ANNUAL REPORT FOR ACTIVE IDOT WETLAND COMPENSATION AND HYDROLOGIC MONITORING SITES

September 1, 2008 through August 31, 2009

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Illinois State Geological Survey
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Open File Series 2009–5

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INTRODUCTION

This report was prepared by the Illinois State Geological Survey (ISGS) to provide the Illinois Department of Transportation (IDOT) with hydrogeologic data collected from wetland compensation sites and potential wetland compensation sites being monitored under contracts IDOT 2008-03746-00-00 and IDOT 2009-03817 ANTIC. Where appropriate, this report also includes a determination of areas meeting wetland hydrology criteria listed in the 1987 U.S. Army Corps of Engineers Wetland Delineation Manual (Environmental Laboratory 1987) and its online updates (http://el.erdc.usace.army.mil/wetlands/pdfs/wlman87.pdf), hereafter referred to as the 1987 Manual, as well as areas meeting wetland hydrology criteria as outlined in the Interim Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Midwest Region (U.S. Army Corps of Engineers 2008), hereafter referred to as the 2008 Midwest Supplement. Additional site activities performed under this contract, such as water-quality monitoring, are not included in this report. Other site observations are included where appropriate.

Summaries of 22 sites are included in this report. Most summaries contain a location map, a site map showing field instruments and the extent of area satisfying wetland hydrology criteria, hydrographs for selected field instruments such as wells and stage gauges, and local precipitation data for the period. Site locations are shown on Figure 1, and a list of site names is presented in Table 1. All data included in this report are from September 1, 2008 through August 31, 2009, at IDOT's request, except where noted.

METHODS

The primary purpose of this report is to determine the area within each wetland compensation site that satisfies the wetland hydrology criteria listed in the 1987 Manual (Environmental Laboratory 1987) and its online updates and in the 2008 Midwest Supplement. Areas satisfying wetland hydrology criteria are delineated using both methods in order to quantify the impacts of using the new method, which was released for testing in 2008. However, to be a wetland, an area must also satisfy soils and vegetation criteria that are assessed by the Illinois Natural History Survey (INHS). INHS will combine the hydrologic data presented in this report with vegetation and soils data they collect, determine the total wetland area of each compensation site, and report it under separate cover. The total wetland area determined by INHS may differ from the areas that satisfy the wetland hydrology criteria shown in this report.

An area must be inundated or saturated for no less than 5% of the growing season in order to satisfy wetland hydrology criteria (Environmental Laboratory 1987) or a minimum of 14 consecutive days when using the 2008 Midwest Supplement. These areas will be determined to be jurisdictional wetlands if vegetation and soils criteria mentioned above are also met. Areas that are inundated or saturated for greater than 12.5% of the growing season satisfy wetland hydrology criteria in a conclusive manner, and strongly indicate wetland conditions, especially where soil and/or vegetation data are inconclusive or slow to respond after site construction activities. To assist in proper characterization of wetland compensation sites, this report shows areas that are inundated or saturated for greater than 5% and 12.5% of the growing season. Areas satisfying wetland hydrology criteria in the 2008 Midwest Supplement (14 consecutive days during the growing season) are also shown for comparison. Inundation occurs when surface water is present at depths no greater than 2 meters (m) (6.6 feet [ft]). Saturation occurs when the water table is no deeper than 30 centimeters (cm) (1 ft) below land surface.

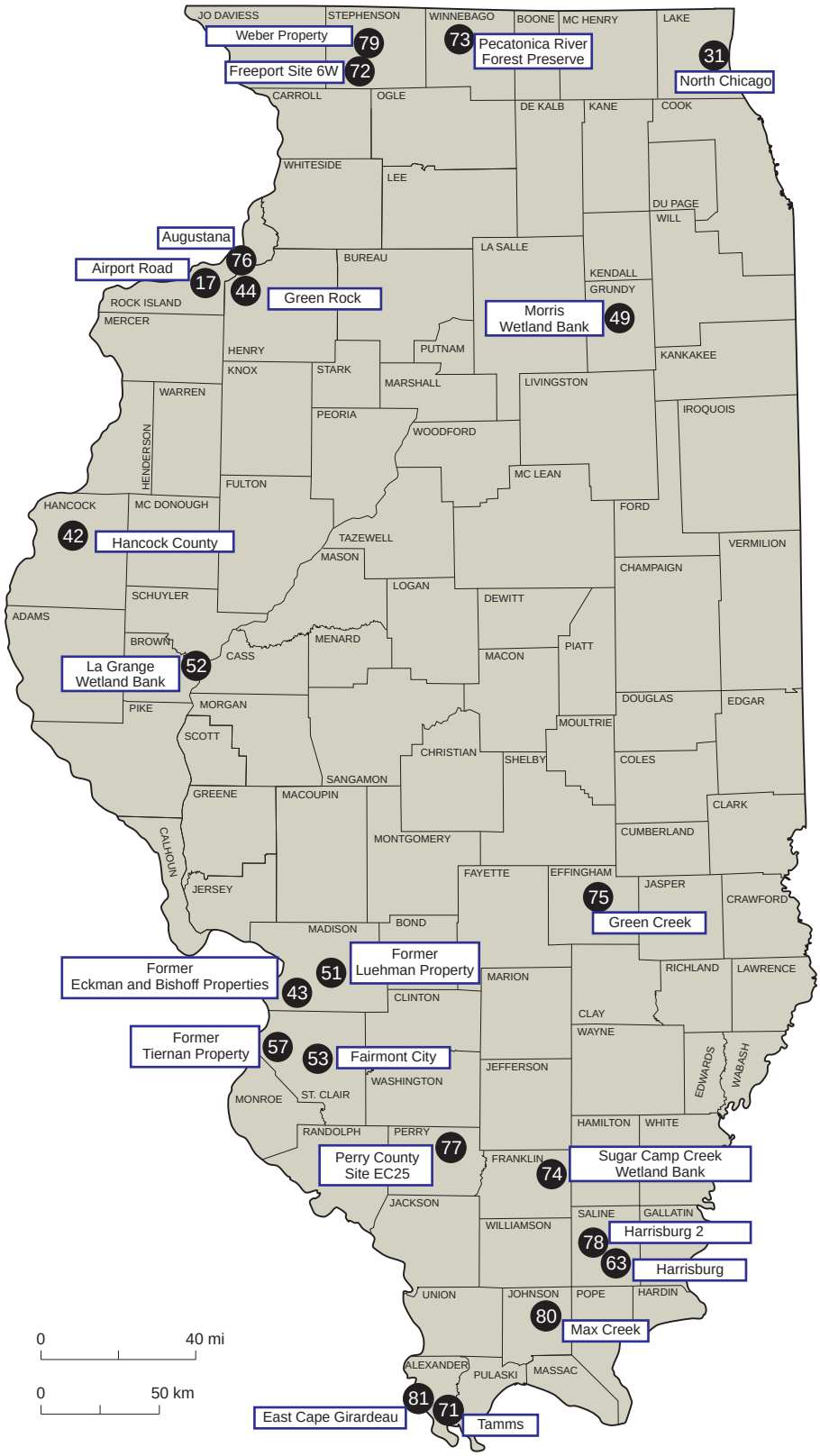

Figure 1 General locations of sites monitored by ISGS for IDOT between September 1, 2008 and August 31, 2009. Numbers indicate ISGS project numbers and are explained in Table 1.

ISGS #	Site Name Route # FAP # Sequence #
17	Airport Road Milan Beltway FAU 5822 Sequence #67
31	North Chicago Wetland Mitigation Site
42	Hancock County near Carthage US 136 FAP 315 & 10 Sequence #235
43	Former Eckman and Bishoff Properties Wetland Bank FAP 14
44	Green Rock Milan Beltway FAU 5822 Sequence #67
49	Morris Wetland Bank Sequence #1306
51	Former Luehmann Property New River Crossing FAP 999
52	La Grange Wetland Bank Sequence #9579
53	Fairmont City New River Crossing FAP 999
57	Former Tiernan Property New River Crossing FAP 999 Sequence #33G
63	Harrisburg US 45 FAP 332
71	Tamms IL 127 FAS 1907 Sequence #1026
72	Freeport Site 6W US 20 FAP 301 Sequence #10487
73	Pecatonica River Forest Preserve Harrison Avenue Extension Sequence #3746
74	Sugar Camp Creek Wetland and Stream Mitigation Bank IL 3 FAP 312 Sequence #9282
75	Green Creek IL 32/33 Sequence #12505
76	Augustana/Rock Island Milan Beltway FAU 5822 Sequence #67
77	Perry County, Pyramid Site EC25 FAS 864 Sequence #9778
78	Harrisburg 2 IL 14 FAP 857
79	Weber Property US 20 FAP 301
80	Max Creek IL 147 FAS 932
81	East Cape Girardeau IL 146 FAP 312

Table 1 ISGS project numbers and active water-level sites monitored by ISGS for IDOT between September 1, 2008 and August 31, 2009.

The Midwestern Regional Climate Center (MRCC) provides data regarding the length and beginning date of the growing season (Midwestern Regional Climate Center 2009). In the 1987 Manual, the growing season is defined as the time period between the last occurrence of 28°F (-2.2°C) air temperatures in spring to the first occurrence of 28°F (-2.2°C) air temperatures in the fall. The median beginning date and length of growing season are calculated by the MRCC for individual climate observation stations throughout the state. Data from the nearest observation station with an adequate period of record are used for each site. This method is used when determining the areas that satisfy wetland hydrology criteria under the 1987 Manual. The 2008 Midwest Supplement determines the growing season using different methods. While the above method is allowable, one of the two following site-specific methods is preferred. The first method relies on vegetation growth and development, and defines the start of the growing season as when two different species of non-evergreen vascular plants begin to grow (colloquially referred to as "green-up"), as evidenced by various features such as emergence of herbaceous plants from the ground, bud burst, emergence or opening of flowers, and others. The second method relies on soil temperatures, with the growing season being the period when soil temperatures are continuously above 41°F (5°C). Site-specific observations of soil temperatures and vegetation were collected by field staff, and the earliest date when either methodology was satisfied was determined to be the beginning of the growing season, and this date was used when determining areas that satisfy wetland hydrology criteria under the 2008 Midwest Supplement. Soil temperatures were collected by field staff using analog bimetal thermometers at a depth of 30 cm (12 in.) during site visits in 2009, and some sites were equipped with soil-temperature dataloggers for continuous readings. Also, nearby climate stations operated by the Illinois State Water Survey measure soil temperatures at 20 cm (8 in.), and they were obtained through the Midwestern Regional Climate Center and used to supplement on-site readings as needed.

Wells and stage gauges where water levels satisfied wetland hydrology criteria are listed in the text for each site. Interpolation between measuring points and/or extrapolation are used to locate the boundary of the area that satisfies wetland hydrology criteria. Best professional judgment is used to refine the location of this boundary, using small-scale topographic features, vegetation, soils, and other site features. To measure the size of an area satisfying wetland hydrology criteria, the boundaries were plotted on the best available base map, then measured with a Tamaya Super Planix B digital planimeter and listed in hectares (ha) and acres (ac). Alternatively, geographic information systems (GIS) combined with computer contouring programs were used at some sites to map and calculate the area satisfying wetland hydrology criteria.

The error of each area measurement will vary widely depending on the quality of the underlying base map, the precision in locating monitoring devices, and the precision of the planimeter or GIS at the scale of the base map. The base maps used for these determinations include as-built surveys (done both by IDOT and ISGS), construction plans, U.S. Geological Survey (USGS) 7.5-minute topographic maps, unrectified aerial photographs, and USGS digital orthophotograph quarter-quadrangle (DOQQ) maps (Illinois State Geological Survey 2009). Given the many potential sources of error, estimates of the amount of error are difficult to calculate and are not included.

Water-level data ordinarily were collected monthly throughout the year, and biweekly during March through May, when highest water levels generally are observed in Illinois. Biweekly readings continued into June as needed or were added as early as February to help determine the beginning of the growing season, or during periods of flooding or heavy precipitation. Weekly readings were made at some sites to improve or check accuracy.

In Illinois, 5% of the growing season ranges from about 9 to 11 days, and 12.5% of the growing season ranges from about 23 days to 29 days. Therefore, two consecutive biweekly measurements are required to satisfy wetland hydrology criteria at 5% of the growing season, and three readings are required at 12.5% of the growing season. If fewer readings suggest wetland hydrology, then interpolation of the water levels is performed to determine total number of days of inundation or saturation. Interpolation between two dates is not performed if a water level is not recorded for both dates. Flooding that prevents measurement of any specific instrument is considered sufficient evidence of inundation for that site visit. Manual water-level measurements are often supplemented with various automated data loggers that measure daily or more frequently. These data loggers are used to determine the timing of hydrologic events such as precipitation or flooding that occur between manual measurements. One manual measurement alone is generally considered insufficient to indicate inundation or saturation for a sufficient duration without the identification of a precipitation or flooding event that would have initiated the inundation or saturation. If conflicts occur between automatic and manually recorded data, best professional judgment is used to solve any conflicts in data, and a specific note may be added to the site summary in question. No changes in methods were needed to determine duration of inundation or saturation to satisfy the 14-day requirement of the 2008 Midwest Supplement.

Monitoring wells are given an alphanumeric designation based in part on their relative depths. Monitoring wells designated with an “S” or “VS” are shallow and are specifically constructed for measuring wetland hydrology in the soil zone. Monitoring wells designated with a “U” (upper) have varying depths but are deeper than “S” wells, and may be used to determine wetland hydrology depending on the depth of the well screen, as determined by the project manager. Other types of wells, including “M”, “L”, and “D”, are deeper wells used to collect other hydrogeologic data and cannot be used to determine wetland hydrology. They are included only to document ISGS activities at the site, and they are not listed or discussed in the text of this report.

Graphs for each site show water-level elevations at wells and surface-water instruments, and depth-to-water below land surface at each well. Depths are shown as negative values when water levels are above land surface. Elevations are shown relative to the National Geodetic Vertical Datum (NGVD) of 1929 or the North American Vertical Datum (NAVD) of 1988. The water levels recorded during the year are shown in the charts accompanying each site summary. For small sites, all measurements are shown on the same chart. For sites with more instruments, similar types of instruments are grouped on individual charts; for example all “S” wells may be on a single chart. For the largest sites, there may be several charts for a single type of instrument. If no data are shown on the charts for any specific well, then the well was either dry or not read, or the data were removed for quality-control purposes (see below).

Multiple data loggers were used to monitor water levels continuously at many sites. Several types of instruments are being used, each made by a different manufacturer. Each type of instrument has different operations and default values. We have removed or labeled any incorrect readings that result when the instrument is dry (e.g., “0" or other default values identified during installation). Other spurious readings that occurred due to data-logger malfunction or natural conditions that cause inaccuracies (e.g., vegetation growth or debris accumulation beneath the logger) were removed after interpretation by ISGS scientists.

On-site precipitation data were collected by ISGS using several types of tipping-bucket rain gauges. Due to inherent difficulties in maintaining rain gauges (e.g., clogging, equipment malfunction, timing of deployments), actual precipitation for each month may be greater than

the recorded value. Because all ISGS gauges are nonheated and must be removed in the winter, monthly precipitation data are also shown from climate observation stations maintained year-round by the MRCC (Midwestern Regional Climate Center 2009). The closest weather station with an adequate period of record is used at each site, and additional stations may be used to supplement the record if data from the closest station are missing. Normal (i.e., mean, average) precipitation values, and the above- and below-normal range threshold values are calculated by the National Water and Climate Center (NWCC) (National Water and Climate Center 2009) and are all based on a 30-year period, between 1961-1990 or 1971-2000 based on a 2-parameter gamma distribution over the 30-year period (National Water and Climate Center 1995). Precipitation is classified as "above 30% threshold", or above the normal range, when there is a 30% chance precipitation will be greater than or equal to the value shown. Precipitation is "below 30% threshold", or below the normal range, when there is a 30% chance that precipitation will be less than or equal to the value shown. Precipitation is considered to be within the normal range when neither above nor below the 30% thresholds. Precipitation may be described relative to "normal" (meaning average or mean) or the "normal range" as defined above.

This document is intended to be a summary of all hydrologic data collected under this contract during the reporting period. Therefore, some details have been omitted that may be necessary to interpret the data for other uses. The primary project manager listed for each site should be contacted for additional information.

Publication of this report is authorized by the Director, Illinois State Geological Survey, Institute of Natural Resource Sustainability, University of Illinois Urbana-Champaign.

REFERENCES

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MILAN BELTWAY, AIRPORT ROAD **ISGS #17**
WETLAND COMPENSATION SITE
FAU 5822
Sequence #67
Rock Island County, near Milan, Illinois
Primary Project Manager: Steven E. Benton
Secondary Project Manager: Kathleen E. Bryant

SITE HISTORY

- August 1997: ISGS data collection was initiated with the installation of monitoring wells and staff gauges.

- August 2004: Construction of the Milan Bypass began. Wetland mitigation began with the excavation of the southern portion of the site. Tree planting began in Fall 2004 and was completed in Spring 2005.

- January 2005: A Level II hydrogeologic characterization report was submitted to IDOT (ISGS Open-File Series 2005–04).

- December 2005: The ISGS was tasked by IDOT to perform post-construction monitoring.

WETLAND HYDROLOGY CALCULATION FOR 2009

The area of the site that satisfied wetland hydrology criteria (Environmental Laboratory 1987) for more than 5% of the 2009 growing season was estimated to be 8.8 ha (21.8 ac) out of a total area of 8.9 ha (22.0 ac). The area that satisfied wetland hydrology criteria for more than 12.5% of the growing season was estimated to be 8.1 ha (20.0 ac). Using new guidance proposed by the U.S. Army Corps of Engineers (2008), we estimate that 8.5 ha (21.0 ac) satisfied wetland hydrology criteria for 14 or more consecutive days during the growing season. These estimates are based on the following factors:

- According to the MRCC, the median date that the growing season begins at the Quad City International Airport in nearby Moline, Illinois, is April 13 and the season lasts 196 days; 5% of the growing season is 10 days and 12.5% of the growing season is 25 days. According to methods outlined in the Midwest Regional Supplement (U.S. Army Corps of Engineers 2008), we estimate that March 18 was the starting date of the 2009 growing season based on soil temperatures observed at the wetland compensation site.

- Total precipitation during the monitoring period was 154% of normal. Precipitation was at or above normal in September and December 2008, and from February through August 2009. In addition, precipitation in the spring (April through June) was 109% of normal.

- In 2009, all the monitoring wells except 9S and 9U satisfied wetland hydrology criteria for more than 5% of the growing season. In addition, all the monitoring wells except 9S, 9U, 16S, and 19S satisfied wetland hydrology criteria for 14 or more consecutive days. Furthermore, all the monitoring wells except 9S, 9U, 16S, 19S, 20S, and 21S satisfied wetland hydrology criteria for more than 12.5% of the growing season.

- In the southern portion of the site, water levels measured at gauge F show that areas below an elevation of 172.16 m (564.86 ft) satisfied jurisdictional wetland hydrology criteria for 5% of the growing season and for 14 or more consecutive days, and areas below 172.13 m (564.76 ft) satisfied jurisdictional wetland hydrology criteria for 12.5% of the growing season. At gauge G, the duration of inundation was not sufficient to satisfy wetland hydrology criteria.

- In the northern portion of the site, inundation was observed at gauges H, I, and RDS4 for durations sufficient to satisfy wetland hydrology criteria. Water levels measured at RDS4 show that areas below an elevation of 172.26 m (565.18 ft) satisfied jurisdictional wetland hydrology criteria for 5% of the growing season, areas below an elevation of 172.25 m (565.15 ft) satisfied wetland hydrology criteria for 14 or more consecutive days, and areas below an elevation of 172.20 m (564.99 ft) satisfied wetland hydrology criteria for 12.5% of the growing season.

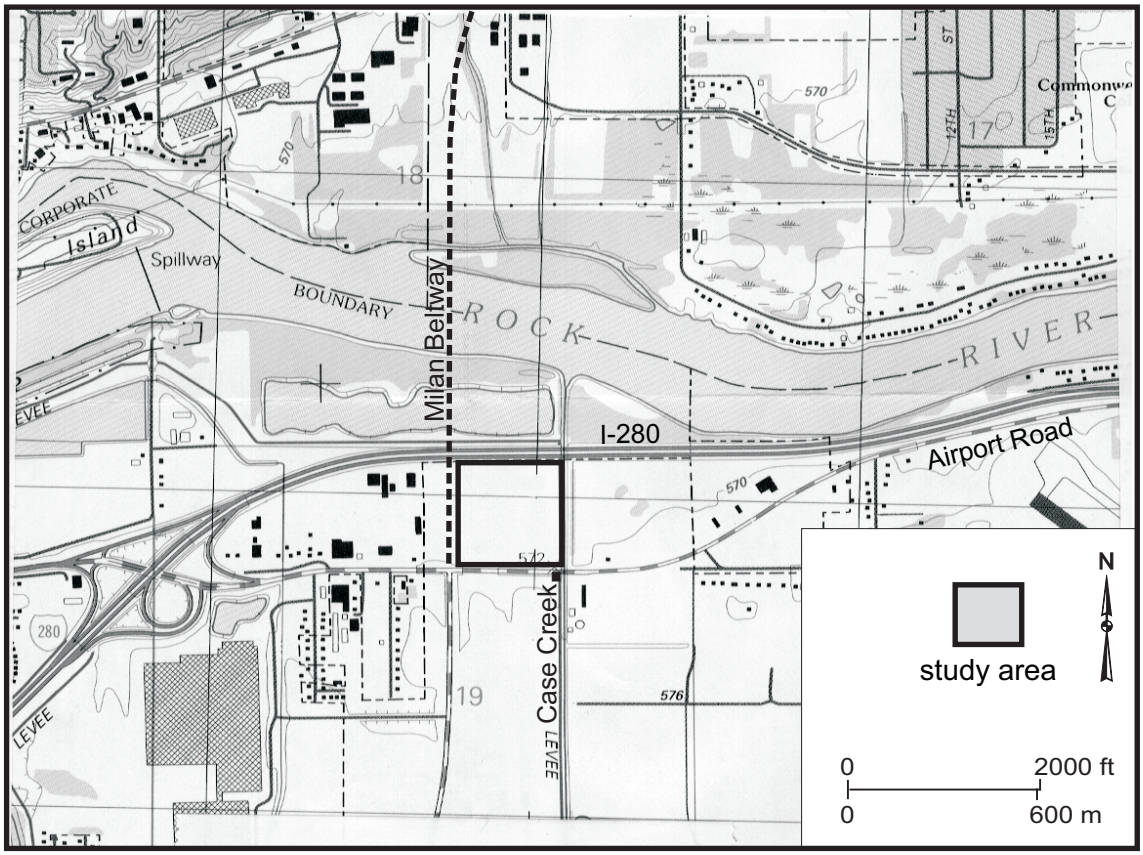
PLANNED FUTURE ACTIVITIES

- Monitoring of the site will continue until notified otherwise by IDOT.

Milan Beltway, Airport Road Wetland Compensation Site (FAU 5822)

General Study Area and Vicinity

from the USGS Topographic Series, Milan IL-IA 7.5-minute Quadrangle (USGS 1992)
contour interval is 10 feet

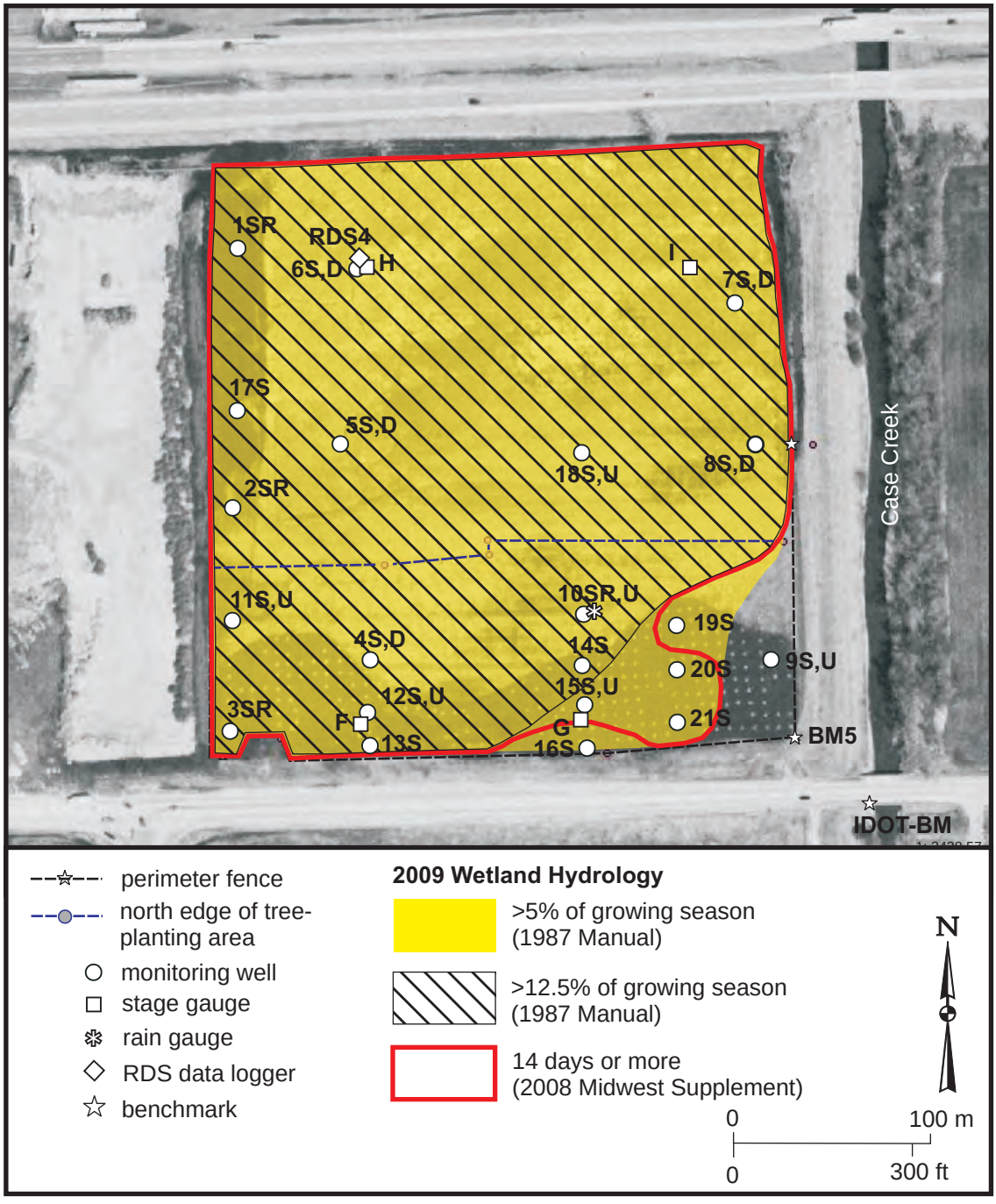


Milan Beltway, Airport Road Wetland Compensation Site (FAU 5822)

Estimated Areal Extent of 2009 Wetland Hydrology

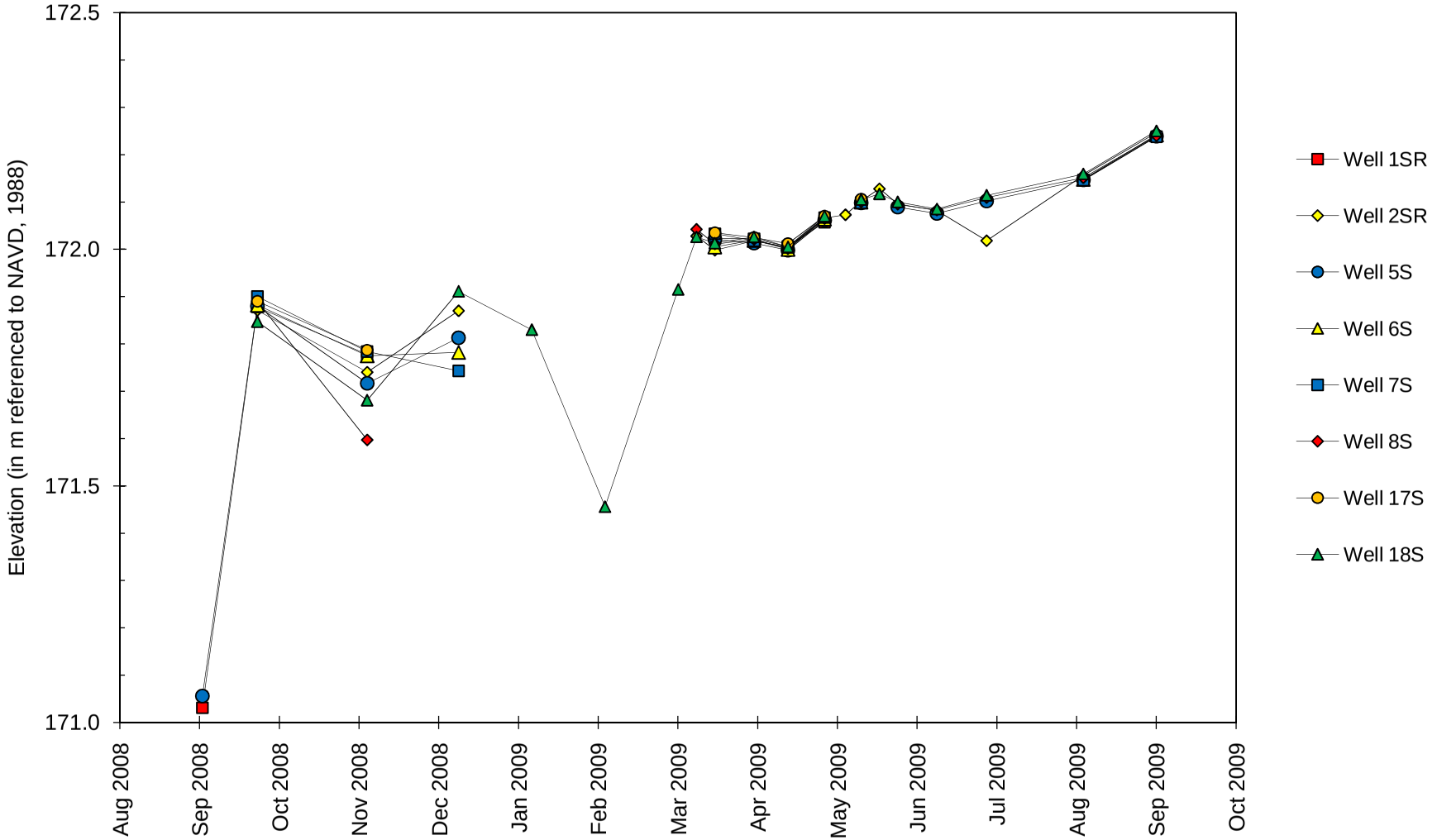
September 1, 2008 through August 31, 2009

Map based on USGS digital orthophotograph, Milan SW quarter quadrangle
from 03/30/2000 aerial photography (ISGS 2005)



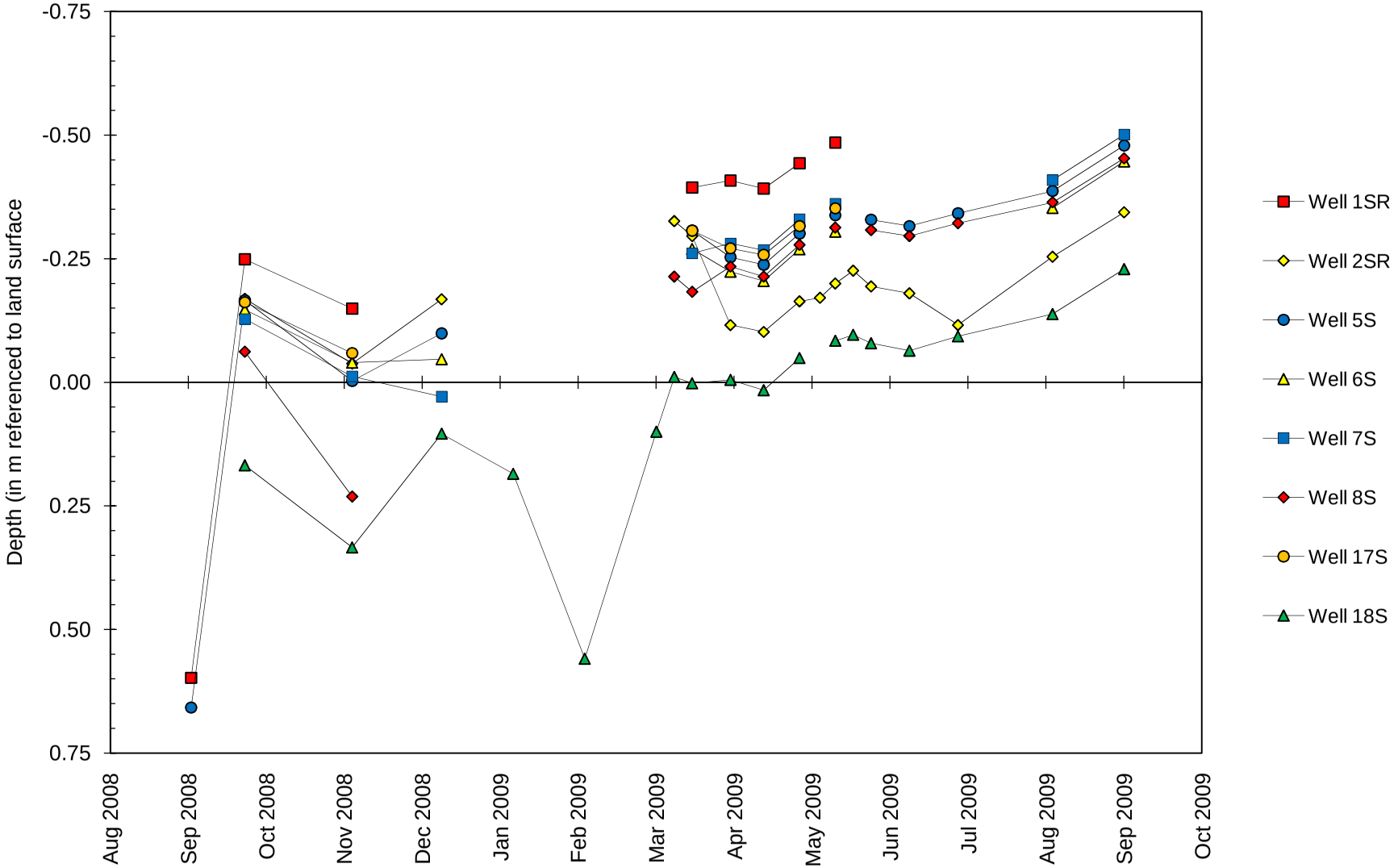
Milan Beltway, Airport Road Wetland Compensation Site
September 1, 2008 through August 31, 2009

Water-Level Elevations in Soil-Zone Monitoring Wells in the Northern Portion of the Site



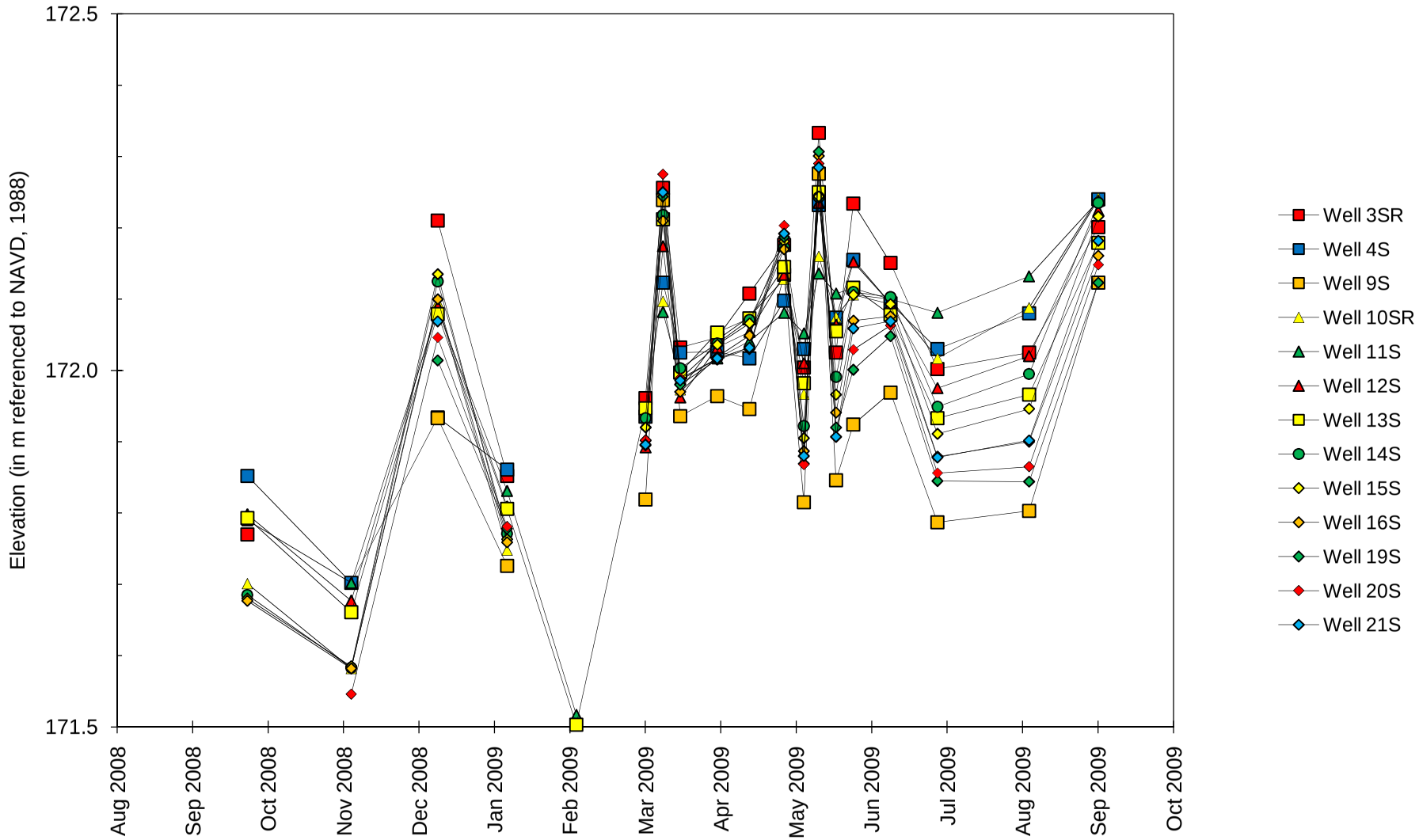
Milan Beltway, Airport Road Wetland Compensation Site
September 1, 2008 through August 31, 2009

Depth to Water in Soil-Zone Monitoring Wells in the Northern Portion of the Site



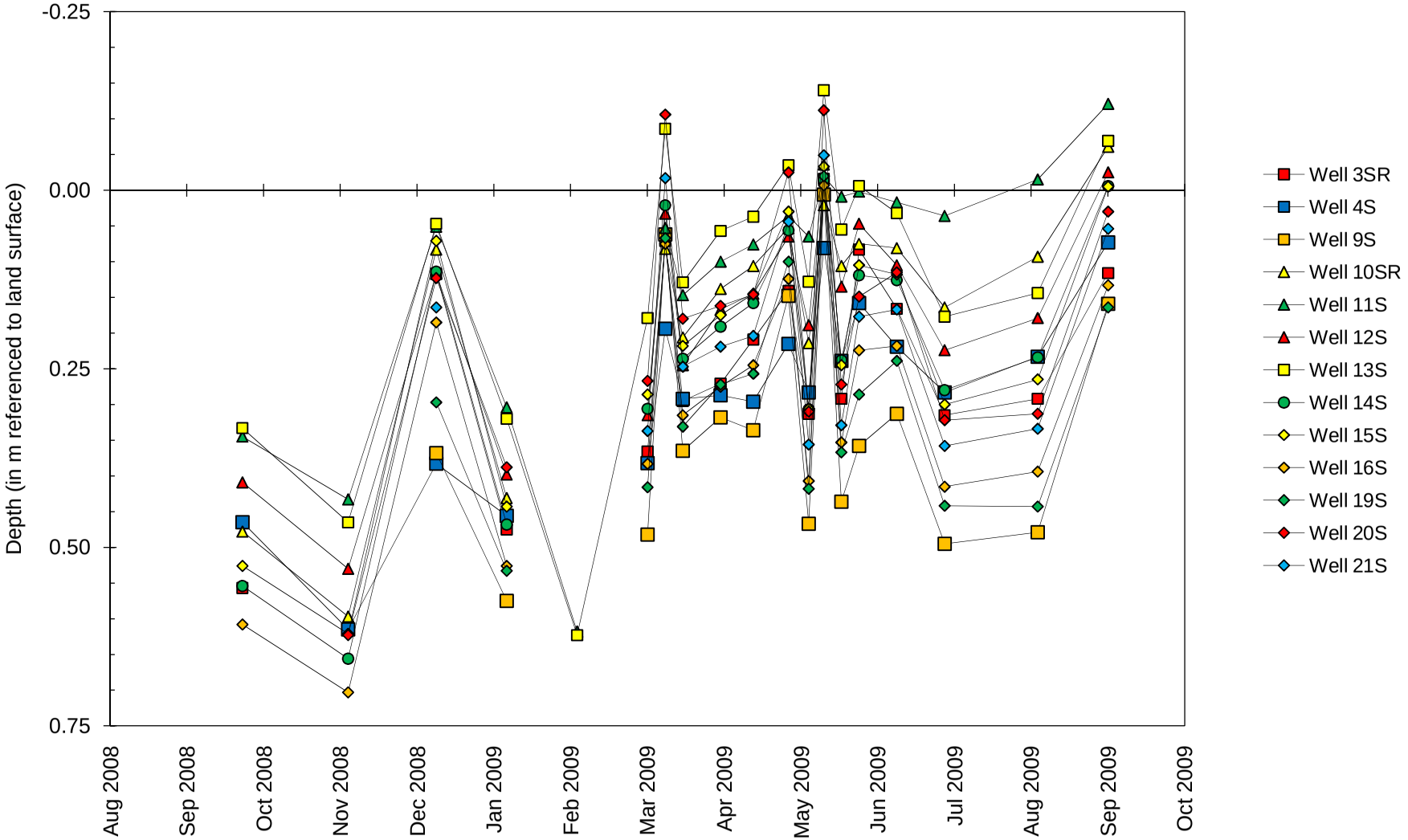
Milan Beltway, Airport Road Wetland Compensation Site
September 1, 2008 through August 31, 2009

Water-Level Elevations in Soil-Zone Monitoring Wells in the Southern Portion of the Site



Milan Beltway, Airport Road Wetland Compensation Site
September 1, 2008 through August 31, 2009

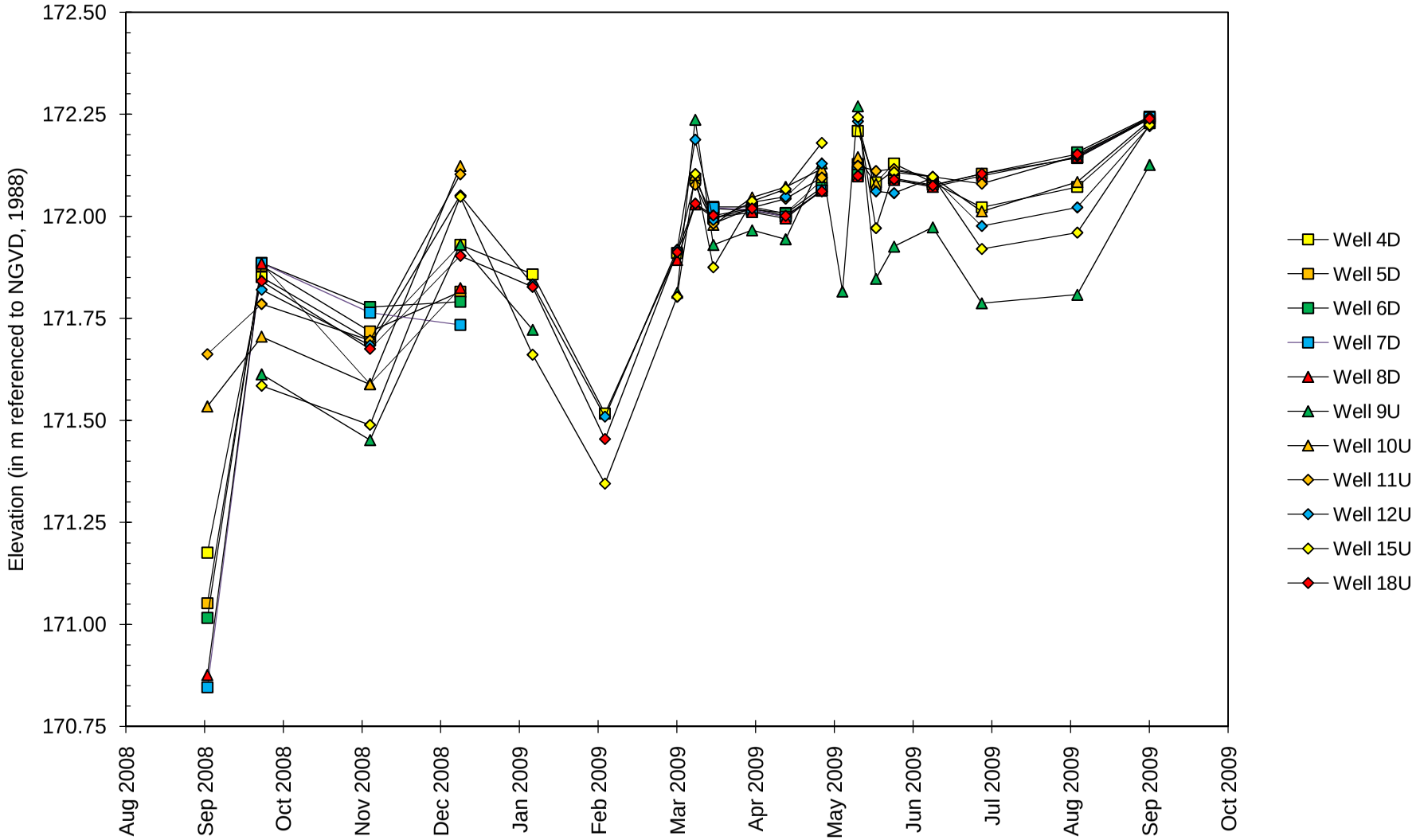
Depth to Water in Soil-Zone Monitoring Wells in the Southern Portion of the Site



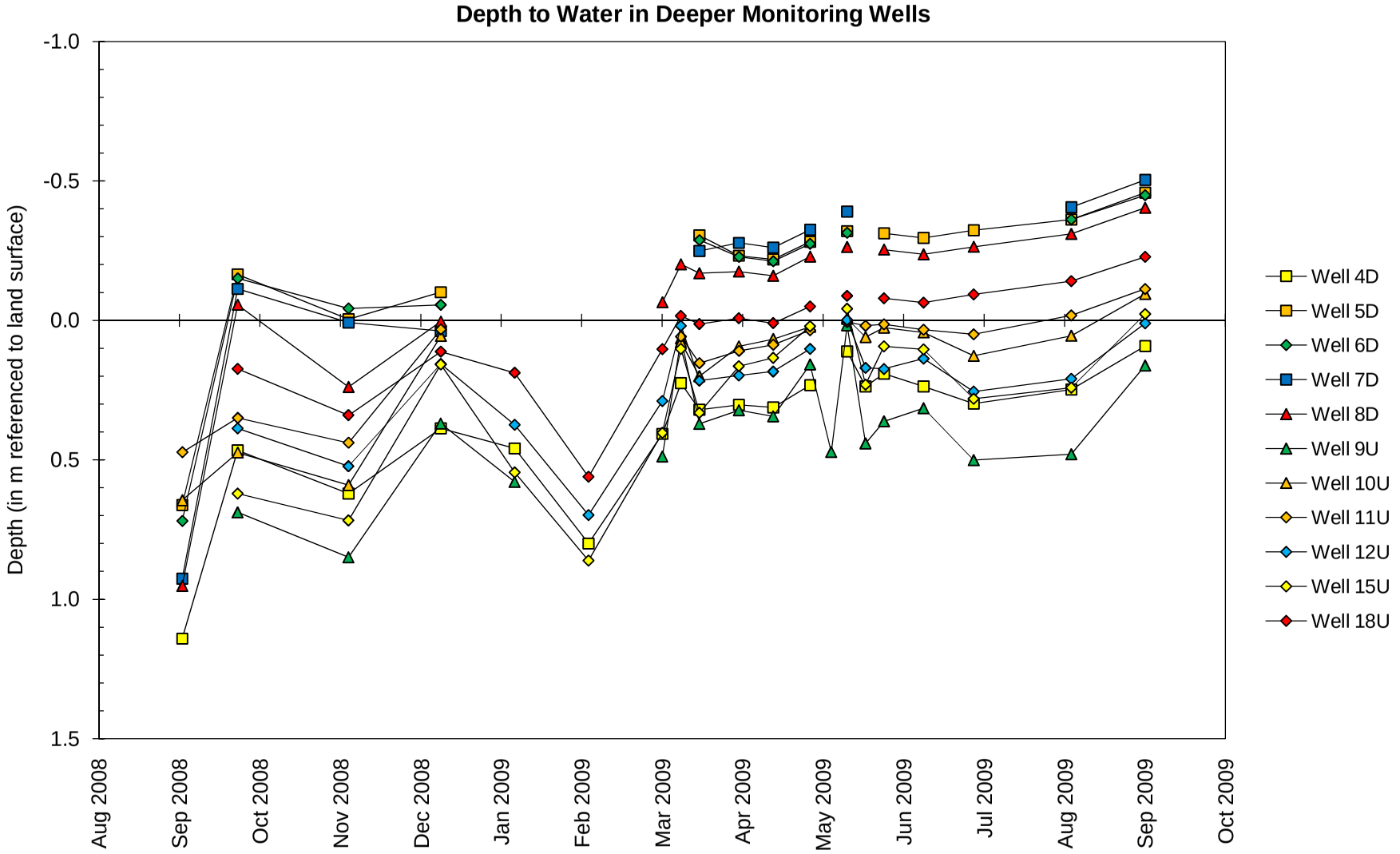
Milan Beltway, Airport Road Wetland Compensation Site

September 1, 2008 through August 31, 2009

Water Level Elevations in Deeper Monitoring Wells

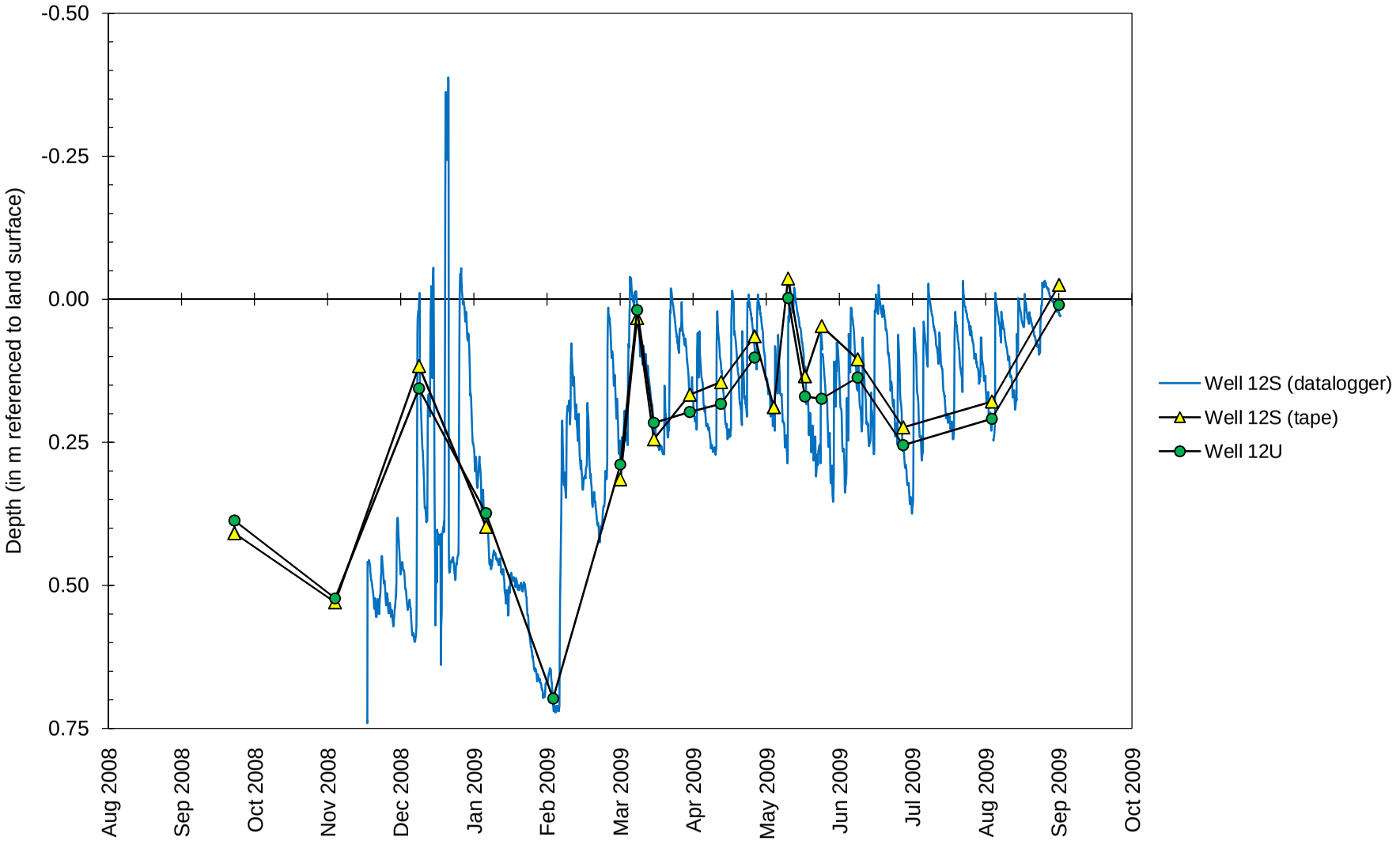


Milan Beltway, Airport Road Wetland Compensation Site
September 1, 2008 through August 31, 2009



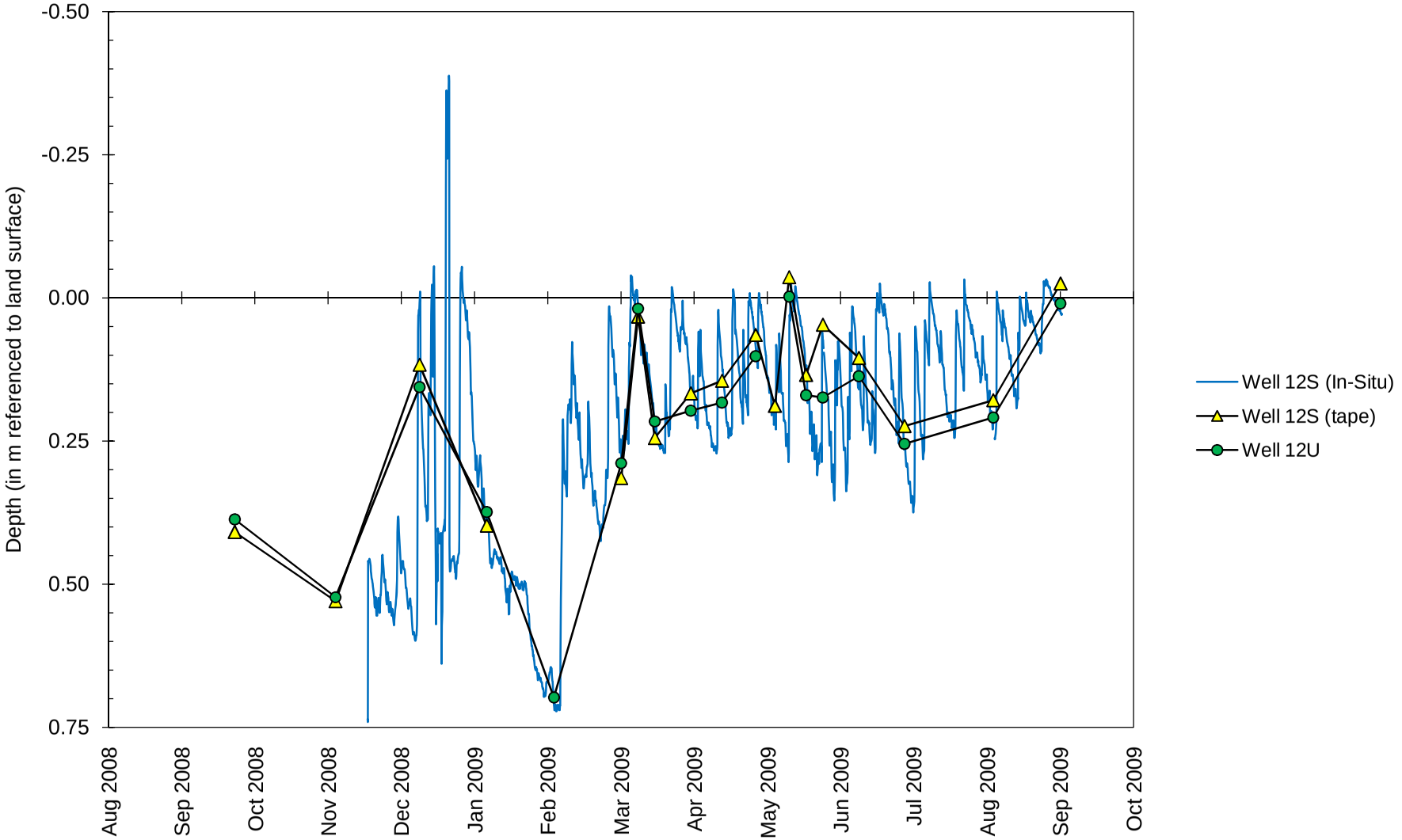
Milan Beltway, Airport Road Wetland Compensation Site
September 1, 2008 through August 31, 2009

Depth to Water at Well Cluster 12
in the Southern Portion of the Site

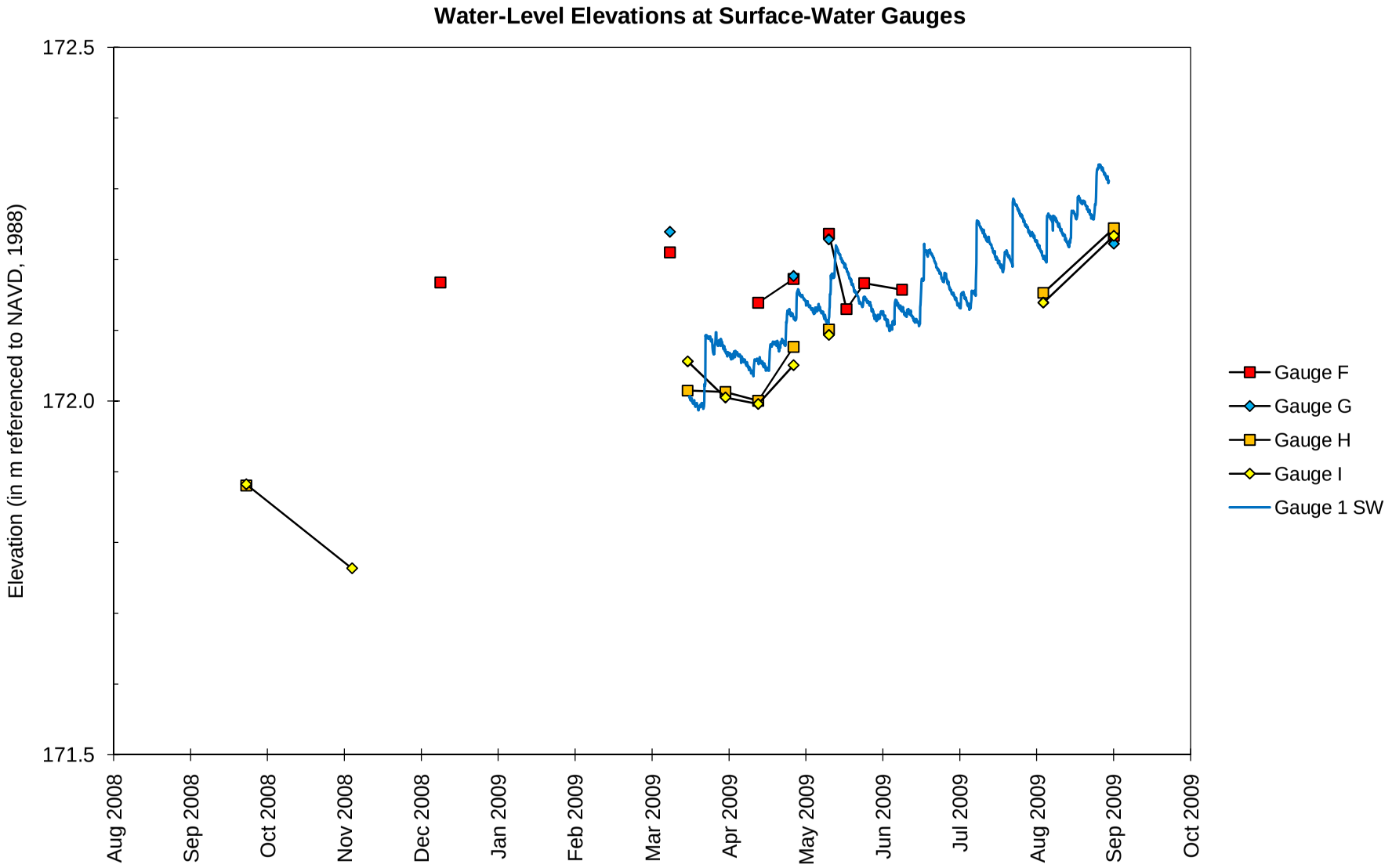


Milan Beltway, Airport Road Wetland Compensation Site
September 1, 2008 through August 31, 2009

Depth to Water at Well Cluster 12
in the Southern Portion of the Site



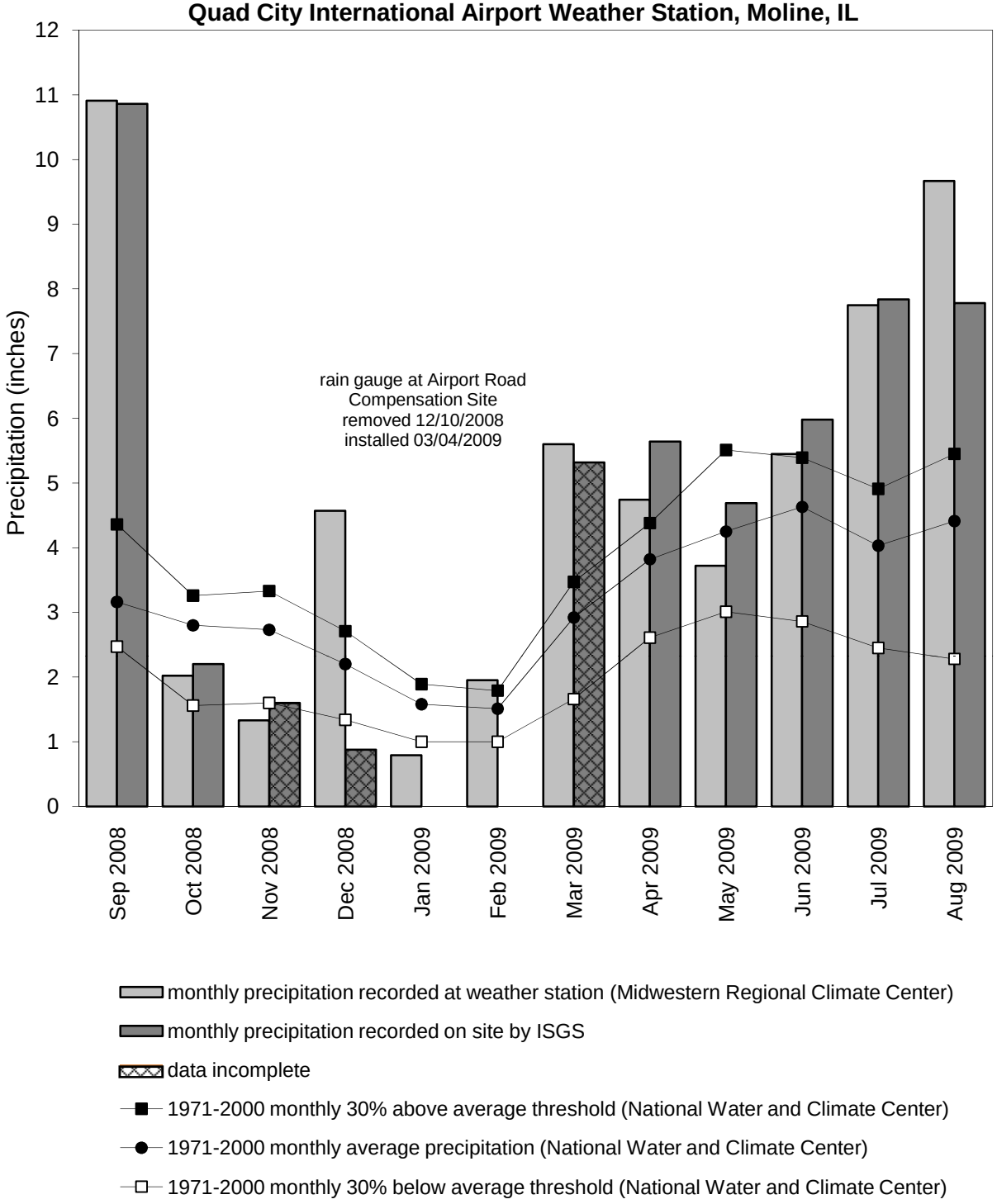
Milan Beltway, Airport Road Wetland Compensation Site
September 1, 2008 through August 31, 2009



Milan Beltway, Augustana/Rock Island Wetland Compensation Site

September 2008 through August 2009

Total Monthly Precipitation Recorded On Site and at the Quad City International Airport Weather Station, Moline, IL



Graph last updated September 11, 2009

NORTH CHICAGO **ISGS #31**
POTENTIAL WETLAND MITIGATION SITE
Lake County, North Chicago, Illinois
Primary Project Manager: Keith Carr
Secondary Project Manager: James Miner

SITE HISTORY

- Spring 1995: ISGS submitted an Initial Site Evaluation report to IDOT.
- Summer and Fall 1998: ISGS installed monitoring wells and surface-water gauges and began a geochemical characterization.
- January 2000: A letter report containing initial observations and recommendations was transmitted to IDOT.
- Spring 2001: Twenty-nine additional soil-zone wells were installed throughout the site to monitor the hydrogeologic conditions in areas identified as containing drained hydric soils.
- Spring 2002: IDOT suspended monitoring at the site.
- Spring 2009: ISGS installed monitoring wells in the northernmost part of the site where field tiles have been found to document restoration potential.

WETLAND HYDROLOGY CALCULATION FOR 2009

The area of the site that satisfied wetland hydrology criteria (Environmental Laboratory 1987) was not calculated because only a small number of wells were installed to confirm wetland and nonwetland conditions in certain areas. An area of wetland hydrology adjacent to IL 137 is delineated on the accompanying map according to requests by IDOT to document wetland conditions in that area, although no acreage is calculated.

- According to the Midwestern Regional Climate Center, the median date that the growing season begins in Waukegan is April 14 and lasts 195 days; 5% of the growing season is 9 days, and 12.5% of the growing season is 24 days. The beginning of the growing season in 2009 was not determined according to the 2008 Midwest Supplement because monitoring did not begin until late April, when the growing season was already underway.
- Total precipitation during the monitoring period was 151% of normal. Precipitation was at or above normal in September and December 2008, and in February through June and August 2009. Precipitation during spring (April through June) was 148% of normal.
- In 2009, wells 09-1, 09-2, 09-3, 09-6, and 09-8 satisfied wetland hydrology criteria for greater than 5% of the growing season and for greater than 14 consecutive days during the growing season. Wells 09-6 and 09-8 also satisfied wetland hydrology criteria for greater than 12.5% of the growing season.

ADDITIONAL INFORMATION

- Despite wetter than average conditions in spring 2009, areas lacking wetland hydrology were documented in the northernmost portion of the site where a field tile system has been located. Therefore, it is probable that removal of the field tile will restore wetlands in that area.

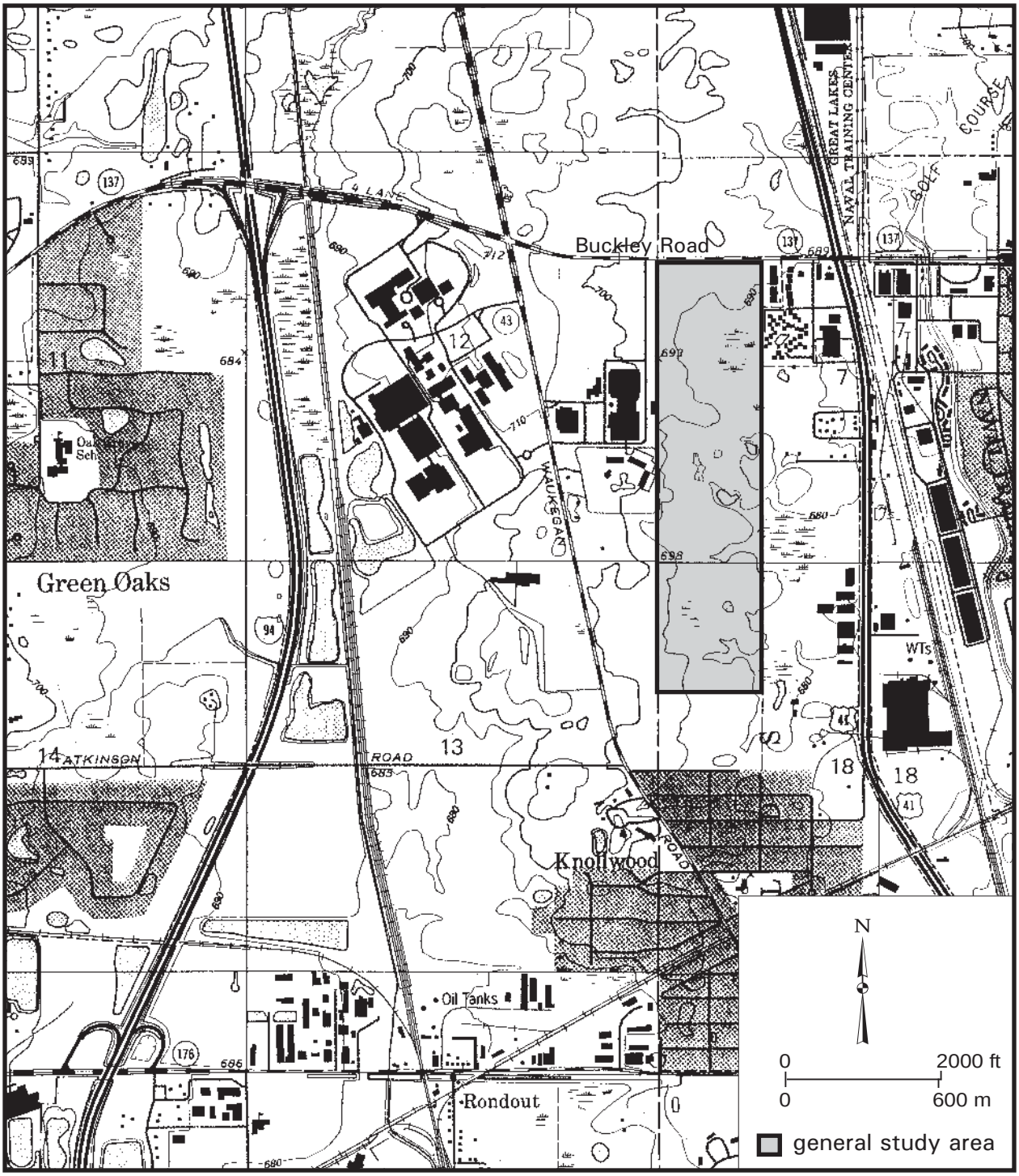
PLANNED FUTURE ACTIVITIES

- Additional tasking was received from IDOT in Summer 2009 requesting expanded monitoring in 2010.

North Chicago Potential Wetland Banking Site
(FAP 120)

General Study Area and Vicinity

from the USGS Topographic Series, Libertyville, IL (W) (USGS 1993) and Waukegan, IL (E) (USGS 1993)
7.5-minute Quadrangles
contour interval is 10 ft



North Chicago Potential Wetland Bank Site

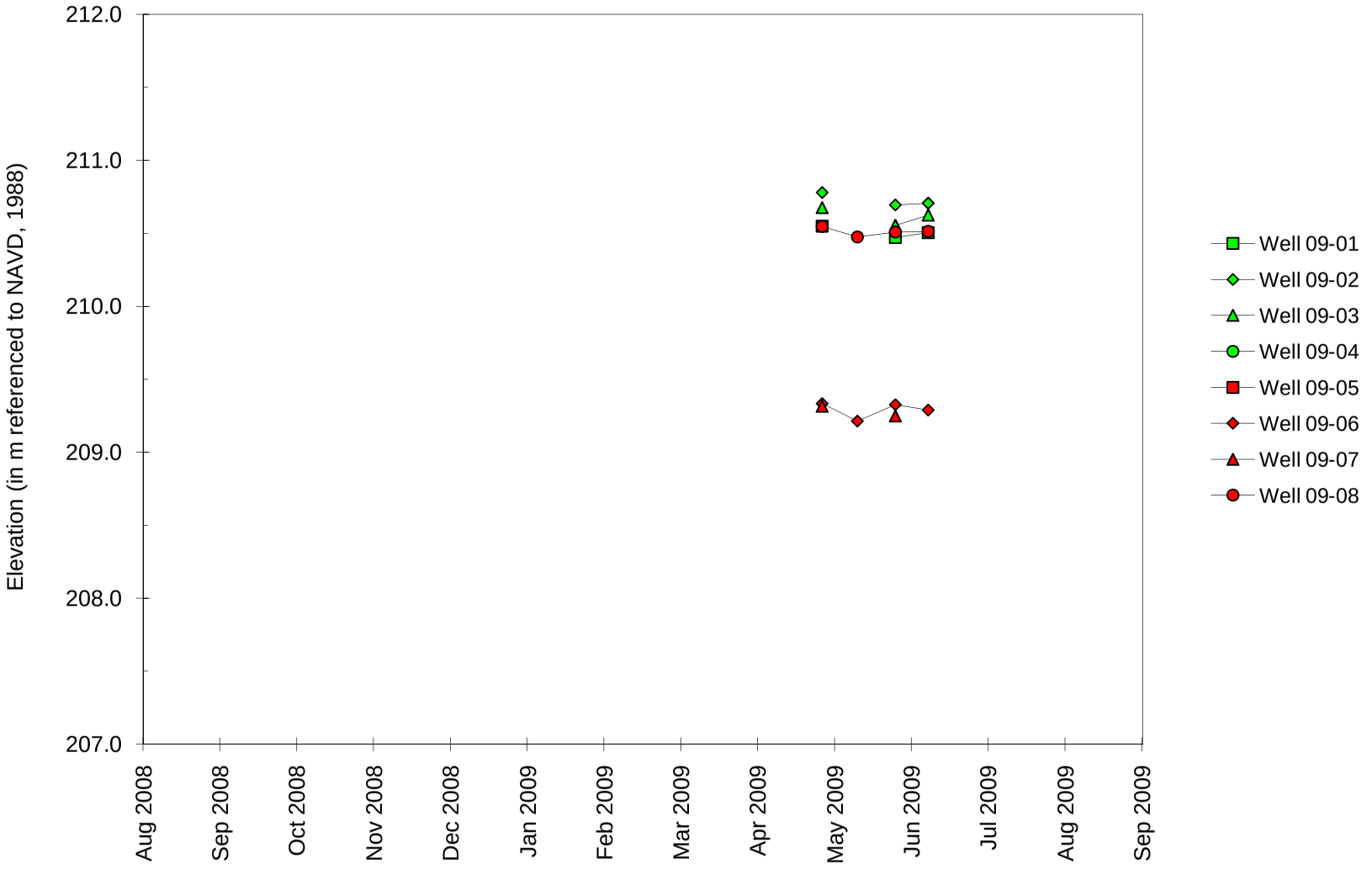
Estimated Areal Extent of 2009 Wetland Hydrology

September 1, 2008 through August 31, 2009

map based on digital orthophotography (ISGS 2005)

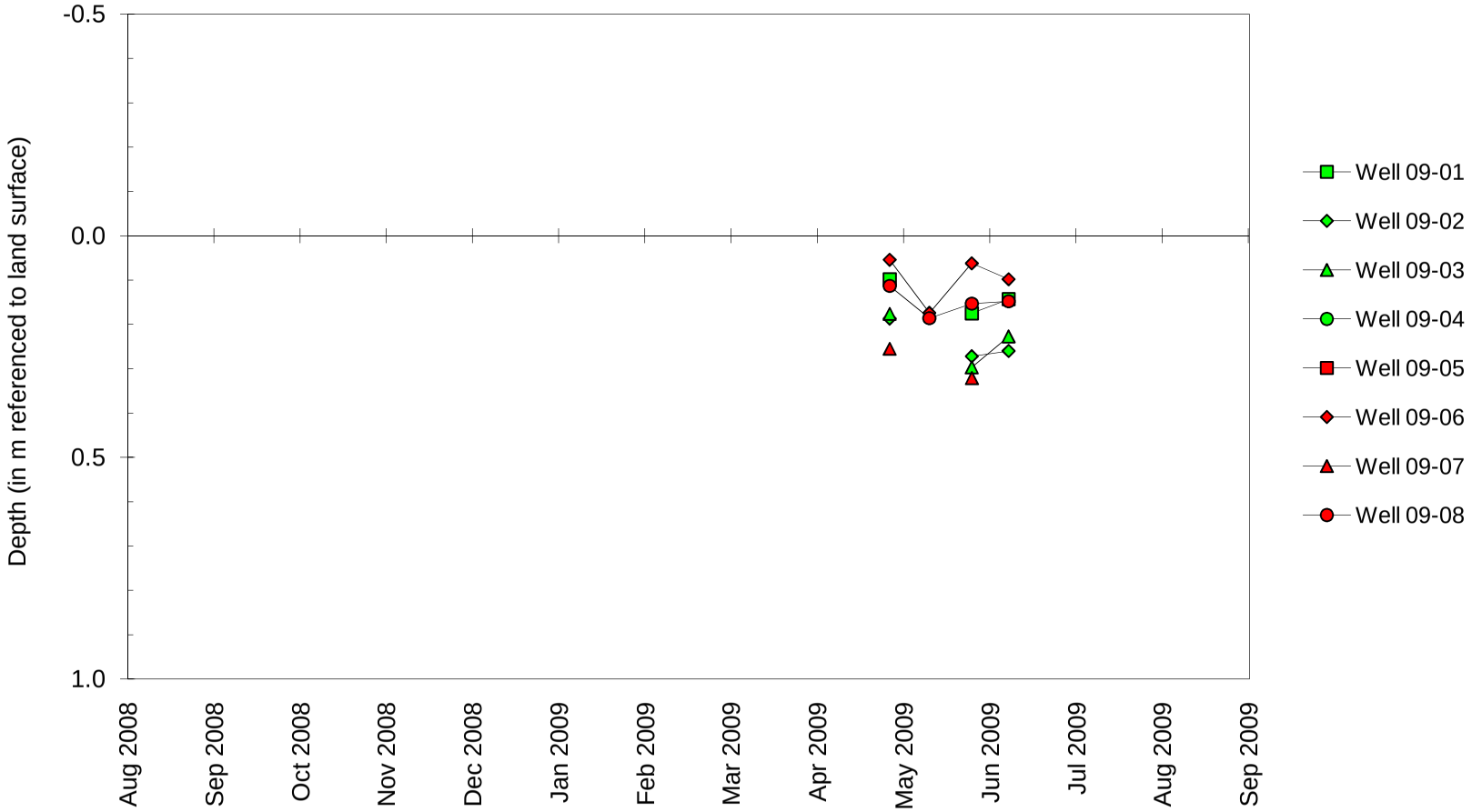
North Chicago Wetland Banking Site
September 1, 2008 through August 31, 2009

Water-Level Elevations in Monitoring Wells



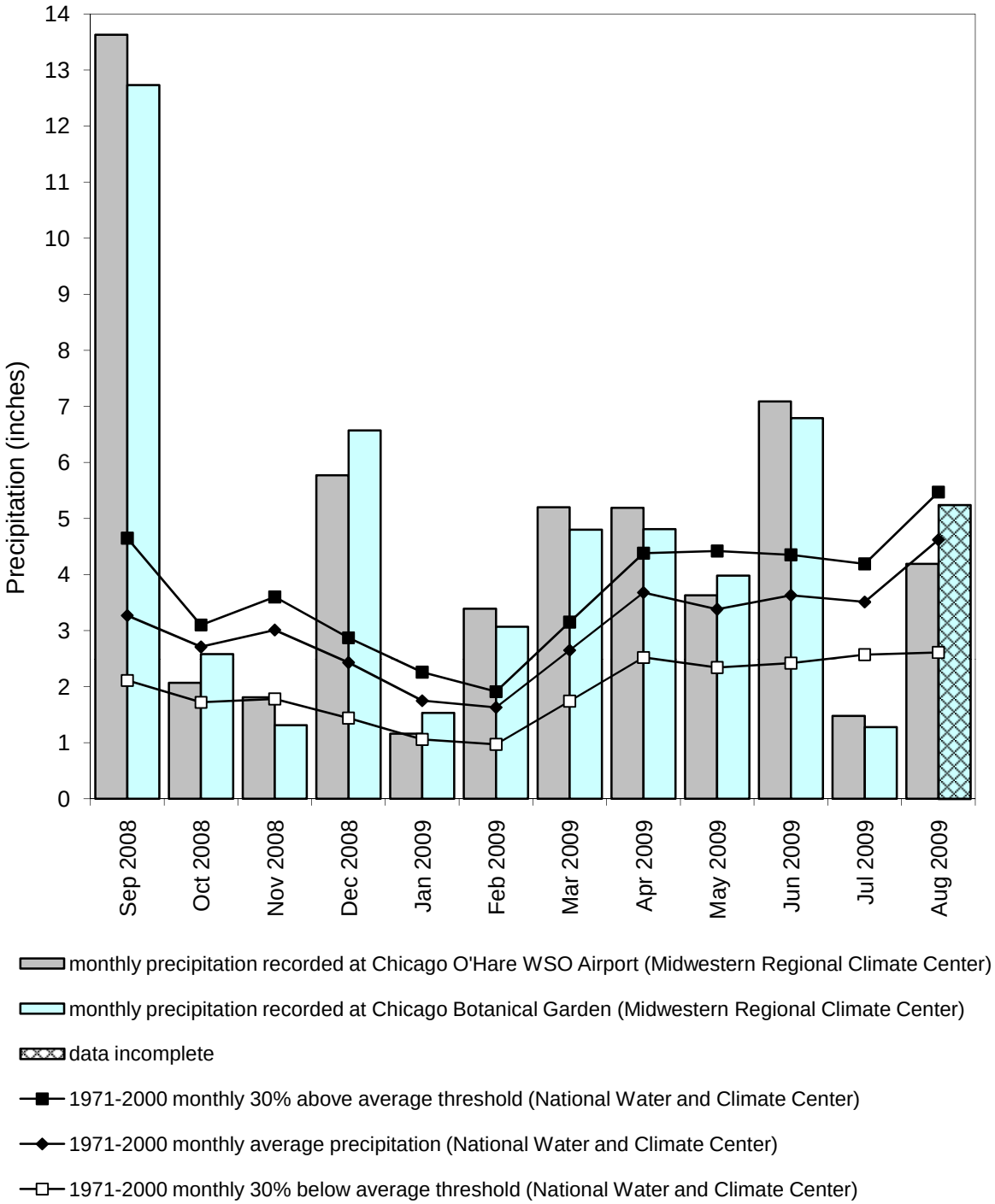
North Chicago Wetland Banking Site
September 1, 2008 through August 31, 2009

Depth to Water in Monitoring Wells



North Chicago Wetland Bank
September 2008 through August 2009

Total Monthly Precipitation Recorded at the Chicago O'Hare WSO Airport and Chicago Botanical Garden Weather Stations



graph last updated October 15, 2009

HANCOCK COUNTY NEAR CARTHAGE **ISGS #42**
WETLAND COMPENSATION SITE
FAP 315 & FAP 10
Sequence #235
Hancock County, near Carthage, Illinois
Primary Project Manager: Steven E. Benton
Secondary Project Manager: Kathleen E. Bryant

SITE HISTORY

- March 1997: IDOT tasked ISGS to monitor the site.
- August 2004: A Level II hydrogeologic characterization report was submitted to IDOT (ISGS Open-File Series 2004–13).
- July 2006: Wetland and highway construction began.
- July 2007: Tree planting was completed.

WETLAND HYDROLOGY CALCULATION FOR 2009

The area of the site that satisfied wetland hydrology criteria (Environmental Laboratory 1987) in 2009 for more than 5% of the growing season was estimated to be 14.9 ha (36.9 ac) out of an area of 17.9 ha (44.3 ac). The area of the site that satisfied wetland hydrology criteria for more than 12.5% of the growing season was also estimated to be 14.9 ha (36.9 ac). Using new guidance proposed by the U.S. Army Corps of Engineers (2008), we estimate that 14.9 ha (36.9 ac) satisfied wetland hydrology criteria for 14 or more consecutive days during the growing season. These estimates are based on the following factors:

- According to the MRCC, the median date that the growing season begins in nearby La Harpe, Illinois, is April 9 and the season lasts 196 days; 5% of the growing season is 10 days and 12.5% of the growing season is 25 days. According to methods outlined in the Midwest Regional Supplement (U. S. Army Corps of Engineers 2008), we estimate that March 18 was the starting date of the 2009 growing season based on soil temperatures observed at the wetland compensation site.
- Total precipitation recorded at Bentley, Illinois during the monitoring period was 150% of normal. Precipitation was at or above normal in September and December 2008, from February to April 2009, and in June and August 2009. Precipitation in the Spring (April through June) was 162% of normal.
- All of the monitoring wells except 19SR, 20S, 21S, 30S, and 35S, satisfied the criteria for jurisdictional wetland hydrology at 5% of the growing season, for 14 or more consecutive days during the growing season, and 12.5% of the growing season.
- Surface-water elevations measured at RDS 1 were greater than or equal to 165.66 m (543.53 ft) for more than 5% of the growing season, greater than or equal to 165.65 m (543.50 ft) for 14 or more consecutive days, and greater than or equal to 165.61 m (543.37 ft) for more than 12.5% of the growing season. Surface-water elevations measured at RDS 3 were greater than or equal to 165.39 m (542.64 ft) for more than 5% of the growing season, greater than or equal to 165.34 m (542.48 ft) for 14 or more

consecutive days, and greater than or equal to 165.30 m (542.35 ft) for more than 12.5% of the growing season.

ADDITIONAL INFORMATION

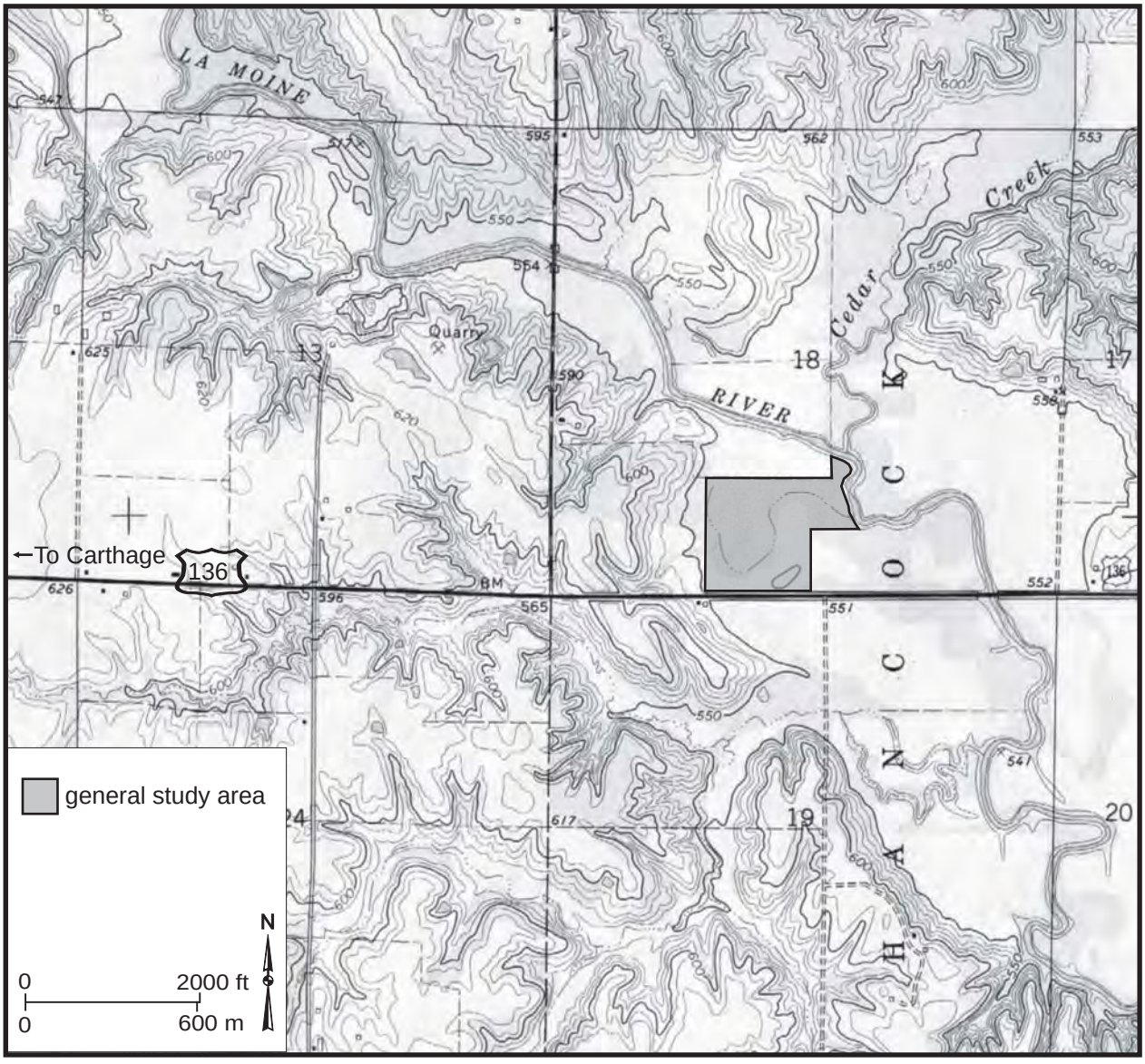
- The site was flooded at least three times during the monitoring period. At the U.S. Army Corps of Engineers, LaMoine River gauge in Colmar, Illinois, peak stage was 157.05 m (515.27 ft) on 3/10/09, which was 1.14 m (3.74 ft) above flood stage (155.91 m [511.53 ft]); on 3/11/09 it was observed that about 90% of the site was flooded. The other flood events occurred on or about 5/1/09 and 5/16/09. Peak stage for the first event was 156.76 m (514.32 ft) on 5/2 and for the second event it was 157.38 m (516.37 ft) on 5/17.

PLANNED FUTURE ACTIVITIES

- Monitoring of the site will continue until no longer required by IDOT.

