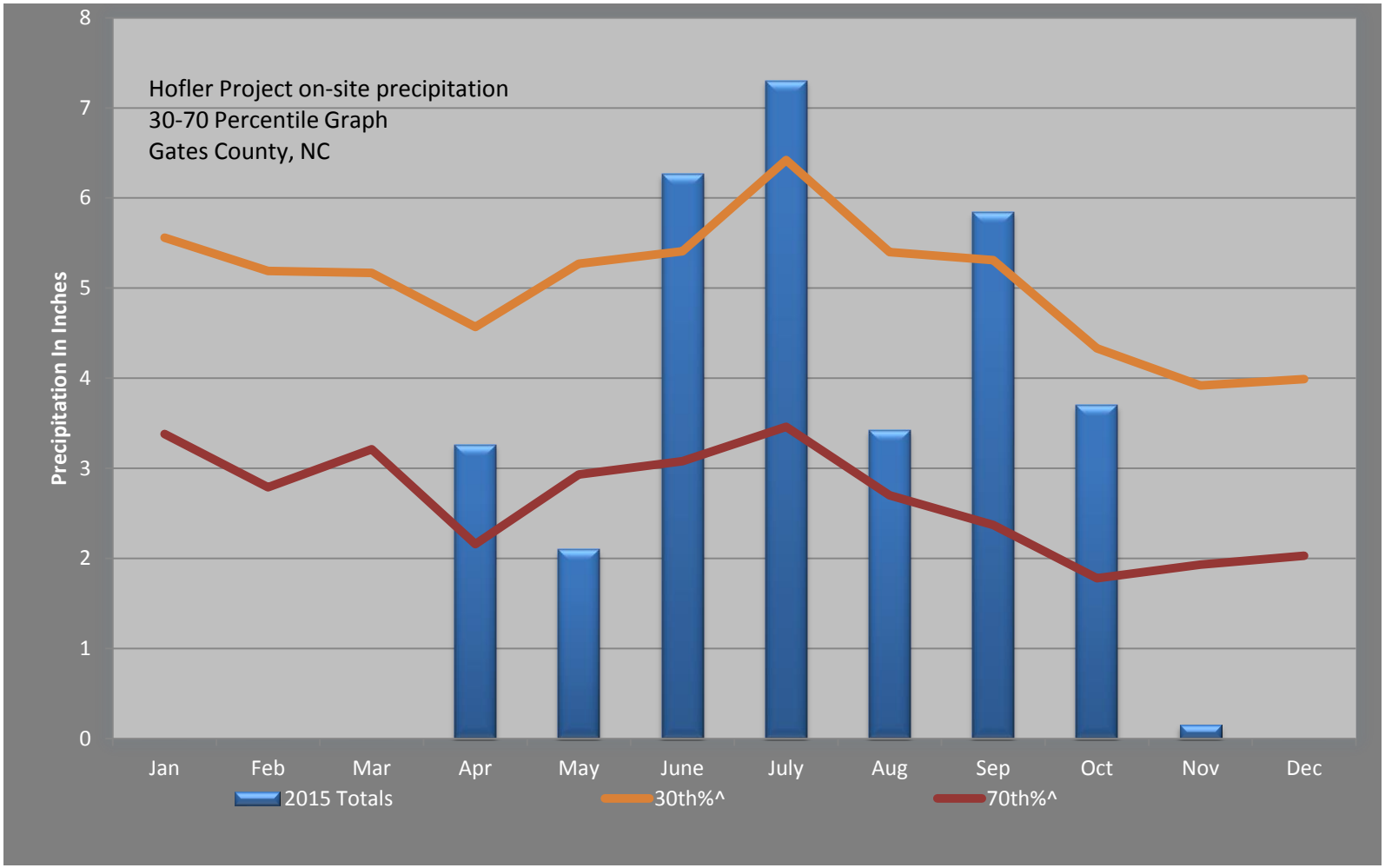
Appendix E

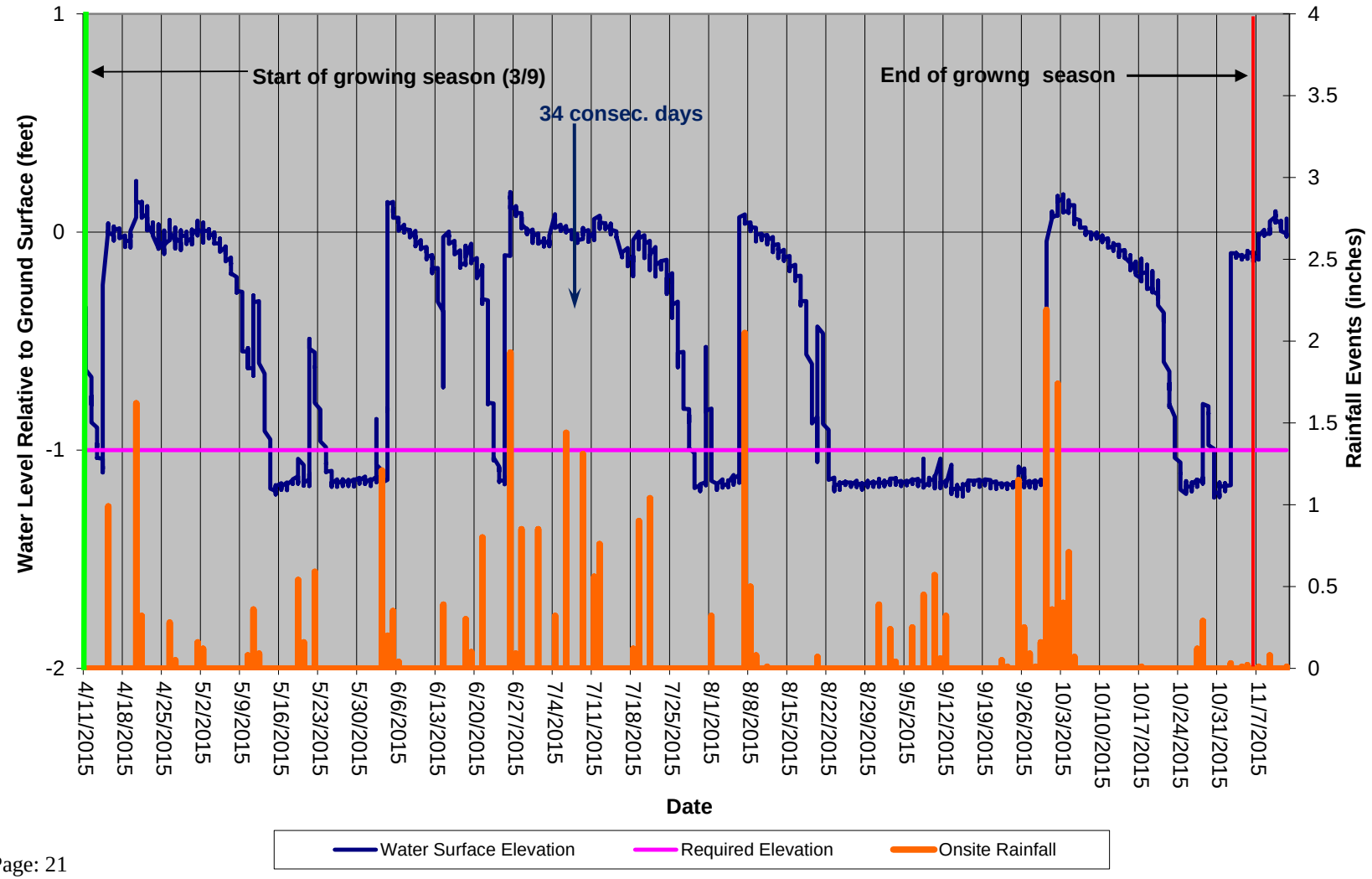
Hydrologic Data

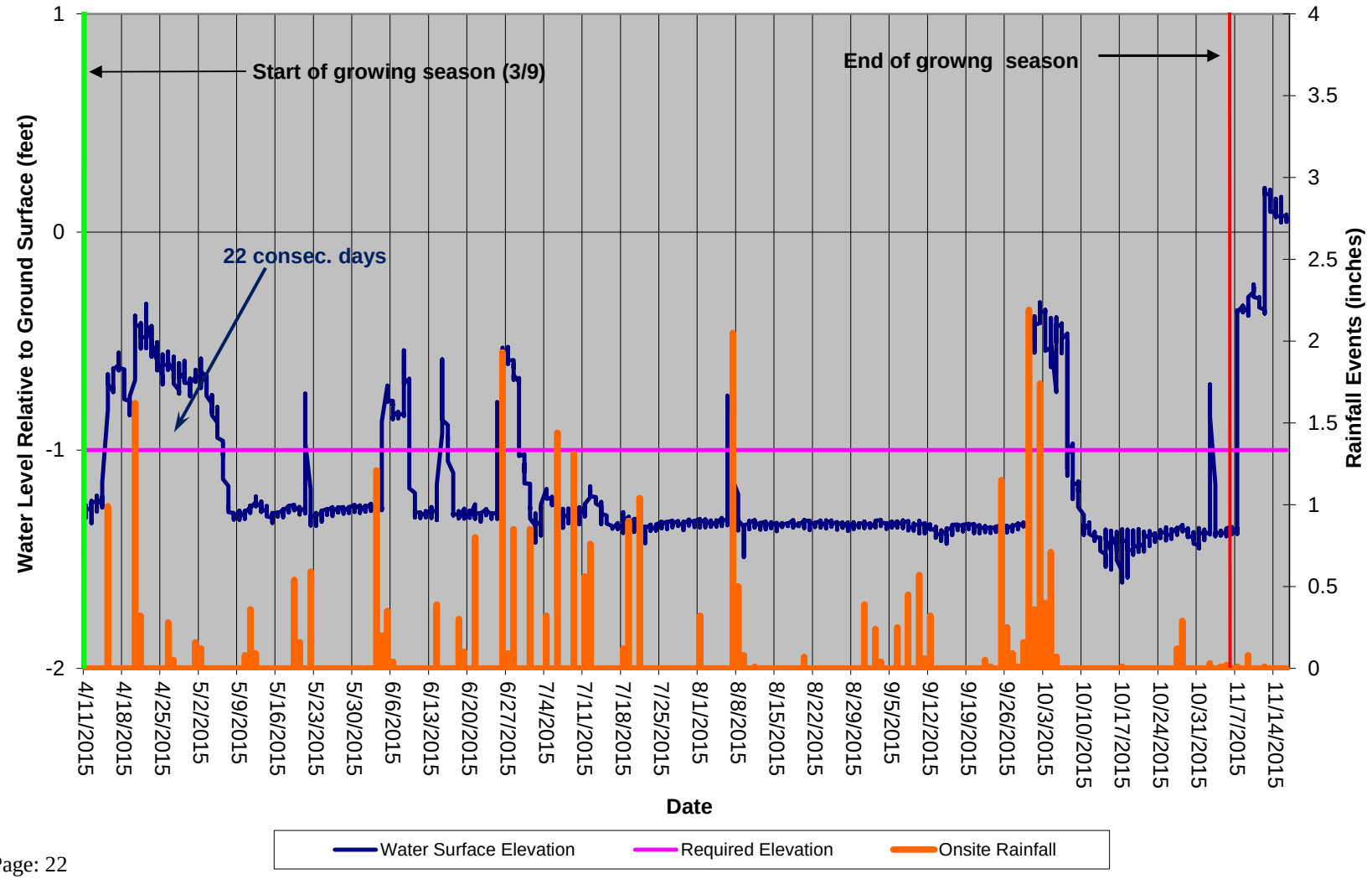
Precipitation Records

Hydrographs

Hydroperiods


Hofler Project on-site precipitation
30-70 Percentile Graph
Gates County, NC
Precipitation In Inches
0
1
2
3
4
5
6
7
8
Jan
Feb
Mar
Apr
May
June
July
Aug
Sep
Oct
Nov
Dec
2015 Totals
30th%^
70th%^


Hofler Monitoring Gauge #1 (9669819)
Start of growing season (3/9)
End of growng season
34 consec. days
Water Level Relative to Ground Surface (feet)
Rainfall Events (inches)
Date
Water Surface Elevation
Required Elevation
Onsite Rainfall


Hofler Monitoring Gauge #2 (9669784)
Start of growing season (3/9)
End of growng season
22 consec. days
Water Level Relative to Ground Surface (feet)
Rainfall Events (inches)
Date
1
0
-1
-2
4
3.5
3
2.5
2
1.5
1
0.5
0
4/11/2015
4/18/2015
4/25/2015
5/2/2015
5/9/2015
5/16/2015
5/23/2015
5/30/2015
6/6/2015
6/13/2015
6/20/2015
6/27/2015
7/4/2015
7/11/2015
7/18/2015
7/25/2015
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8/8/2015
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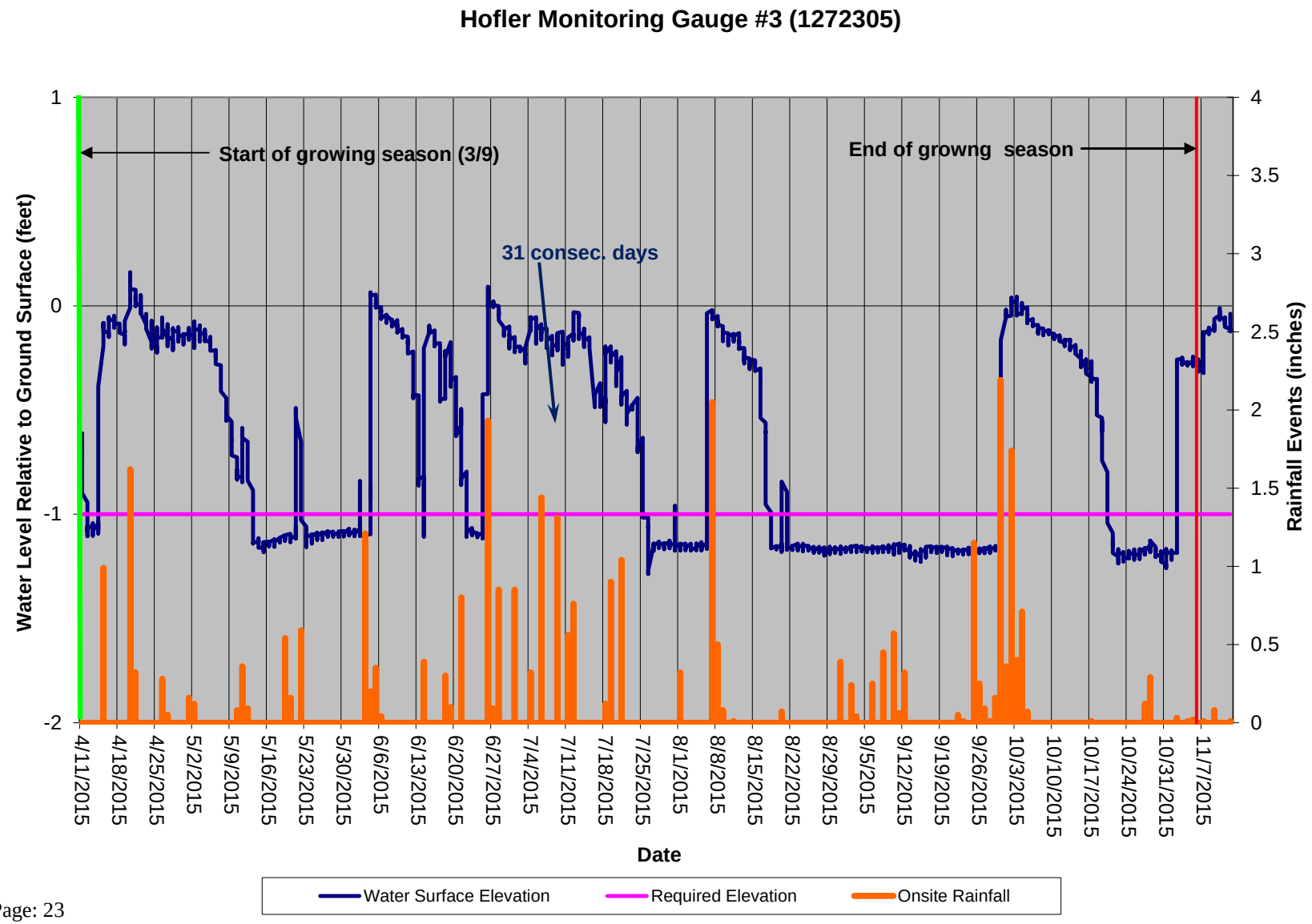