Hancock County near Carthage
Wetland Compensation Site
(FAP 315 and FAP 10)
General Study Area and Vicinity

from the USGS Topographic Series, Carthage East, IL 7.5-minute Quadrangle (USGS 1974)
contour interval is 10 feet

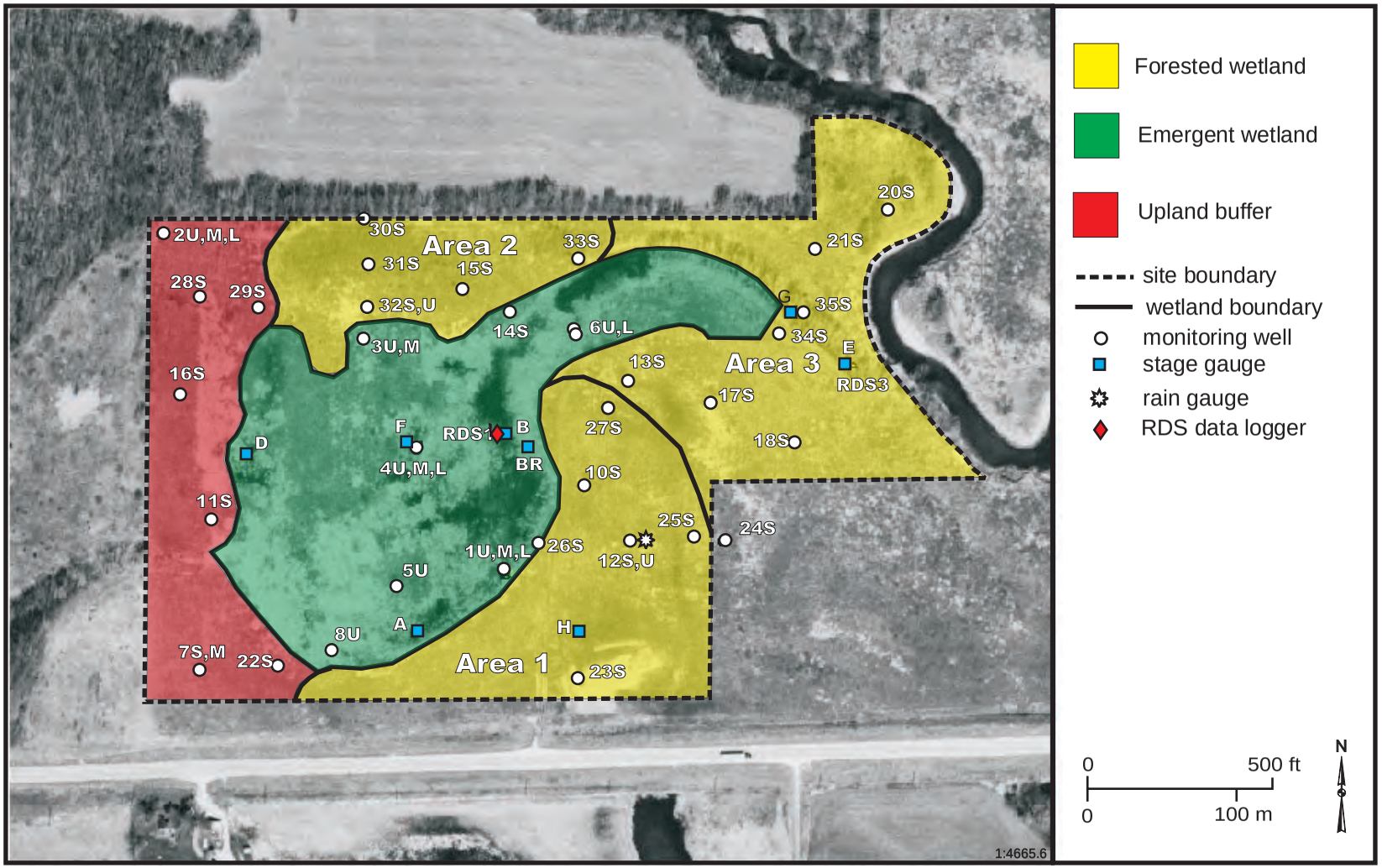


Hancock County near Carthage Wetland Compensation Site (FAP 315 and FAP 10)

Wetland and Nonwetland Site Areas

based on IDOT as-built plans

Map based on USGS digital orthophotograph, Carthage East SE quarter quadrangle
produced from 2005 aerial photography (ISGS 2005)

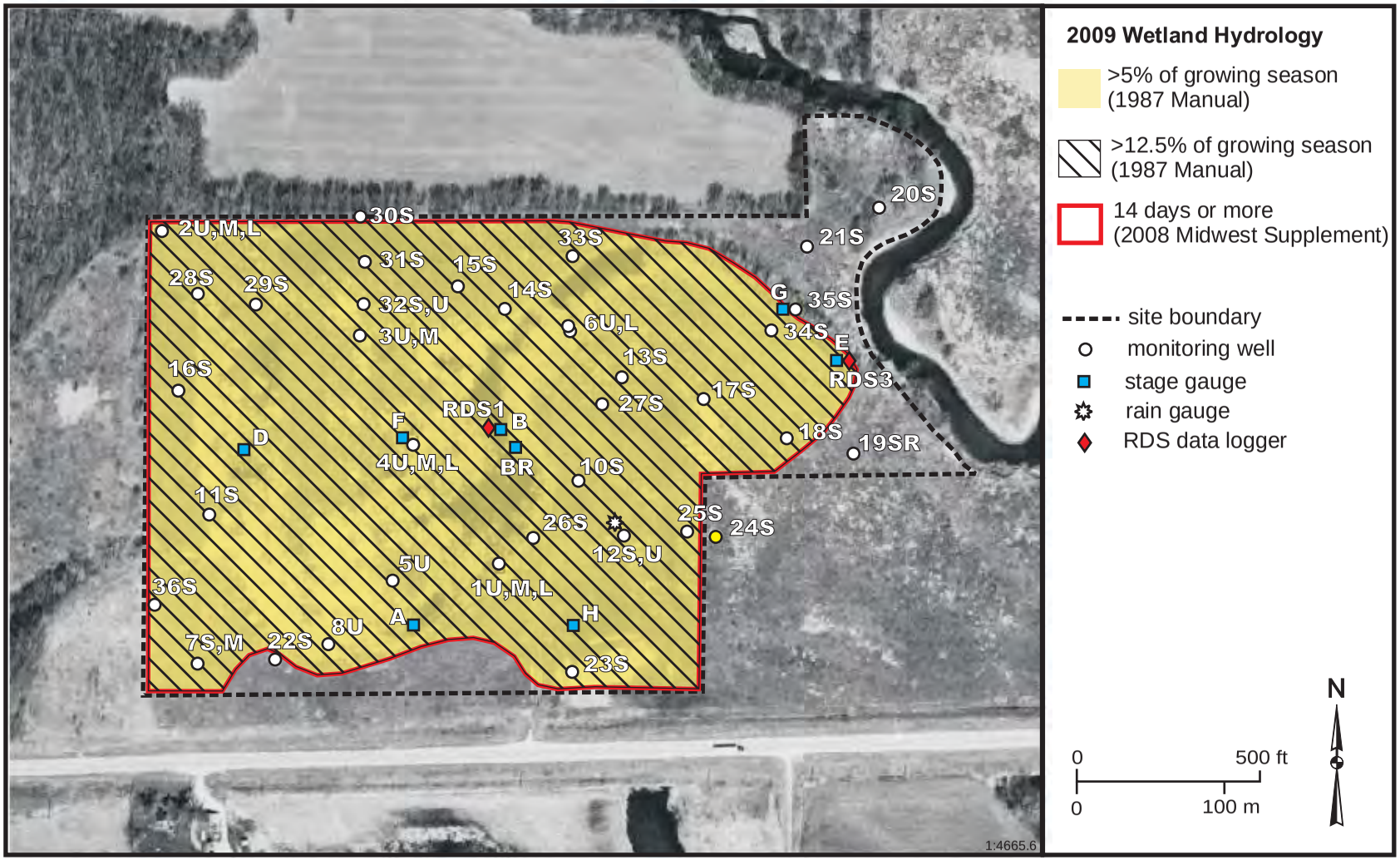


Hancock County near Carthage Wetland Compensation Site (FAP 315 and FAP 10)

Estimated Areal Extent of 2009 Wetland Hydrology

September 1, 2008 through August 31, 2009

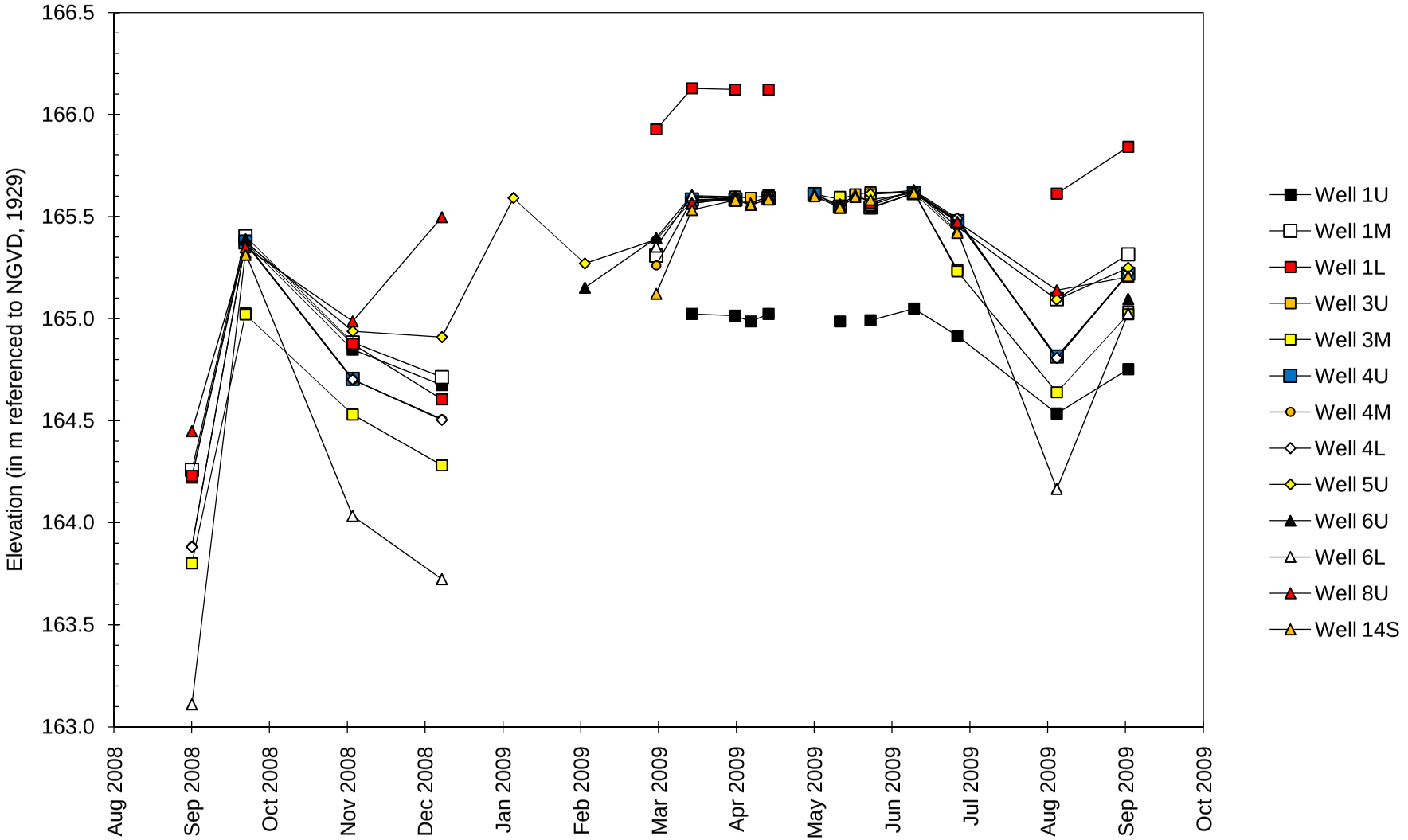
Map based on USGS digital orthophotograph, Carthage East SE quarter quadrangle
produced from 2005 aerial photography (ISGS 2005)



Hancock County near Carthage Wetland Compensation Site

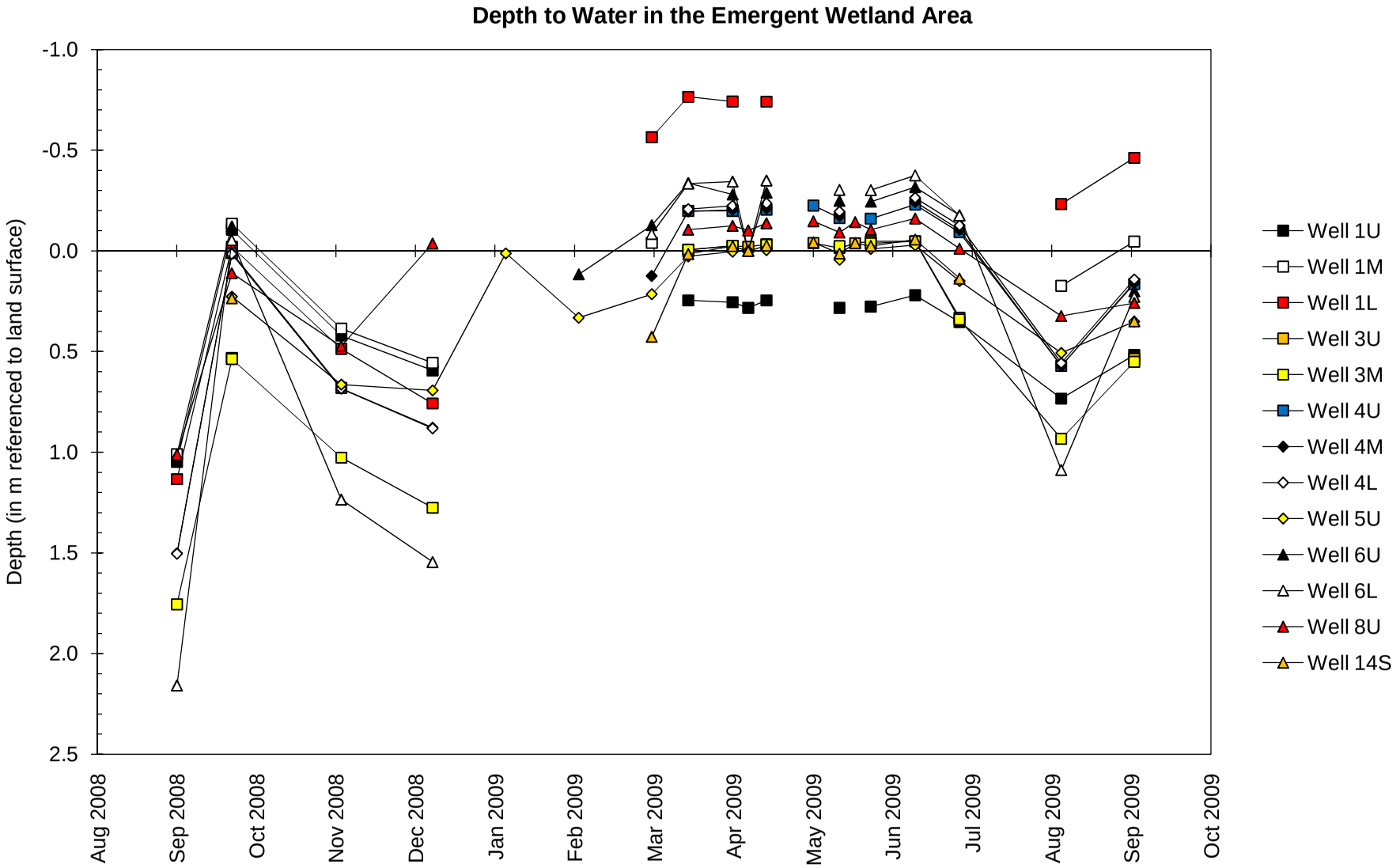
September 1, 2008 through August 31, 2009

Water-Level Elevations in the Emergent Wetland Area



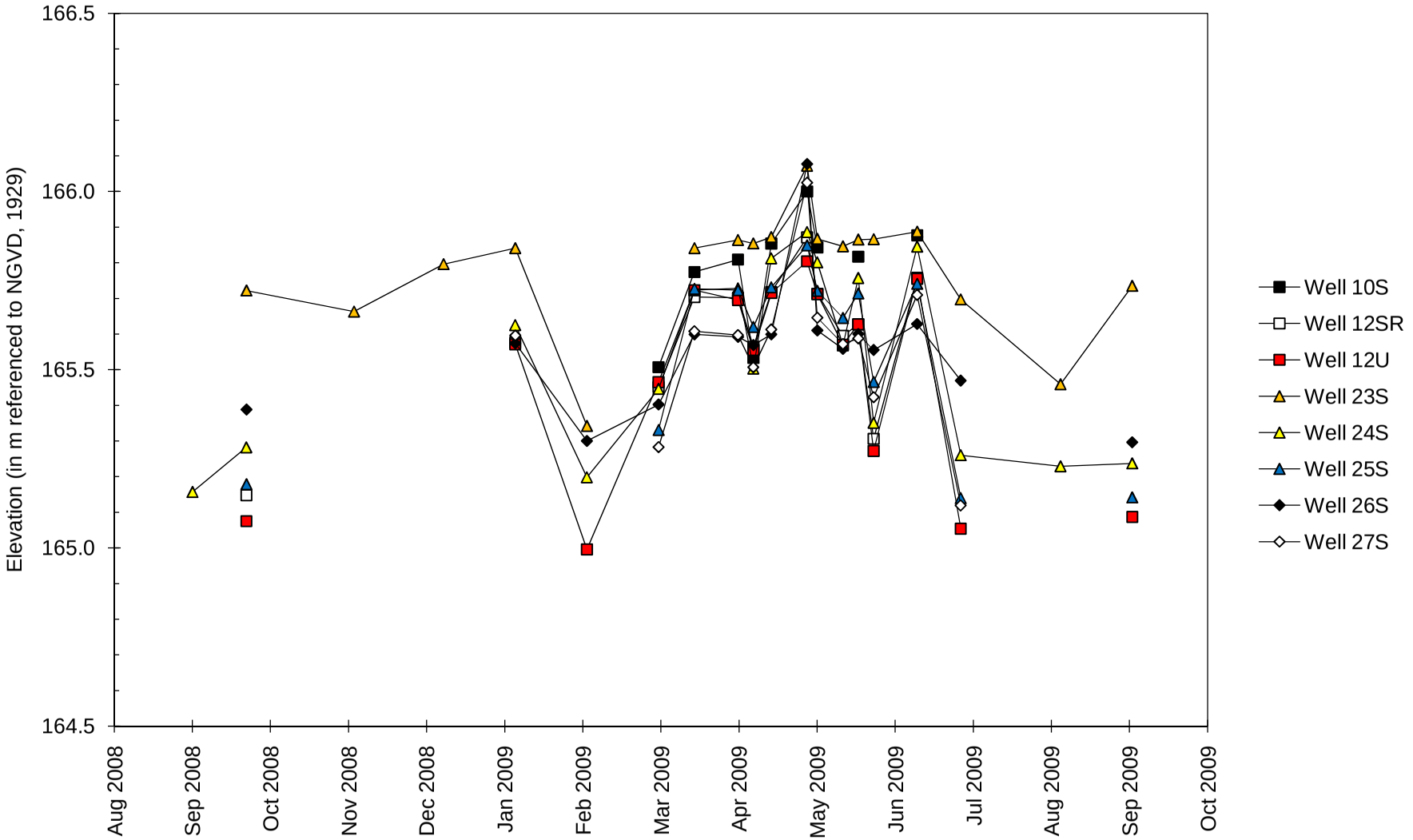
Hancock County near Carthage Wetland Compensation Site

September 1, 2008 through August 31, 2009



Hancock County near Carthage Wetland Compensation Site
September 1, 2008 through August 31, 2009

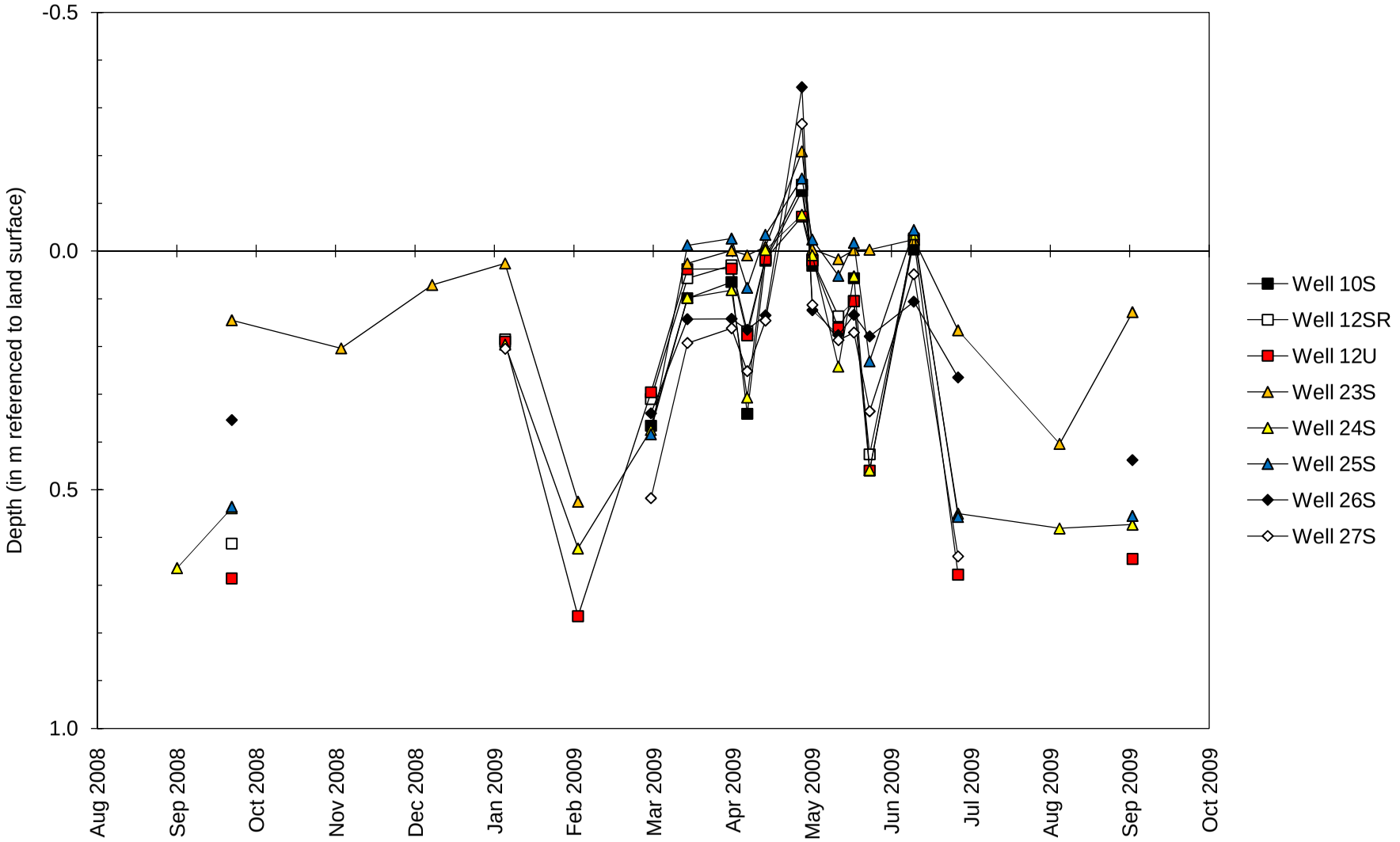
Water-Level Elevations in Forested Wetland Area 1



Hancock County near Carthage Wetland Compensation Site

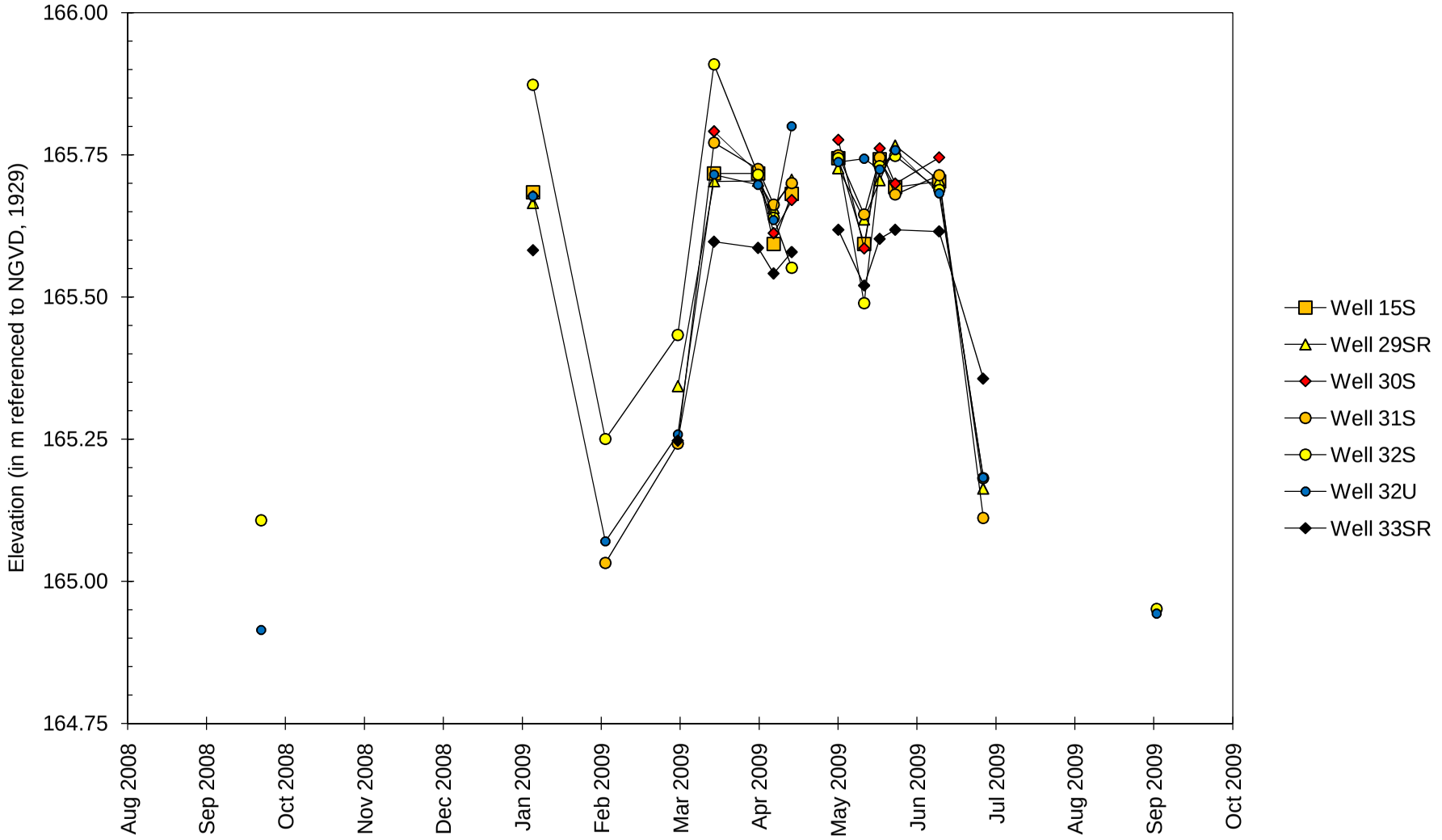
September 1, 2008 through August 31, 2009

Depth to Water in Forested Wetland Area 1

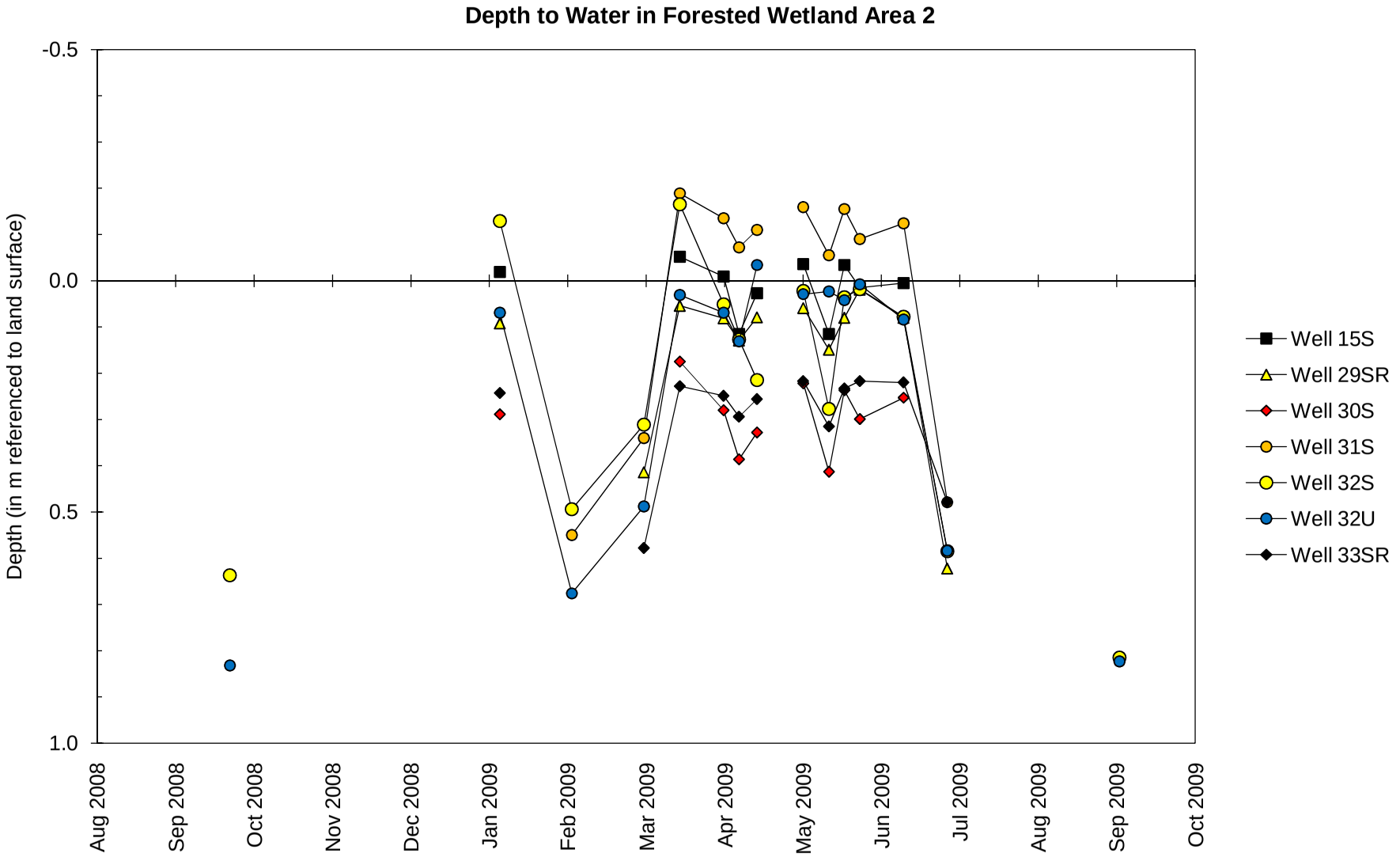


Hancock County near Carthage Wetland Compensation Site
September 1, 2008 through August 31, 2009

Water-Level Elevations in Forested Wetland Area 2



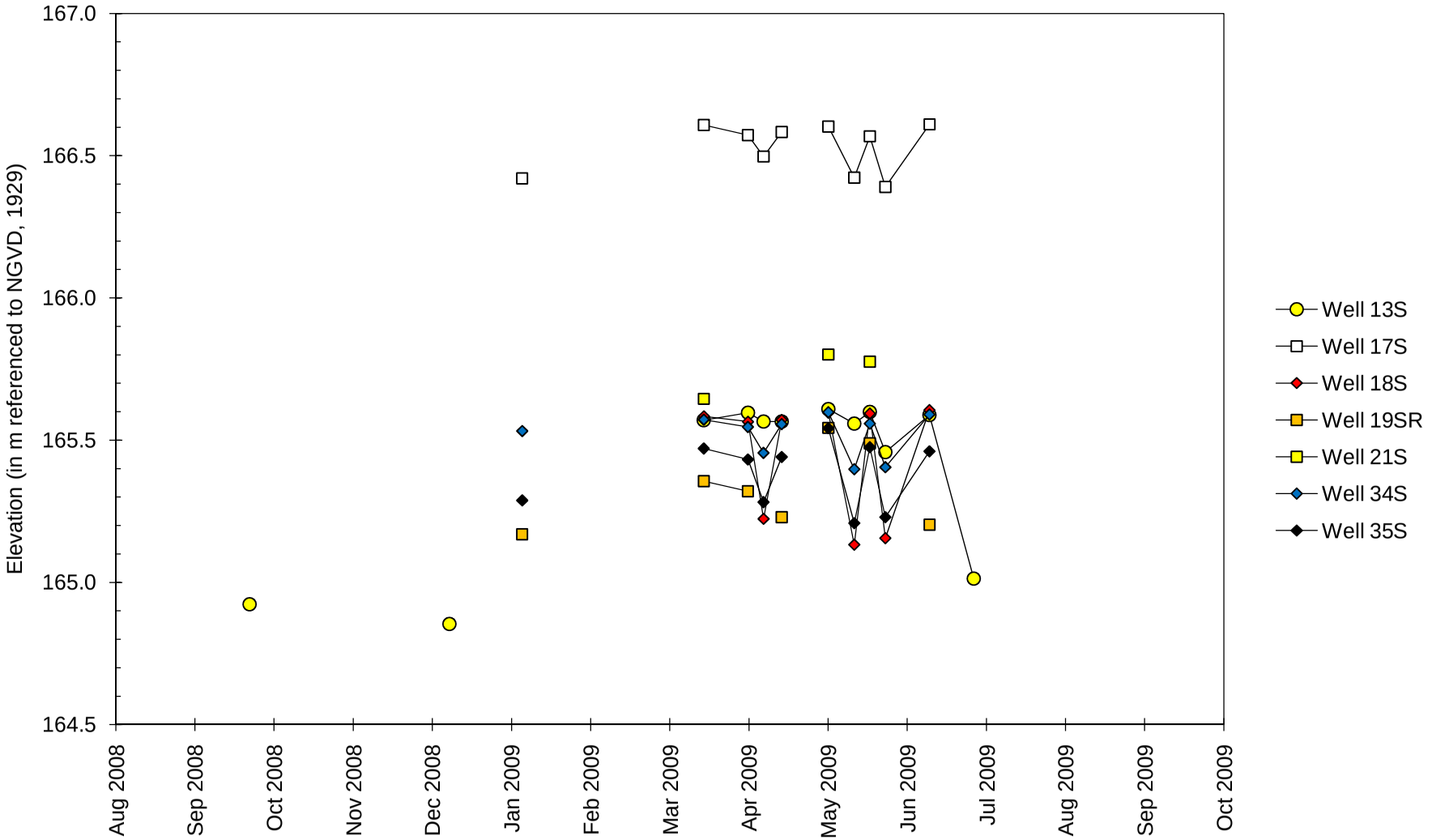
Hancock County near Carthage Wetland Compensation Site
September 1, 2008 through August 31, 2009



Hancock County near Carthage Wetland Compensation Site

September 1, 2008 through August 31, 2009

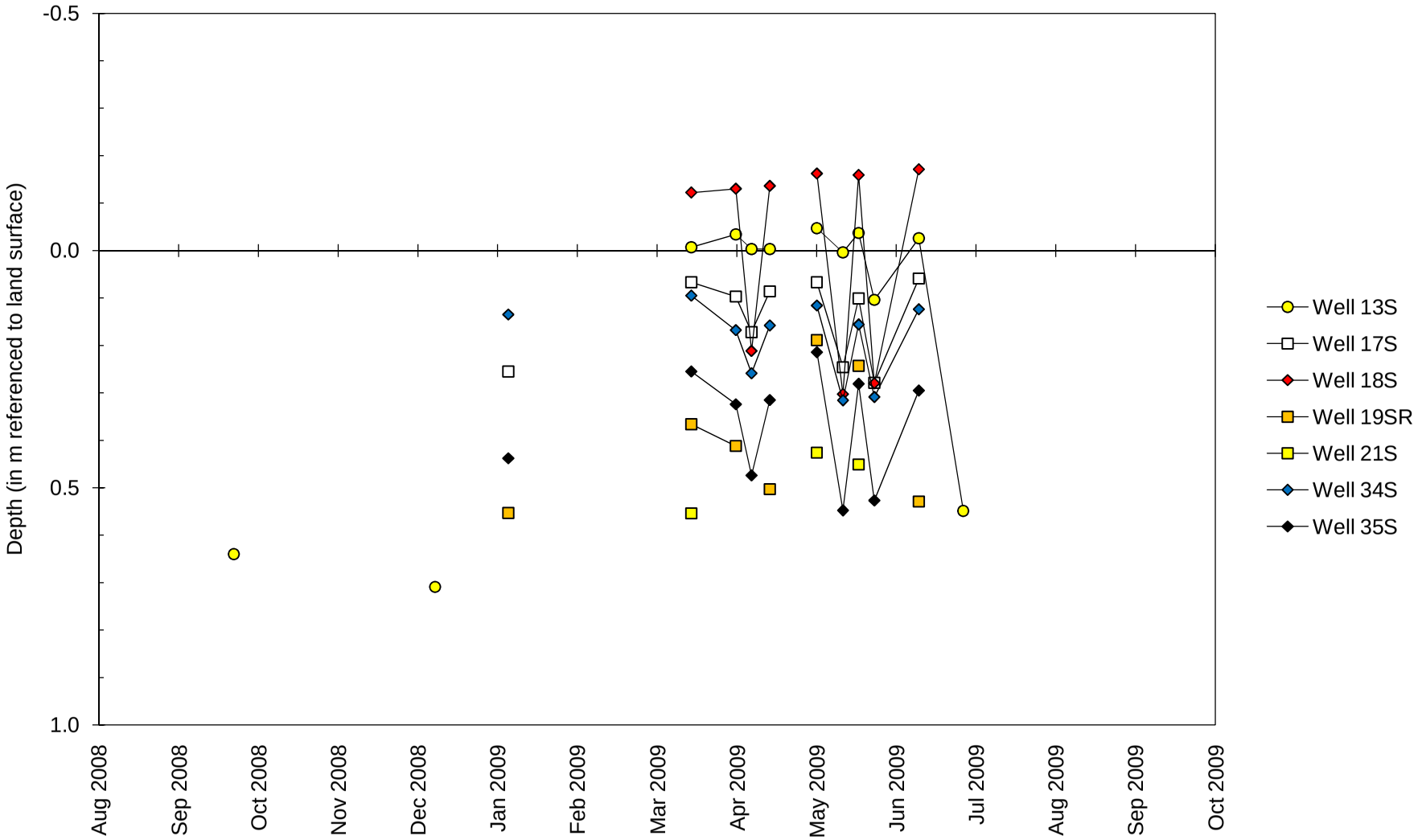
Water-Level Elevations in Forested Wetland Area 3



Hancock County near Carthage Wetland Compensation Site

September 1, 2008 through August 31, 2009

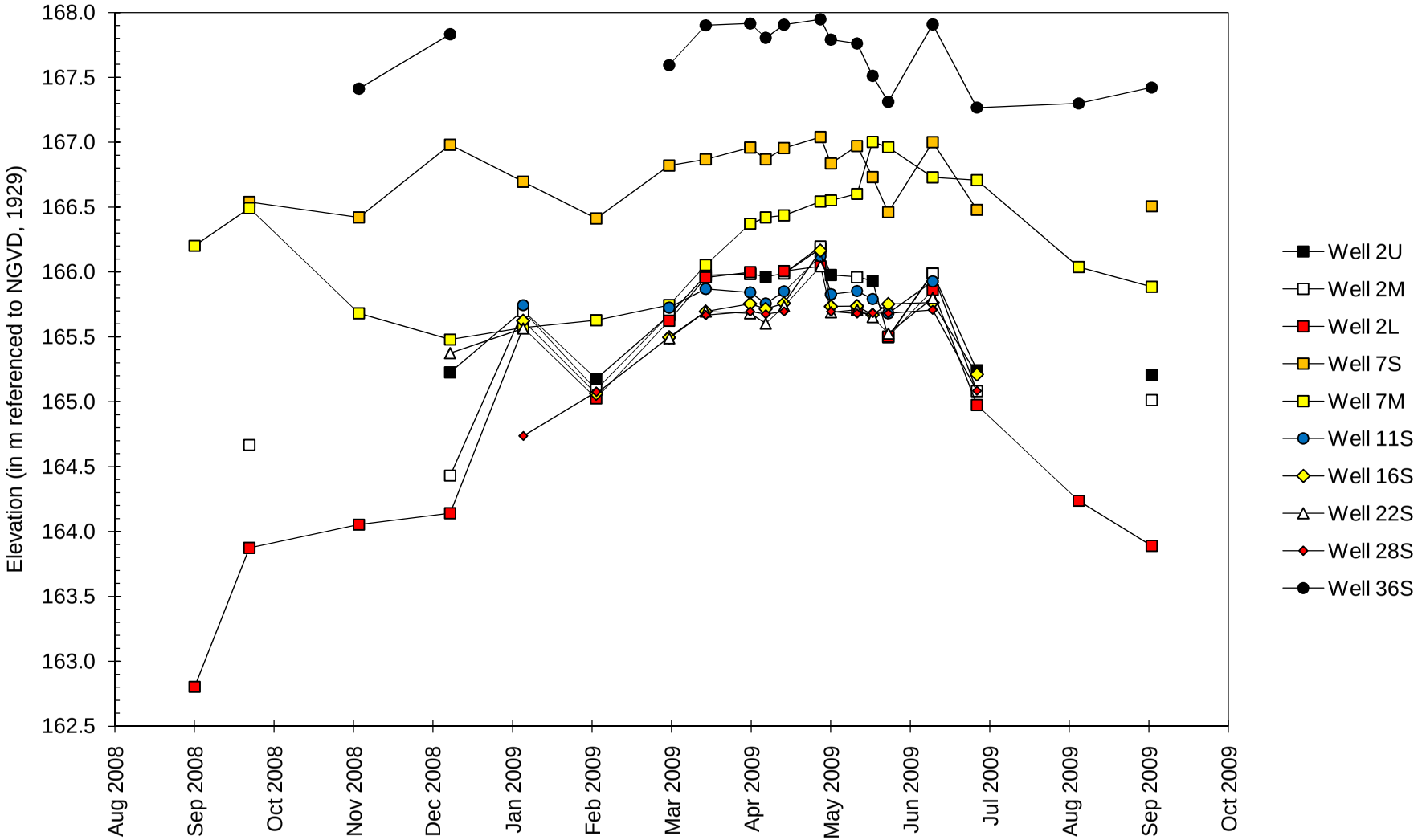
Depth to Water in Forested Wetland Area 3



Hancock County near Carthage Wetland Compensation Site

September 1, 2008 through August 31, 2009

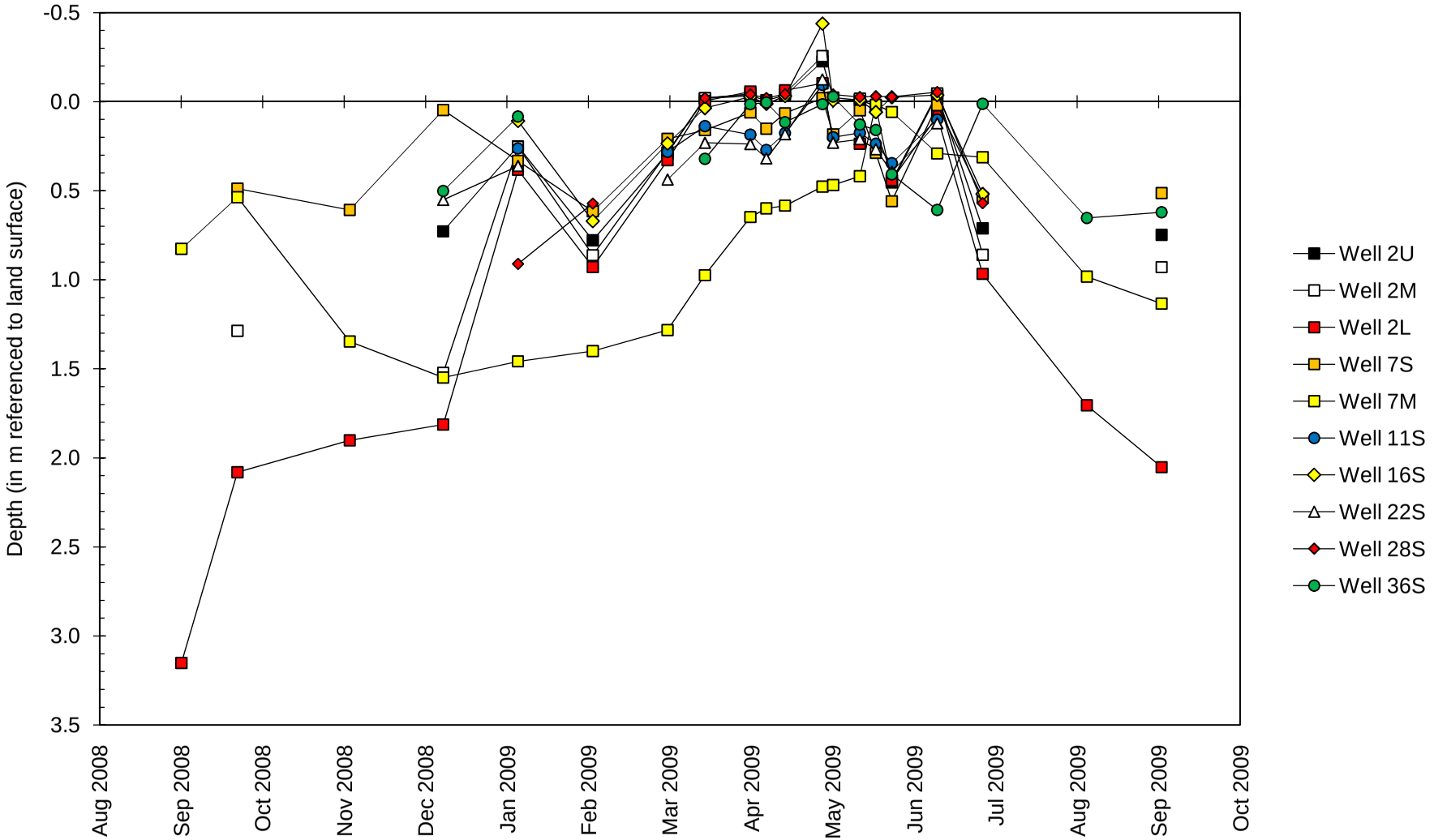
Water-Level Elevations in the Upland Buffer Area



Hancock County near Carthage Wetland Compensation Site

September 1, 2008 through August 31, 2009

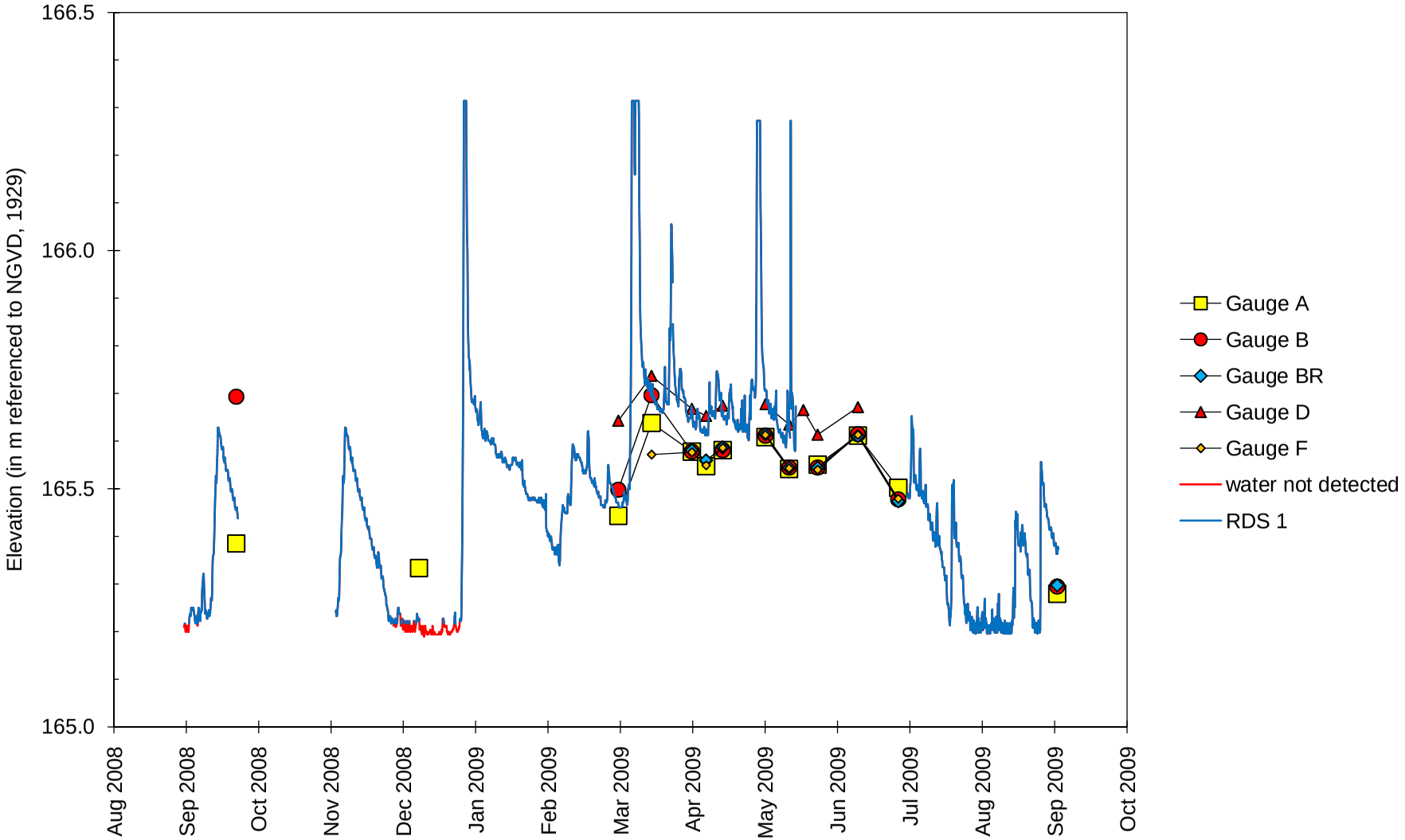
Depth to Water in the Upland Buffer Area



Hancock County near Carthage Wetland Compensation Site

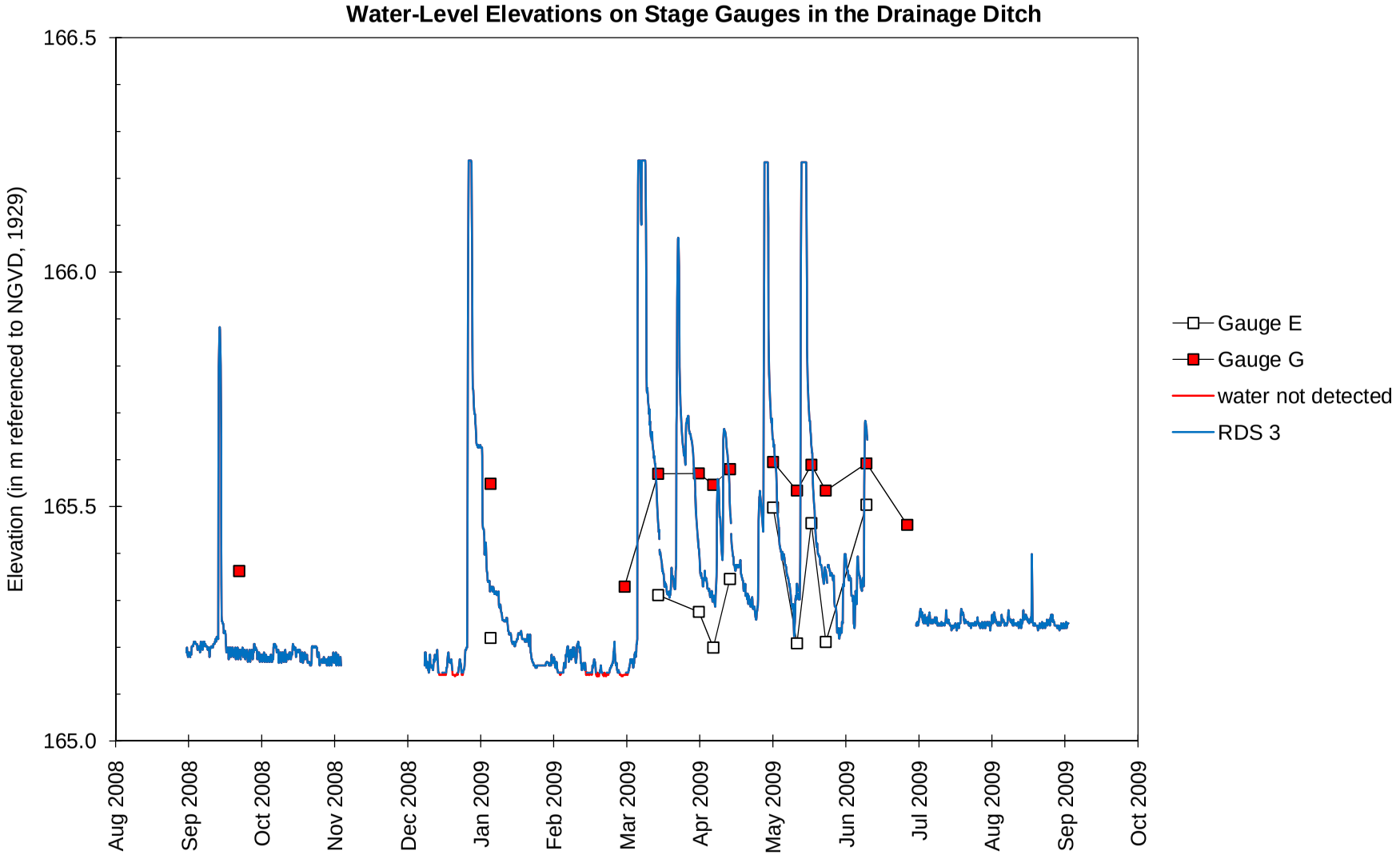
September 1, 2008 through August 31, 2009

Water-Level Elevations on Stage Gauges in the Emergent Wetland Area



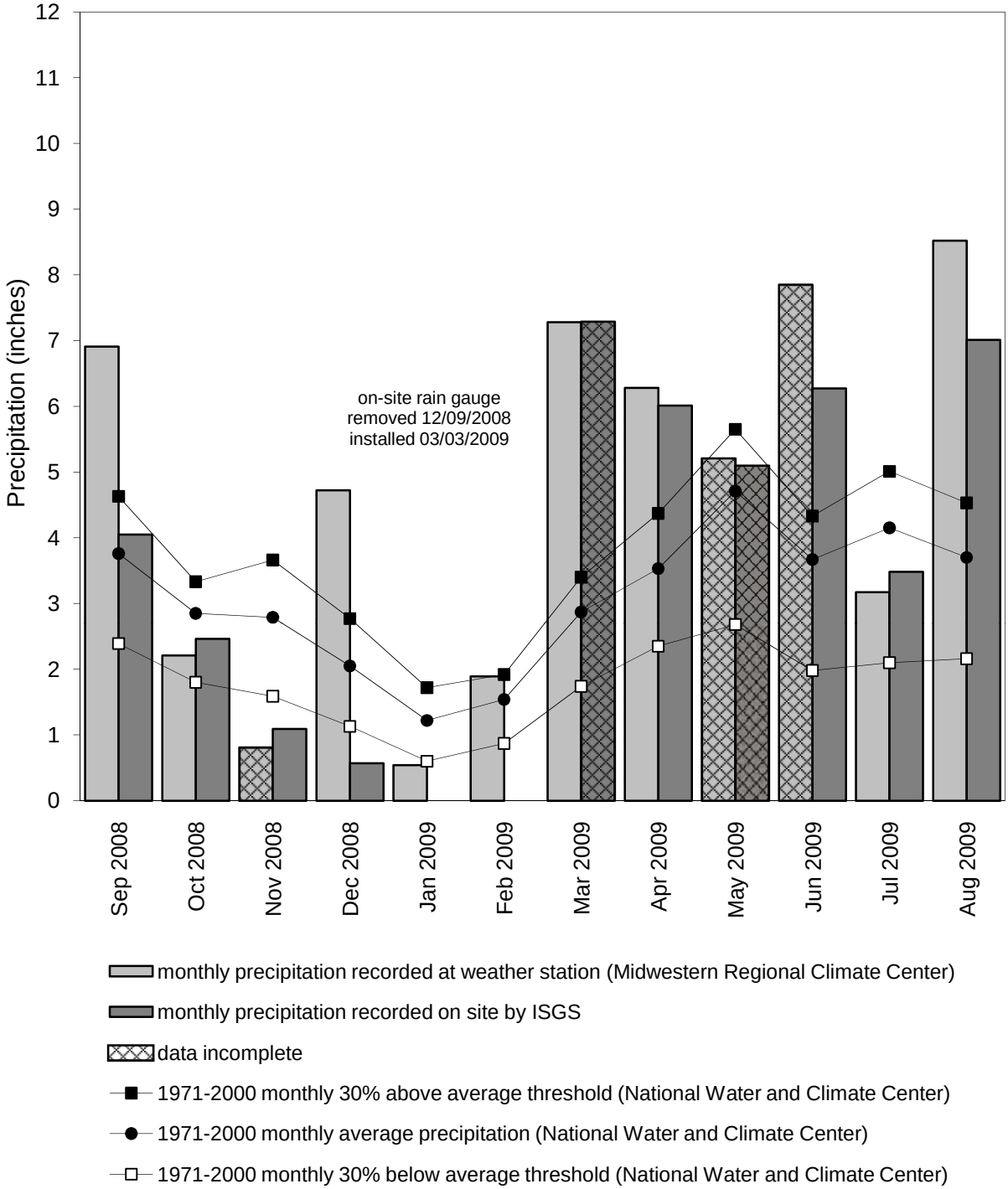
Hancock County near Carthage Wetland Compensation Site

September 1, 2008 through August 31, 2009



Hancock County near Carthage
Wetland Compensation Site
September 2008 through August 2009

Total Monthly Precipitation Recorded On Site and at the Bentley, IL Weather Station



Graph last updated September 14, 2009

ECKMANN/BISCHOFF **ISGS #43**
WETLAND BANK
FAP 14
Madison County, near Collinsville, Illinois
Primary Project Manager: Steven E. Benton
Secondary Project Manager: none

SITE HISTORY

- March 2009: IDOT tasked the ISGS to restart monitoring of the site.

- April 2009: ISGS installed a monitoring network at the site and began data collection.

WETLAND HYDROLOGY CALCULATION FOR 2009

We estimate that the area of the site that satisfied wetland hydrology criteria (Environmental Laboratory 1987) in 2009 for greater than 5% of the growing season was 23.1 ha (57.0 ac) out of a total area of 23.1 ha (57.0 ac). The area of the site that satisfied wetland hydrology criteria for greater than 12.5% of the growing season was estimated to be 22.7 ha (56.0 ac). Using new guidance proposed by the U. S. Army Corps of Engineers (2008), we estimate that 23.1 ha (57.0 ac) satisfied wetland hydrology criteria for 14 or more consecutive days during the growing season. These estimates are based on the following factors:

- According to the MRCC, the median date that the growing season begins in nearby Belleville, Illinois, is April 6 and the season lasts 199 days; 5% of the growing season is 10 days and 12.5% of the growing season is 25 days. According to methods outlined in the Midwest Regional Supplement (U. S. Army Corps of Engineers 2008), we estimate that March 8 was the starting date of the 2009 growing season at this site based on soil temperatures measured at the nearby Fairmont City site.

- Total precipitation recorded at the Belleville, Illinois weather station during the monitoring period was 110% of normal. Precipitation was at or above normal in September and December 2008, and in February 2009, and from April through August 2009. Total precipitation in the spring (April through June) was 140% of normal.

- In 2009, all of the monitoring wells satisfied wetland hydrology criteria for more than 5% of the growing season. In addition, all of the wells except 6S satisfied wetland hydrology criteria for 14 or more consecutive days and for more than 12.5% of the growing season.

- Surface-water levels measured at EBSW1 reveal that inundation occurred at an elevation at or above 124.03 m (406.97 ft) for more than 5% of the growing season, at an elevation at or above 124.03 m (406.94 ft) for 14 or more consecutive days, and at an elevation at or above 124.02 m (406.91 ft) for more than 12.5% of the growing season.

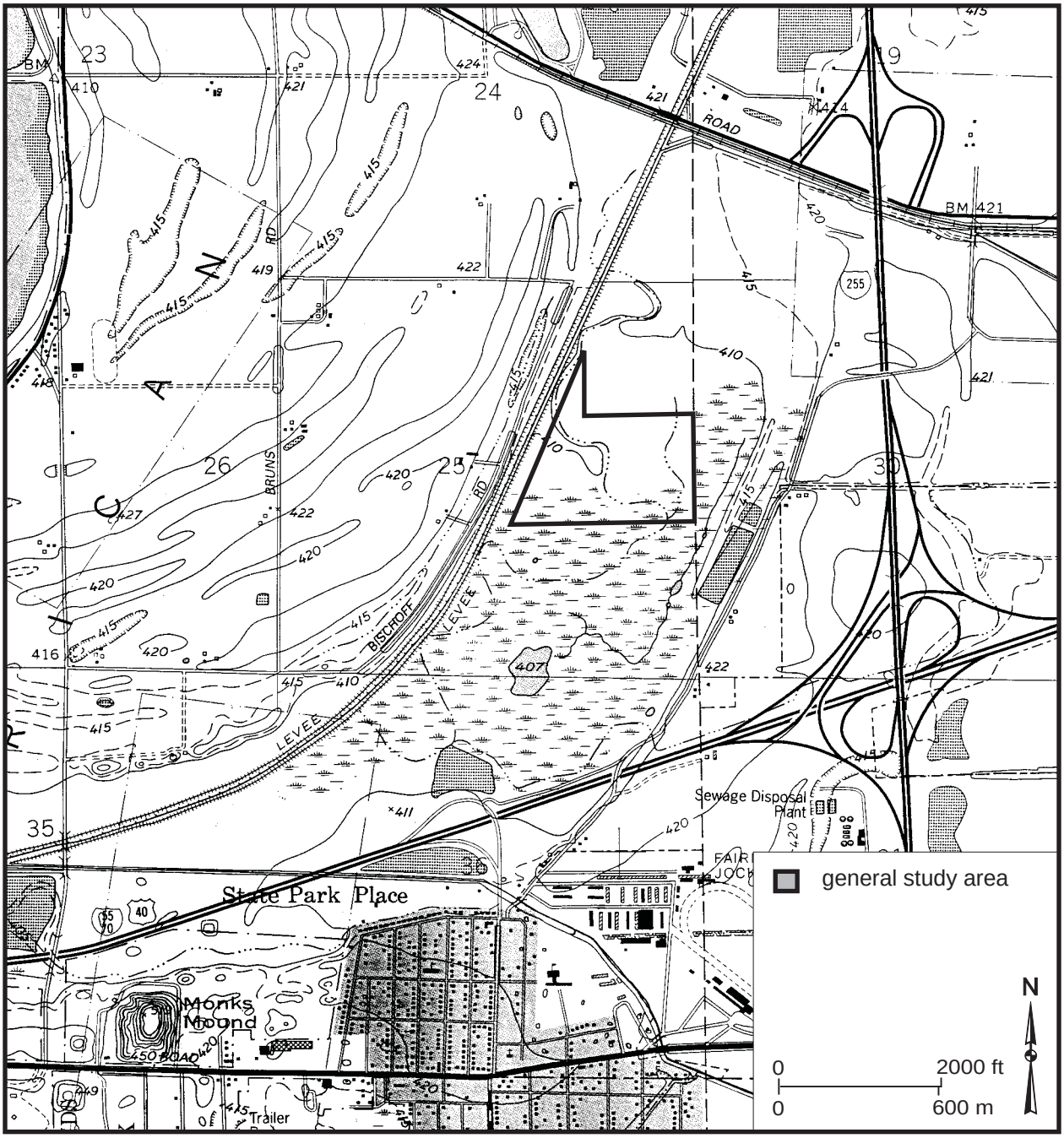
ADDITIONAL INFORMATION

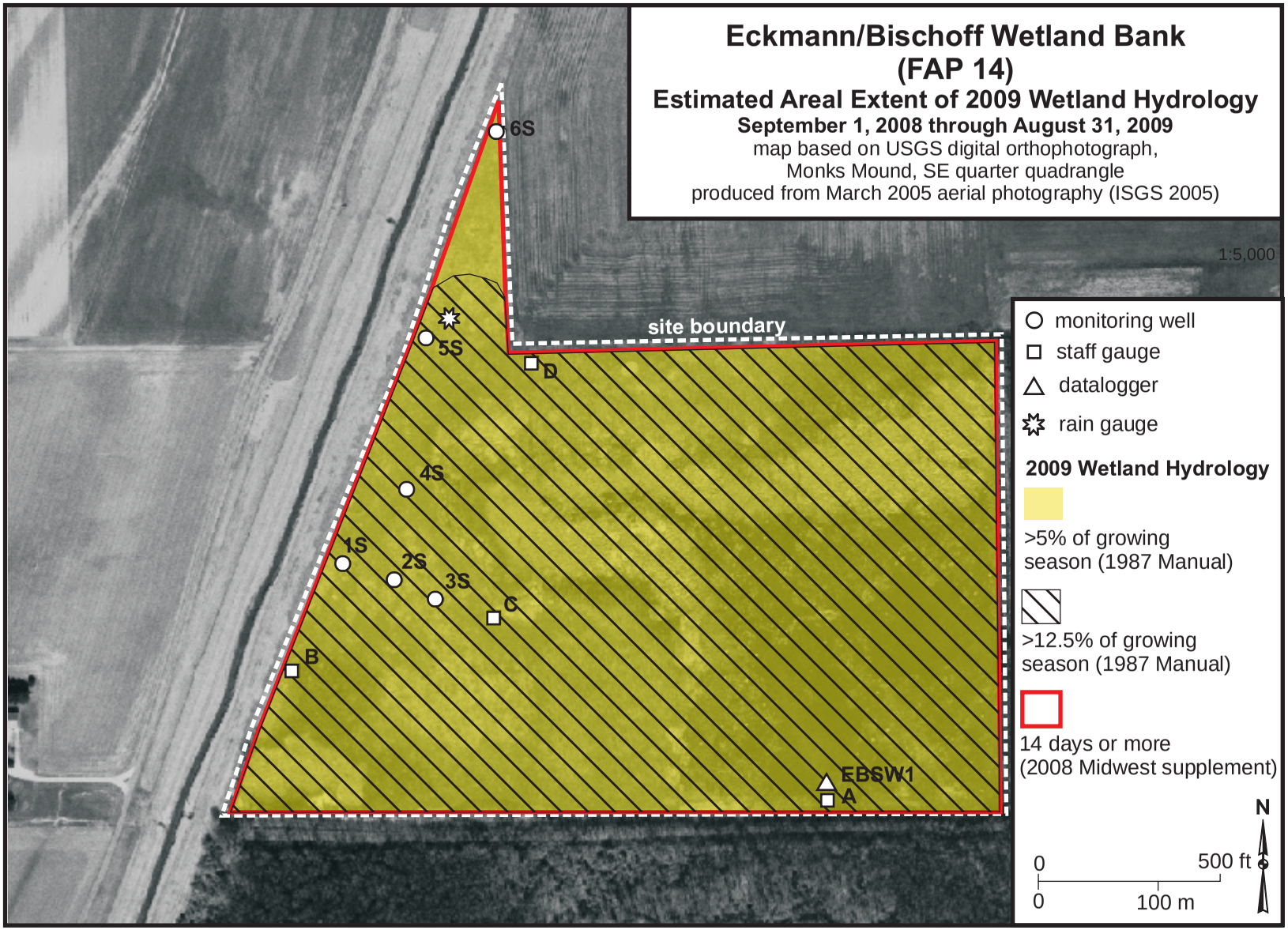
- Monitoring of the site will continue until no longer required by IDOT.

- In August 2009 it was discovered that a portion of Schneider Ditch along the southern boundary of the site had been re-excavated and a swath about 6.1 m (20.0 ft) wide on both sides of the ditch cleared of vegetation. This will likely have an effect on the hydrology of the site.

Eckmann/Bischoff Wetland Bank
(FAP 14)
Study Area and Vicinity

from the USGS Topographic Series, Monks Mound IL 7.5-minute Quadrangle
(USGS 1954, photorevised 1993)
contour interval is 10 feet

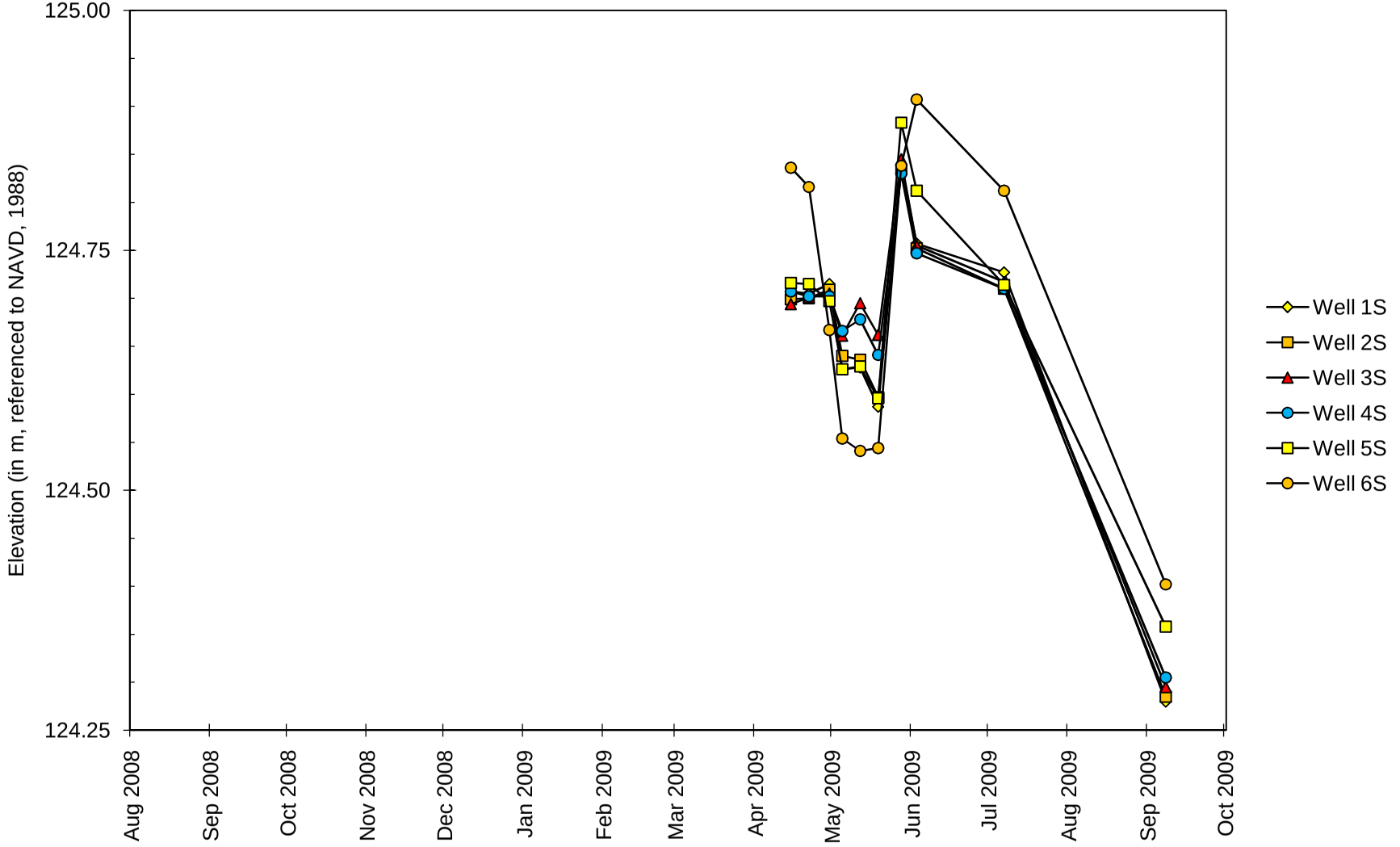



Eckmann/Bischoff Wetland Bank
(FAP 14)
Estimated Areal Extent of 2009 Wetland Hydrology
September 1, 2008 through August 31, 2009
map based on USGS digital orthophotograph,
Monks Mound, SE quarter quadrangle
produced from March 2005 aerial photography (ISGS 2005)
1:5,000
site boundary
6S
5S
D
4S
1S
2S
3S
C
B
EBSW1
A
monitoring well
staff gauge
datalogger
rain gauge
2009 Wetland Hydrology
>5% of growing season (1987 Manual)
>12.5% of growing season (1987 Manual)
14 days or more (2008 Midwest supplement)
N
0
500 ft
0
100 m

Eckmann/Bischoff Wetland Bank

September 1, 2008 through August 31, 2009

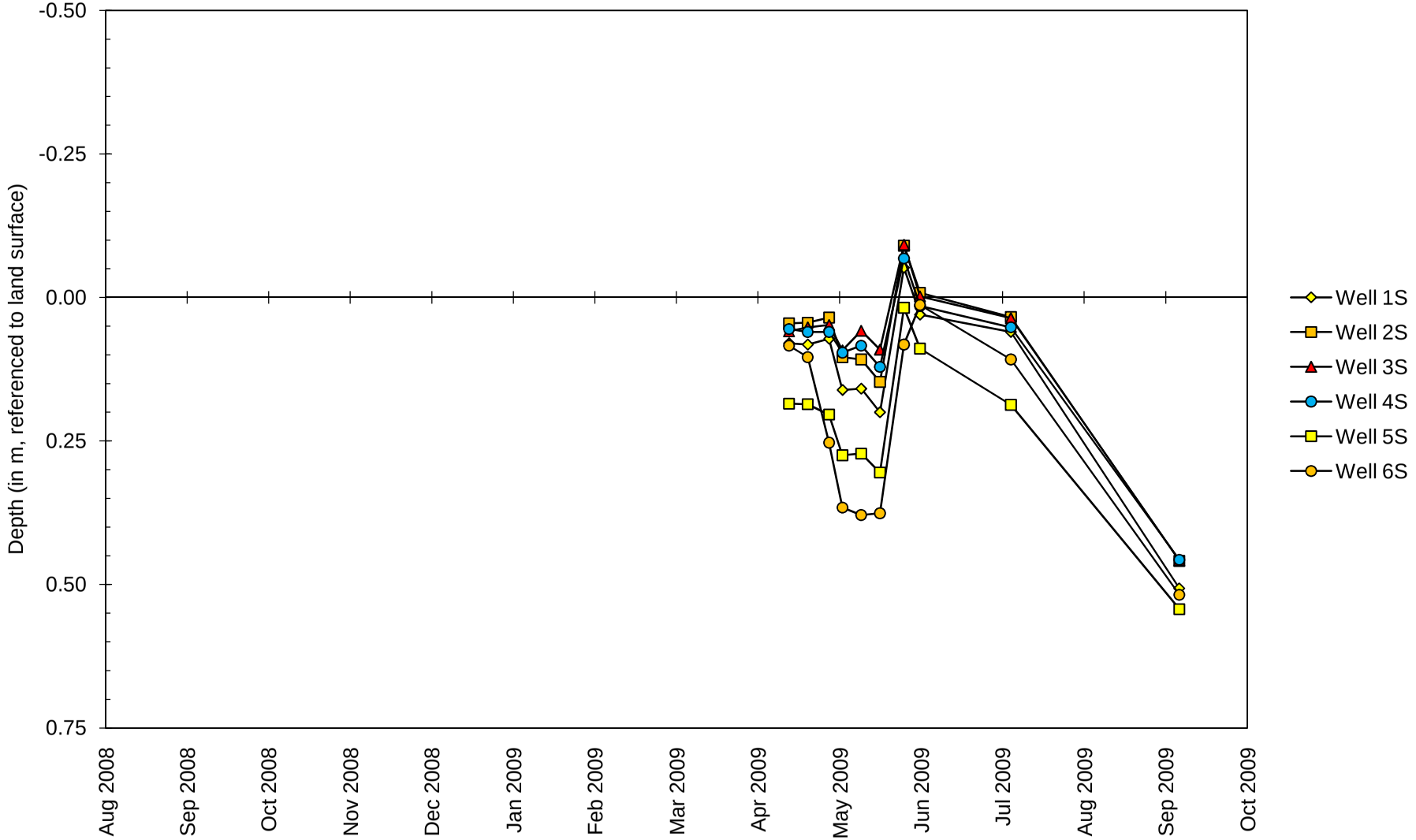
Water-level Elevations in Soil-Zone Monitoring Wells



Eckmann/Bischoff Wetland Bank

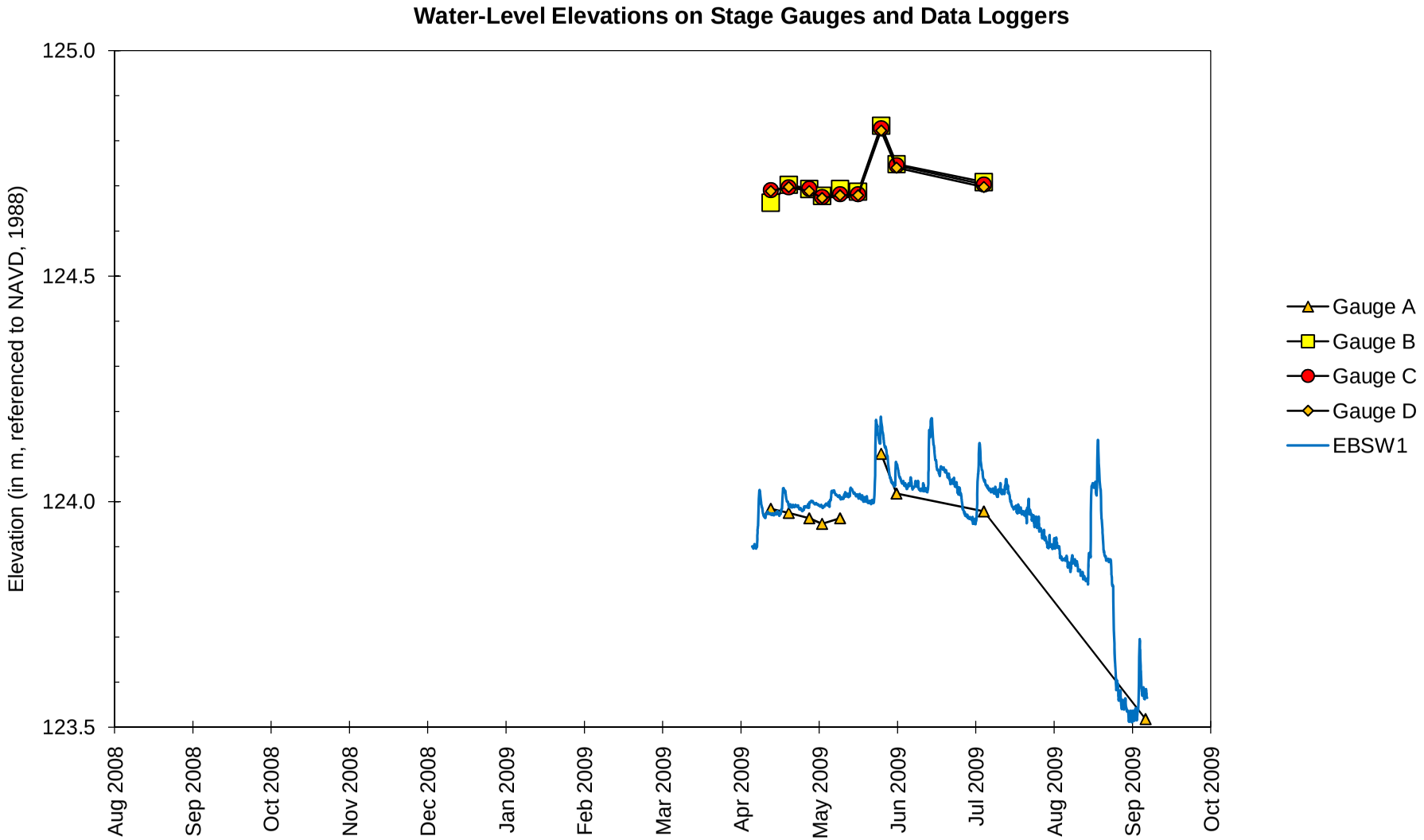
September 1, 2008 through August 31, 2009

Depth to Water in Soil-Zone Monitoring Wells



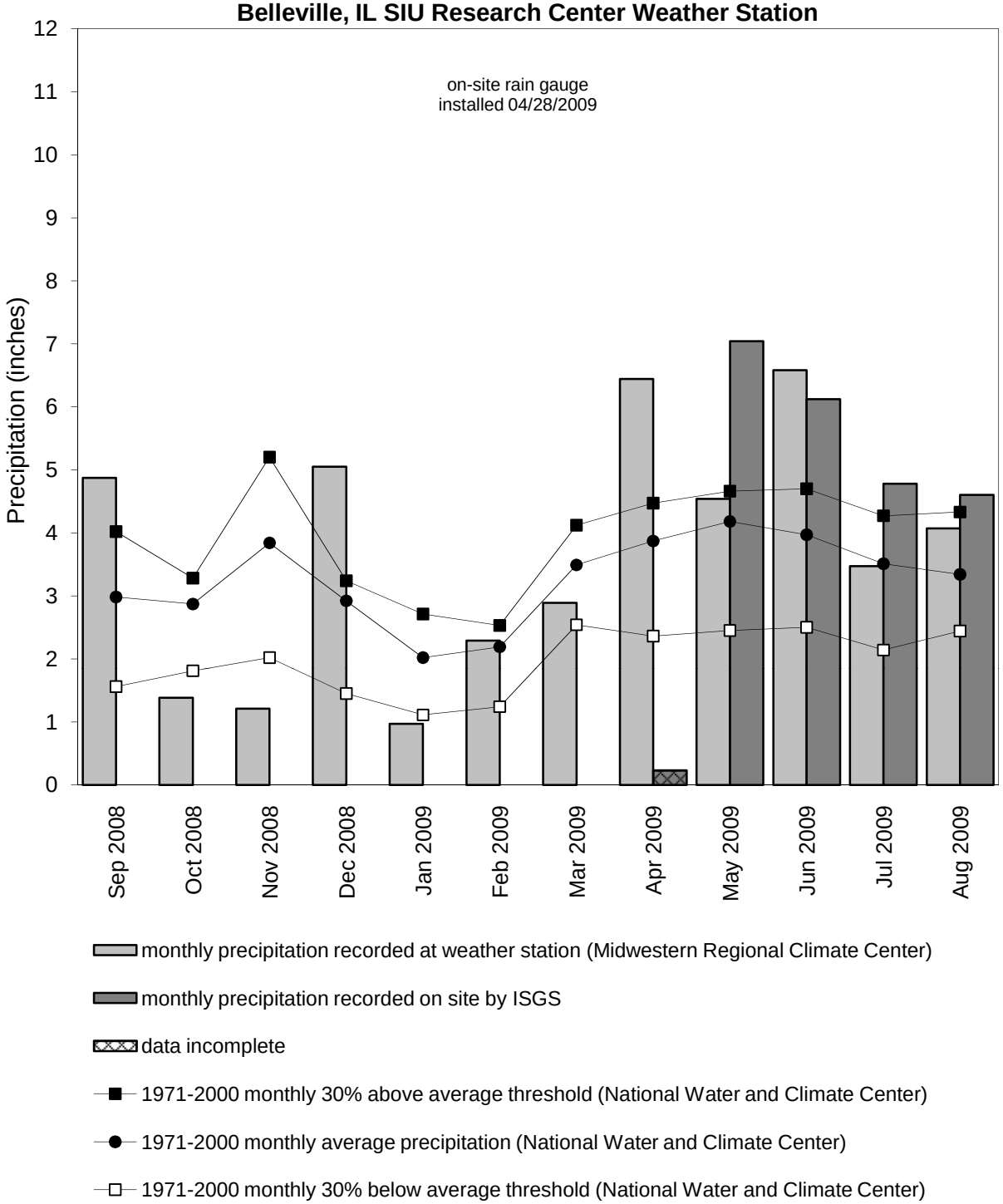
Eckmann/Bischoff Wetland Bank

September 1, 2008 through August 31, 2009



Eckmann/Bischoff Wetland Bank
September 2008 through August 2009

Total Monthly Precipitation Recorded On Site and at the Belleville, IL SIU Research Center Weather Station



Graph last updated October 1, 2009

MILAN BELTWAY, GREEN ROCK **ISGS #44**
WETLAND COMPENSATION SITE
FAU 5822
Sequence #67
Henry County, near Green Rock, Illinois
Primary Project Manager: Steven E. Benton
Secondary Project Manager: Kathleen E. Bryant

SITE HISTORY

- December 2005: IDOT tasked the ISGS to conduct five-year performance monitoring of the Green Rock wetland mitigation site.

- March 2006: The monitoring network was installed on Phase I of the site.

- November 2007: The monitoring network was installed on Phase II of the site.

WETLAND HYDROLOGY CALCULATION FOR 2009

The site is divided into two portions, Phase I and Phase II. In 2009, 15.9 ha (39.4 ac) of Phase 1, out of a total area of 16.7 ha (41.3 ac), and 3.3 ha (8.2 ac) of Phase 2, out of a total area of 4.3 ha (10.7 ac), satisfied wetland hydrology criteria at both 5% and 12.5% of the growing season. Using new guidance proposed by the U. S. Army Corps of Engineers (2008), we estimate that 15.9 ha (39.4 ac) of Phase I and 3.3 ha (8.2 ac) of Phase II satisfied wetland hydrology criteria for 14 or more consecutive days during the growing season. These estimates are based on the following factors:

- According to the MRCC, the median date that the growing season begins at the Quad City International Airport in nearby Moline, Illinois, is April 13 and the season lasts 196 days; 5% of the growing season is 10 days and 12.5% of the growing season is 25 days. According to methods outlined in the Midwest Regional Supplement (U. S. Army Corps of Engineers 2008), we estimate that March 18 was the starting date of the 2009 growing season based on soil temperatures measured at the compensation site.

- Total precipitation during the monitoring period was 153% of normal. Precipitation was at or above normal in September and December 2008, from February through April 2009, and from June through August 2009. Total precipitation in the spring (April through June) was 109% of normal.

- In 2009, water levels measured in all of the monitoring wells, except well 15S, satisfied the criteria for jurisdictional wetland hydrology for greater than 5% of the growing season, for 14 or more consecutive days, and for greater than 12.5% of the growing season.

- The site was flooded ten times during the monitoring period. One occurred near the end of the 2008 growing season and four occurred during the non-growing season portion of the period. One of these flood events, on or about 2/7/09, initiated a period of continuous inundation on the site that lasted from February to July. Subsequent flood events, on or about 2/26, 3/1, 3/11, 3/28, 5/3, 5/17, and 6/24, maintained inundation on the site.

ADDITIONAL INFORMATION

- The determination of the elevation at which the Green Rock site floods has been refined by a further analysis of Rock River stage data and on-site logger data. The analysis reveals that the site floods when the Rock River at Moline, Illinois, rises above a stage of about 2.86 m (9.38 ft), which is an elevation of about 170.90 m (560.72 ft).

- On-site observations reveal that surface water on the site tends to flow westward. Three surface-water outlets were seen that convey water to the Green River (marked by arrows on the attached wetland hydrology map). After water has stopped flowing through the lowest outlet, about 20 cm (8 in.) to 30 cm (12 in.) of surface water remains on most of the site.

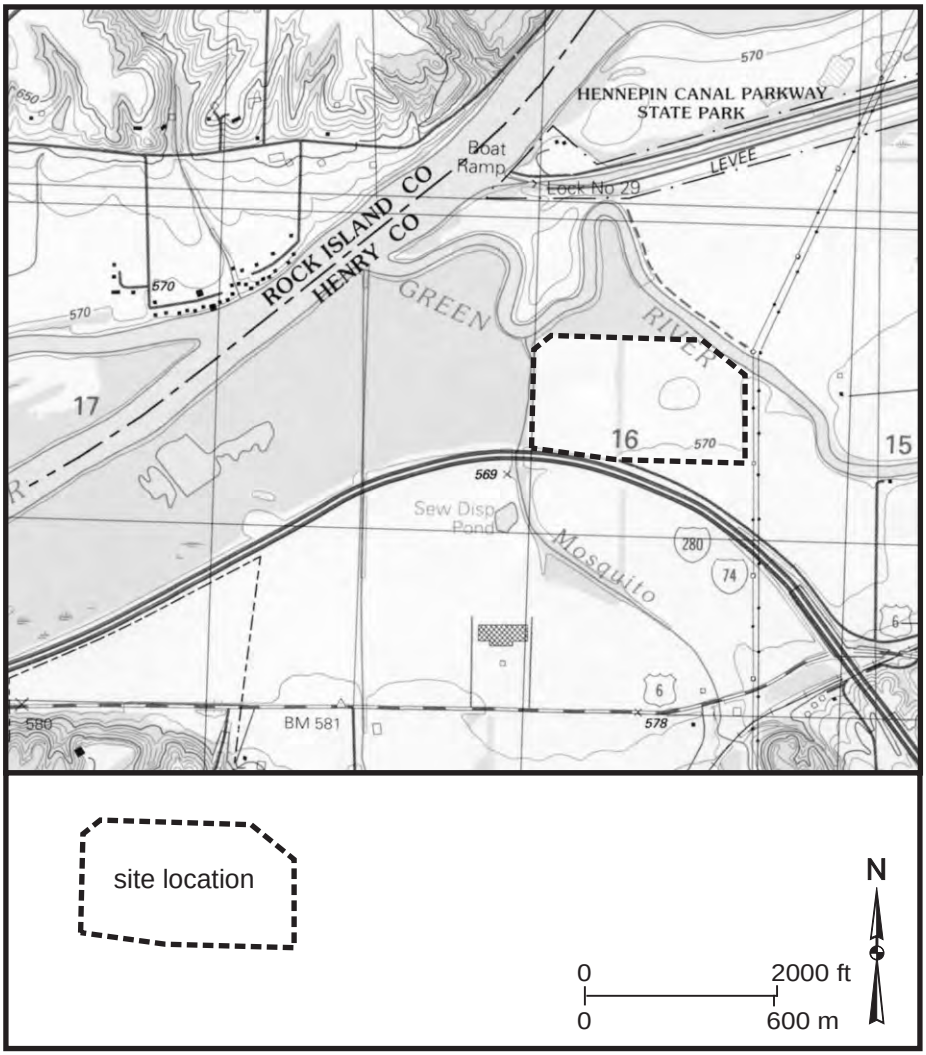
PLANNED FUTURE ACTIVITIES

- Monitoring of the site will continue until notified otherwise by IDOT.

Milan Beltway, Green Rock Wetland Compensation Site (FAU 5822)

General Study Area and Vicinity

from the USGS Topographic Series, Coal Valley, IL (W) (USGS 1991) and
Green Rock, IL (E) (USGS 1992) 7.5-minute Quadrangles
contour interval is 10 feet

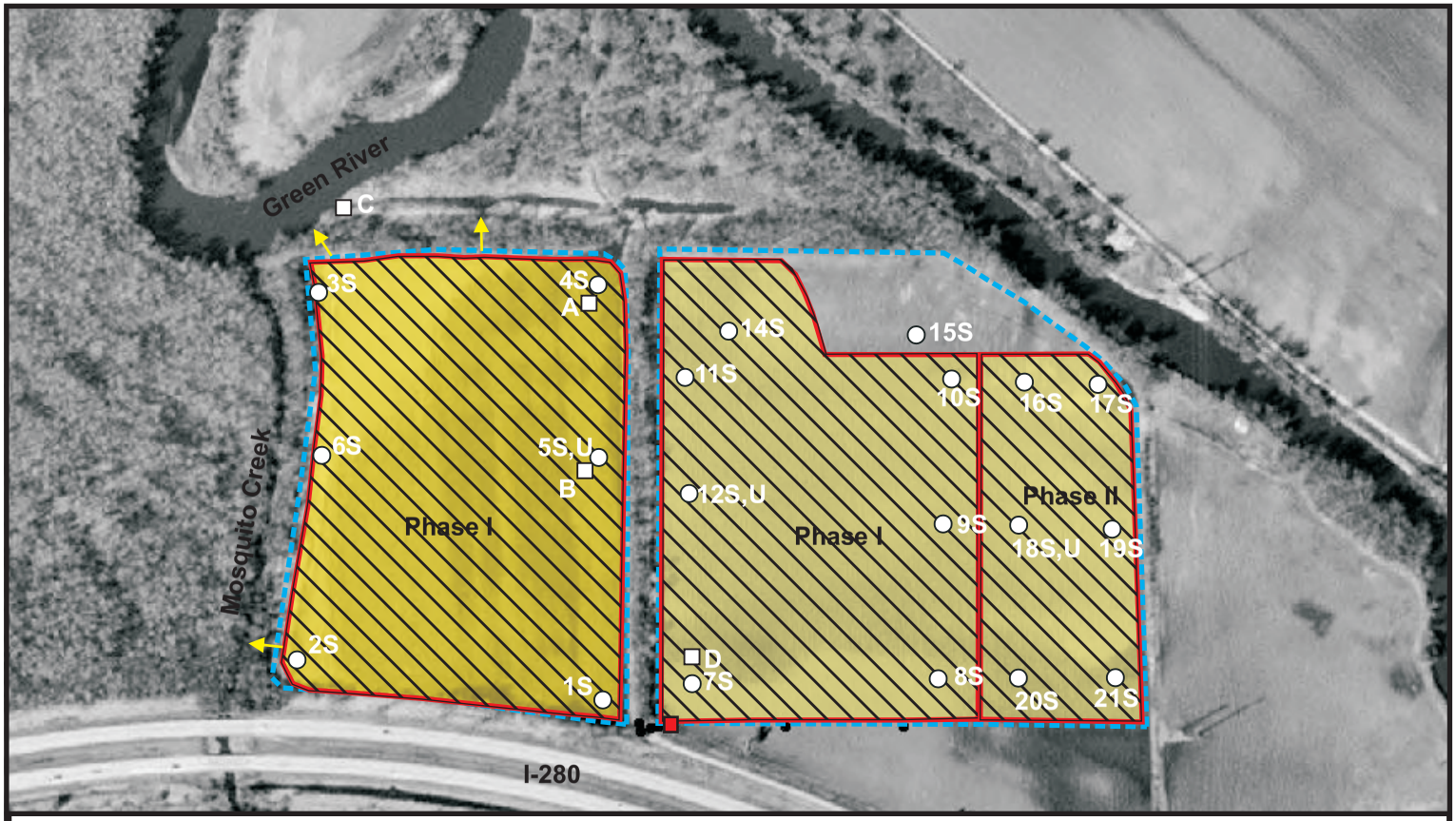


Milan Beltway, Green Rock Wetland Compensation Site (FAU 5822)

Estimated Areal Extent of 2009 Wetland Hydrology

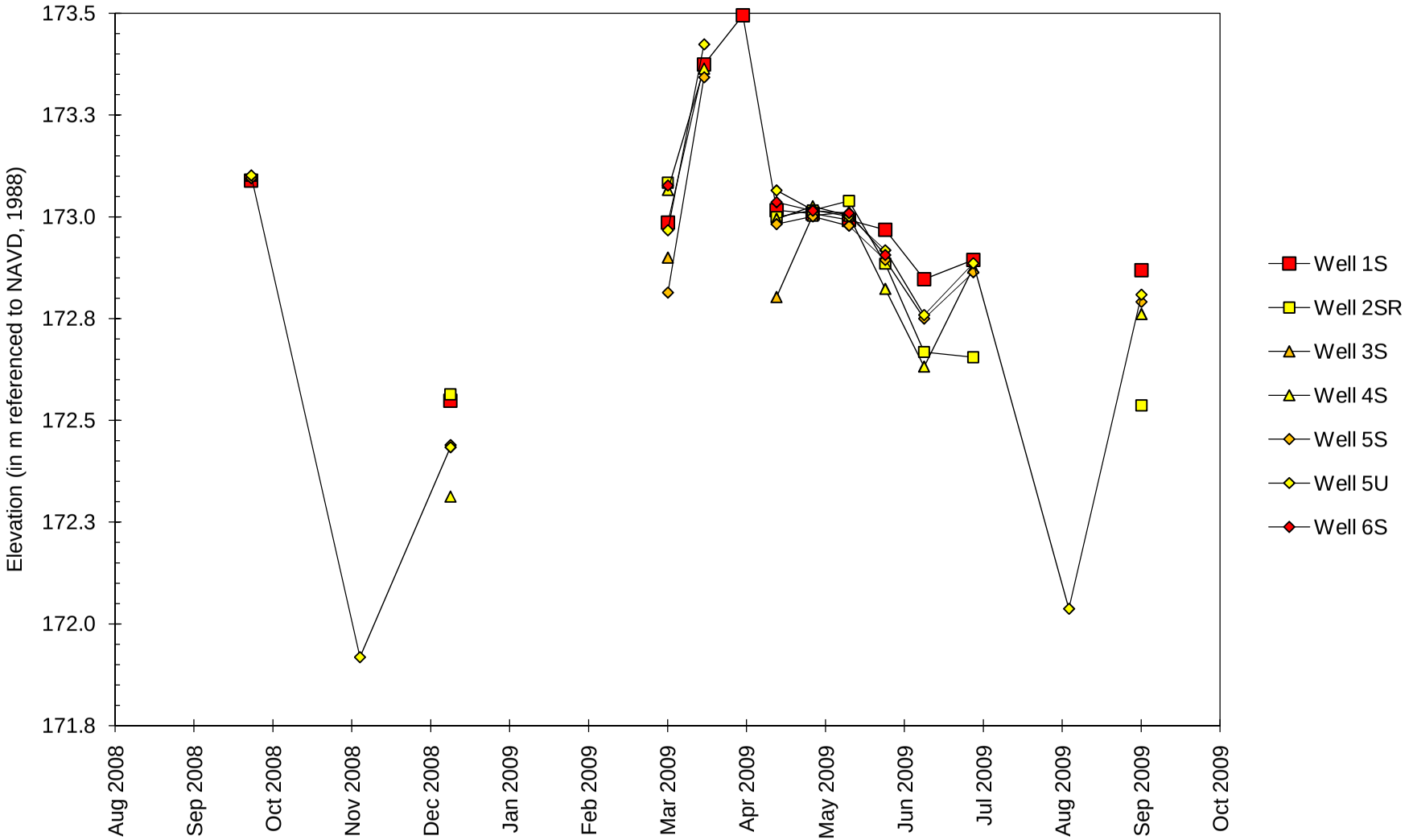
September 1, 2008 through August 31, 2009

Map based on USGS digital orthophotograph, Coal Valley NE quarter quadrangle
produced from 4/14/98 aerial photography (ISGS 2006)



Milan Beltway, Green Rock Wetland Compensation Site
September 1, 2008 through August 31, 2009

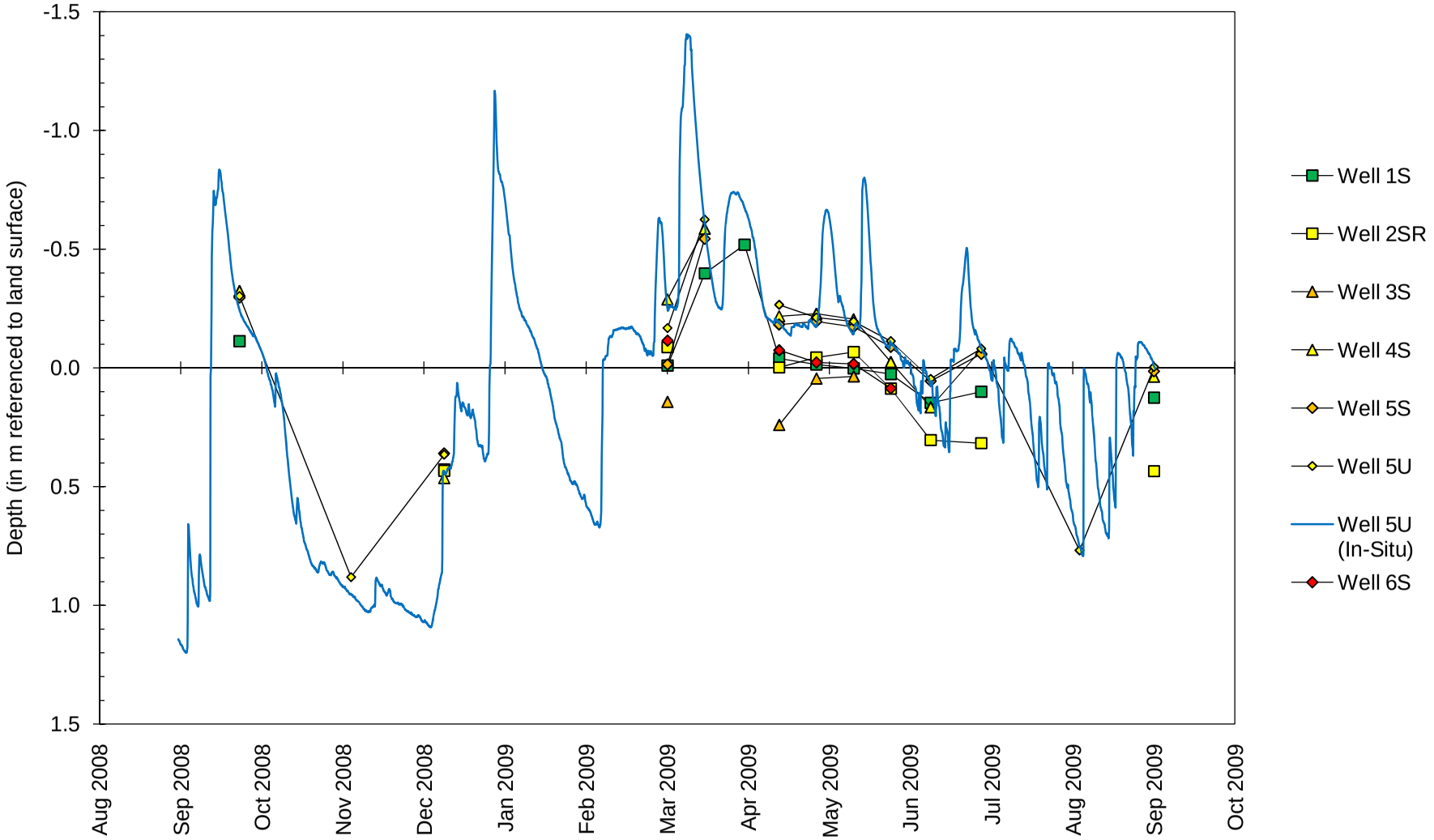
Water-Level Elevations in Monitoring Wells in the Western Portion of Phase 1



Milan Beltway, Green Rock Wetland Compensation Site

September 1, 2008 through August 31, 2009

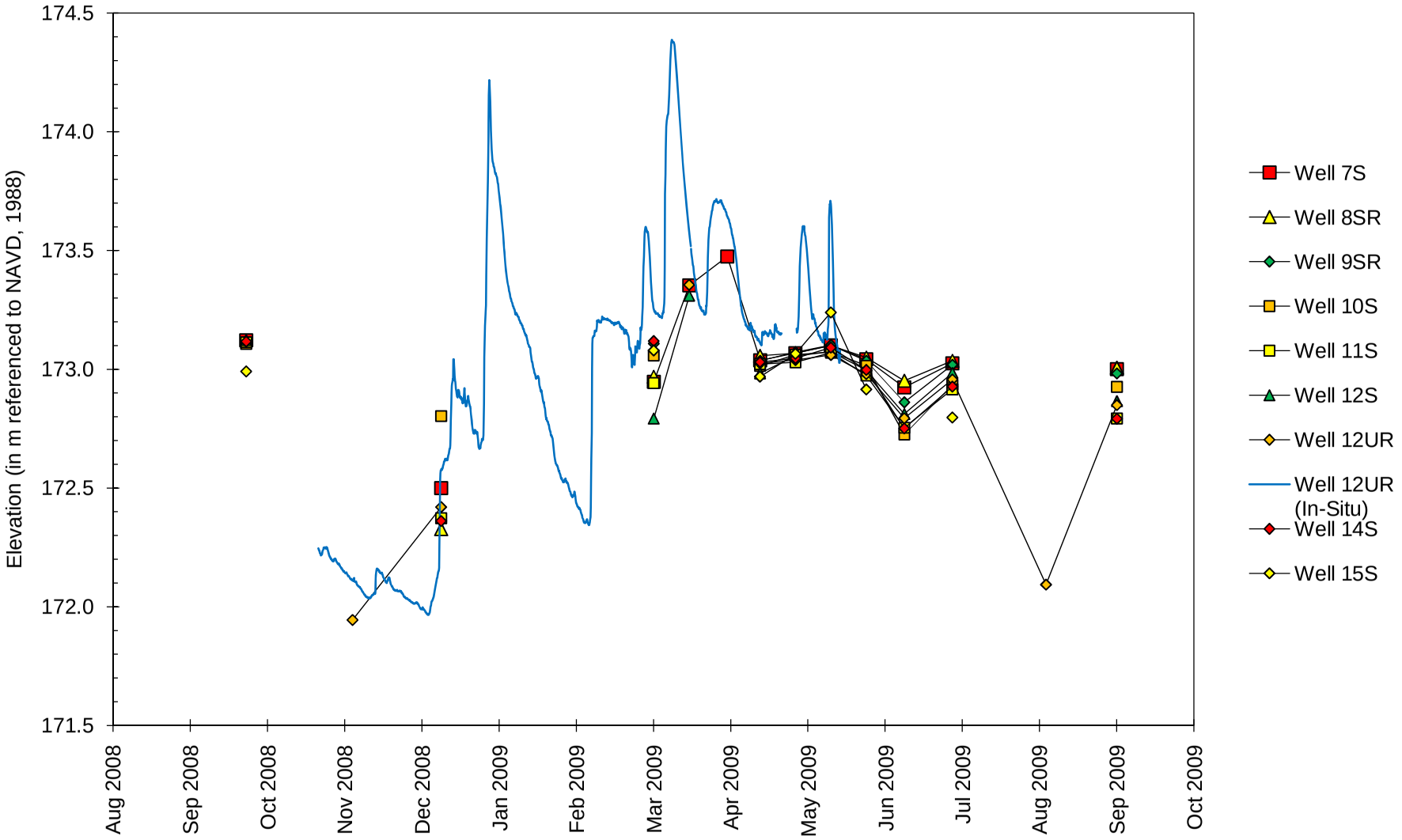
Depth to Water in Monitoring Wells in the Western Portion of Phase 1



Milan Beltway, Green Rock Wetland Compensation Site

September 1, 2008 through August 31, 2009

Water-Level Elevations in the Eastern Portion of Phase 1

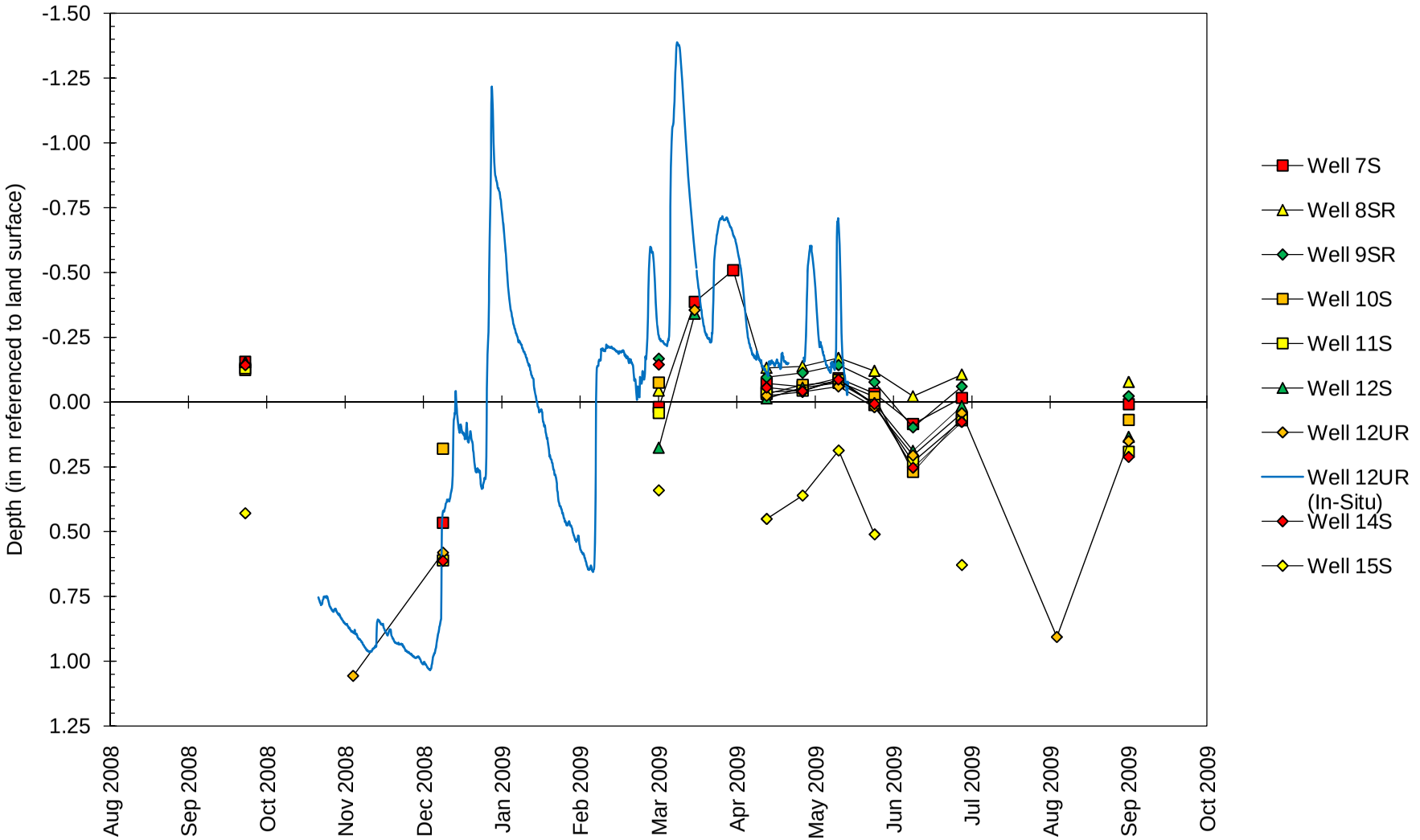


09

Milan Beltway, Green Rock Wetland Compensation Site

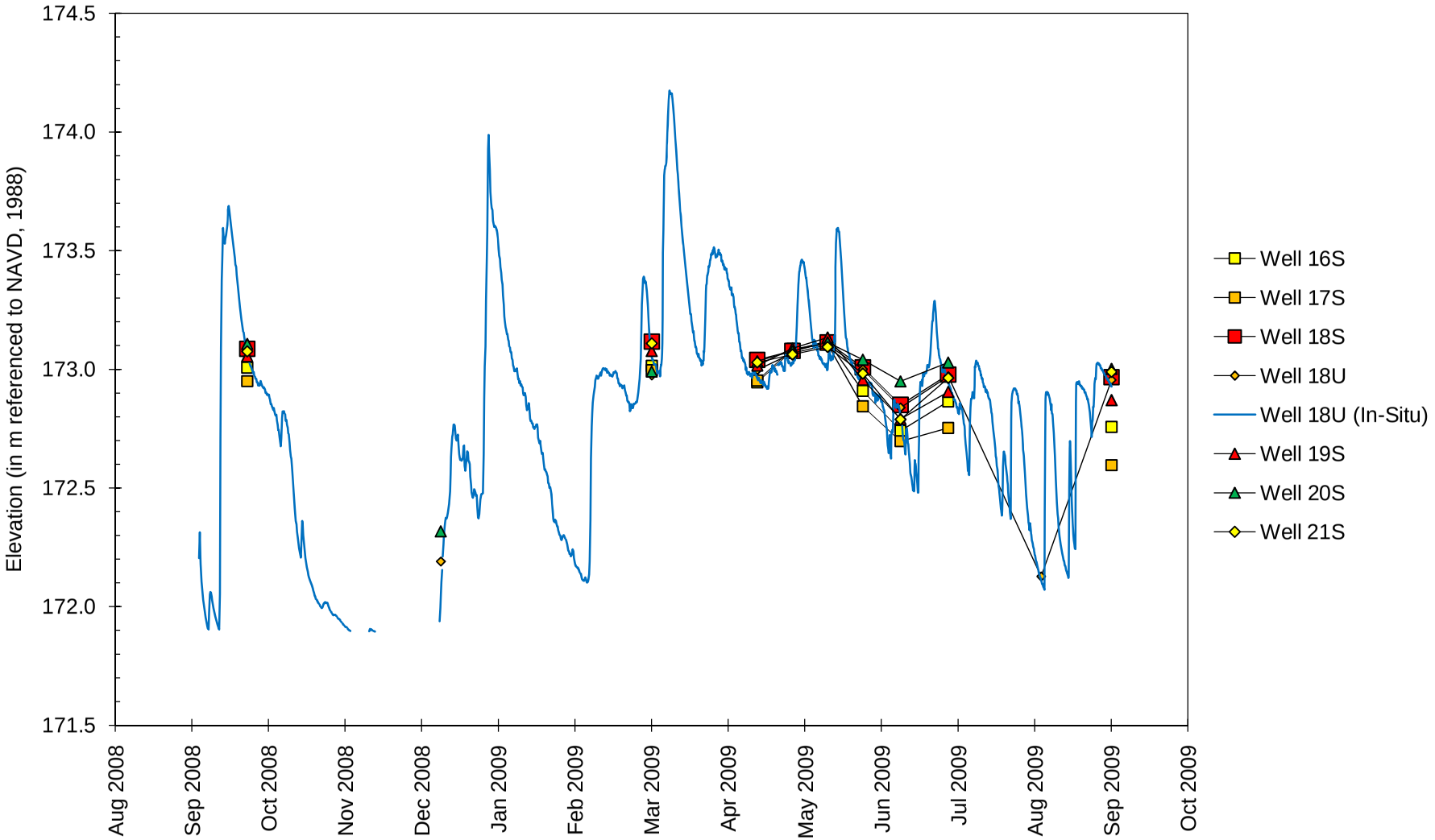
September 1, 2008 through August 31, 2009

Depth to Water in the Eastern Portion of Phase 1



Milan Beltway, Green Rock Wetland Compensation Site
September 1, 2008 through August 31, 2009

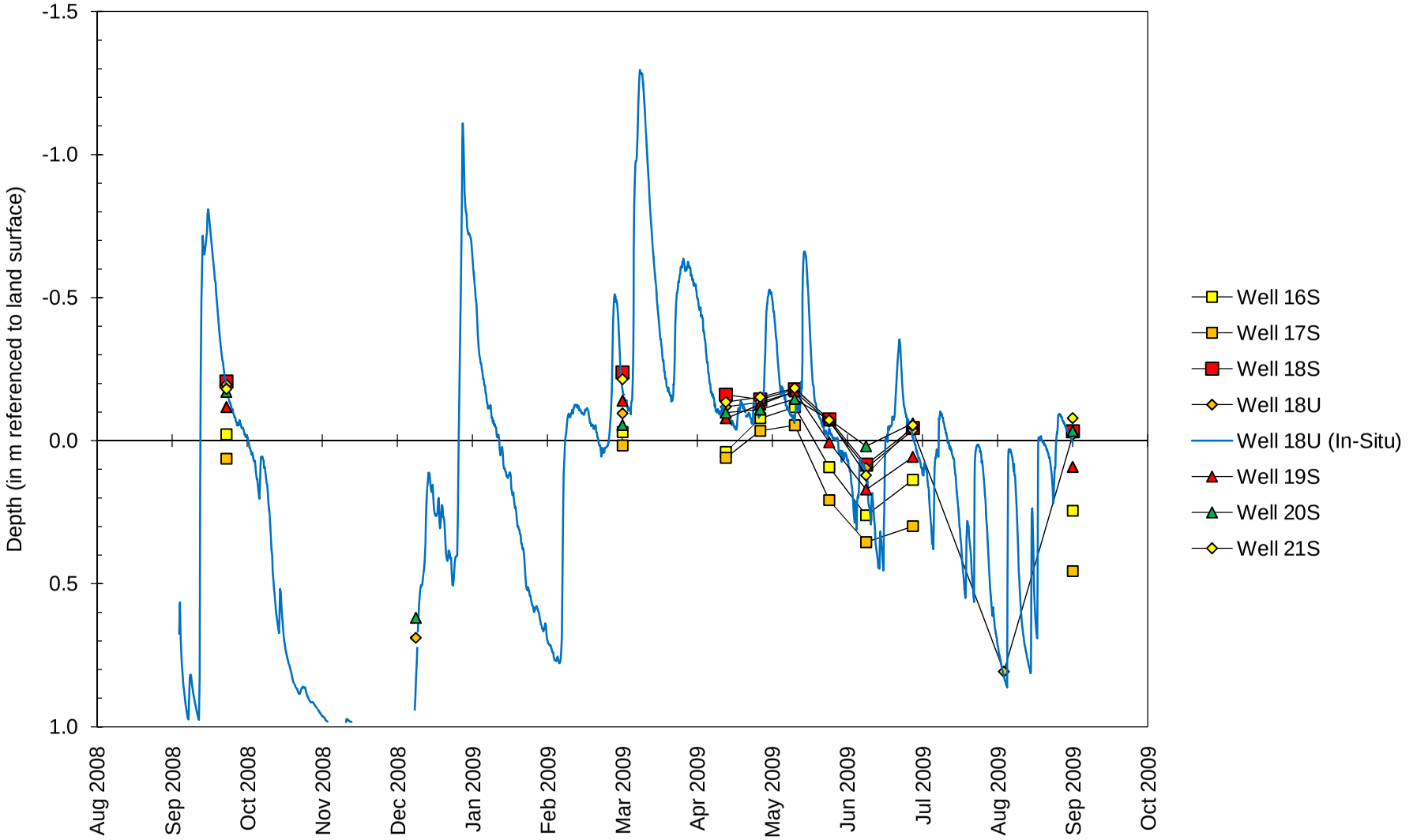
Water-Level Elevations in Monitoring Wells in Phase 2



Milan Beltway, Green Rock Wetland Compensation Site

September 1, 2008 through August 31, 2009

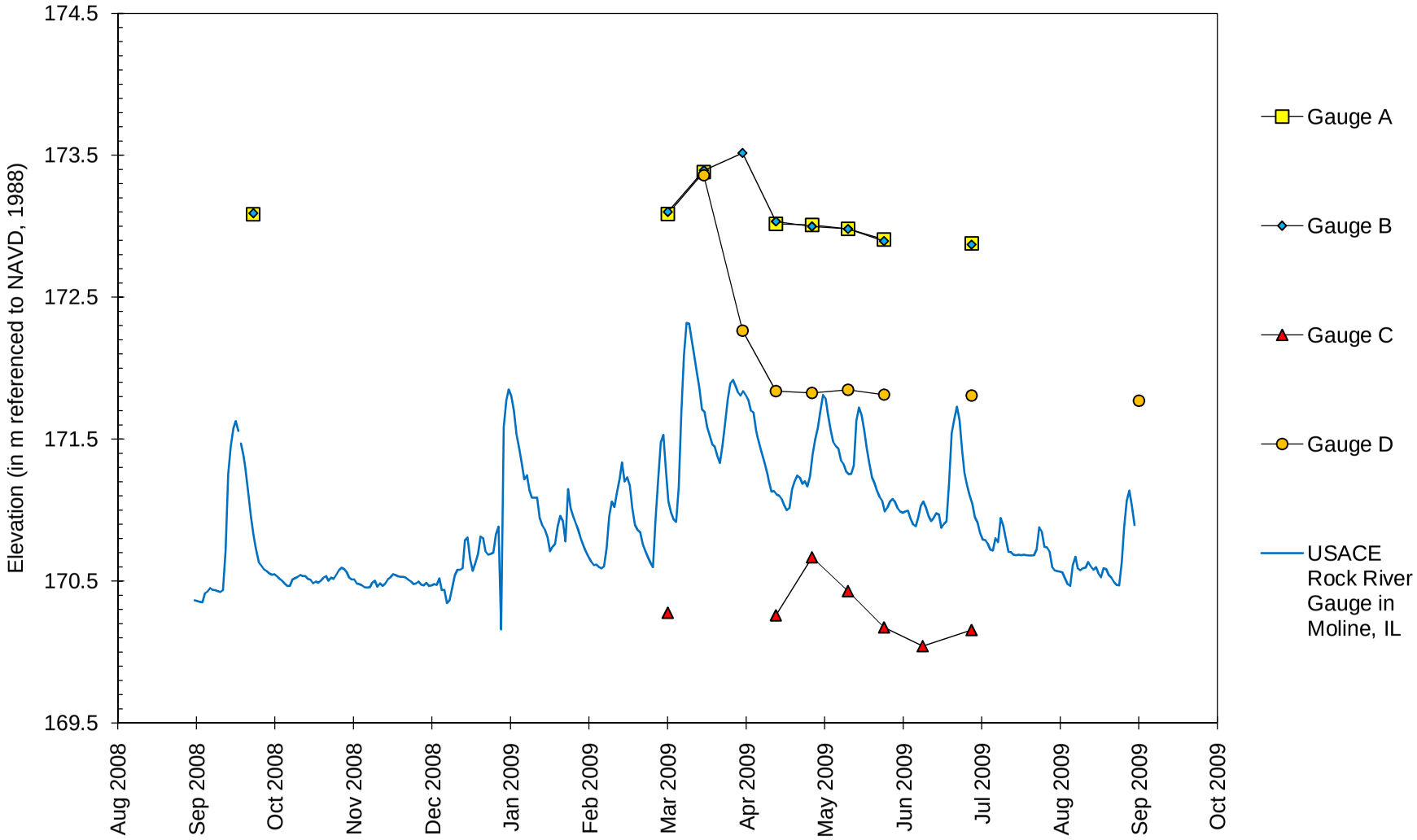
Depth to Water in Monitoring Wells in Phase 2



Milan Beltway, Green Rock Wetland Compensation Site

September 1, 2008 through August 31, 2009

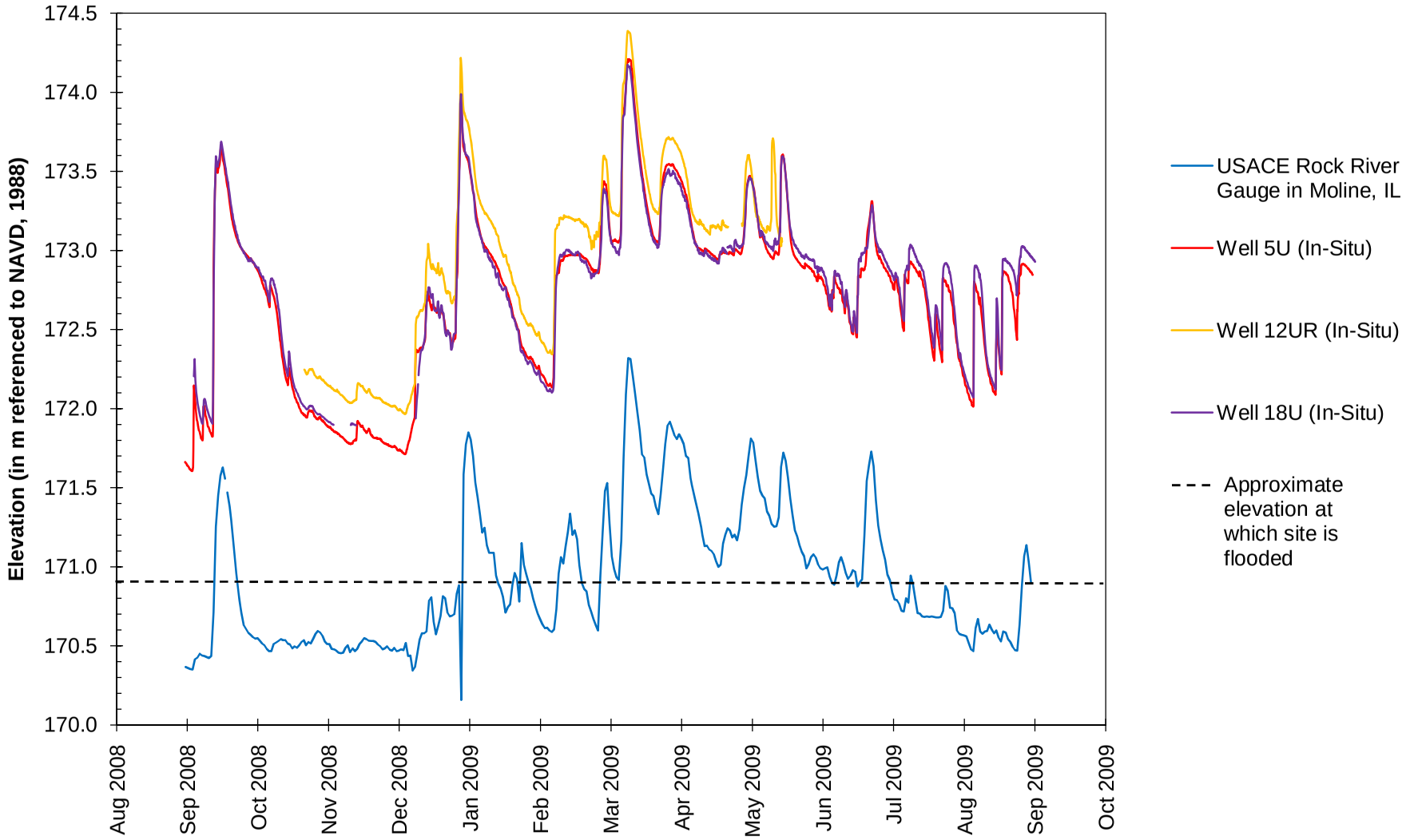
Water-Level Elevations on Stage Gauges at the Site and in the Rock River



Milan Beltway, Green Rock Wetland Compensation Site

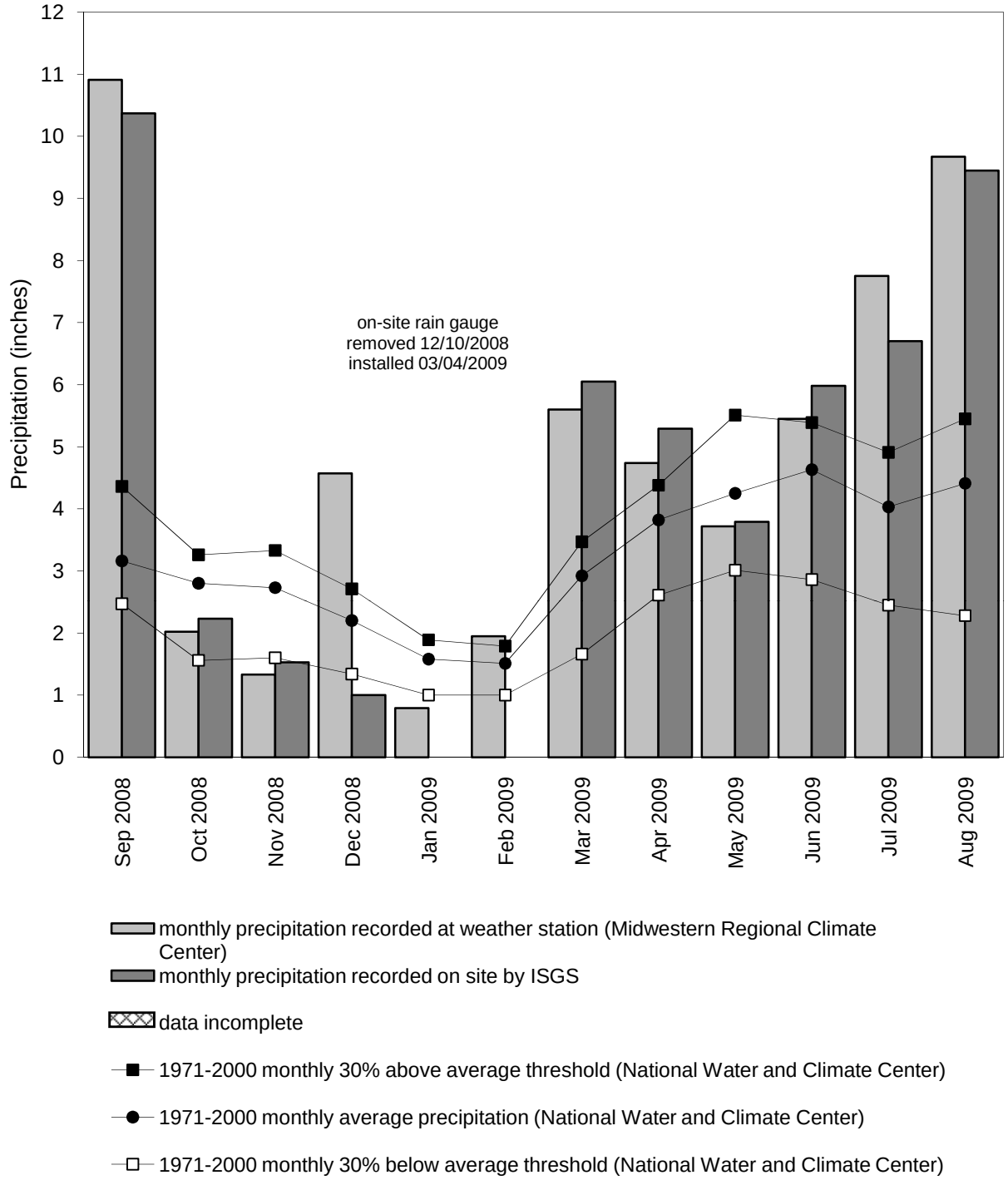
September 1, 2008 through August 31, 2009

Water-Level Elevations in Monitoring Wells at the Site and at the USACE Rock River Gauge in Moline, Illinois



Milan Beltway, Green Rock
Wetland Compensation Site
September 2008 through August 2009

Total Monthly Precipitation Recorded On Site and at the Quad City International Airport Weather Station, Moline, IL



Graph last updated Sept 14, 2009

MORRIS, ILLINOIS RIVER **ISGS #49**
WETLAND BANK SITE
Sequence #1306
Grundy County, near Morris, Illinois
Primary Project Manager: Keith W. Carr
Secondary Project Manager: Geoffrey E. Pociask

SITE HISTORY

- March 1999: ISGS was tasked by IDOT to perform a Level II hydrogeologic assessment of the potential banking site.

- March 2007: A Level II hydrogeologic characterization report was submitted to IDOT (ISGS Open-File Series 2007–03).

WETLAND HYDROLOGY CALCULATION FOR 2009

We estimate that the total area of the site that satisfied wetland hydrology criteria (Environmental Laboratory 1987) for greater than 5% of the growing season in 2009 was 14.97 ha (36.98 ac) out of a total site area of 342 ha (844 ac). Further, 12.9 ha (32 ac) also satisfied wetland hydrology criteria for greater than 12.5% of the growing season. Using new guidance proposed by the U.S. Army Corps of Engineers (2008), we estimate that 14.97 ha (36.98 ac) satisfied wetland hydrology criteria for 14 or more consecutive days during the growing season. These estimates are based on the following factors:

- According to the MRCC, the median date that the growing season begins in Morris, Illinois is April 13 and the season lasts 187 days; 5% of the growing season is 9 days and 12.5% of the growing season is 23 days. According to methods outlined in the Midwest Regional Supplement (U.S. Army Corps of Engineers 2008), we estimate that March 10 was the starting date of the 2009 growing season based on vegetation growth and development observed at the wetland compensation site.

- Total precipitation for the monitoring period was 148% of normal. During the three-month period from February through April 2009, precipitation was 159% of normal, resulting in atypically wet conditions entering the growing season. Also, precipitation remained at or above normal for the February through August period of 2009.

- In 2009, of the 44 active soil-zone wells on site, 17 satisfied wetland hydrology criteria for greater than 5% of the growing season and for 14 or more consecutive days during the growing season, including 11SR, 12S, 16S, 18SR, 21SR, 35SR2, 40S, 42S, 43S, 43VS, 44S, 44VS, 46SR2, 48SR2, 51SR, 56SR, and 57S. Further, these wells also satisfied wetland hydrology criteria for greater than 12.5% of the growing season, with the exception of 18SR and 46SR2.

- Staff gauges or data loggers in closed depressions at SW5, SW7, SW8, SW9, SW10, and SW11 indicated inundation for a period greater than 5% of the growing season, for a period of 14 or more consecutive days of the growing season, and for a period greater than 12.5% of the growing season. The water level elevations that met the criteria for all three time thresholds are as follows; SW5 (149.96 m [492.0 ft]), SW7 (150.57 m [494.0 ft]), SW8 (150.57 m [494.0 ft]), SW9 (150.73 m [494.5 ft]), SW10 (149.66 m [491.0 ft]), and SW11 (149.05 m [489.0 ft])

- As in previous years, perennial water bodies such as the creek channels were not included in areas having met wetland hydrology criteria.

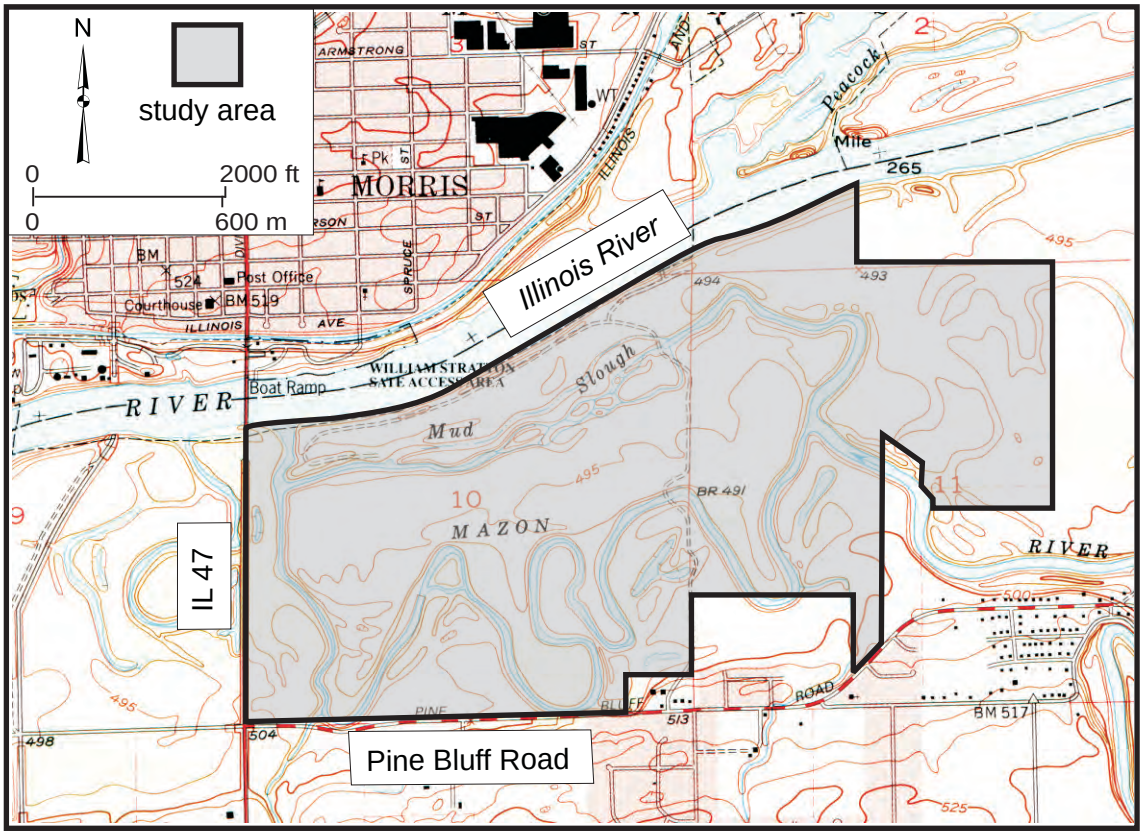
PLANNED FUTURE ACTIVITIES

- 2009 is to be the last year for widespread monitoring of shallow groundwater at the site. Monitoring of surface water via staff gauges and two dataloggers will continue in 2010 until no longer required by IDOT.

Morris, Illinois River Wetland Bank Site

General Study Area and Vicinity

from the USGS Topographic Series, Morris, IL 7.5-minute Quadrangle (USGS 1993)
contour interval is 5 feet

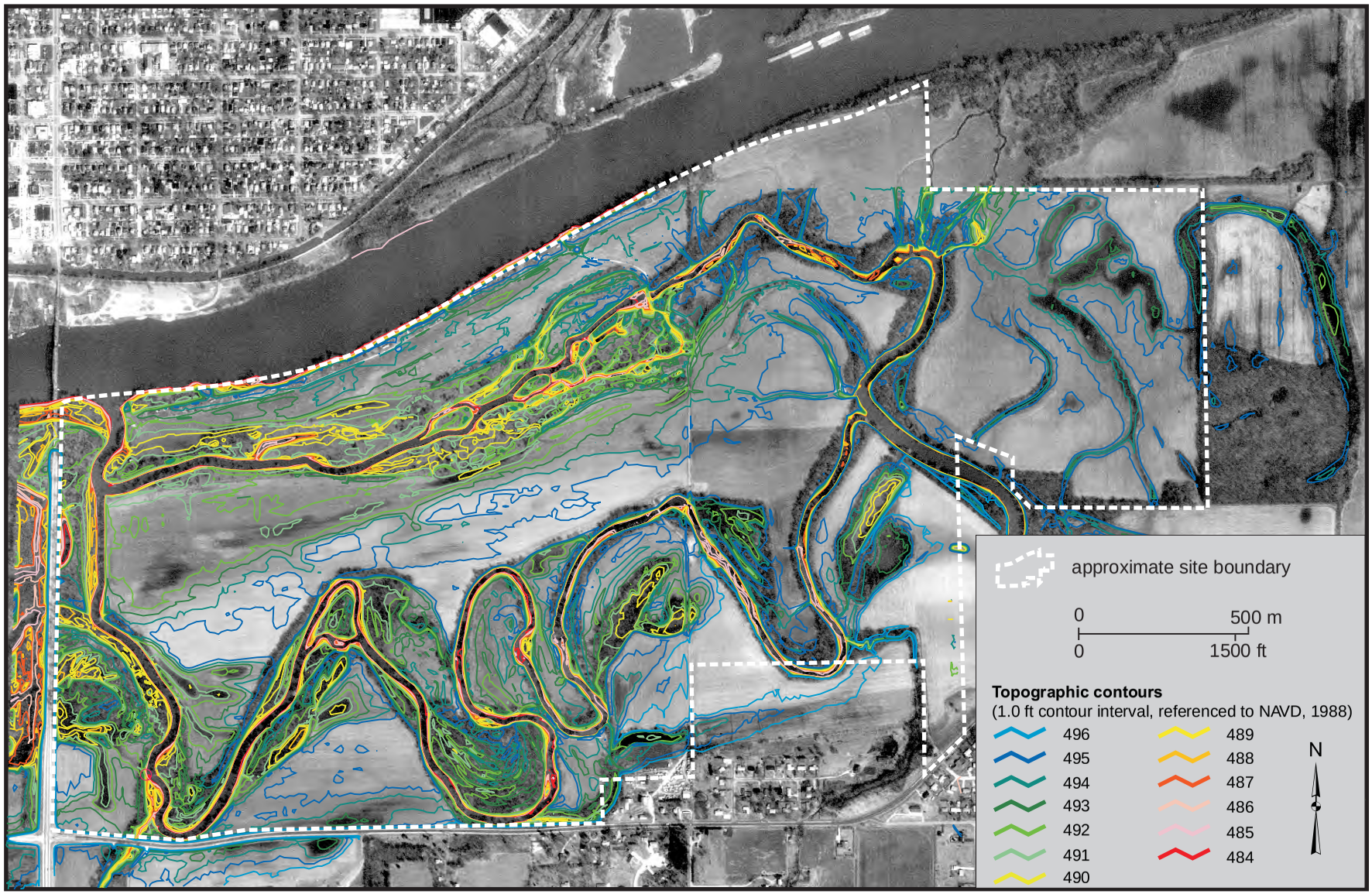


Morris, Illinois River Wetland Bank Site

Site Topographic Map (IDOT/INHS)

contours prepared by Illinois Natural History Survey in May 2000, using IDOT survey data

Map based on USGS digital orthophotograph, Morris NE quarter quadrangle
from 4/5/1998 aerial photography (ISGS 2001)

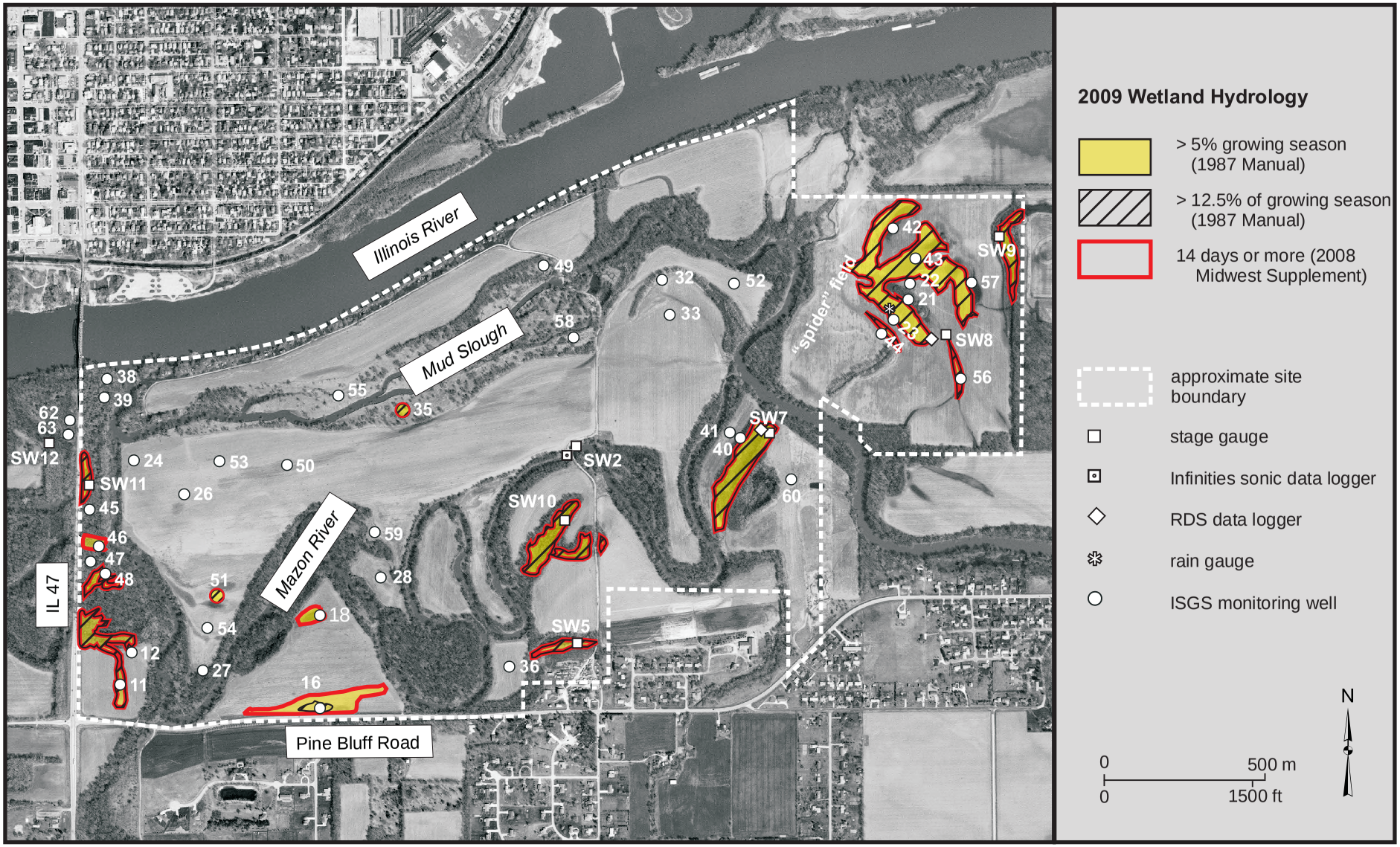


Morris, Illinois River Wetland Bank Site

Estimated Areal Extent of 2009 Wetland Hydrology

September 1, 2008 through August 31, 2009

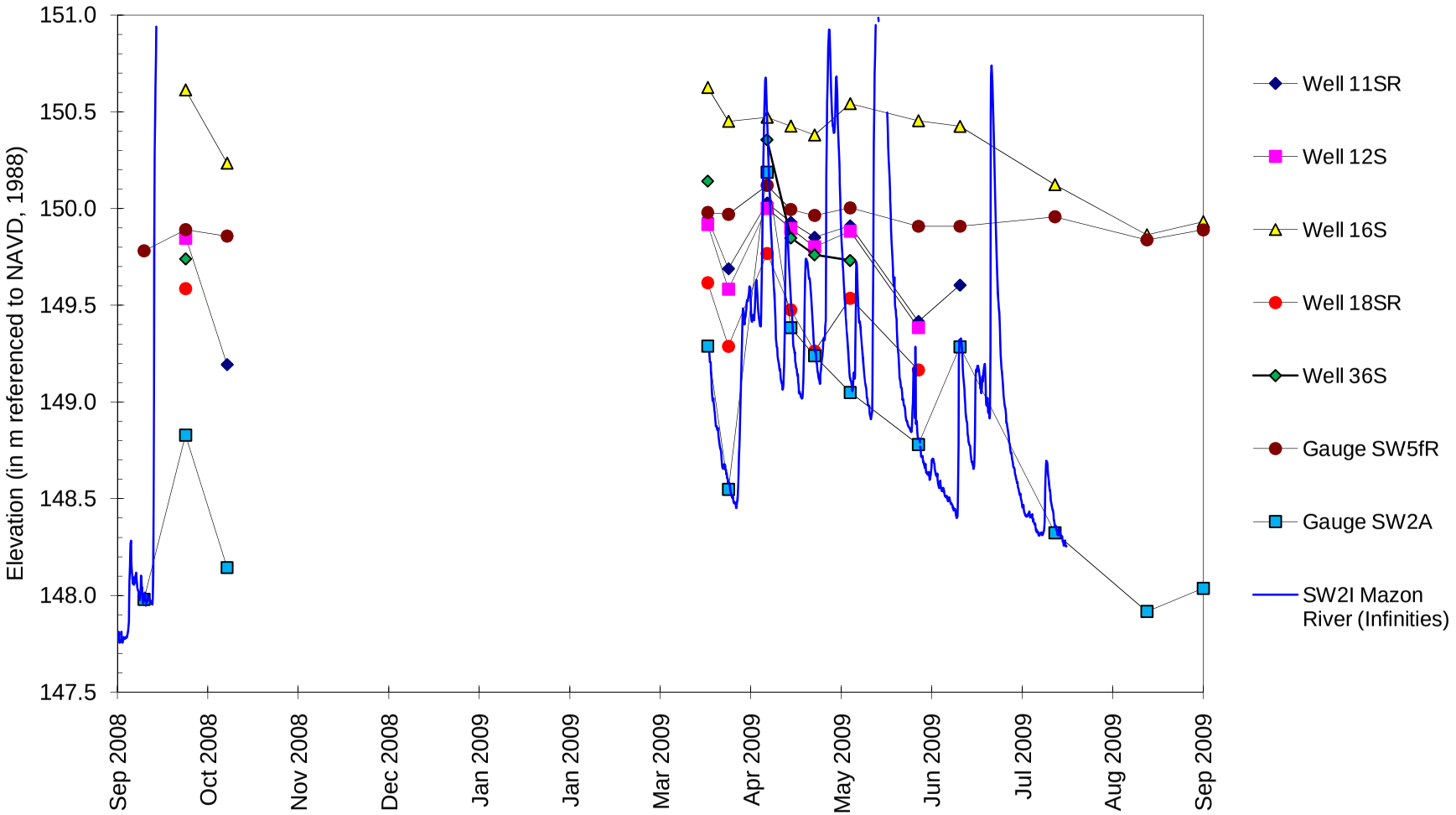
Map based on USGS digital orthophotograph, Morris NE quarter quadrangle
from 4/5/1998 aerial photography (ISGS 2001)



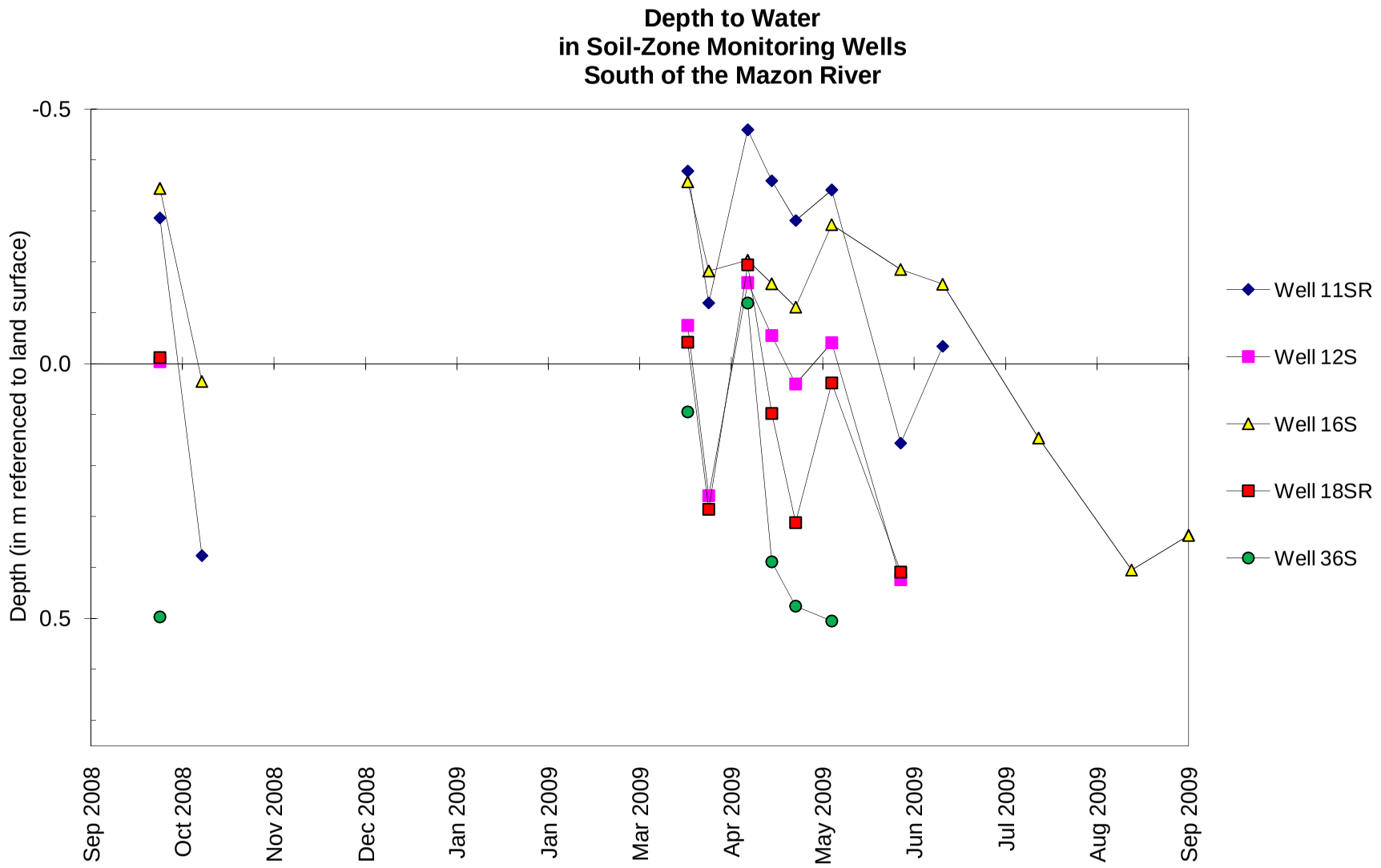
Morris, Illinois River Wetland Bank Site

September 1, 2008 through August 31, 2009

Water-Level Elevations
in Soil-Zone Monitoring Wells, Data Loggers, and Stage Gauges
South of the Mazon River



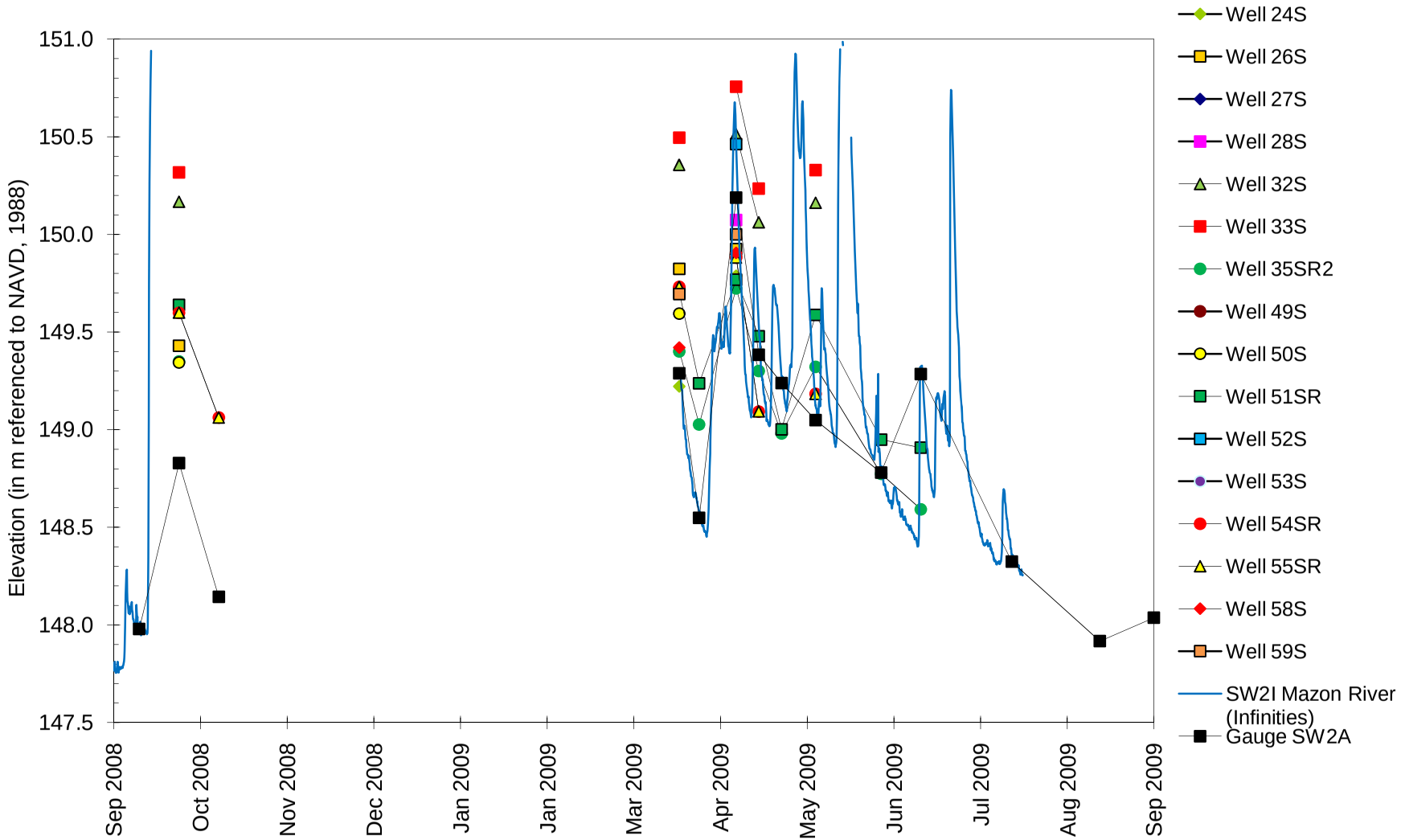
Morris, Illinois River Wetland Bank Site
September 1, 2008 through August 31, 2009



Morris, Illinois River Wetland Bank Site

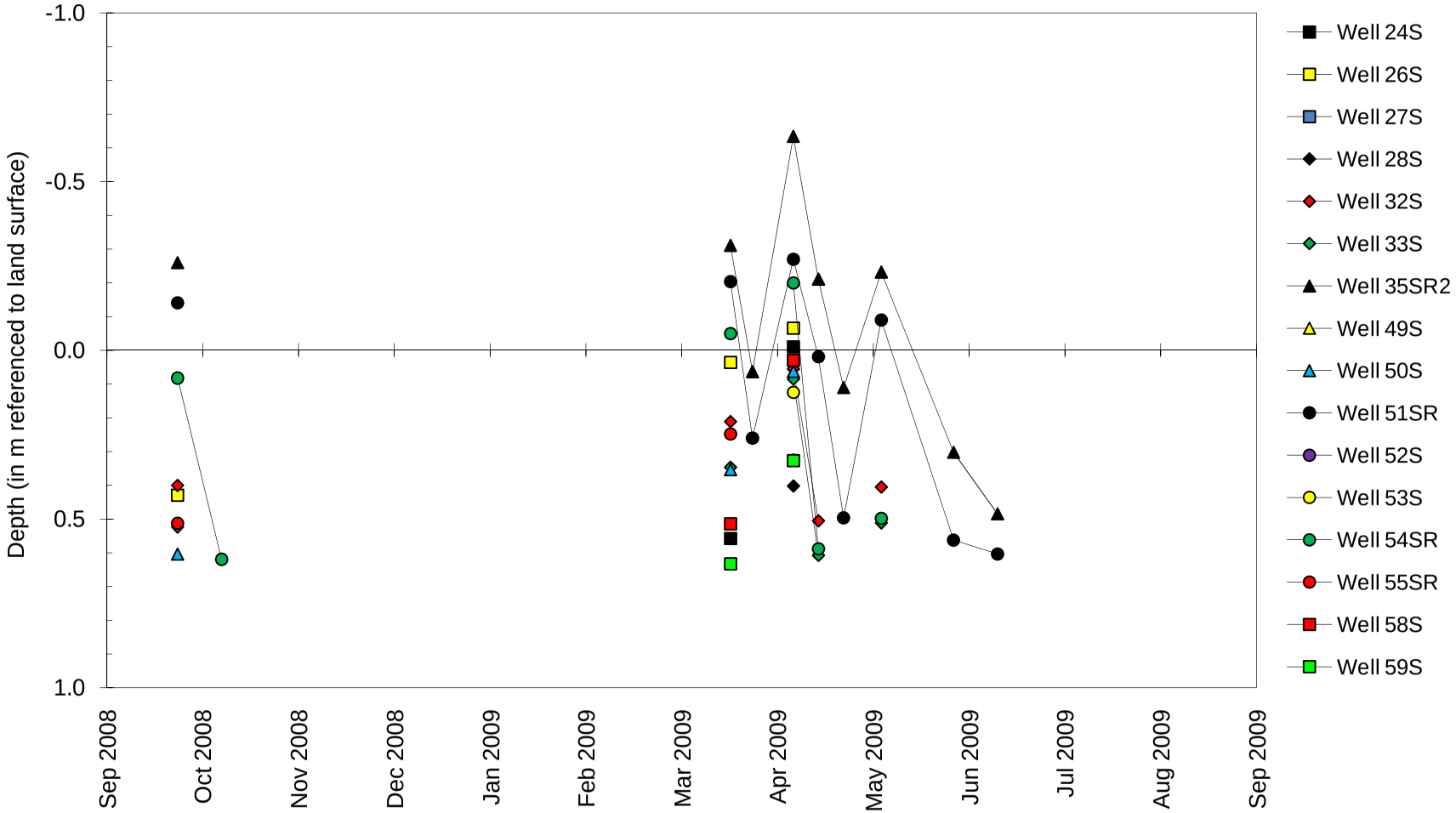
September 1, 2008 through August 31, 2009

Water-Level Elevations
in Soil-Zone Monitoring Wells, Data Loggers, and Stage Gauges
North of the Mazon River



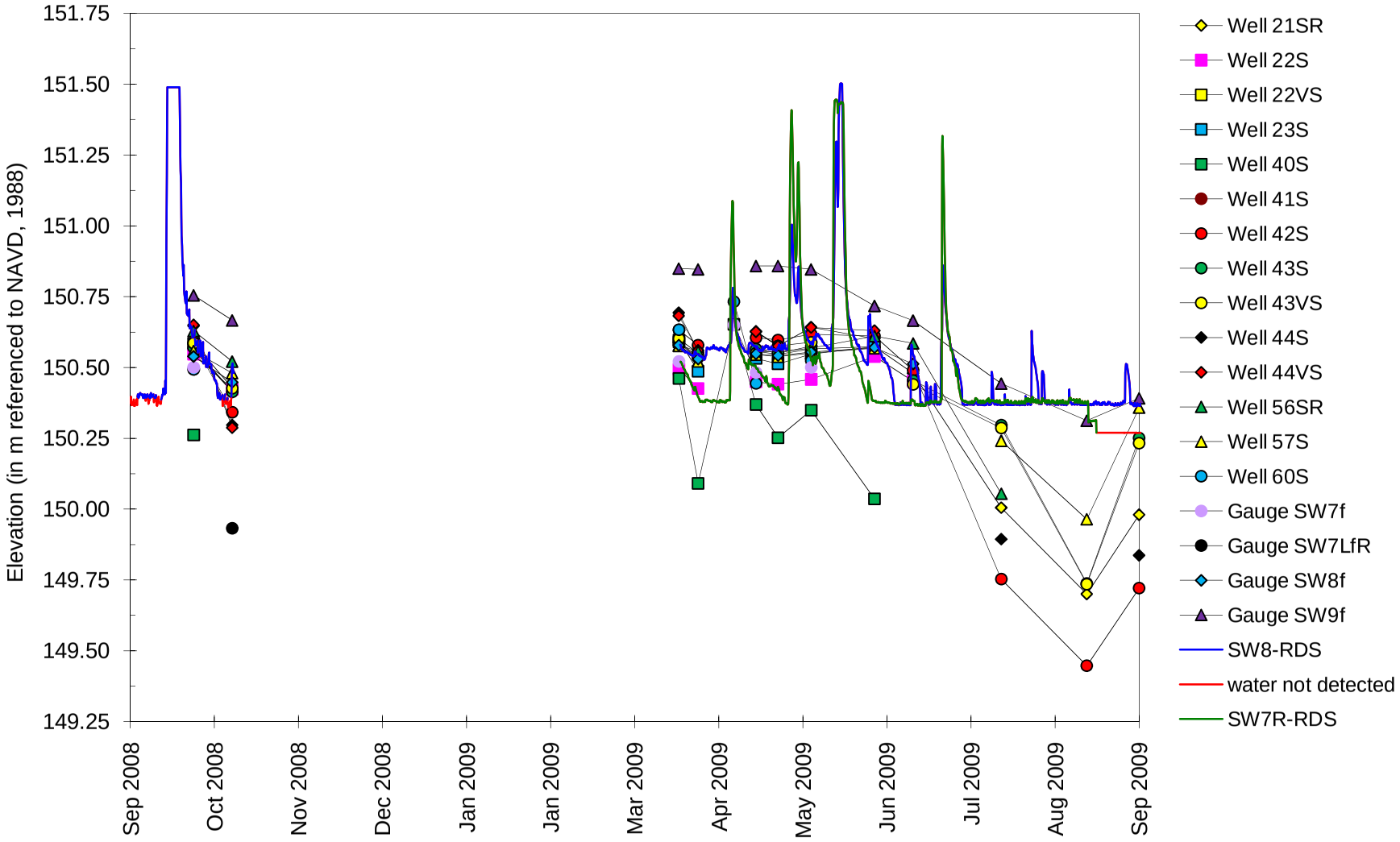
Morris, Illinois River Wetland Bank Site
September 1, 2008 through August 31, 2009

Depth to Water
in Soil-Zone Monitoring Wells
North of the Mazon River



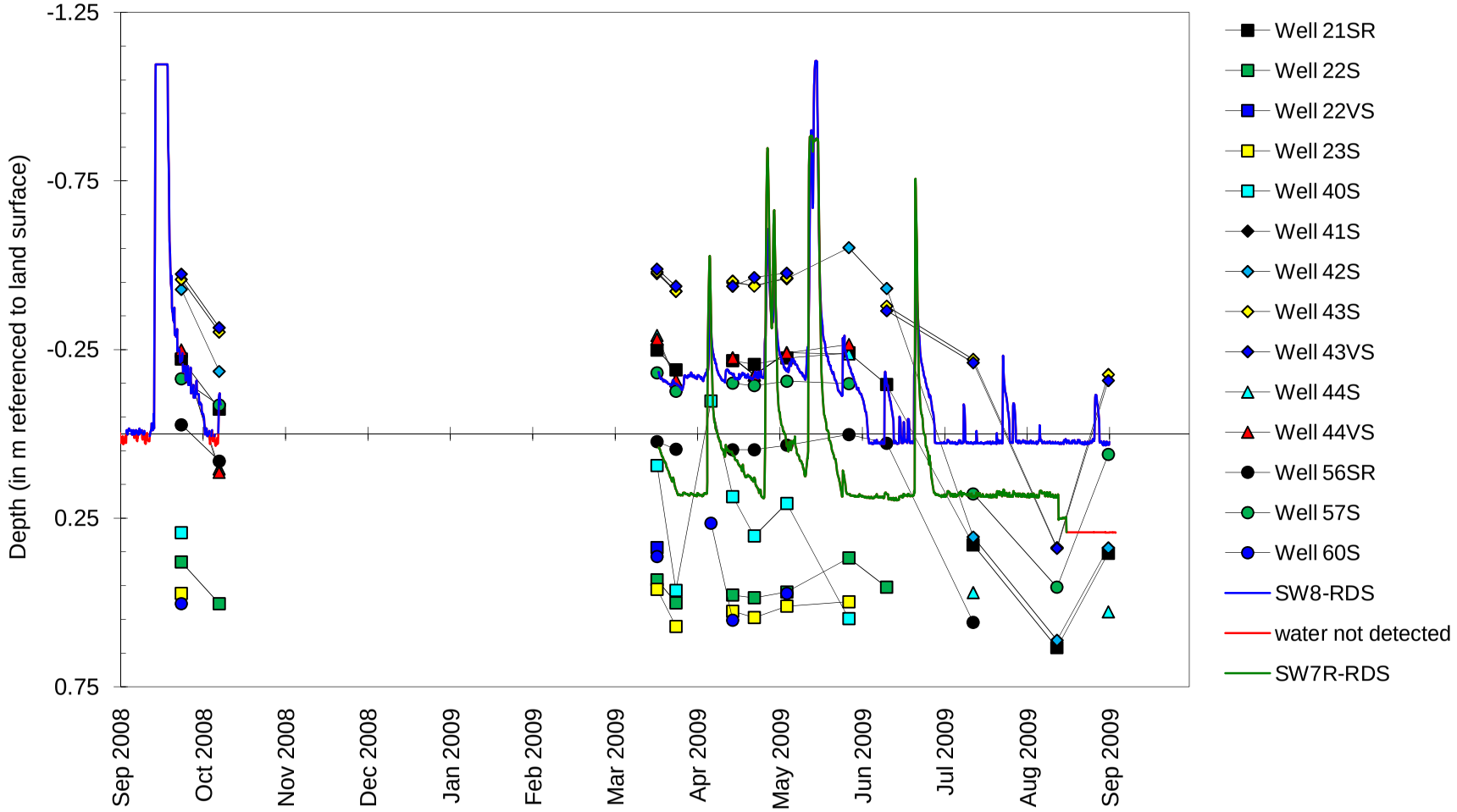
Morris, Illinois River Wetland Bank Site
September 1, 2008 through August 31, 2009

Water-Level Elevations
in Soil-Zone Monitoring Wells, Data Loggers, and Stage Gauges
in the East Field and near the Natural Slough



Morris, Illinois River Wetland Bank Site
September 1, 2008 through August 31, 2009

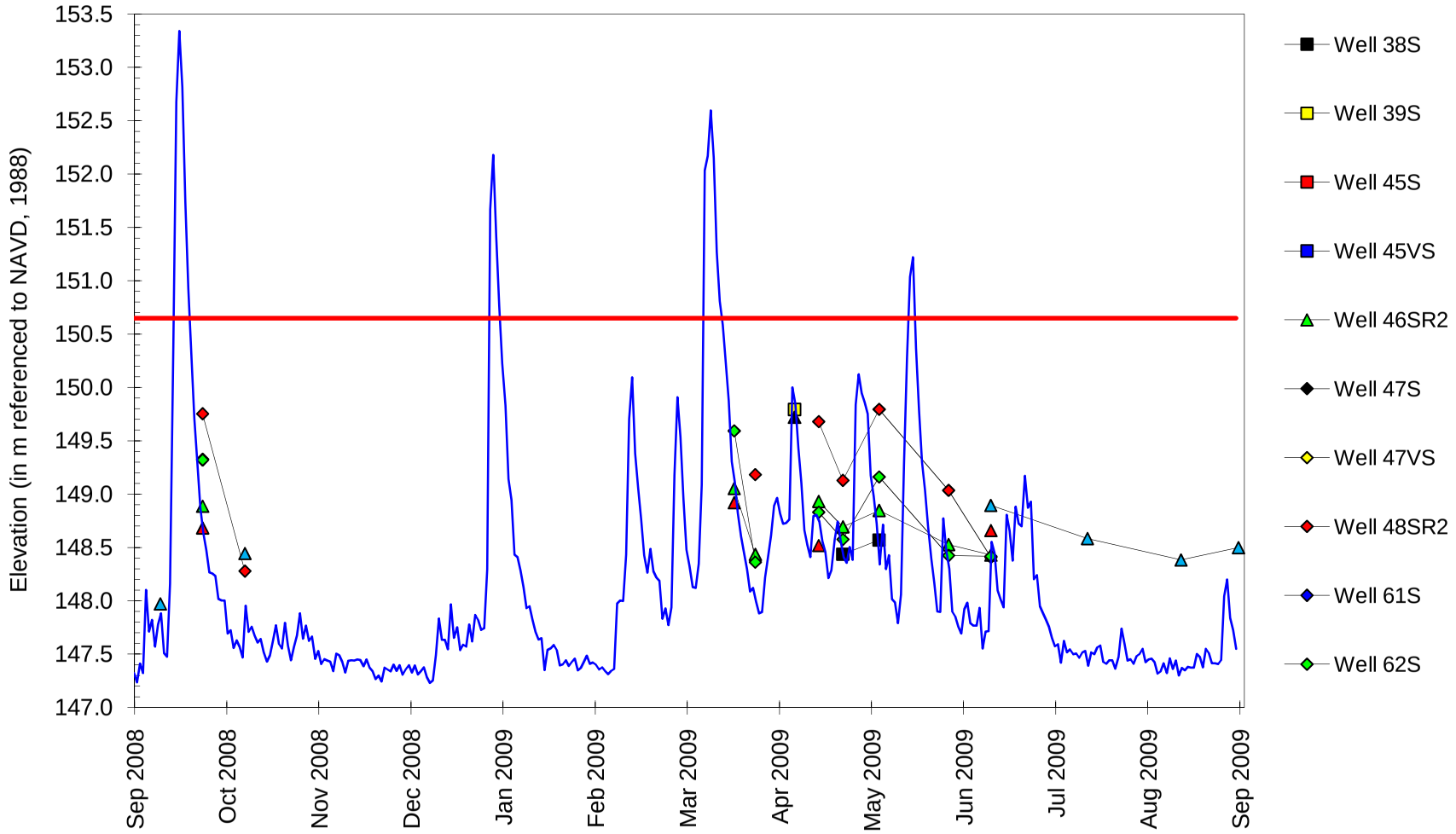
Depth to Water
in Soil-Zone Monitoring Wells and Data Loggers
in the East Field and near the Natural Slough



Morris, Illinois River Wetland Bank Site

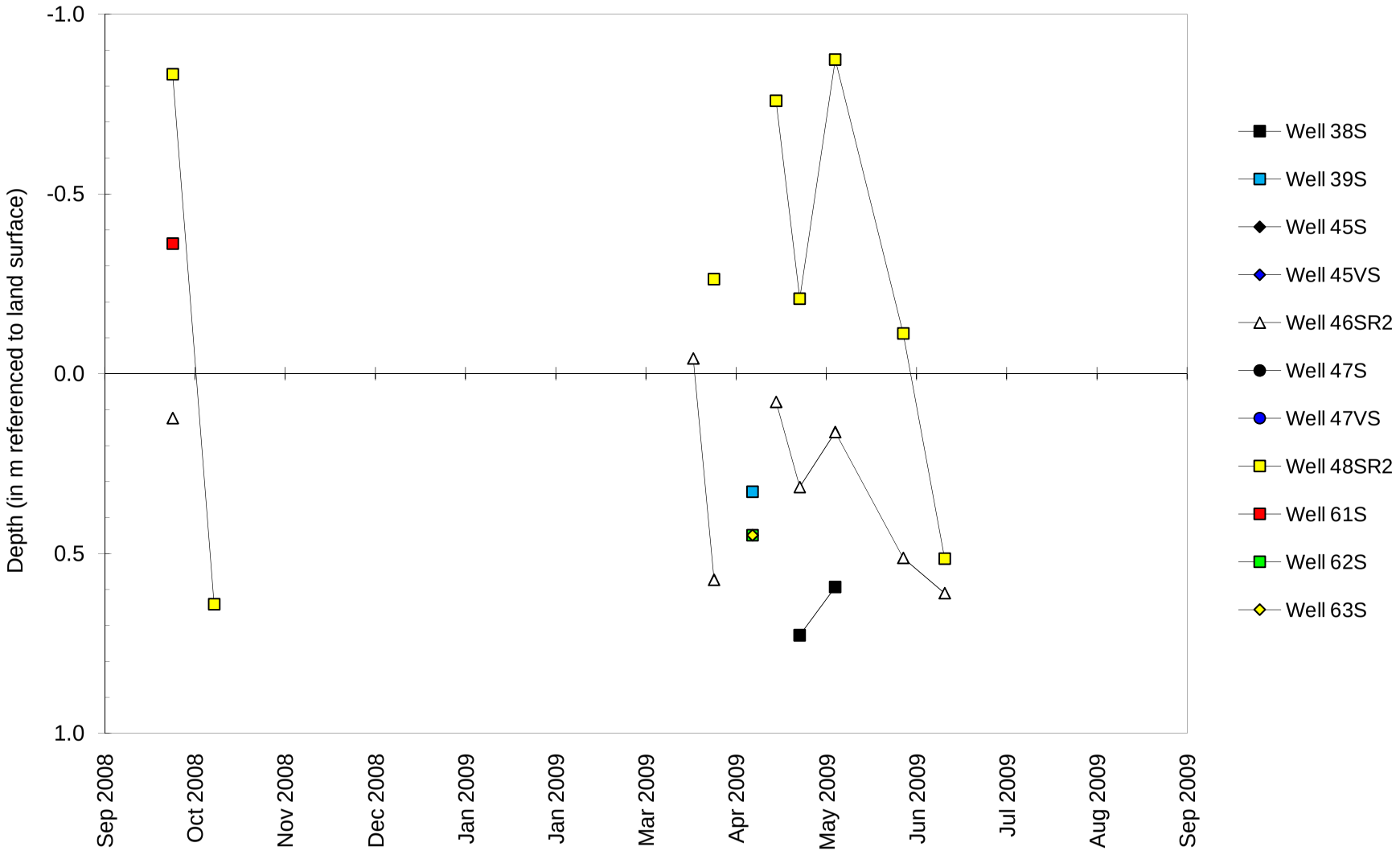
September 1, 2008 through August 31, 2009

Water-Level Elevations
in Monitoring Wells, Data Loggers, and Stage Gauges
near the Illinois River Floodplain Forest



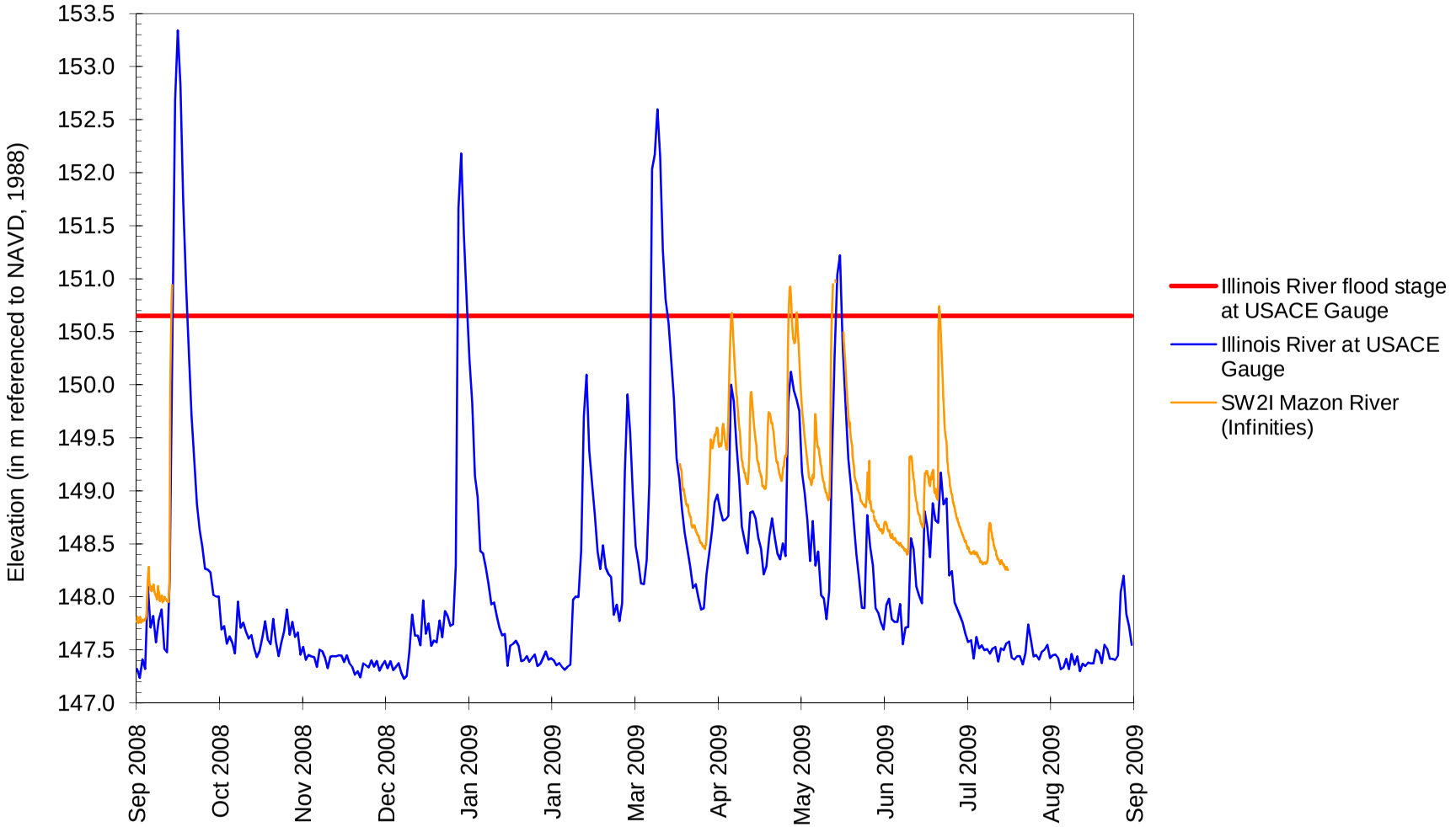
Morris, Illinois River Wetland Bank Site
September 1, 2008 through August 31, 2009

Depth to Water
in Monitoring Wells
near the Illinois River Floodplain Forest



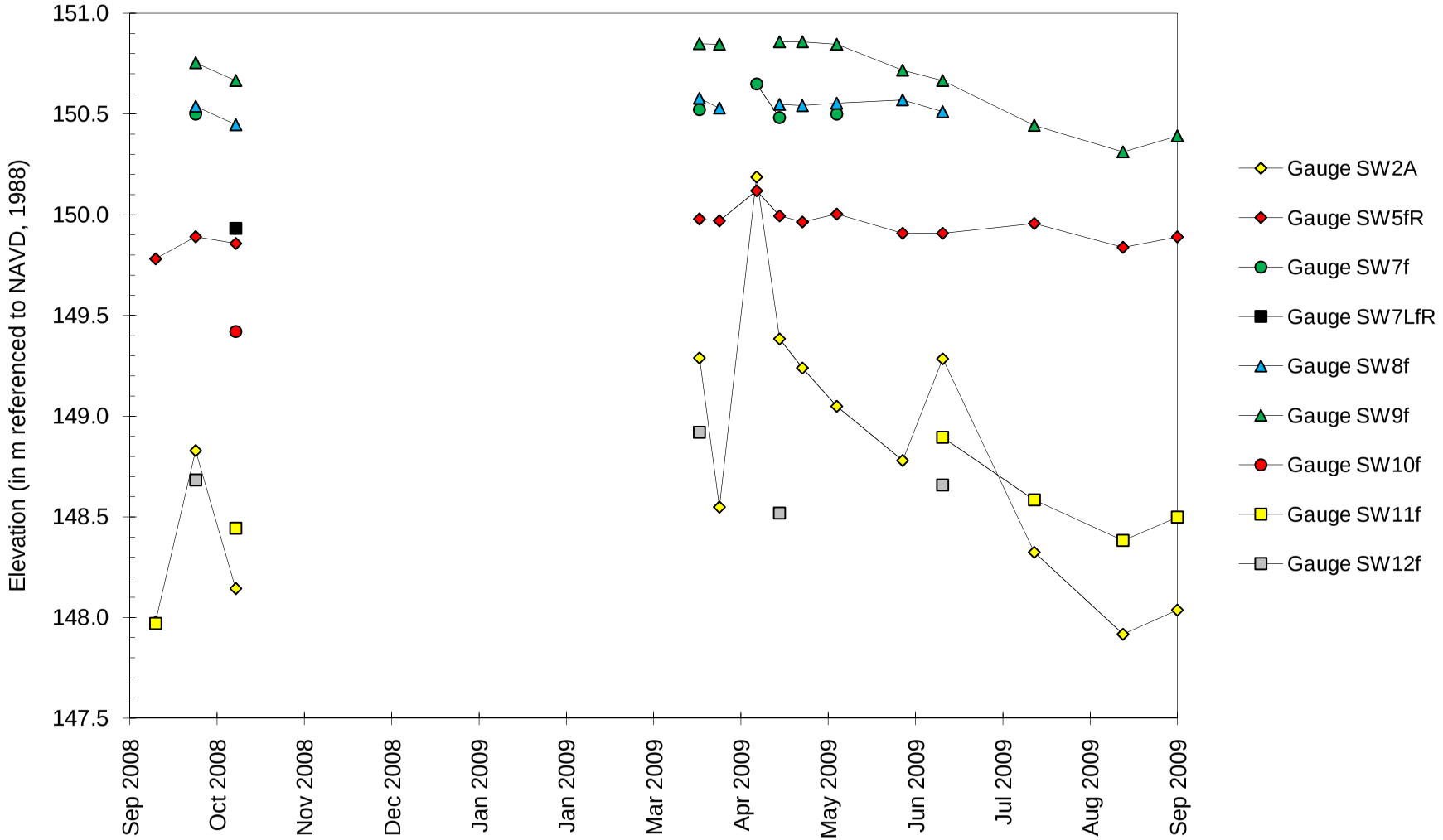
Morris, Illinois River Wetland Bank Site
September 1, 2008 through August 31, 2009

Water-Level Elevations in Selected Data Loggers



Morris, Illinois River Wetland Bank Site
September 1, 2008 through August 31, 2009

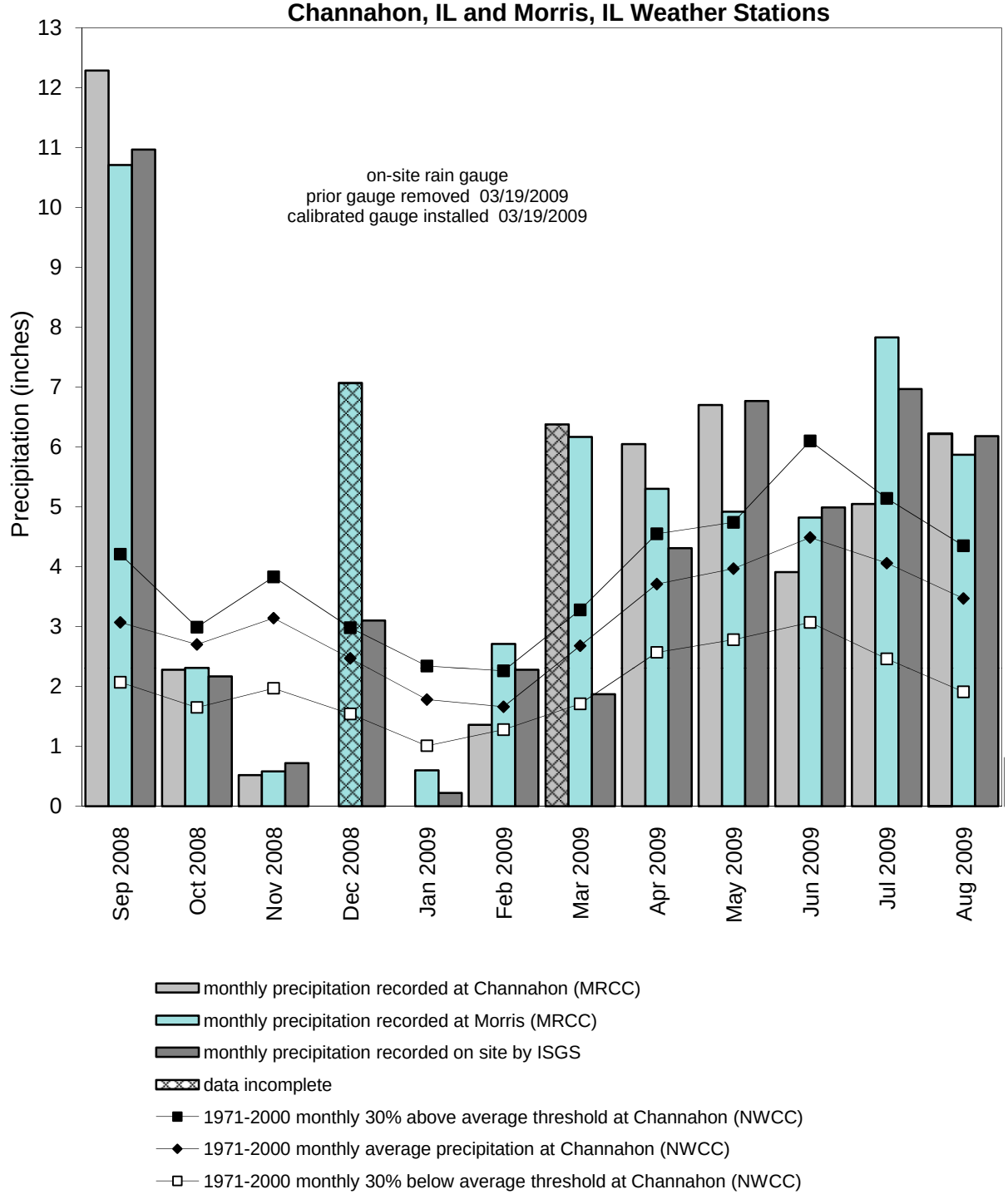
Water-Level Elevations on Stage Gauges



Morris, Illinois River Wetland Bank Site

September 2008 through August 2009

Total Monthly Precipitation Recorded On Site and at the Channahon, IL and Morris, IL Weather Stations



Graph last updated October 15, 2009

FORMER LUEHMANN PROPERTY, NEW RIVER CROSSING **ISGS #51**
POTENTIAL WETLAND COMPENSATION SITE
FAP 999
Madison County, near Stallings, Illinois
Primary Project Manager: Steven E. Benton
Secondary Project Manager: Charles W. Knight

SITE HISTORY

- February 2000: The ISGS was tasked to perform a Level II hydrogeologic assessment of the site.

- May 2003: A Level II hydrogeological characterization report was submitted to IDOT (ISGS Open-File Series 2003–09).

- June 2003: IDOT requested the suspension of ground-water monitoring. The collection of data from surface-water instruments is ongoing.

SUMMARY OF 2009 EVENTS

The total area of the site is 27.5 ha (68 ac). Because ground-water monitoring was suspended at this site, an estimate of the area satisfying the criteria for wetland hydrology was not prepared for this report.

- According to the MRCC, the median date that the growing season begins in nearby Belleville, Illinois, is April 6 and the season lasts 199 days; 5% of the growing season is 10 days and 12.5% of the growing season is 25 days. No starting date for the growing season using methods outlined in the Midwest Regional Supplement (U.S. Army Corps of Engineers 2008) was determined for this site.

- Precipitation at the nearby Edwardsville weather station during the monitoring period was 52.70 inches, which was 138% of normal. Precipitation was at or above normal in September and December 2008, and in February, April, May, and July 2009.

- Measurements in the Cahokia Canal indicate that the water level exceeded 126.8 m (416.0 ft) on 15 occasions during the growing season, September 4 and September 12-21, 2008, and April 10–11, April 19-20, May 8–9, May 16, May 25–June 1, June 8–9, June 15-18, July 2–6, July 12, August 16, August 17, August 20, and September 5, 2009. This is the suggested elevation of an intake culvert described in the Level II Report (ISGS Open-File Series 2003–09).

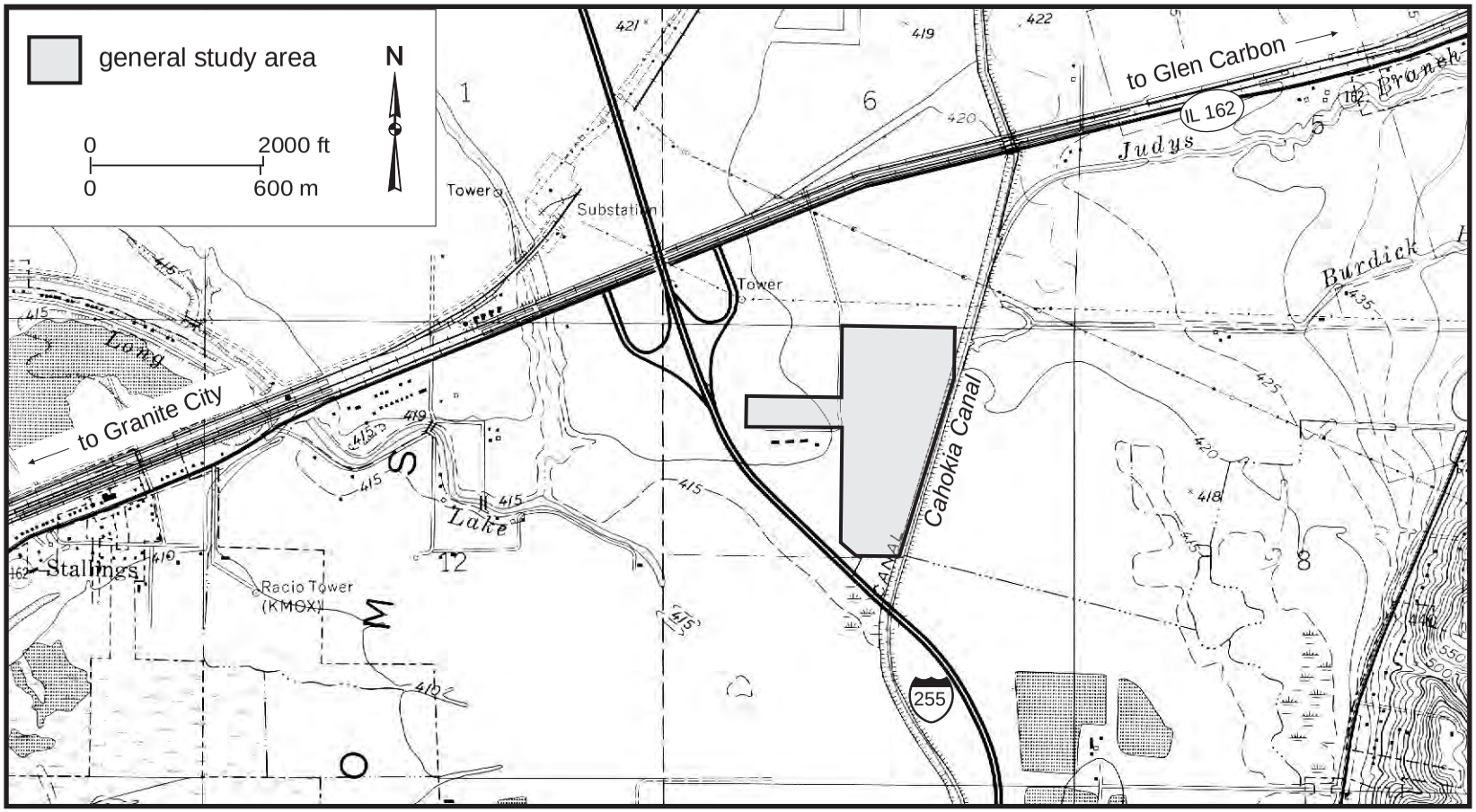
PLANNED FUTURE ACTIVITIES

- Collection of surface-water data will continue at this site until no longer required by IDOT.

Former Luehmann Property, New River Crossing Potential Wetland Compensation Site (FAP 999)

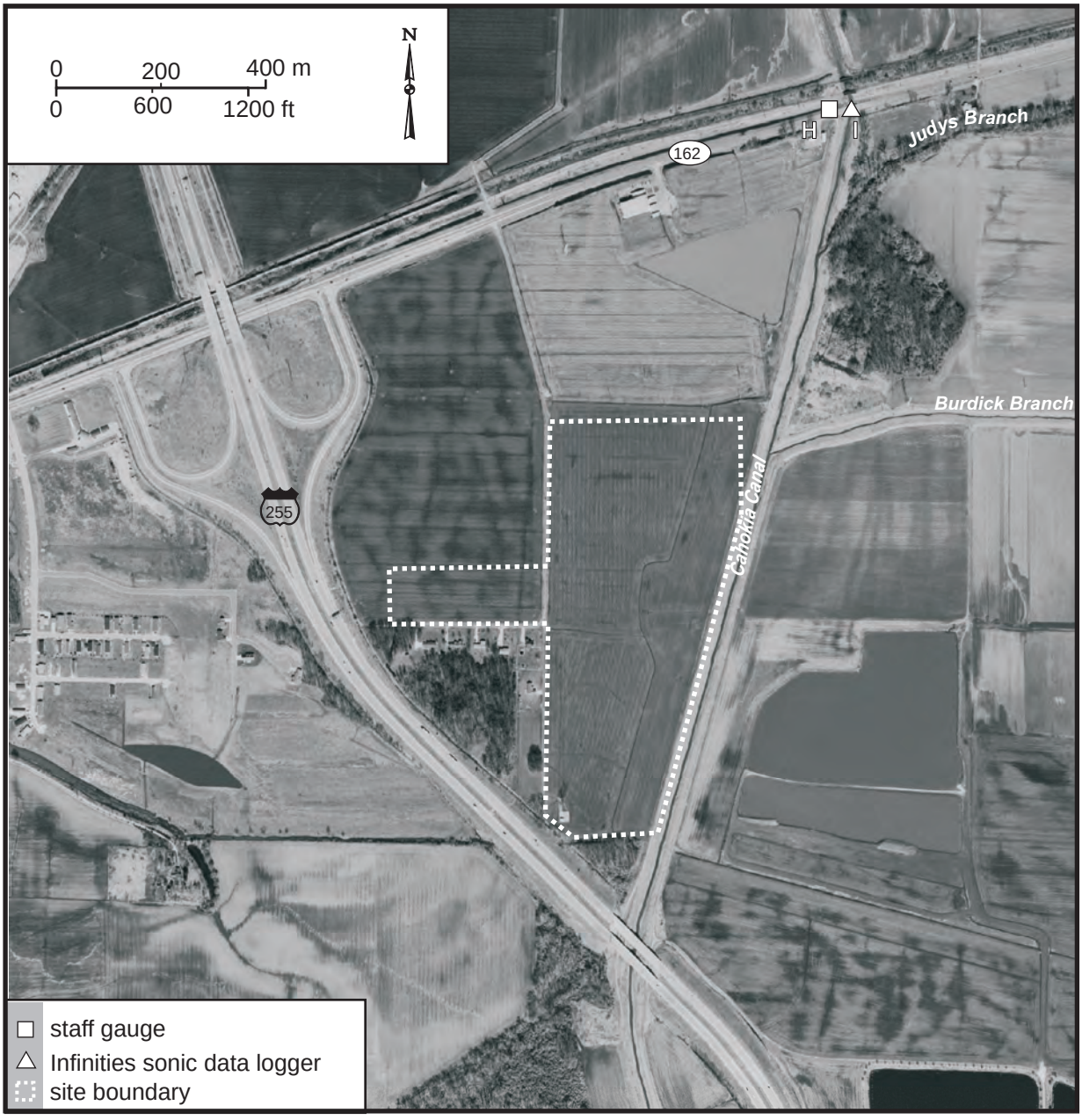
General Study Area and Vicinity

from the USGS Topographic Series, Monks Mound, IL 7.5-minute Quadrangle (USGS 1993)
contour interval is 3 m (10 ft)



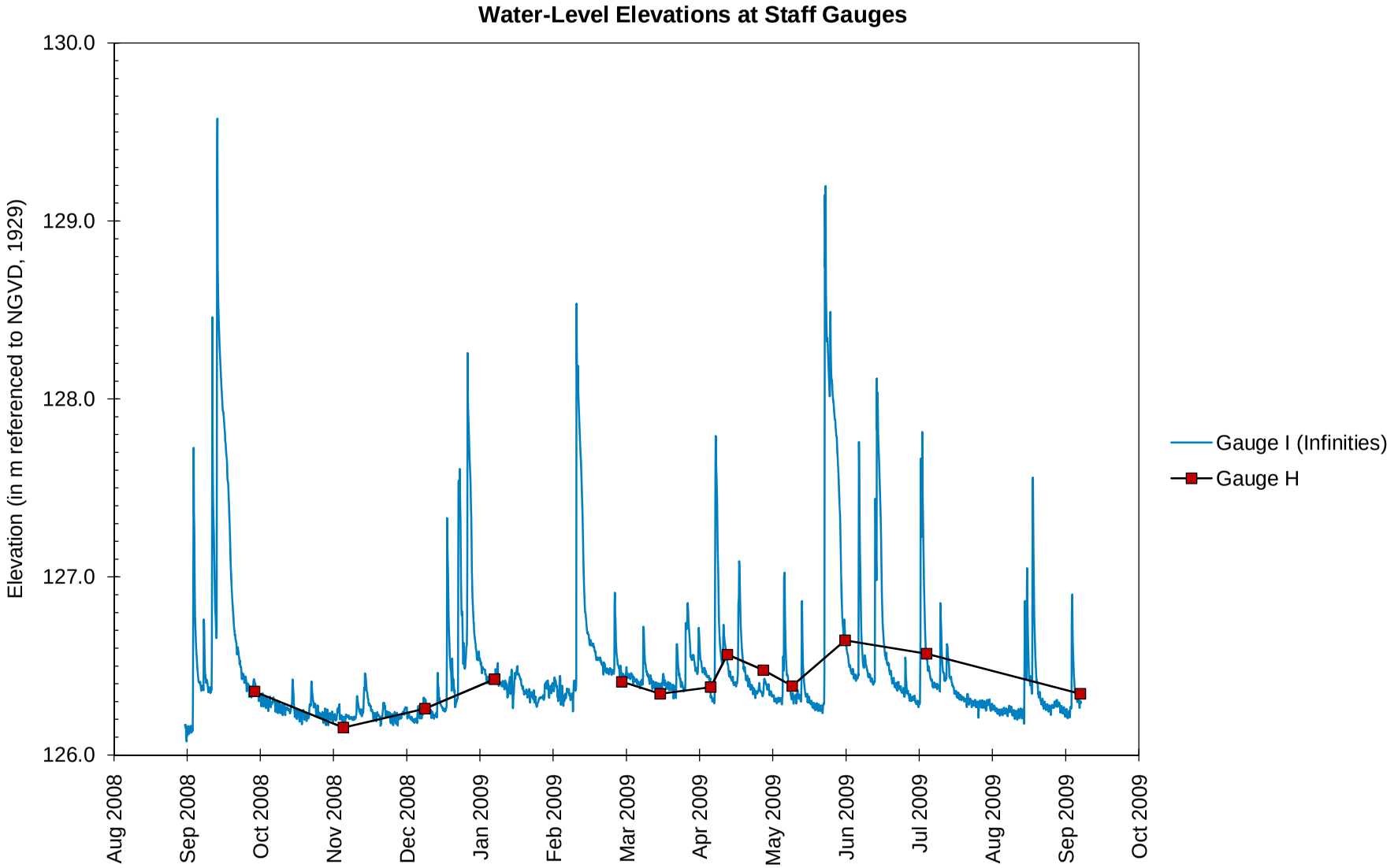
Former Luehmann Property, New River Crossing
Potential Wetland Compensation Site
(FAP 999)
Locations of ISGS Monitoring Instruments

Map based on USGS digital orthophotograph, Monks Mound NE quarter quadrangle
produced from 2005 aerial photography (ISGS 2006)

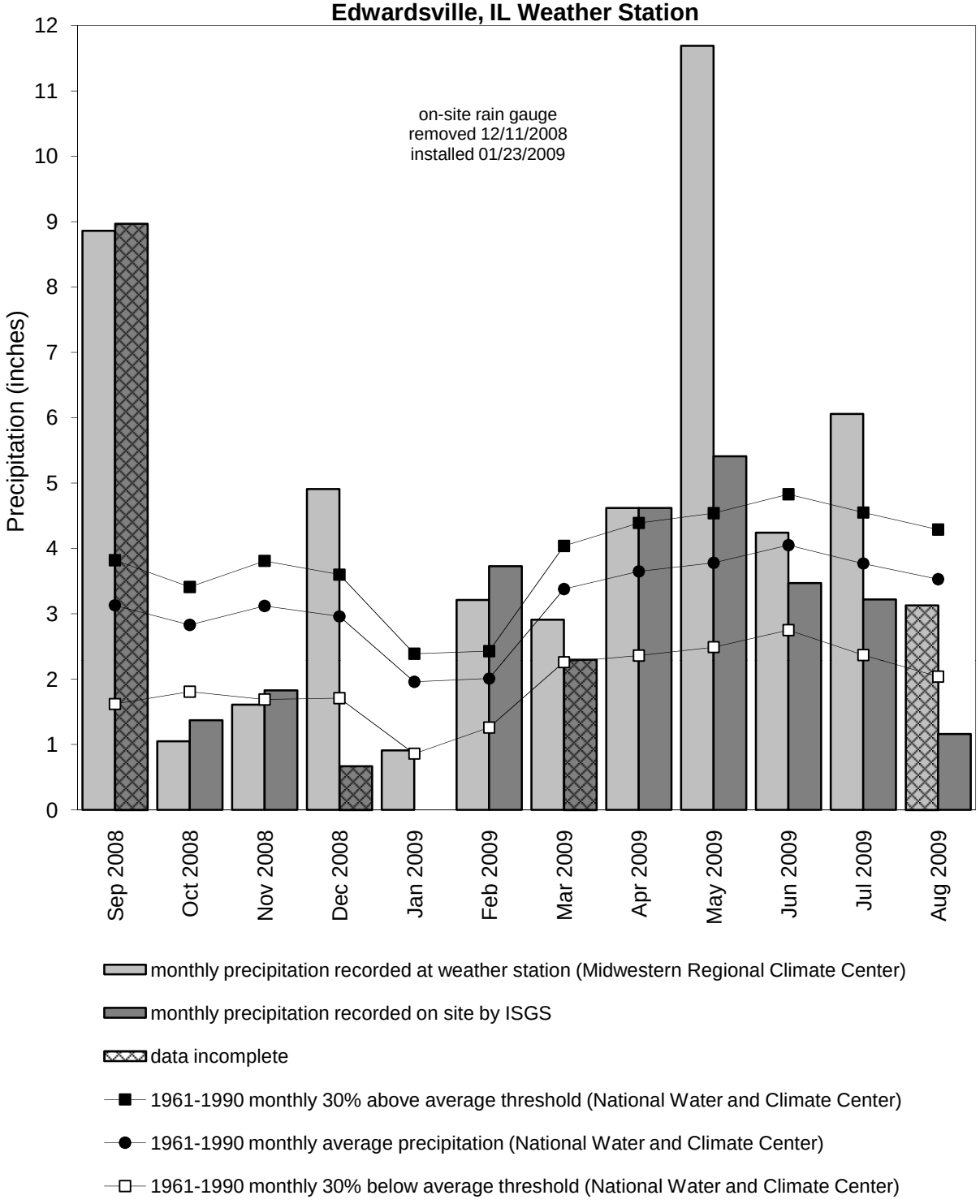


Former Luehmann Property, New River Crossing Potential Wetland Compensation Site

September 1, 2008 through August 31, 2009



Former Luehmann Property, New River Crossing
Potential Wetland Compensation Site
September 2008 through August 2009
Total Monthly Precipitation Recorded On Site and at the Edwardsville, IL Weather Station



Graph last updated October 15, 2009

FORMER WESSEL PROPERTY **ISGS #52**
LA GRANGE WETLAND BANK SITE
Sequence #9579
Brown County, near La Grange, Illinois
Primary Project Manager: Keith W. Carr
Secondary Project Manager: Geoffrey E. Pociask

SITE HISTORY

- February 2000: ISGS was tasked by IDOT to conduct a Level II hydrogeologic assessment of the site, and began on-site activities in the Spring of 2000.

- January 2003: ISGS submitted a wetland banking instrument to IDOT.

- January 2005: A Level II report was submitted to IDOT (ISGS Open-File Series 2005–02).

- Fall 2005 and 2006: Extensive earthworks were undertaken by IDOT, including filling and plugging of several ditches, reshaping of the east levee, construction of a raised access road, and the excavation of a large basin in the north-central area of the site. Two large drainage tiles were located and removed by IDOT. A partial repair of the south levee breach was also completed by an adjacent landowner. In Fall of 2006, 2,849 trees were planted in Fields 4 and 7.

- Winter and Spring 2009: Similar to 2008, winter flooding and ice action caused damage to wells and planted trees. A total of 7 soil-zone wells were installed in March as replacements for damaged wells. A long-duration flood affected the site in 2009, inundating most of the property from mid-March to late May.

WETLAND HYDROLOGY CALCULATION FOR 2009

We estimate that the total area of the site that satisfied wetland hydrology criteria (Environmental Laboratory 1987) for greater than 5% of the growing season in 2009 was 582 ha (1438 ac) out of a total site area of 666 ha (1645 ac). Further, 578 ha (1429 ac) also satisfied wetland hydrology criteria for greater than 12.5% of the growing season. Using new guidance proposed by the U.S. Army Corps of Engineers (2008), we estimate that 580 ha (1434 ac) satisfied wetland hydrology criteria for 14 or more consecutive days during the growing season. These estimates are based on the following factors:

- According to the MRCC, the median date that the growing season begins in nearby Rushville, Illinois is April 6 and the season lasts 208 days; 5% of the growing season is 10 days and 12.5% of the growing season is 26 days. According to methods outlined in the Midwest Regional Supplement (U.S. Army Corps of Engineers 2008), we estimate that February 27 was the starting date of the 2009 growing season based on vegetation growth and development observed at the wetland compensation site.

- Total precipitation for the monitoring period was 150% of normal. During the late-winter to spring period from February through June 2009, precipitation was 156% of normal, resulting in atypically moist conditions in the early part of the growing season. Only November 2008 and January 2009 had below normal precipitation; all other months

were within the normal range or above normal. Large, up-basin precipitation totals also triggered multiple flood peaks that kept the site mostly inundated during the spring of 2009.

- Due to long-duration flooding at the site, the U.S. Army Corps of Engineers gauge at the nearby lock and dam was the primary source of water-level elevation data. Only two nests of monitoring wells were accessible above the flood line for reading or surveying for most of the spring. Neither of the two soil-zone wells at these nests (2S or 14SR) satisfied wetland hydrology criteria.

- Water levels recorded at the U.S. Army Corps of Engineers stream gauging station showed surface-water inundation for a period sufficient to satisfy wetland hydrology criteria at an elevation of at least 134.75 m (442.09 ft) for greater than 5% of the growing season, an elevation of at least 134.50 m (441.27 ft) for 14 or more days of the growing season, and at an elevation of at least 134.25 m (440.45 ft) for greater than 12.5% of the growing season. There is good agreement between this gauge and on-site monitoring instruments in this year and in previous years.