8/29/2015
9/5/2015
9/12/2015
9/19/2015
9/26/2015
10/3/2015
10/10/2015
10/17/2015
10/24/2015
10/31/2015
11/7/2015
11/14/2015
Water Surface Elevation
Required Elevation
Onsite Rainfall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Start of growing season (3/9)
End of growng season
31 consec. days
Water Level Relative to Ground Surface (feet)
Rainfall Events (inches)
1
0
-1
-2
4
3.5
3
2.5
2
1.5
1
0.5
0
4/11/2015
4/18/2015
4/25/2015
5/2/2015
5/9/2015
5/16/2015
5/23/2015
5/30/2015
6/6/2015
6/13/2015
6/20/2015
6/27/2015
7/4/2015
7/11/2015
7/18/2015
7/25/2015
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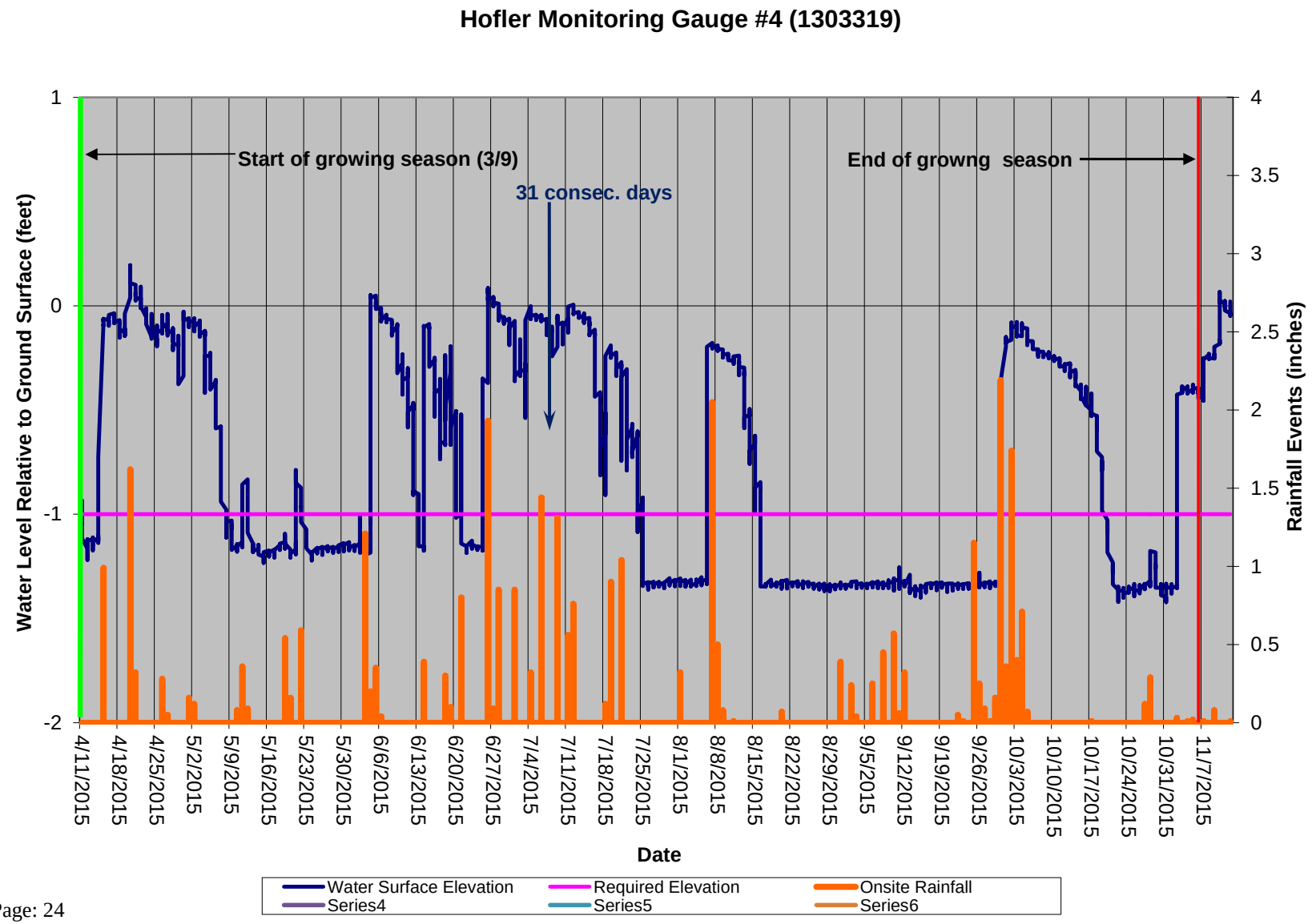
9/19/2015
9/26/2015
10/3/2015
10/10/2015
10/17/2015
10/24/2015
10/31/2015
11/7/2015
Date
Water Surface Elevation
Required Elevation
Onsite Rainfall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Start of growing season (3/9)
End of growng season
31 consec. days
Water Level Relative to Ground Surface (feet)
Rainfall Events (inches)
Date
1
0
-1
-2
4
3.5
3
2.5
2
1.5
1
0.5
0
4/11/2015
4/18/2015
4/25/2015