PLANNED FUTURE ACTIVITIES

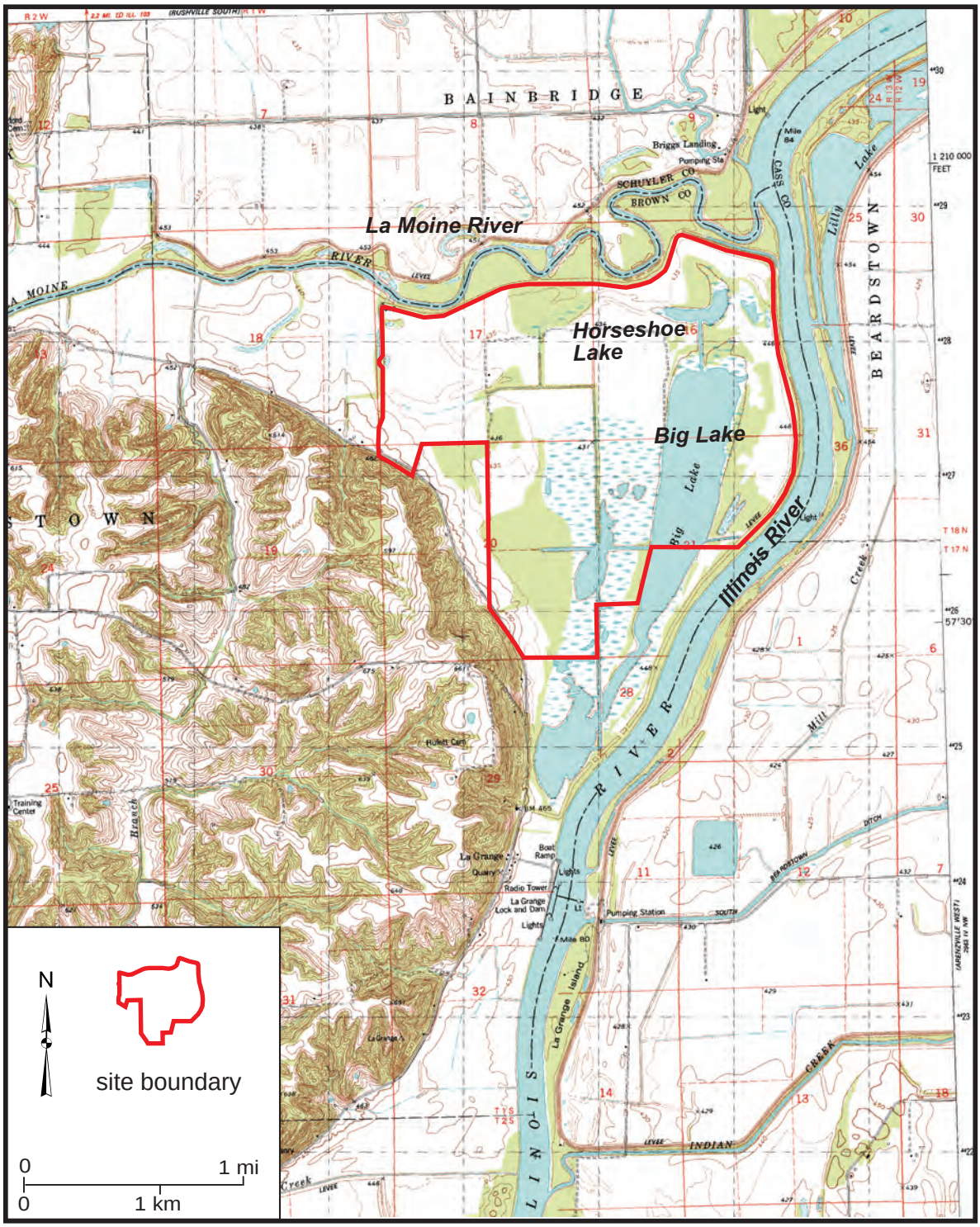
- Three flood-resistant data loggers will be added to the site in the Fall of 2009. Soil-zone wells damaged in the 2009 flooding will also be replaced prior to the start of the growing season. In addition, three water-quality dataloggers will be installed to help quantify site functions.

- Monitoring of hydrology will continue until no longer required by IDOT.

Former Wessel Property, La Grange Wetland Bank Site

General Study Area and Vicinity

from the USGS Topographic Series, Cooperstown, IL 7.5-minute Quadrangle (USGS 1980)
contour interval is 10 feet

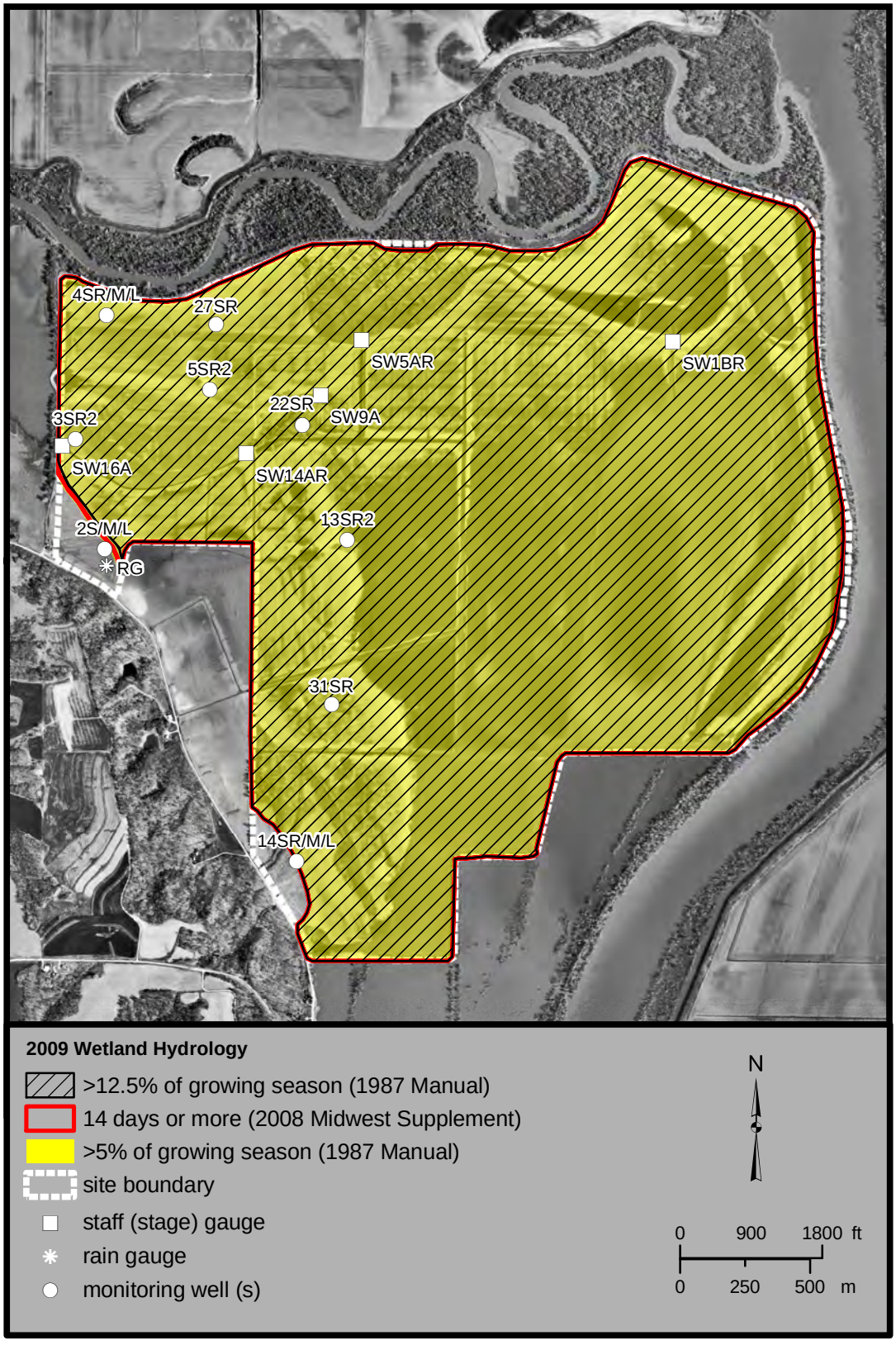


Former Wessel Property, La Grange Wetland Bank Site

Estimated Areal Extent of 2009 Wetland Hydrology

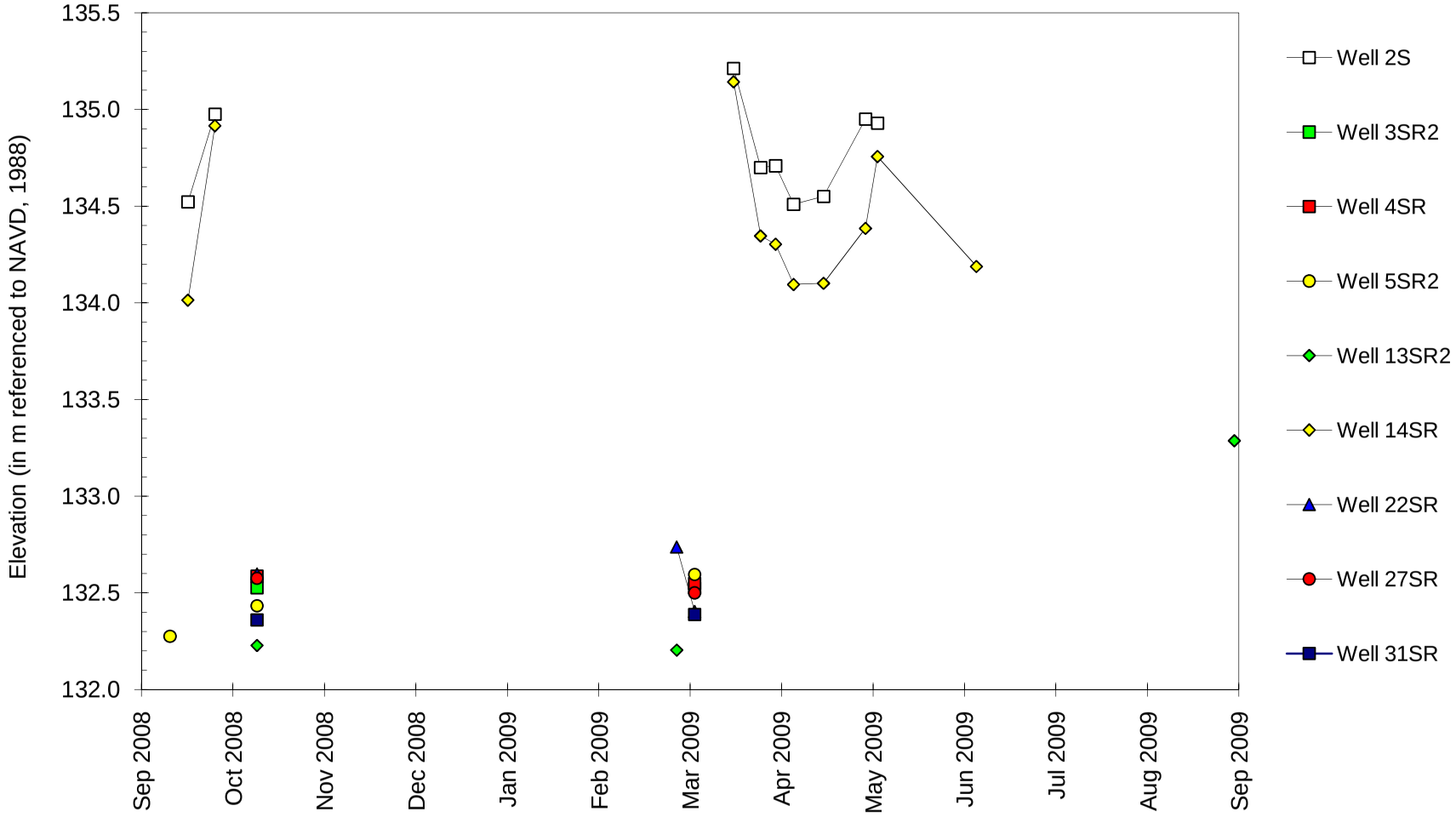
September 1, 2008 through August 31, 2009

map based upon USGS digital orthophotograph, Cooperstown NE quarter quadrangle, produced from 4/14/98 aerial photography (ISGS 2002)



Former Wessel Property, La Grange Wetland Bank Site
September 1, 2008 through August 31, 2009

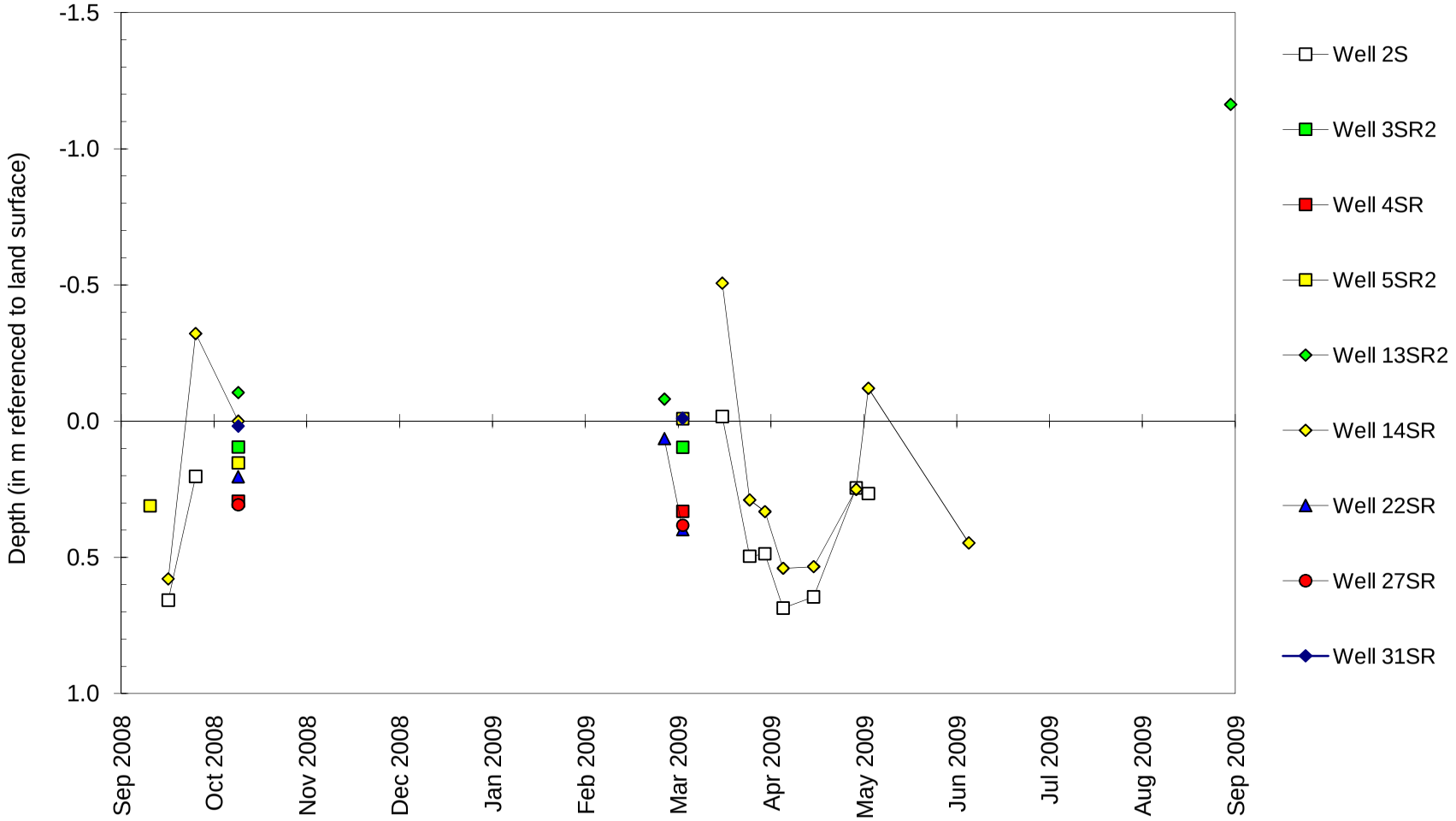
Water-Level Elevations in Shallow Monitoring Wells in the Terrace and Fan



Former Wessel Property, La Grange Wetland Bank Site

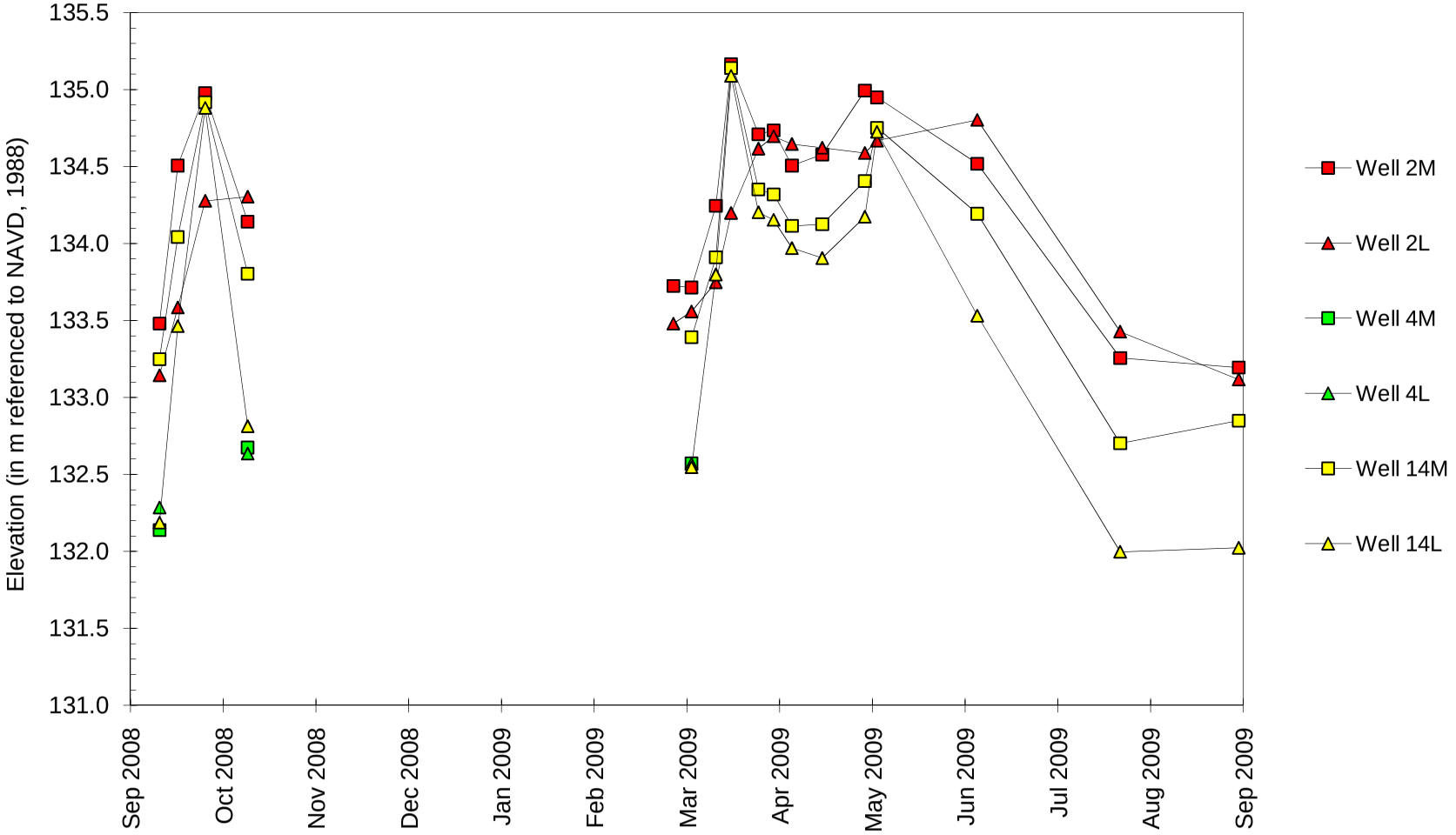
September 1, 2008 through August 31, 2009

Depth to Water
in Shallow Monitoring Wells
in the Terrace and Fan



Former Wessel Property, La Grange Wetland Bank Site
September 1, 2008 through August 31, 2009

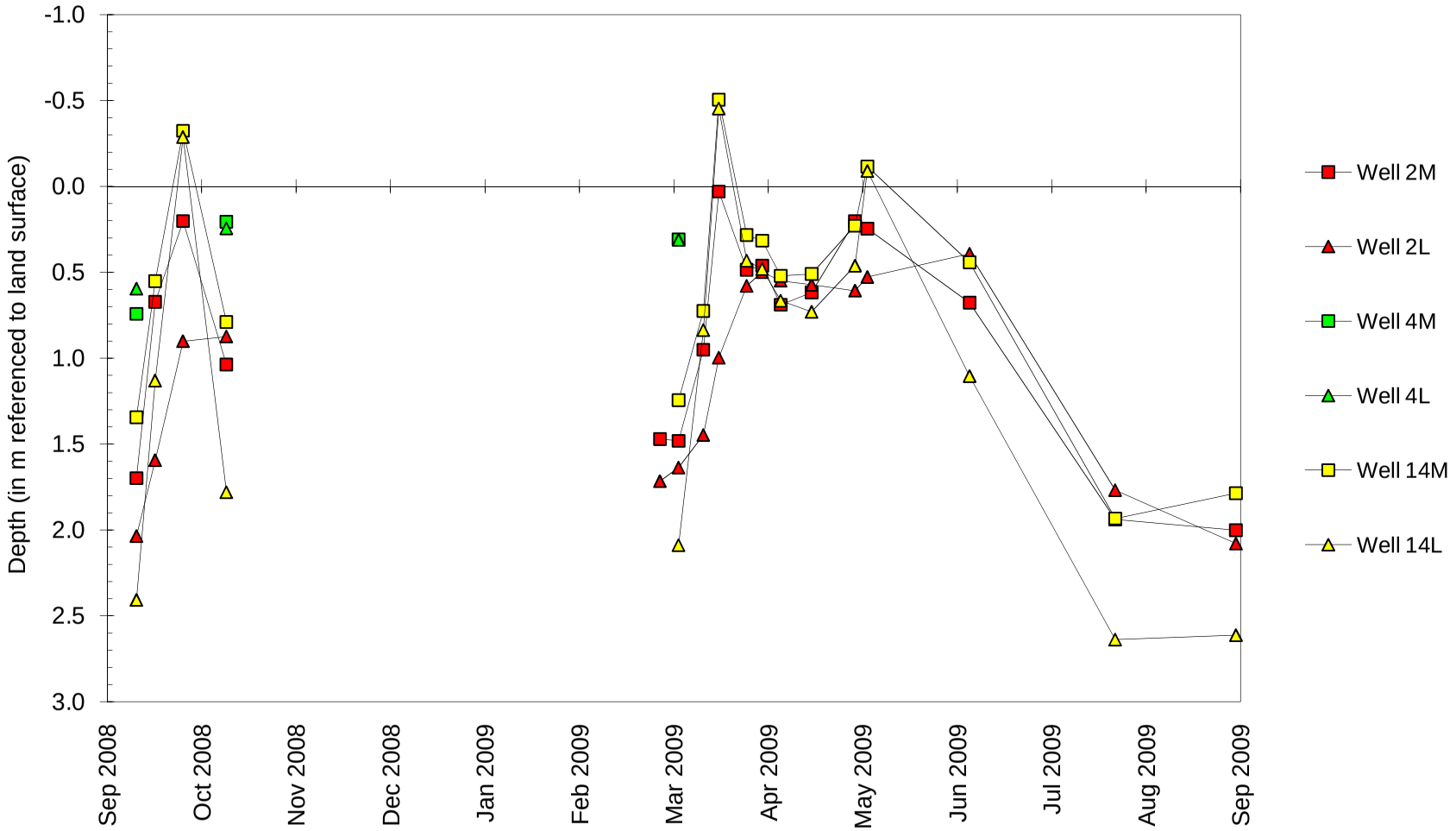
Water-Level Elevations in Deeper Monitoring Wells in the Terrace and Fan



Former Wessel Property, La Grange Wetland Bank Site

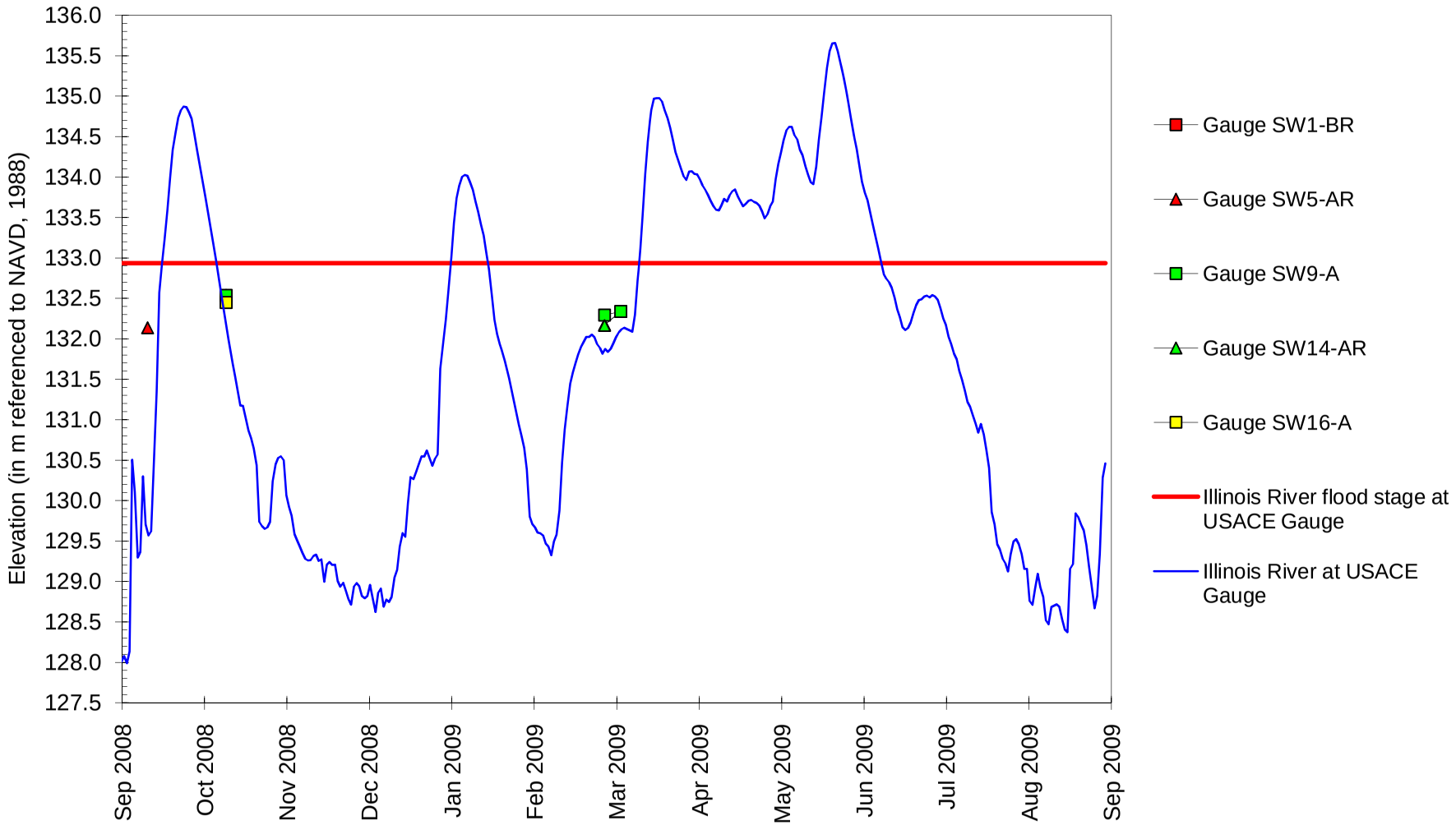
September 1, 2008 through August 31, 2009

Depth to Water
in Deeper Monitoring Wells
in the Terrace and Fan



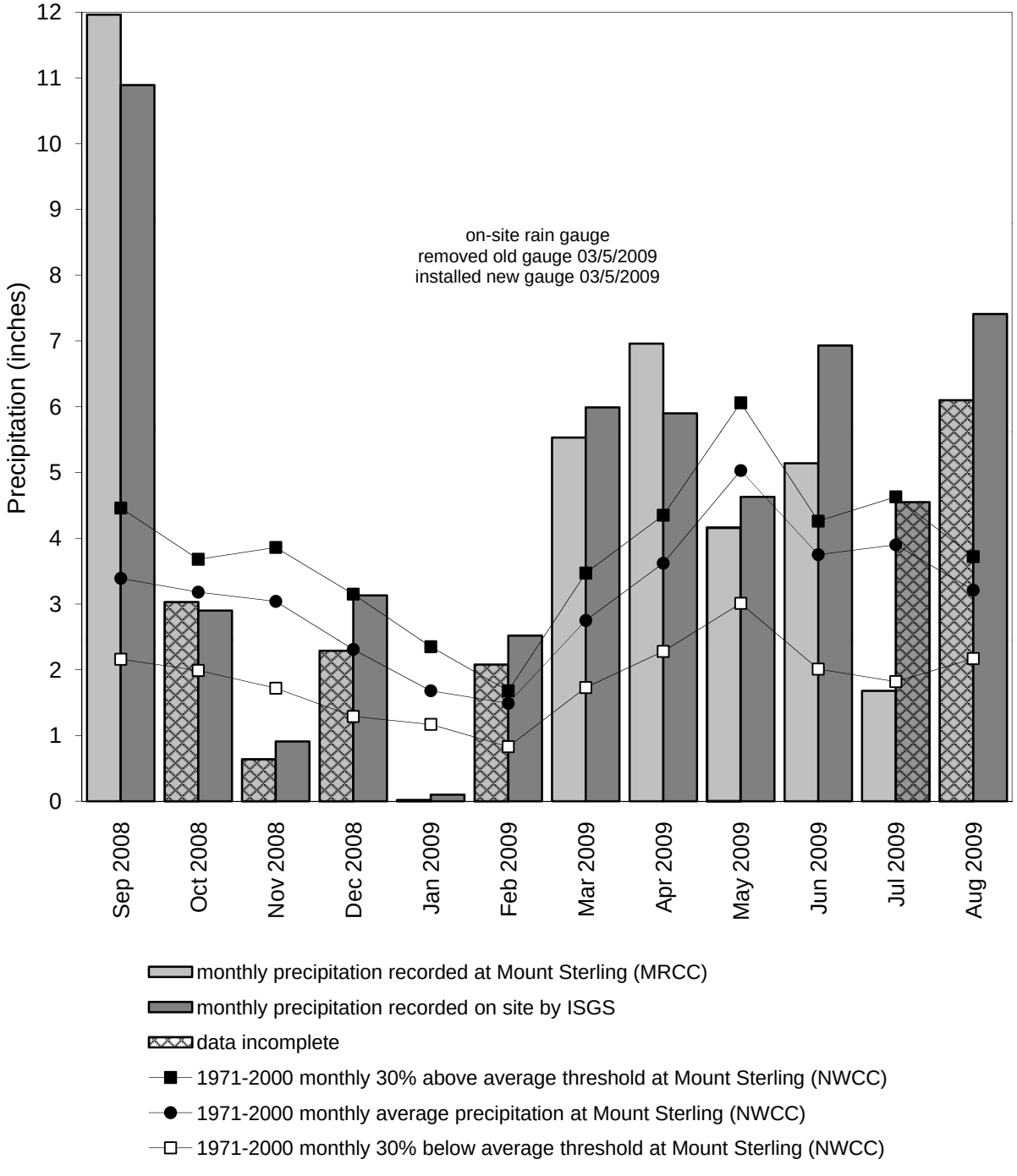
Former Wessel Property, La Grange Wetland Bank Site
September 1, 2008 through August 31, 2009

Water-Level Elevations on Surface Water Gauges



Former Wessel Property,
La Grange Wetland Bank
September 2008 through August 2009

Total Monthly Precipitation Recorded On Site and at the Mount Sterling, IL Weather Station



Graph last updated October 15, 2009

FAIRMONT CITY, NEW RIVER CROSSING **ISGS #53**
POTENTIAL WETLAND COMPENSATION SITE
FAP 999
Saint Clair County, near Fairmont City, Illinois
Primary Project Manager: Steven E. Benton
Secondary Project Manager: Charles W. Knight

SITE HISTORY

- August 1999: The ISGS conducted an initial site evaluation. The results were reported to IDOT by letter in November.

- September 2000: ISGS began monitoring ground- and surface-water levels.

- March 2003: A Level II report was submitted to IDOT (ISGS Open-File Series 2003–04).

WETLAND HYDROLOGY CALCULATION FOR 2009

The area of the site that satisfied wetland hydrology criteria (Environmental Laboratory 1987) in 2009 for more than 5% of the growing season was estimated to be 14.5 ha (35.8 ac) out of a total area of 32.4 ha (80.0 ac). The area that satisfied wetland hydrology criteria for more than 12.5% of the 2009 growing season was estimated to be 13.3 ha (33.0 ac). Using new guidance proposed by the U. S. Army Corps of Engineers (2008), we estimate that 13.3 ha (33.0 ac) satisfied wetland hydrology criteria for 14 or more consecutive days during the growing season. These estimates are based on the following factors:

- According to the MRCC, the median date that the growing season begins in nearby Belleville, Illinois, is April 6 and the season lasts 199 days; 5% of the growing season is 10 days and 12.5% of the growing season is 25 days. According to methods outlined in the Midwest Regional Supplement (U.S. Army Corps of Engineers 2008), we estimate that March 8 was the starting date of the 2009 growing season based on both vegetation growth and development and soil temperatures measured at the wetland compensation site.

- Total precipitation recorded at the Belleville, Illinois weather station during the monitoring period was 110% of normal. Precipitation was at or above normal in September and December 2008, in February 2009, and from April through August 2009. Total precipitation in the spring (April through June) was 140% of normal.

- In 2009, wetland hydrology occurred for more than 5% of the growing season at wells 3S, 4S, 5S, 6S, 9S, 13S, 14S, 15S, 16S, 17SR, 23S, 24S, 25S, and 26S. Except for well 6S, wetland hydrology also occurred at these wells for 14 or more consecutive days and for more than 12.5% of the growing season.

- Surface-water elevations measured in the pond (SW Pond, gauge AR) and drainage ditch along the base of the terrace (gauges B and BR) reveal that surface-water elevation was at or above 122.22 m (401.00 ft) for more than 5% of the growing season, at or above 122.20 m (400.94 ft) for 14 or more consecutive days, and at or above 122.18 m (400.87 ft) for more than 12.5% of the growing season. At gauges D and F, on the east side of the site, surface-water elevation was above 122.36 m

(401.46 ft) for 5%, for 14 or more consecutive days, and for 12.5% of the growing season.

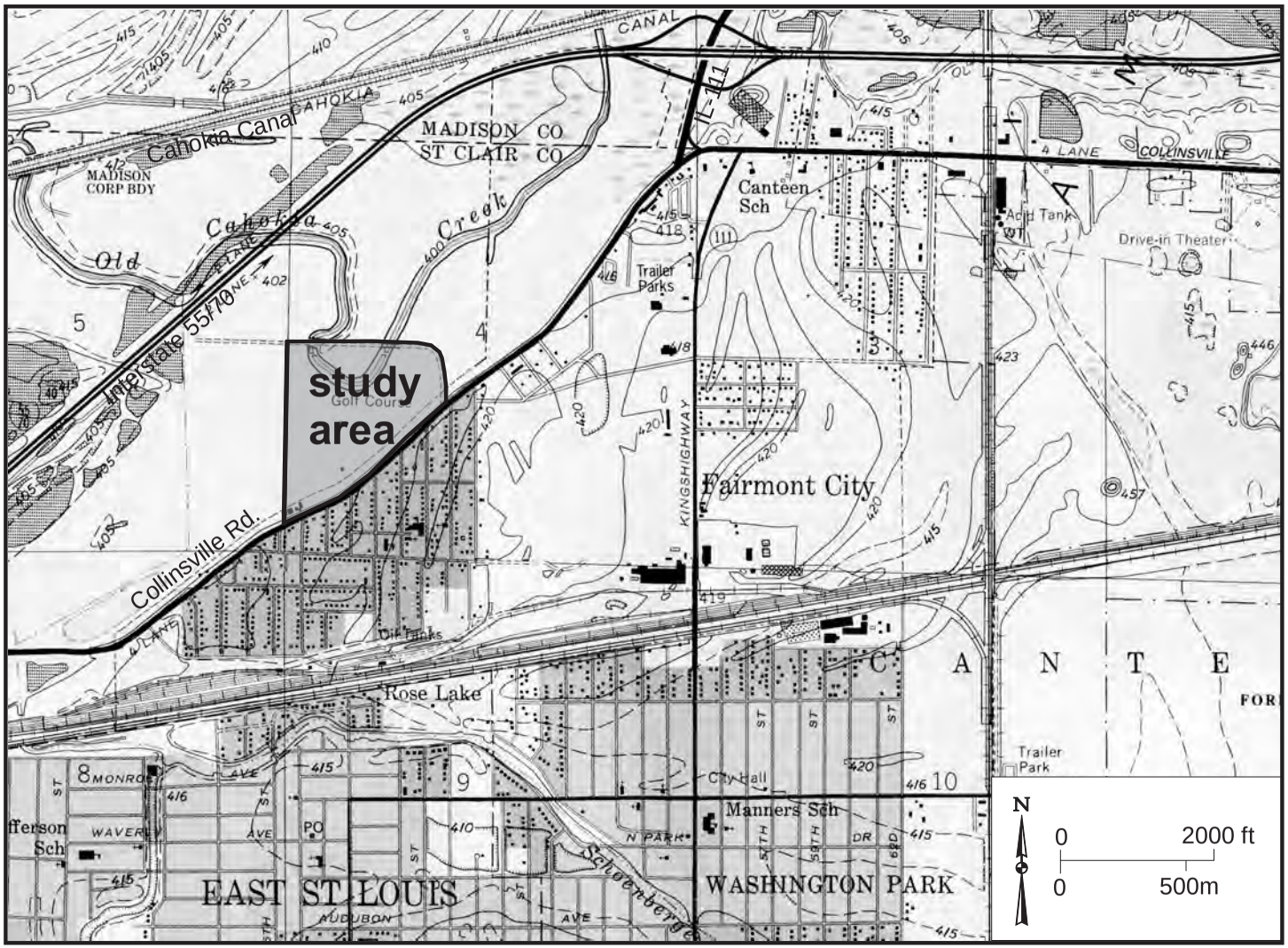
PLANNED FUTURE ACTIVITIES

- Monitoring will continue at this site until notified otherwise by IDOT.

Fairmont City, New River Crossing Potential Wetland Compensation Site (FAP 999)

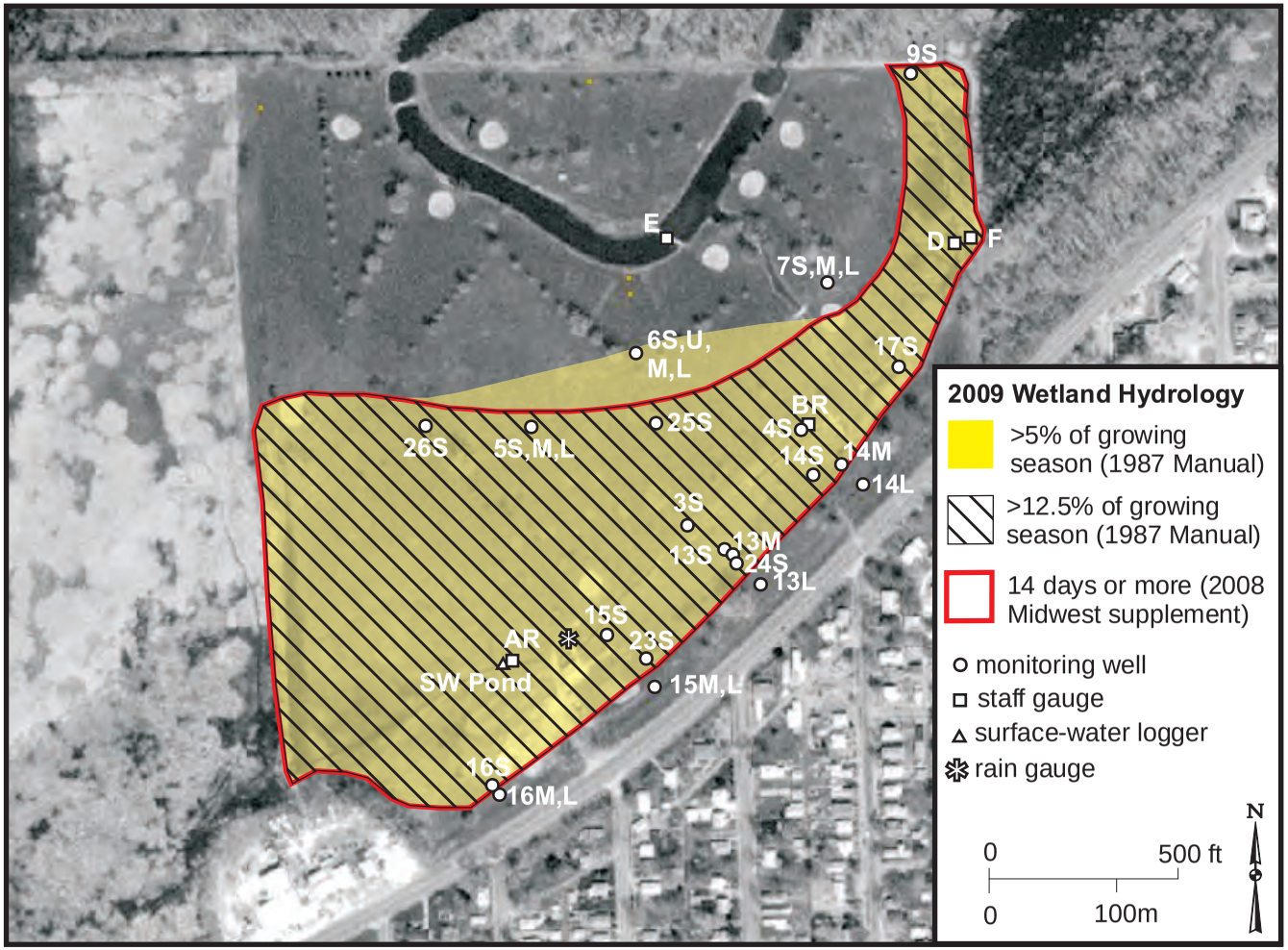
General Study Area and Vicinity

from the USGS Topographic Series, Monks Mound, IL 7.5-minute Quadrangle (USGS 1993)



Fairmont City Potential Wetland Compensation Site
(FAP 999)
Estimated Areal Extent of 2009 Wetland Hydrology
September 1, 2008 through August 31, 2009

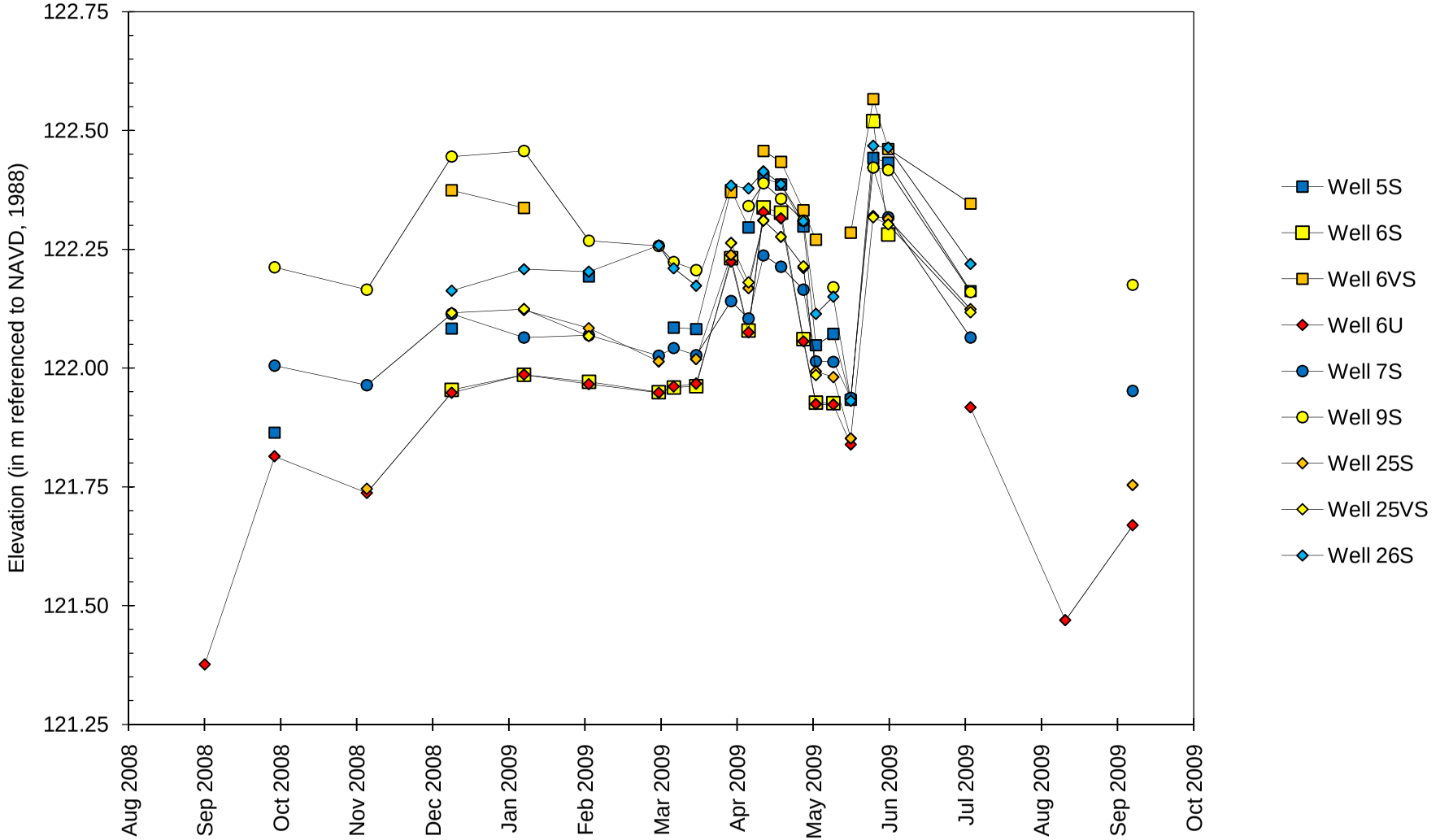
Map based on USGS digital orthophotograph, Monks Mound SW quarter quadrangle
produced from 04/08/1999 aerial photography (ISGS 2001)
monitoring well, staff gauge and data logger locations from GPS survey



Fairmont City, New River Crossing Potential Wetland Compensation Site

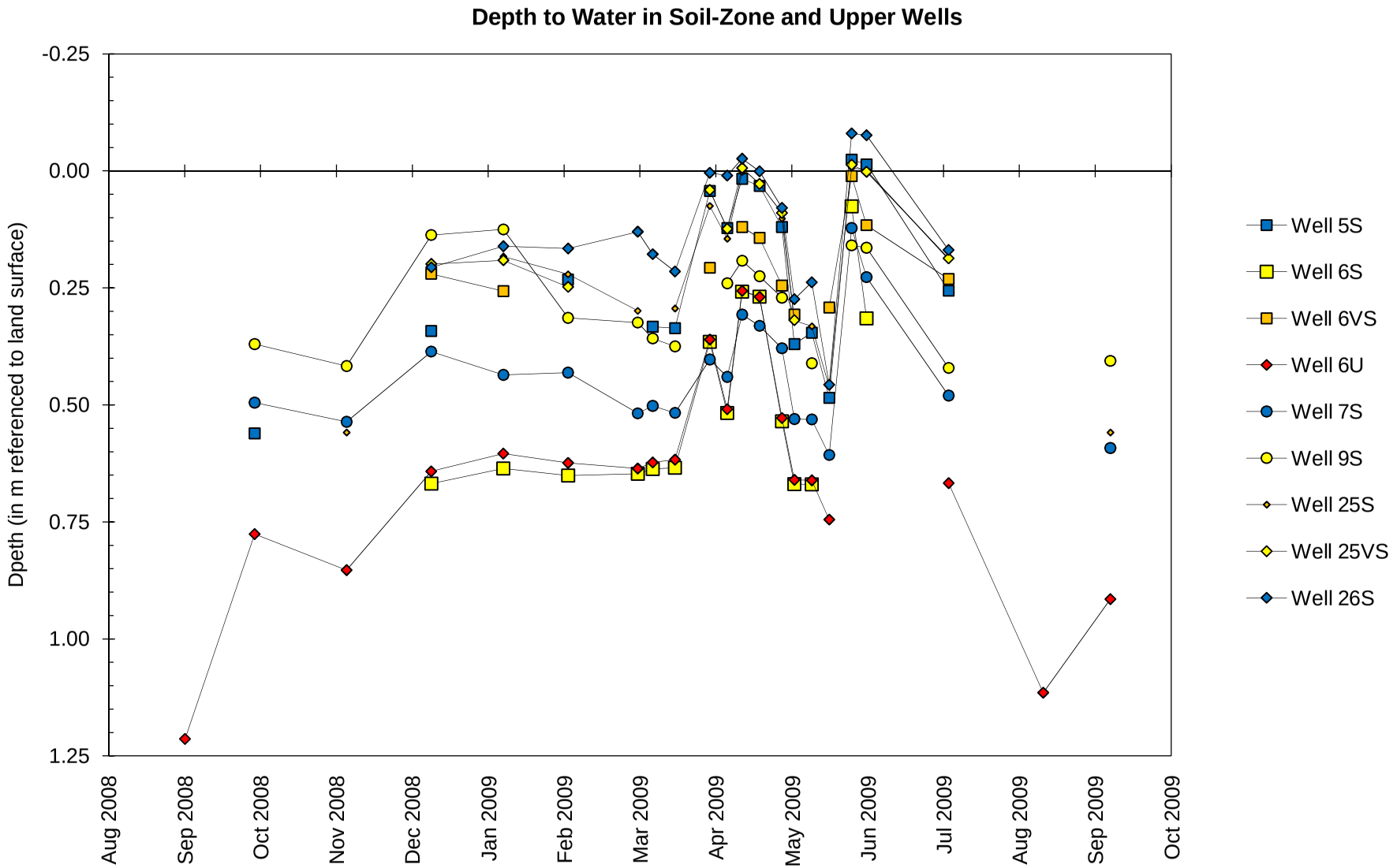
September 1, 2008 through August 31, 2009

Water-Level Elevations in Soil-Zone and Upper Wells



Fairmont City, New River Crossing Potential Wetland Compensation Site

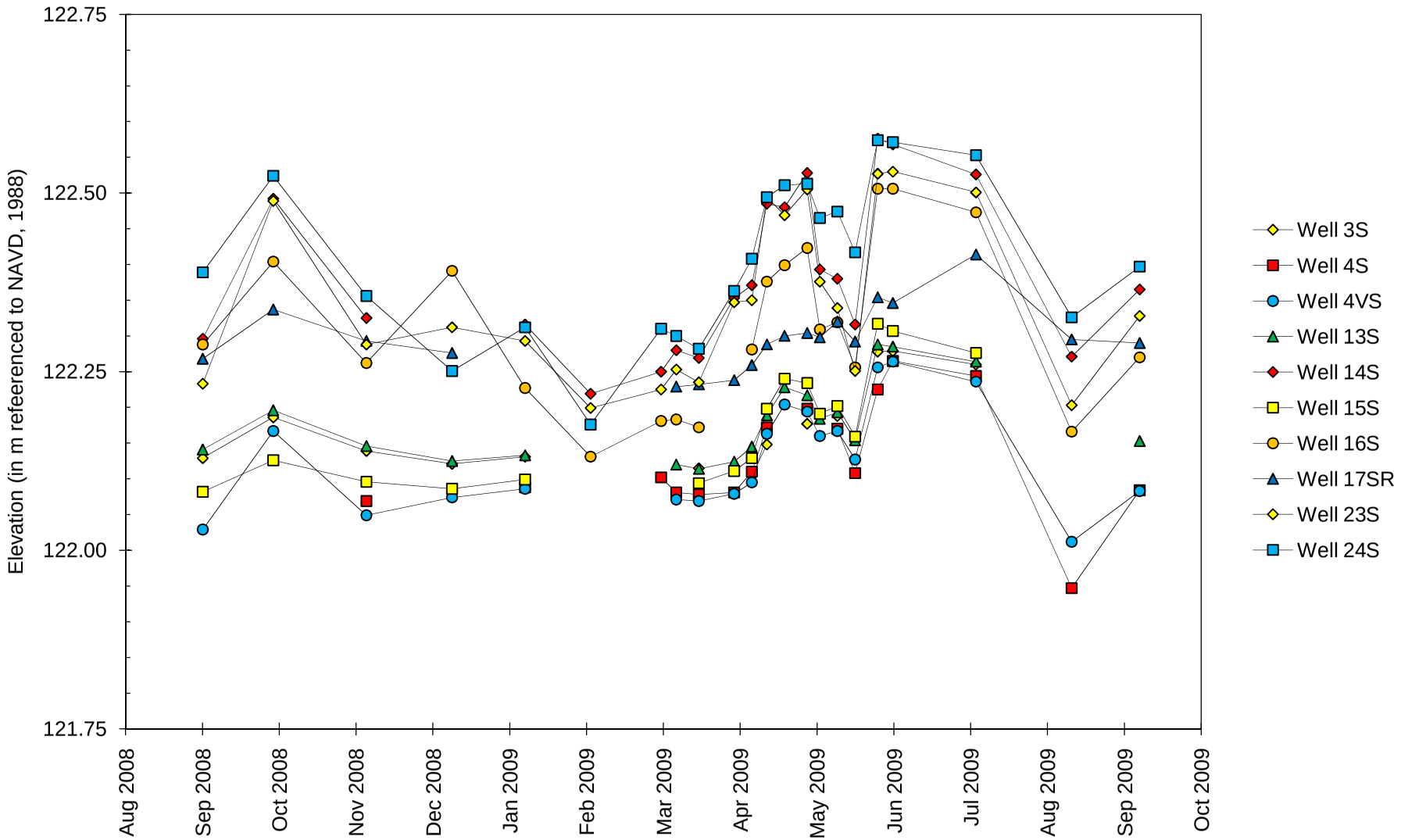
September 1, 2008 through August 31, 2009



Fairmont City, New River Crossing Potential Wetland Compensation Site

September 1, 2008 through August 31, 2009

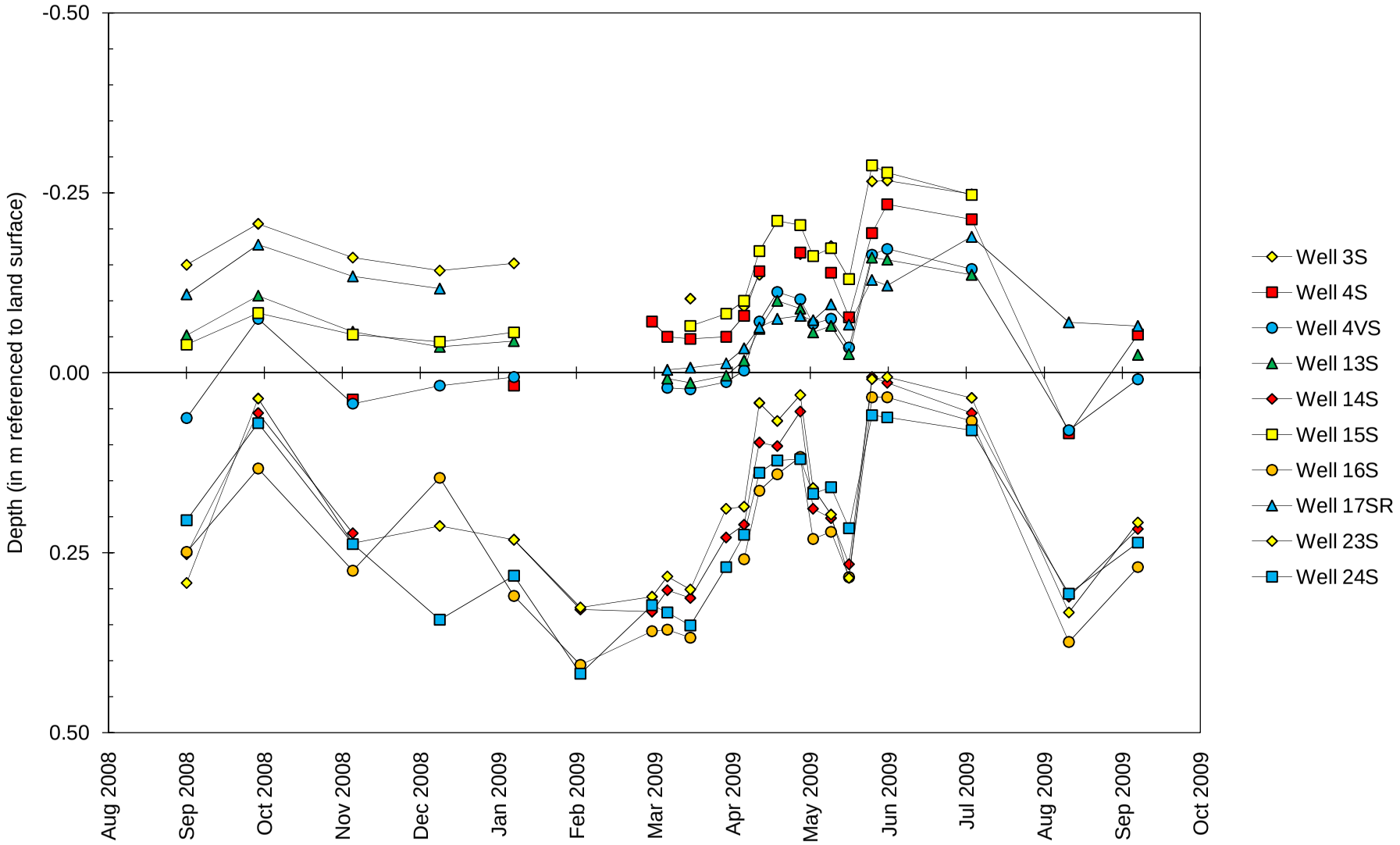
Water-Level Elevations in Soil-Zone and Upper Wells



Fairmont City, New River Crossing Potential Wetland Compensation Site

September 1, 2008 through August 31, 2009

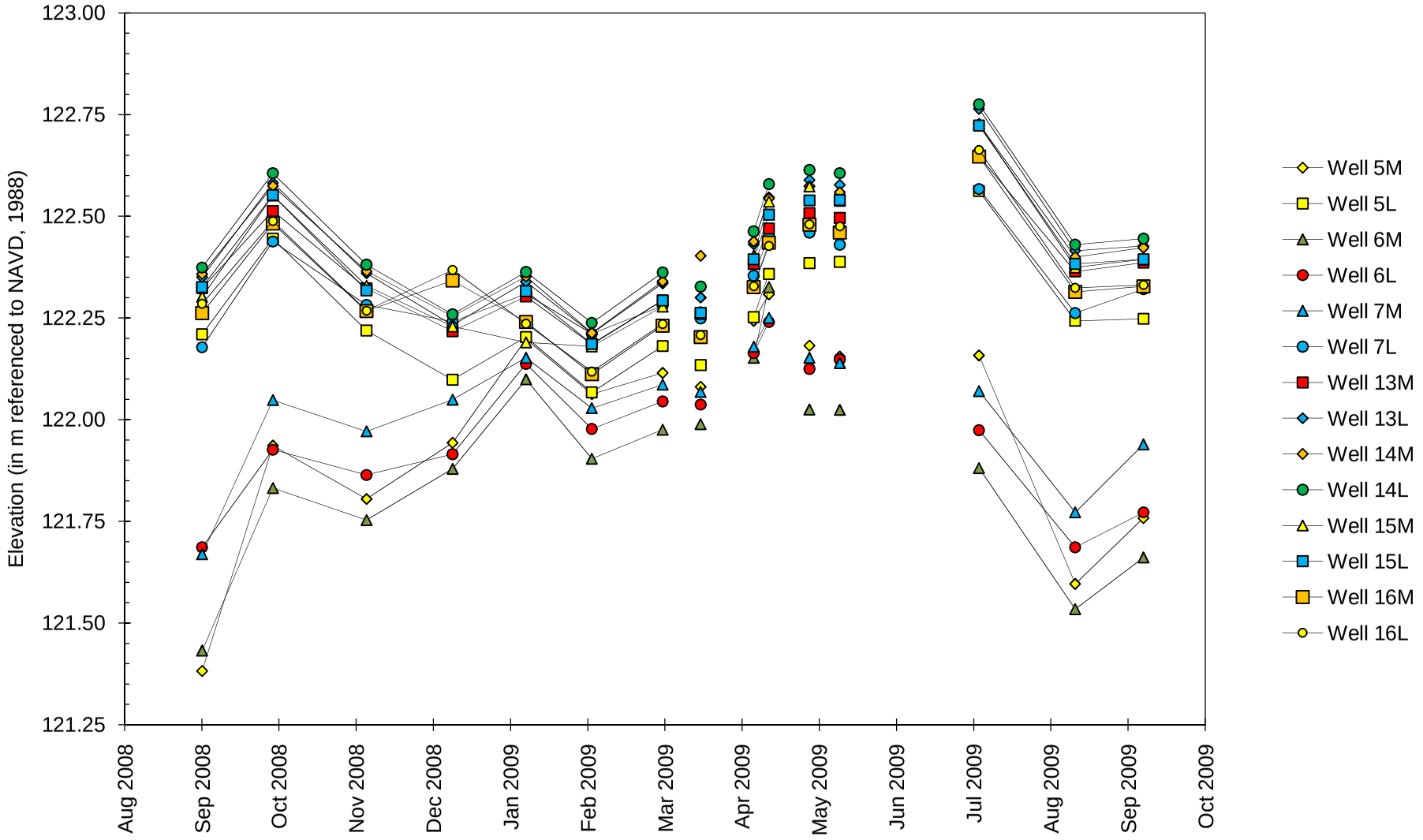
Depth to Water in Soil-Zone and Upper Wells



Fairmont City, New River Crossing Potential Wetland Compensation Site

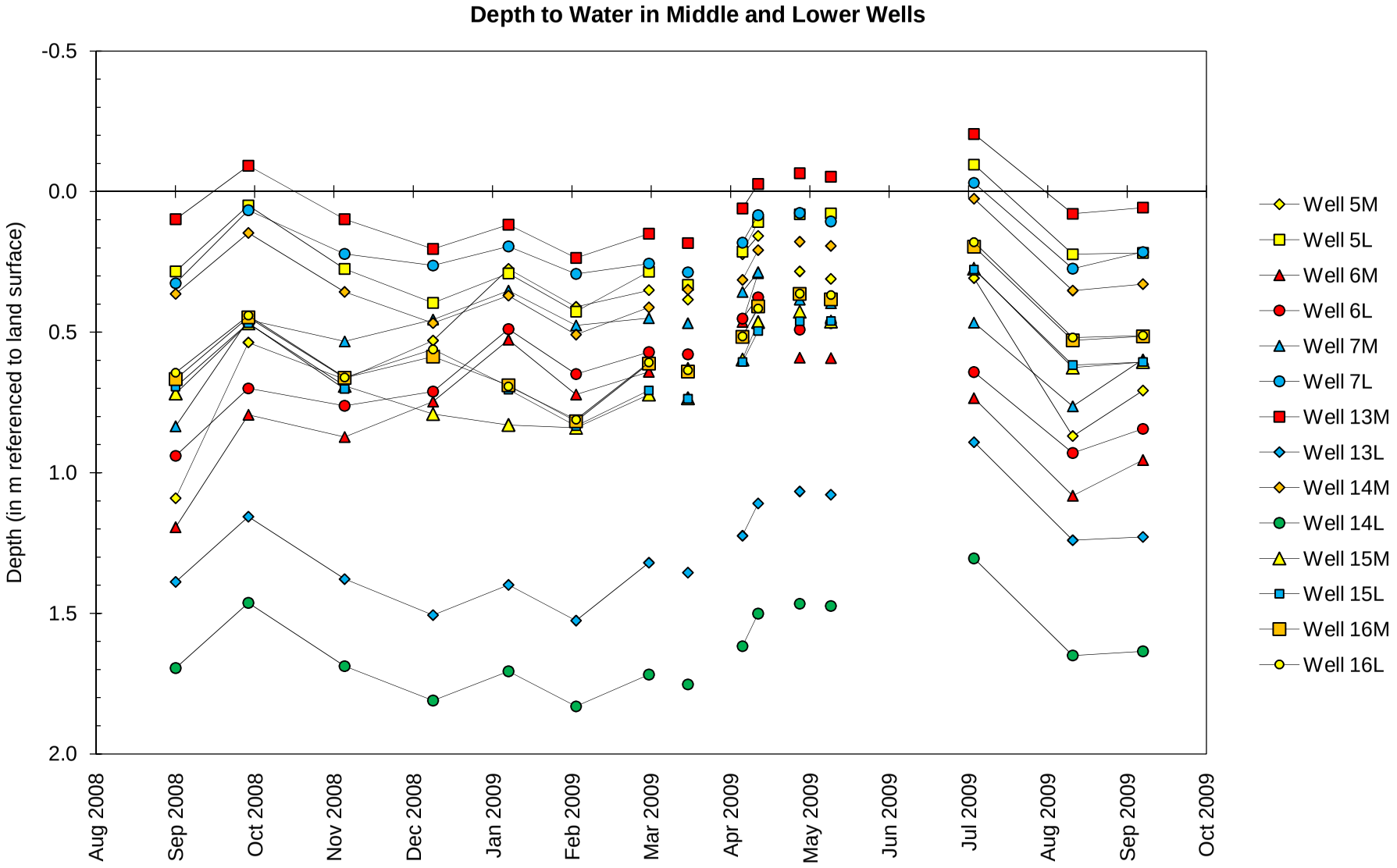
September 1, 2008 through August 31, 2009

Water-Level Elevations in Middle and Lower Wells



Fairmont City, New River Crossing Potential Wetland Compensation Site

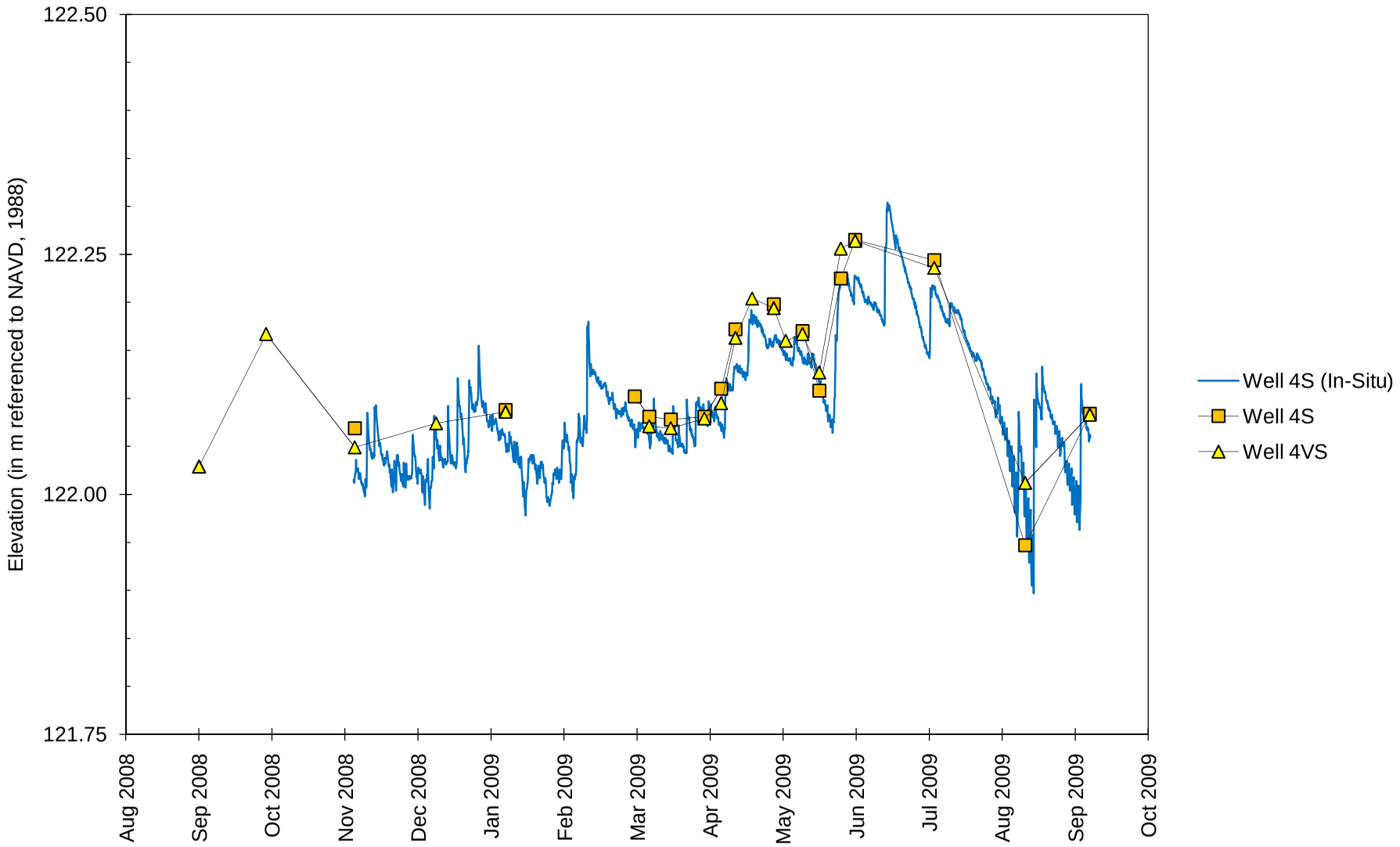
September 1, 2008 through August 31, 2009



Fairmont City, New River Crossing Potential Wetland Compensation Site

September 1, 2008 through August 31, 2009

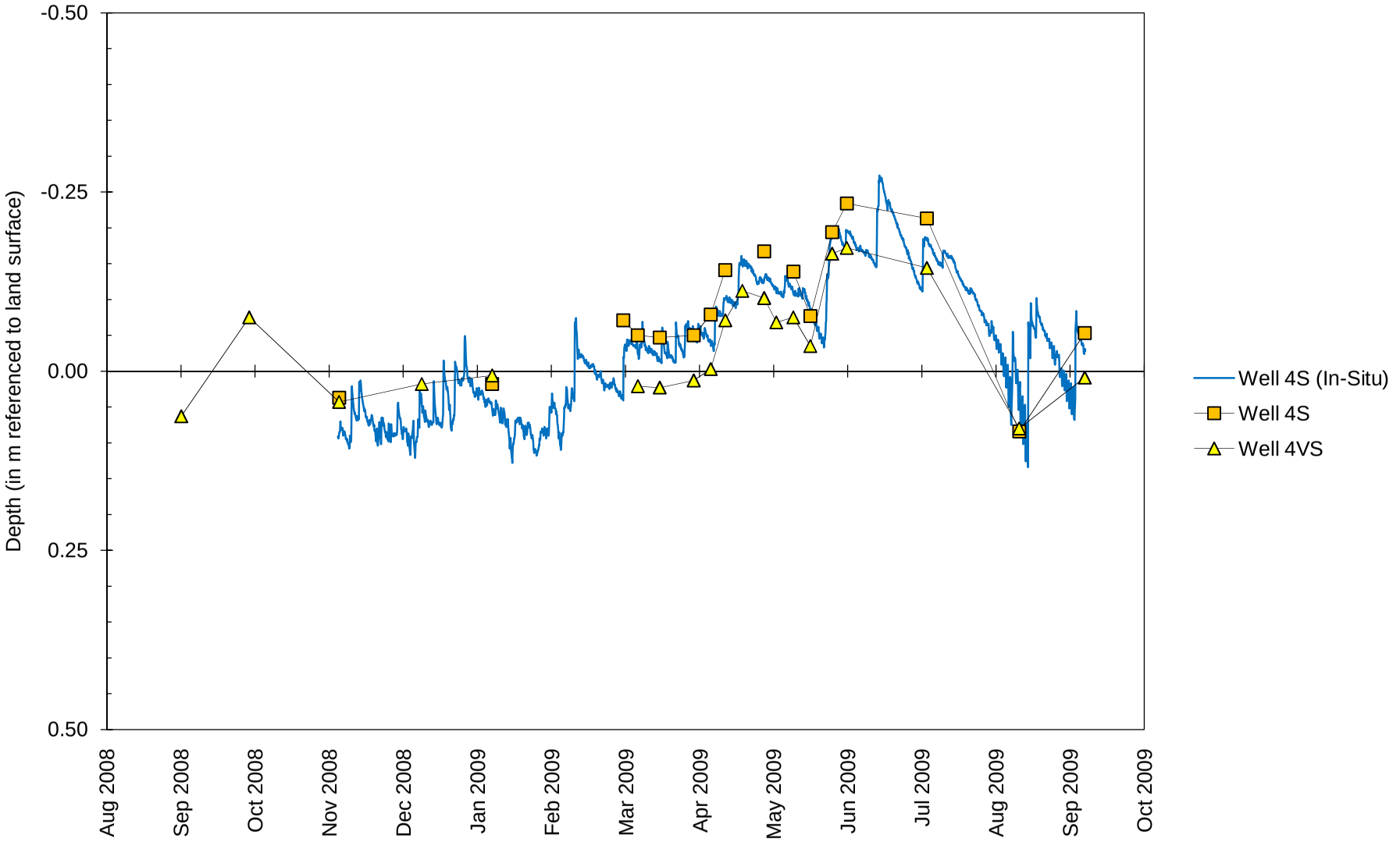
Water-Level Elevations at Well Cluster 4



Fairmont City, New River Crossing Potential Wetland Compensation Site

September 1, 2008 through August 31, 2009

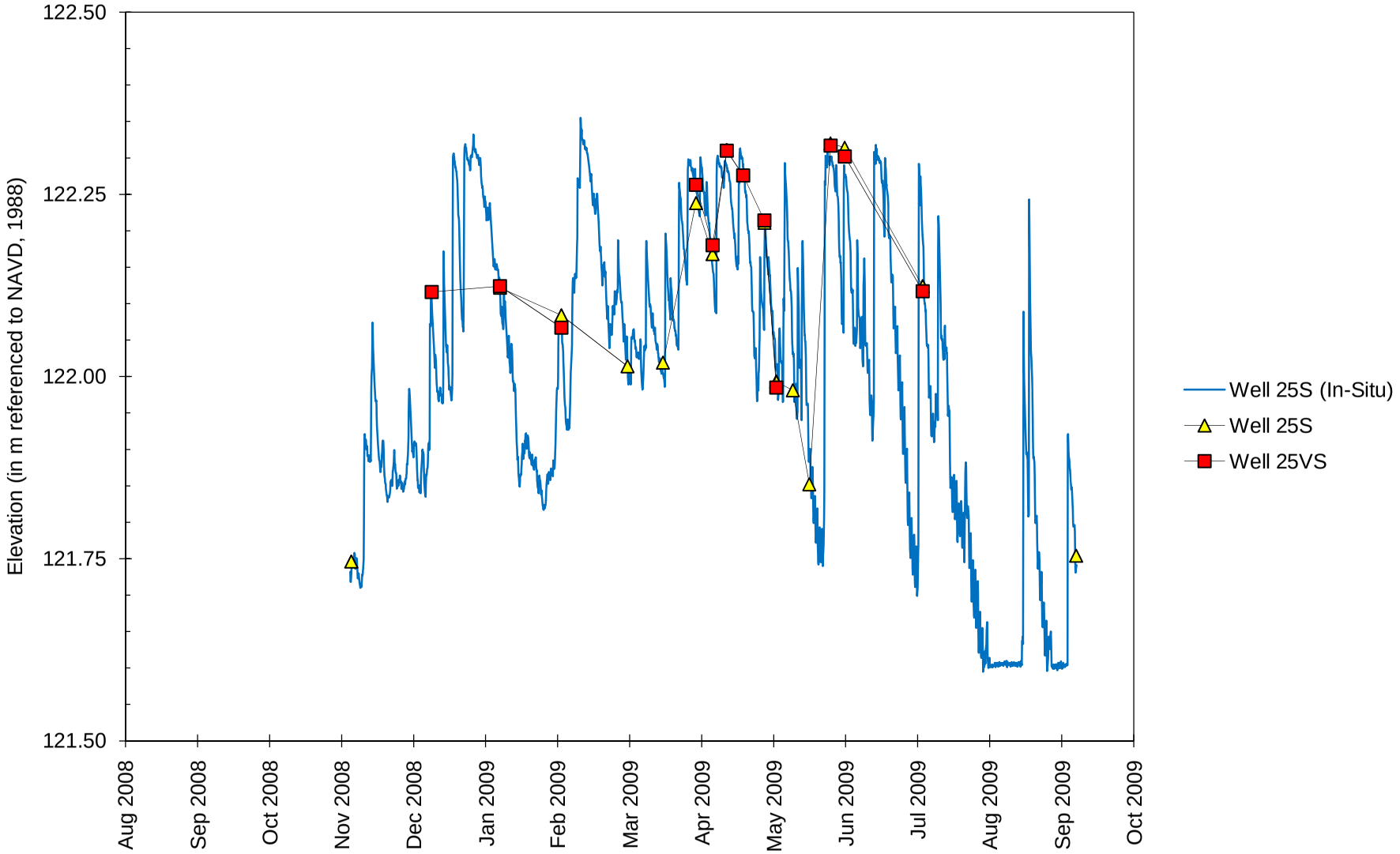
Depth to Water at Well Cluster 4



Fairmont City, New River Crossing Potential Wetland Compensation Site

September 1, 2008 through August 31, 2009

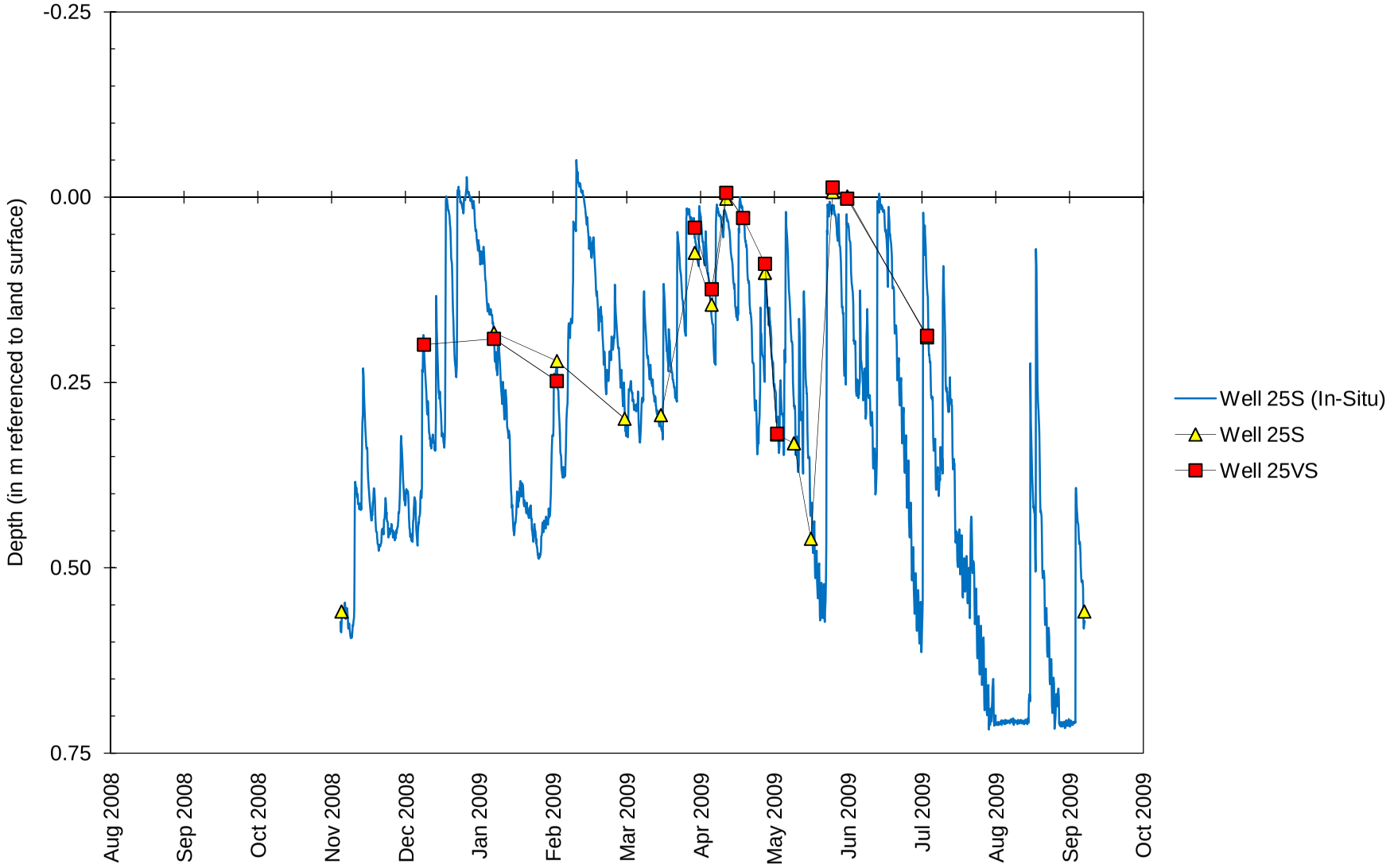
Water-Level Elevations at Well Cluster 25



Fairmont City, New River Crossing Potential Wetland Compensation Site

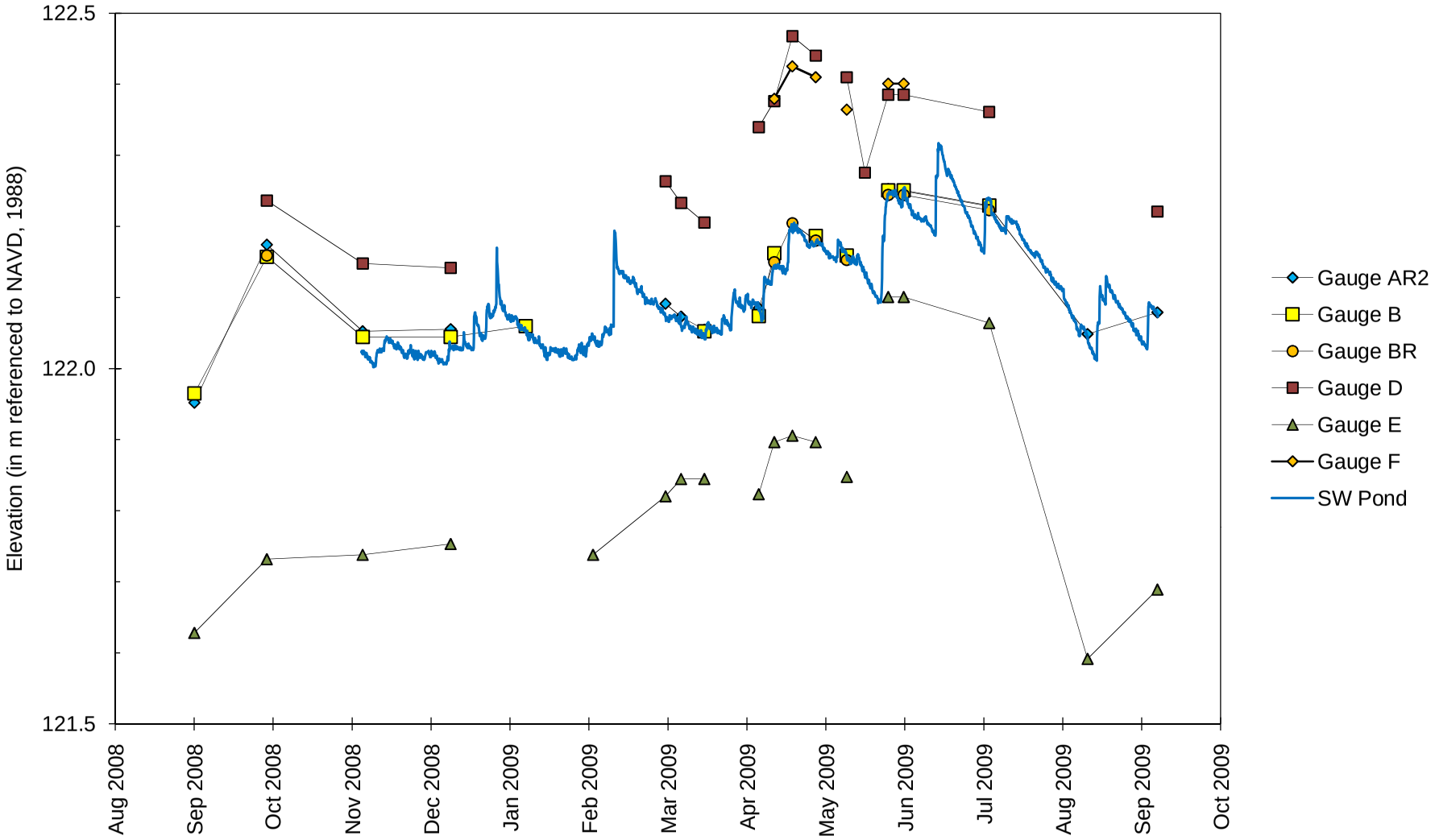
September 1, 2008 through August 31, 2009

Depth to Water at Well Cluster 25

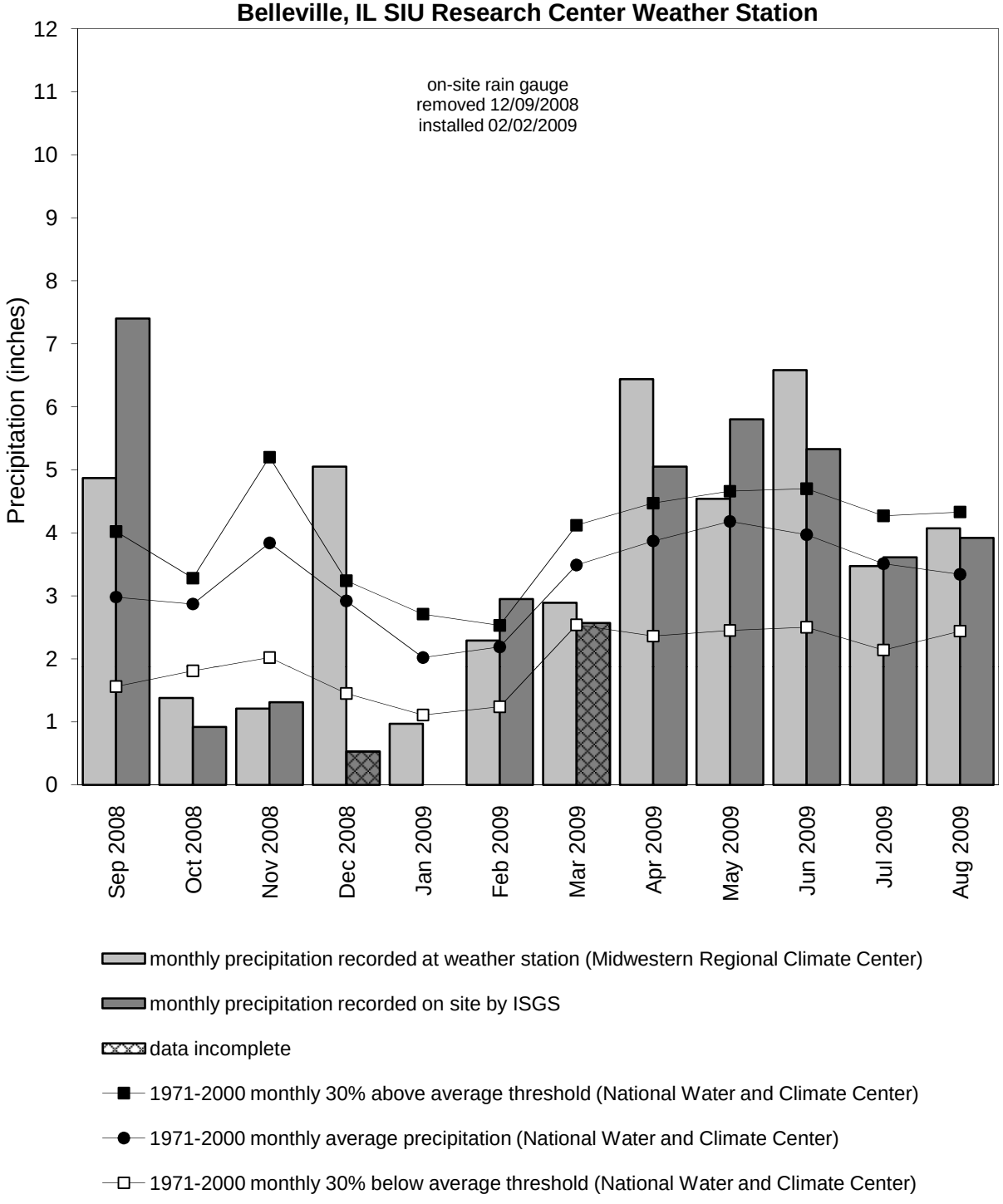


Fairmont City, New River Crossing Potential Wetland Compensation Site
September 1, 2008 to August 31, 2009

Water-Level Elevations on Stage Gauges and Data Loggers



Fairmont City, New River Crossing
Potential Wetland Compensation Site
September 2008 through August 2009
Total Monthly Precipitation Recorded On Site and at the Belleville, IL SIU Research Center Weather Station



Graph last updated October 15, 2009

FORMER TIERNAN PROPERTY, NEW RIVER CROSSING **ISGS #57**
POTENTIAL WETLAND COMPENSATION SITE
FAP 999
Sequence #33G
Saint Clair County, near Cahokia, Illinois
Primary Project Manager: Steven E. Benton
Secondary Project Manager: Charles W. Knight

SITE HISTORY

- July 2000: The ISGS was tasked to perform a Level II hydrogeologic assessment of the site.

- July 2005: A Level II hydrogeologic characterization report was submitted to IDOT (ISGS Open-File Series 2005–11).

WETLAND HYDROLOGY CALCULATION FOR 2009

The area that satisfied wetland hydrology criteria (Environmental Laboratory 1987) in 2009 for greater than 5% of the growing season was estimated to be 20.7 ha (51.2 ac) out of a total site area of 26.4 ha (65.3 ac). The area that satisfied wetland hydrology criteria for greater than 12.5% of the growing season was estimated to be 20.5 ha (50.6 ac). Using new guidance proposed by the U. S. Army Corps of Engineers (2008), we estimate that 20.7 ha (51.2 ac) satisfied wetland hydrology criteria for 14 or more consecutive days during the growing season. These estimates are based on the following factors:

- According to the MRCC, the median date that the growing season begins in nearby Cahokia, Illinois, is April 2 and the season lasts 214 days; 5% of the growing season is 11 days and 12.5% of the growing season is 27 days. According to methods outlined in the Midwestern Regional Supplement (U. S. Army Corps of Engineers 2008), we estimate that March 8 was the starting date of the 2009 growing season based on both vegetation growth and development and soil temperatures measured at the wetland compensation site.

- Total precipitation recorded at the Belleville, Illinois weather station during the monitoring period was 110% of normal. Precipitation was at or above normal in September and December 2008, in February 2009, and from April through August 2009. Total precipitation in the spring (April through June) was 140% of normal.

- In 2009, water levels measured in all of the wells except 6S, 23VS, and 23S, satisfied wetland hydrology criteria for more than 5% of the growing season and for 14 or more consecutive days during the growing season. In addition, all of the monitoring wells except 6S, 11S, 23VS, and 23S, satisfied wetland hydrology criteria for more than 12.5% of the growing season.

- Surface-water elevation at gauge D was at or above 121.20 m (397.66 ft) for a period long enough during the growing season to satisfy jurisdictional wetland hydrology criteria for more that 5% of the growing season and for 14 or more consecutive days. Surface water was at or above 121.00 m (397.00 ft) long enough to satisfy wetland hydrology criteria for 12.5% of the growing season.

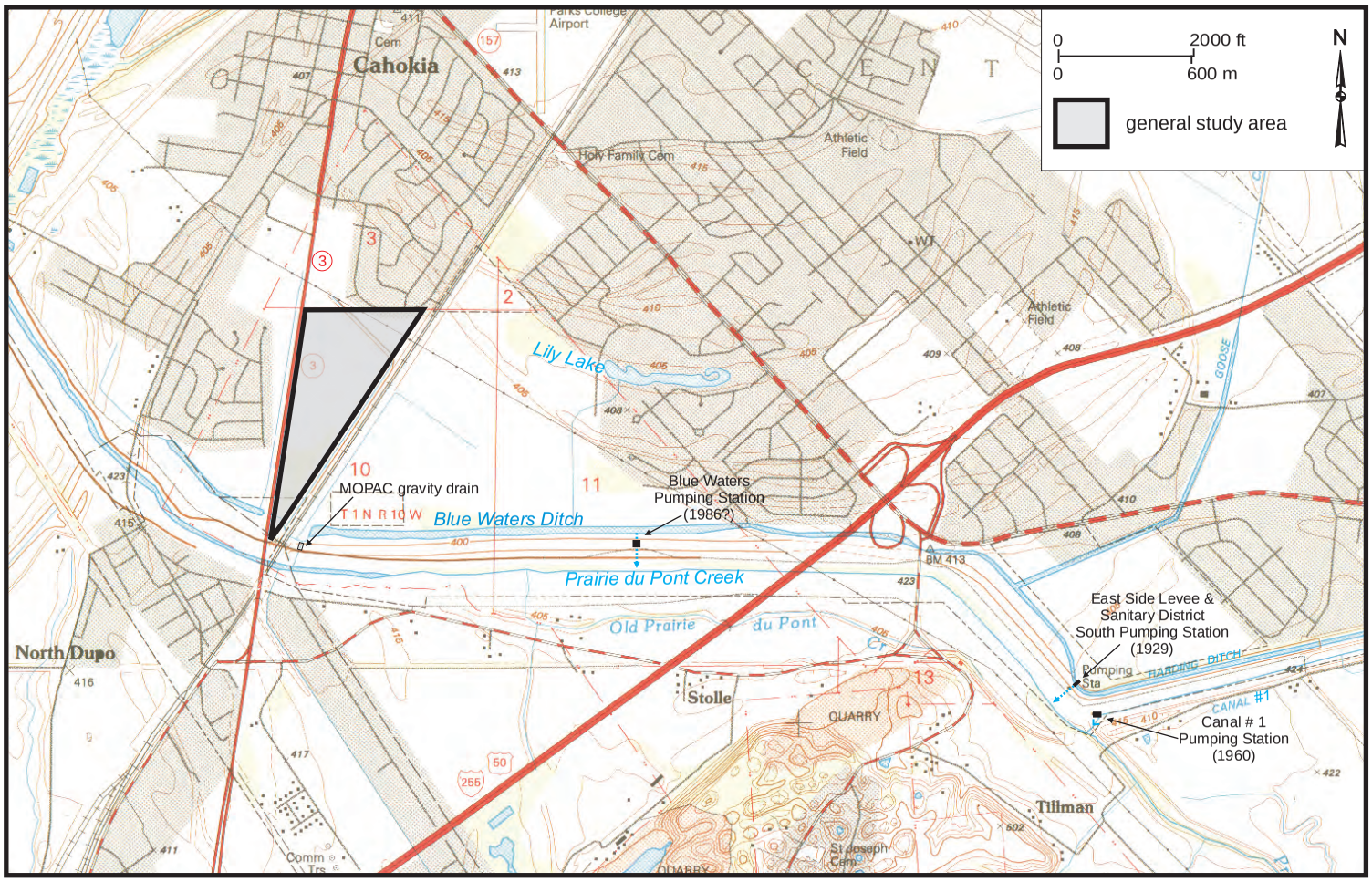
PLANNED FUTURE ACTIVITIES

- Monitoring will continue until no longer required by IDOT.

Former Tiernan Property (Cahokia) Potential Wetland Compensation Site (FAP 999)

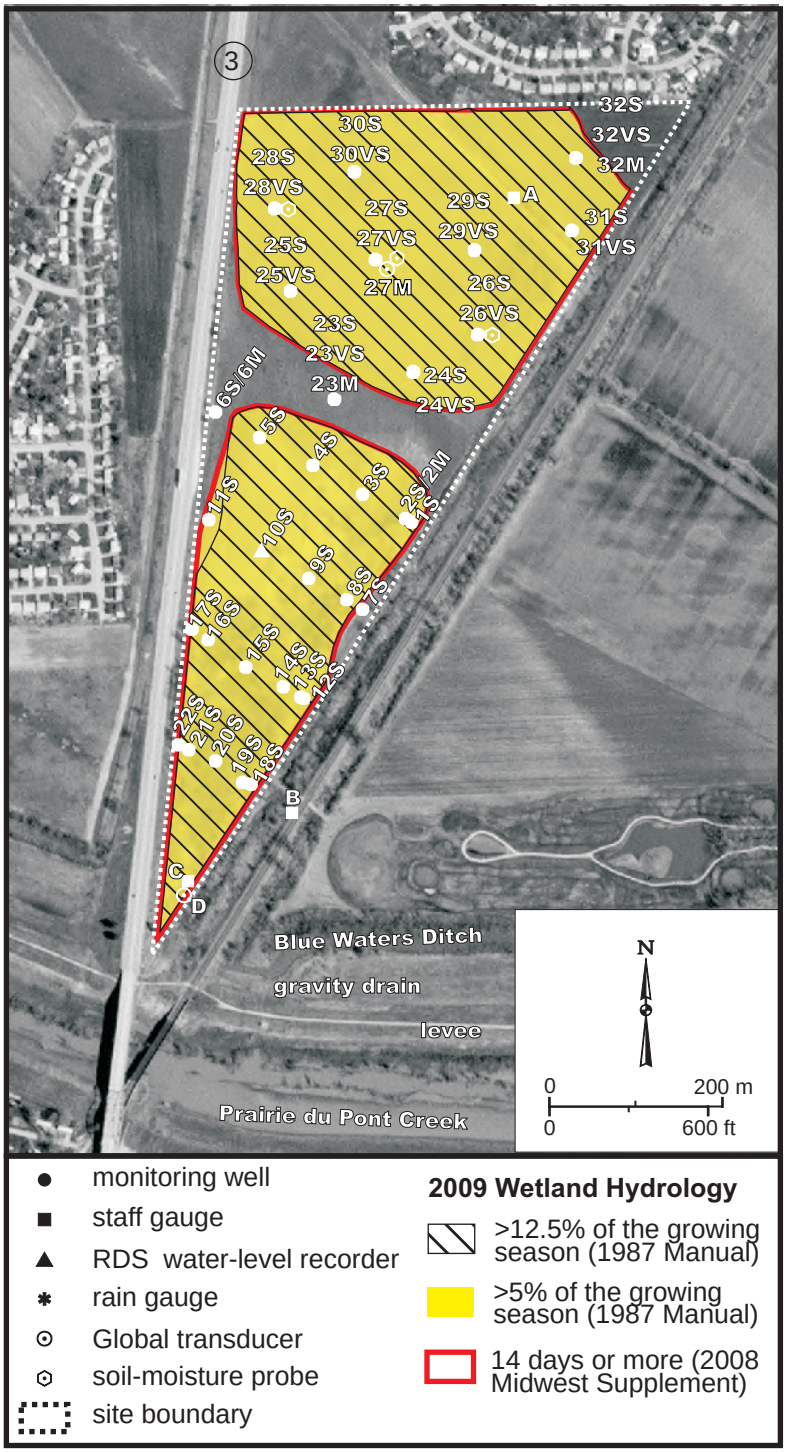
General Study Area and Vicinity

from the USGS Topographic Series, Cahokia, IL 7.5-minute Quadrangle (USGS 1993)
contour interval is 3 m (10 ft)



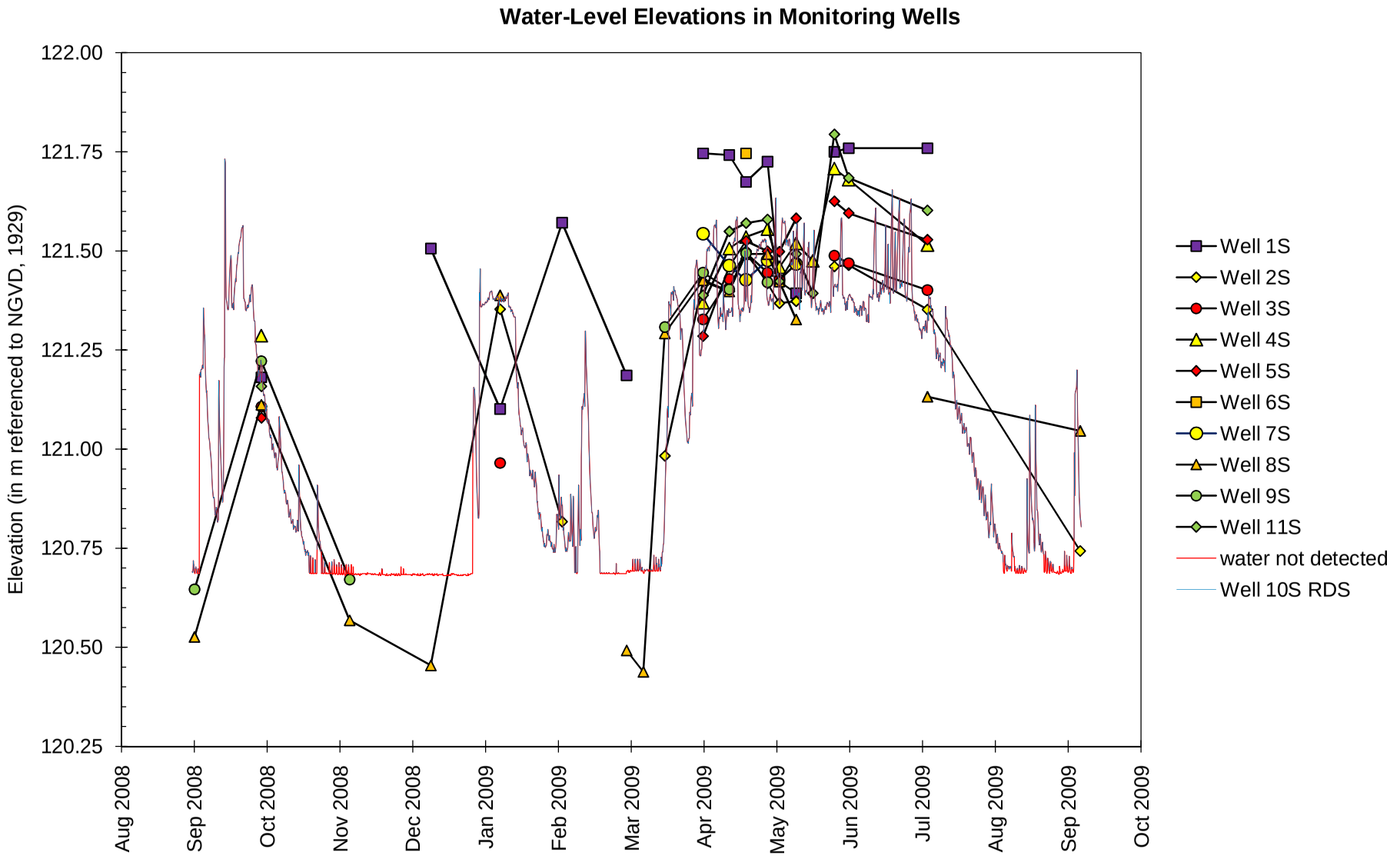
Former Tiernan Property, New River Crossing
Potential Wetland Compensation Site
(FAP 999)
Estimated Areal Extent of 2009 Wetland Hydrology
September 1, 2008 through August 31, 2009

Map based on USGS digital orthophotograph, Cahokia SW quarter quadrangle
produced from 04/02/98 aerial photography (ISGS 2000)



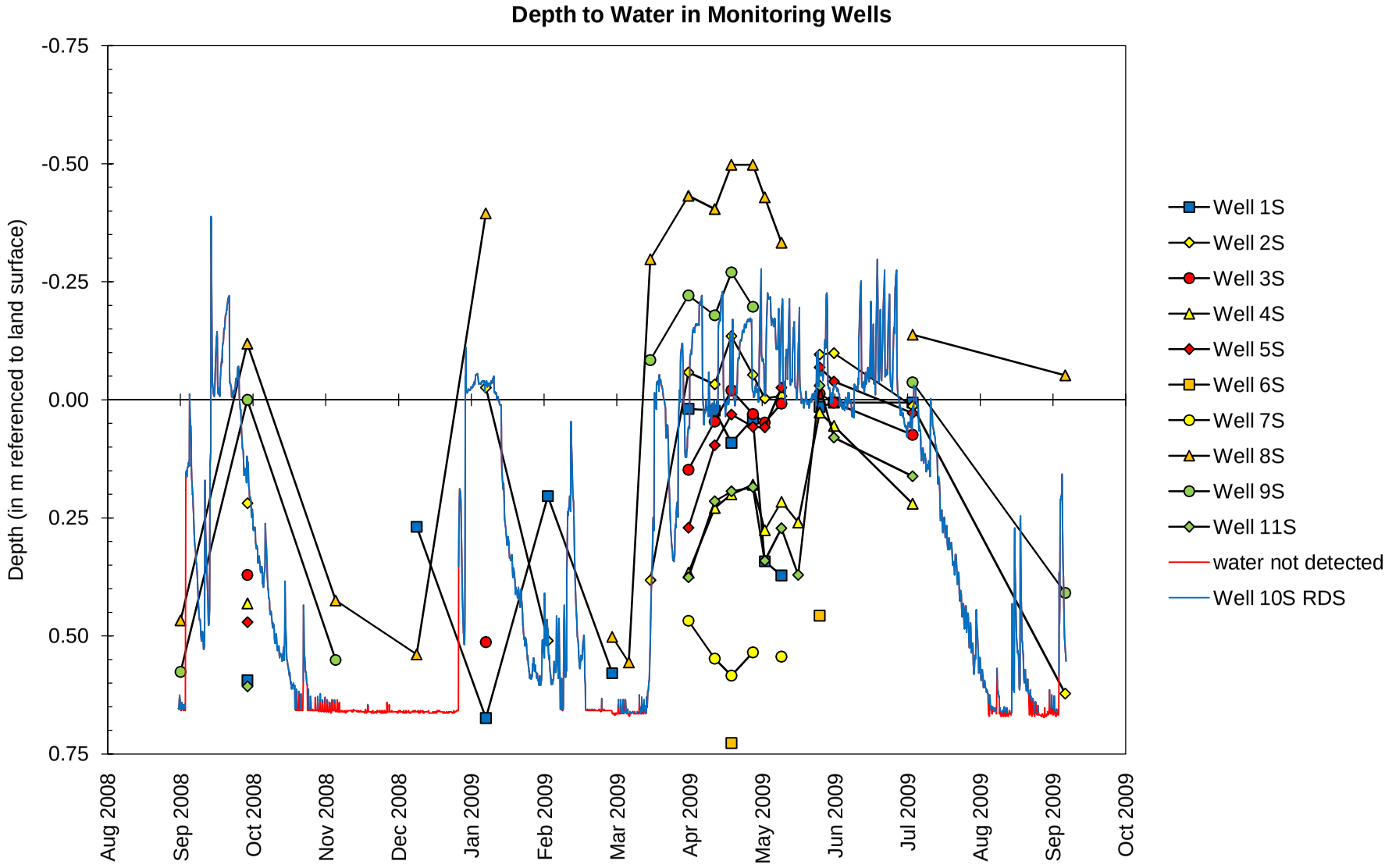
Former Tiernan Property, New River Crossing Potential Wetland Compensation Site

September 1, 2008 through August 31, 2009



Former Tiernan Property, New River Crossing Potential Wetland Compensation Site

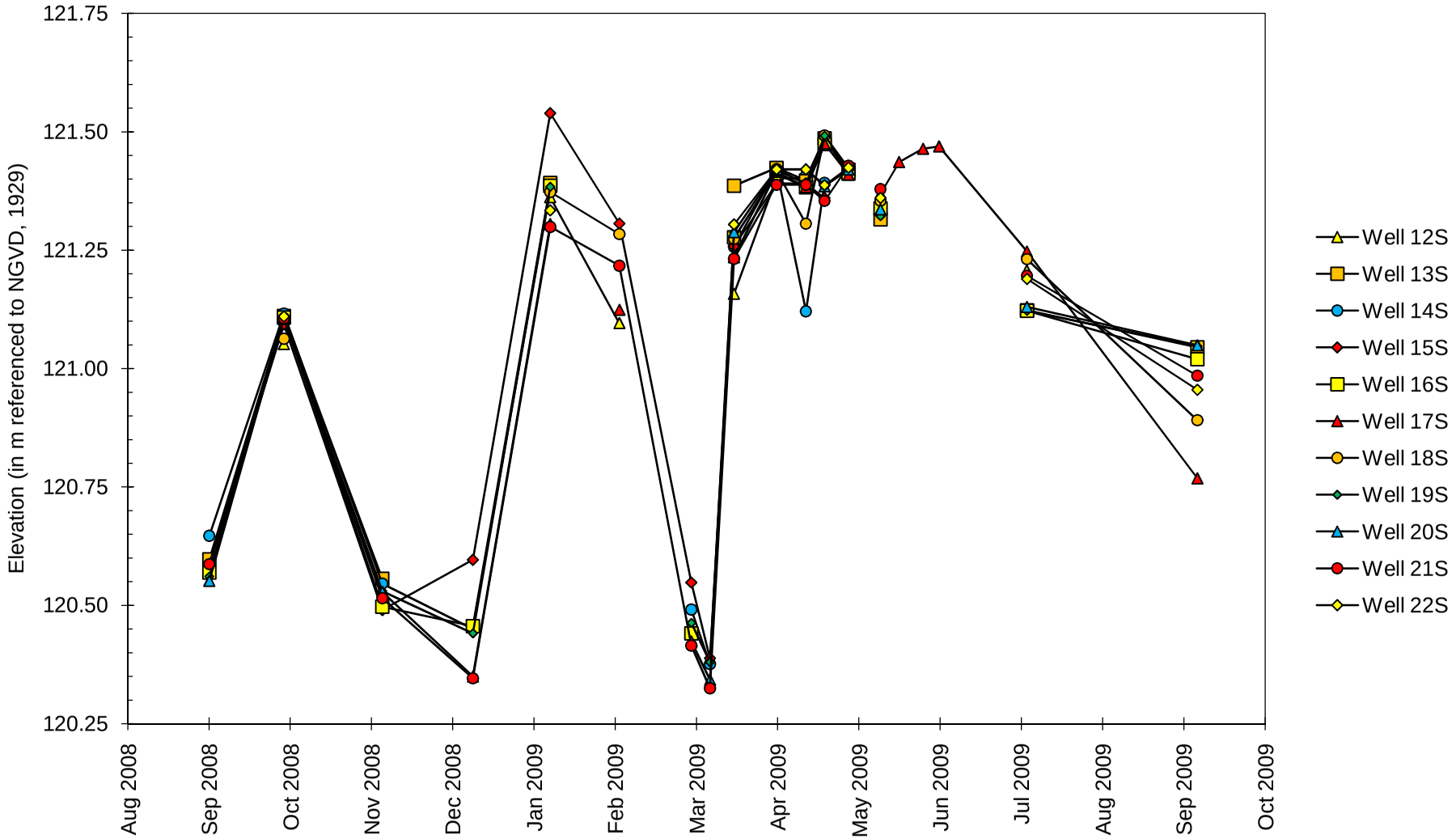
September 1, 2008 through August 31, 2009



Former Tiernan Property, New River Crossing Potential Wetland Compensation Site

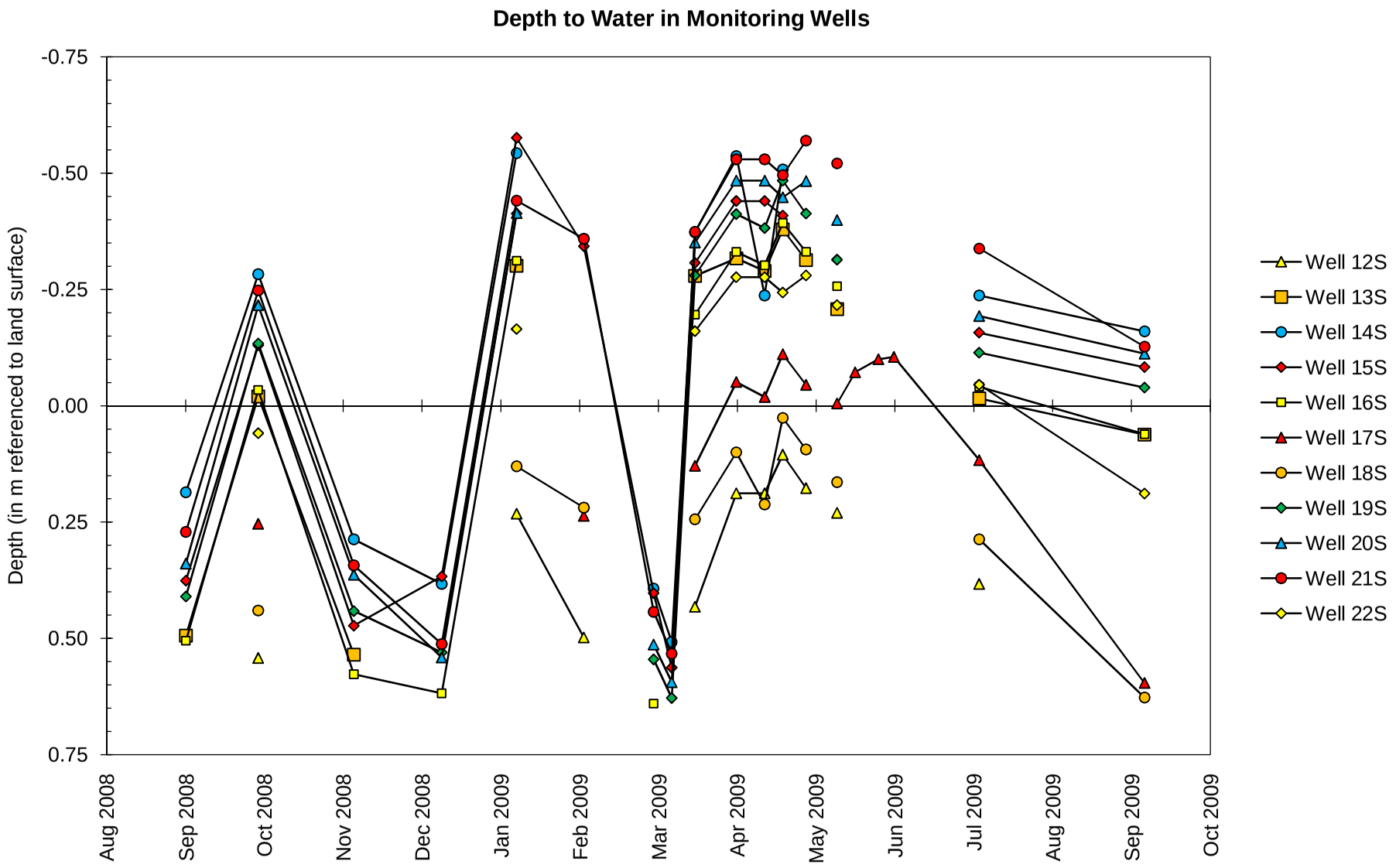
September 1, 2008 through August 31, 2009

Water-Level Elevations in Monitoring Wells



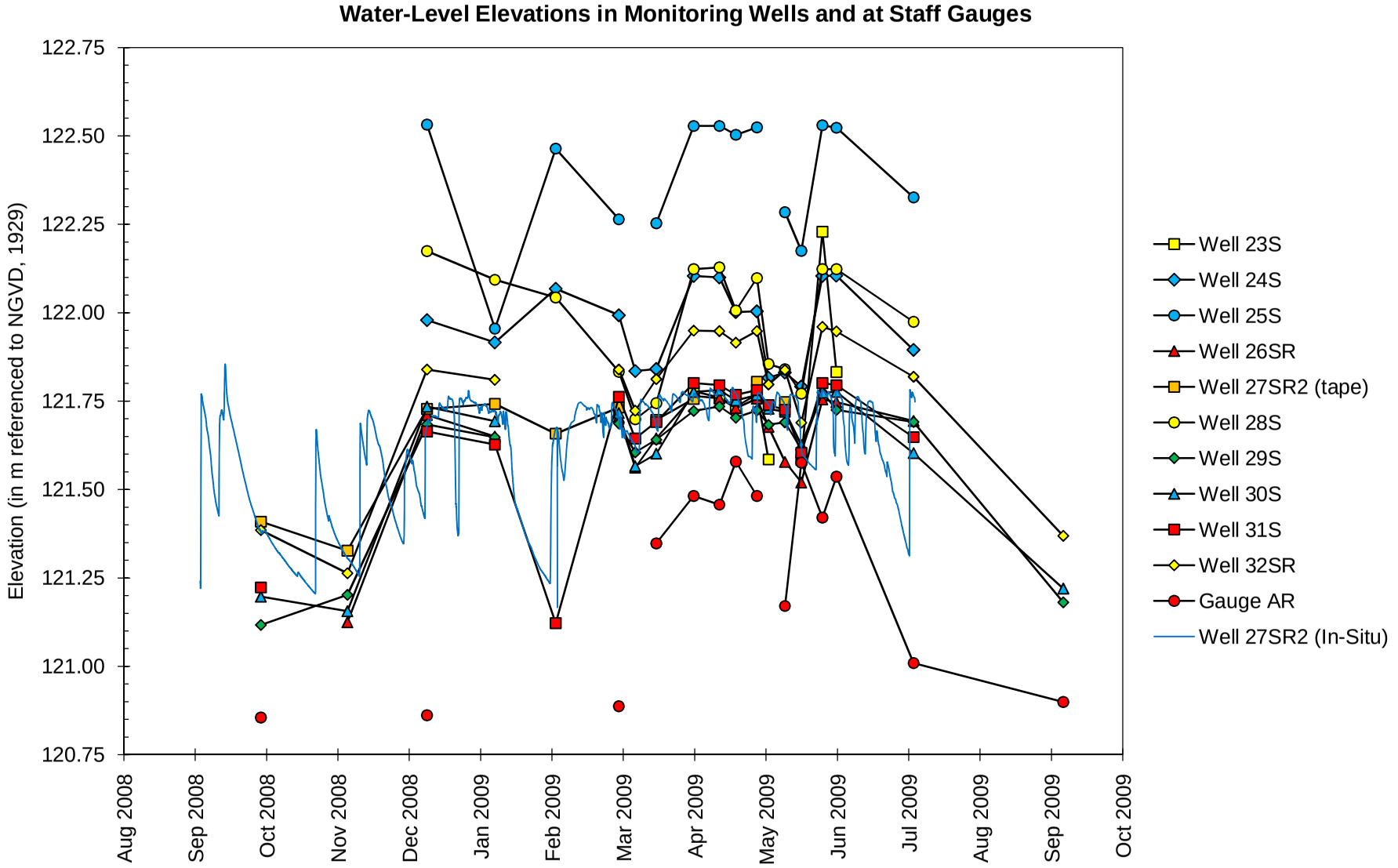
Former Tiernan Property, New River Crossing Potential Wetland Compensation Site

September 1, 2008 through August 31, 2009



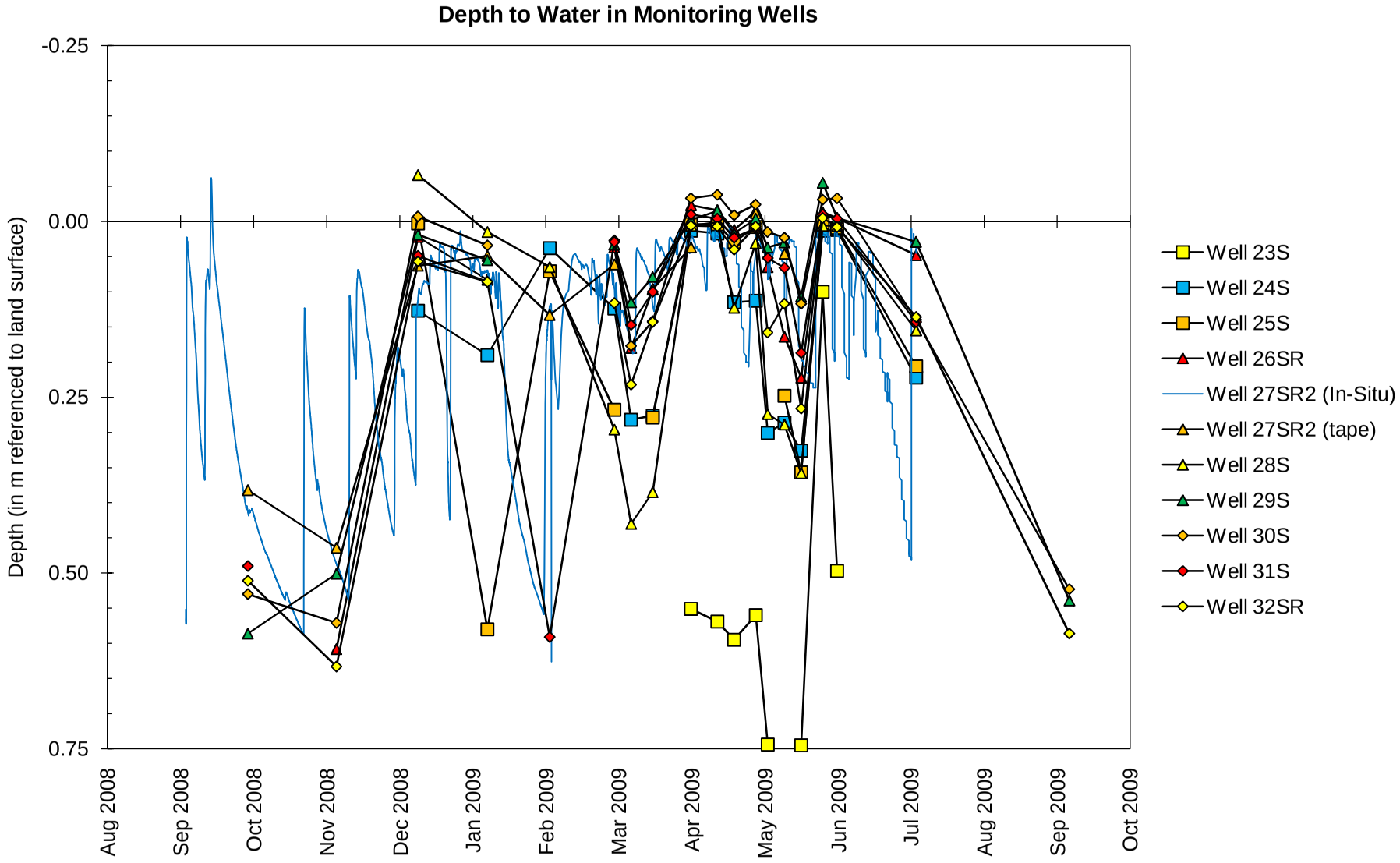
Former Tiernan Property, New River Crossing Potential Wetland Compensation Site

September 1, 2008 through August 31, 2009



Former Tiernan Property, New River Crossing Potential Wetland Compensation Site

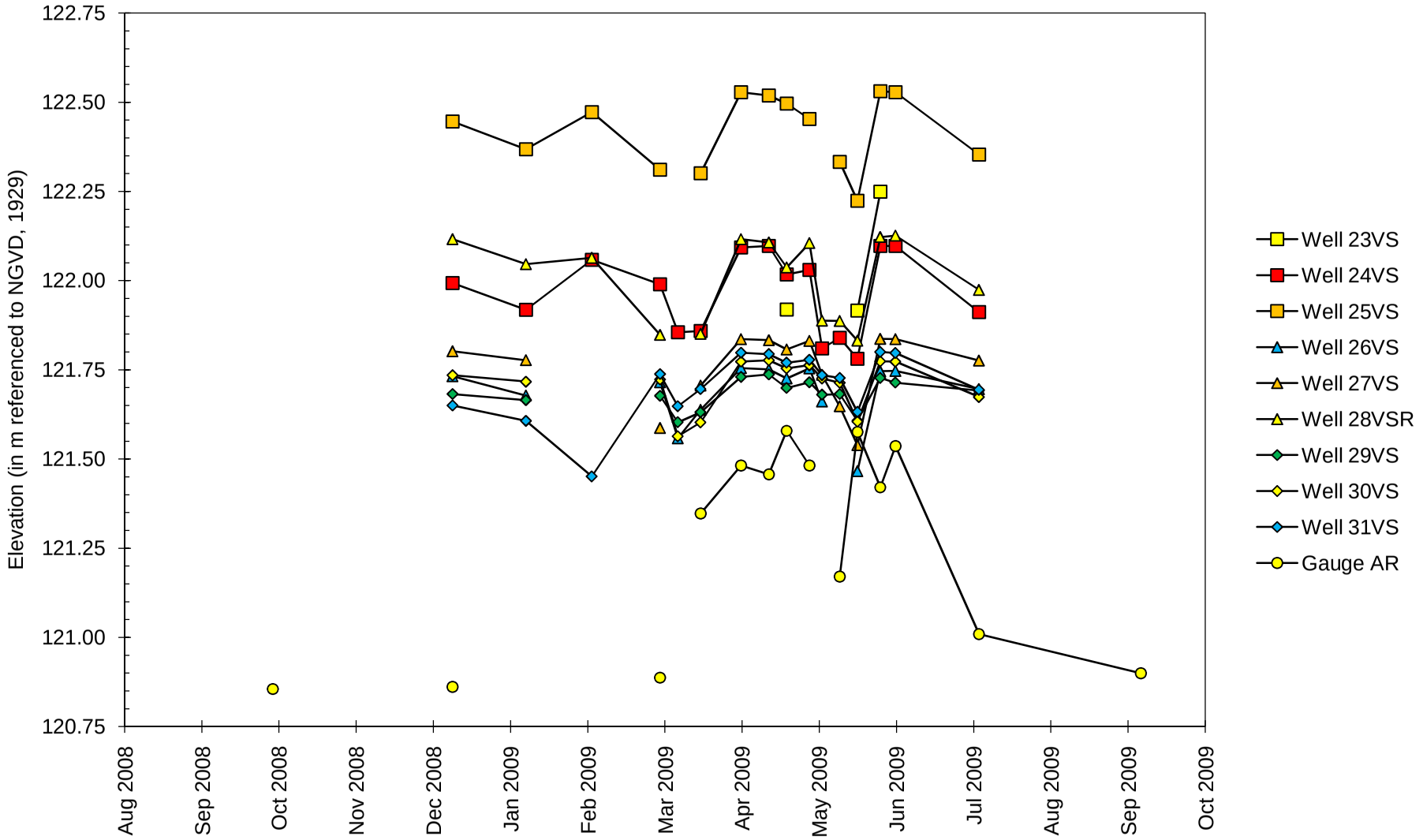
September 1, 2008 through August 31, 2009



Former Tiernan Property, New River Crossing Potential Wetland Compensation Site

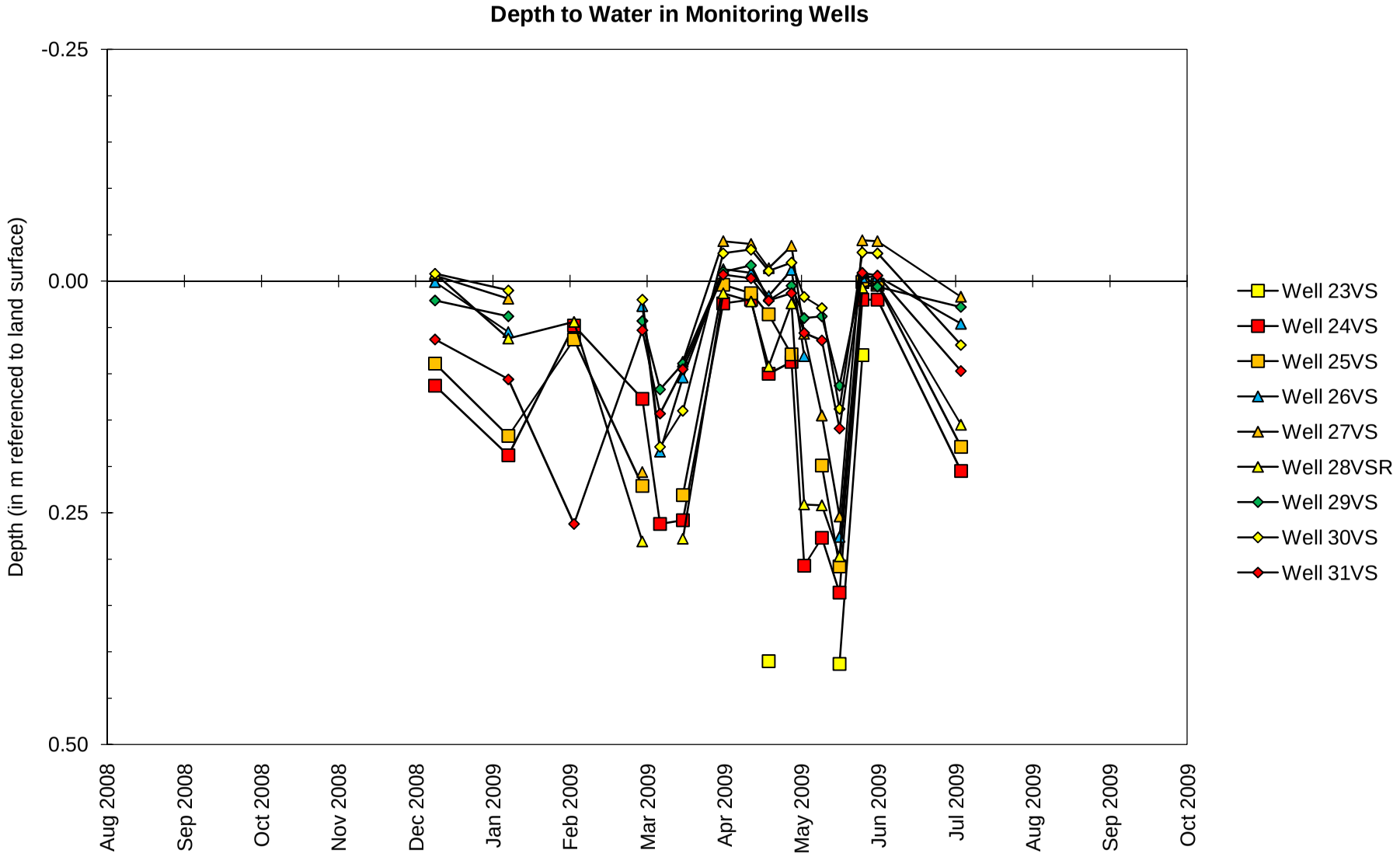
September 1, 2008 through August 31, 2009

Water-Level Elevations in Monitoring Wells and at Staff Gauges



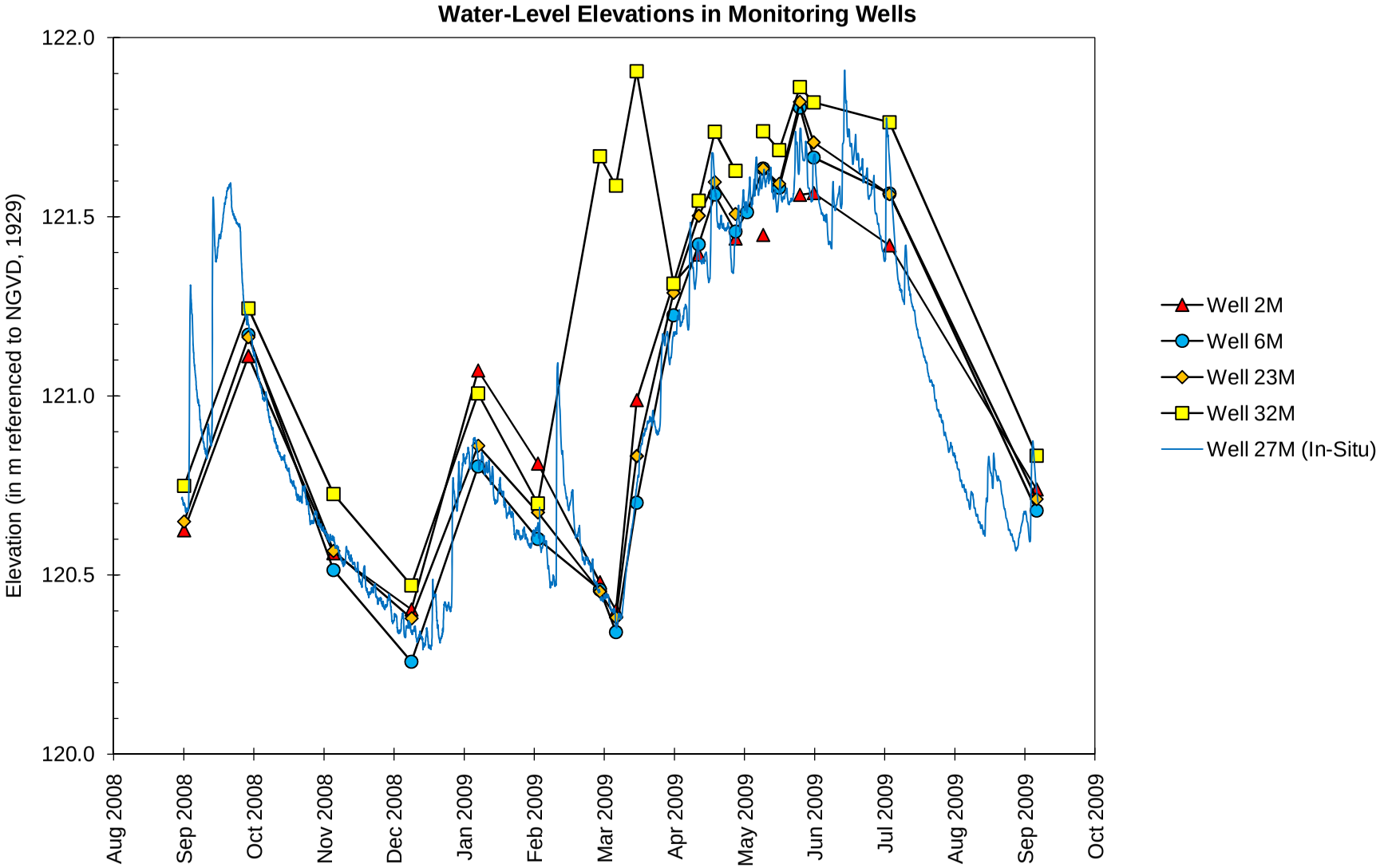
Former Tiernan Property, New River Crossing Potential Wetland Compensation Site

September 1, 2008 through August 31, 2009



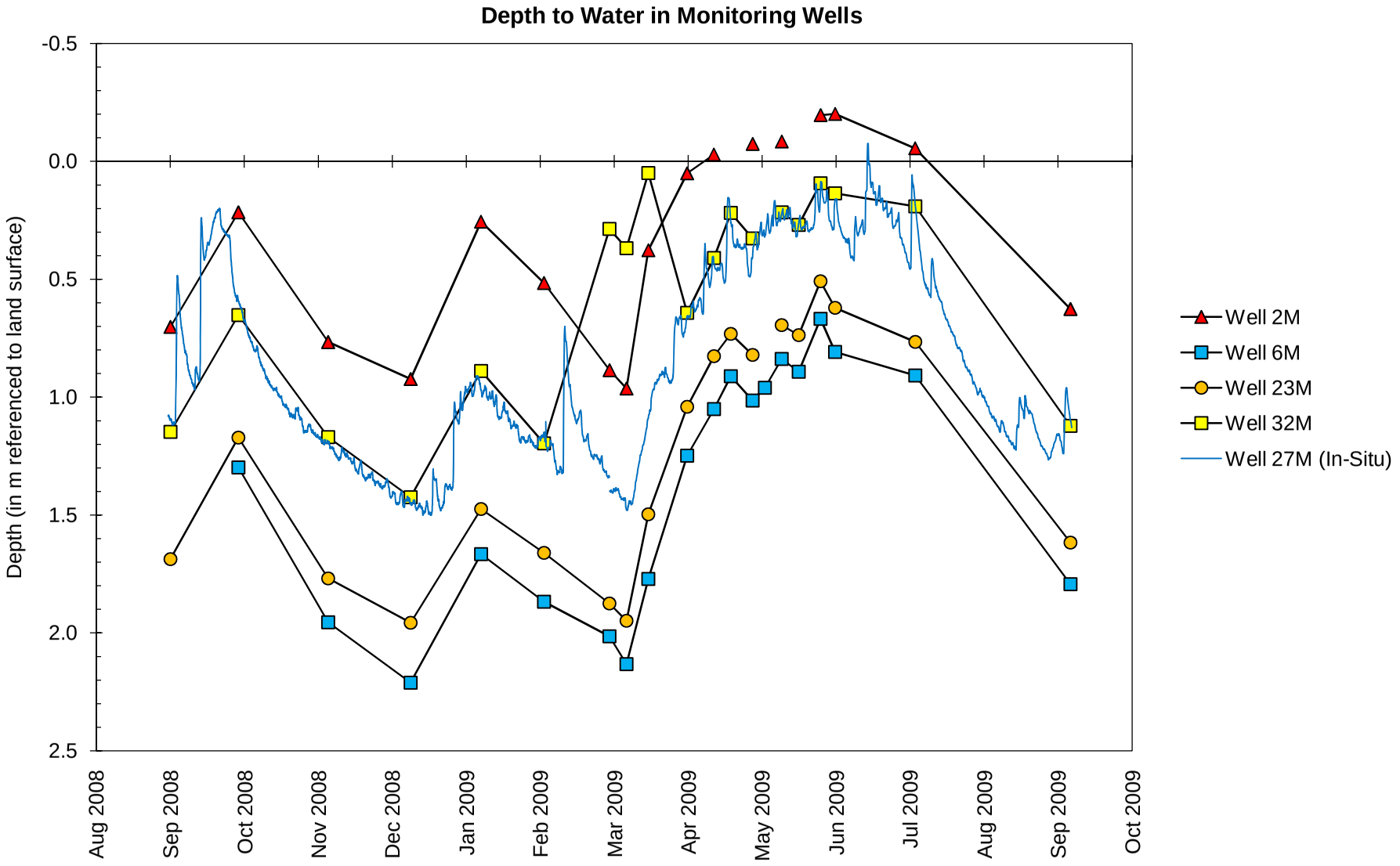
Former Tiernan Property, New River Crossing Potential Wetland Compensation Site

September 1, 2008 through August 31, 2009



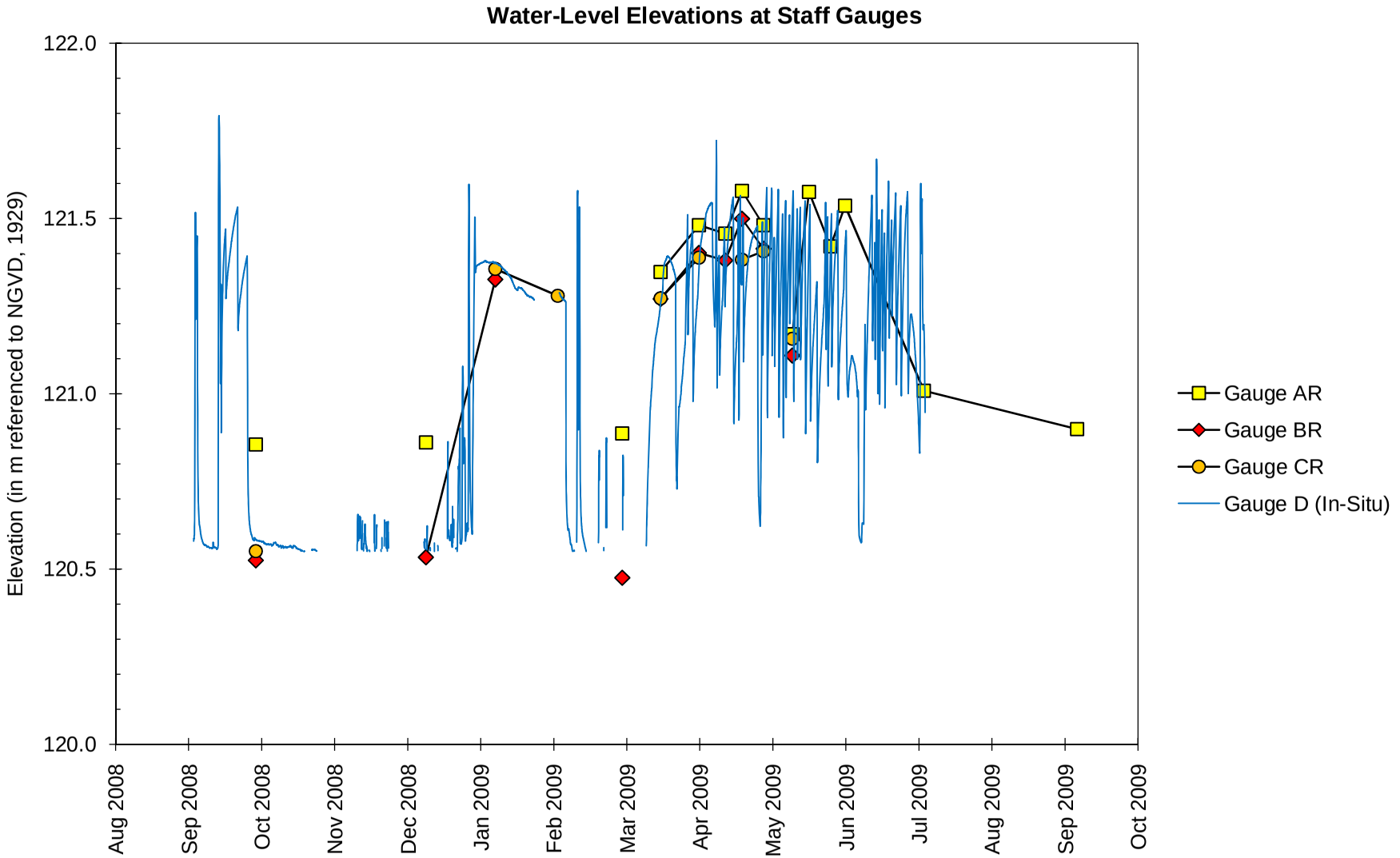
Former Tiernan Property, New River Crossing Potential Wetland Compensation Site

September 1, 2008 through August 31, 2009

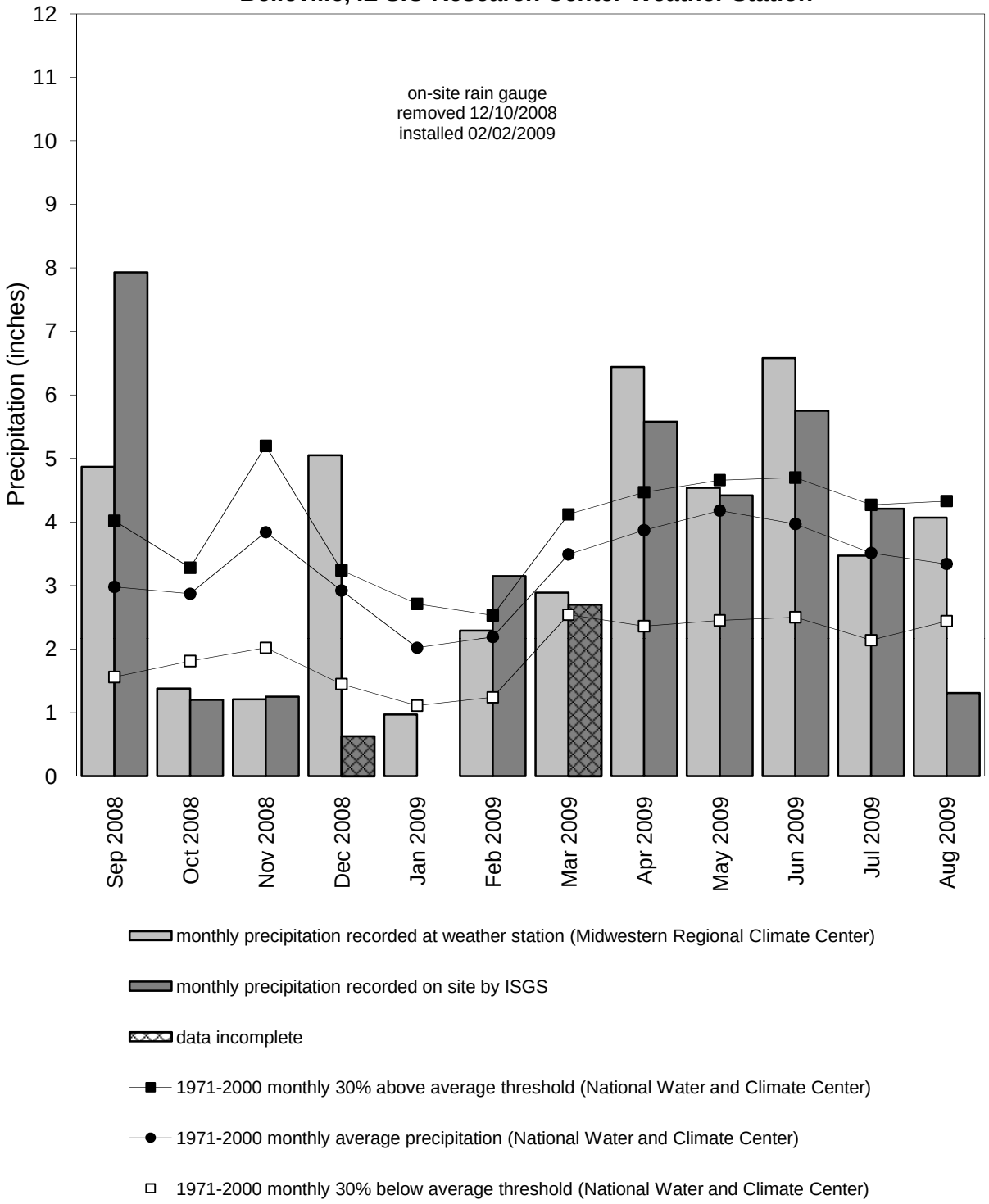


Former Tiernan Property, New River Crossing Potential Wetland Compensation Site

September 1, 2008 through August 31, 2009



Former Tiernan Property, New River Crossing
Potential Wetland Compensation Site
September 2008 through August 2009
Total Monthly Precipitation Recorded On Site and at the Belleville, IL SIU Research Center Weather Station



Graph last updated October 15, 2009

HARRISBURG **ISGS #63**
WETLAND COMPENSATION SITE
FAP 332
Sequence #90
Saline County, near Harrisburg, Illinois
Primary Project Manager: Geoffrey E. Pociask
Secondary Project Manager: not assigned

SITE HISTORY

- May 2004: Construction at the wetland compensation site was completed.
- December 2005: ISGS was tasked by IDOT to monitor post-construction water levels.

WETLAND HYDROLOGY CALCULATION FOR 2009

We estimate that 6.3 ha (15.6 ac) out of a total site area of 8.1 ha (20.0 ac) satisfied wetland hydrology criteria (Environmental Laboratory 1987) for greater than 5% of the growing season in 2009, whereas 5.9 ha (14.6 ac) satisfied wetland hydrology for greater than 12.5% of the growing season. Using new guidance proposed by the U.S. Army Corps of Engineers (2008), we estimate that 6.2 ha (15.3 ac) satisfied wetland hydrology criteria for 14 or more consecutive days during the growing season. These estimates are based on the following factors:

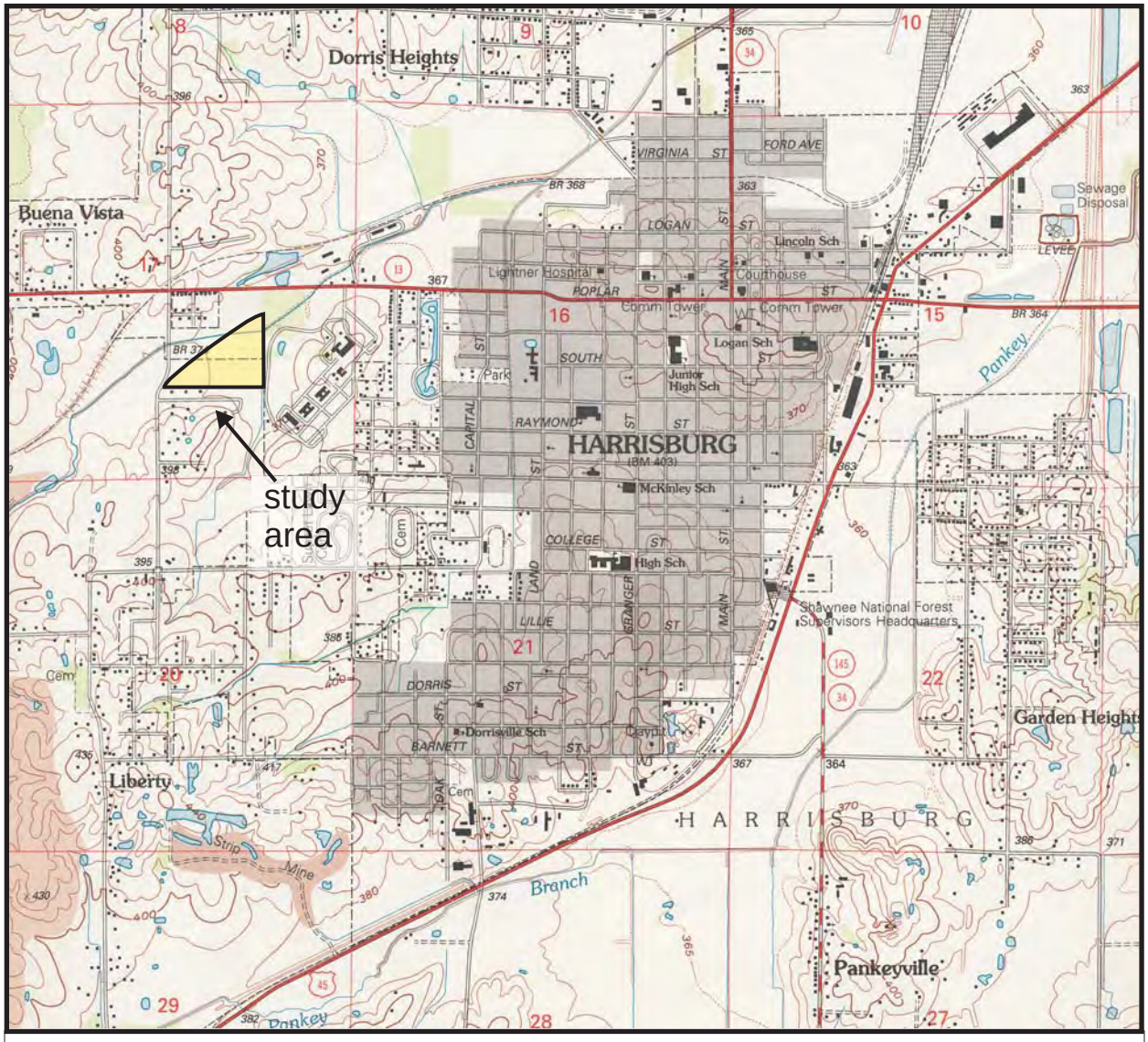
- According to the MRCC, the median date that the growing season begins in Harrisburg, Illinois, is April 1 and the season lasts 211 days; 5% of the growing season is 11 days and 12.5% of the growing season is 26 days. According to methods outlined in the Midwest Regional Supplement (U.S. Army Corps of Engineers 2008), we estimate that March 4 was the starting date of the 2009 growing season based on vegetation growth and development observed at the wetland compensation site.
- Total precipitation for the period from September 2008 through August 2009 was 95% of normal. Drier than normal conditions prevailed September 2008 through March 2009 and in June 2009. Precipitation amounts were at or above normal for April, May, July and August 2009.
- In 2009, all wells satisfied wetland hydrology criteria for greater than 5% of the growing season and for 14 or more consecutive days during the growing season. Furthermore, all wells except 10S satisfied wetland hydrology criteria for greater that 12.5% of the growing season.
- The data logger RDS 1 indicated that surface-water inundation occurred below 111.13 m (364.60 ft) for greater than 5% of the growing season, below 111.08 m (364.43 ft) for 14 or more consecutive days during the growing season, and below an elevation of 111.06 m (364.37 ft) for greater than 12.5% of the growing season.

PLANNED FUTURE ACTIVITIES

- Monitoring will continue through 2010 or until no longer required by IDOT.

Harrisburg Wetland Compensation Site
(FAP 332)
General Study Area and Vicinity

from the USGS Topographic Series, Harrisburg, IL 7.5-minute Quadrangle (USGS 1996)
contour interval is 5 feet

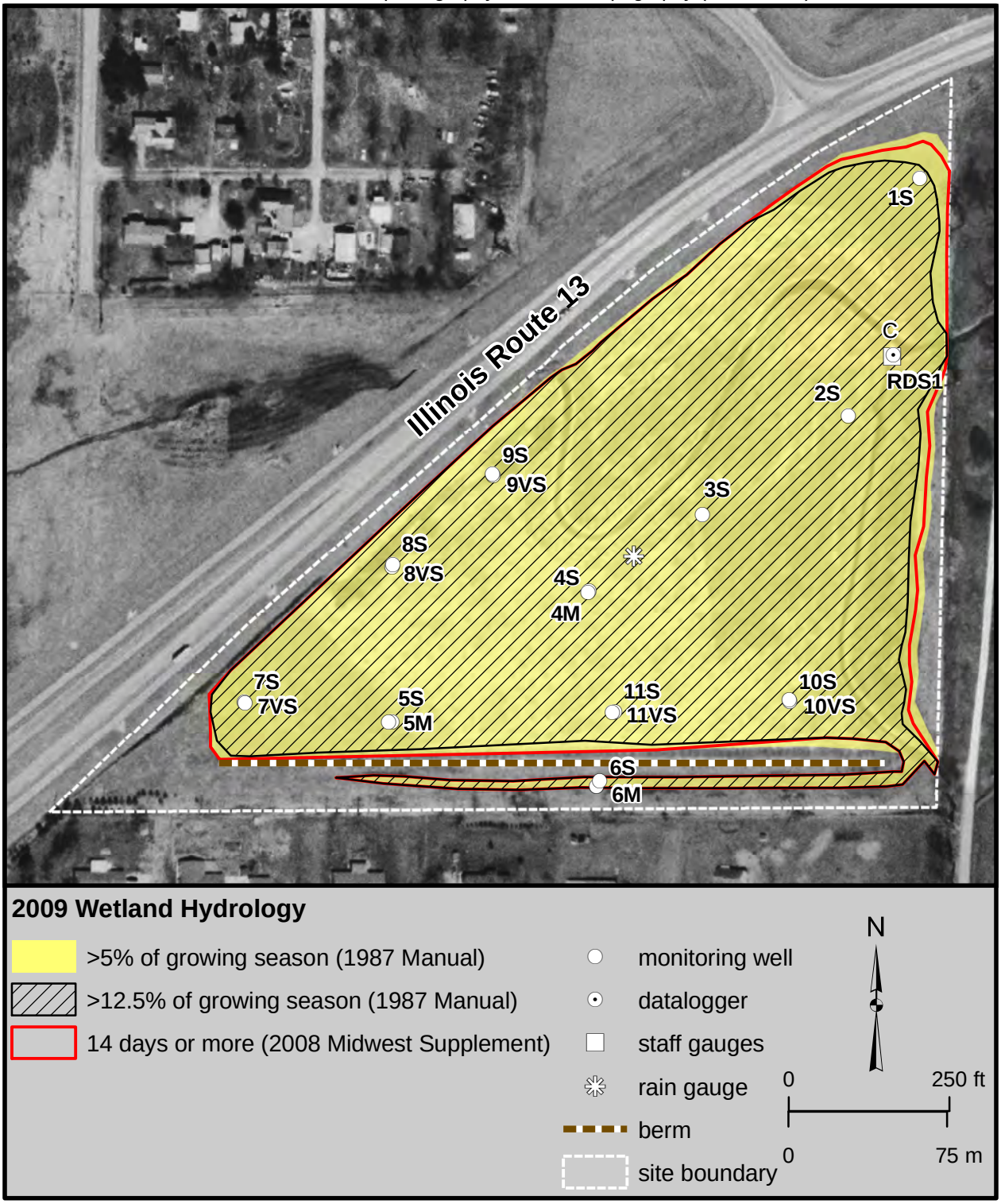


Harrisburg Wetland Compensation Site
(FAP 332)

Estimated Areal Extent of 2009 Wetland Hydrology

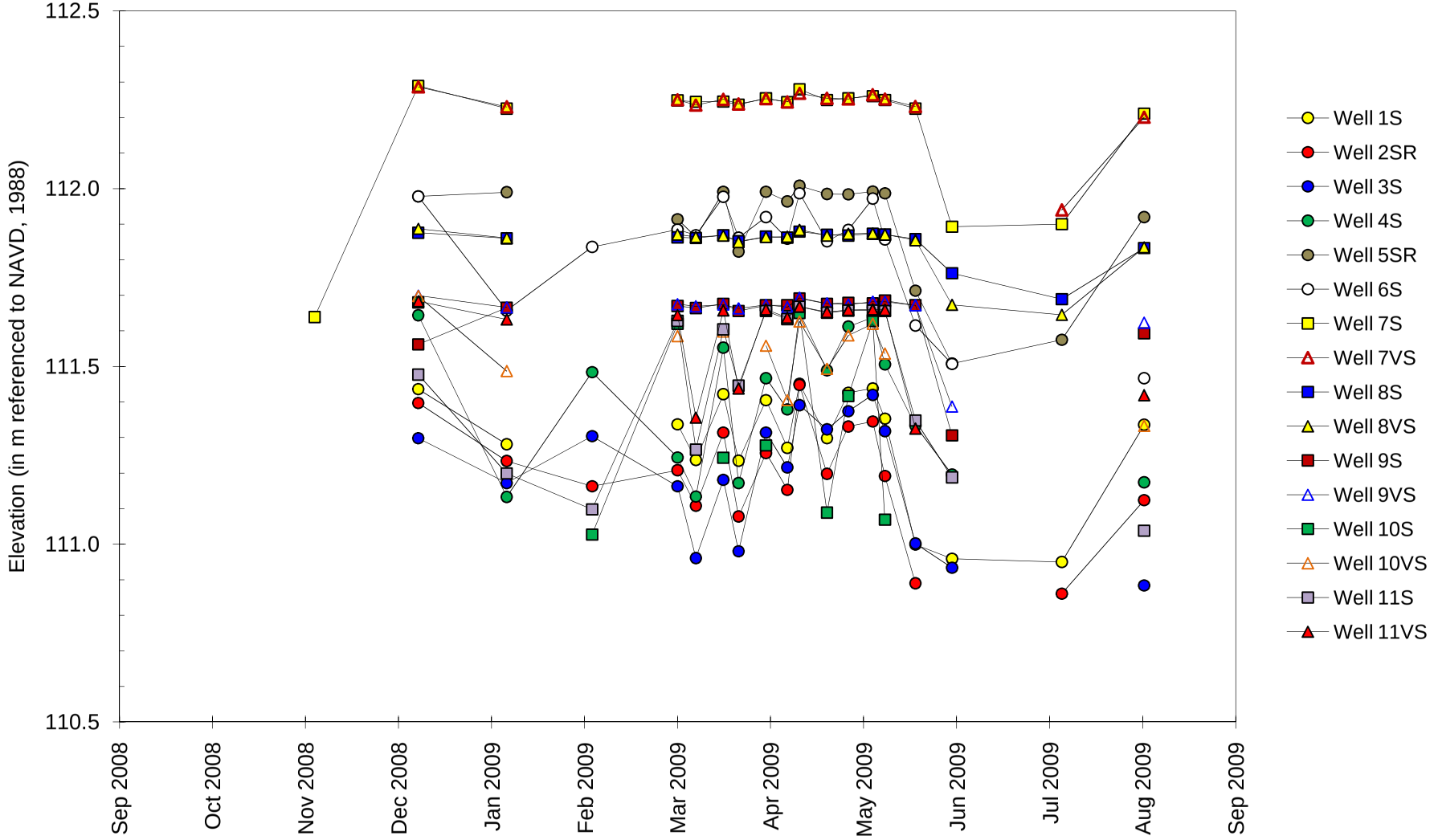
September 1, 2008 through August 31, 2009

map based on USGS digital orthophotograph Harrisburg NW quarter quadrangle
from 3/17/2005 aerial photography and ISGS topography (ISGS 2006)



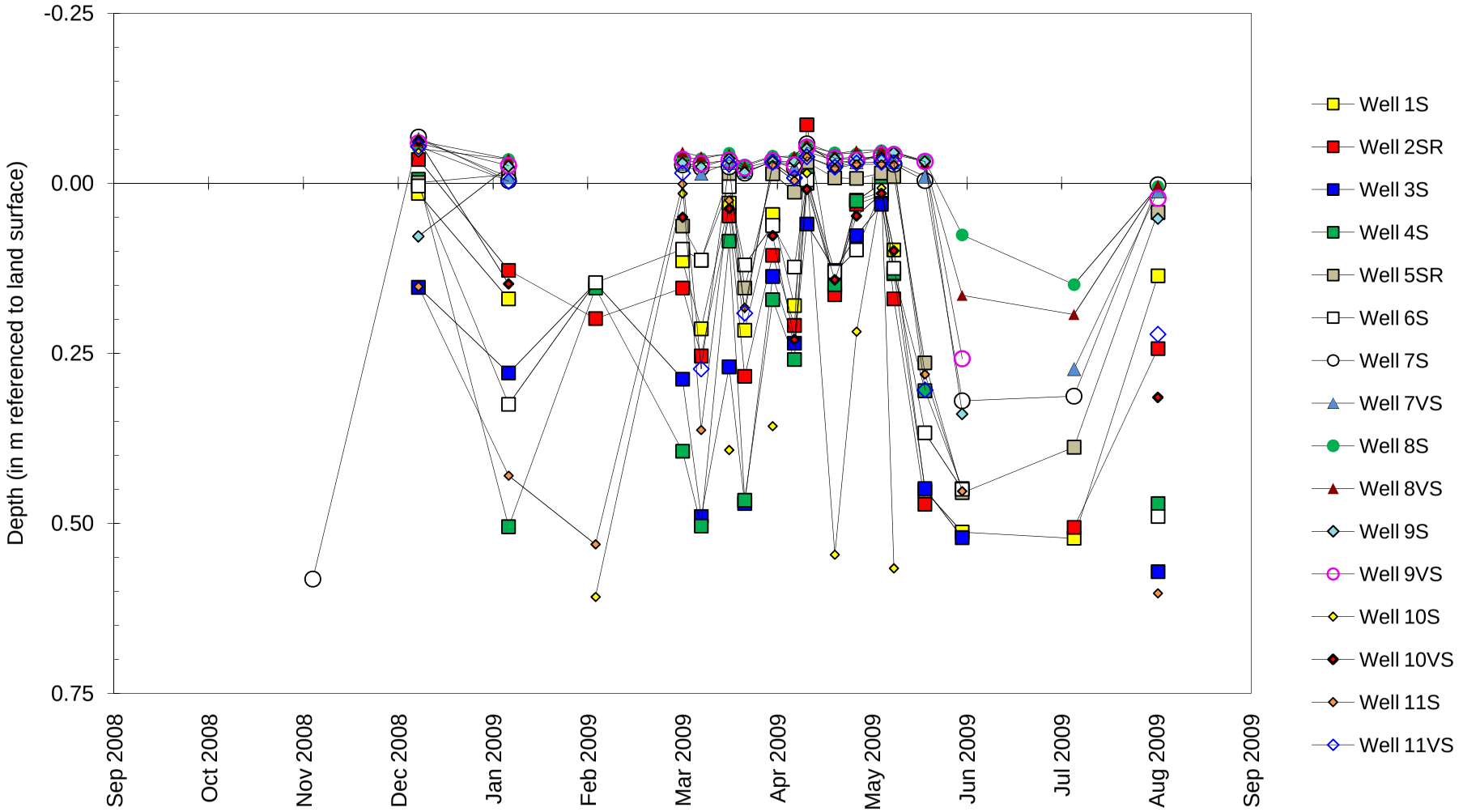
Harrisburg Wetland Compensation Site
September 1, 2008 through August 31, 2009

Water-Level Elevations in Shallow Monitoring Wells



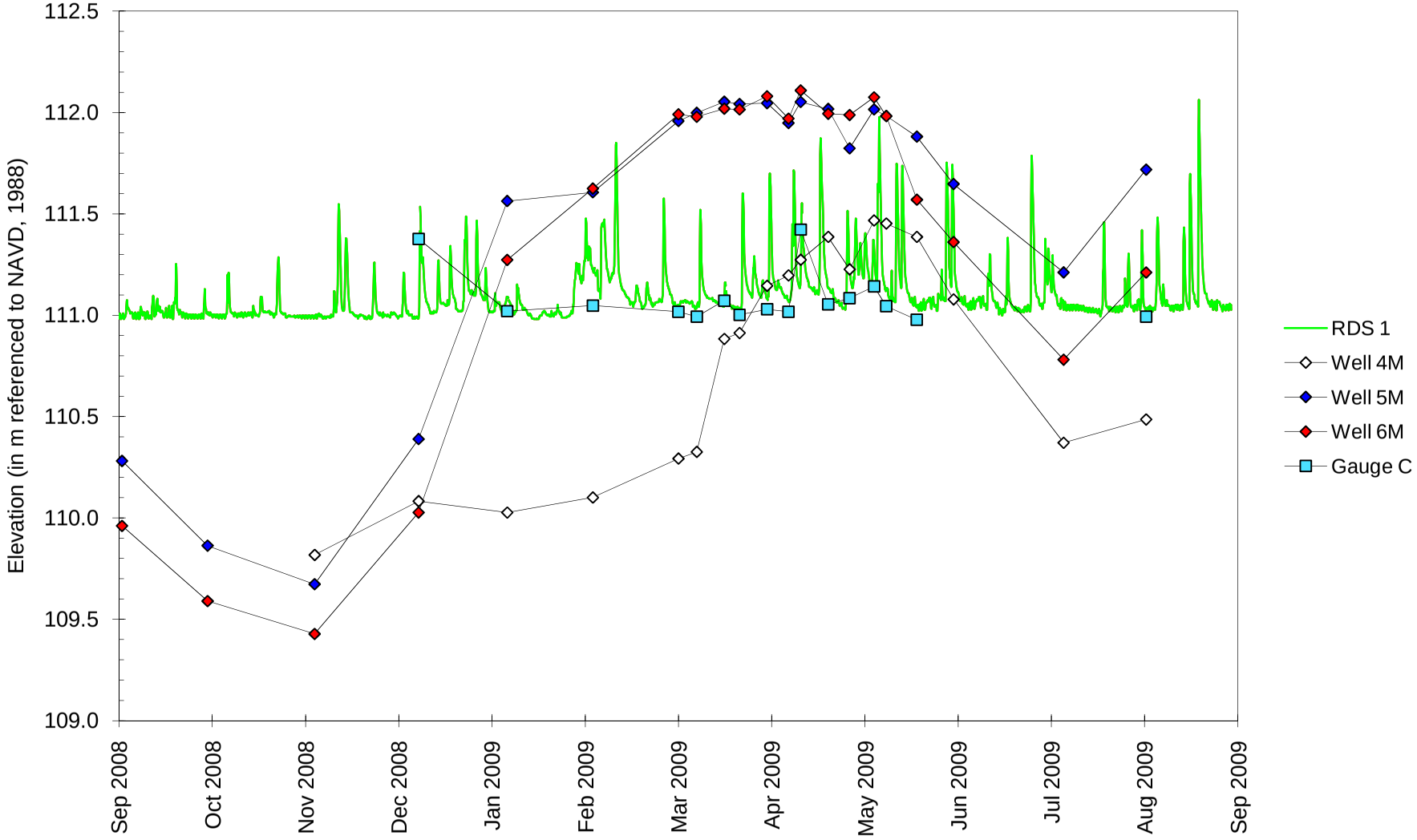
Harrisburg Wetland Compensation Site
September 1, 2008 through August 31, 2009

Depth to Water
in Shallow Monitoring Wells



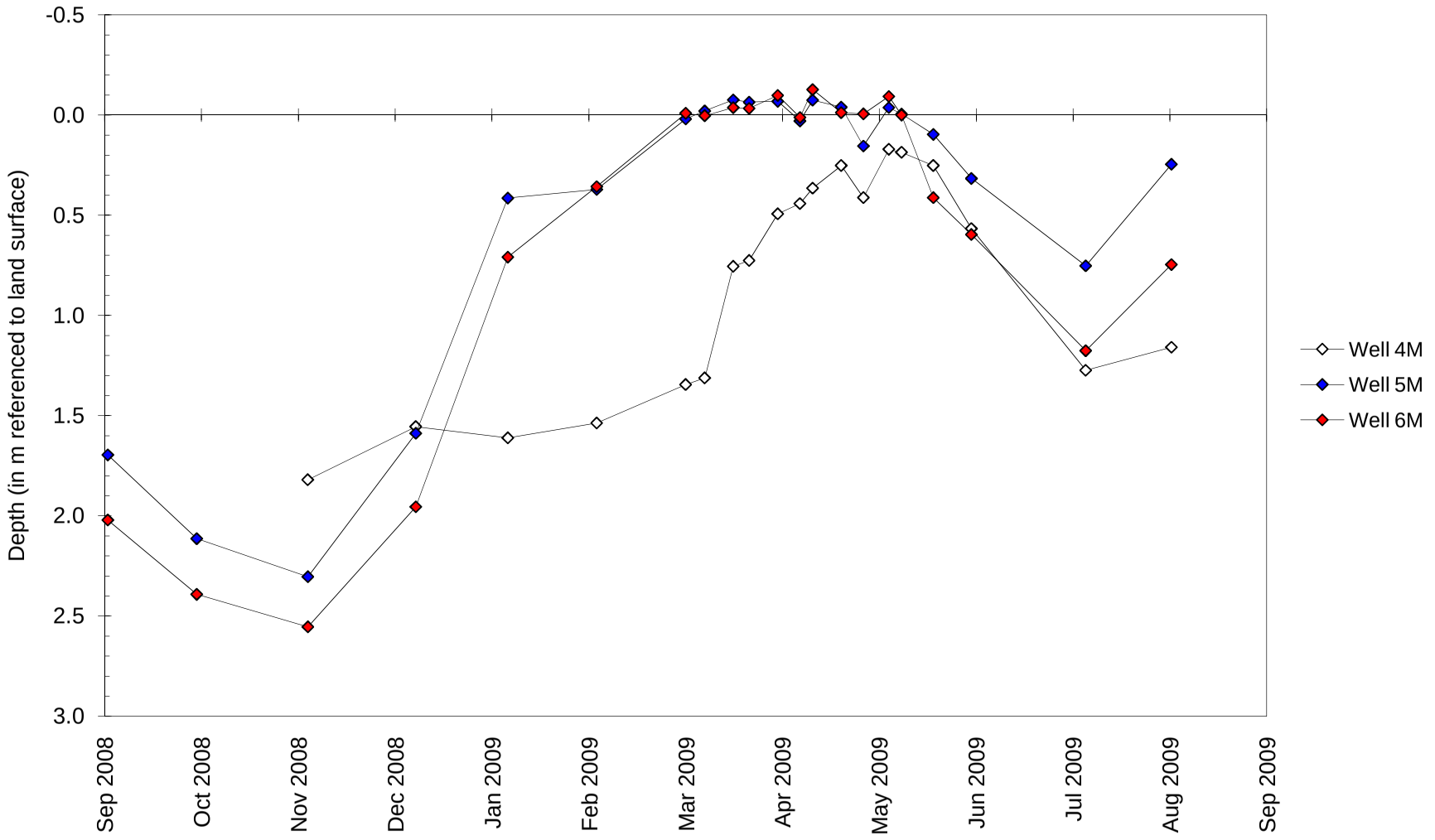
Harrisburg Wetland Compensation Site
September 1, 2008 through August 31, 2009

Water-Level Elevations
in Monitoring Wells, on the Stage Gauge and at the Data Logger

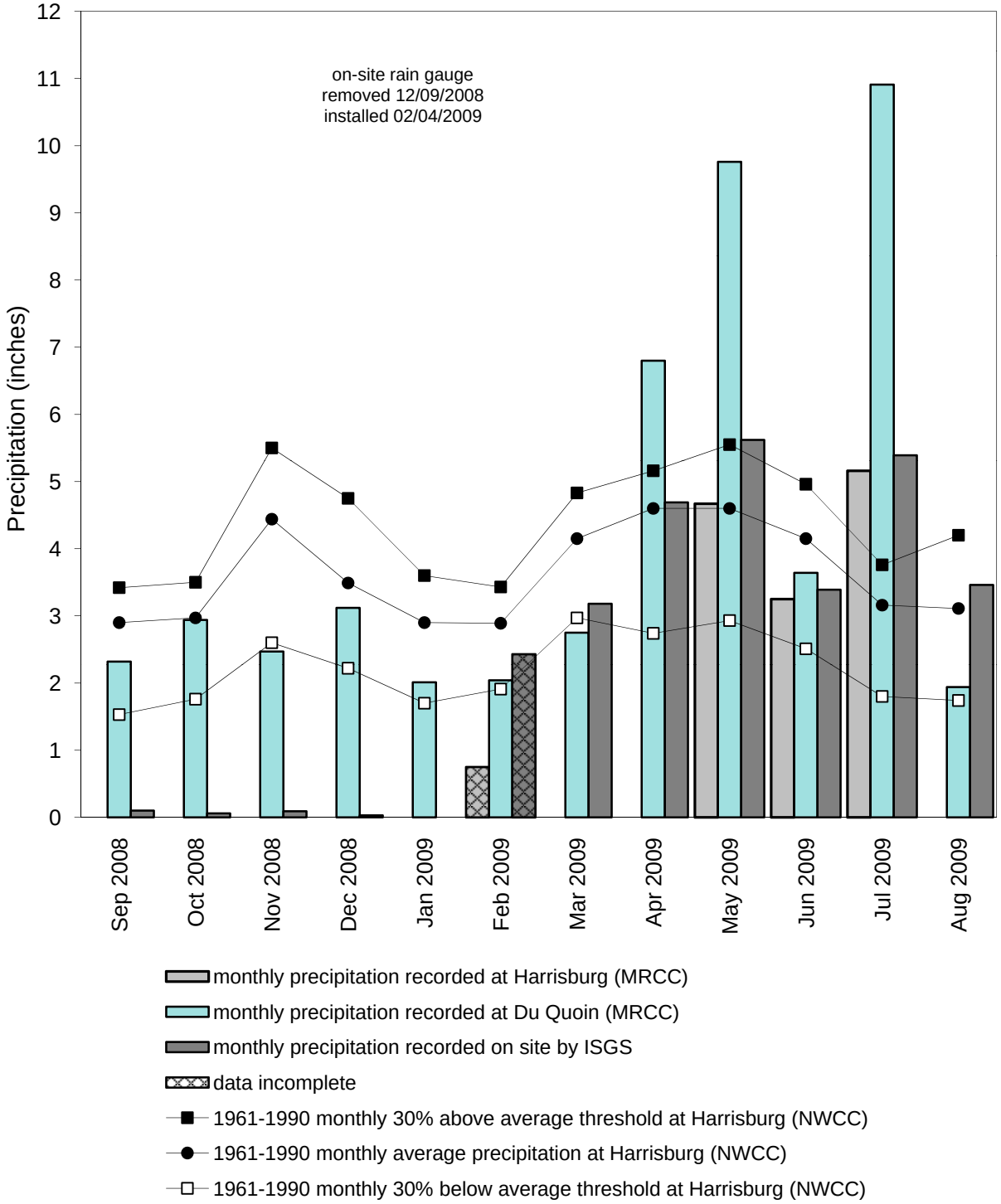


Harrisburg Wetland Compensation Site
September 1, 2008 through August 31, 2009

Depth to Water
in Monitoring Wells



Harrisburg Wetland Compensation Site
September 2008 through August 2009
Total Monthly Precipitation Recorded On Site and at the Harrisburg, IL and Du Quoin, IL Weather Stations



Graph last updated October 19, 2009

TAMMS **ISGS #71**
WETLAND COMPENSATION SITE
FAS 1907
Sequence #1026
Union County, near Tamms, Illinois
Primary Project Manager: Geoffrey E. Pociask
Secondary Project Manager: not assigned

SITE HISTORY

- Summer 2001: The wetland compensation site was constructed.
- June 2003: ISGS was tasked by IDOT to monitor wetland hydrology.
- November 2003: Post-construction water-level monitoring was initiated.

WETLAND HYDROLOGY CALCULATION FOR 2009

We estimate that 2.7 ha (6.7 ac) out of the 6.3-ha (15.6-ac) site satisfied wetland hydrology criteria (Environmental Laboratory 1987) for greater than 5% of the growing season in 2009, whereas 2.0 ha (4.8 ac) satisfied wetland hydrology criteria for greater than 12.5% of the growing season. Using new guidance proposed by the U.S. Army Corps of Engineers (2008), we estimate that 2.5 ha (6.1 ac) satisfied wetland hydrology criteria for 14 or more consecutive days during the growing season. These estimates are based on the following factors:

- According to the MRCC, the median date that the growing season begins in nearby Anna, Illinois, is March 31 and the season lasts 225 days; 5% of the growing season is 11 days and 12.5% of the growing season is 28 days. According to methods outlined in the Midwest Regional Supplement (U.S. Army Corps of Engineers 2008), we estimate that March 4 was the starting date of the 2009 growing season based on vegetation growth and development observed at the wetland compensation site.
- Total precipitation for the reporting period from September 2008 through August 2009 was 81% of normal. Drier than normal conditions prevailed in September and November 2008 and during January through March and June through August 2009. Precipitation was at or above normal in October and December 2008, and during April and May 2009.
- In 2009, wells 3S, 4S, 5S, 6S, 7S, 9S, and 10S satisfied the wetland hydrology criteria for greater than 5% of the growing season and for 14 or more consecutive days during the growing season. Furthermore, wells 3S, 4S, 7S, 9S, and 10S also satisfied wetland hydrology criteria for greater than 12.5% of the growing season.
- Surface-water data from RDS 1 showed that areas at the north end of the site below 103.1 m (338.3 ft) were inundated for greater than 5% of the growing season and for 14 or more consecutive days during the growing season, and areas below 103.0 m (337.9 ft) were inundated for greater than 12.5% of the growing season. Surface-water data from RDS 2 showed that areas at the south end of the site below 102.4 m (336.0 ft) were inundated for greater than 5% of the growing season and for 14 or more

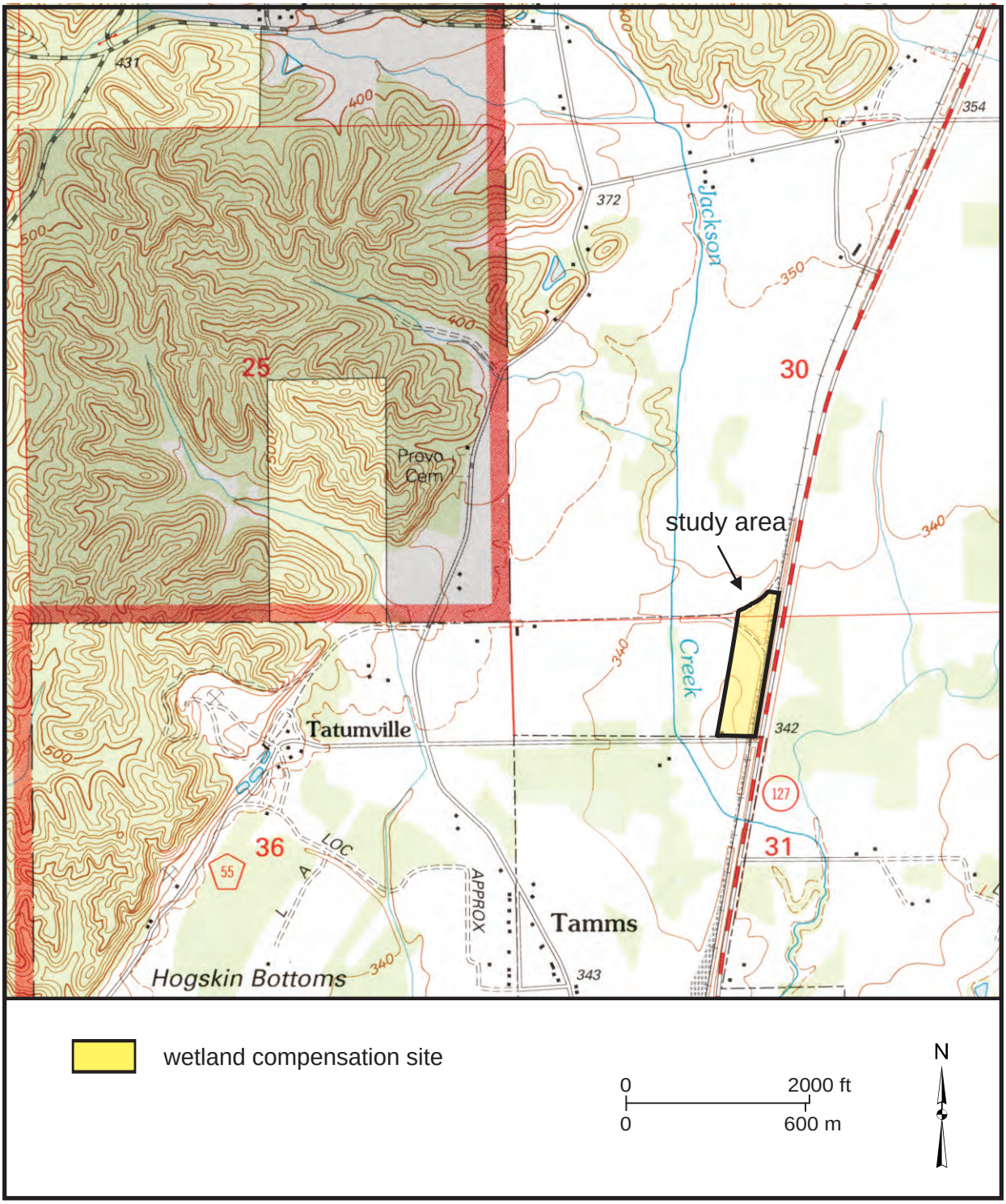
consecutive days during the growing season, and areas below 102.3 m (335.6 ft) were inundated for greater than 12.5% of the growing season.

PLANNED FUTURE ACTIVITIES

- Water-level monitoring will continue until no longer required by IDOT.

Tamms Wetland Compensation Site
(FAS 1907)
General Study Area and Vicinity

from the USGS Topographic Series, Mill Creek, IL 7.5-minute Quadrangle (USGS 1996).
contour interval is 20 feet

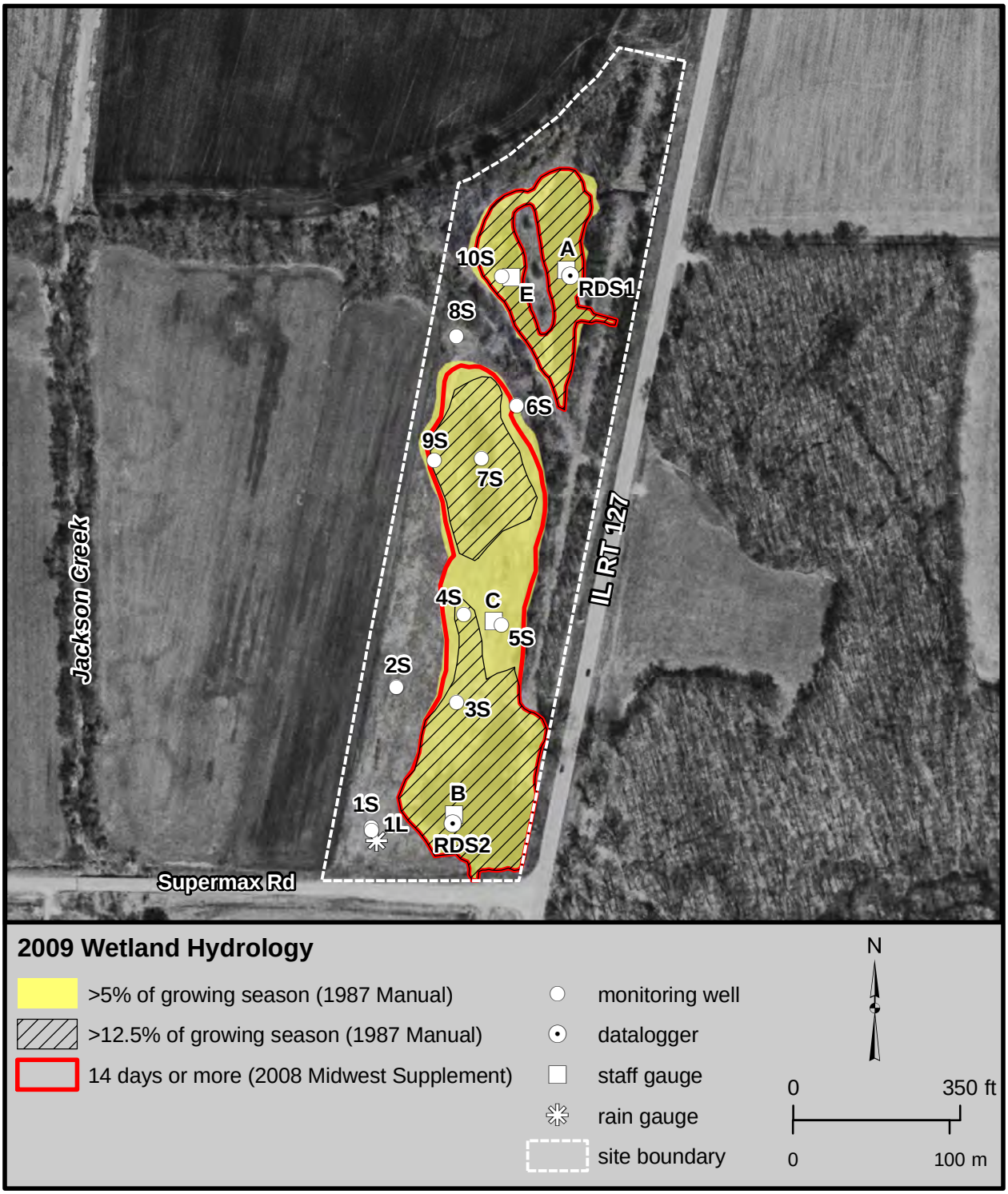


Tamms Wetland Compensation Site
(FAS 1907)

Estimated Areal Extent of 2009 Wetland Hydrology

September 1, 2008 through August 31, 2009

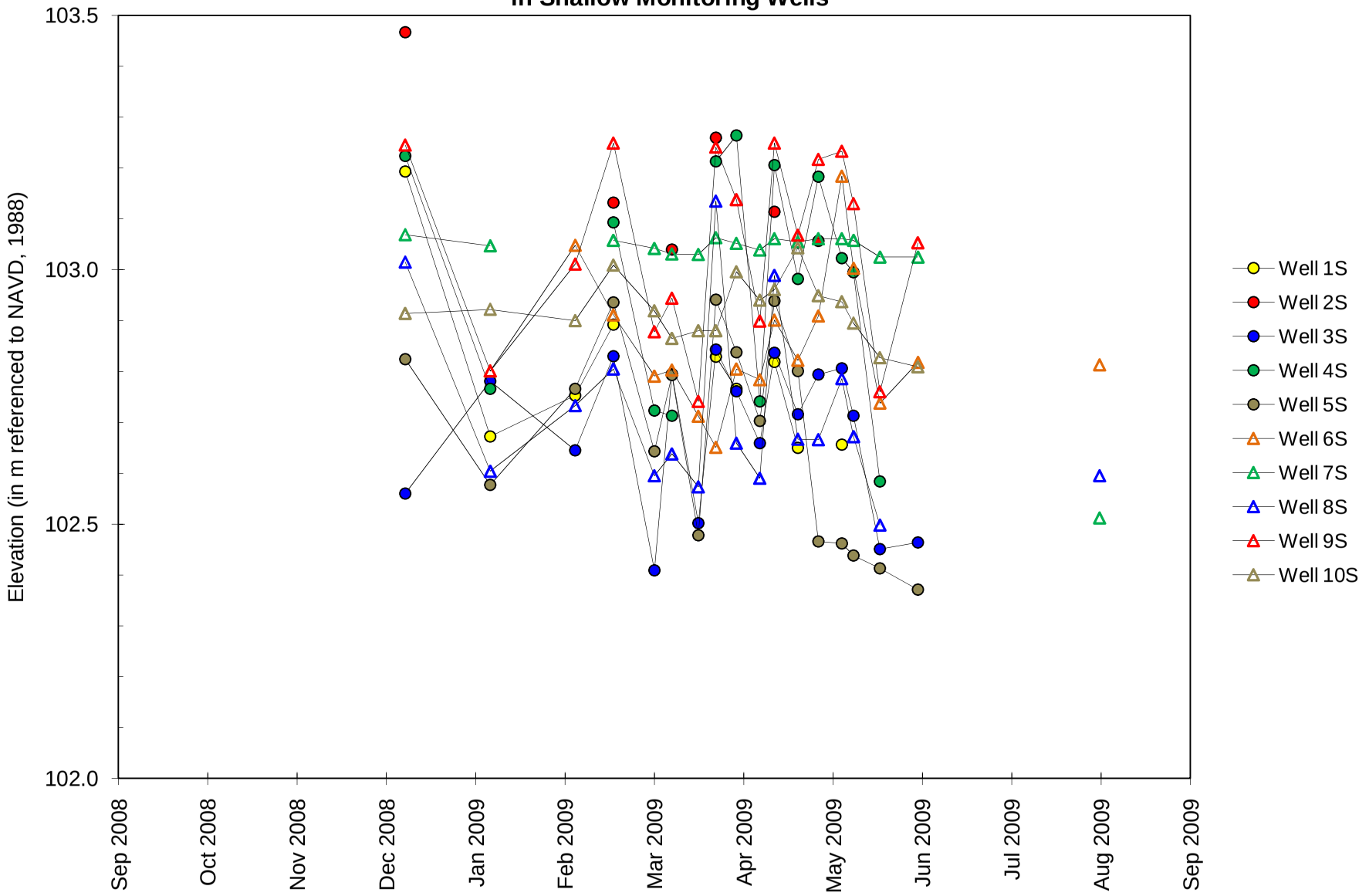
map based on USGS digital orthophotograph Mill Creek SE quarter quadrangle
from 3/31/2005 aerial photography and ISGS topography (ISGS 2006).



Tamms Wetland Compensation Site

September 1, 2008 through August 31, 2009

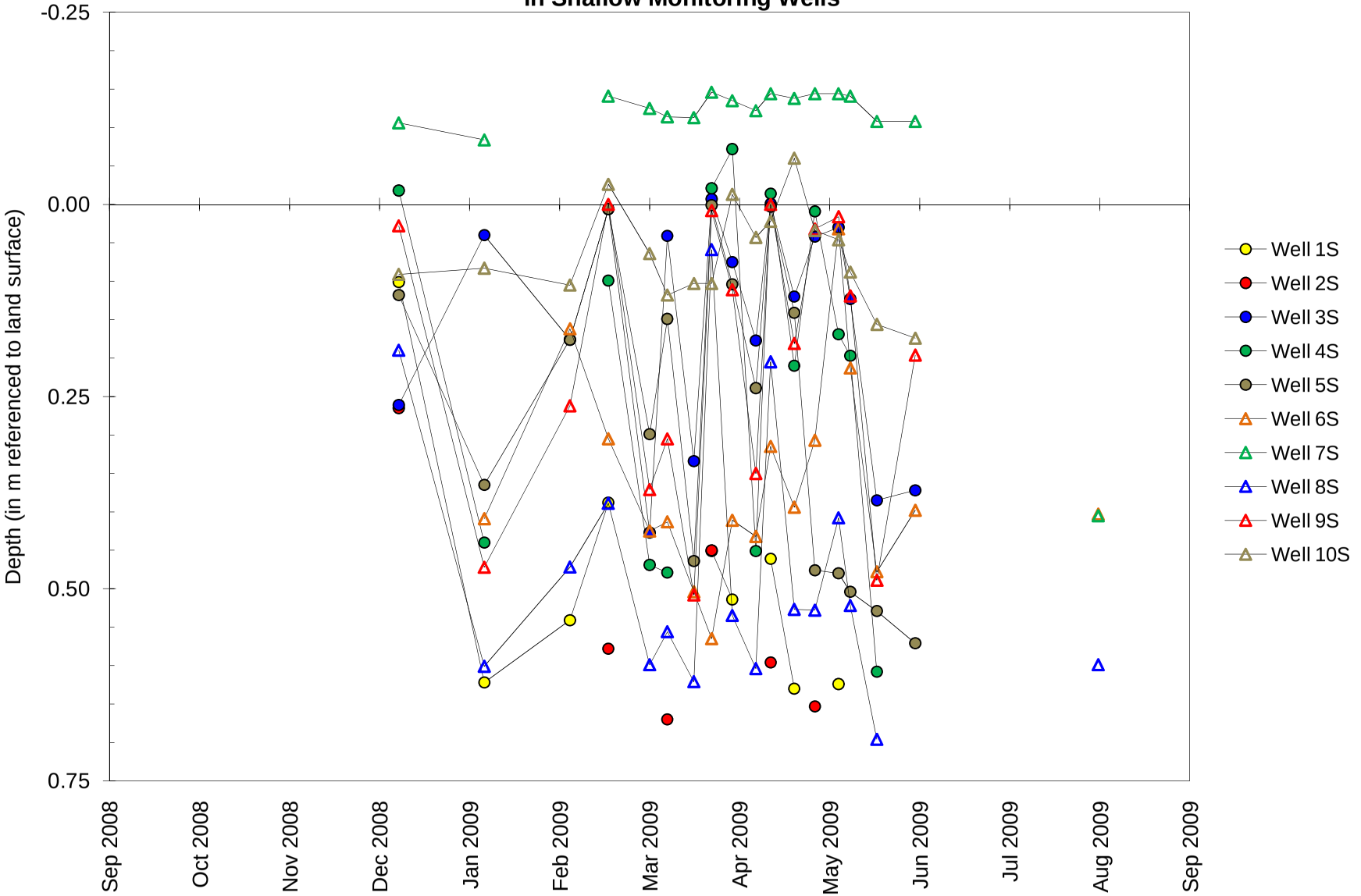
Water-Level Elevations in Shallow Monitoring Wells



Tamms Wetland Compensation Site

September 1, 2008 through August 31, 2009

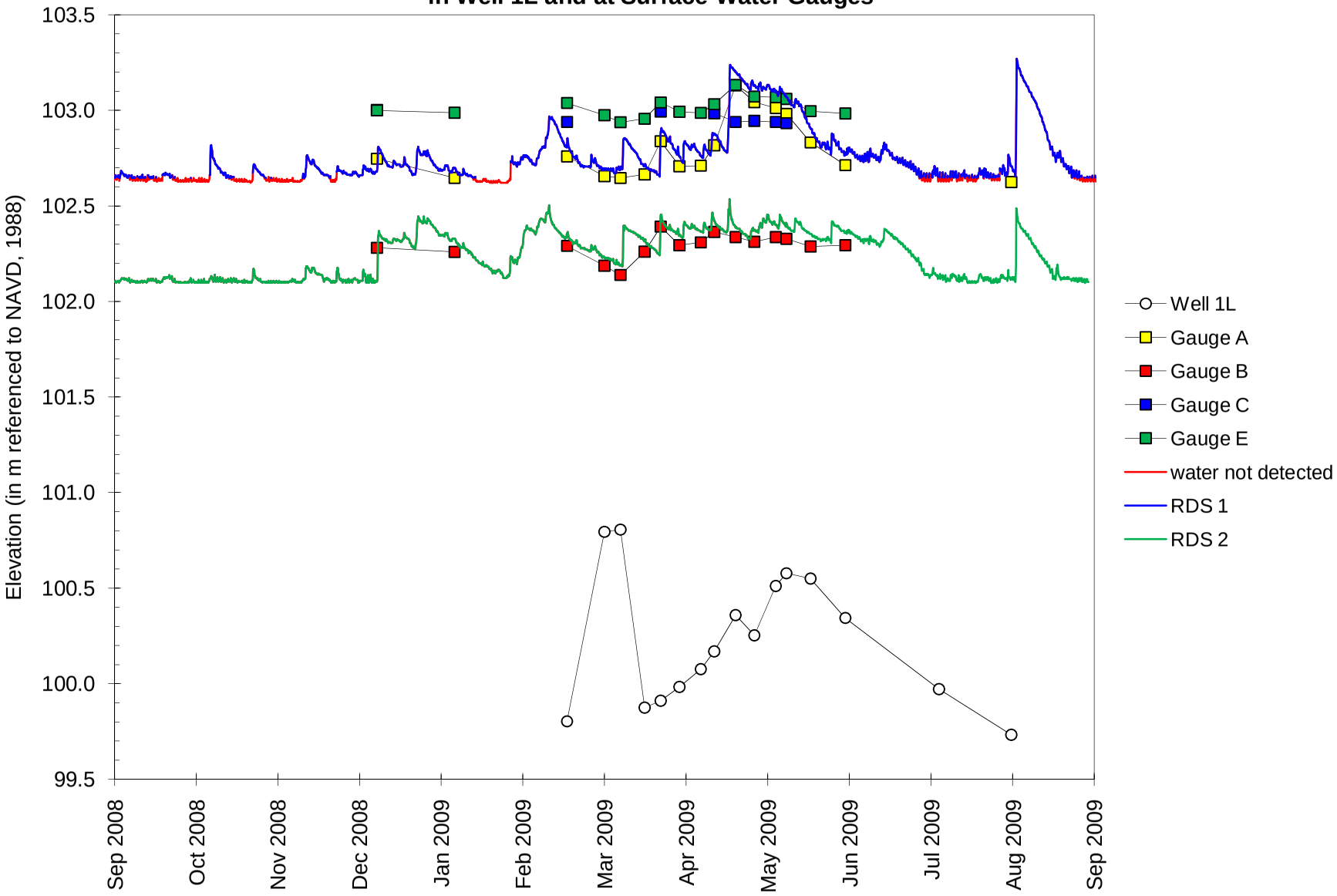
Depth to Water in Shallow Monitoring Wells



Tamms Wetland Compensation Site

September 1, 2008 through August 31, 2009

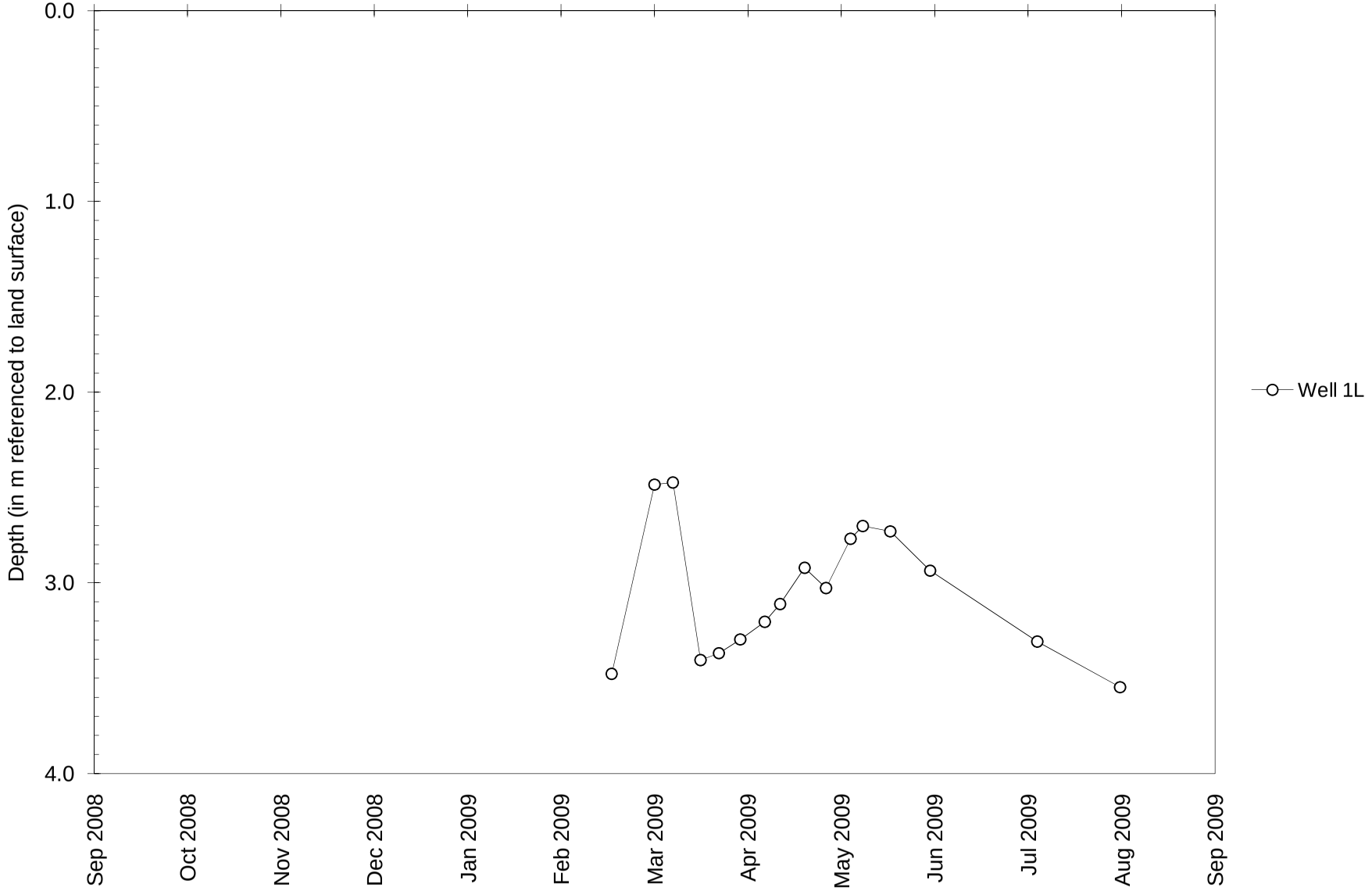
Water-Level Elevations in Well 1L and at Surface-Water Gauges



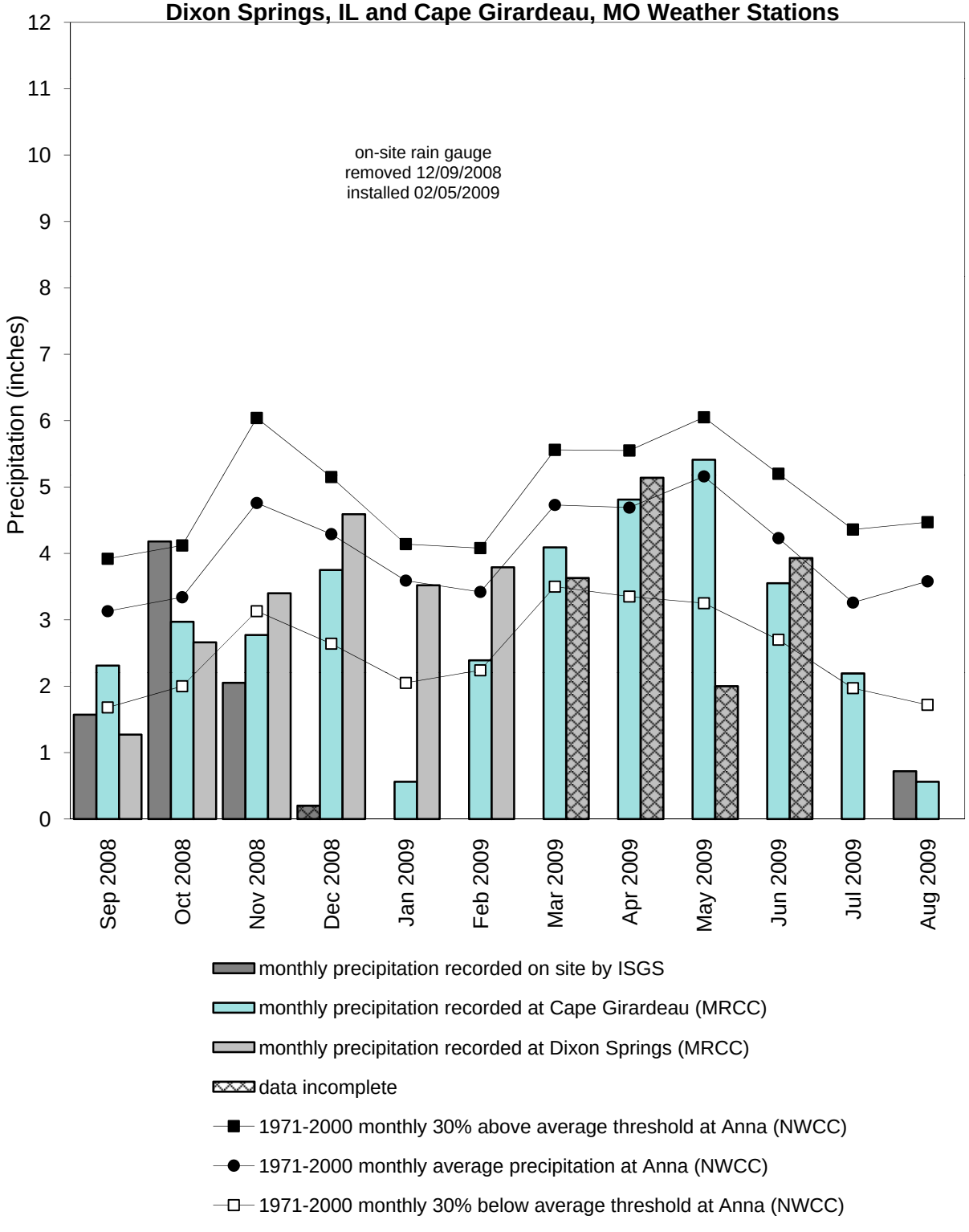
Tamms Wetland Compensation Site

September 1, 2008 through August 31, 2009

Depth to Water in Well 1L



Tamms Wetland Compensation Site
September 2008 through August 2009
Total Monthly Precipitation Recorded On Site and at the Dixon Springs, IL and Cape Girardeau, MO Weather Stations



Graph last updated October 19, 2009

FREEPORT BYPASS WEST **ISGS #72**
WETLAND COMPENSATION SITE 6W
FAP 301
Sequence #10487
Stephenson County, near Freeport, Illinois
Primary Project Manager: Eric T. Plankell
Secondary Project Manager: not assigned

SITE HISTORY

- Fall 2003: ISGS was tasked by IDOT to perform a Level II hydrogeologic assessment of the potential for wetland mitigation at this site.