5/2/2015
5/9/2015
5/16/2015
5/23/2015
5/30/2015
6/6/2015
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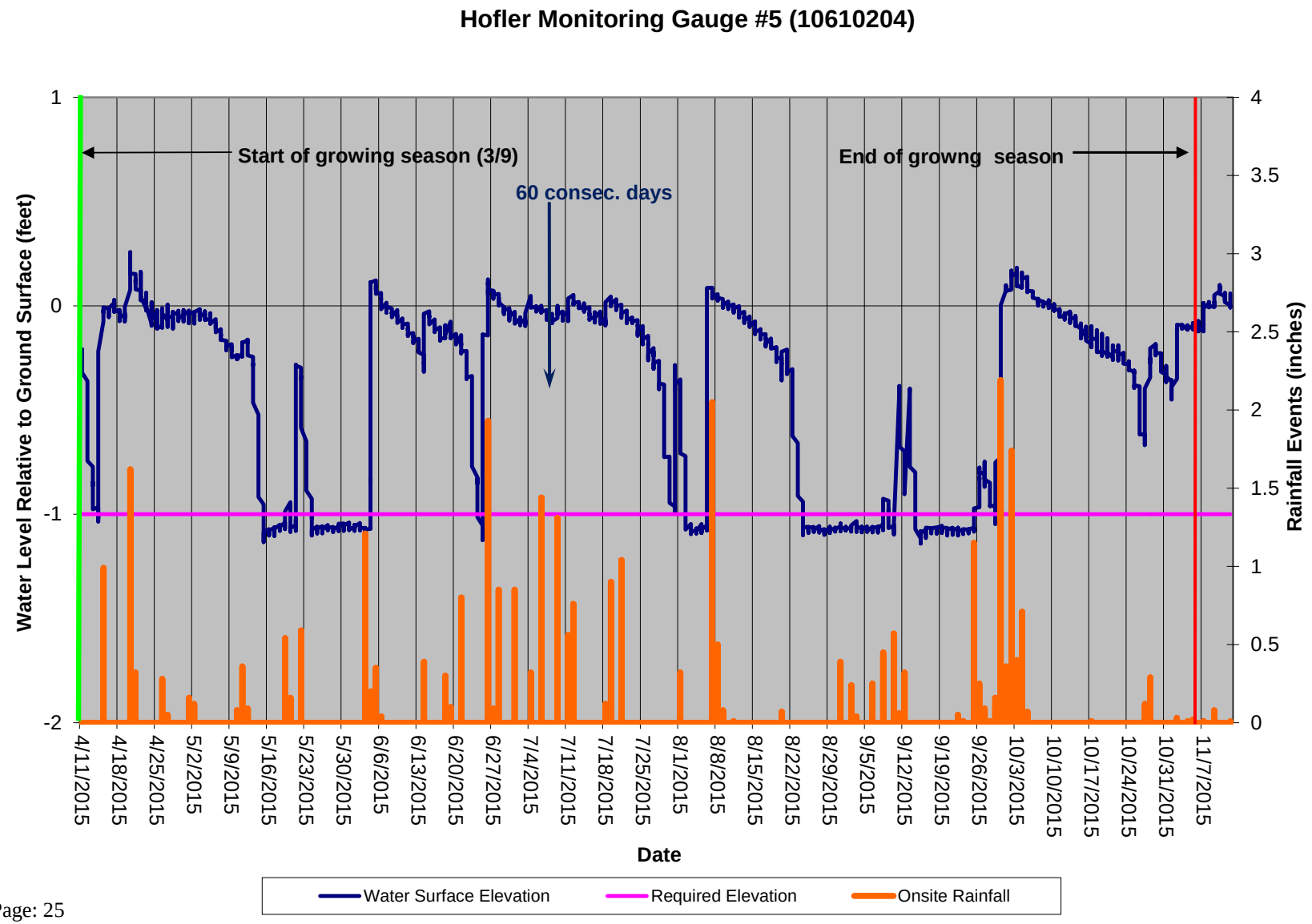
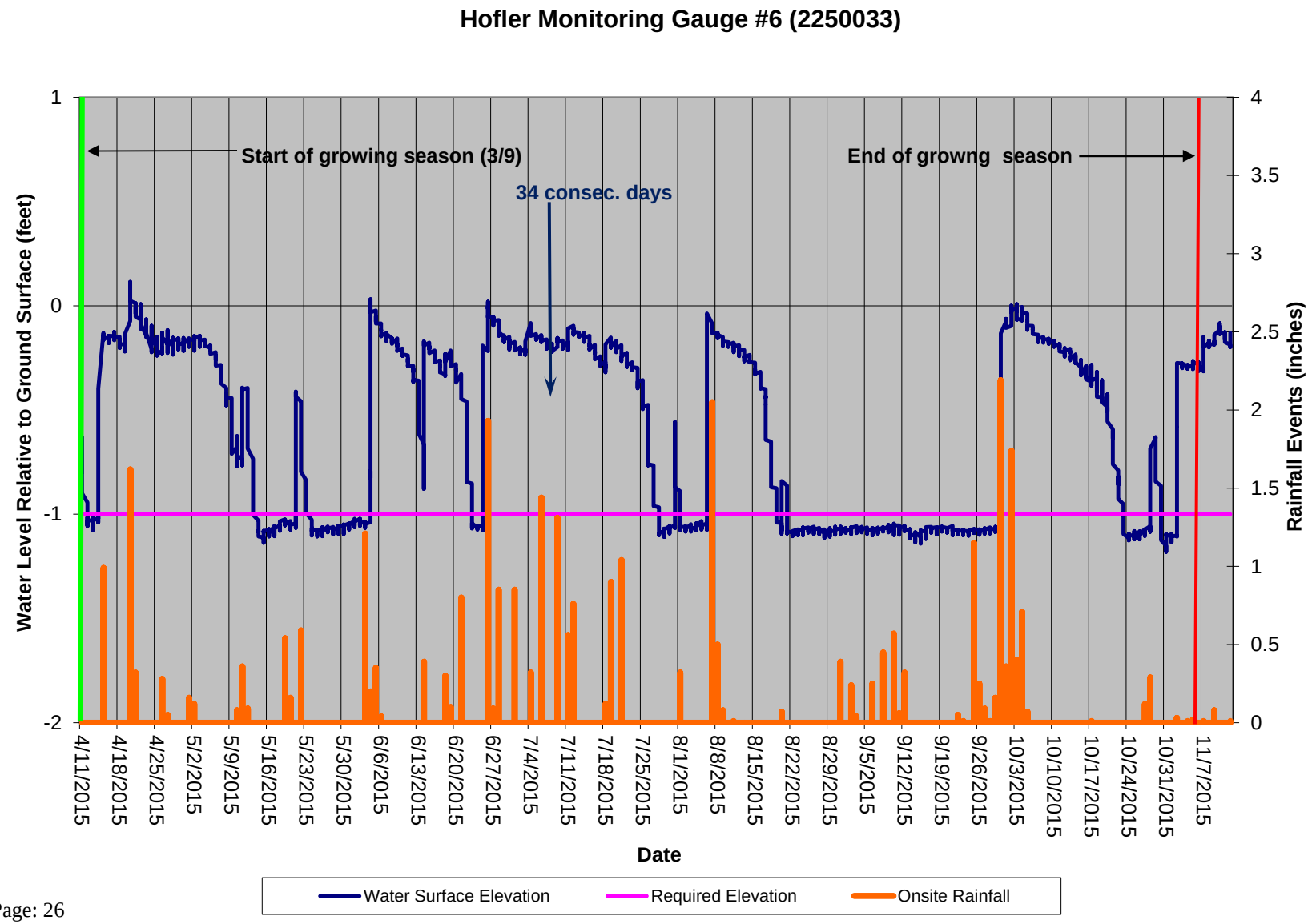
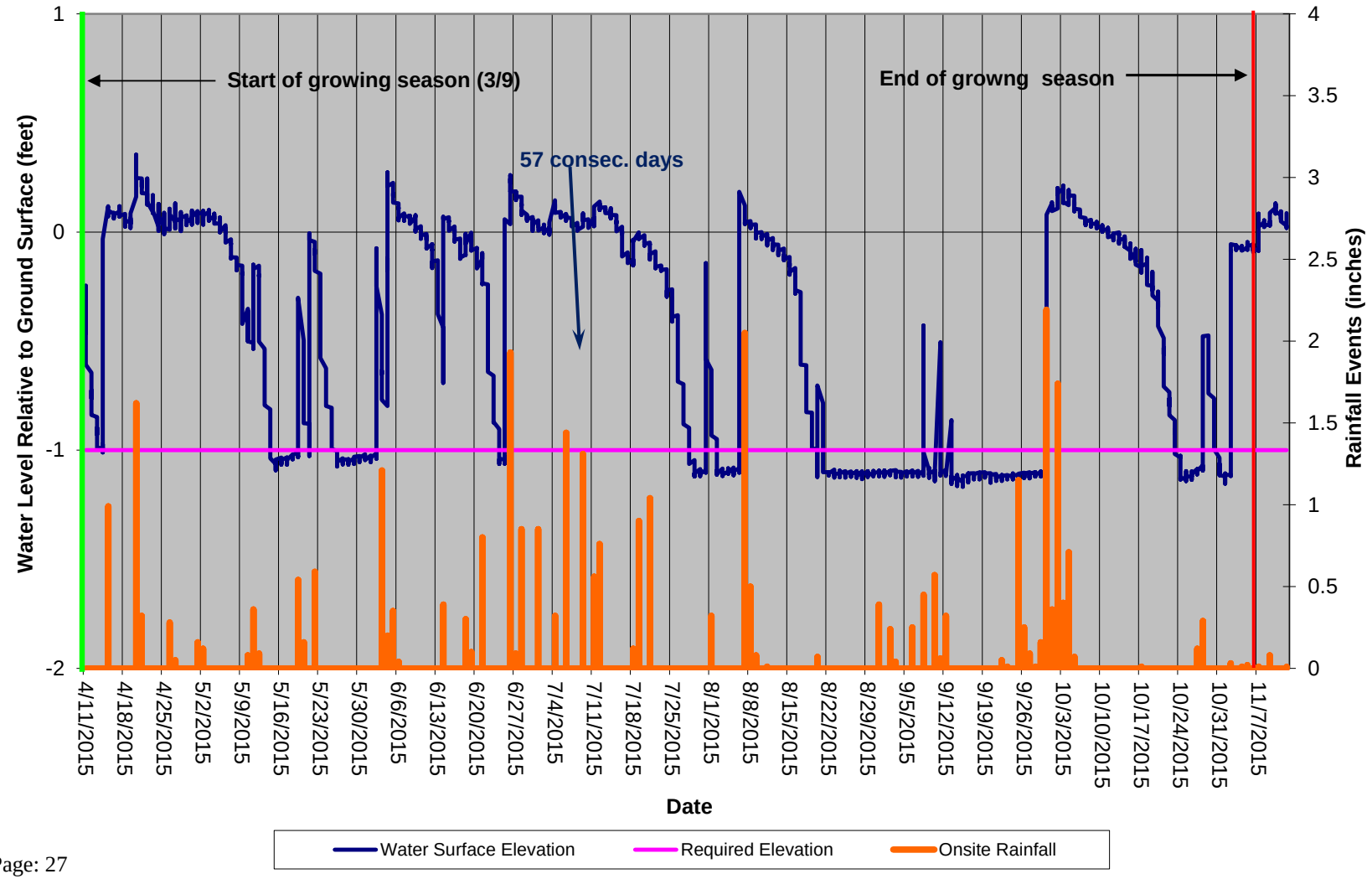
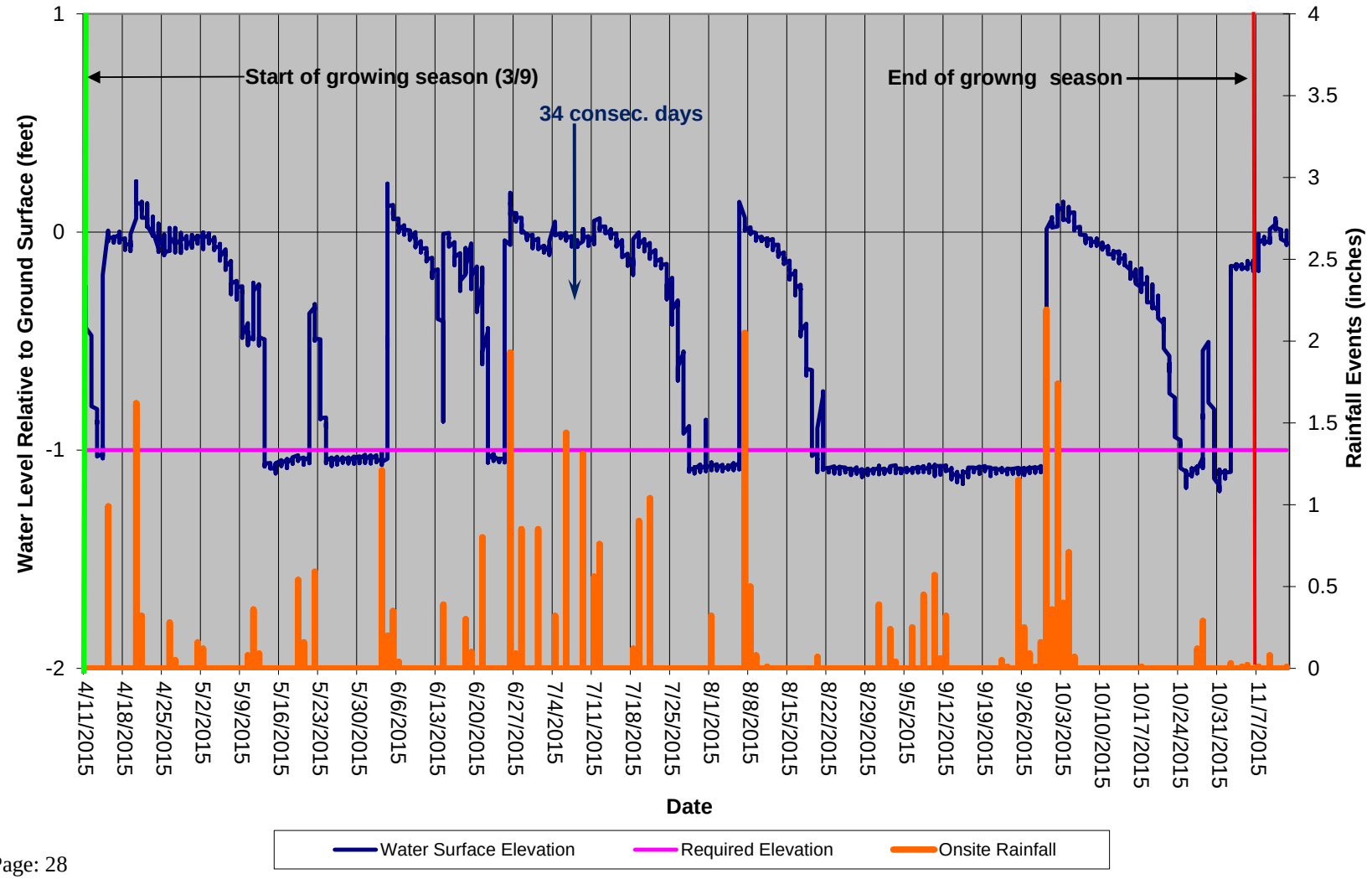
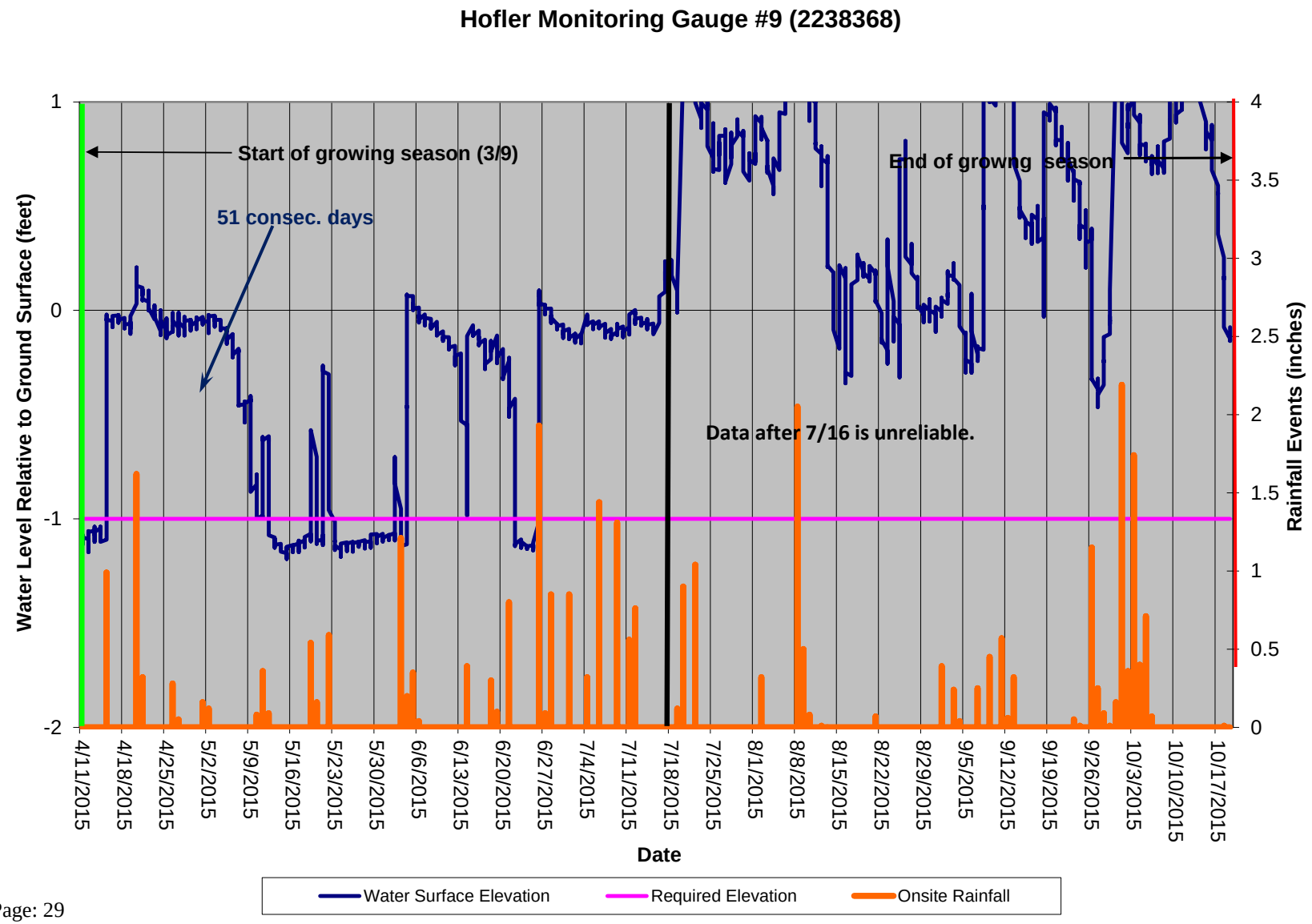
8/15/2015
8/22/2015
8/29/2015
9/5/2015
9/12/2015
9/19/2015
9/26/2015
10/3/2015
10/10/2015
10/17/2015
10/24/2015
10/31/2015
11/7/2015
Water Surface Elevation
Required Elevation
Onsite Rainfall
Series4
Series5
Series6