- December 2003: ISGS monitoring network was installed.

- Summer 2006: Tree planting was completed and a berm was installed at the western end of the central drainage ditch.

- February 2007: ISGS submitted a Level II hydrogeologic characterization report to IDOT (ISGS Open-File Series 2007–01).

WETLAND HYDROLOGY CALCULATION FOR 2009

The estimated total area that satisfied wetland hydrology criteria (Environmental Laboratory 1987) for greater than 5% of the 2009 growing season is 5.0 ha (12.5 ac), and the total area that satisfied wetland hydrology criteria for greater than 12.5% of the 2009 growing season is 3.0 ha (7.4 ac) out of a total site area of 9.6 ha (23.6 ac). Using new guidance proposed by the U.S. Army Corps of Engineers (2008), we estimate that 7.0 ha (17.2 ac) also satisfied wetland hydrology criteria for 14 or more consecutive days during the growing season. These estimates are based on the following factors:

- According to the MRCC, the median date that the growing season begins in Freeport, Illinois is April 13, and the season lasts 183 days; 5% of the growing season is 9 days, and 12.5% of the growing season is 23 days. According to methods outlined in the Midwest Regional Supplement (U.S. Army Corps of Engineers 2008), we estimate that March 19 was the starting date of the 2009 growing season based on vegetation growth and development and soil temperature observed at the wetland compensation site.

- Total precipitation at the nearby Wastewater Treatment Plant weather station in Freeport, Illinois was approximately 128% of normal for the monitoring period of September 2008 through August 2009. Precipitation at this station was below normal in November and December 2008, and in August 2009. Precipitation amounts were at or above normal for the remaining months of the 2008–2009 monitoring period. A flooding event along the Pecatonica River that peaked on April 29 resulted in the observed areas that satisfied wetland hydrology criteria for the 2008-2009 monitoring period.

- In 2009, water levels measured in all soil-zone (S and VS) wells except 4S, 5S, and 6S satisfied the wetland hydrology criteria for greater than 5% of the growing season. All wells, except 4S, satisfied the wetland hydrology criteria for 14 or more consecutive days of the growing season. Additionally, water levels measured in wells 2S, 7S, 9S,

10S, and 15S satisfied the wetland hydrology criteria for greater than 12.5% of the growing season.

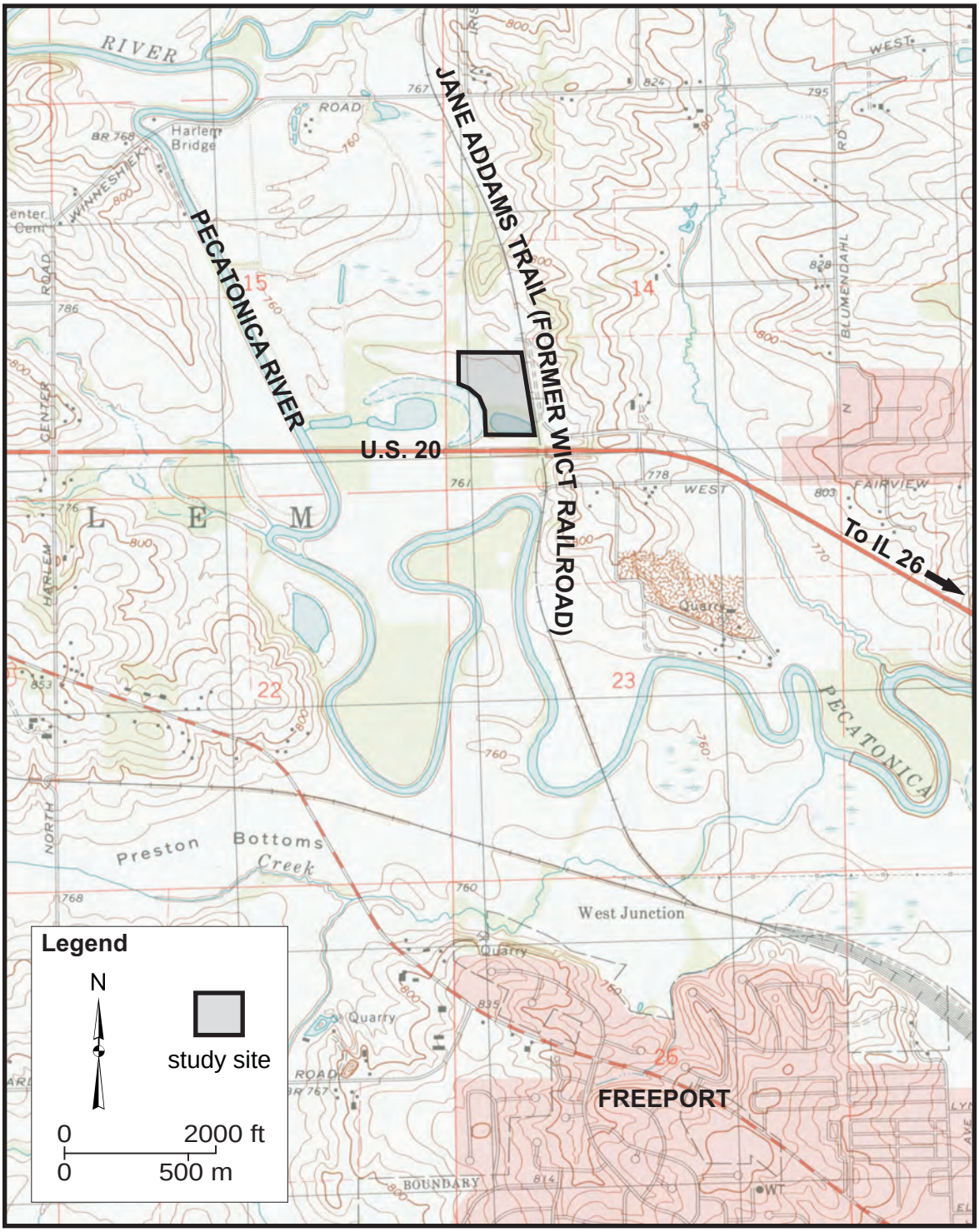
- Water-level records for the In-Situ pressure transducer at Gauge CR indicated on-site inundation at or below approximately 230.86 m (757.41 ft) for greater than 5% of the growing season, inundation at or below approximately 230.91 m (757.58 ft) for 14 or more consecutive days of the growing season, and inundation at or below approximately 230.78 m (757.15 ft) for greater than 12.5% of the growing season.

PLANNED FUTURE ACTIVITIES

- Monitoring will continue at the site until no longer required by IDOT.

Freeport Bypass West Wetland Compensation Site 6W
(FAS 301)
General Study Area and Vicinity

from the USGS Topographic Series, Freeport West, IL 7.5-minute Quadrangle (USGS 1998)
contour interval is 10 feet

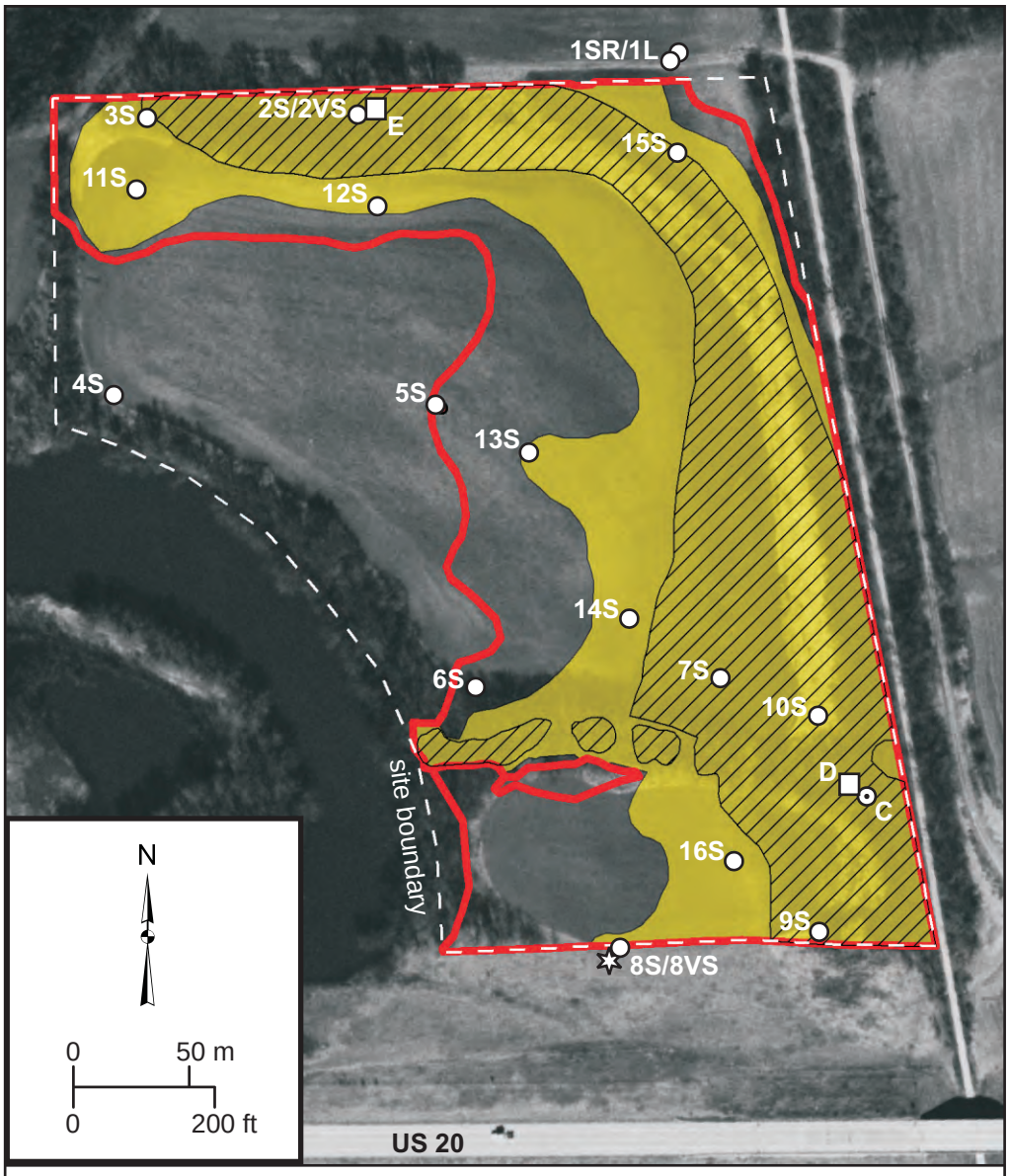


Freeport Bypass West Wetland Compensation Site 6W (FAS 301)

Estimated Areal Extent of 2009 Wetland Hydrology

September 1, 2008 through August 31, 2009

Map based on USGS digital orthophotograph, Freeport West, NE quarter quadrangle (ISGS 2005)



2009 Wetland Hydrology

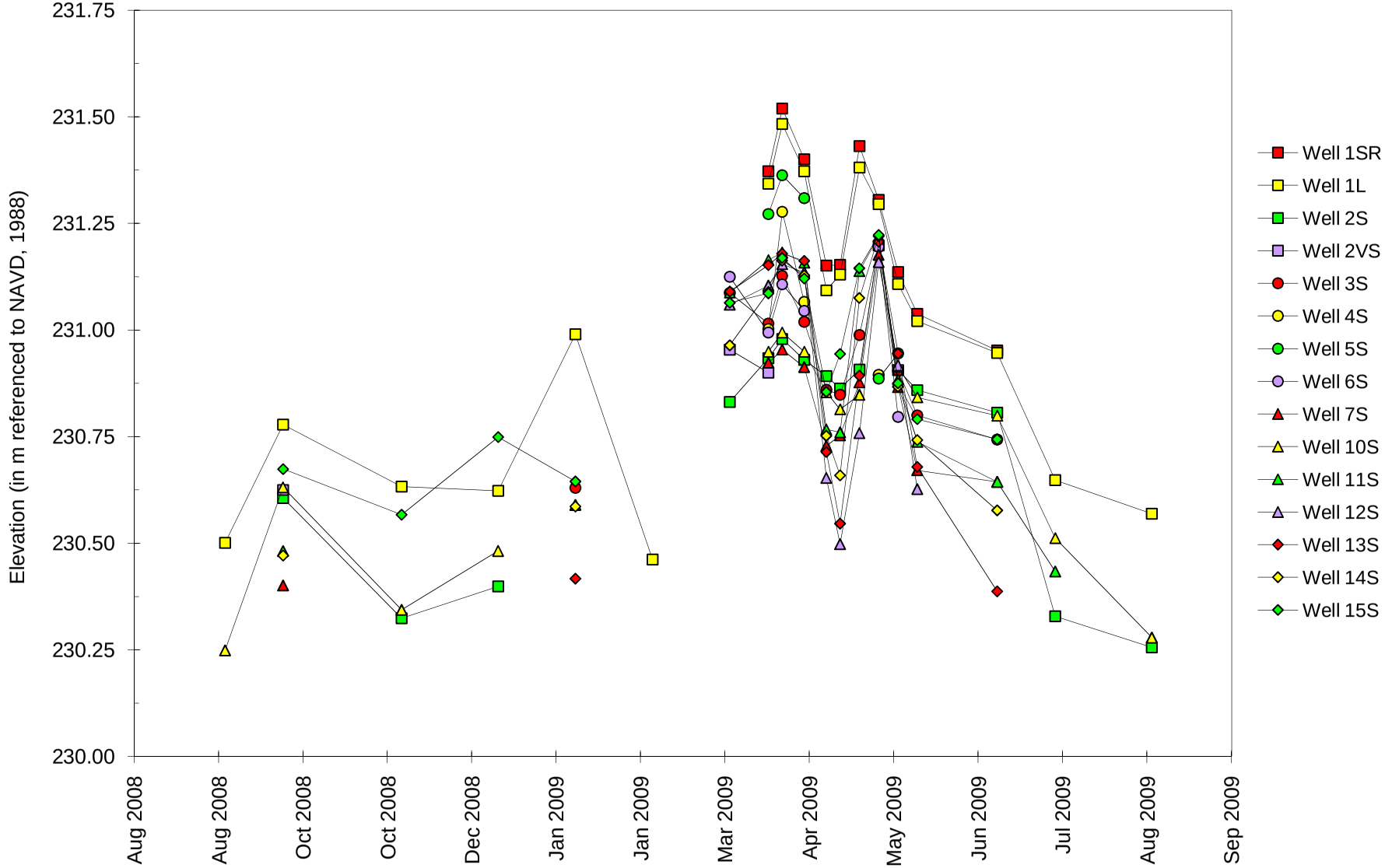
- ISGS monitoring well
- Staff gauge
- In-Situ pressure transducer
- Rain gauge

- > 5% of the growing season (1987 Manual)
- > 12.5% of the growing season (1987 Manual)
- > 14 days (2008 Midwest Supplement)

Freeport Bypass West Wetland Compensation Site 6W

September 1, 2008 through August 31, 2009

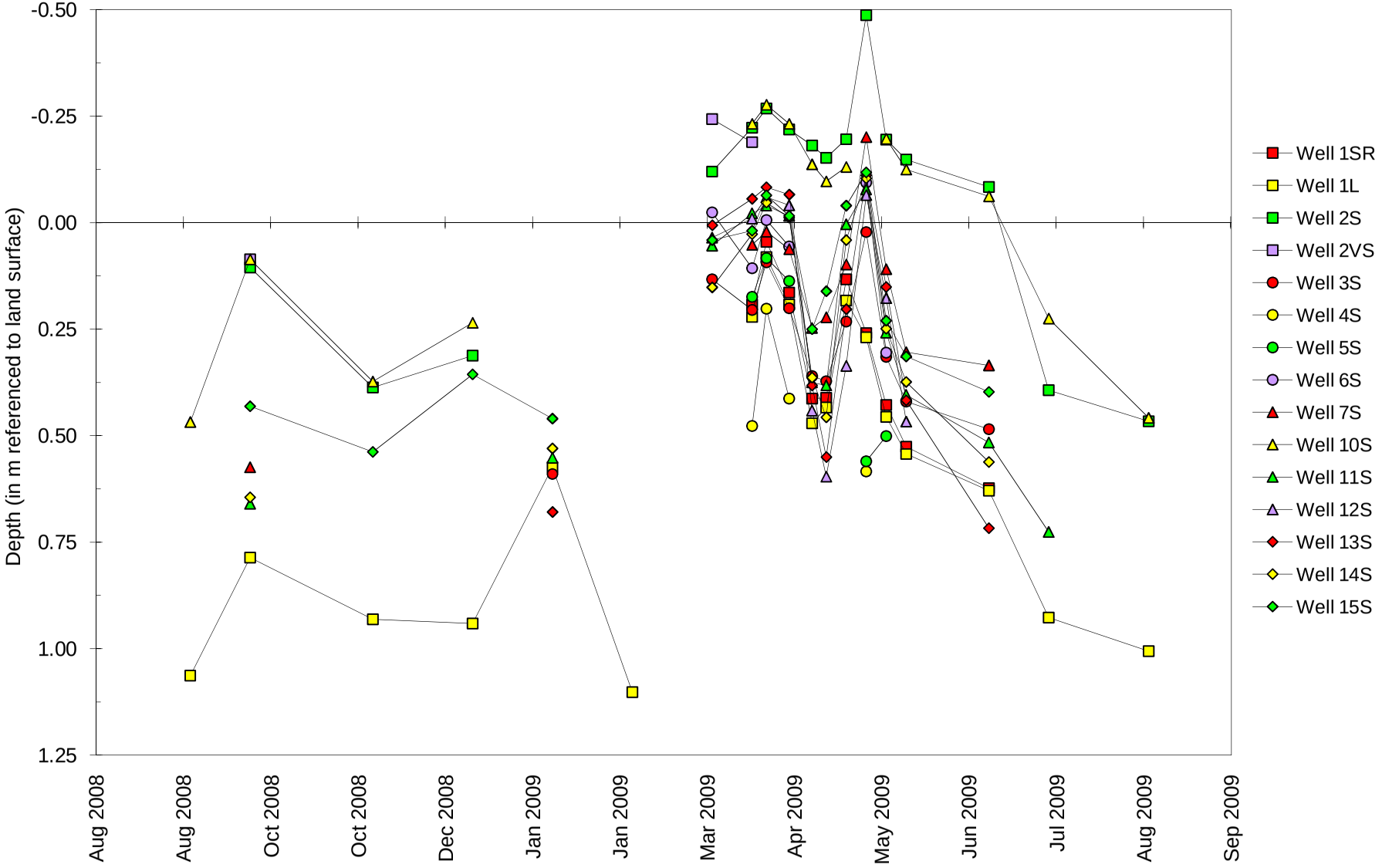
Water-Level Elevations in Monitoring Wells in the North Field



Freeport Bypass West Wetland Compensation Site 6W

September 1, 2008 through August 31, 2009

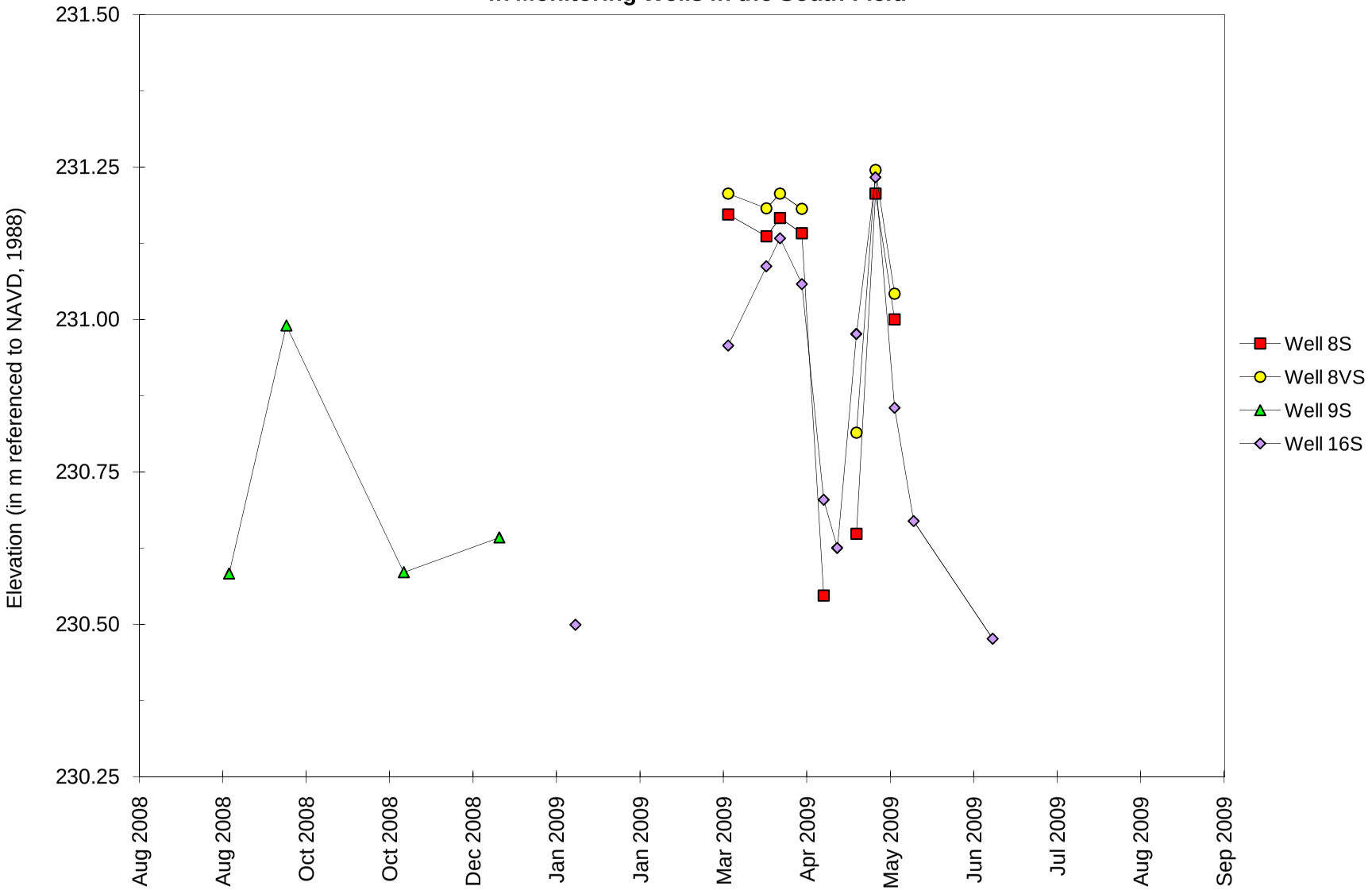
Depth to Water
in Monitoring Wells in the North Field



Freeport Bypass West Wetland Compensation Site 6W

September 1, 2008 through August 31, 2009

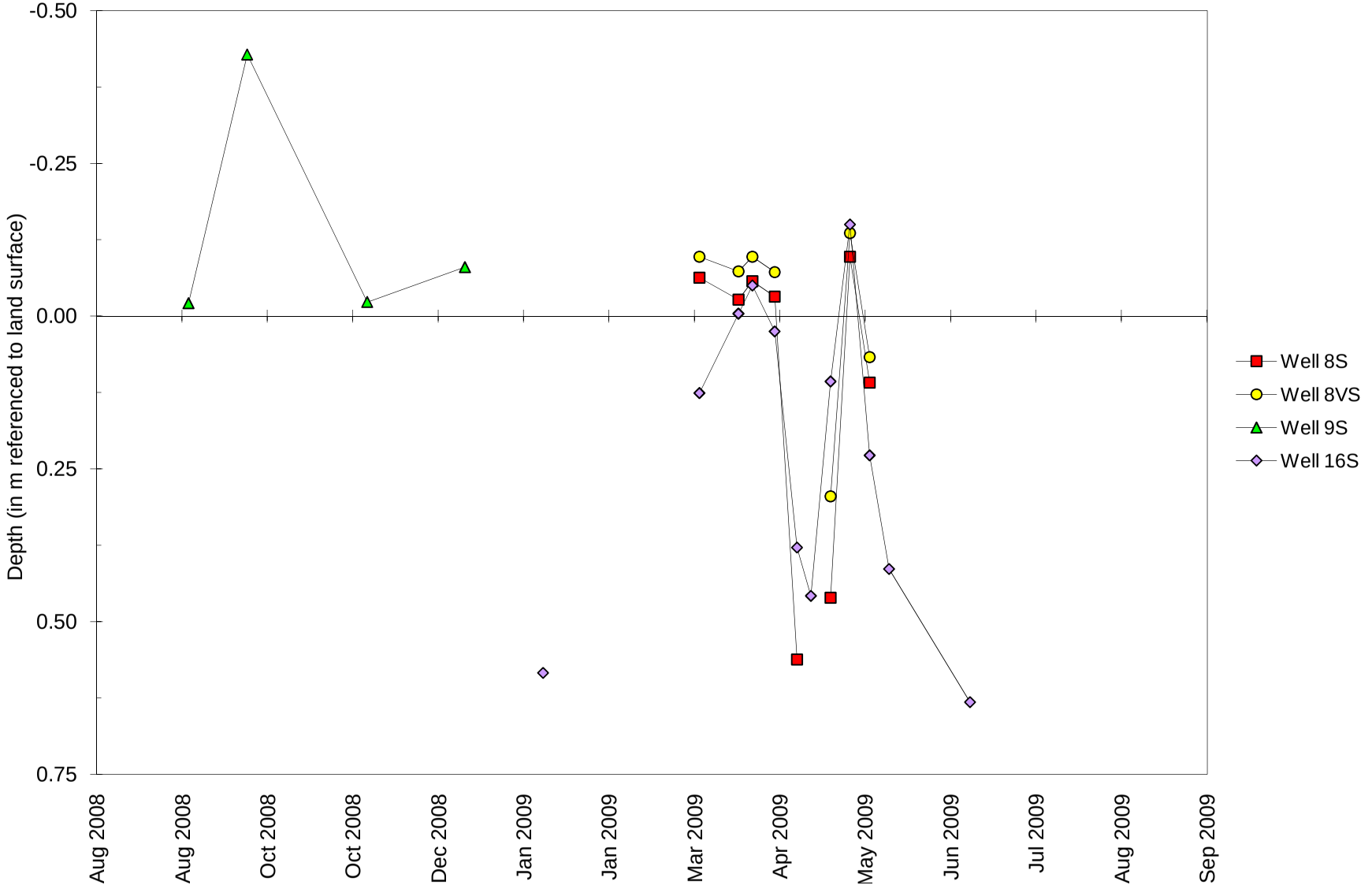
Water-Level Elevations in Monitoring Wells in the South Field



Freeport Bypass West Wetland Compensation Site 6W

September 1, 2008 through August 31, 2009

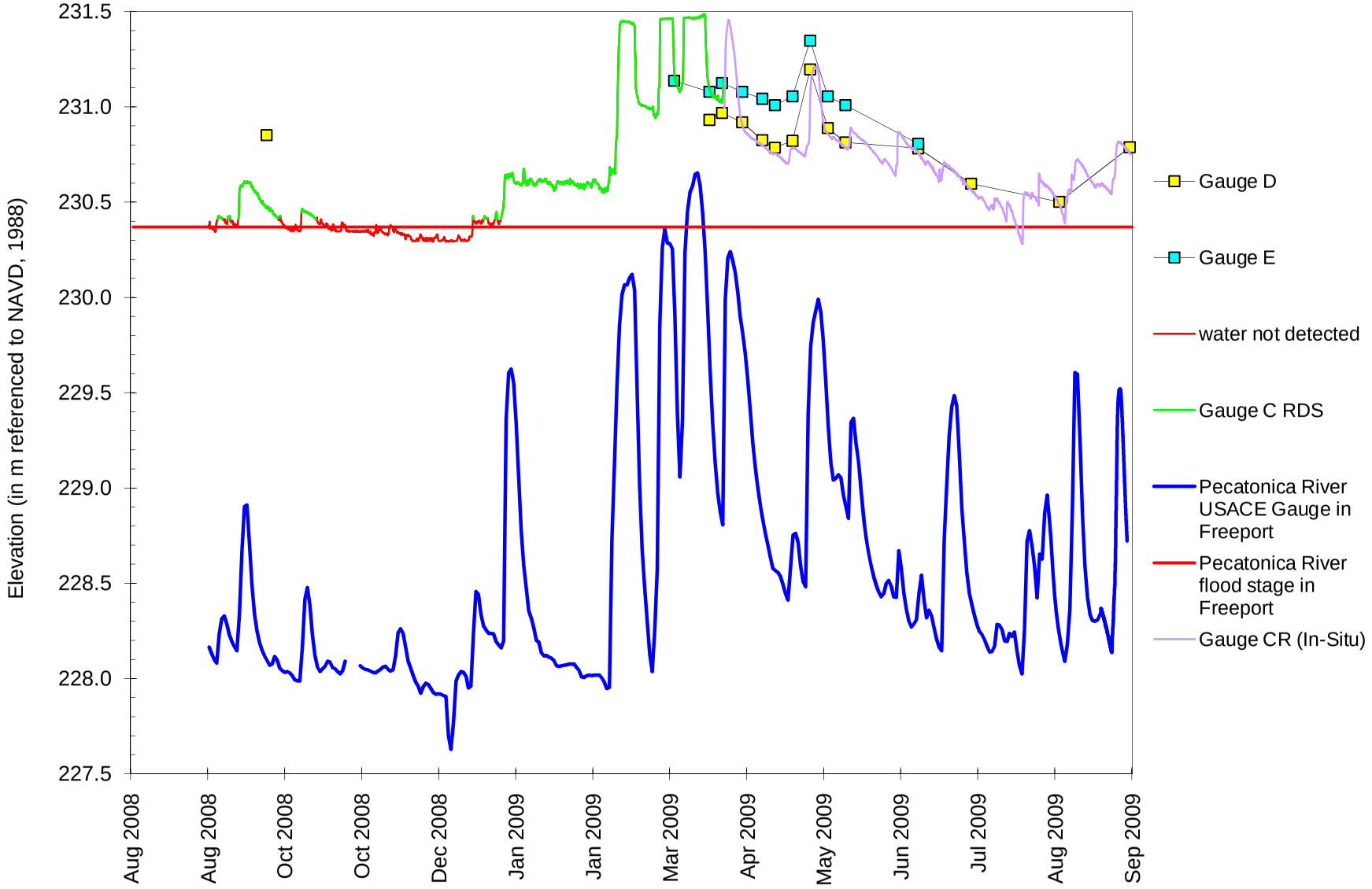
Depth to Water
in Monitoring Wells in the South Field



Freeport Bypass West Wetland Compensation Site 6W

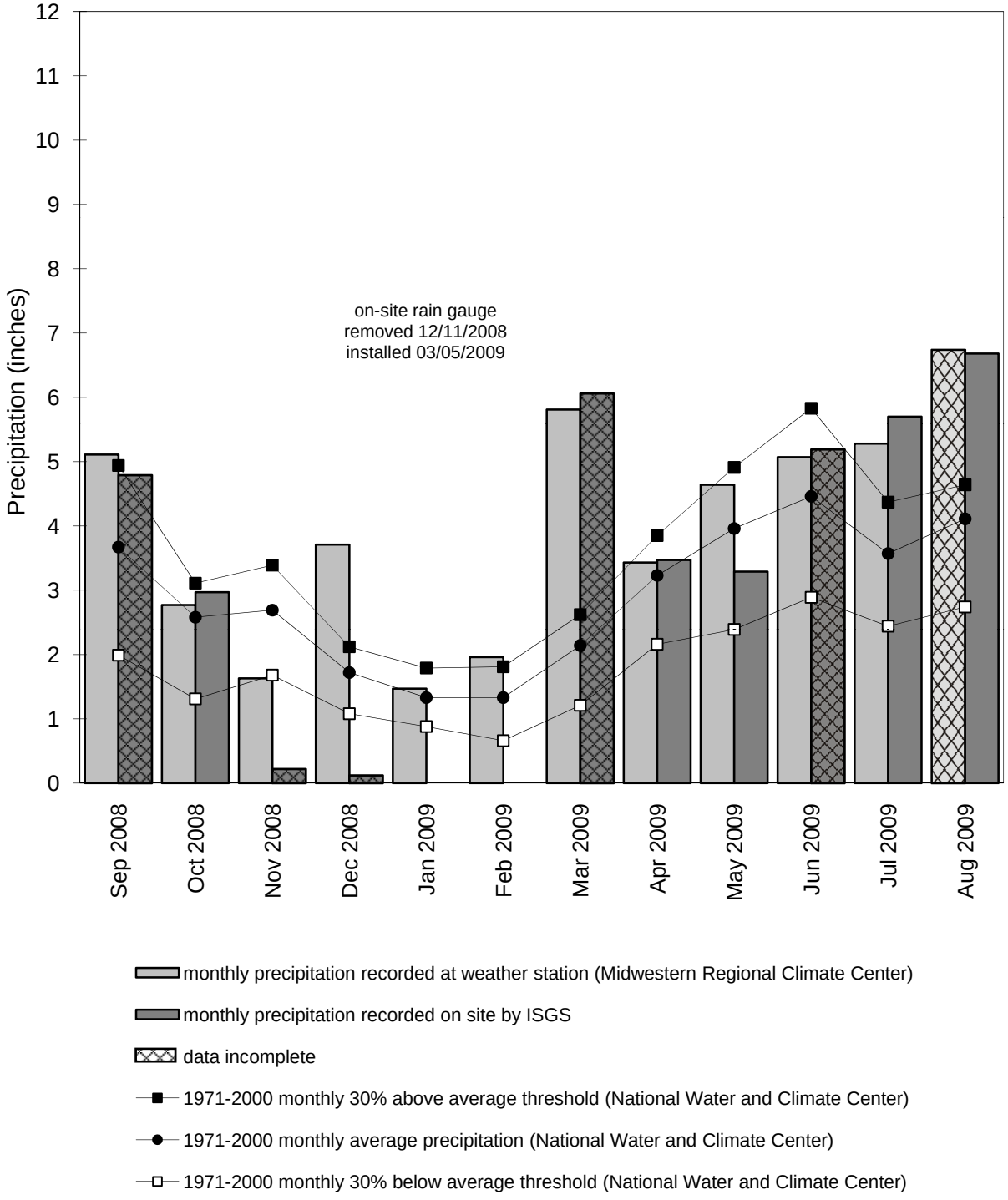
September 1, 2008 through August 31, 2009

Water-Level Elevations on Stage Gauges



Freeport Bypass West
Wetland Compensation Site 6W
September 2008 through August 2009

Total Monthly Precipitation Recorded On Site and at the Freeport Wastewater Treatment Plant Weather Station, Freeport, IL



Graph last updated September 14, 2009

PECATONICA RIVER FOREST PRESERVE **ISGS #73**
WETLAND COMPENSATION SITE
Harrison Avenue Extension
Sequence #3746
Winnebago County, near Pecatonica, Illinois
Primary Project Manager: Eric T. Plankell
Secondary Project Manager: Steven E. Benton

SITE HISTORY

- Summer 2003: Wetland construction was completed at the site.
- February 2005: ISGS was tasked by IDOT to monitor wetland hydrology.
- April 2005: ISGS began on-site monitoring with the installation of a monitoring network.

WETLAND HYDROLOGY CALCULATION FOR 2009

The estimated total area that satisfied wetland hydrology criteria (Environmental Laboratory 1987) for greater than 5% of the 2009 growing season is 5.3 ha (13.0 ac) and the area that satisfied wetland hydrology criteria for greater than 12.5% is 2.2 ha (5.3 ac) out of a total mitigation area acreage of approximately 6.9 ha (17.1 ac). Using new guidance proposed by the U.S. Army Corps of Engineers (2008), we estimate that 3.9 ha (9.7 ac) satisfied wetland hydrology criteria for 14 or more consecutive days during the growing season. Additional areas outside the designated mitigation areas also satisfied wetland hydrology criteria, and are discussed below. These estimates are based on the following factors:

- According to the MRCC, the median date that the growing season begins in nearby Freeport, Illinois is April 13, and the season lasts 183 days; 5% of the growing season is 9 days, and 12.5% of the growing season is 23 days. According to methods outlined in the Midwest Regional Supplement (U.S. Army Corps of Engineers 2008), we estimate that March 24 was the starting date of the 2009 growing season based on vegetation growth and development observed at the wetland compensation site.
- Total precipitation at the nearby Wastewater Treatment Plant weather station in Freeport, Illinois, was approximately 128% of normal for the monitoring period of September 2008 through August 2009. Precipitation at this station was below normal in November and December 2008, and in August 2009. Precipitation amounts were at or above normal for the remaining months of the 2008–2009 monitoring period. Several inches of rainfall recorded at the site during the latter half of April and the first week of May, coupled with a flooding event along the Pecatonica River that peaked on May 2, were the primary influences resulting in the observed areas that satisfied the wetland hydrology criteria for the 2008-2009 monitoring period.
- In 2009, water levels measured in all soil-zone (S) monitoring wells, except wells 12S and 16S, satisfied wetland hydrology criteria for greater than 5% of the growing season. All wells, except 7S, 12S, and 16S satisfied wetland hydrology criteria for 14 or more consecutive days of the growing season. In addition, water levels measured in wells 1S, 2S, 3S, 4S, 5S, 6SR, 9S, 14S, 17S, 18S, and 19S satisfied wetland hydrology criteria for greater than 12.5% of the growing season.

- Surface-water levels shown by data loggers at gauges C and H indicated inundation at or below approximately 225.10 m (738.52 ft) and 224.99 m (738.14 ft), respectively, for greater than 5% of the growing season, and inundation at or below approximately 225.07 m (738.42 ft) and 225.04 m (738.32 ft), respectively, for 14 or more consecutive days of the growing season. Gauge C indicated inundation at or below approximately 225.03 m (738.29 ft) for greater than 12.5% of the growing season, while gauge H was not inundated for greater than 12.5% of the growing season.

- In areas within the site, but outside of the designated mitigation areas, approximately 6.3 ha (15.6 ac) satisfied wetland hydrology criteria for greater than 5% of the growing season, approximately 5.2 ha (12.7 ac) satisfied wetland hydrology criteria for 14 or more consecutive days of the growing season, and approximately 4.1 ha (10.0 ac) satisfied wetland hydrology criteria for greater than 12.5% of the growing season. These acreages include some preexisting wetland areas previously delineated along the western edge of the site by Hey and Associates, Inc.

- For the purposes of this report, the boundaries of the mitigation areas were reproduced from engineering plans drawn by Hey and Associates, Inc, and then corrected to match features observed in the field and on aerial photography of the site taken in 2005. Therefore, total site acreage may vary from other estimates.

- A beaver dam, first discovered in April 2009 and located approximately 140 m (460 ft) north of the Pecatonica River in the western ditch, is helping to sustain water levels in the northern mitigation area and along the western edge of the site (including wells 1S, 2S, 3S, 4S, 5S, 6S, 14S, 17S, 18S, 19S, and 20S) for longer than has been typically observed.

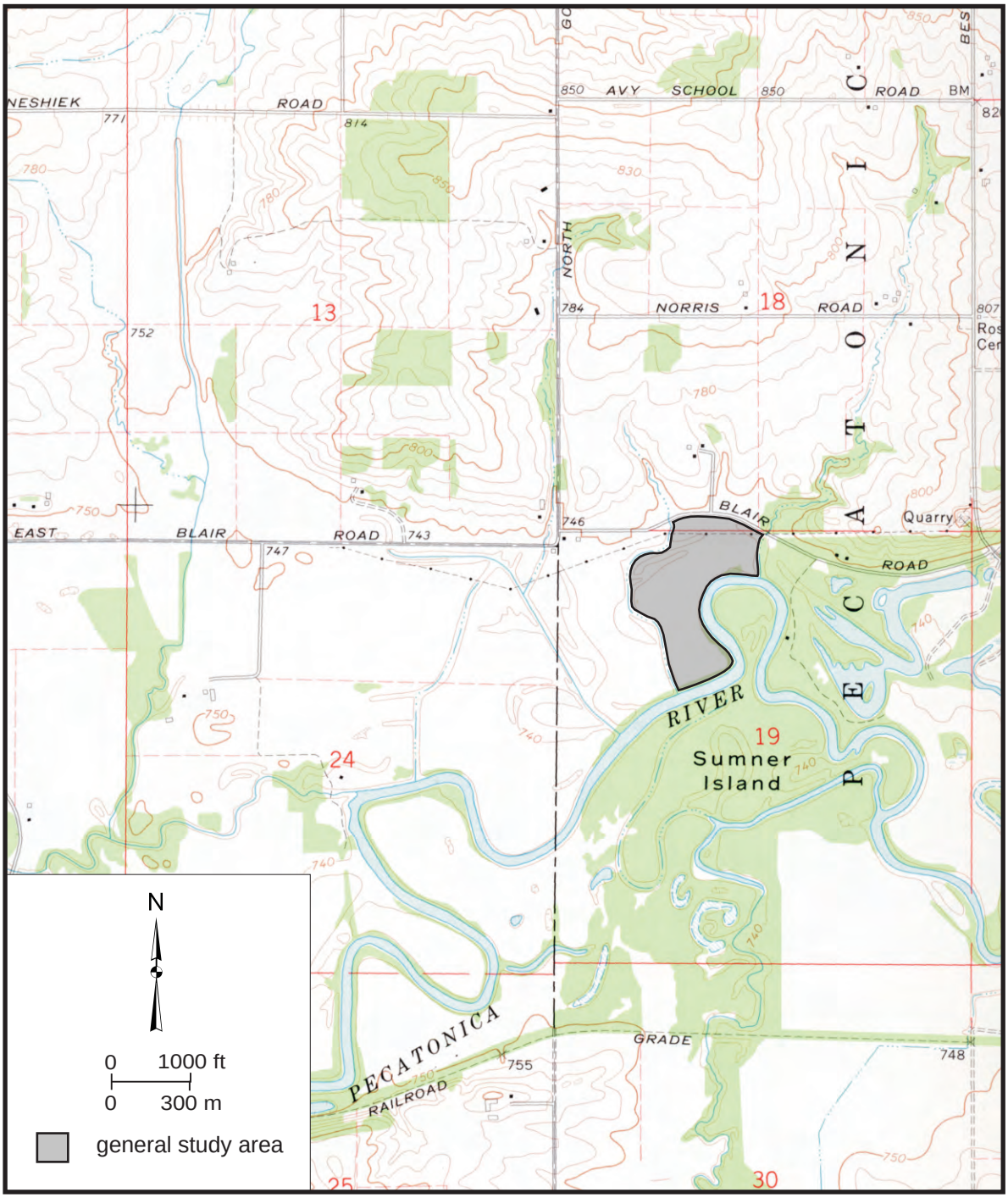
PLANNED FUTURE ACTIVITIES

- Monitoring will continue at the site until no longer required by IDOT.

Pecatonica River Forest Preserve Wetland Compensation Site (Sequence #3746)

General Study Area and Vicinity

from the USGS Topographic Series, Ridott, IL 7.5-minute Quadrangle (USGS 1971)
contour interval is 10 feet



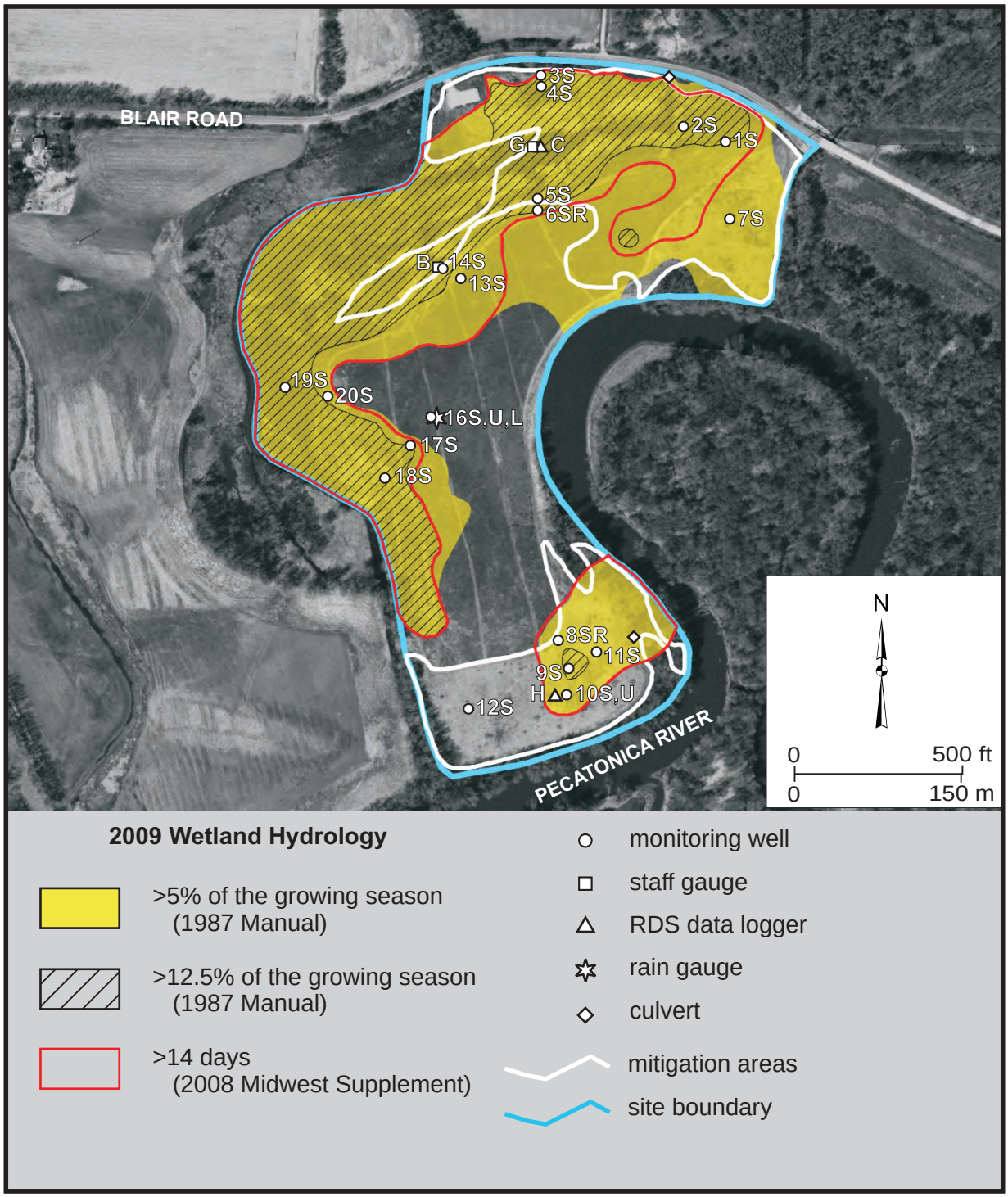
Pecatonica River Forest Preserve Wetland Compensation Site (Sequence #3746)

Estimated Areal Extent of 2009 Wetland Hydrology

September 1, 2008 through August 31, 2009

Map based on USGS digital orthophotograph Ridott, NE quarter quadrangle

Produced from 4/8/99 aerial photography (ISGS 2005)



2009 Wetland Hydrology

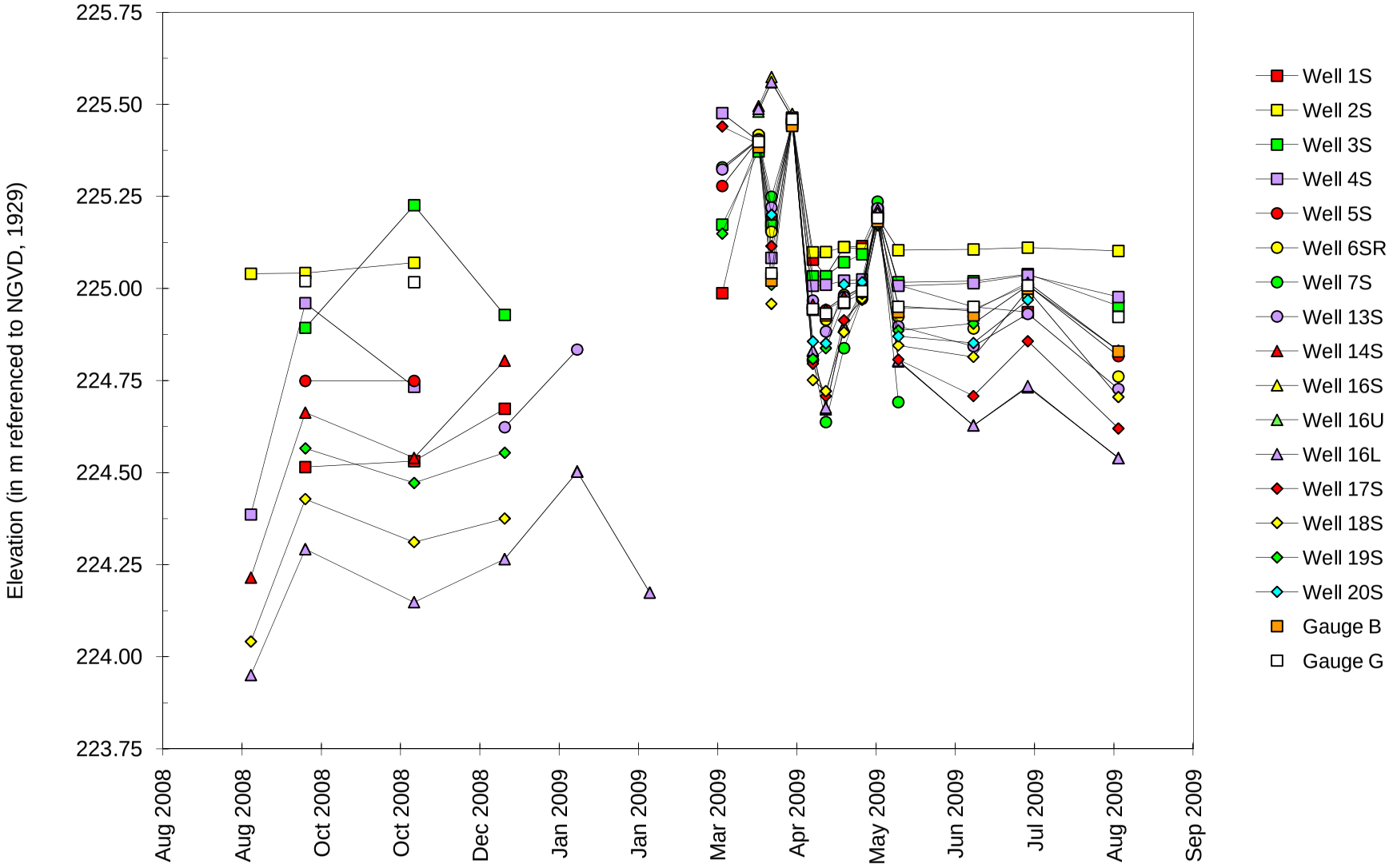
- >5% of the growing season (1987 Manual)
- >12.5% of the growing season (1987 Manual)
- >14 days (2008 Midwest Supplement)

- monitoring well
- staff gauge
- RDS data logger
- rain gauge
- culvert
- mitigation areas
- site boundary

Pecatonica River Forest Preserve Wetland Compensation Site

September 1, 2008 through August 31, 2009

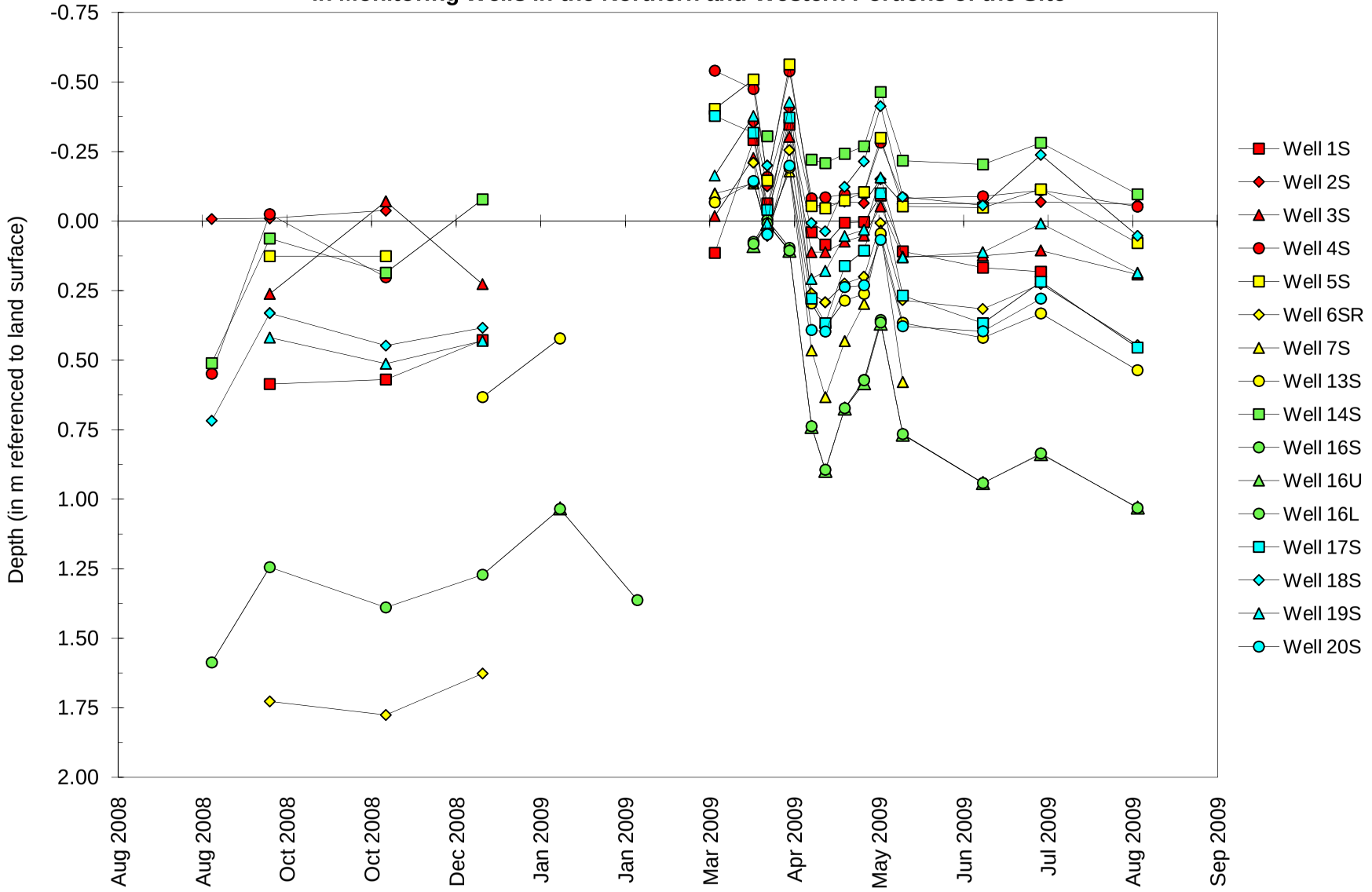
Water-Level Elevations in Monitoring Wells and at Select Stage Gauges in the Northern and Western Portions of the Site



Pecatonica River Forest Preserve Wetland Compensation Site

September 1, 2008 through August 31, 2009

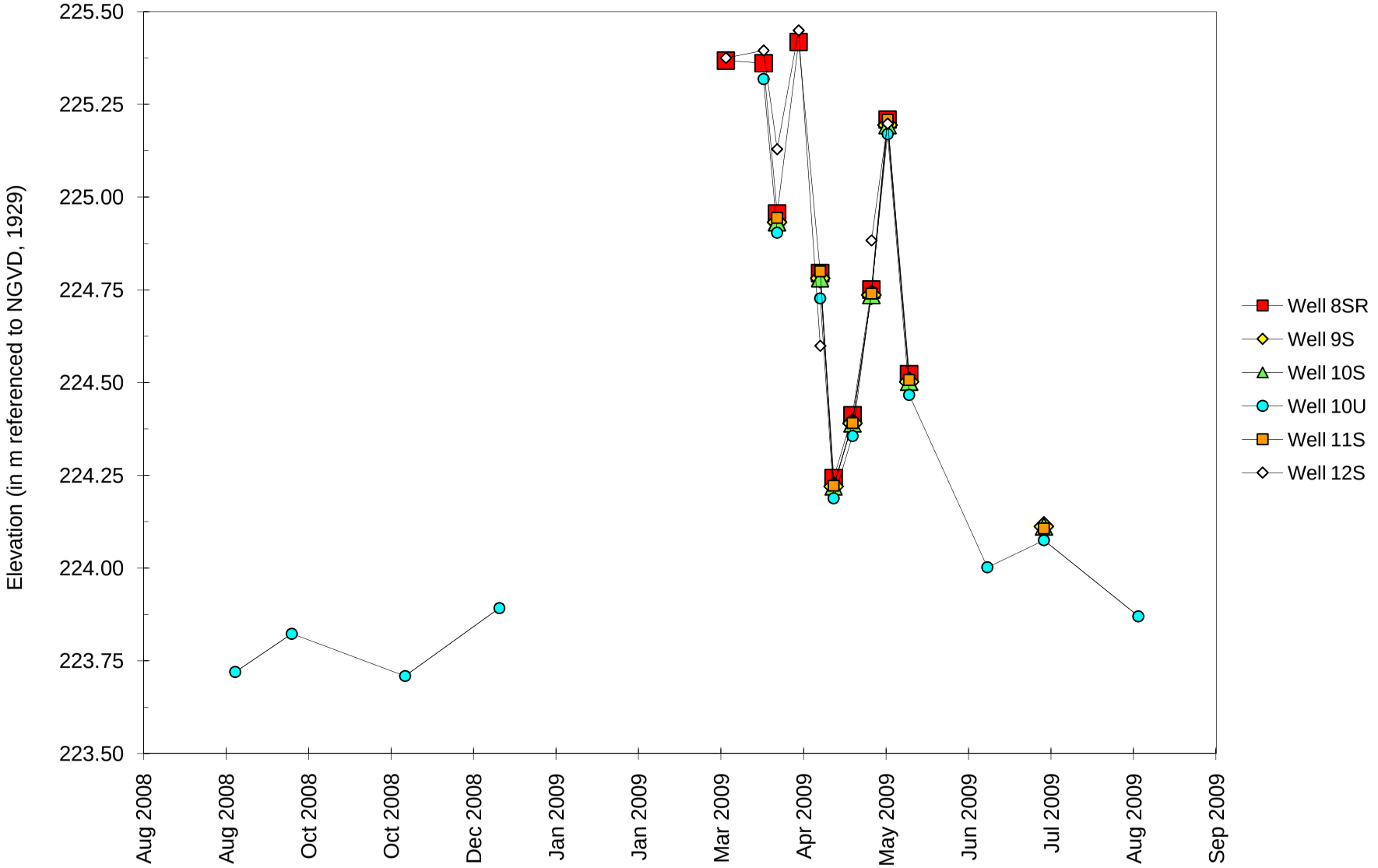
Depth to Water
in Monitoring Wells in the Northern and Western Portions of the Site



Pecatonica River Forest Preserve Wetland Compensation Site

September 1, 2008 through August 31, 2009

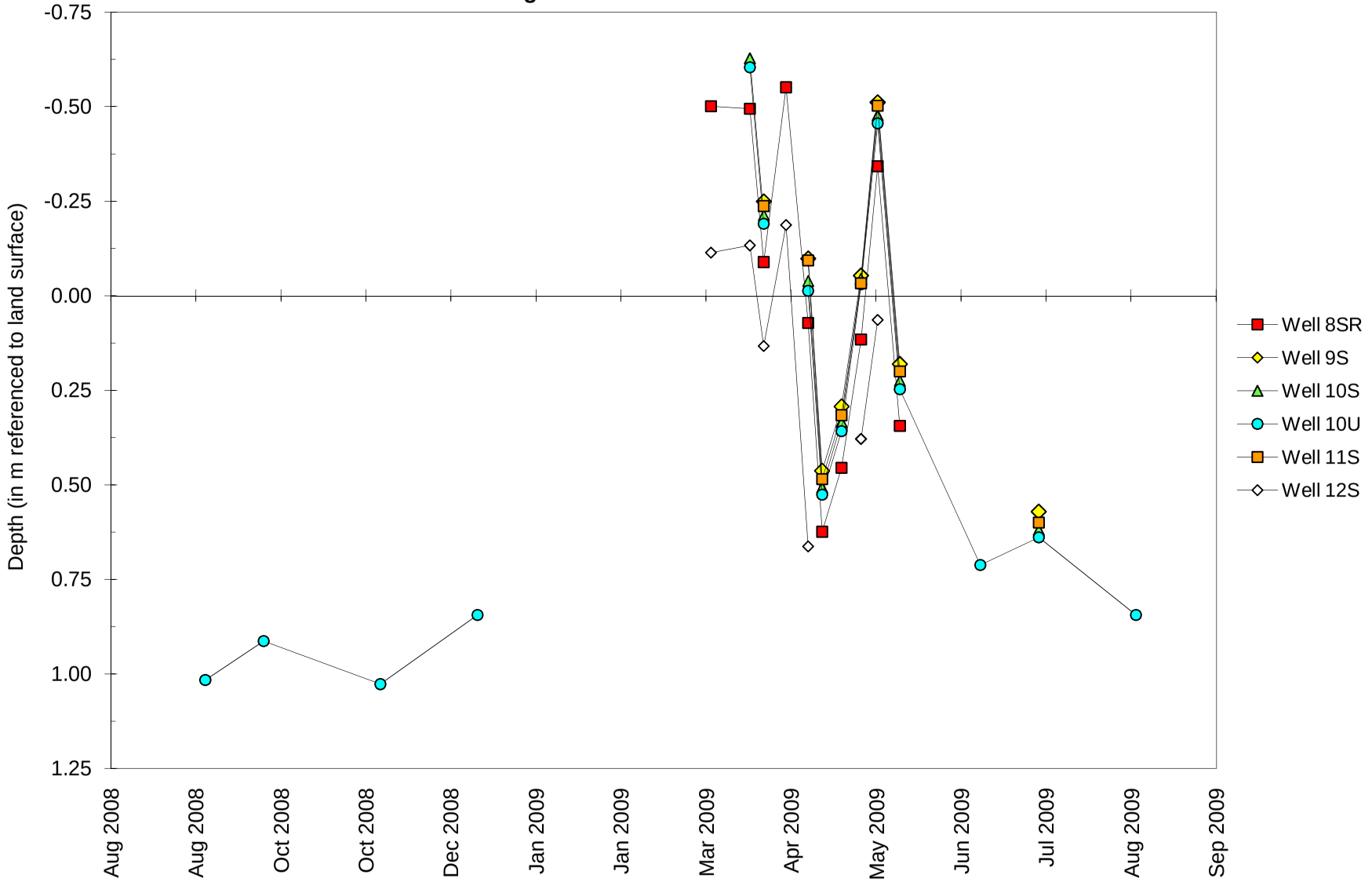
Water-Level Elevations in Monitoring Wells in the Southern Portion of the Site



Pecatonica River Forest Preserve Wetland Compensation Site

September 1, 2008 through August 31, 2009

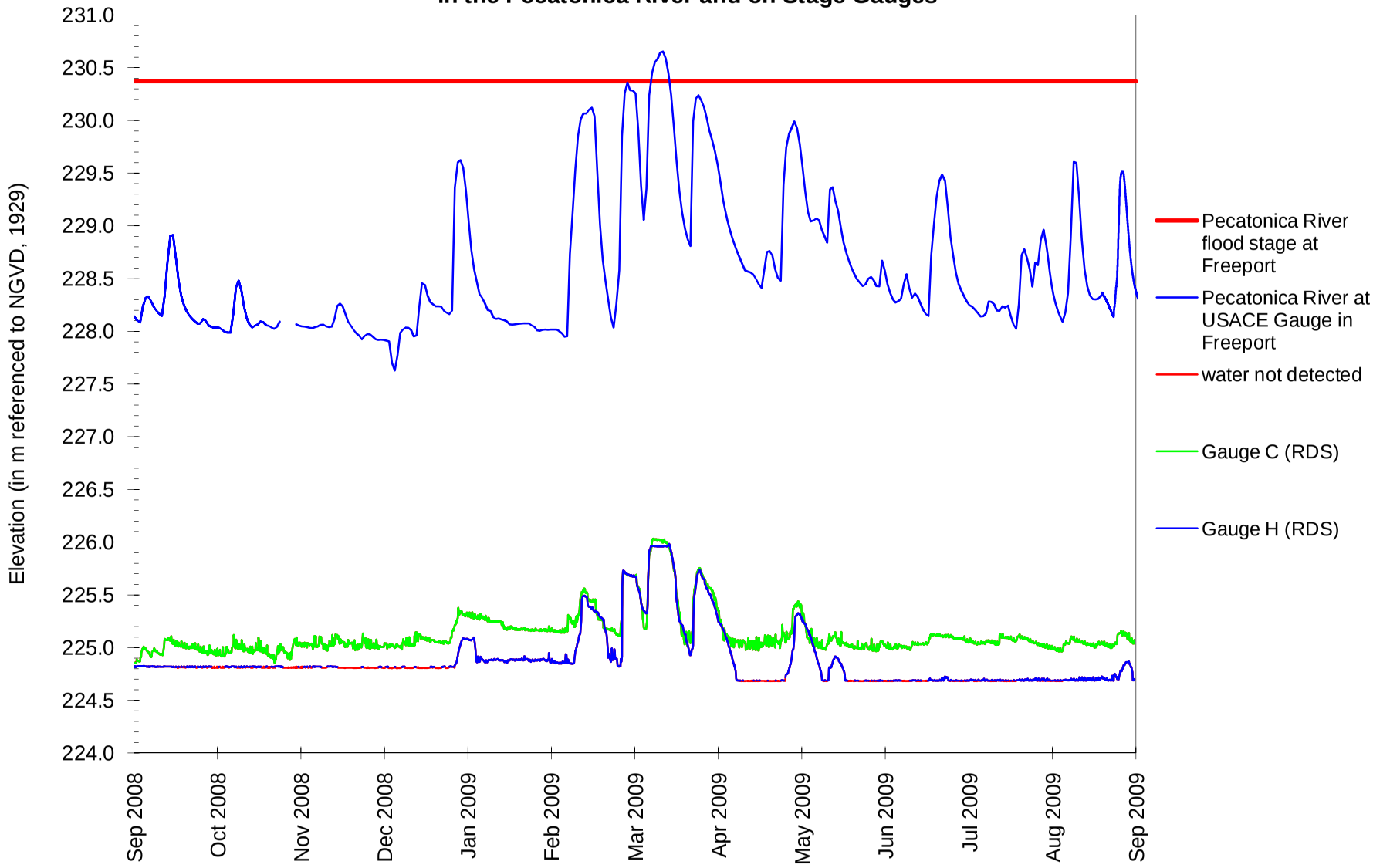
Depth to Water
in Monitoring Wells in the Southern Portion of the Site



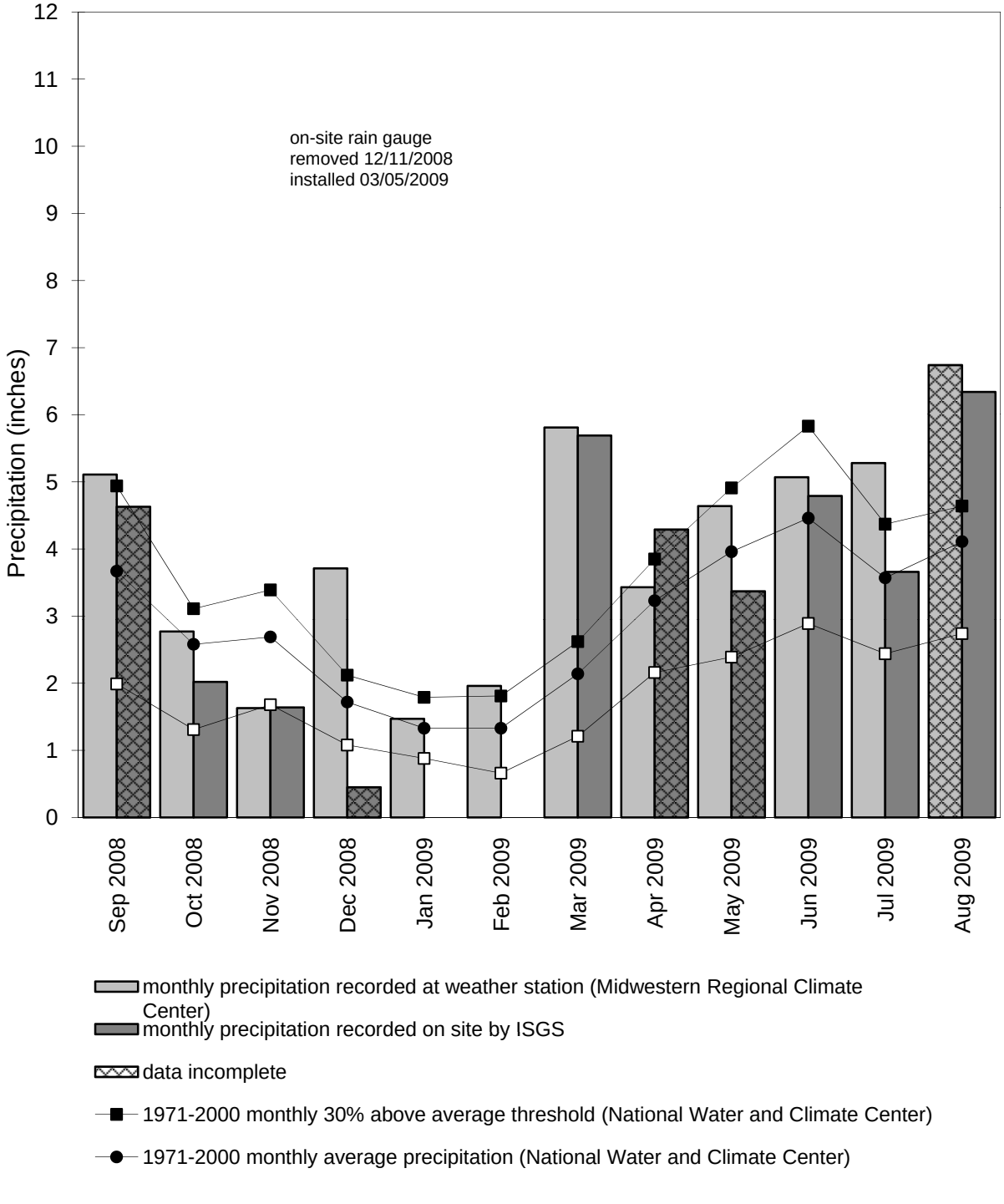
Pecatonica River Forest Preserve Wetland Compensation Site

September 1, 2008 through August 31, 2009

Water-Level Elevations in the Pecatonica River and on Stage Gauges



Pecatonica River Forest Preserve
Wetland Compensation Site
September 2008 through August 2009
Total Monthly Precipitation Recorded On Site and at the Freeport Wastewater Treatment Plant Weather Station, Freeport, IL



Graph last updated October 22, 2009

SUGAR CAMP CREEK **ISGS #74**
WETLAND COMPENSATION SITE
FAP 312 and Wetland and Stream Mitigation Bank
Sequence #9282
Franklin County, Northern Township, Illinois
Primary Project Manager: Geoffrey E. Pociask
Secondary Project Manager: not assigned

SITE HISTORY

- December 2004: ISGS submitted an initial site evaluation report to IDOT.
- Spring 2005: IDOT tasked ISGS to conduct a Level II hydrogeologic characterization of the site and to prepare a draft wetland banking instrument for the site. Water-level monitoring was initiated in March 2005.
- August 2006: ISGS submitted a draft wetland banking prospectus to IDOT.
- March 2007: ISGS submitted the Level II hydrogeologic characterization report to IDOT (ISGS Open-File Series 2007–02).
- June 2009: Wetland and stream mitigation banking instrument approved by the Interagency Review Team.

WETLAND HYDROLOGY CALCULATION FOR 2009

We estimate that 36.8 ha (90.9 ac) of the total site area of 50.9 ha (125.7 ac), including the FAP 312 wetland compensation site, satisfied wetland hydrology criteria (Environmental Laboratory 1987) for greater than 5% of the growing season in 2009, whereas 33.4 ha (82.5 ac) satisfied wetland hydrology criteria for greater than 12.5% of the growing season. Within the 8.3-ha (20.5-ac) FAP 312 wetland compensation site, 8.3 ha (20.4 ac) satisfied wetland hydrology criteria for greater than 5% of the growing season, of which 7.8 ha (19.4 ac) also satisfied wetland hydrology criteria for greater than 12.5% of the growing season. Using new guidance proposed by the U.S. Army Corps of Engineers (2008), we estimate that 34.9 ha (86.2 ac) of the entire parcel and 7.8 ha (19.4 ac) of the FAP 312 wetland compensation site satisfied wetland hydrology criteria for 14 or more consecutive days during the growing season. These estimates are based on the following factors:

- According to the MRCC, the median date that the growing season begins in nearby Du Quoin, Illinois, is April 5 and the season lasts 207 days; 5% of the growing season is 10 days, and 12.5% of the growing season is 26 days. According to methods outlined in the Midwest Regional Supplement (U.S. Army Corps of Engineers 2008), we estimate that March 5 was the starting date of the 2009 growing season based on soil temperatures observed at the wetland compensation site.
- Total precipitation for the reporting period from September 2008 through August 2009 was 114% of normal. Drier than normal conditions prevailed in September and November 2008, in December 2008 through March 2009 and in June and August 2009. Precipitation was at or above normal in October 2008, and in April, May and July 2009.

- In 2009, all wells except for 25S satisfied wetland hydrology criteria for greater than 5% of the growing season, for 14 or more consecutive days during the growing season, and for greater than 12.5% of the growing season.

- Data from gauges A and F in Sugar Camp Creek indicated that 13 floods inundated large portions of the site during the 2009 growing season. Data from this data logger indicated that the duration of inundation from each of these floods was less than 5% of the growing season.

- Surface-water data from Gauge I in the FAP 312 mitigation area showed that water-level elevation was at or above 123.2 m (404.2 ft) for greater than 5% of the growing season, for 14 or more consecutive days during the growing season, and for greater than 12.5% of the growing season. Furthermore, surface-water data from Gauge J showed water levels at or above 123.5 m (405.2 ft) for greater than 5% of the growing season, for 14 or more consecutive days during the growing season, and for greater than 12.5% of the growing season. Gauge H, west of Sugar Camp Creek, was damaged during the reporting period and was not used for the wetland hydrology determination.

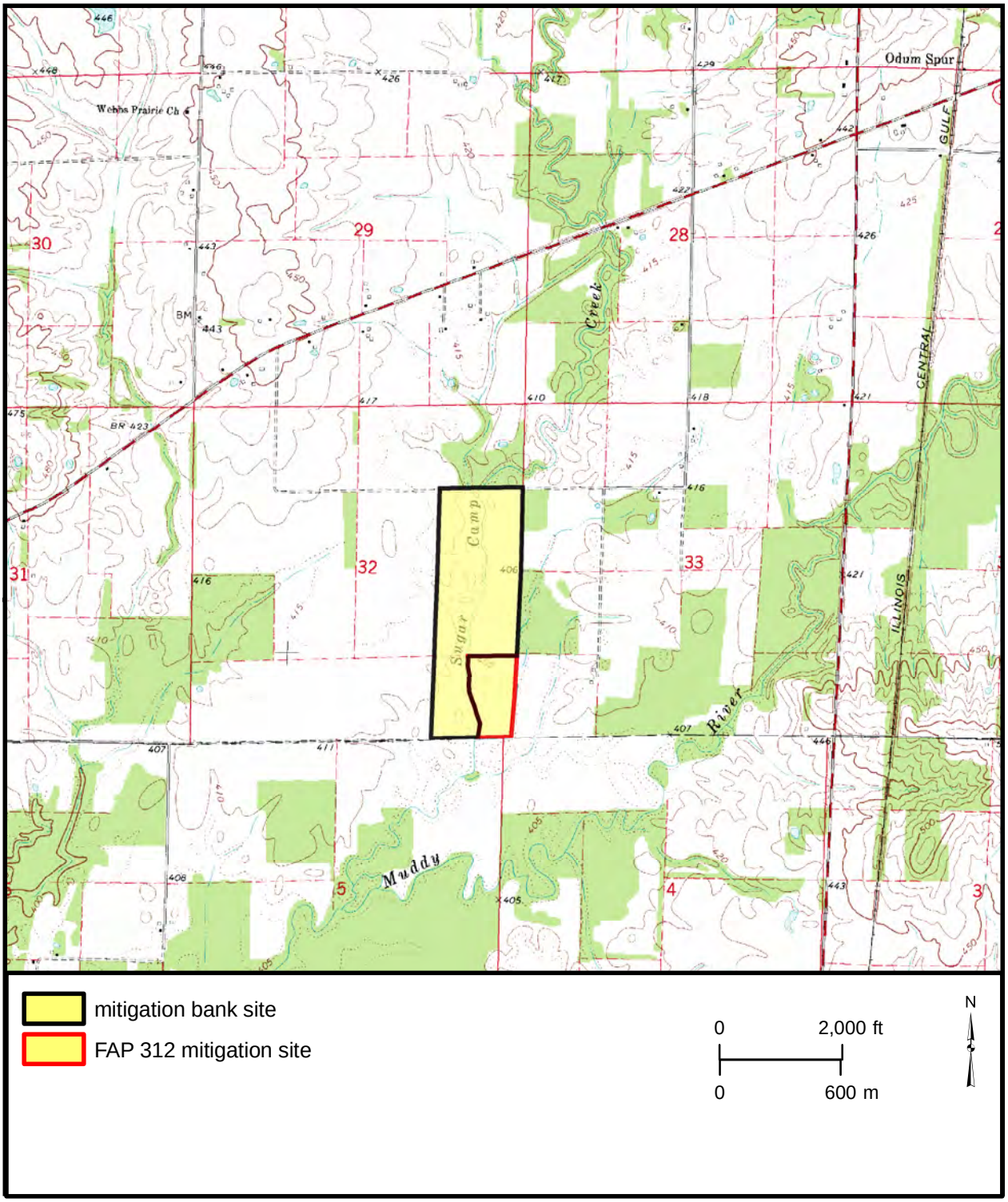
PLANNED FUTURE ACTIVITIES

- Monitoring activities will continue until no longer required by IDOT.

Sugar Camp Creek Wetland Compensation Site
(FAP 312 and Wetland and Stream Mitigation Bank)

General Study Area and Vicinity

from the USGS Topographic Series, Ewing, IL 7.5-minute Quadrangle (USGS 1974).
contour interval is 10 feet

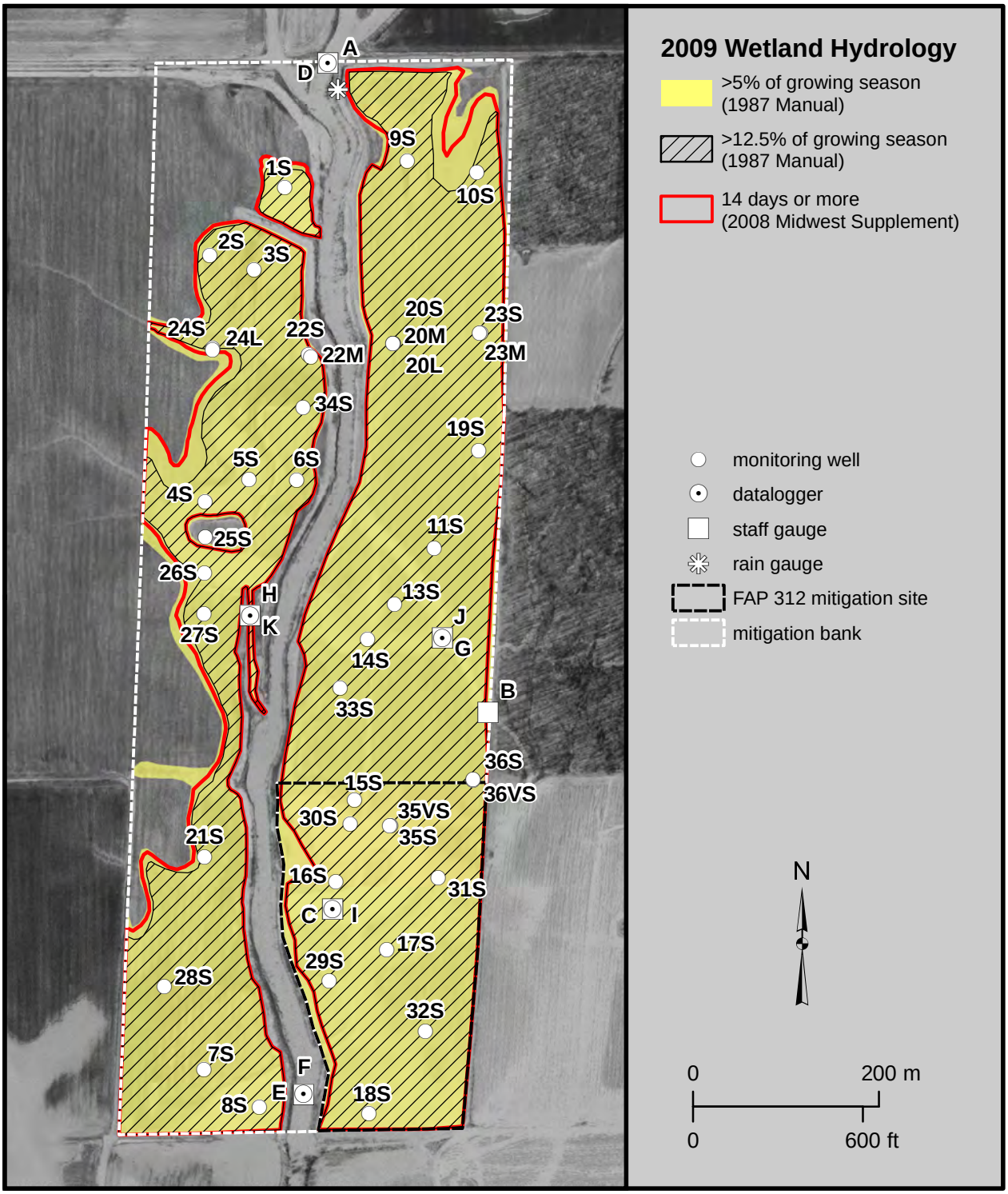


Sugar Camp Creek Wetland Compensation Site
(FAP 312 and Proposed Wetland Mitigation Bank)

Estimated Areal Extent of 2009 Wetland Hydrology

September 1, 2008 through August 31, 2009

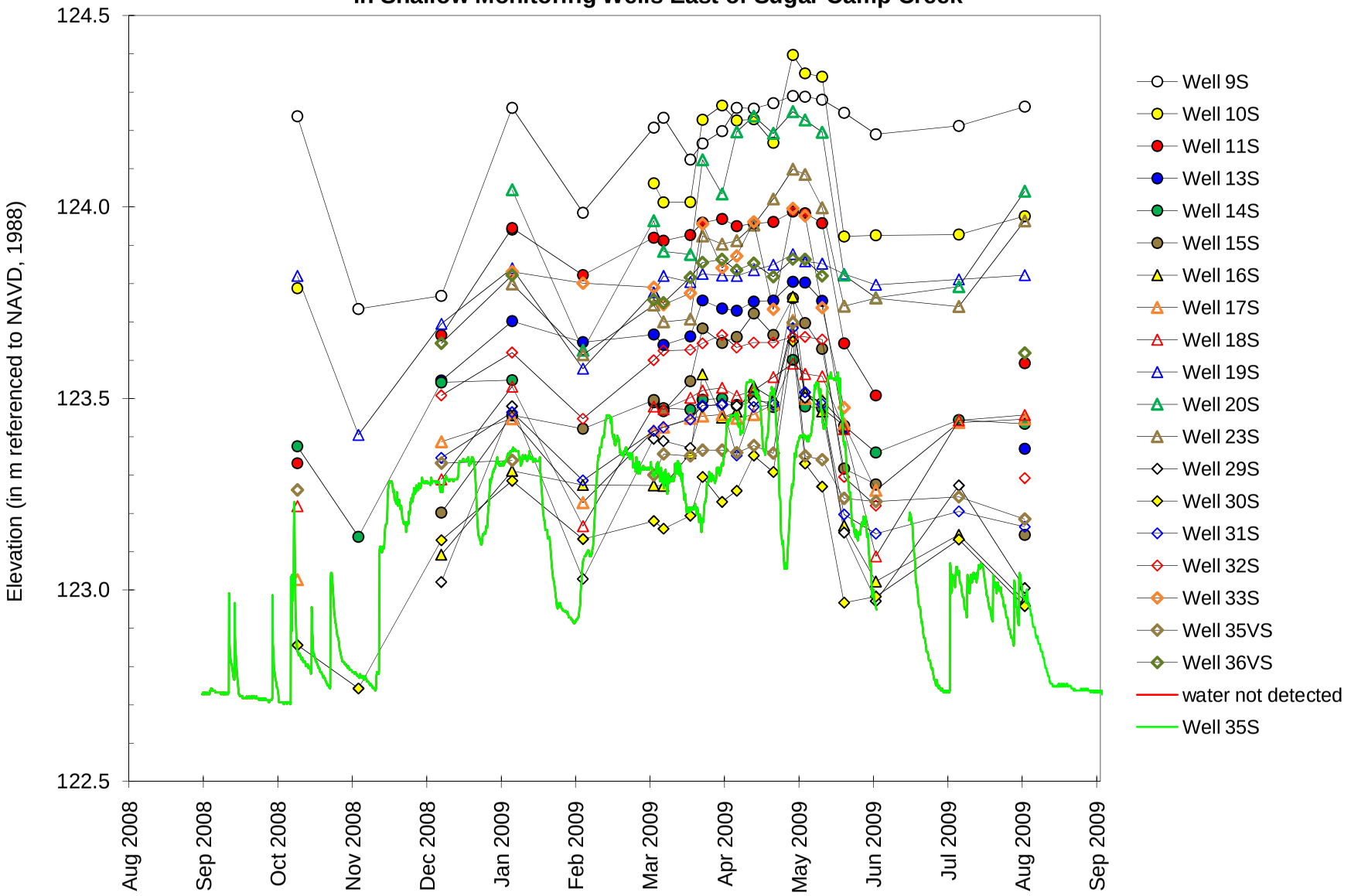
Map based on USGS digital orthophotograph, Ewing SE quarter quadrangle,
aerial photography from April 1998 (ISGS 2000)



Sugar Camp Creek Wetland Compensation Site

September 1, 2008 through August 31, 2009

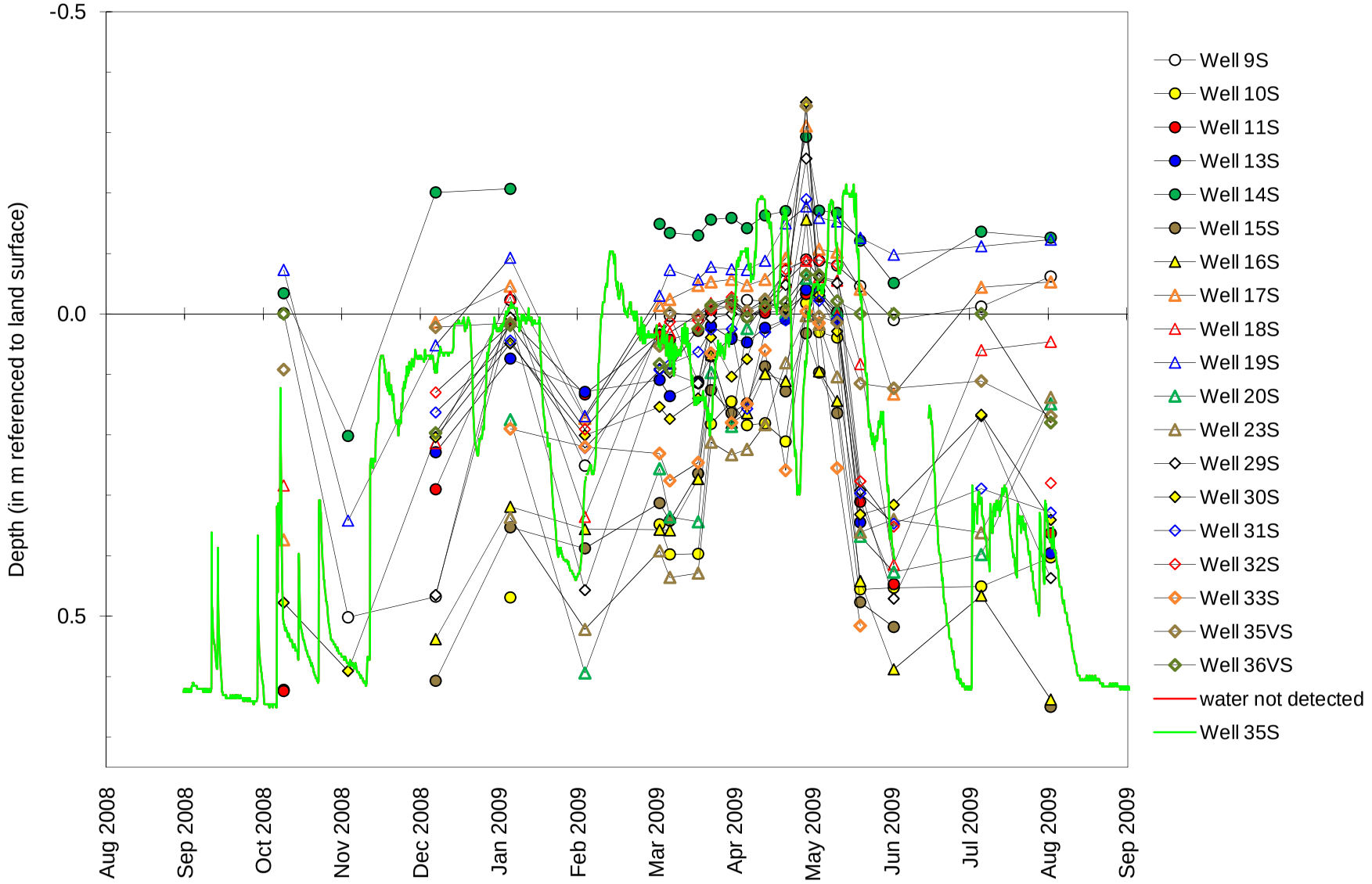
Water-Level Elevations in Shallow Monitoring Wells East of Sugar Camp Creek



Sugar Camp Creek Wetland Compensation Site

September 1, 2008 through August 31, 2009

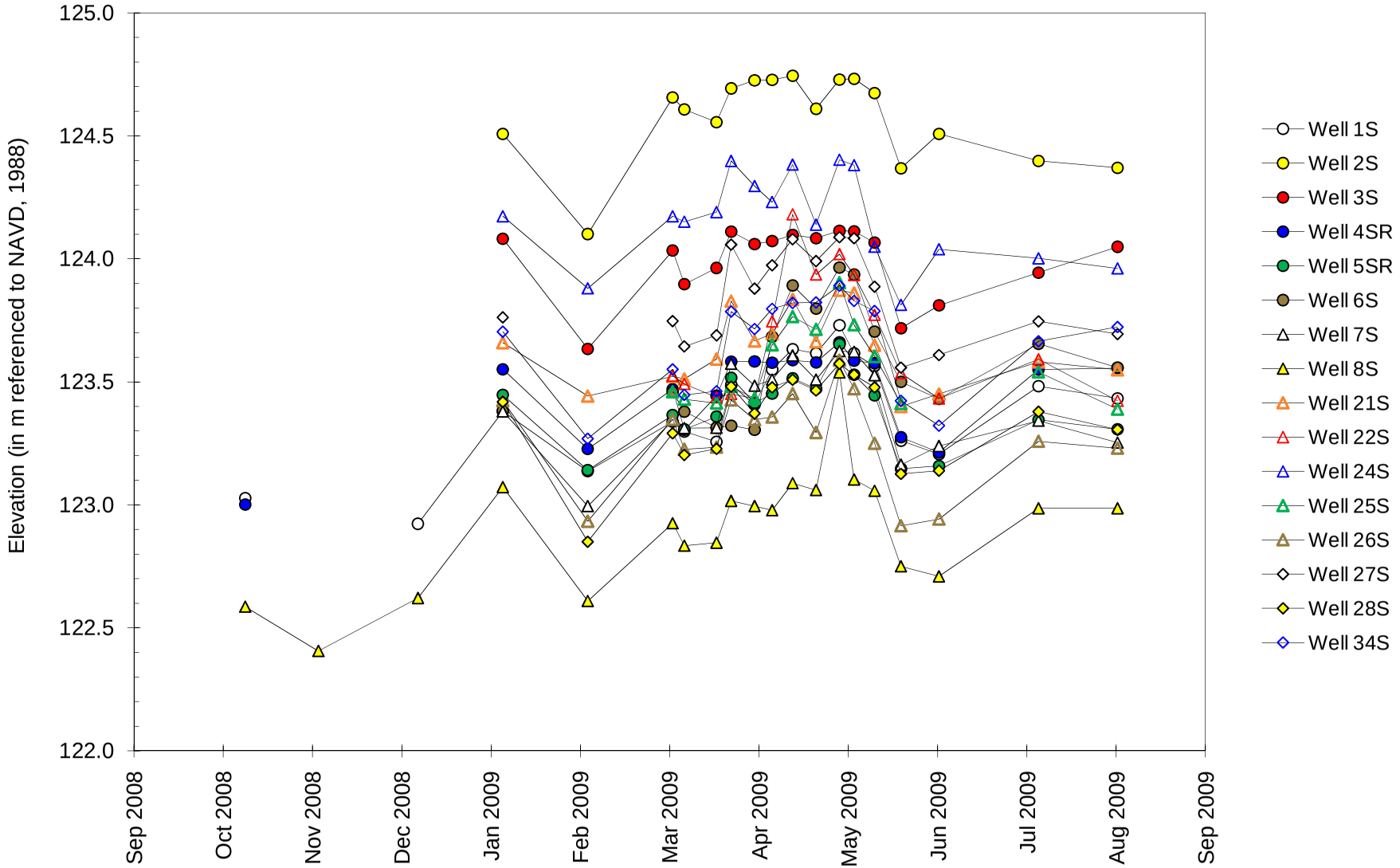
Depth to Water
in Shallow Monitoring Wells East of Sugar Camp Creek



Sugar Camp Creek Wetland Compensation Site

September 1, 2008 through August 31, 2009

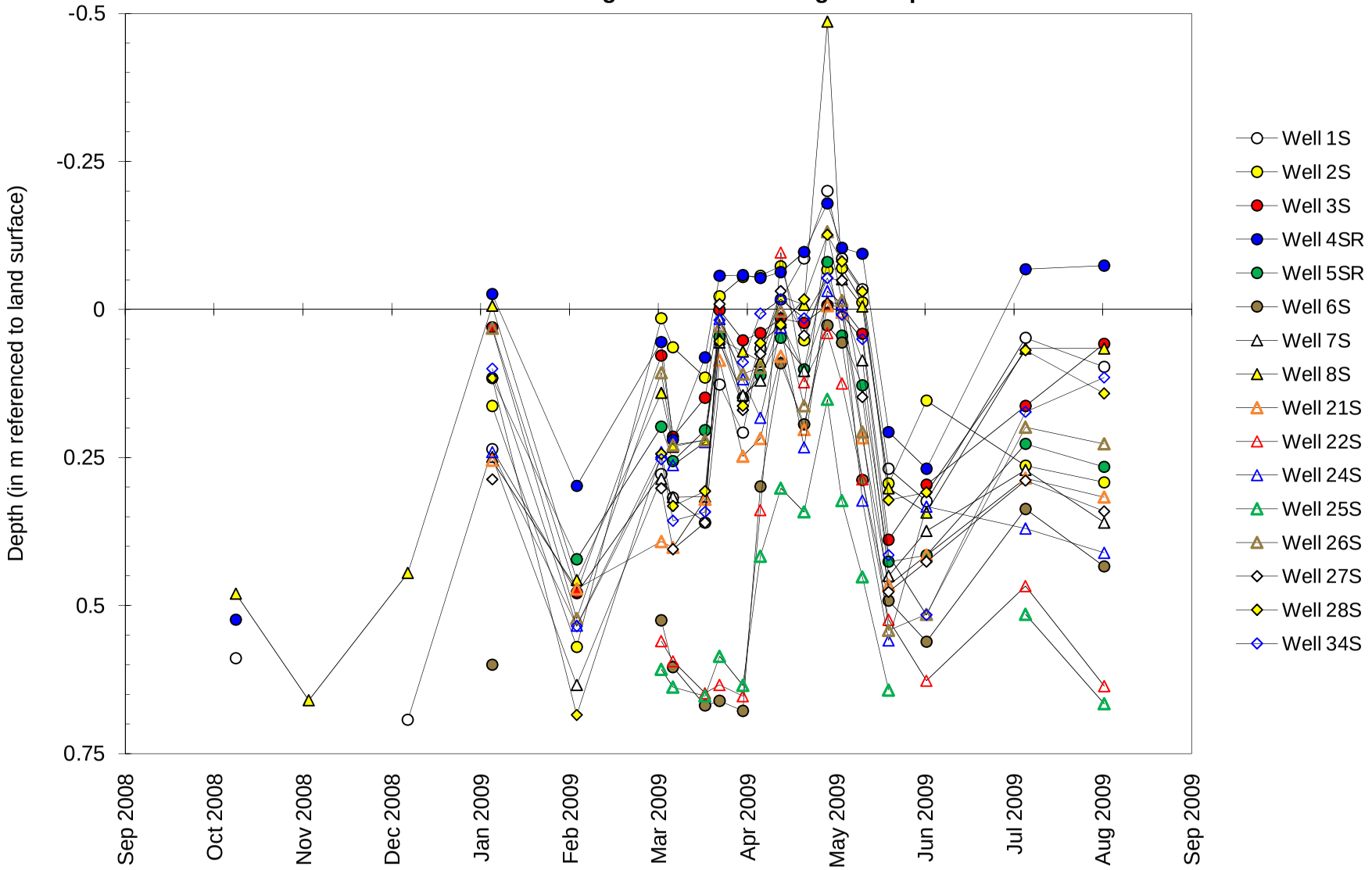
Water-Level Elevations
in Shallow Monitoring Wells West of Sugar Camp Creek



Sugar Camp Creek Wetland Compensation Site

September 1, 2008 through August 31, 2009

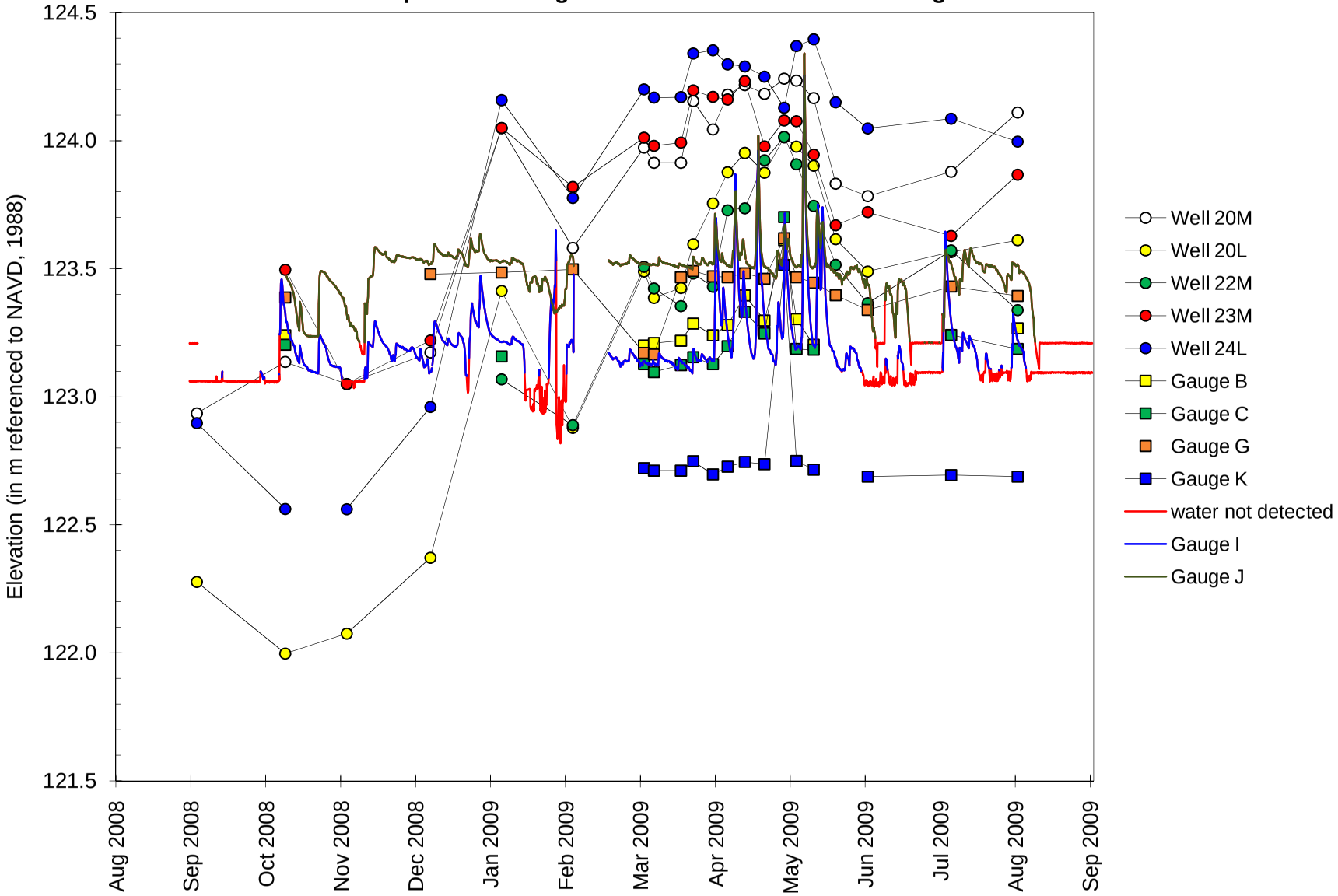
Depth to Water
in Shallow Monitoring Wells West of Sugar Camp Creek



Sugar Camp Creek Wetland Compensation Site

September 1, 2008 through August 31, 2009

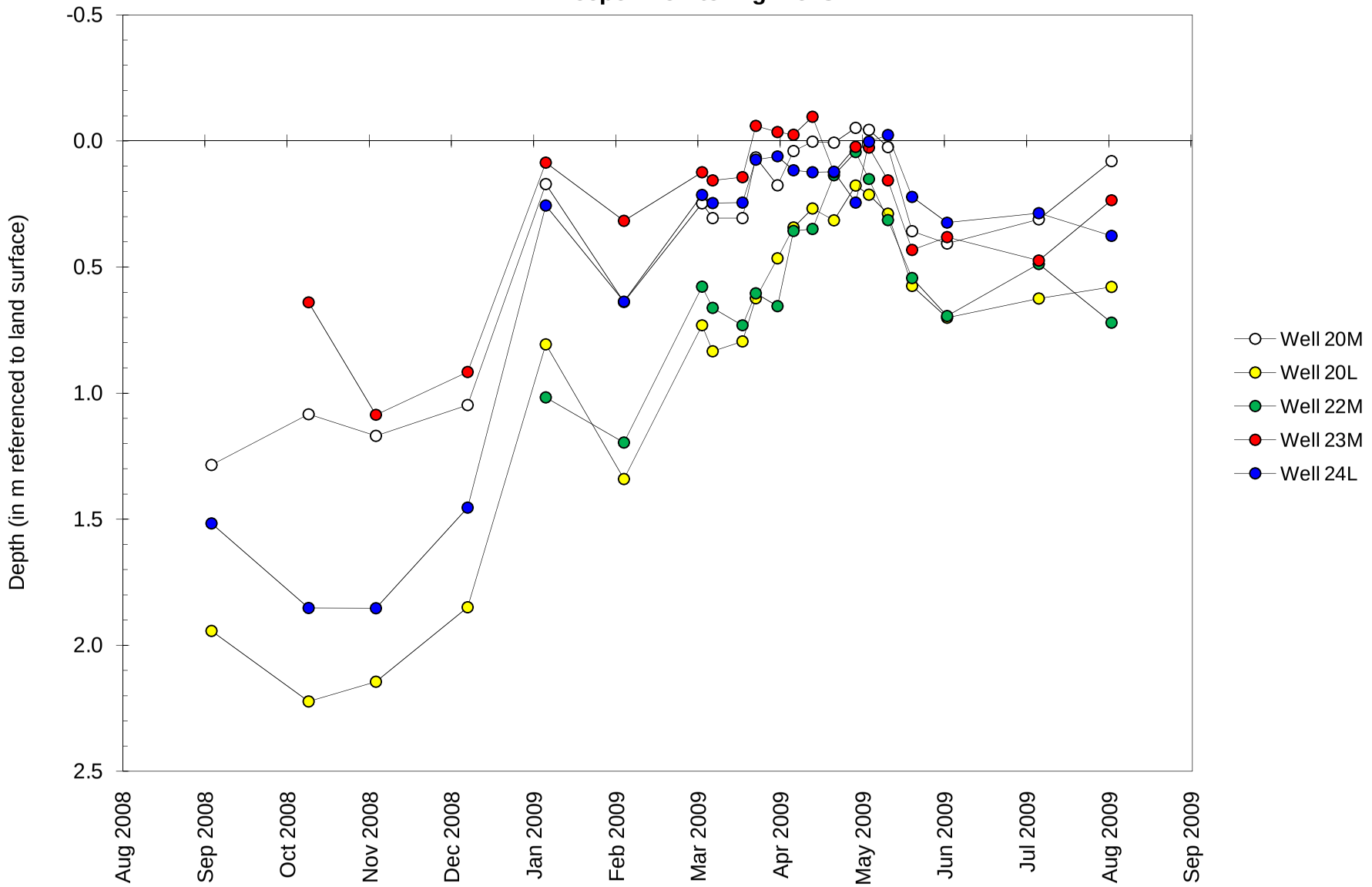
Water-Level Elevations in Deeper Monitoring Wells and at Surface-Water Gauges



Sugar Camp Creek Wetland Compensation Site

September 1, 2008 through August 31, 2009

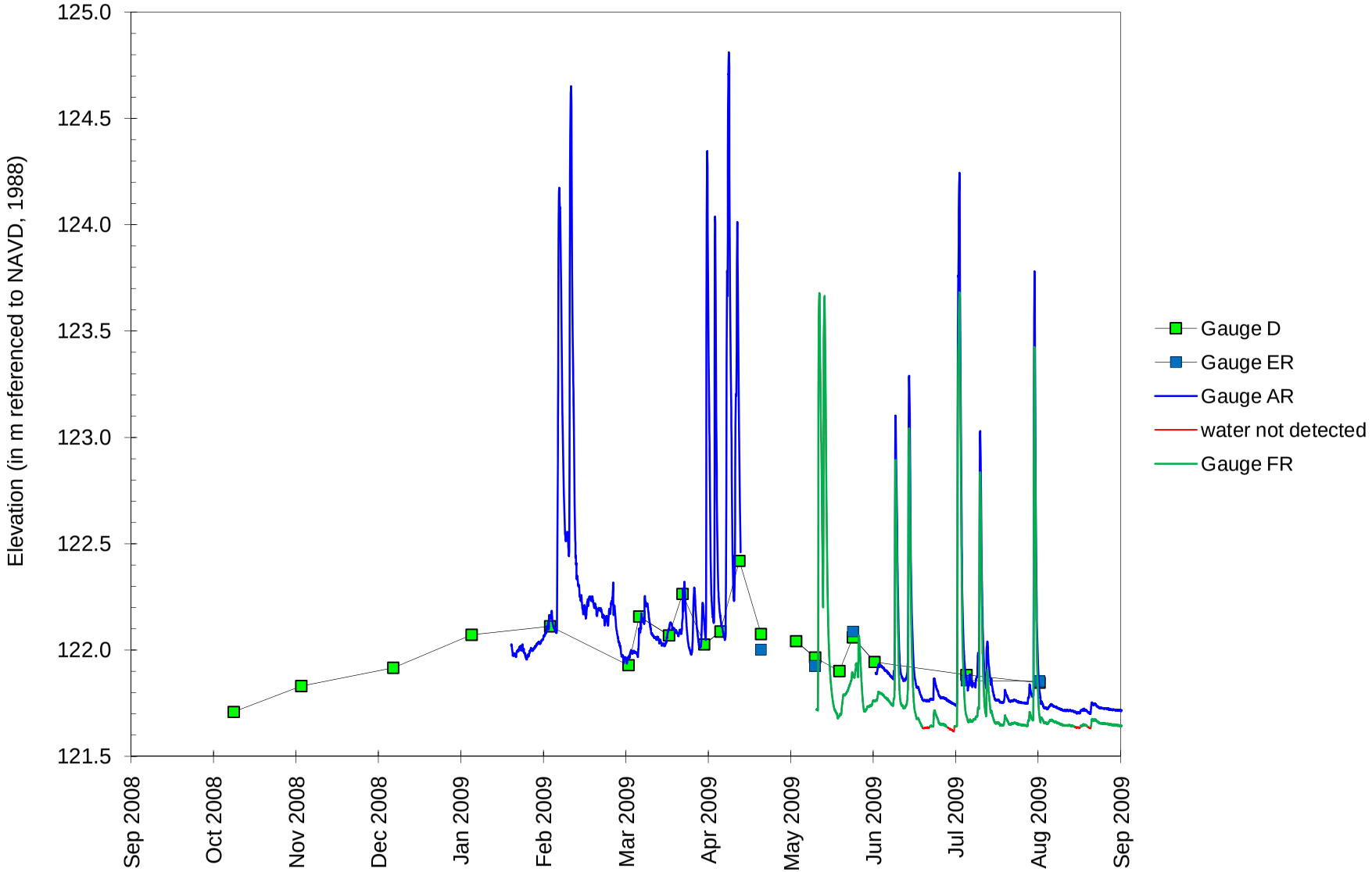
Depth to Water in Deeper Monitoring Wells



Sugar Camp Creek Wetland Compensation Site

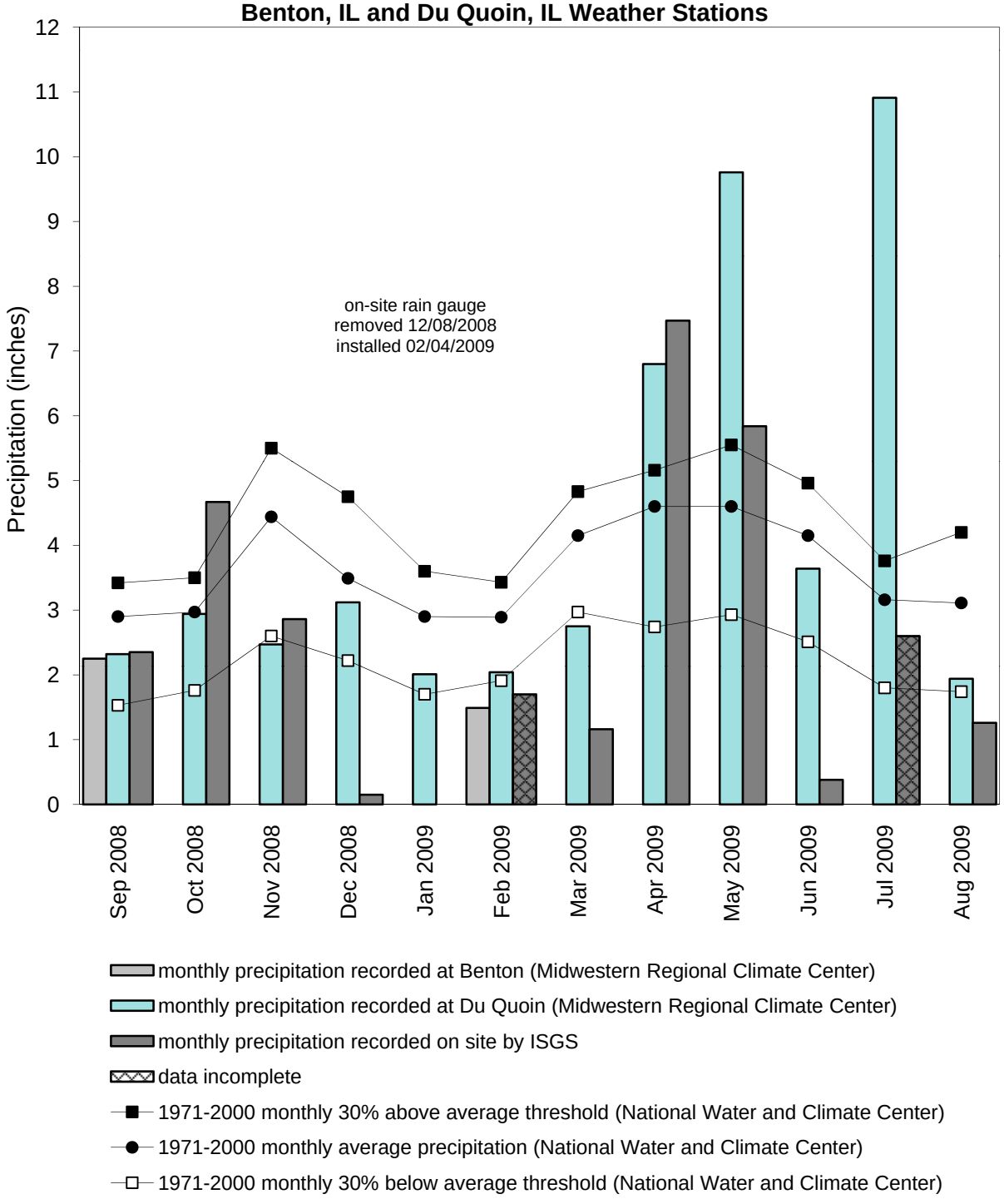
September 1, 2008 through August 31, 2009

Water-Level Elevations at Stage Gauges in Sugar Camp Creek



Sugar Camp Creek
Potential Wetland Compensation Site
September 2008 through August 2009

Total Monthly Precipitation Recorded On Site and at the Benton, IL and Du Quoin, IL Weather Stations



Graph last updated October 19, 2009

GREEN CREEK **ISGS #75**
WETLAND COMPENSATION SITE
FAP 774
Sequence #12505
Effingham County, near Effingham, Illinois
Primary Project Manager: Eric T. Plankell
Secondary Project Manager: not assigned

SITE HISTORY

- September 2006: A Level II hydrogeological characterization report was submitted to IDOT (ISGS Open-File Series 2006–03).

- June 2007: Construction at the wetland compensation site was completed.

- Summer 2009: Additional trees were planted at the site.

WETLAND HYDROLOGY CALCULATION FOR 2009

The area of the site that satisfied wetland hydrology criteria (Environmental Laboratory 1987) for greater than 5% of the 2009 growing season was estimated to be 1.8 ha (4.4 ac) out of a total site area of 4.1 ha (10.0 ac). The area that satisfied wetland hydrology criteria for greater than 12.5% of the 2009 growing season was estimated to be 1.7 ha (4.2 ac). Using new guidance proposed by the U.S. Army Corps of Engineers (2008), we estimate that 1.8 ha (4.5 ac) satisfied wetland hydrology criteria for 14 or more consecutive days during the growing season. These estimates are based on the following factors:

- According to the MRCC, the median date that the growing season begins in nearby Effingham, Illinois, is April 6 and the season lasts 210 days; 5% of the growing season is 11 days and 12.5% of the growing season is 26 days. According to methods outlined in the Midwest Regional Supplement (U.S. Army Corps of Engineers 2008), we estimate that March 10 was the starting date of the 2009 growing season based on vegetation growth and development observed at the wetland compensation site.

- Total precipitation during the monitoring period was 121% of normal. Above-normal precipitation in April and May 2009 helped sustain elevated water levels on the eastern half of the site into June.

- In 2009, water levels measured in all soil-zone (S) monitoring wells satisfied the wetland hydrology criteria for greater than 12.5% of the growing season.

- Surface-water inundation was observed for greater than 12.5% of the growing season on both sides of the main north–south ditch. Water-level records for staff gauge B indicated inundation in the western half of the site at or below approximately 160.30 m (525.92 ft) for greater than 5% of the growing season and for 14 or more consecutive days of the growing season; inundation at or below approximately 160.13 m (525.35 ft) was measured for greater than 12.5% of the growing season. Water-level records for staff gauge ER indicated inundation in the eastern half of the site at or below approximately 160.79 m (527.53 ft) for greater than 5% of the growing season and at or below approximately 160.64 m (527.50 ft) for 14 or more consecutive days of the

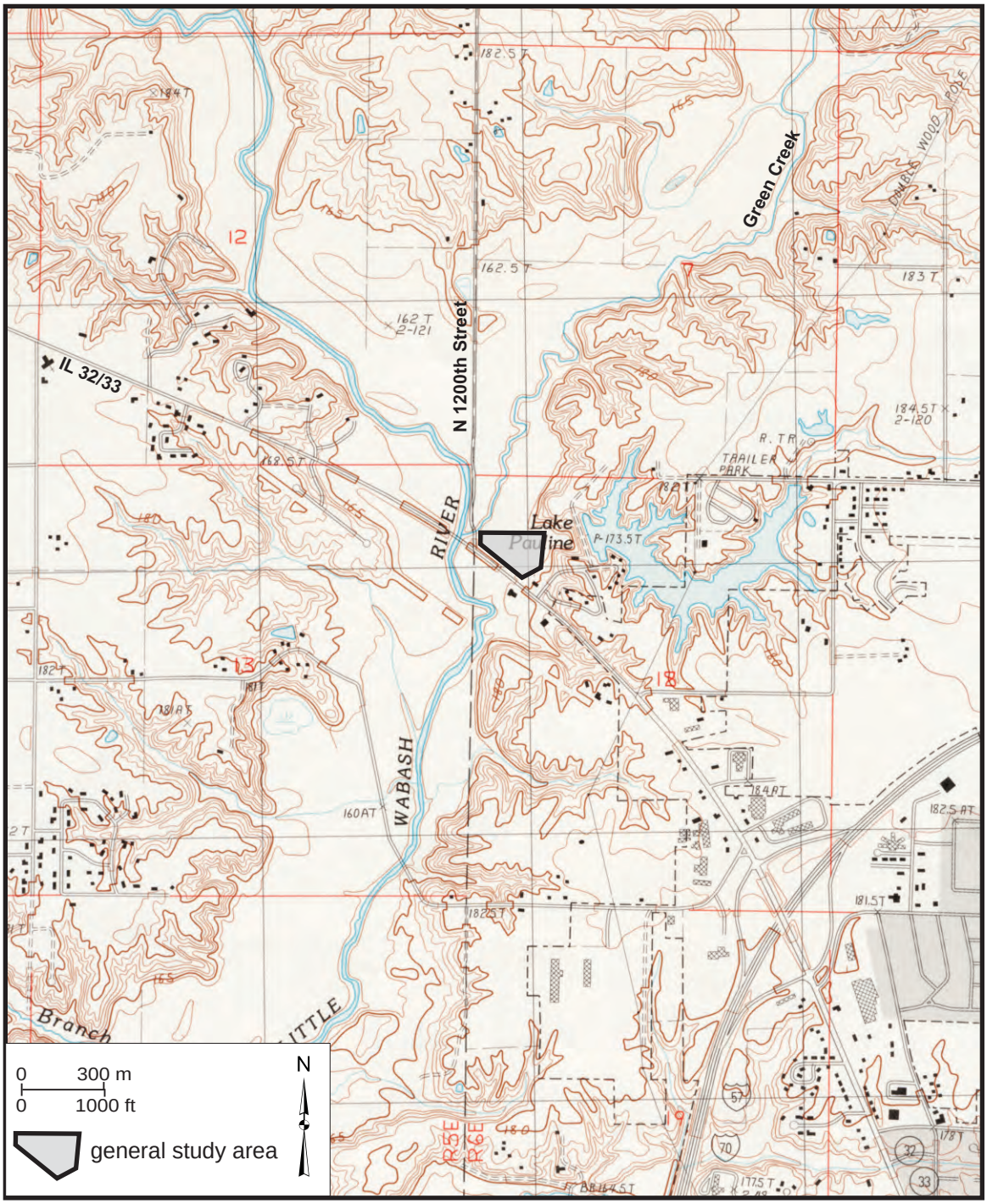
growing season; inundation at or below approximately 160.78 m (527.50 ft) was measured for greater than 12.5% of the growing season. According to the surface-water gauge in Green Creek, water levels in Green Creek reached an elevation sufficient to flood the entire site twice in 2009: once on February 11, and once on April 30.

PLANNED FUTURE ACTIVITIES

- Monitoring will continue at the site until no longer required by IDOT.

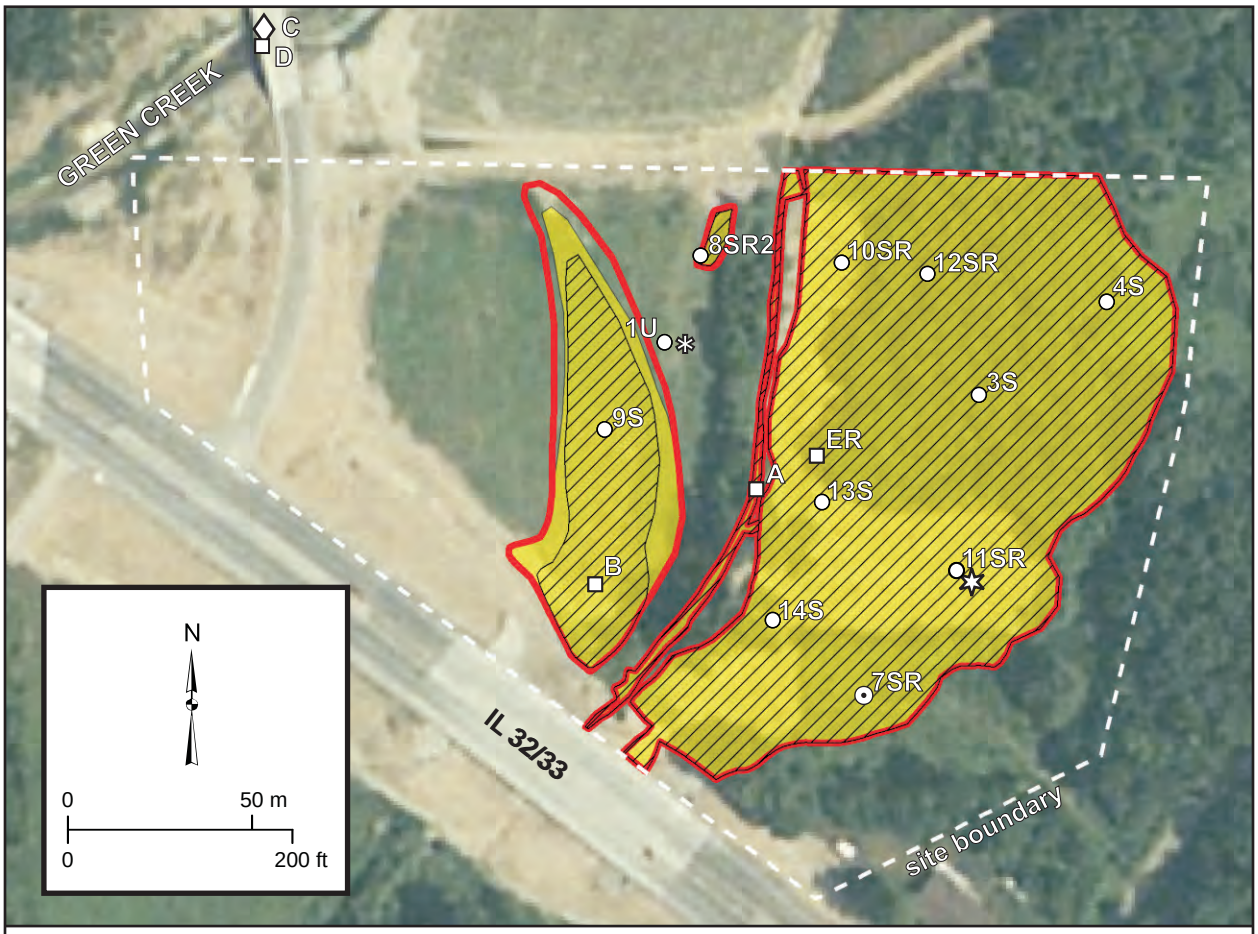
Green Creek Wetland Compensation Site
(FAP 774, IL 32/33, Sequence #12505)
General Study Area and Vicinity

from the USGS Topographic Series, Effingham North, IL 7.5-minute Quadrangle (USGS 1985)
contour interval is 3 m (10 ft)



Green Creek Wetland Compensation Site
(FAP 774, IL 32/33, Sequence #12505)
Estimated Areal Extent of 2009 Wetland Hydrology
September 1, 2008 through August 31, 2009

Map based on USDA digital orthophotograph of Effingham County, Illinois,
produced for the National Agriculture Imagery Program (NAIP) (USDA 2007)



- ISGS monitoring well
- Staff gauge (4.0 ft)
- RDS water-level data logger
- Rain gauge
- Infinities sonic data logger

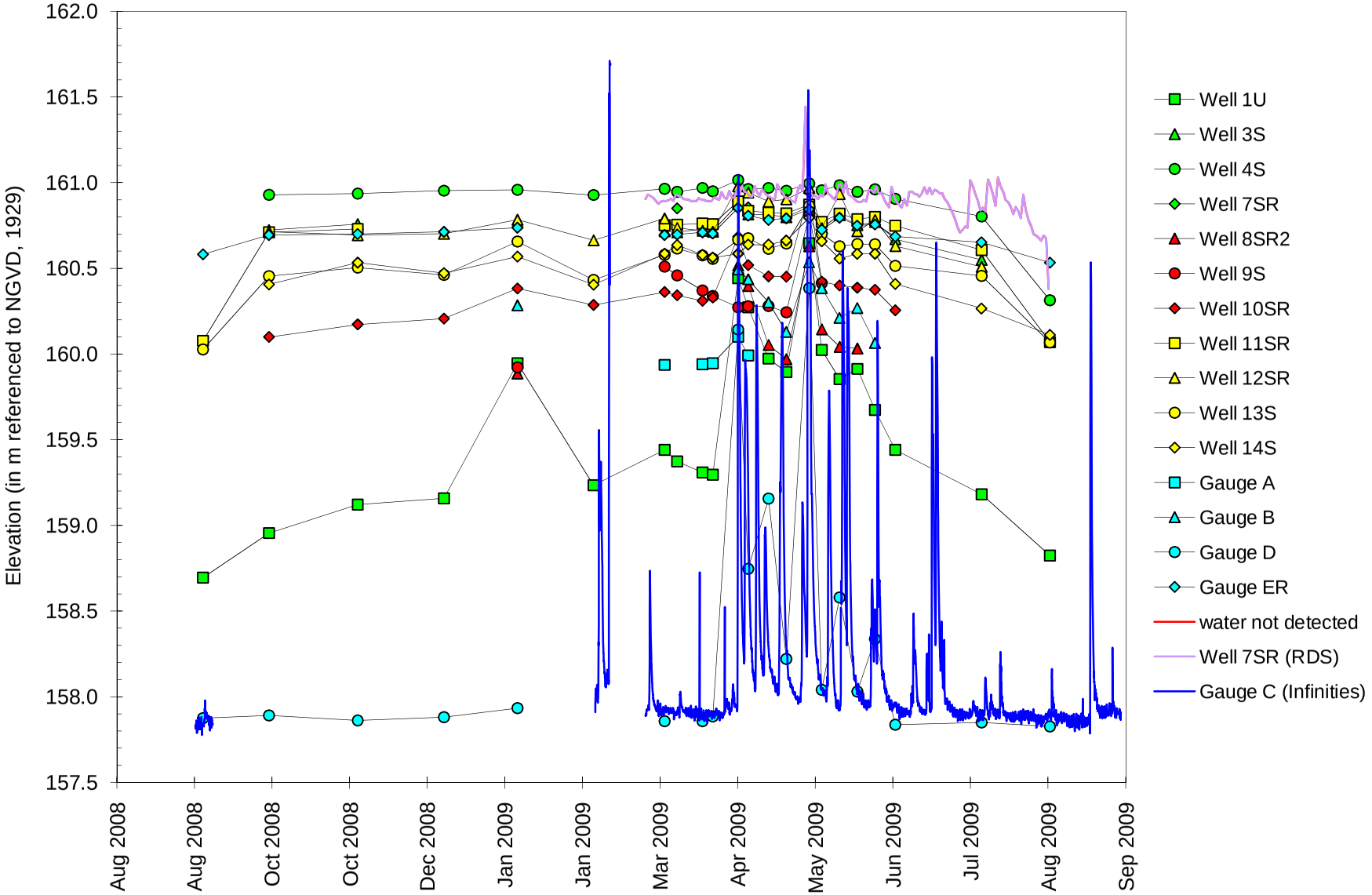
2009 Wetland Hydrology

- > 5% of the growing season (1987 Manual)
- > 12.5% of the growing season (1987 Manual)
- > 14 days (2008 Midwest Supplement)

Green Creek Wetland Compensation Site

September 1, 2008 through August 31, 2009

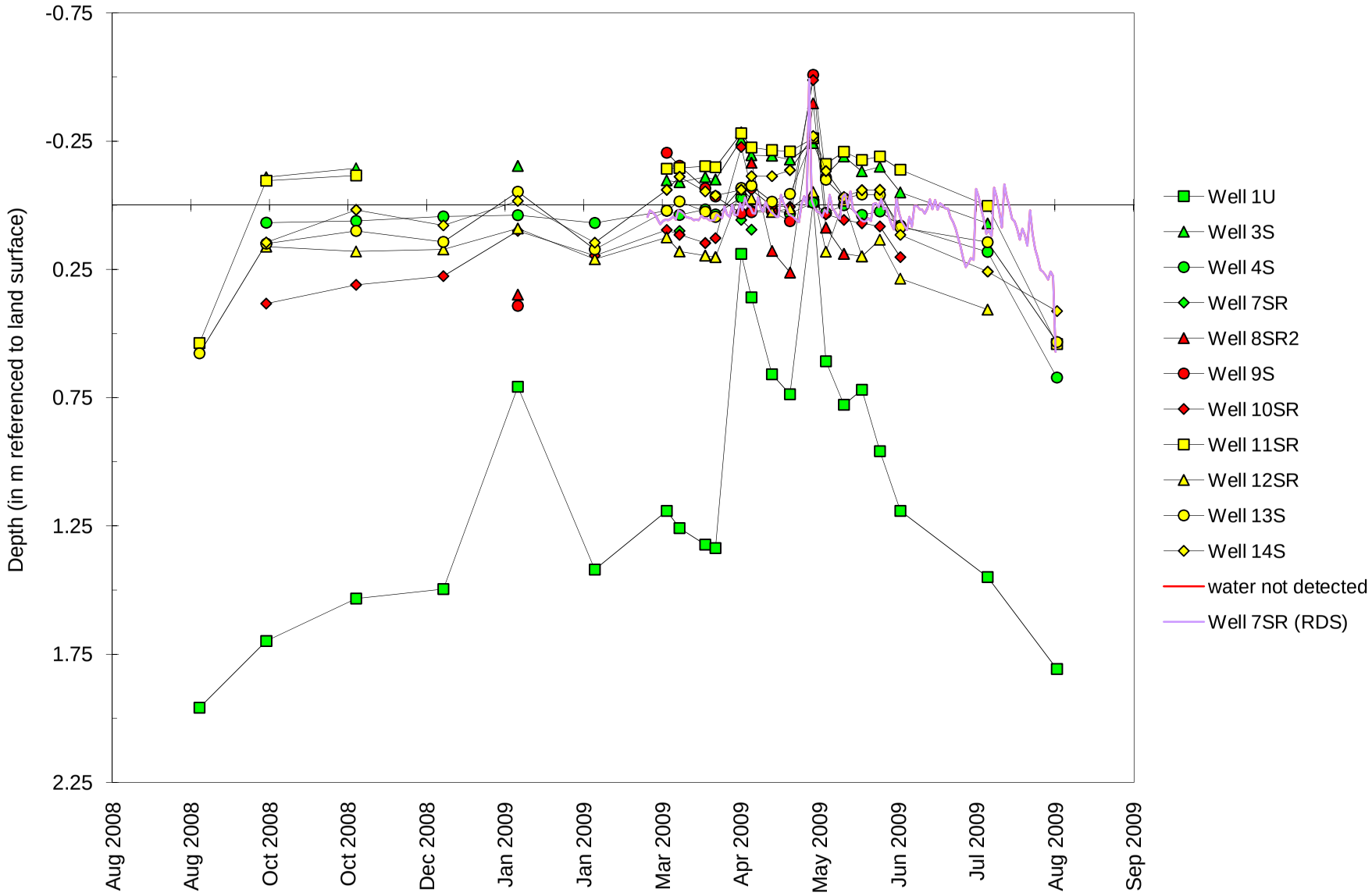
Water-Level Elevations in Monitoring Wells and on Stage Gauges



Green Creek Wetland Compensation Site

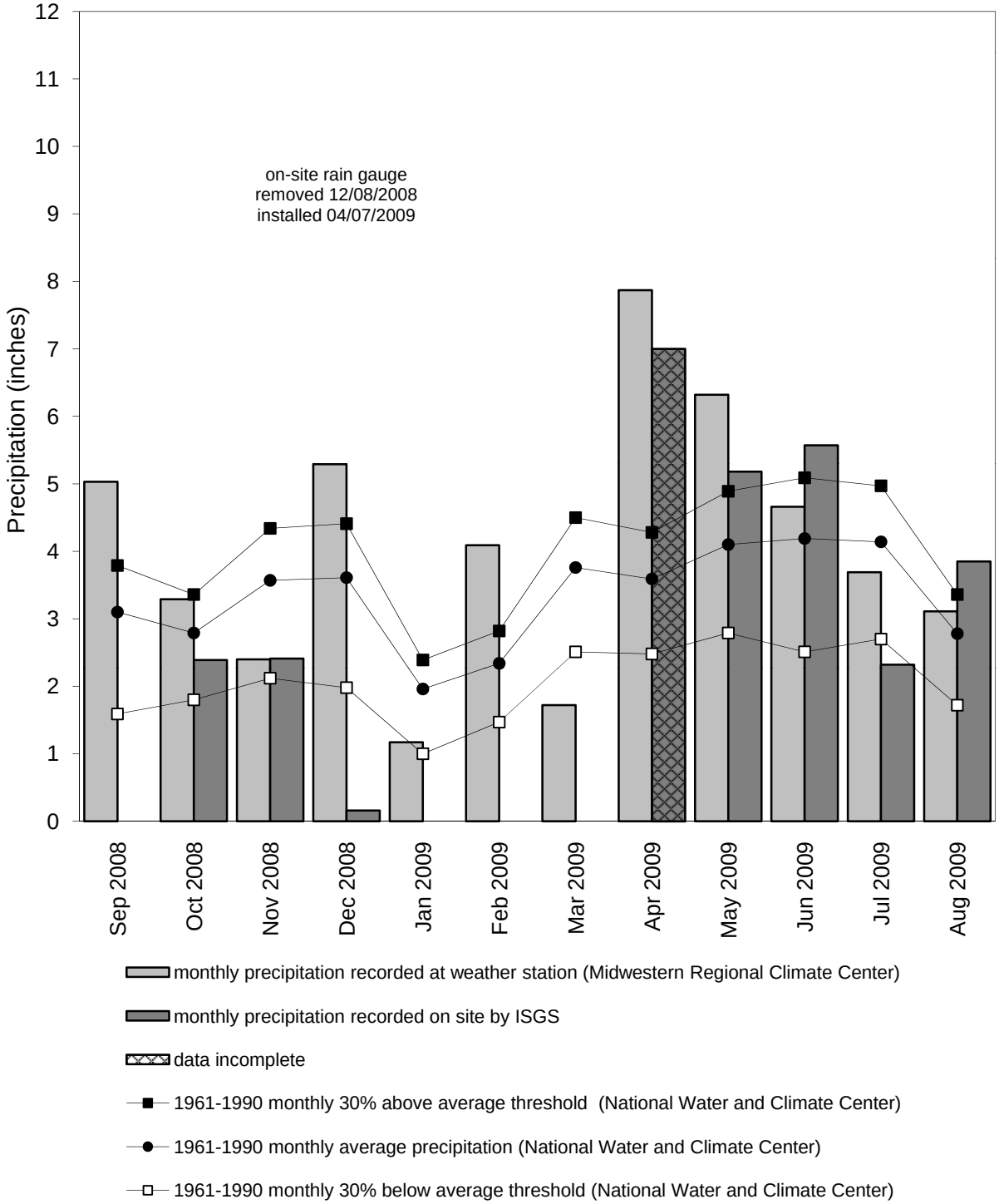
September 1, 2008 through August 31, 2009

Depth to Water in Monitoring Wells



Green Creek Wetland Compensation Site
September 2008 through August 2009

Total Monthly Precipitation Recorded On Site and at the Effingham, IL Weather Station



Graph last updated October 19, 2009

MILAN BELTWAY, AUGUSTANA/ROCK ISLAND WETLAND COMPENSATION SITE **ISGS #76**

FAU 5822
Sequence #67
Rock Island County, near Moline, Illinois
Primary Project Manager: Steven E. Benton
Secondary Project Manager: Kathleen E. Bryant

SITE HISTORY

- February 2008: The ISGS was tasked by IDOT to conduct 5-year monitoring.
- March 2008: A monitoring network was installed on the site.

WETLAND HYDROLOGY CALCULATION FOR 2009

The total area of the site that satisfied wetland hydrology criteria (Environmental Laboratory 1987) for more than 5% of the 2009 growing season was estimated to be 2.92 ha (7.22 ac) out of a total area of 4.13 ha (10.22 ac). This included, in the areas shown on the attached figure, 0.12 ha (0.30 ac) of area A, 0.08 ha (0.20 ac) of area B, 0.71 ha (1.75 ac) of area C, 1.18 ha (2.92 ac) of area D, and 0.83 ha (2.05 ac) of area E. The total area that satisfied wetland hydrology criteria for more than 12.5% of the 2009 growing season was estimated to be 2.08 ha (5.14 ac), and included 0.07 ha (0.17 ac) of area C, 1.18 ha (2.92 ac) of area D, and 0.83 ha (2.05 ac) of area E. Using new guidance proposed by the U. S. Army Corps of Engineers (2008), we estimate that 2.92 ha (7.22 ac) satisfied wetland hydrology criteria for 14 or more consecutive days during the growing season. This included 0.12 ha (0.30 ac) of area A, 0.08 ha (0.20 ac) of area B, 0.71 ha (1.75 ac) of area C, 1.18 ha (2.92 ac) of area D, and 0.83 ha (2.05 ac) of area E. These estimates are based on the following factors:

- According to the MRCC, the median date that the growing season begins at the Quad City International Airport in nearby Moline, Illinois, is April 13 and the season lasts 196 days; 5% of the growing season is 10 days and 12.5% of the growing season is 25 days. According to methods outlined in the Midwest Regional Supplement (U.S. Army Corps of Engineers 2008), we estimate that March 18 was the start date of the 2009 growing season based on soil temperatures observed at the wetland compensation site.
- Total precipitation during the monitoring period was 154% of normal. Precipitation was at or above normal in September and December 2008, and from February 2009 through August 2009. Total precipitation in the spring (April through June) was 109% of normal.
- In 2009, wetland hydrology occurred for 5% of the growing season and for 14 or more consecutive days at monitoring wells 3S, 6S, 7S, 8S, 12S, 13S, 14S, 15S, 16S, 18VS, 18S, 19S, 20S, 21VS, 21S, 22S, 23S, and 24S. In addition, wetland hydrology occurred for more than 12.5% of the growing season at monitoring wells 8S, 12S, 13S, 14S, 15S, 16S, 18VS, 18S, 19S, 20S, 21VS, 21S, and 22S.
- During the growing season, inundation was observed mostly in area D. Surface-water elevations measured at gauge C reveal that the portions of area D at and below an elevation of 172.50 m (565.97 ft) were inundated for periods long enough to satisfy

wetland hydrology criteria for 5%, for 14 or more consecutive days, and for 12.5% of the growing season. Analysis of the data recorded by RDS1 and RDS2 reveals that surface water was high enough to inundate portions of areas A and C numerous times during the growing season, but that the duration of inundation was not long enough to satisfy any of the wetland hydrology criteria.

ADDITIONAL INFORMATION

- Analysis of surface-water elevations recorded by RDS1 and RDS2 reveals two sources of water. One source is flooding from the Rock River. The graphs show that the broadest peaks recorded by RDS1 and RDS2 generally corresponded to the highest stages recorded by the U.S. Army Corps of Engineers gauge at Moline, Illinois. These peaks tend to have the longest duration, lasting from about 1 to 2 weeks. The other source of water is runoff in the watershed of the site, which generally results in peaks that last a few hours to less than 1 day.

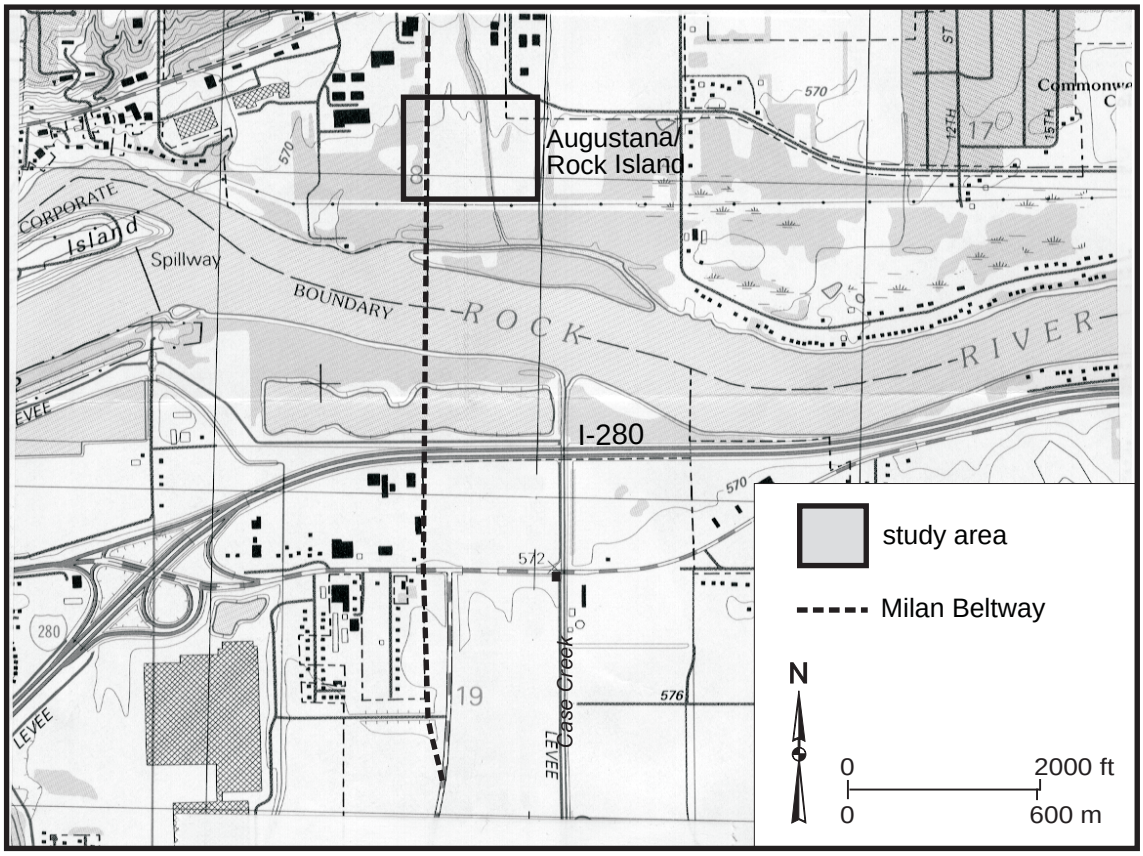
PLANNED FUTURE ACTIVITIES

- Monitoring activities will continue until no longer required by IDOT.

Milan Beltway, Augustana/Rock Island Wetland Compensation Site (FAU 5822)

General Study Area and Vicinity

from the USGS Topographic Series, Milan IL-IA 7.5-minute Quadrangle (USGS 1992)
contour interval is 10 feet

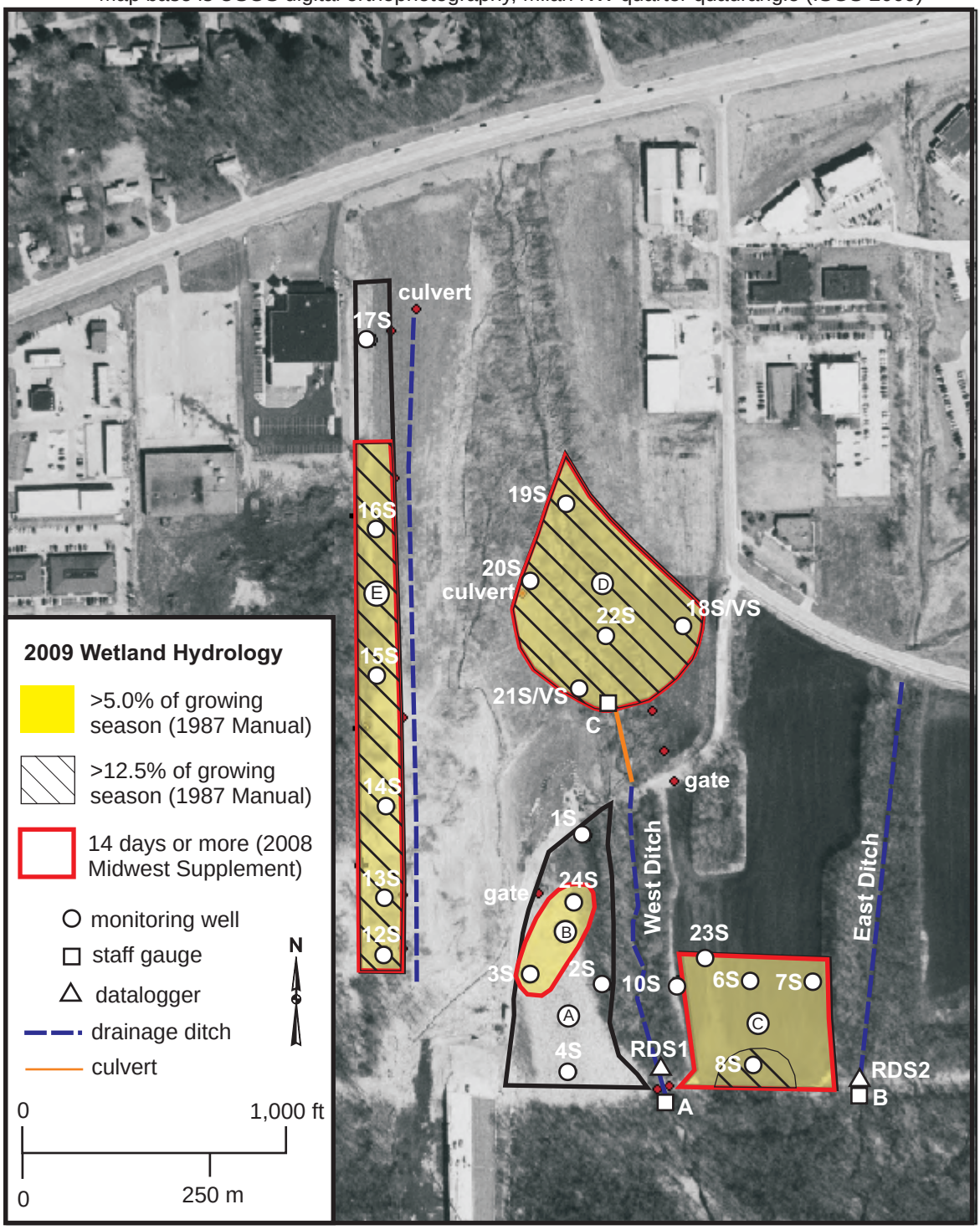


Milan Beltway, Augustana/Rock Island Wetland Compensation Site (FAU 5822)

Estimated Areal Extent of 2009 Wetland Hydrology

September 1, 2008 through August 31, 2009

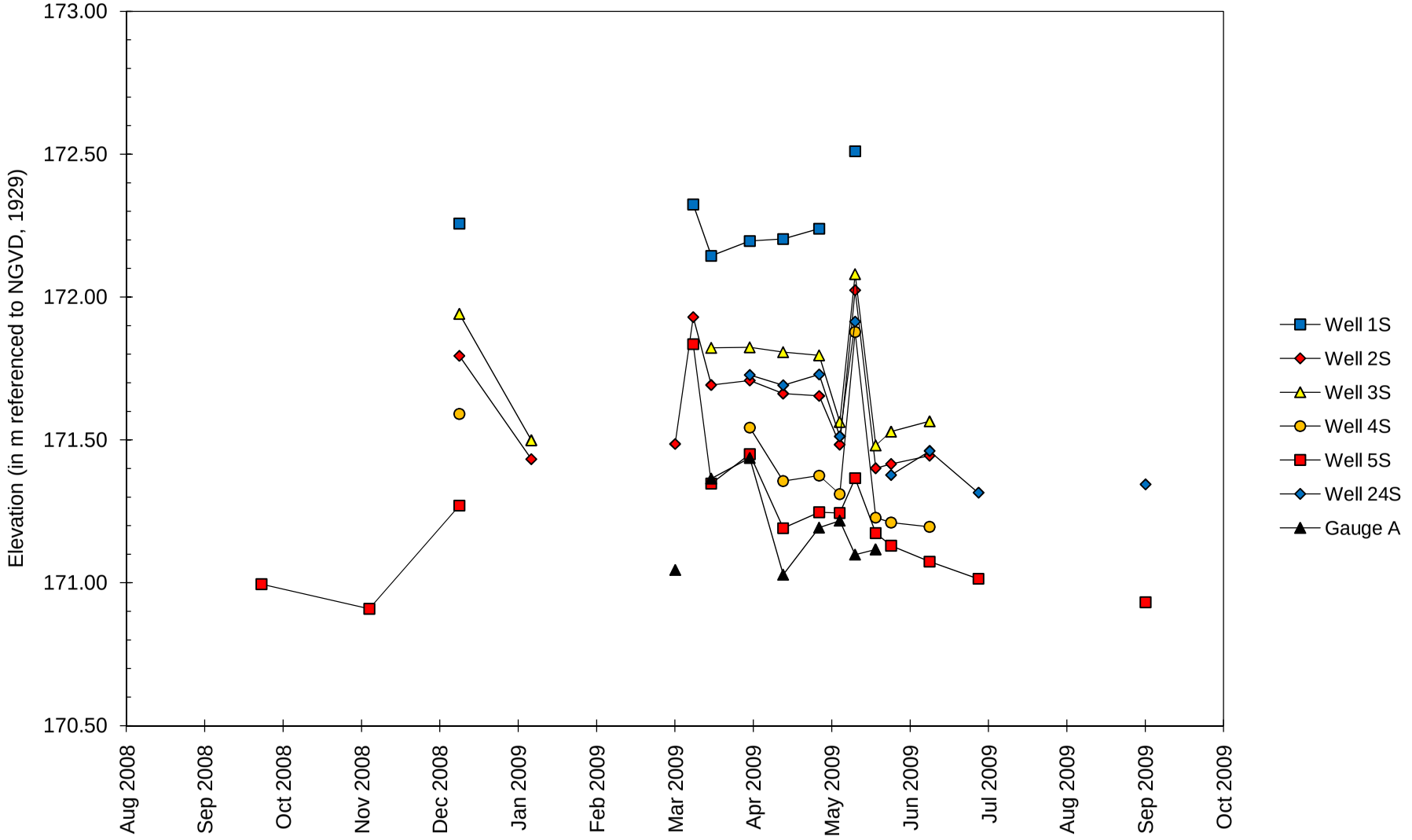
Map base is USGS digital orthophotography, Milan NW quarter quadrangle (ISGS 2009)



Milan Beltway, Augustana/Rock Island Wetland Compensation Site

September 1, 2008 through August 31, 2009

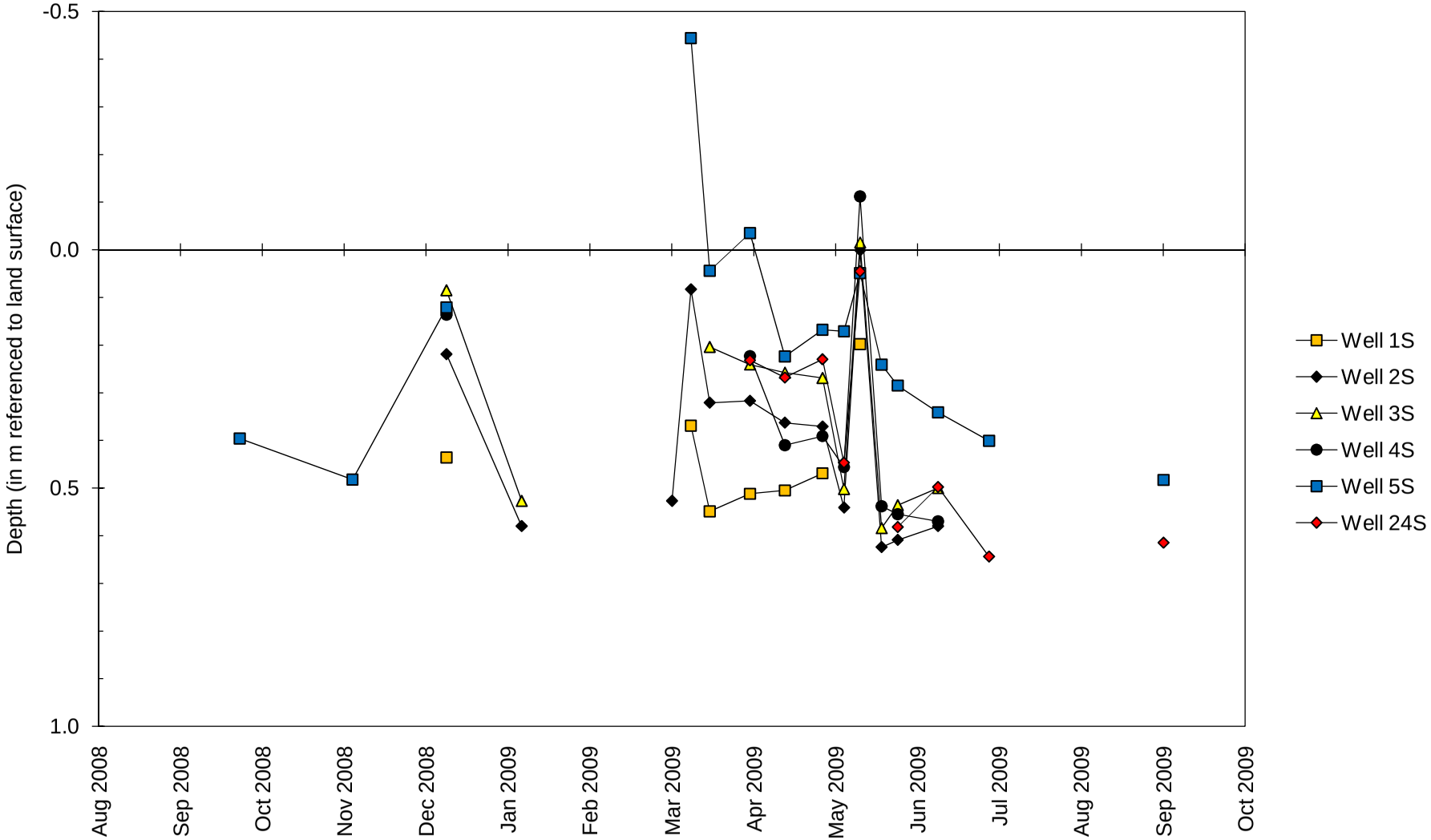
Water-Level Elevations in Monitoring Wells and at Staff Gauges in Areas A and B



Milan Beltway, Augustana/Rock Island Wetland Compensation Site

September 1, 2008 through August 31, 2009

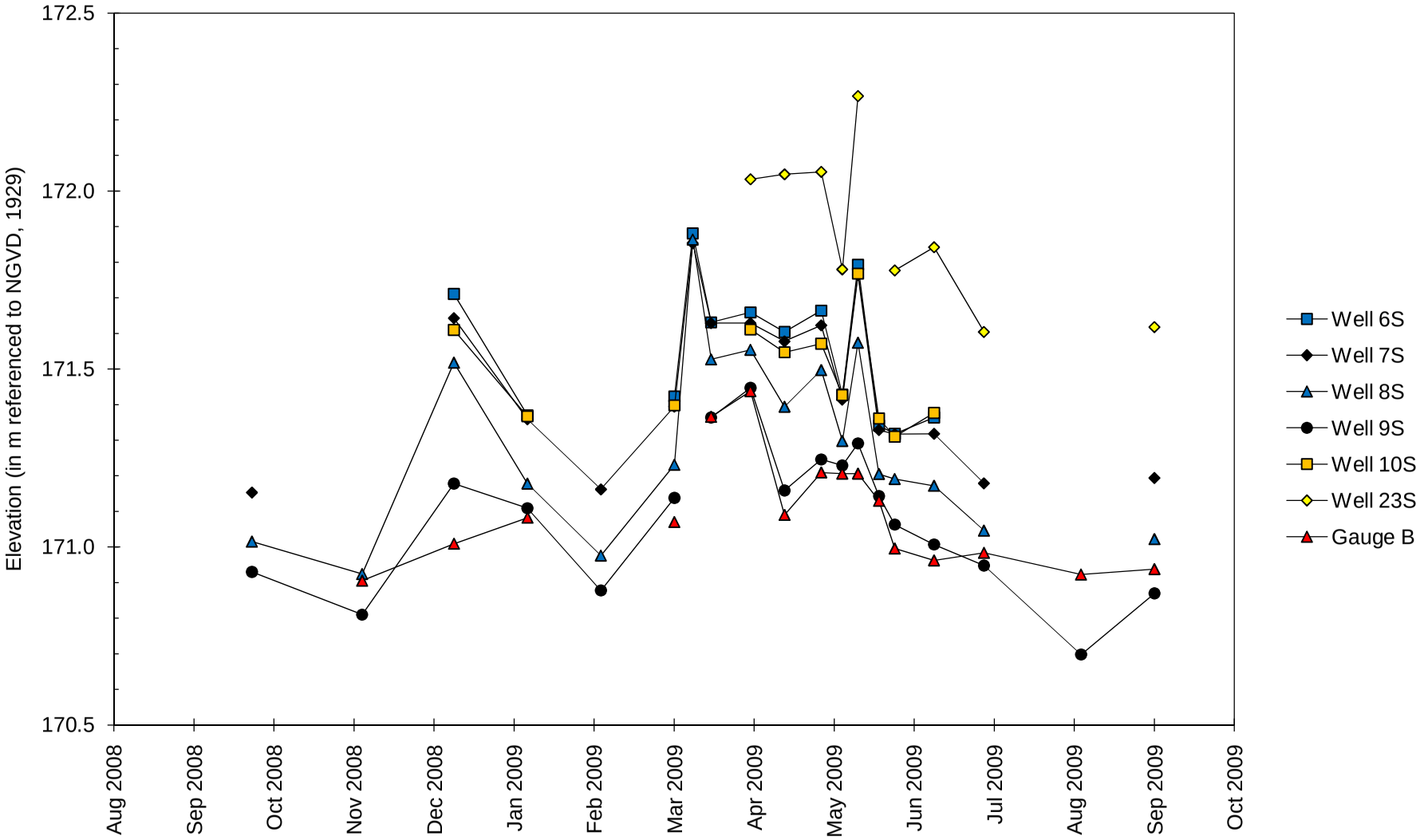
Depth to Water in Monitoring Wells in Areas A and B



Milan Beltway, Augustana/Rock Island Wetland Compensation Site

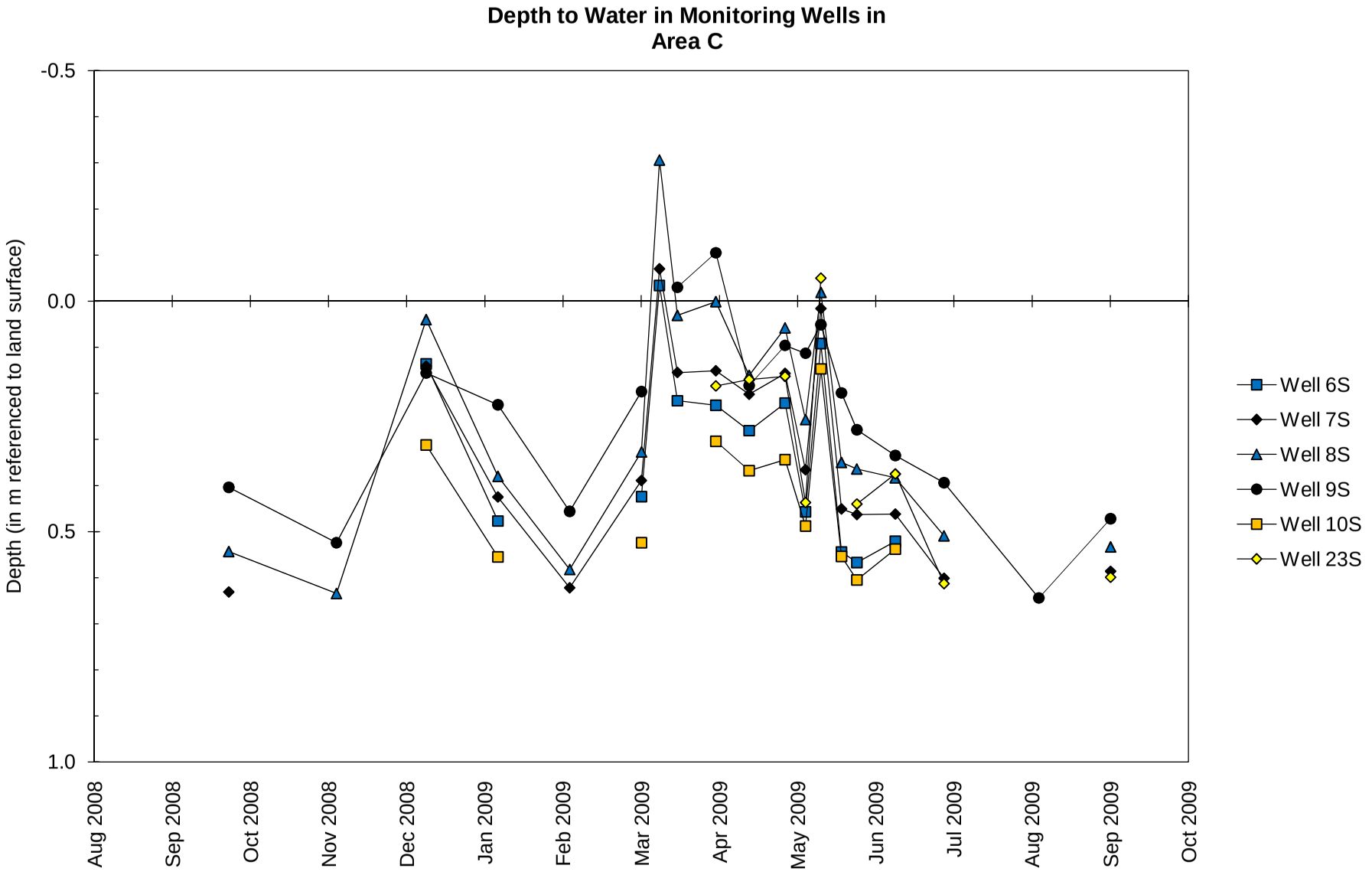
September 1, 2008 through August 31, 2009

Water Level Elevations in Monitoring Wells and at Staff Gauges in Area C



Milan Beltway, Augustana/Rock Island Wetland Compensation Site

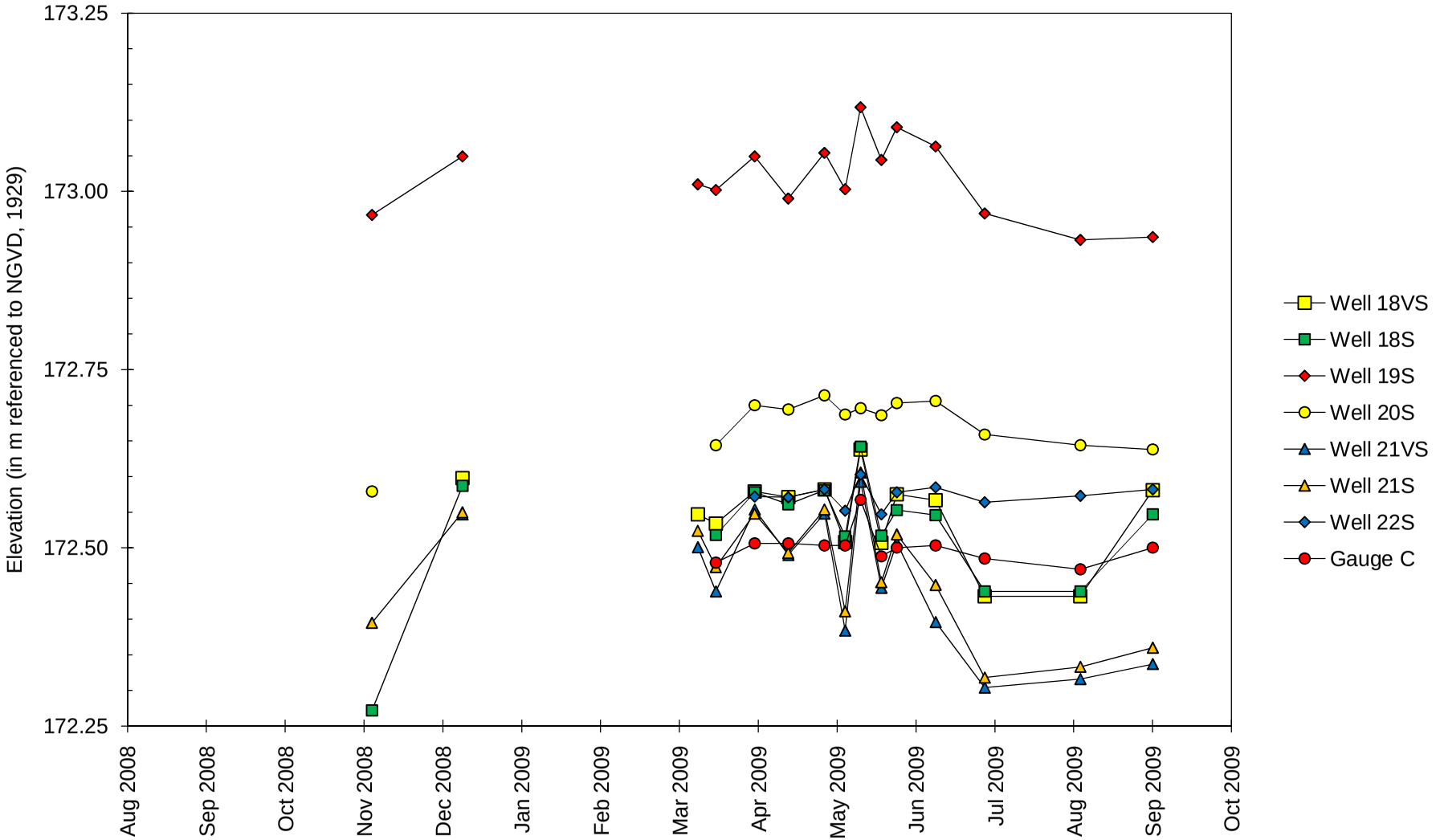
September 1, 2008 through August 31, 2009



Milan Beltway, Augustana/Rock Island Wetland Compensation Site

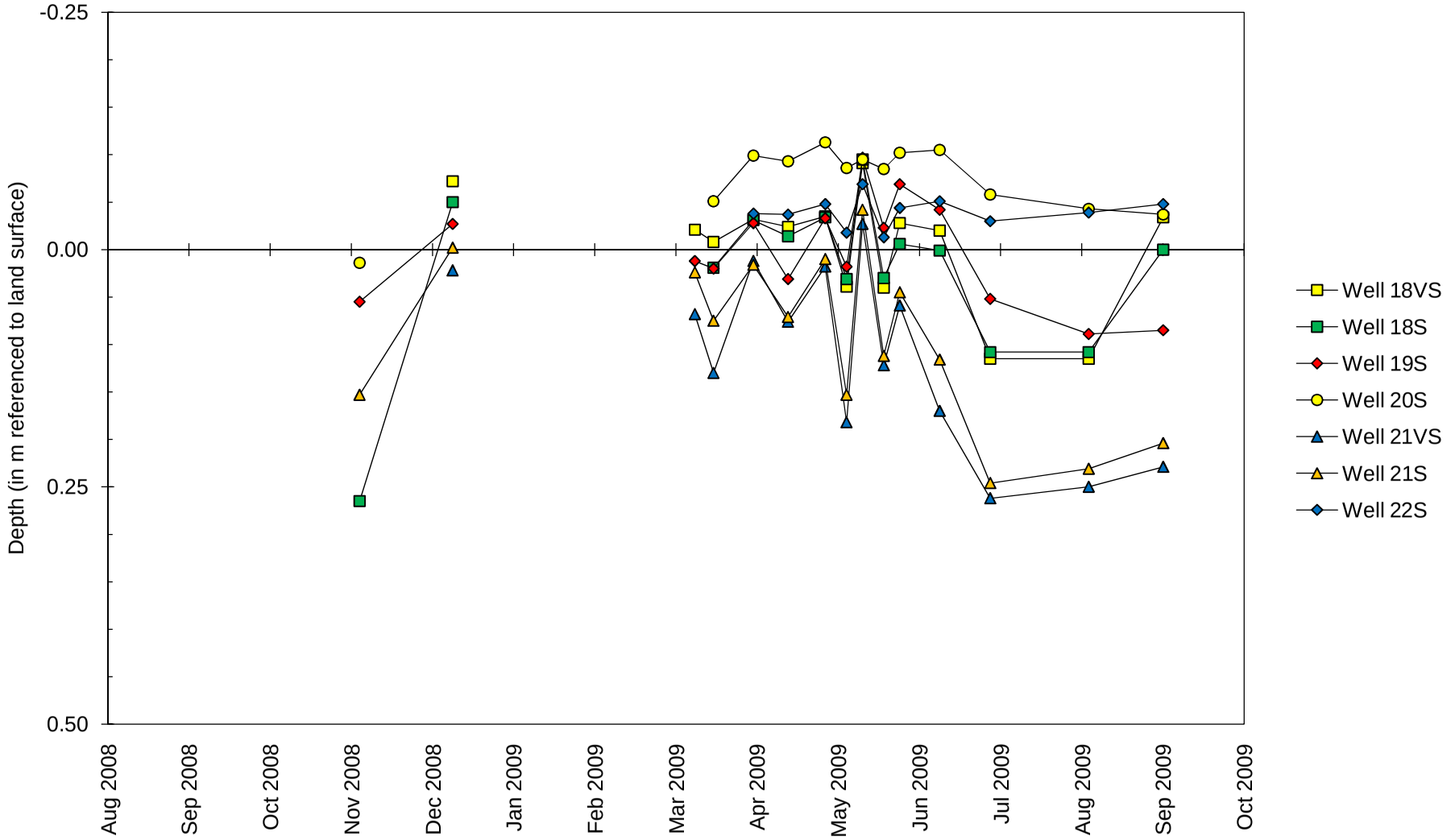
September 1, 2008 through August 31, 2009

Water-Level Elevations in Monitoring Wells and at Staff Gauges in Area D



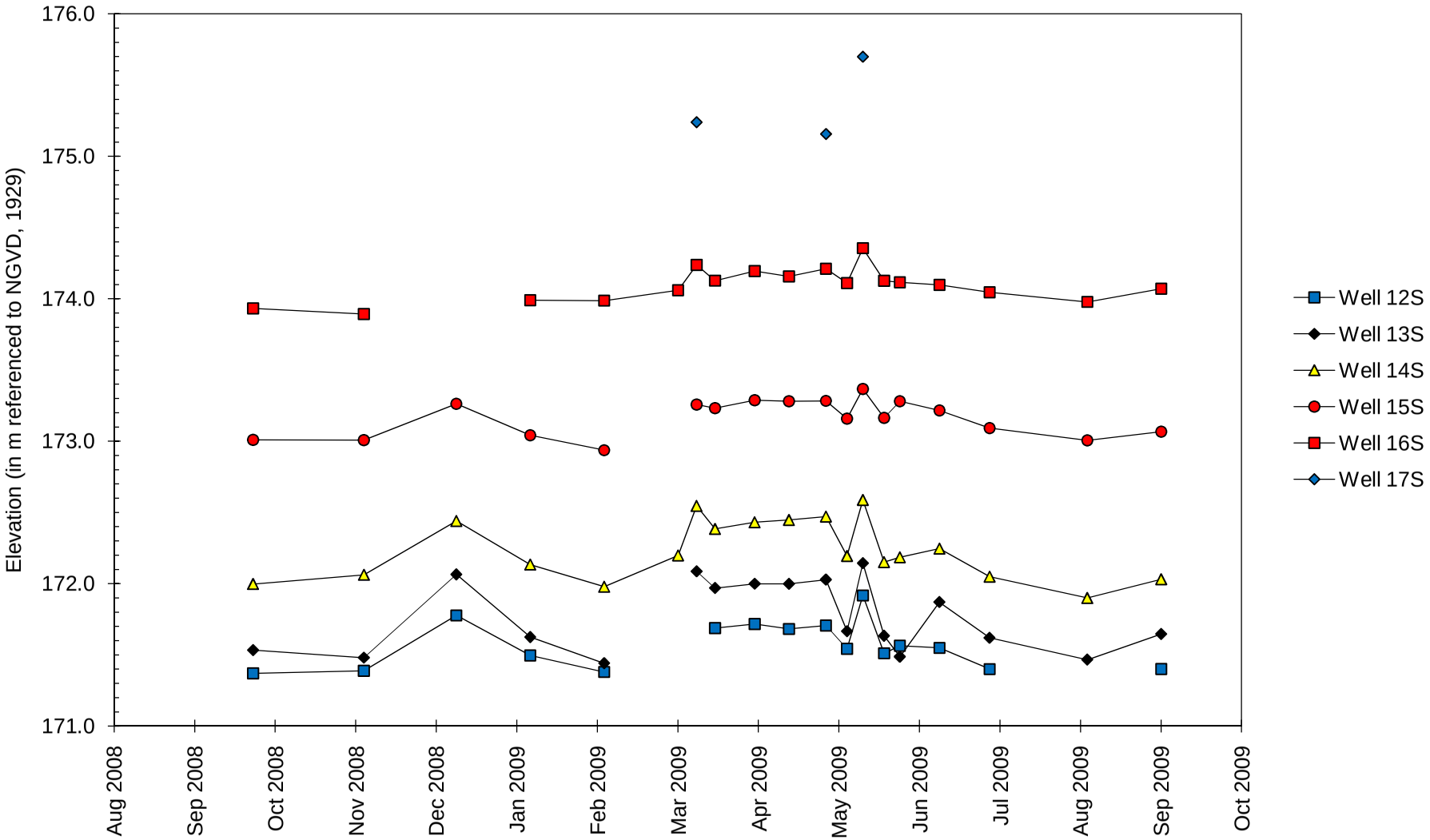
Milan Beltway, Augustana/Rock Island Wetland Compensation Site
September 1, 2008 through August 31, 2009

Depth to Water in Monitoring Wells in Area D



Milan Beltway, Augustana/Rock Island Wetland Compensation Site
September 1, 2008 through August 31, 2009

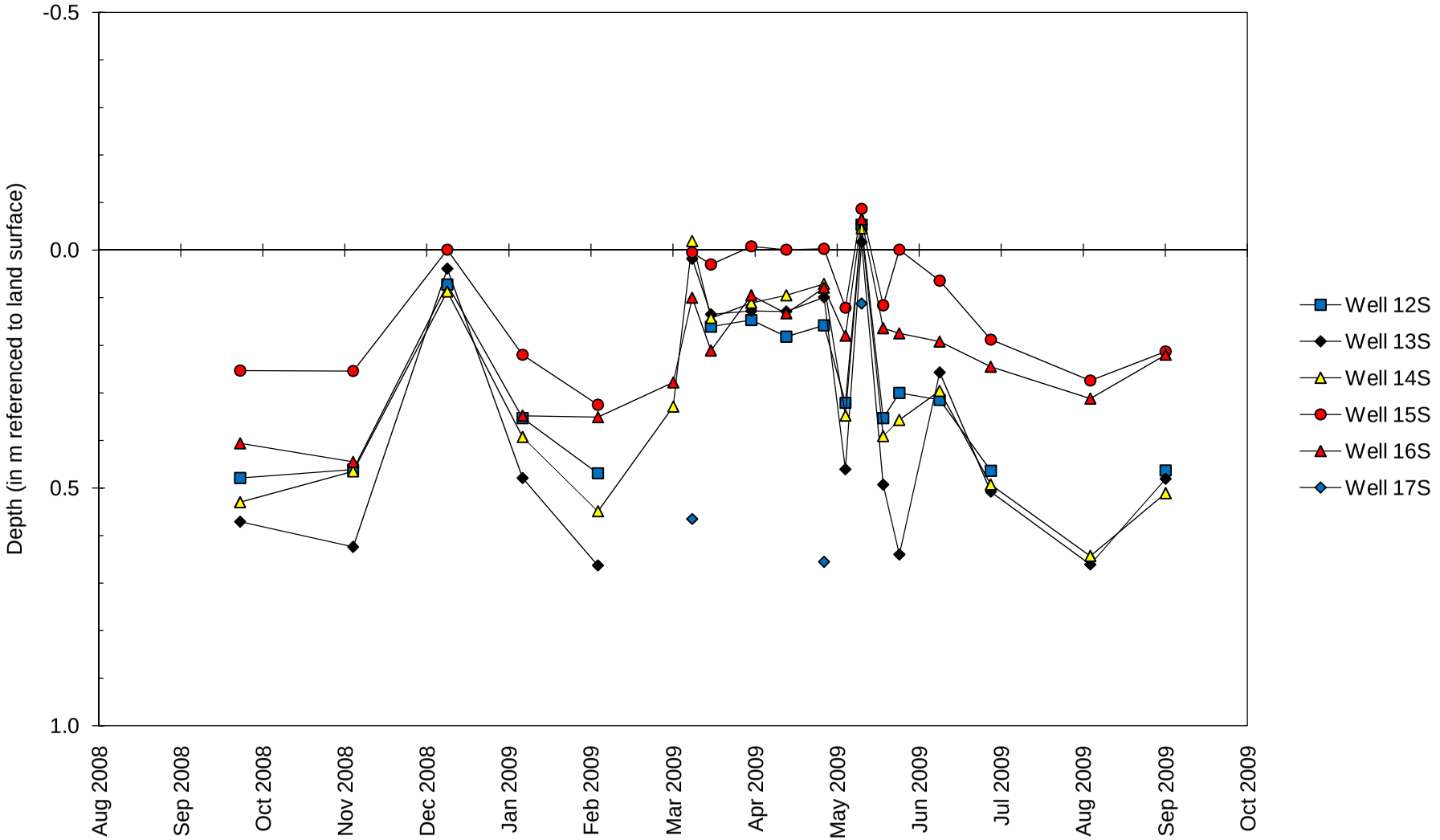
Water-Level Elevations in Monitoring Wells in Area E



Milan Beltway, Augustana/Rock Island Wetland Compensation Site

September 1, 2008 through August 31, 2009

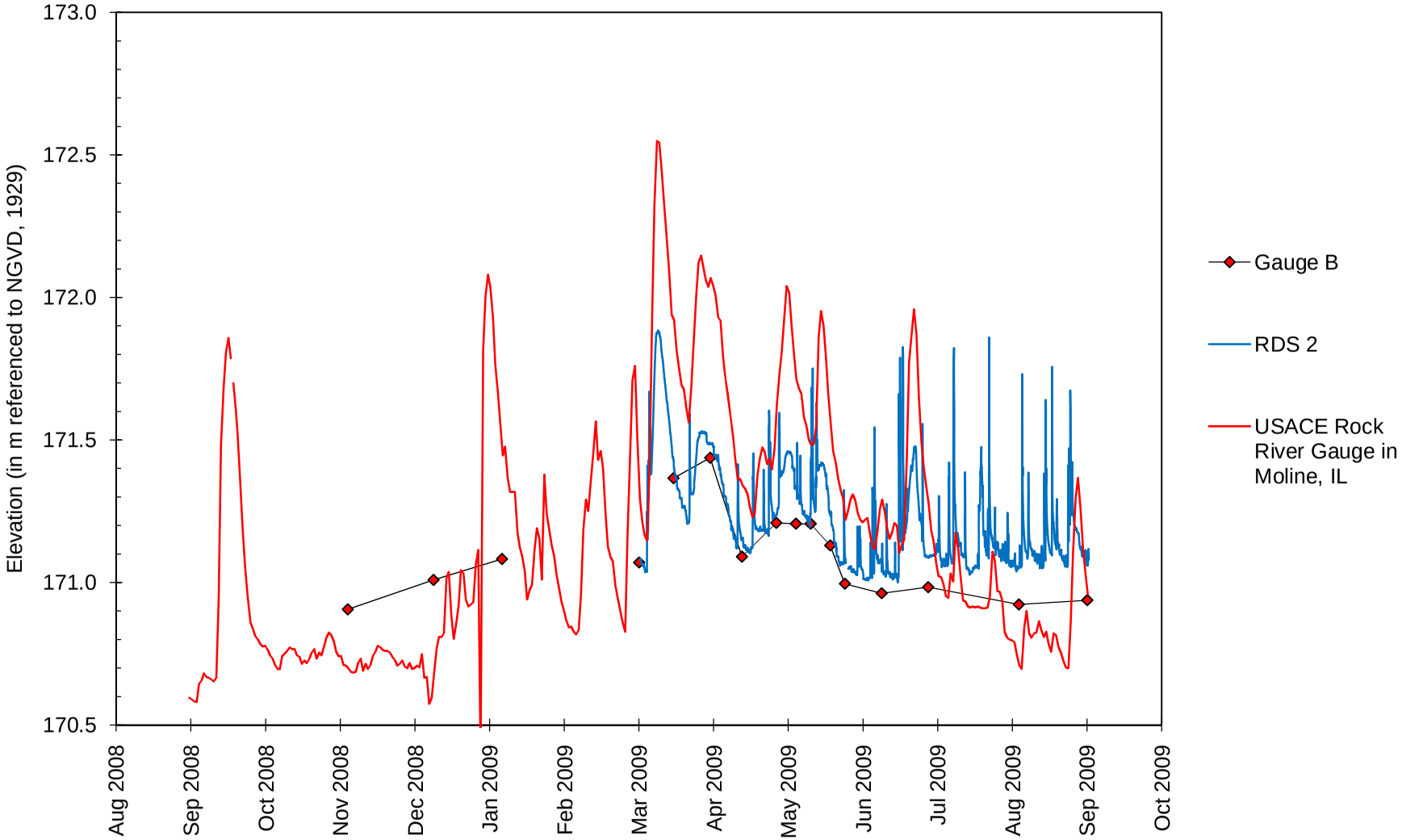
Depth to Water in Monitoring Wells in Area E



Milan Beltway, Augustana/Rock Island Wetland Compensation Site

September 1, 2008 through August 31, 2009

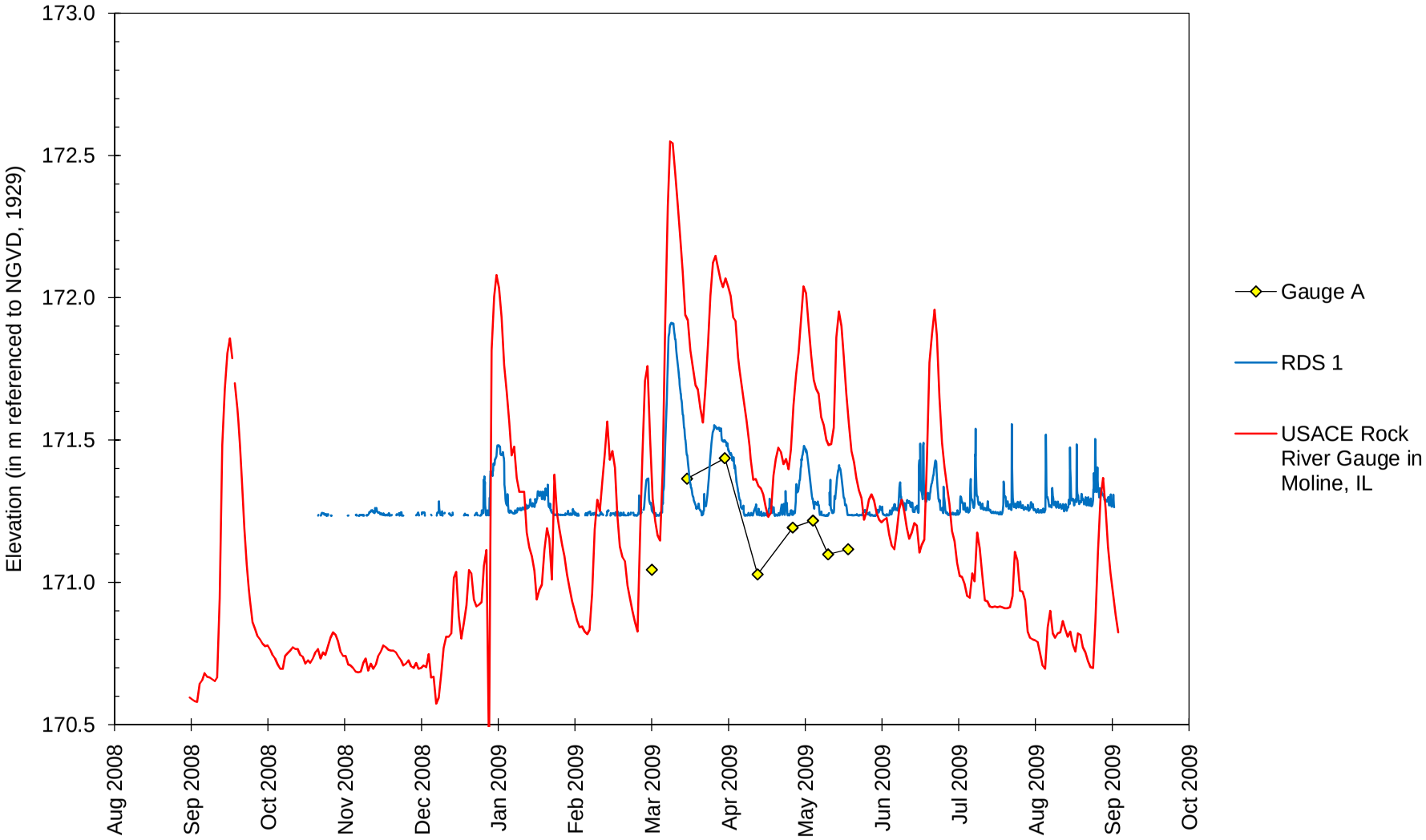
Water-Level Elevations at Staff Gauges in East Ditch and at the USACE, Rock River Gauge in Moline, Illinois



Milan Beltway, Augustana/Rock Island Wetland Compensation Site

September 1, 2008 through August 31, 2009

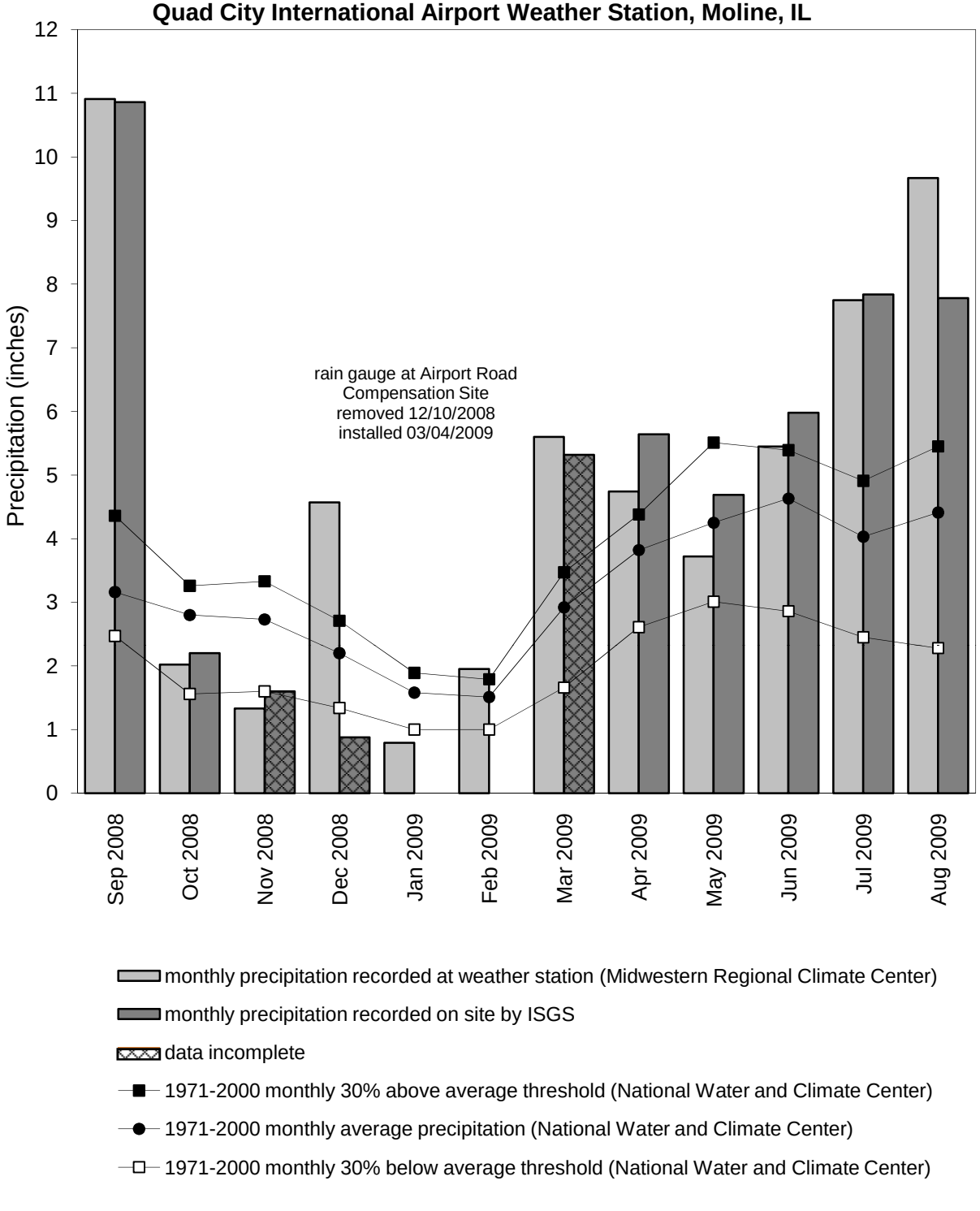
Water-Level Elevations at Staff Gauges in West Ditch and at the USACE, Rock River Gauge in Moline, Illinois



Milan Beltway, Augustana/Rock Island Wetland Compensation Site

September 2008 through August 2009

Total Monthly Precipitation Recorded On Site and at the Quad City International Airport Weather Station, Moline, IL



Graph last updated September 11, 2009

PYRAMID SITE EC25 **ISGS #77**
WETLAND COMPENSATION SITE
Pyatt's Blacktop
Sequence #9778
Perry County, near Pinckneyville, Illinois
Primary Project Manager: Eric T. Plankell
Secondary Project Manager: not assigned

SITE HISTORY

- June 2007: ISGS was tasked by IDOT to monitor wetland hydrology.
- April 2008: ISGS began on-site monitoring with the installation of a monitoring network.

WETLAND HYDROLOGY CALCULATION FOR 2009

The estimated area that satisfied wetland hydrology criteria (Environmental Laboratory 1987) for greater than 5% of the 2009 growing season is 5.3 ha (13.1 ac) out of a total mitigation area of approximately 5.3 ha (13.1 ac). The estimated area that satisfied wetland hydrology criteria for greater than 12.5% of the 2009 growing season is also 5.3 ha (13.1 ac). Using new guidance proposed by the U.S. Army Corps of Engineers (2008), we estimate that 5.3 ha (13.1 ac) also satisfied wetland hydrology criteria for 14 or more consecutive days during the growing season. These estimates are based on the following factors:

- According to the MRCC, the median date that the growing season begins in nearby Du Quoin, Illinois is April 5, and the season lasts 207 days; 5% of the growing season is 10 days, and 12.5% of the growing season is 26 days. According to methods outlined in the Midwest Regional Supplement (U.S. Army Corps of Engineers 2008), we estimate that March 10 was the starting date of the 2009 growing season based on vegetation growth and development observed at the wetland compensation site.
- Total precipitation for the monitoring period, as recorded at the weather station in Du Quoin, Illinois, was 115% of normal. Precipitation at the Du Quoin, Illinois weather station was above normal in the months of April, May, and July 2009, and below normal for the remaining months in the monitoring period. Precipitation recorded at the Du Quoin weather station for the months of April through July 2009 was 185% of normal for those months.
- In 2009, water levels measured in all soil-zone (S and VS) monitoring wells satisfied the wetland hydrology criteria for greater than 12.5% of the growing season.
- Water-level records from the RDS data logger at well 13VS indicated inundation at or below approximately 131.36 m (430.97 ft) for greater than 5% of the growing season, and for 14 or more consecutive days of the growing season. Additionally, water-level records from well 13VS indicated inundation at or below approximately 131.29 m (430.74 ft) for greater than 12.5% of the growing season.
- Gauge B, installed in Little Galum Creek, recorded six separate flood events in April and May that inundated most or all of the site on each occasion. Although each flood lasted only a few hours, their occurrence, coupled with above-normal precipitation and low

springtime evapotranspiration, was sufficient to cause the entire site to meet all wetland hydrology criteria for the 2009 growing season.