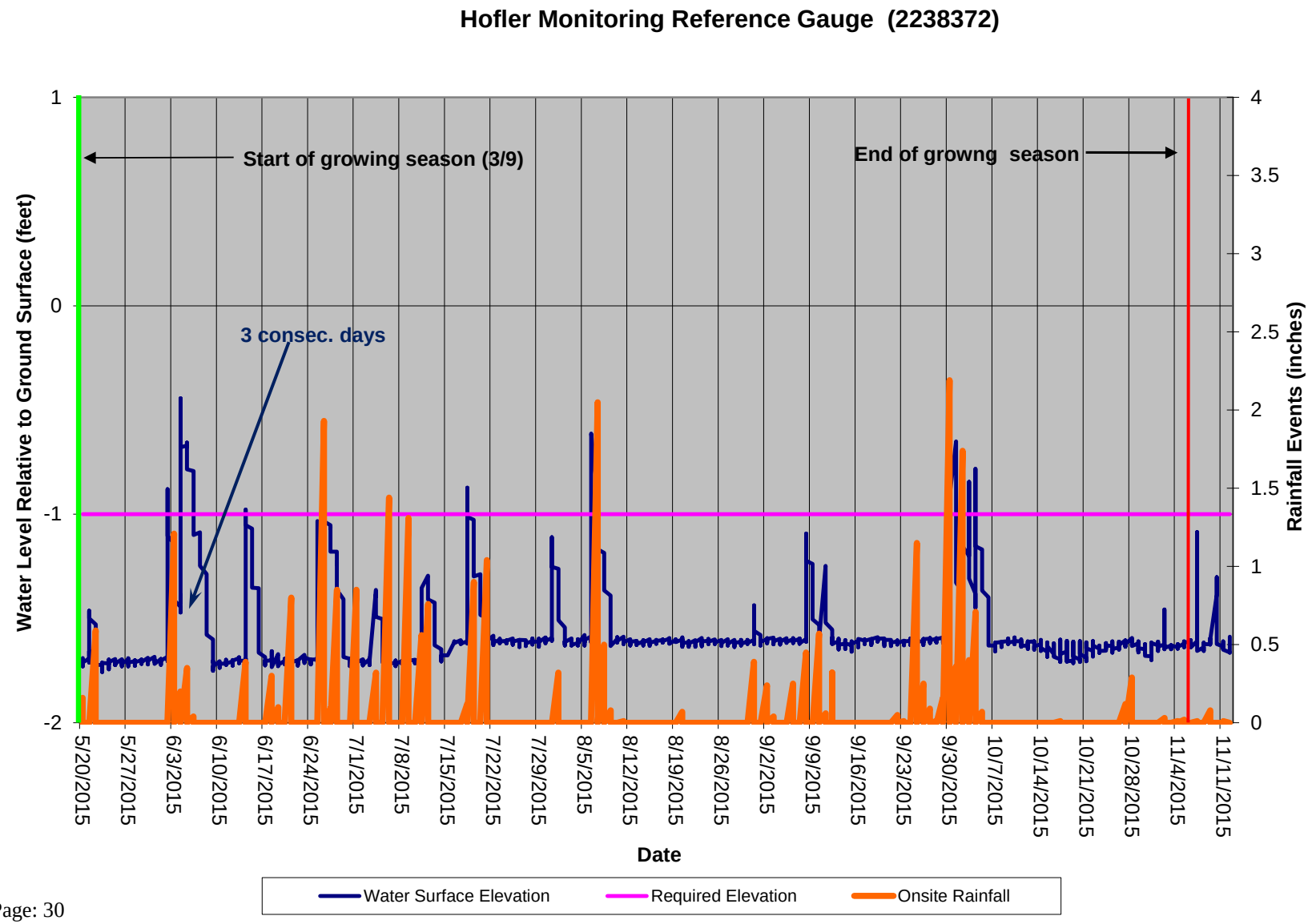

Hofler Monitoring Gauge #5 (10610204)
Start of growing season (3/9)
End of growng season
60 consec. days
Water Level Relative to Ground Surface (feet)
Rainfall Events (inches)
Date
Water Surface Elevation
Required Elevation
Onsite Rainfall


Hofler Monitoring Gauge #6 (2250033)
Start of growing season (3/9)
End of growng season
34 consec. days
Water Level Relative to Ground Surface (feet)
Rainfall Events (inches)
1
0
-1
-2
4
3.5
3
2.5
2
1.5
1
0.5
0
4/11/2015
4/18/2015
4/25/2015
5/2/2015
5/9/2015
5/16/2015
5/23/2015
5/30/2015
6/6/2015
6/13/2015
6/20/2015
6/27/2015
7/4/2015
7/11/2015
7/18/2015
7/25/2015
8/1/2015
8/8/2015
8/15/2015
8/22/2015
8/29/2015
9/5/2015
9/12/2015
9/19/2015
9/26/2015
10/3/2015
10/10/2015
10/17/2015
10/24/2015
10/31/2015
11/7/2015
Date
Water Surface Elevation
Required Elevation
Onsite Rainfall


Hofler Monitoring Gauge #7 (1126651)
Start of growing season (3/9)
End of growng season
57 consec. days
Water Level Relative to Ground Surface (feet)
Rainfall Events (inches)
Date
Water Surface Elevation
Required Elevation
Onsite Rainfall


Hofler Monitoring Gauge #8 (1126652)
Start of growing season (3/9)
End of growng season
34 consec. days
Water Level Relative to Ground Surface (feet)
Rainfall Events (inches)
1
0
-1
-2
4
3.5
3
2.5
2
1.5
1
0.5
0
4/11/2015
4/18/2015
4/25/2015
5/2/2015
5/9/2015
5/16/2015
5/23/2015
5/30/2015
6/6/2015
6/13/2015
6/20/2015
6/27/2015
7/4/2015
7/11/2015
7/18/2015
7/25/2015
8/1/2015
8/8/2015
8/15/2015
8/22/2015
8/29/2015
9/5/2015
9/12/2015
9/19/2015
9/26/2015
10/3/2015
10/10/2015
10/17/2015
10/24/2015
10/31/2015
11/7/2015
Date
Water Surface Elevation
Required Elevation
Onsite Rainfall


Hofler Monitoring Gauge #9 (2238368)
Start of growing season (3/9)
51 consec. days
End of growing season
Data after 7/16 is unreliable.
Water Level Relative to Ground Surface (feet)
Rainfall Events (inches)
Date
Water Surface Elevation
Required Elevation
Onsite Rainfall


Hofler Monitoring Reference Gauge (2238372)
Start of growing season (3/9)
End of growng season
3 consec. days
Water Level Relative to Ground Surface (feet)
Rainfall Events (inches)
1
0
-1
-2
4
3.5
3
2.5
2
1.5
1
0.5
0
5/20/2015
5/27/2015
6/3/2015
6/10/2015
6/17/2015
6/24/2015
7/1/2015
7/8/2015
7/15/2015
7/22/2015
7/29/2015
8/5/2015
8/12/2015
8/19/2015
8/26/2015
9/2/2015
9/9/2015
9/16/2015
9/23/2015
9/30/2015
10/7/2015
10/14/2015
10/21/2015
10/28/2015
11/4/2015
11/11/2015
Date
Water Surface Elevation
Required Elevation
Onsite Rainfall

Monitoring Gauge Number	Max Consecutive Hydroperiod: Saturation within 12 Inches of Soil Surface: Percent of growing season and Dates														
	WETS Table: Murfreesboro, NC Growing Season 3/9 - 11/6 (243 days)														
	2015	Dates	2016	Dates	2017	Dates	2018	Dates	2019	Dates	2020	Dates	2021	Dates	Mean
9669819 (1)	14.0	4/11-5/14													**14.0**
9669784 (2)	9.1	4/15-5/6													**9.1**
1272305 (3)	12.8	6/25-7/25													**12.8**
1303319 (4)	12.8	6/25-7/25													**12.8**
10610204 (5)	24.7	6/4-8/2													**24.7**
2250033 (6)	14.0	6/25-7/28													**14.0**
1126651 (7)	23.5	6/2-7/28													**23.5**
1126652 (8)	14.0	6/25-7/28													**14.0**
2238368 (9)	11.5	4/15-5/12													**11.5**
2238372 (Ref)	1.2	6/4-6/6													**1.2**
Precip Total	30.02														
Within 30%/70% Range?	**Y**														

30/70 Range adjusted to match data collection period.

Meets or exceeds success criteria

N/A Not available - Gage pulled or yet to be installed by this phase

M Malfunction, Data Overwritten or Irretrievable

Appendix F

USACE Permit Needs Determination

DEPARTMENT OF THE ARMY
WILMINGTON DISTRICT, CORPS OF ENGINEERS
69 DARLINGTON AVENUE
WILMINGTON, NORTH CAROLINA 28403-1343

REPLY TO
ATTENTION OF:

July 21, 2014

Regulatory Division

Re: NCIRT Review and USACE Approval of the Hofler Property Wetland Mitigation Site Plan; SAW-2012-01393; NCEEP Project # 95355

Mr. Tim Baumgartner
North Carolina Ecosystem Enhancement Program
1652 Mail Service Center
Raleigh, NC 27699-1652

Dear Mr. Baumgartner:

The purpose of this letter is to provide the North Carolina Ecosystem Enhancement Program (NCEEP) with all comments generated by the North Carolina Interagency Review Team (NCIRT) during the 30-day comment period for the the Hofler Property Wetland Mitigation Site Plan, which was reposted and closed on April 5, 2014. These comments are attached for your review.

This mitigation plan was originally posted in January, 2014. Comments posted identified numerous concerns with the projects (see attached memo). Because of these comments, the plan was revised in March 2014, and reposted on March 6, 2014 for a second review. The deadline for comments was April 5, 2014. An initial review of the comments revealed that many of the comments from the first round of comments had not been addressed in the March mitigation plan revision.

Prior to making a determination as to whether to approve this project, a third copy of the mitigation plan, dated May 2014, was received on May 29, 2014. This plan has subsequently been reviewed in light of the comments provided by NCIRT members during the review. Most of the comments have been addressed in the recent version of the plan, including concerns regarding well placement, vegetation plots, appropriate hydroperiod, and the proposed species list for planting. Based on these modifications, we have determined that major concerns identified with the Draft Mitigation Plan have been addressed, and the mitigation plan is considered approved with this correspondence.

Nevertheless, we believe it is important to note that the location and method of construction at the proposed site are not preferred, and effort should be made to avoid this type of project in the future. As a general rule, we do not believe that building berms around a restored wetland is an appropriate way to reestablish hydrology on a site. To begin with, this is not true restoration as you are establishing an entirely new hydrology regime on the site. Water flow into and out of the wetland is severely restricted by the berms, and the outflow elevation for the entire site is controlled by "ditch plugs/check dams" (see discussion on page 23 of the mitigation plan dated May 2014). In addition, there is the potential that

berms may be breached in the future though natural or anthropogenic means, which could affect the hydrology of the entire site. Lastly, constructing a wetland site in the middle of an agricultural field is not ideal as it drastically limits the connection between the site and forested wetlands adjacent to or downstream from the project. In this case, water flowing from the site must travel through more than ¼ mile of ditch before it reaches the forested headwaters of Lassiter Swamp, limiting the benefit of the project and the ability of the site to fully achieve the stated goals of the mitigation plan.

The Final Mitigation Plan is to be submitted with the Preconstruction Notification (PCN) Application for Nationwide permit approval of the project along with a copy of this letter. All changes made to the Final Mitigation Plan should be summarized in an errata sheet included at the beginning of the document. As it was determined that the project does not contain jurisdictional waters of the U.S., construction for the project does not require a Department of the Army permit; however, you must still provide a copy of the Final Mitigation Plan, along with a copy of this letter, to the appropriate USACE field office at least 30 days in advance of beginning construction of the project. Please note that this approval does not preclude the inclusion of permit conditions in the permit authorization for the project. Additionally, this letter provides initial approval for the Mitigation Plan, but this does not guarantee that the project will generate the requested amount of mitigation credit. As you are aware, unforeseen issues may arise during construction or monitoring of the project that may require maintenance or reconstruction that may lead to reduced credit.

Thank you for your prompt attention to this matter, and if you have any questions regarding this letter, the mitigation plan review process, or the requirements of the Mitigation Rule, please call me at 919-846-2564.

Sincerely,

TUGWELL.TODD.JASON.1048429293
2014.07.21 14:23:23 -04'00'

Todd Tugwell
Special Projects Manager

Enclosures

Electronic Copies Furnished:

NCIRT Distribution List
NCEEP/Heather Smith
NCEEP/Lin Xu

Ed Temple

From: Smith, Heather [heather.c.smith@ncdenr.gov]
Sent: Monday, July 21, 2014 3:24 PM
To: edtemple@vol.com
Subject: FW: NCEEP Draft Mitigation Plan Approval Letter with Comment Memo / Hofler Property Wetland Mitigation Project / Gates County / SAW-2012-01393 (UNCLASSIFIED)

Categories: Red Category

Ed,

Here is the clarification email.

Sincerely,

Heather Smith
Eastern Project Manager
Ecosystem Enhancement Program
919-707-8496
heather.c.smith@ncdenr.gov

Physical Address:
217 West Jones St., 3rd Floor, Suite 3000A, Raleigh, N.C. 27603

Mailing address:
1652 Mail Service Center, Raleigh, N.C. 27699-1652.

Parking and visitor access information is available on the EEP website.

Email correspondence to and from this address may be subject to the North Carolina Public Records Law and may be disclosed to third parties.

-----Original Message-----
From: Tugwell, Todd SAW [mailto:Todd.Tugwell@usace.army.mil]
Sent: Monday, July 21, 2014 3:17 PM
To: Baumgartner, Tim
Cc: Smith, Heather
Subject: RE: NCEEP Draft Mitigation Plan Approval Letter with Comment Memo / Hofler Property Wetland Mitigation Project / Gates County / SAW-2012-01393 (UNCLASSIFIED)

Classification: UNCLASSIFIED
Caveats: NONE

No, that was an oversight. No need for a PCN.

Todd

-----Original Message-----
From: Baumgartner, Tim [mailto:tim.baumgartner@ncdenr.gov]
Sent: Monday, July 21, 2014 3:02 PM
To: Tugwell, Todd SAW
Cc: Smith, Heather
Subject: [EXTERNAL] RE: NCEEP Draft Mitigation Plan Approval Letter with Comment Memo / Hofler Property Wetland Mitigation Project / Gates County / SAW-2012-01393 (UNCLASSIFIED)

Todd,

Thanks for the letter. We are a little confused. The last paragraph of the letter says to submit a PCN. There is no PCN needed for the project because the site is not currently jurisdictional. Do they submit a PCN anyway or was this an oversight?

Thanks
Tim

==========

Tim Baumgartner, CPESC

Deputy Director of Operations

Ecosystem Enhancement Program

Department of Environment and Natural Resources

Office - 919-707-8543

Cell - 919-218-2557

From: Tugwell, Todd SAW [mailto:Todd.Tugwell@usace.army.mil]
Sent: Monday, July 21, 2014 2:43 PM
To: Baumgartner, Tim
Cc: Xu, Lin; Smith, Heather; Fritz Rohde (Fritz.Rohde@noaa.gov); Chapman, Amy; Baker, Virginia; Beter, Dale E SAW; Biddlecome, William J SAW; bowers.todd@epa.gov; Crumbley, Tyler SAW; Karoly, Cyndi; Cox, David R.; Hall, Dolores; Emily_Jernigan@fws.gov; Alsmeyer, Eric C SAW; Kulz, Eric; Gibby, Jean B SAW; Greer, Emily C SAW; Jones, Scott SAW; Higgins, Karen; Kathryn_Matthews@fws.gov; Marella Buncick (Marella_Buncick@fws.gov); McLendon, Scott C SAW; Gledhill-earley, Renee; Sollod, Steve; Wilson, Travis W.; Wheeler, Tracey L SAW; Wicker, Henry M JR SAW
Subject: NCEEP Draft Mitigation Plan Approval Letter with Comment Memo / Hofler Property Wetland Mitigation Project / Gates County / SAW-2012-01393 (UNCLASSIFIED)

Classification: UNCLASSIFIED

Caveats: NONE

Mr. Baumgartner,

Attached is the approval letter for the Draft Mitigation Plan for the Hofler Mitigation Project, along with all the comments that were generated during the IRT's review of the project on the Mitigation Plan Review Portal. Please note that this letter approves the Draft Mitigation Plan. The site was determined to have no waters of the U.S., so a permit is not required for construction; however, a copy of the final mitigation plan should be provided at least 30 days prior to construction on site. Also, please ensure that the Final Mitigation Plan is posted to NCEEP's documents portal so that all members of the IRT have access to the Final plan.

Please let me know if you have any questions about the process or the attached letter.

Todd Tugwell

Special Projects Manager

Regulatory Division

Wilmington District

U.S. Army Corps of Engineers

11405 Falls of Neuse Road

Wake Forest, NC 27587

(919) 846-2564

Classification: UNCLASSIFIED

Caveats: NONE

Classification: UNCLASSIFIED
Caveats: NONE