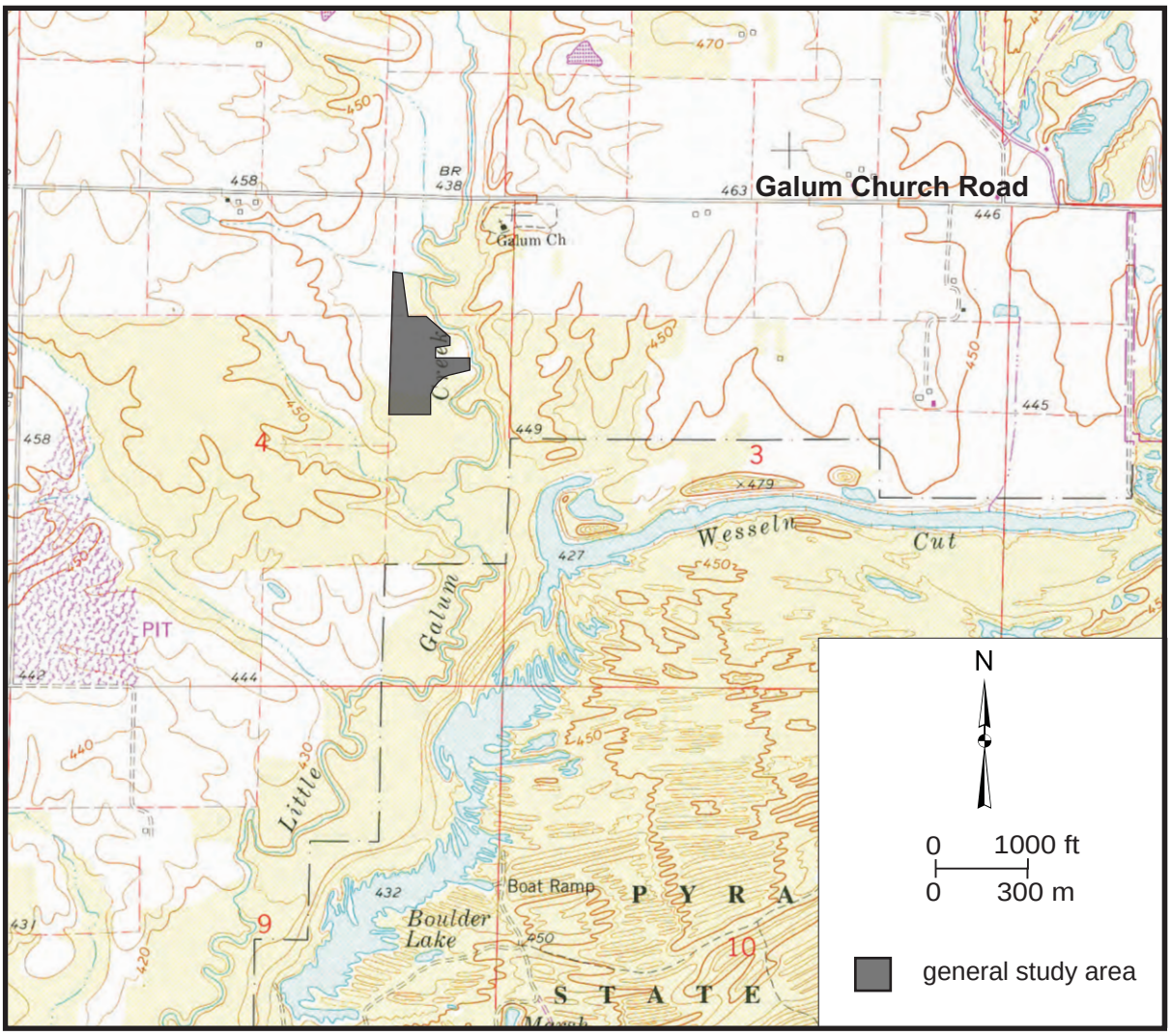
- Ditches along the western and southern edges of the site allow much of the surface water to quickly drain from the site, and thus potentially reduce the amount of acreage that will meet wetland hydrology criteria in subsequent years with more normal precipitation levels.

PLANNED FUTURE ACTIVITIES

- Monitoring will continue at the site until no longer required by IDOT.

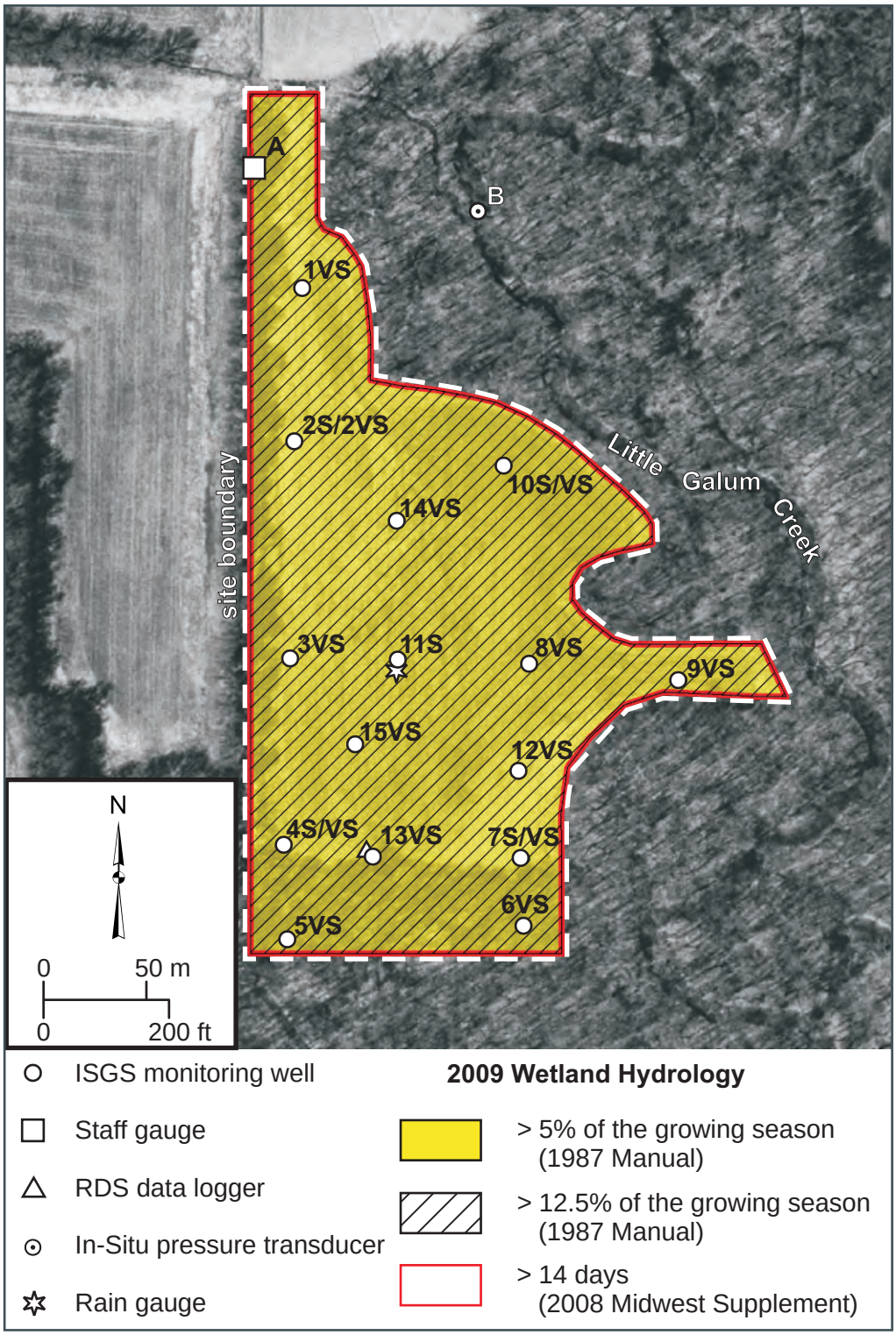
Pyramid Site EC25 Wetland Compensation Site
[FAS 864 (Pyatt's Blacktop)]
General Study Area and Vicinity

from the USGS Topographic Series, Pinckneyville, IL 7.5-minute Quadrangle (USGS 1982)
contour interval is 10 feet



Pyramid Site EC25 Wetland Compensation Site
[FAS 864 (Pyatt's Blacktop)]
Estimated Areal Extent of 2009 Wetland Hydrology
September 1, 2008 through August 31, 2009

Map based on USGS digital orthophotograph, Pinckneyville, SE quarter quadrangle (ISGS 2005)

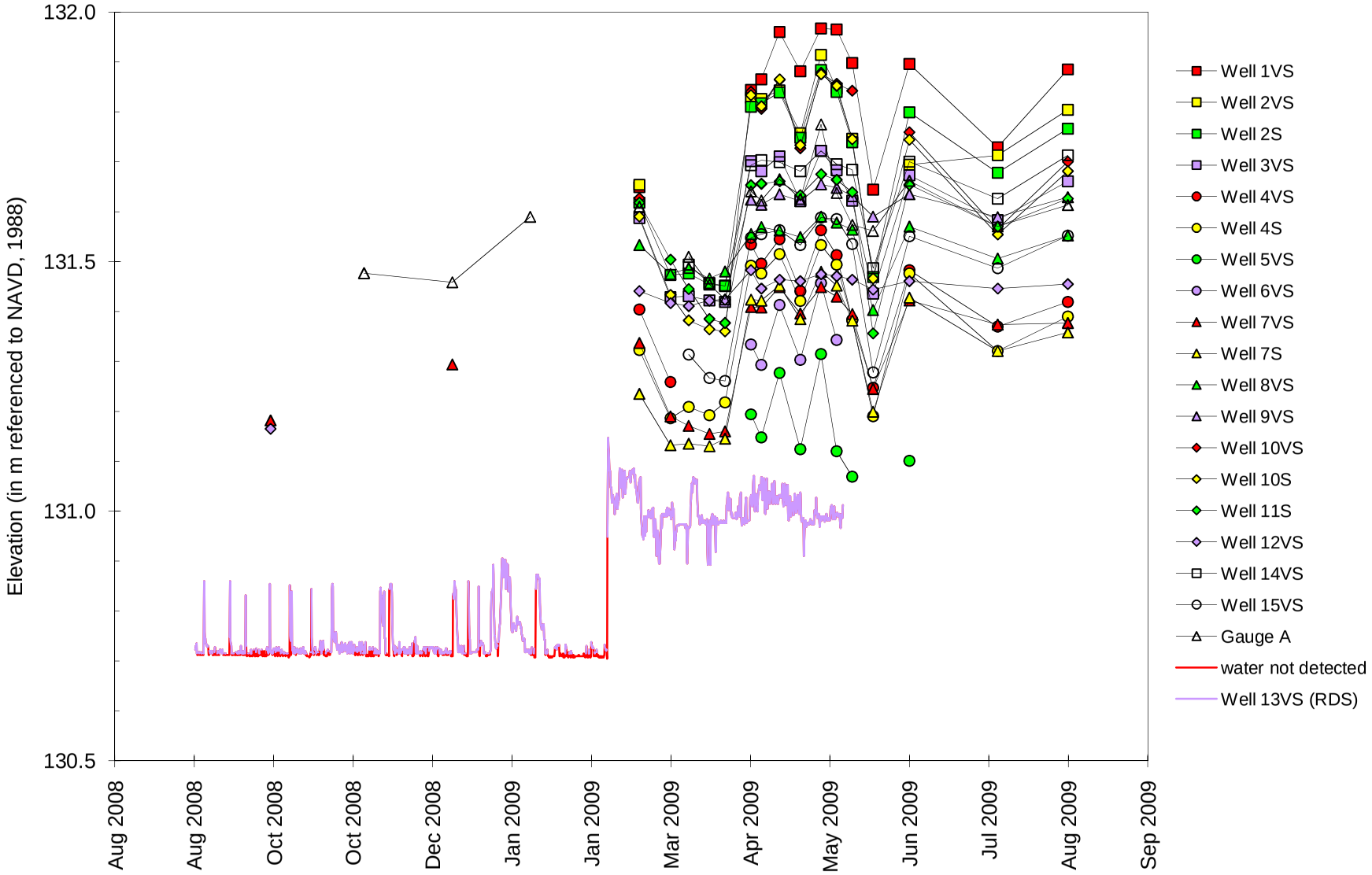


○	ISGS monitoring well	**2009 Wetland Hydrology**	
□	Staff gauge	▭	> 5% of the growing season (1987 Manual)
△	RDS data logger	▨	> 12.5% of the growing season (1987 Manual)
⊙	In-Situ pressure transducer	▭	> 14 days (2008 Midwest Supplement)
✡	Rain gauge		

Pyramid Site EC25 Wetland Compensation Site

September 1, 2008 through August 31, 2009

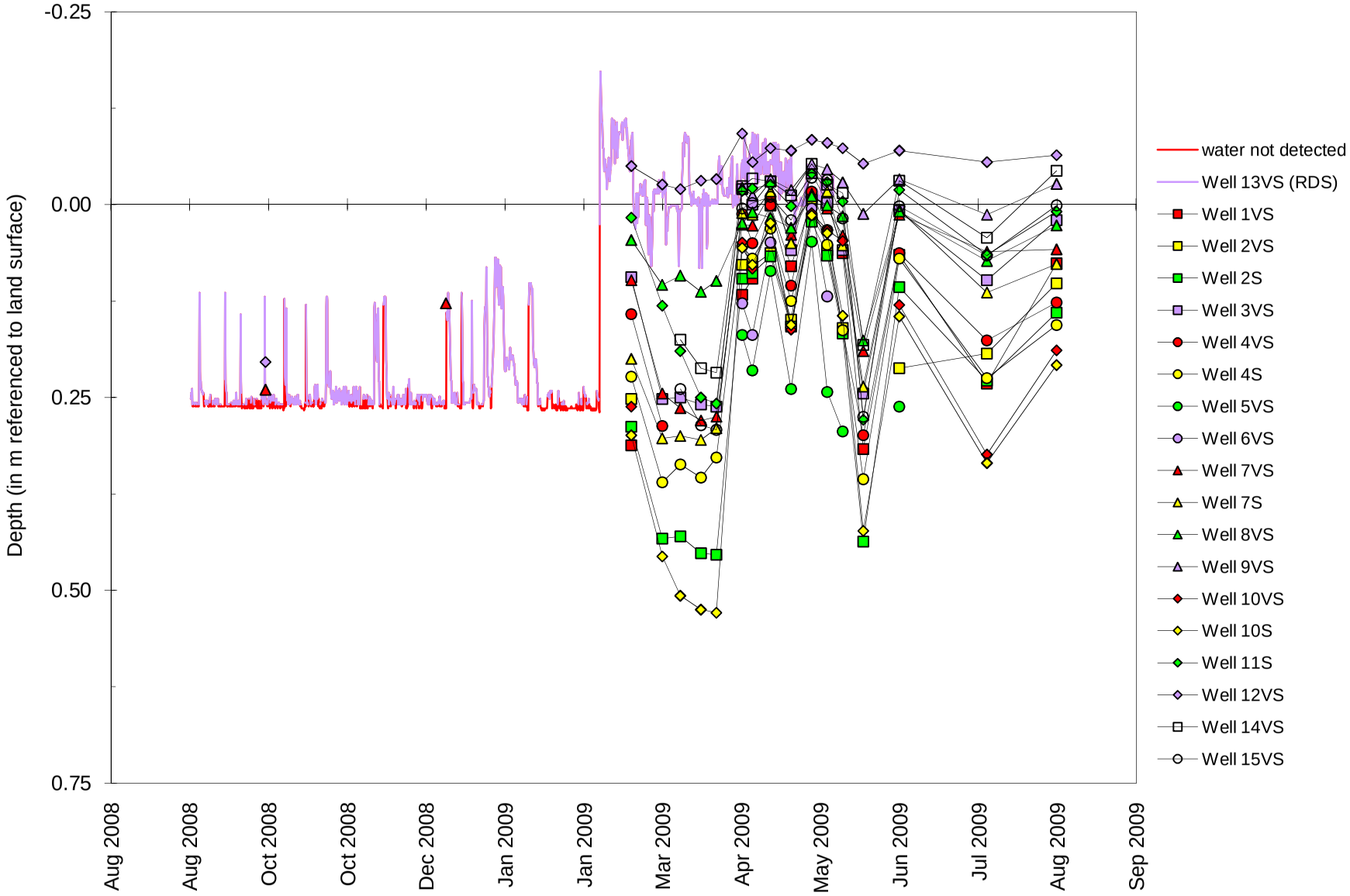
Water-Level Elevations in Monitoring Wells and on Stage Gauges



Pyramid Site EC25 Wetland Compensation Site

September 1, 2008 through August 31, 2009

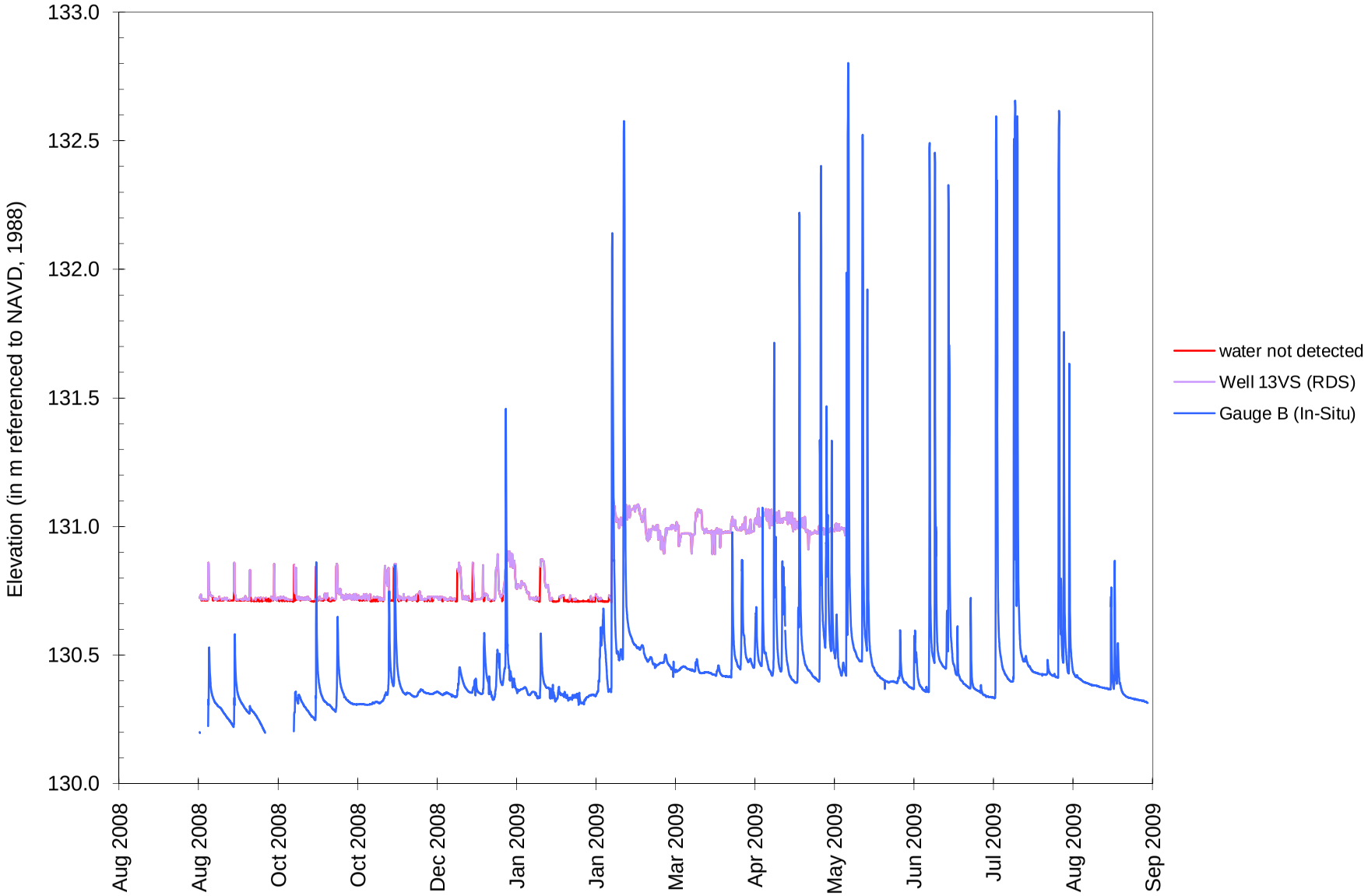
Depth to Water in Monitoring Wells



Pyramid Site EC25 Wetland Compensation Site

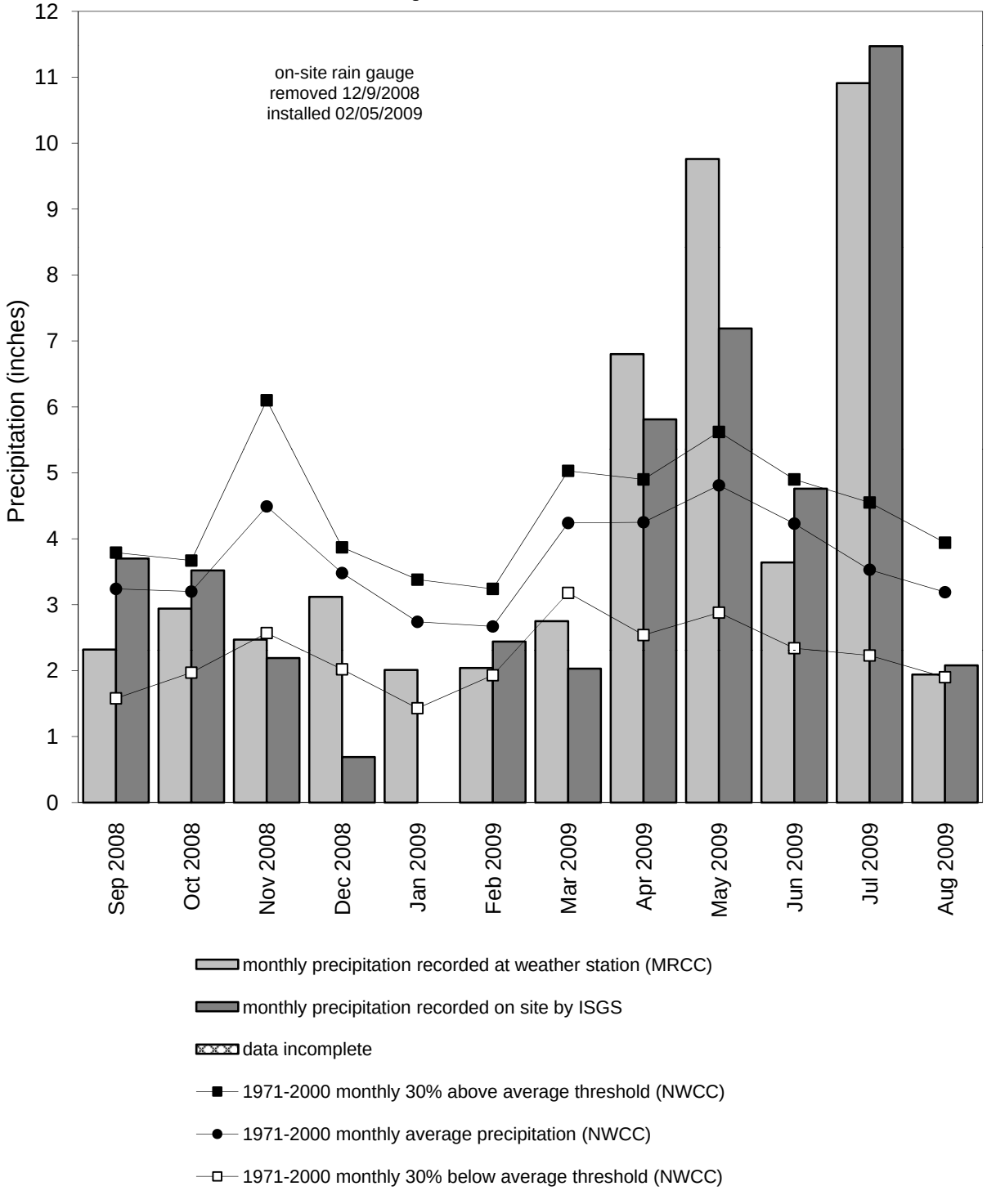
September 1, 2008 through August 31, 2009

Water-Level Elevations at Data Loggers



Pyramid Site EC25 Wetland Compensation Site
September 2008 through August 2009

Total Monthly Precipitation Recorded On Site and at the Du Quoin, IL Weather Station



Graph last updated October 19, 2009

HARRISBURG, SITE 2 **ISGS #78**
WETLAND COMPENSATION SITE
FAP 857
Saline County, near Harrisburg, Illinois
Primary Project Manager: Geoffrey E. Pociask
Secondary Project Manager: Charles W. Knight

SITE HISTORY

- October 2007: Construction at the wetland compensation site began.

- March 2008: ISGS was tasked by IDOT to monitor the site for performance standards as outlined in the wetland mitigation plan, and post-construction water-level monitoring was initiated.

- May 2008: Construction at the wetland compensation site was completed.

WETLAND HYDROLOGY CALCULATION FOR 2009

We estimate that 9.5 ha (23.4 ac) out of a total site area of approximately 14.2 ha (35.0 ac) satisfied wetland hydrology criteria (Environmental Laboratory 1987) for greater than 5% of the growing season in 2009, whereas 6.9 ha (17.0 ac) satisfied wetland hydrology criteria for greater than 12.5% of the growing season. Using new guidance proposed by the U.S. Army Corps of Engineers (2008), we estimate that 9.3 ha (22.9 ac) satisfied wetland hydrology criteria for 14 or more consecutive days during the growing season. These estimates are based on the following factors:

- According to the MRCC, the median date that the growing season begins in Harrisburg, Illinois, is April 1 and the season lasts 211 days; 5% of the growing season is 11 days and 12.5% of the growing season is 26 days. According to methods outlined in the Midwest Regional Supplement (U.S. Army Corps of Engineers 2008), we estimate that March 4 was the starting date of the 2009 growing season based on vegetation growth and development observed at the wetland compensation site.

- Total precipitation for the period from September 2008 through August 2009 was 95% of normal. Drier than normal conditions prevailed September 2008 through March 2009 and in June 2009. Precipitation amounts were at or above normal for April, May, July and August 2009.

- In 2009, all wells except 23VS satisfied wetland hydrology criteria for greater than 5% of the growing season. Furthermore, all wells except 5VS, 20VS, and 23VS satisfied wetland hydrology criteria for 14 or more consecutive days during the growing season and all wells except 5S, 5VS, 16VS, 20VS, 23VS, and 24VS satisfied wetland hydrology criteria for greater than 12.5% of the growing season.

- Data from gauge A showed that water-level elevation was at or above 114.0 m (374.0 ft) for greater than 5% of the growing season, for more than 14 consecutive days during the growing season, and for greater than 12.5% of the growing season. Gauge B showed water levels at or above 112.4 m (368.8 ft) for greater than 5% of the growing

season, for more than 14 consecutive days during the growing season, and for greater than 12.5% of the growing season.

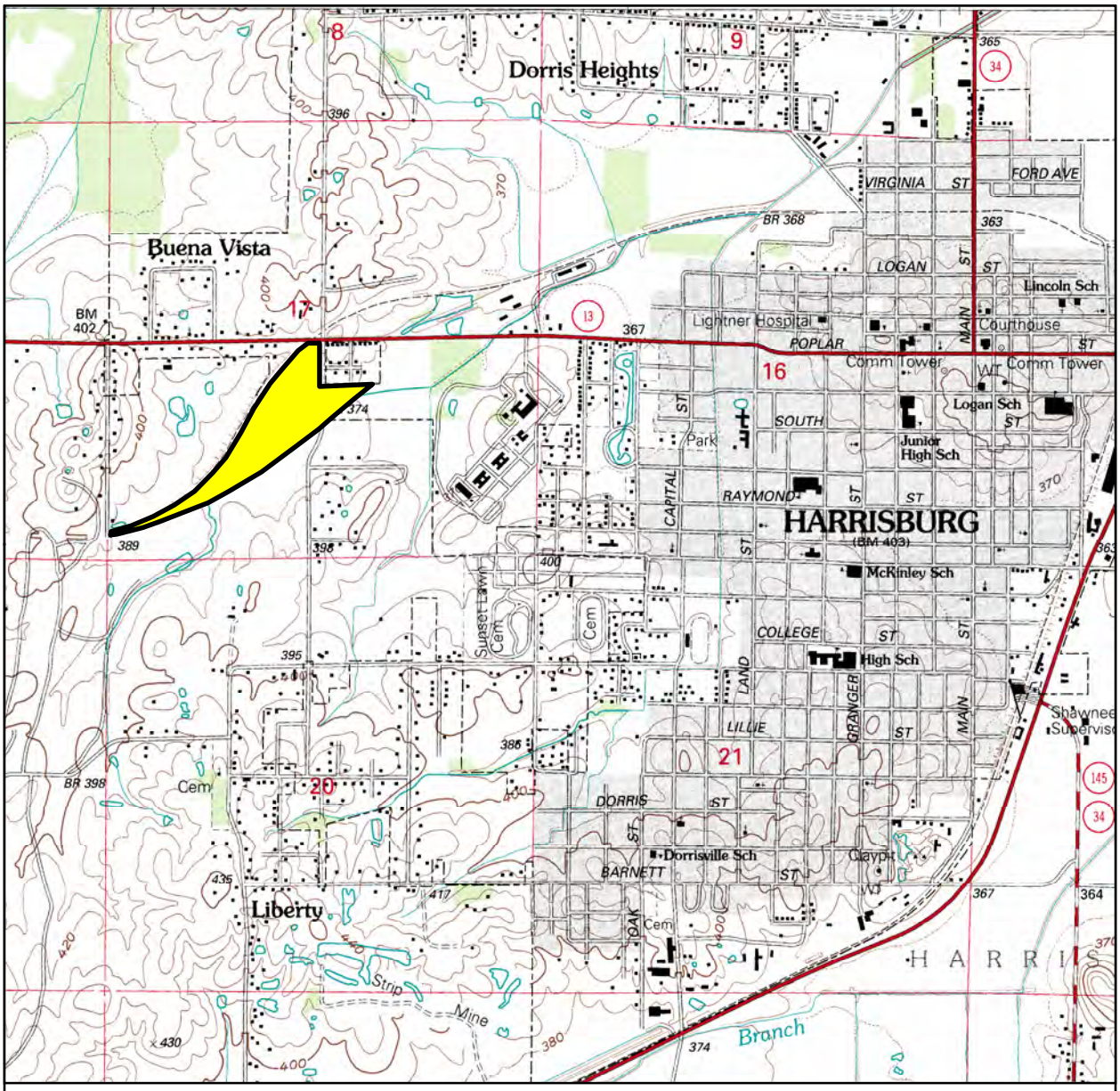
PLANNED FUTURE ACTIVITIES

- Water-level monitoring is expected to continue through 2012 or until no longer required by IDOT.

Harrisburg, Site 2 Wetland Compensation Site
(FAP 857)

General Study Area and Vicinity

from the USGS Topographic Series, Harrisburg, IL 7.5-minute Quadrangle (USGS 1996)
contour interval is 5 feet

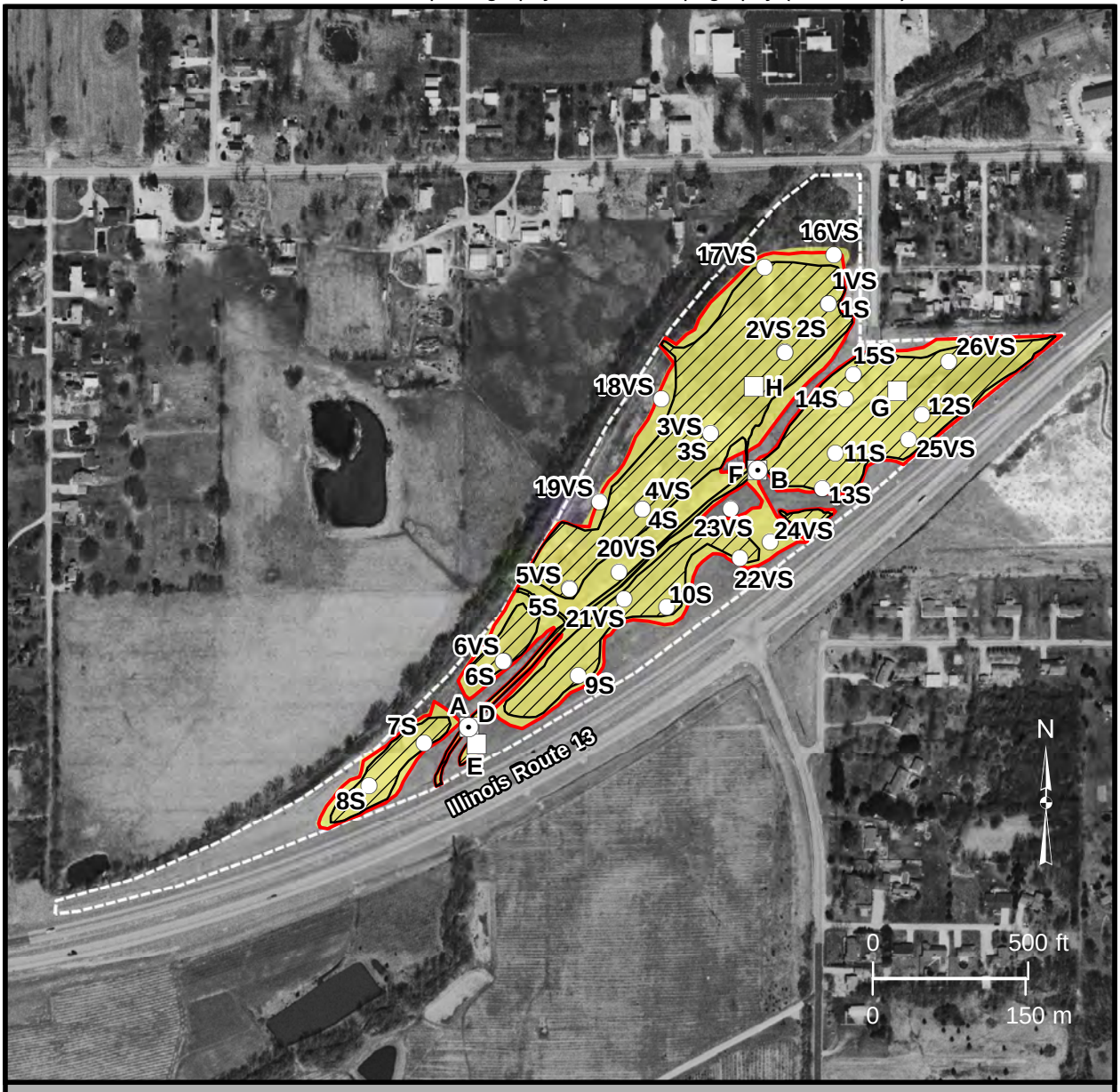


Harrisburg, Site 2 Wetland Compensation Site
(FAP 857)

Estimated Areal Extent of 2009 Wetland Hydrology

September 1, 2008 though August 31, 2009

map based on USGS digital orthophotograph Harrisburg NW quarter quadrangle
from 3/17/2005 aerial photography and ISGS topography (ISGS 2006)



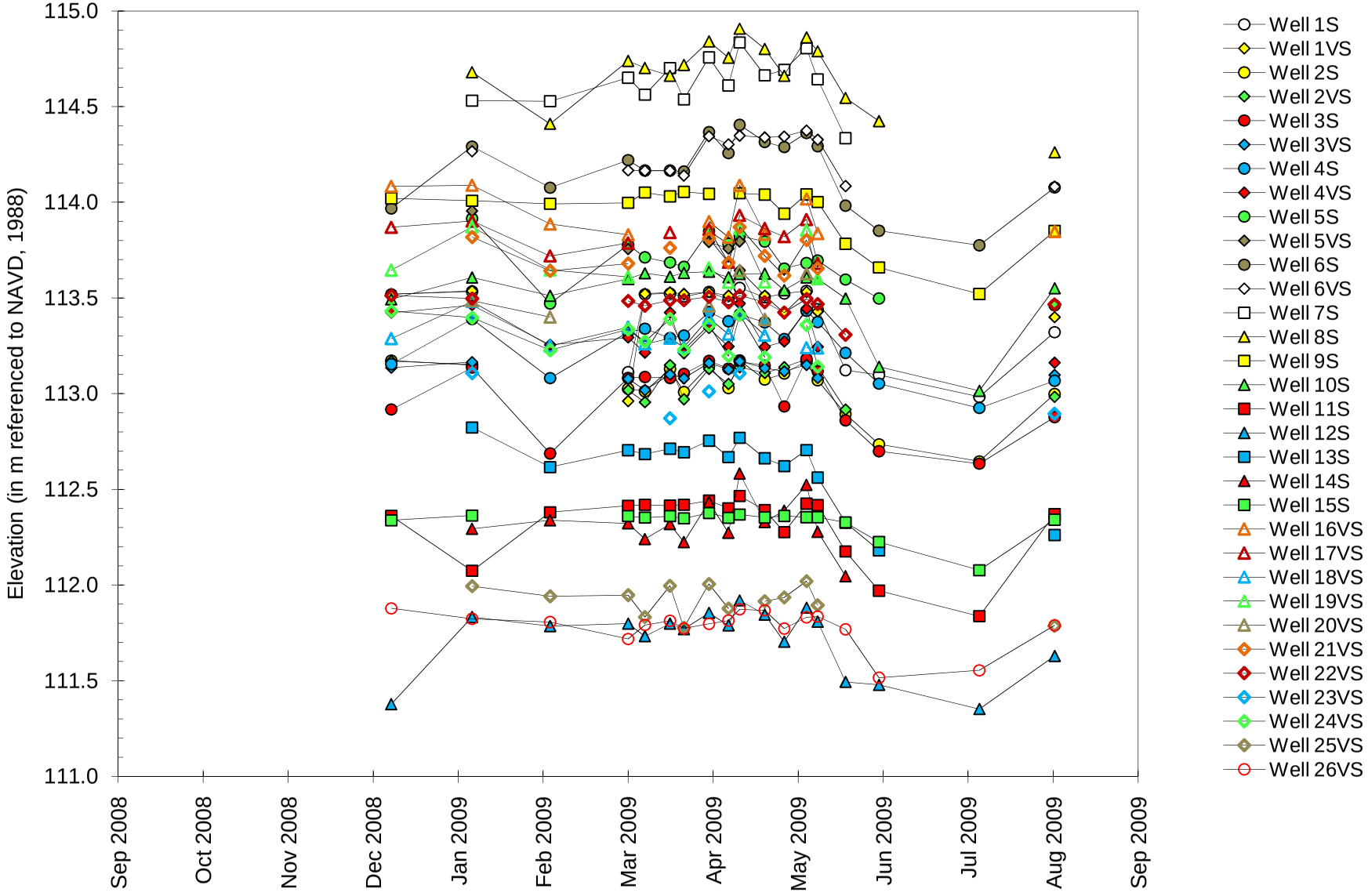
2009 Wetland Hydrology

- >5% of growing season (1987 Manual)
- >12.5% of growing season (1987 Manual)
- 14 days or more (2008 Midwest Supplement)
- monitoring well
- datalogger
- staff gauge
- site boundary

Harrisburg, Site 2 Wetland Compensation Site

September 1, 2008 through August 31, 2009

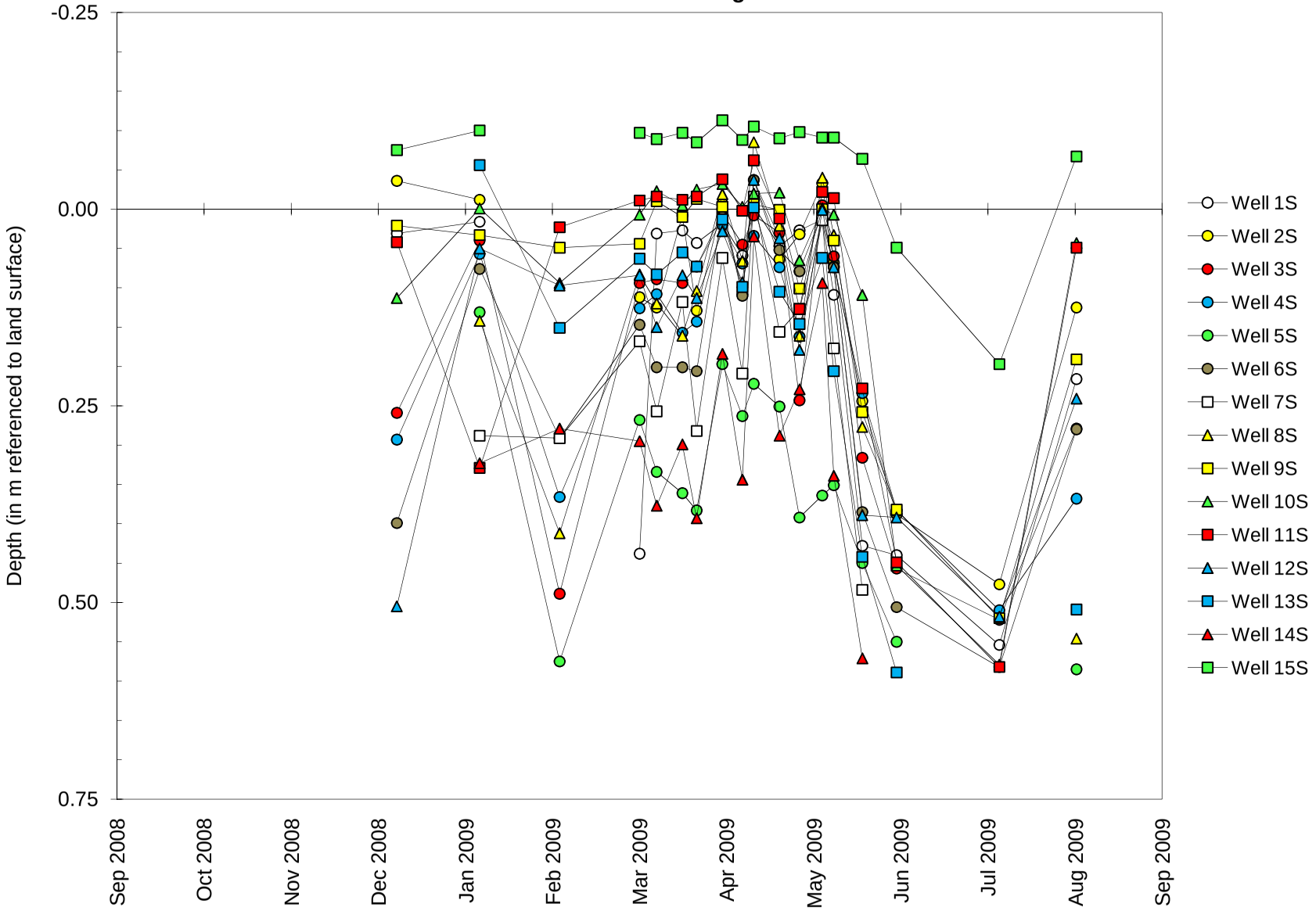
Water-Level Elevations in Monitoring Wells



Harrisburg, Site 2 Wetland Compensation Site

September 1, 2008 through August 31, 2009

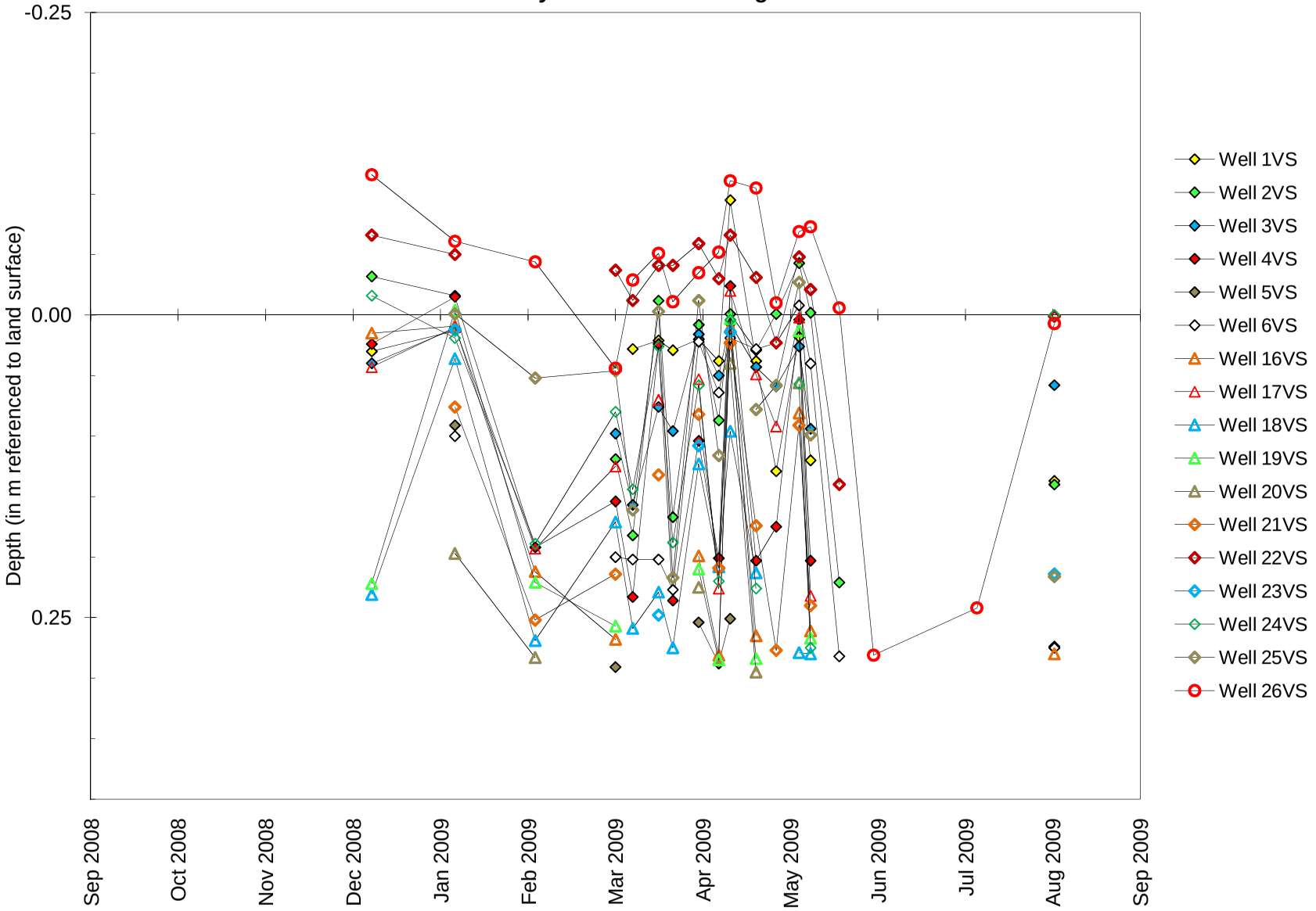
Depth to Water in Shallow Monitoring Wells



Harrisburg, Site 2 Wetland Compensation Site

September 1, 2008 through August 31, 2009

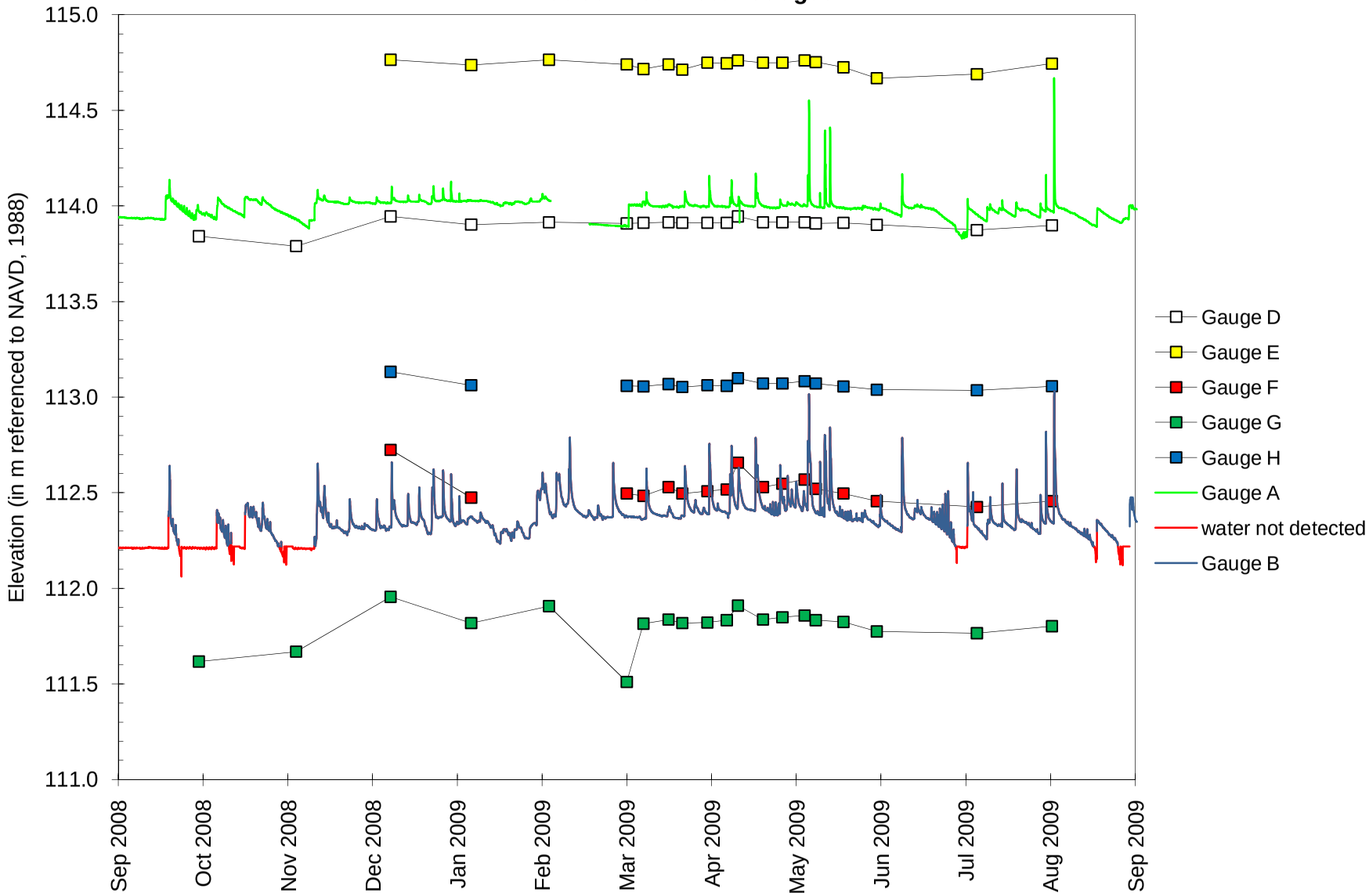
Depth to Water
in Very Shallow Monitoring Wells



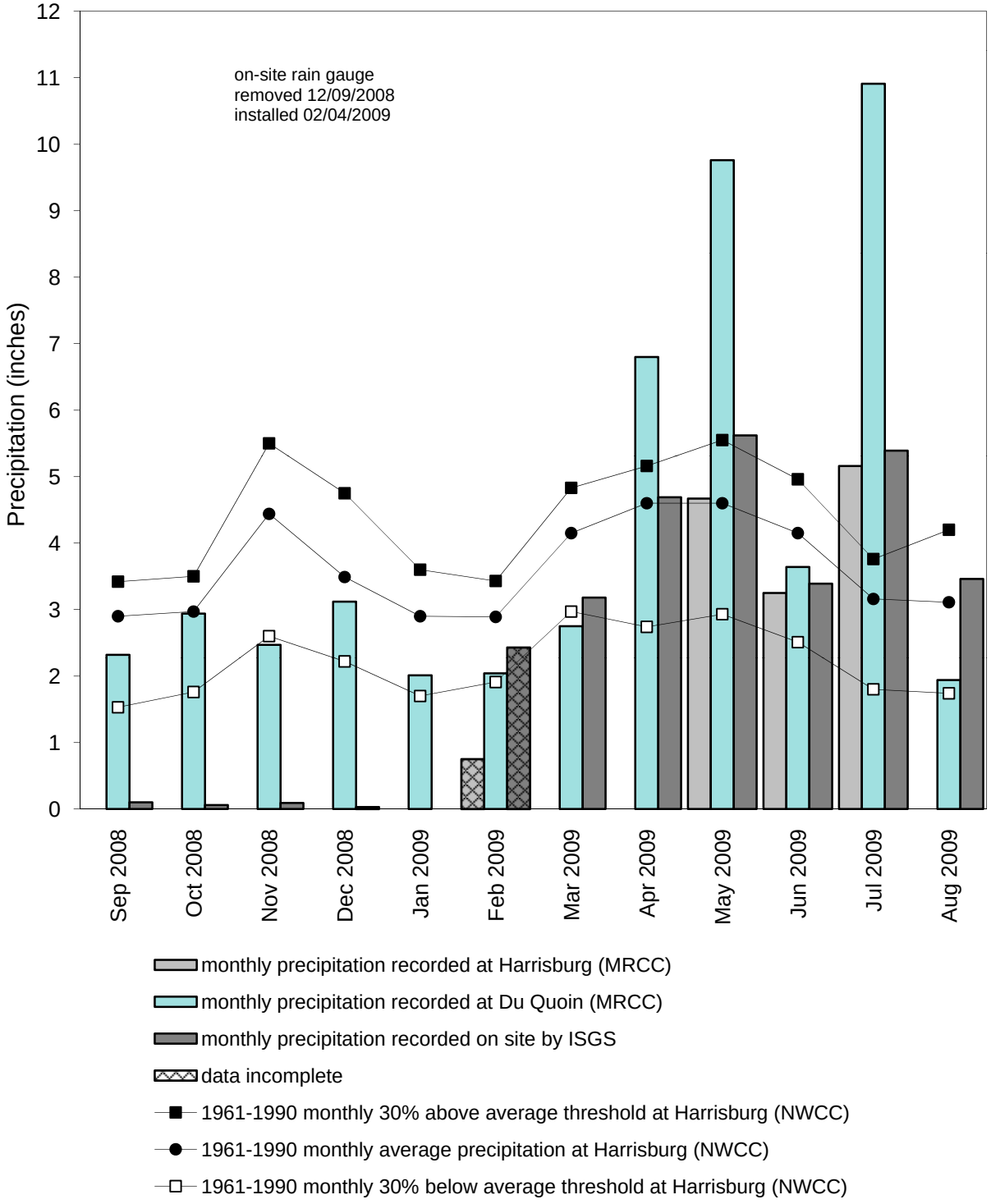
Harrisburg, Site 2 Wetland Compensation Site

September 1, 2008 through August 31, 2009

Water-Level Elevations at Surface-Water Gauges



Harrisburg, Site 2 Wetland Compensation Site
September 2008 through August 2009
Total Monthly Precipitation Recorded On Site and at the Harrisburg, IL and Du Quoin, IL Weather Stations



Graph last updated October 19, 2009

WEBER PROPERTY **ISGS #79**
POTENTIAL WETLAND COMPENSATION SITE
FAP 301
Sequence #10487
Stephenson County, near Freeport, Illinois
Primary Project Manager: Eric T. Plankell
Secondary Project Manager: not assigned

SITE HISTORY

- Fall 2008: IDOT requested that ISGS begin monitoring the site.
- November 2008: ISGS monitoring network was installed.
- April 2009: ISGS was tasked to provide concept plans for combination borrow site and wetland mitigation site.
- September 2009: ISGS sent concept plans to IDOT.

WETLAND HYDROLOGY CALCULATION FOR 2009

The estimated total area that satisfied wetland hydrology criteria (Environmental Laboratory 1987) for greater than 5% of the 2009 growing season is 2.9 ha (7.2 ac) out of a total site area of 5.8 ha (14.3 ac). The estimated total area that satisfied wetland hydrology criteria for greater than 12.5% of the 2009 growing season is 0.3 ha (0.8 ac). Using new guidance proposed by the U.S. Army Corps of Engineers (2008), we estimate that 3.6 ha (8.9 ac) also satisfied wetland hydrology criteria for 14 or more consecutive days during the growing season. These estimates are based on the following factors:

- According to the MRCC, the median date that the growing season begins in Freeport, Illinois is April 13, and the season lasts 183 days; 5% of the growing season is 9 days, and 12.5% of the growing season is 23 days. According to methods outlined in the Midwest Regional Supplement (U.S. Army Corps of Engineers 2008), we estimate that March 19 was the starting date of the 2009 growing season based on vegetation growth and development observed at the wetland compensation site.
- Total precipitation at the nearby Wastewater Treatment Plant weather station in Freeport, Illinois was approximately 137% of normal for the monitoring period of September 2008 through August 2009. Precipitation at this station was below normal in November 2008, and near or above normal for the remaining months of the 2008–2009 monitoring period. Significant local rainfall recorded by the ISGS during the latter half of April, coupled with a flooding event along the Pecatonica River, resulted in elevated ground- and surface-water levels that were sustained across the western half of the site for greater than 5% of the growing season. Earlier spring flooding along the Pecatonica River, bolstered by above normal precipitation in March, resulted in elevated ground- and surface-water levels that were sustained across the western two-thirds of the site for 14 or more consecutive days of the growing season.
- In 2008, water levels measured in soil-zone (S) wells 2S and 5S satisfied wetland hydrology criteria for greater than 5% of the growing season. Additionally, water levels

measured in wells 2S, 5S, and 6S satisfied wetland hydrology criteria for 14 or more consecutive days of the growing season. (Note: Well 6S is located outside the site boundary, and is not considered in the wetland hydrology calculation discussed above). No wells at the site satisfied wetland hydrology criteria for greater than 12.5% of the growing season.

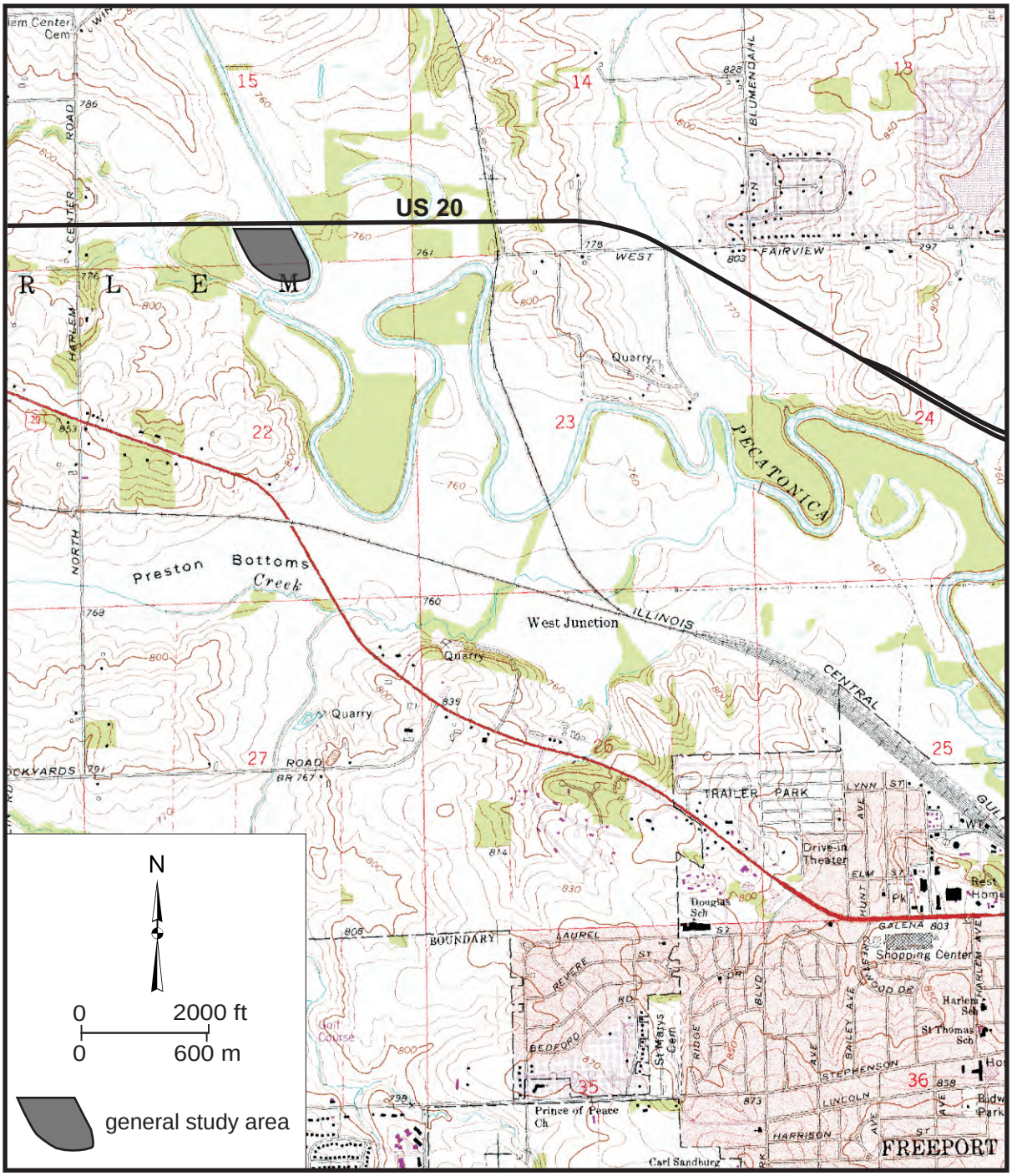
- Water-level records for Gauge A indicated on-site inundation at elevations at or below approximately 230.58 m (756.50 ft) and 230.44 m (756.04 ft) for durations that satisfied wetland hydrology criteria for greater than 5% of the growing season, and for 14 or more consecutive days of the growing season. Water-level records for Gauge A also indicated inundation at elevations at or below approximately 230.23 m (755.35 ft) for greater than 12.5% of the growing season.

PLANNED FUTURE ACTIVITIES

- Monitoring will continue until no longer required by IDOT.

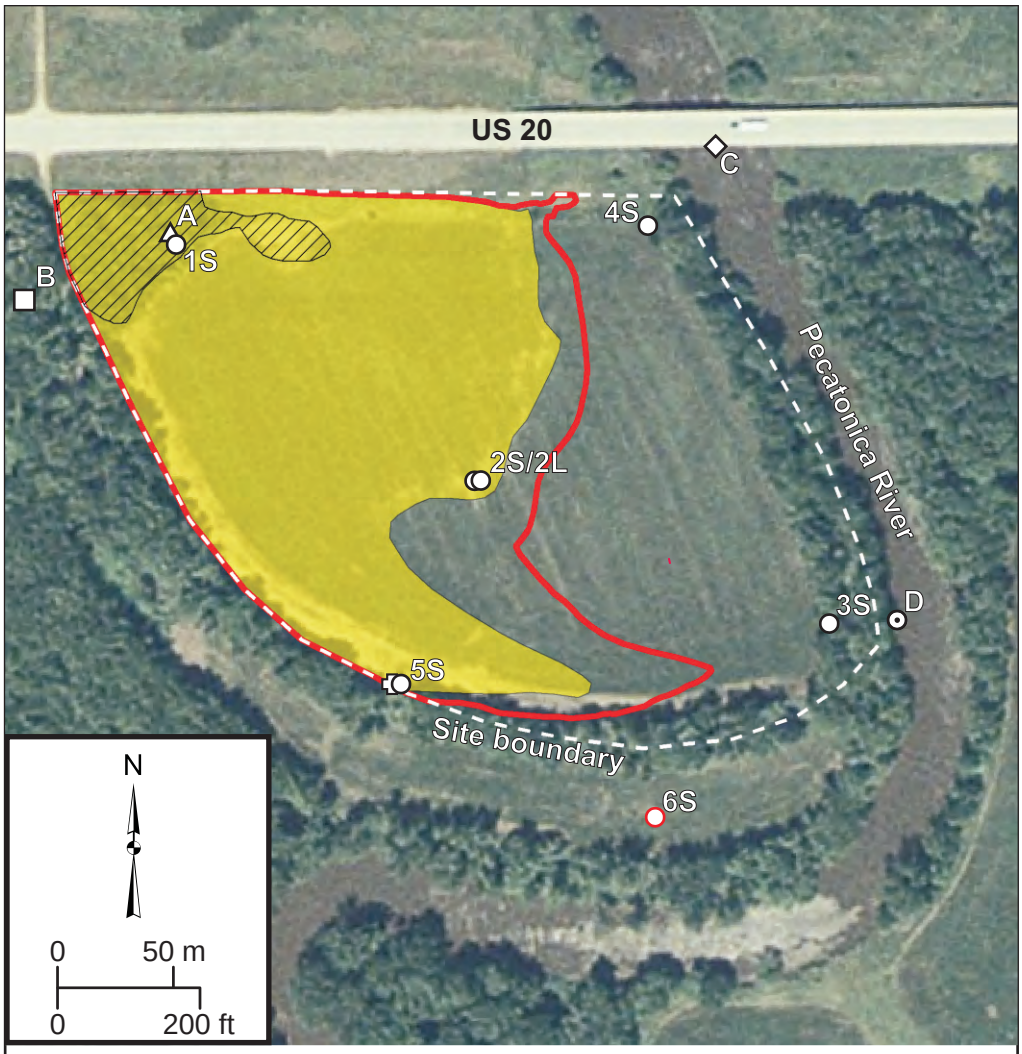
Weber Property Potential Wetland Compensation Site
FAP 301, US 20 - Freeport Bypass West
General Study Area and Vicinity

from the USGS Topographic Series, Freeport West, ILL. 7.5-minute Quadrangle
(USGS 1971, photorevised 1978)
Contour interval is 10 feet



Weber Property Potential Wetland Compensation Site
FAP 301, US 20 - Freeport Bypass West
Estimated Areal Extent of 2009 Wetland Hydrology
September 1, 2008 through August 31, 2009

Map based on USDA digital orthophotograph of Stephenson County, Illinois, produced for the National Agriculture Imagery Program (NAIP) (USDA 2007)



ISGS monitoring well

Staff gauge

In-Situ pressure transducer

RDS data logger

Stage gauge

ISGS benchmark

2009 Wetland Hydrology

> 5% of the growing season (1987 Manual)

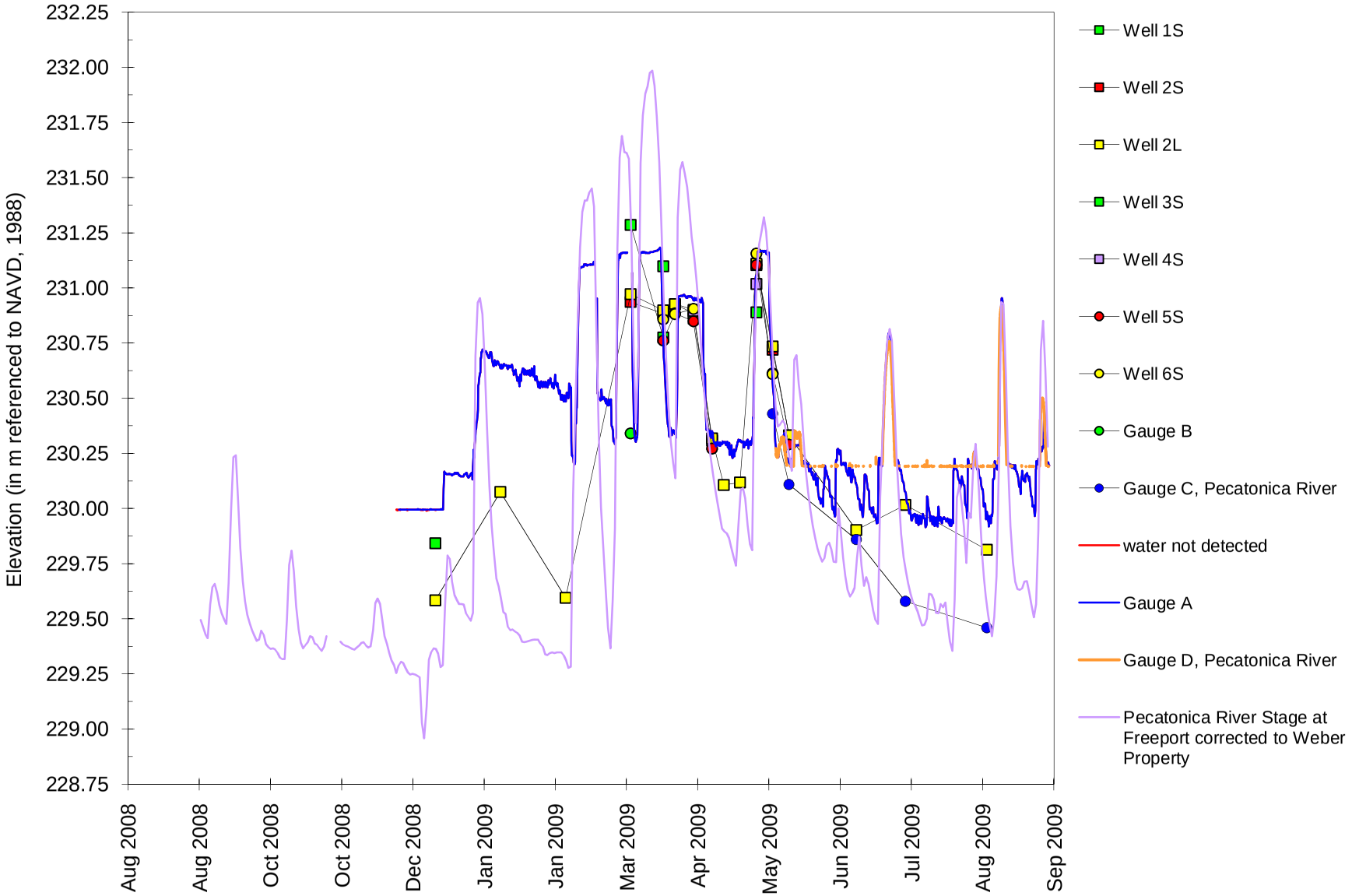
> 12.5% of the growing season (1987 Manual)

> 14 days (2008 Midwest Supplement)

Weber Property Potential Wetland Compensation Site

September 1, 2008 through August 31, 2009

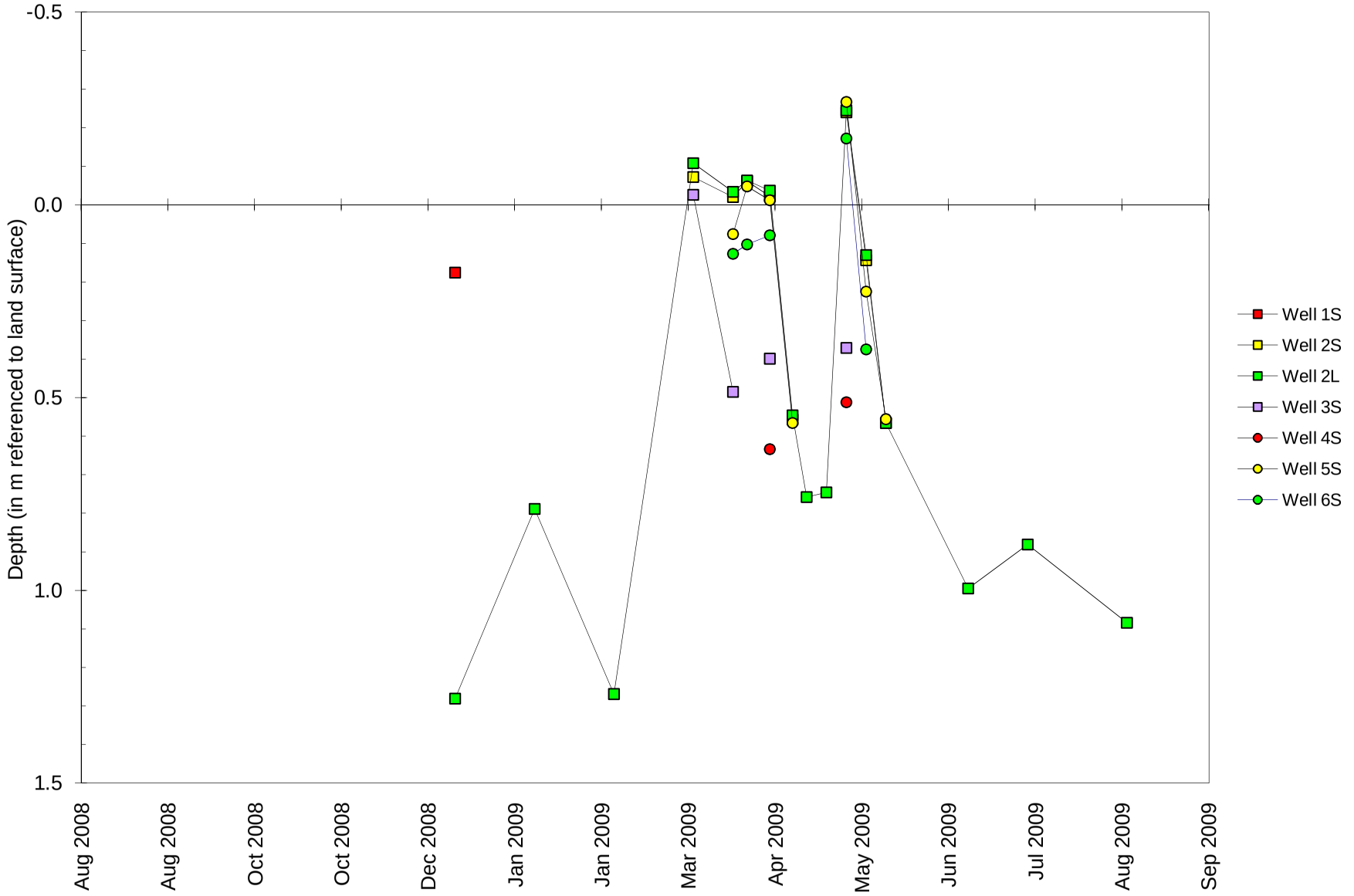
Water-Level Elevations in Monitoring Wells and at Stage Gauges



Weber Property Potential Wetland Compensation Site

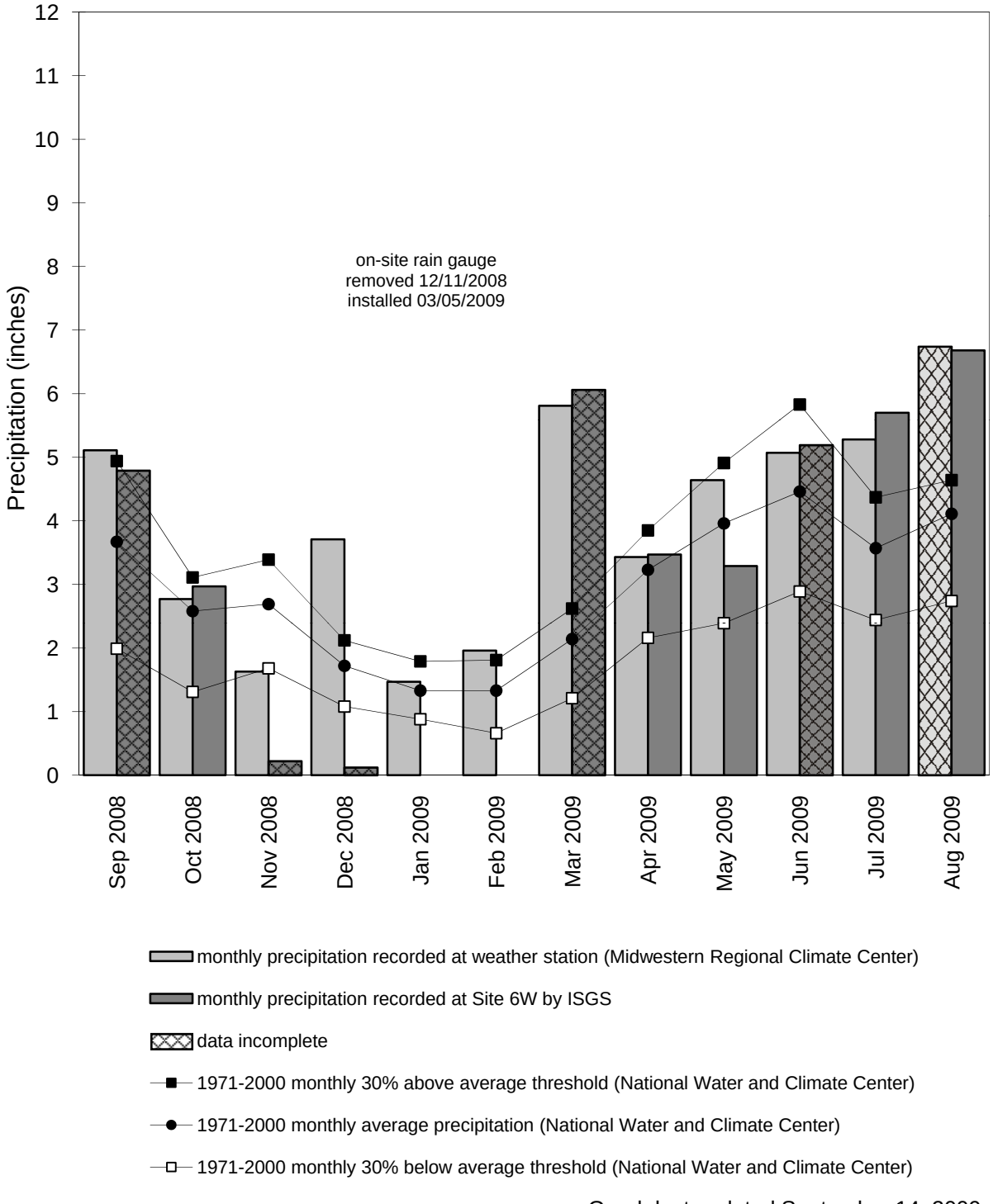
September 1, 2008 through August 31, 2009

Depth to Water in Monitoring Wells



Weber Property
Potential Wetland Compensation Site
September 2008 through August 2009

Total Monthly Precipitation Recorded at Site 6W and at the Freeport Wastewater Treatment Plant Weather Station, Freeport, IL



Graph last updated September 14, 2009

MAX CREEK **ISGS #80**
WETLAND COMPENSATION SITE
FAP 857
Johnson County, near Simpson, Illinois
Primary Project Manager: Geoffrey E. Pociask
Secondary Project Manager: Charles W. Knight

SITE HISTORY

- July 2008: An Initial Site Evaluation was submitted to IDOT.
- December 2008: Water-level monitoring was initiated.
- August 2009: Construction at the wetland mitigation site began.

WETLAND HYDROLOGY CALCULATION FOR 2009

We estimate that 0.6 ha (1.6 ac) out of a total site area of approximately 1.2 ha (3.0 ac) satisfied wetland hydrology criteria (Environmental Laboratory 1987) for greater than 5% of the growing season in 2009, whereas 0.2 ha (0.5 ac) satisfied wetland hydrology for greater than 12.5% of the growing season. Using new guidance proposed by the U.S. Army Corps of Engineers (2008), we estimate that 0.4 ha (0.9 ac) satisfied wetland hydrology criteria for 14 or more consecutive days during the growing season. These estimates are based on the following factors:

- According to the MRCC, the median date that the growing season begins in Anna, Illinois, is March 31 and the season lasts 225 days; 5% of the growing season is 11 days and 12.5% of the growing season is 28 days. According to methods outlined in the Midwest Regional Supplement (U.S. Army Corps of Engineers 2008), we estimate that March 4 was the starting date of the 2009 growing season based on vegetation growth and development observed at the wetland compensation site.
- Total precipitation for the reporting period from September 2008 through August 2009 was 63% of normal. Drier than normal conditions prevailed in September 2008 through March 2009 and in May, June, and August 2009. Precipitation was at or above normal in April and July 2009.
- In 2009, wells 1VS, 3S, 3VS, 5VS, and 7VS satisfied wetland hydrology criteria for greater than 5% of the growing season. Furthermore, wells 3S, 3VS, 5VS, and 7VS satisfied wetland hydrology for 14 or more consecutive days during the growing season, and wells 5VS and 7VS satisfied wetland hydrology criteria for greater than 12.5% of the growing season.
- Surface-water data from Gauge A in Max Creek indicate that two floods inundated the site during the 2009 growing season. However, the duration of inundation from each of these floods was less than 5% of the growing season.
- Surface-water data from Gauge B showed that water-levels were at or above 115.1 m (377.6 ft) for greater than 5% of the growing season and for 14 or more consecutive

days during the growing season. Gauge B was not inundated for greater than 12.5% of the growing season.

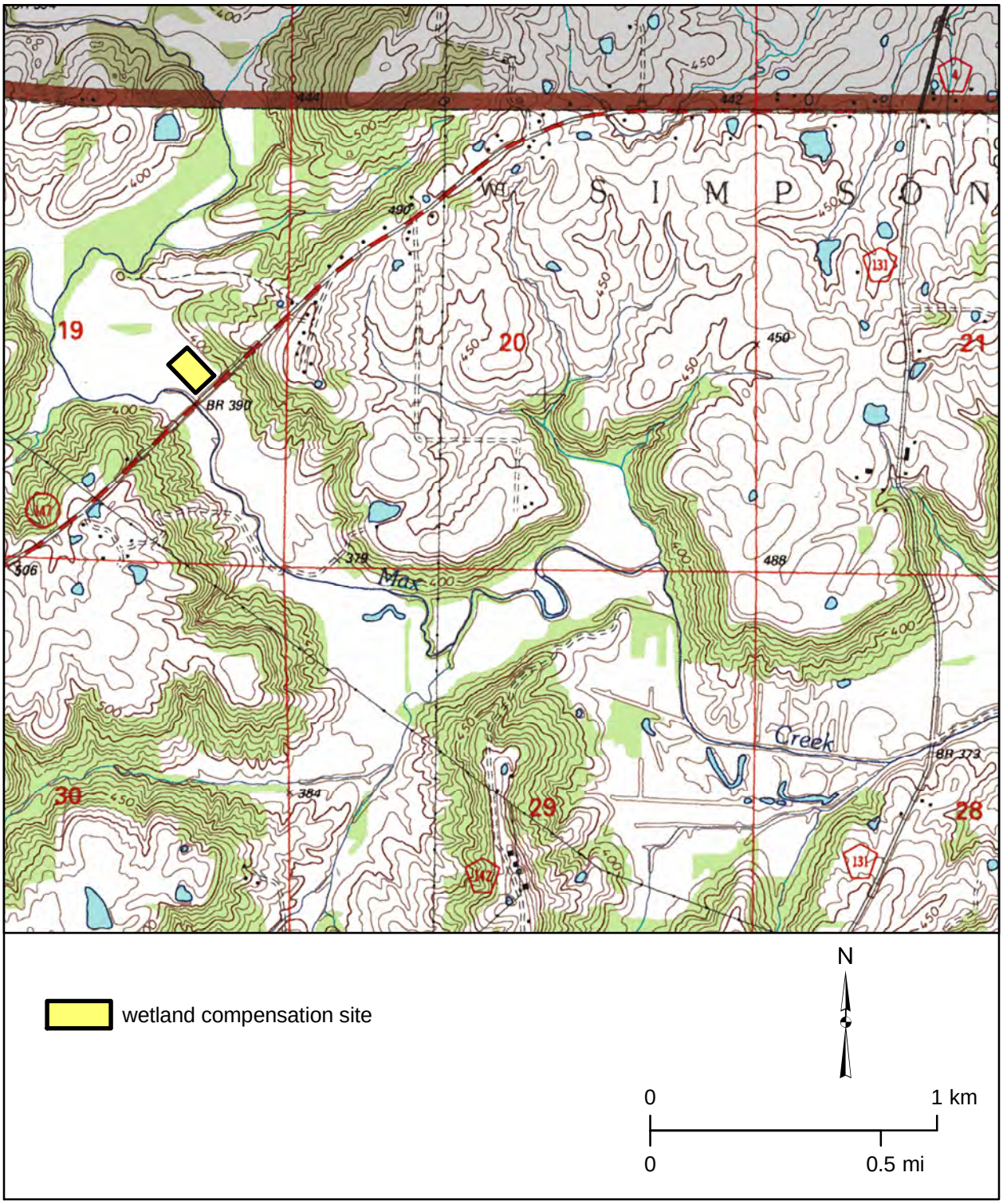
PLANNED FUTURE ACTIVITIES

- Replacement wells will be installed after construction is complete in Fall 2009.
- Water-level monitoring is expected to continue through 2014 or until no longer required by IDOT.

Max Creek Wetland Compensation Site
(FAP 932, Illinois Route 147)

General Study Area and Vicinity

from the USGS Topgraphic Series, Bloomfield, IL 7.5-minute Quadrangle (USGS 1996)
contour interval is 10 feet

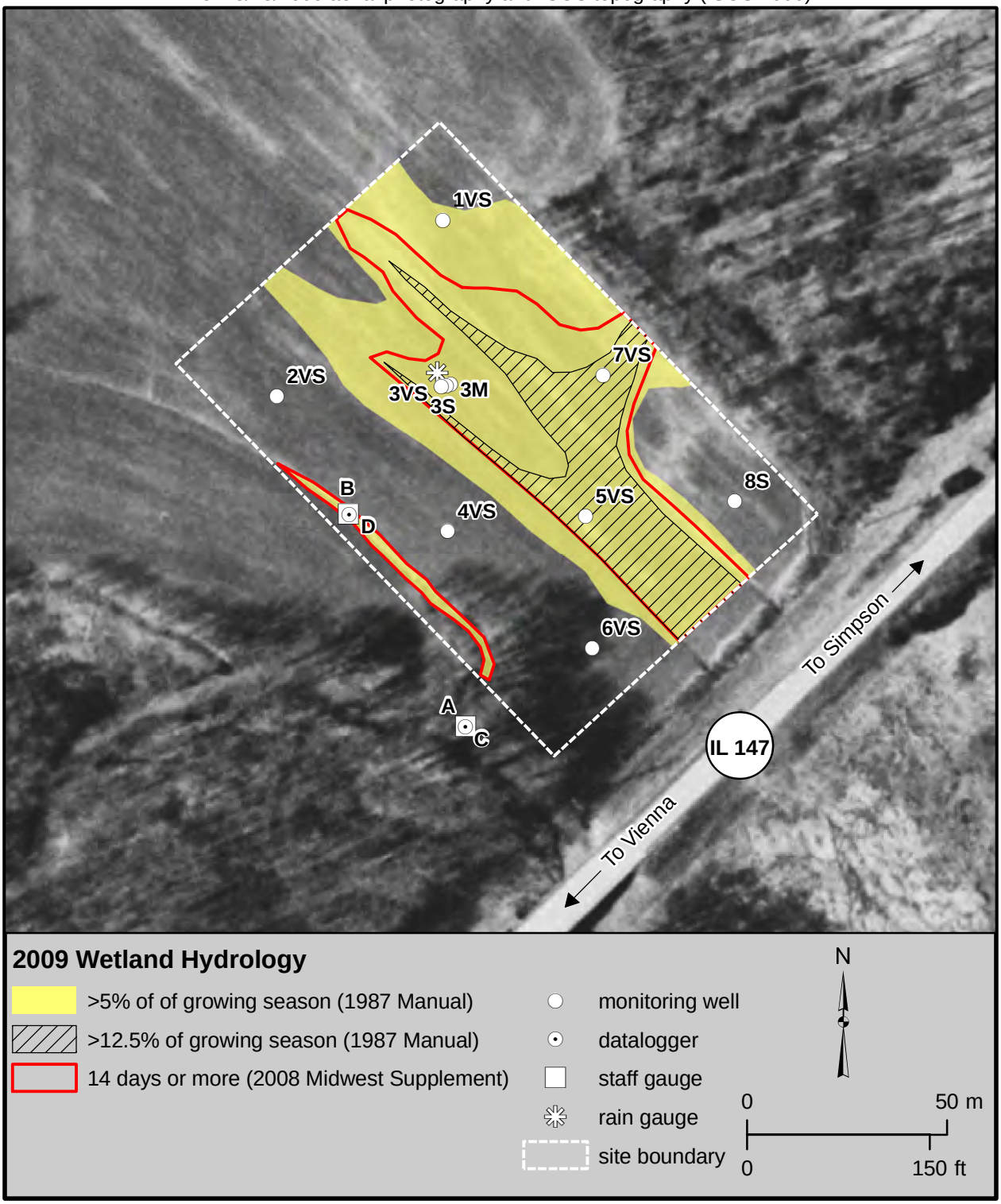


Max Creek Wetland Compensation Site
(FAP 932, Illinois Route 147)

Estimated Areal Extent of 2009 Wetland Hydrology

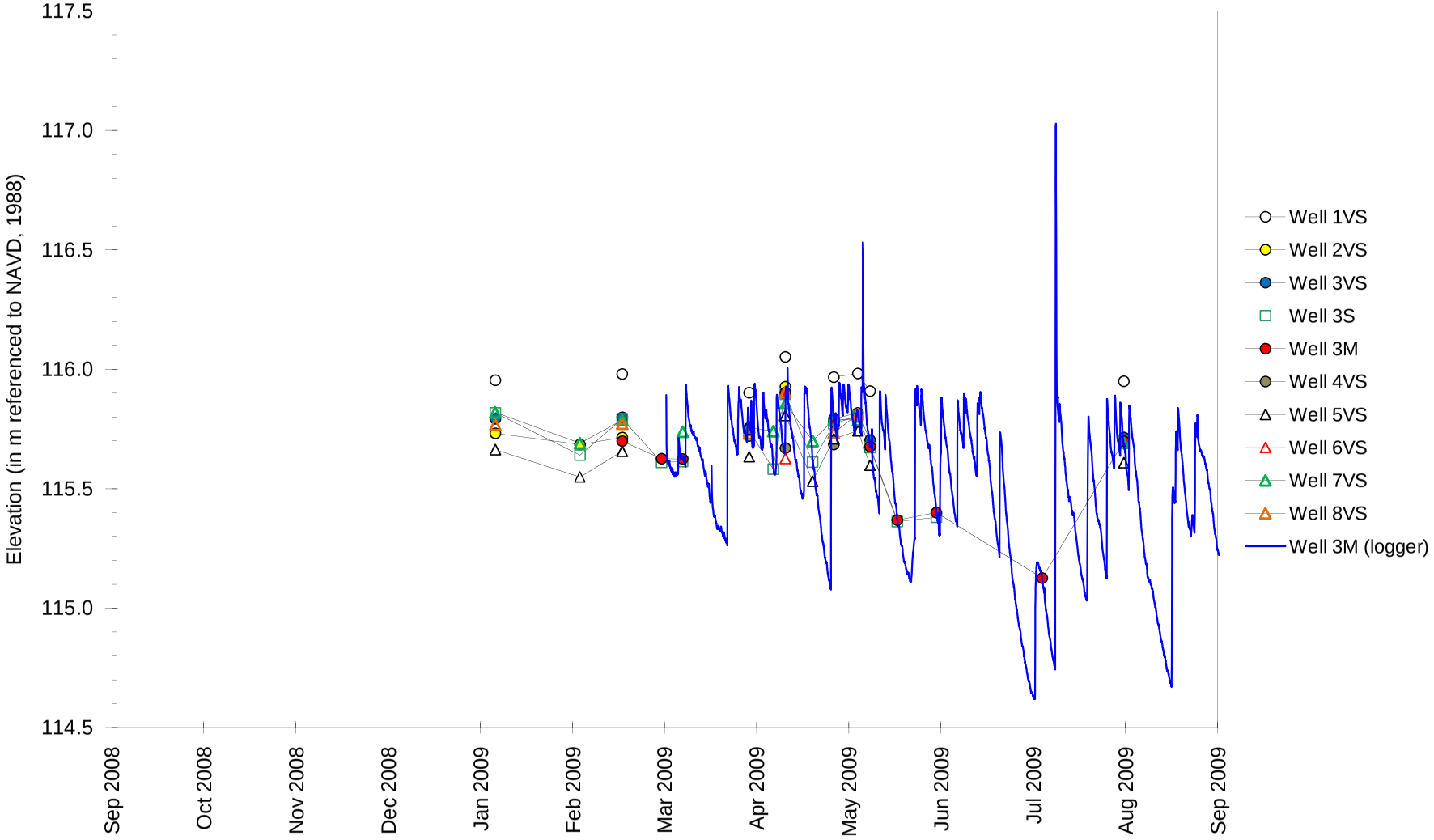
September 1, 2008 through August 31, 2009

map based on USGS digital orthophotograph Bloomfield NE quarter quadrangle
from 3/28/2005 aerial photography and ISGS topography (ISGS 2006)



Max Creek Wetland Compensation Site
September 1, 2008 through August 31, 2009

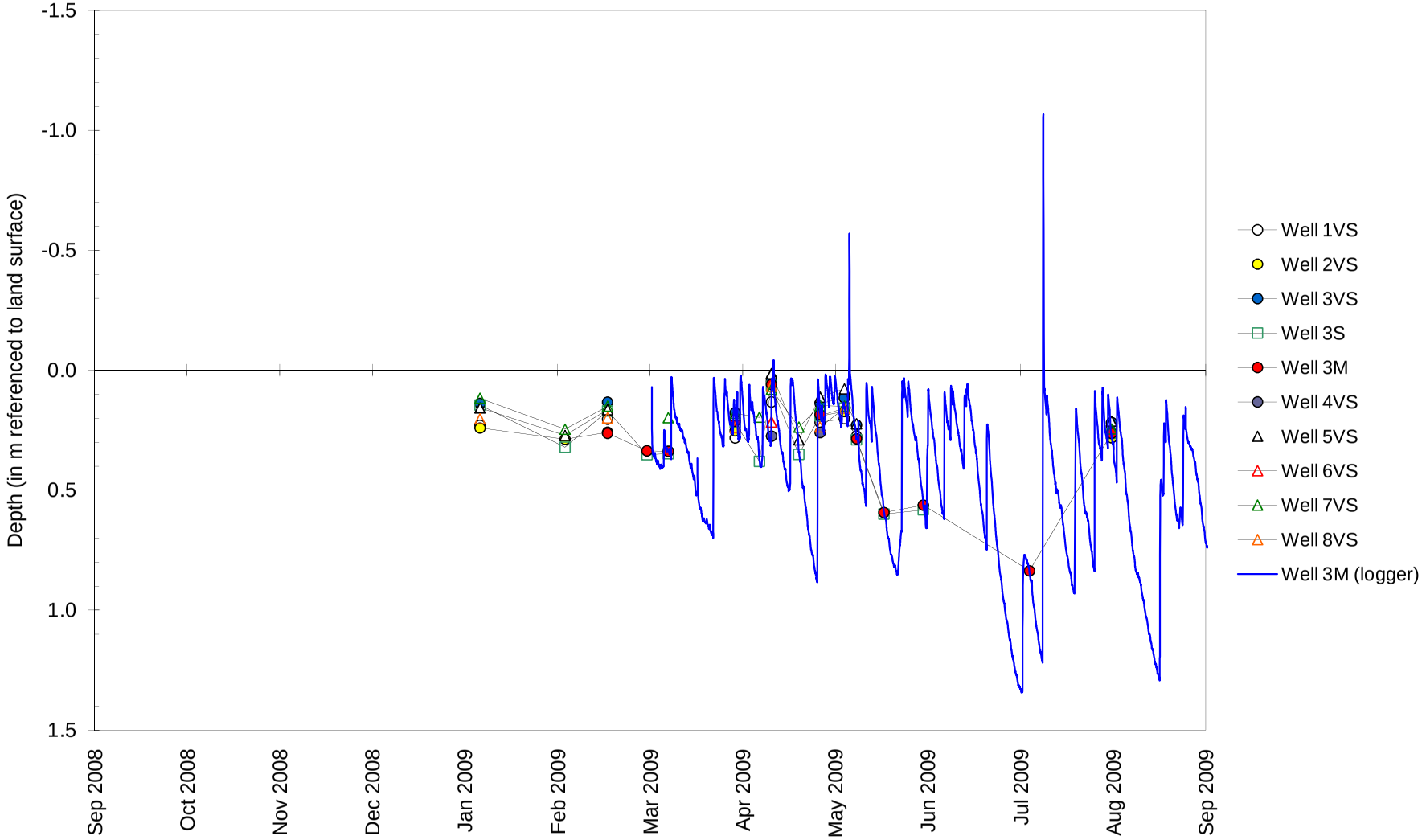
Water-Level Elevations in Monitoring Wells



Max Creek Potential Wetland Compensation Site

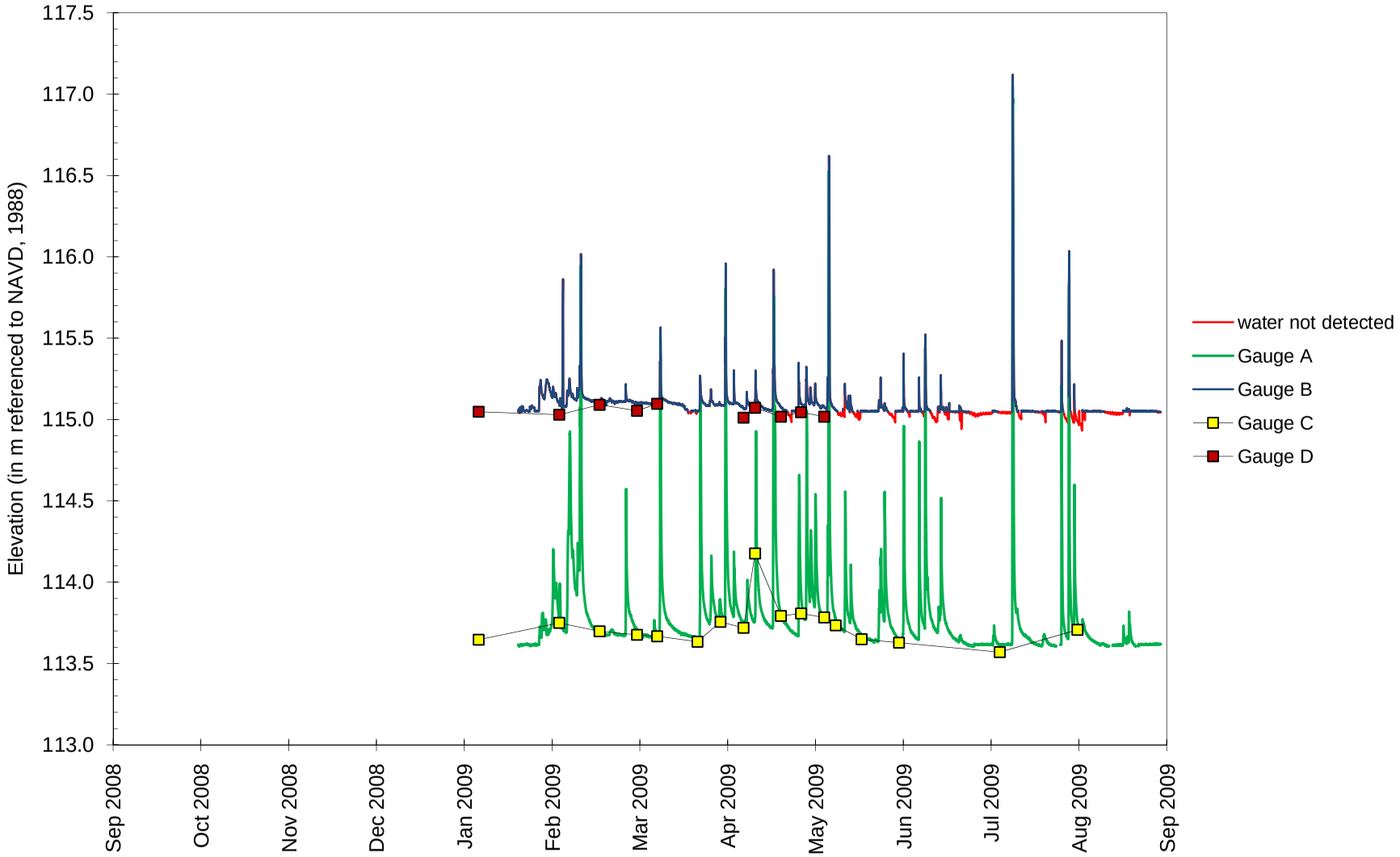
September 1, 2008 through August 31, 2009

Depth to Water in Monitoring Wells



Max Creek Wetland Compensation Site
September 1, 2008 through August 31, 2009

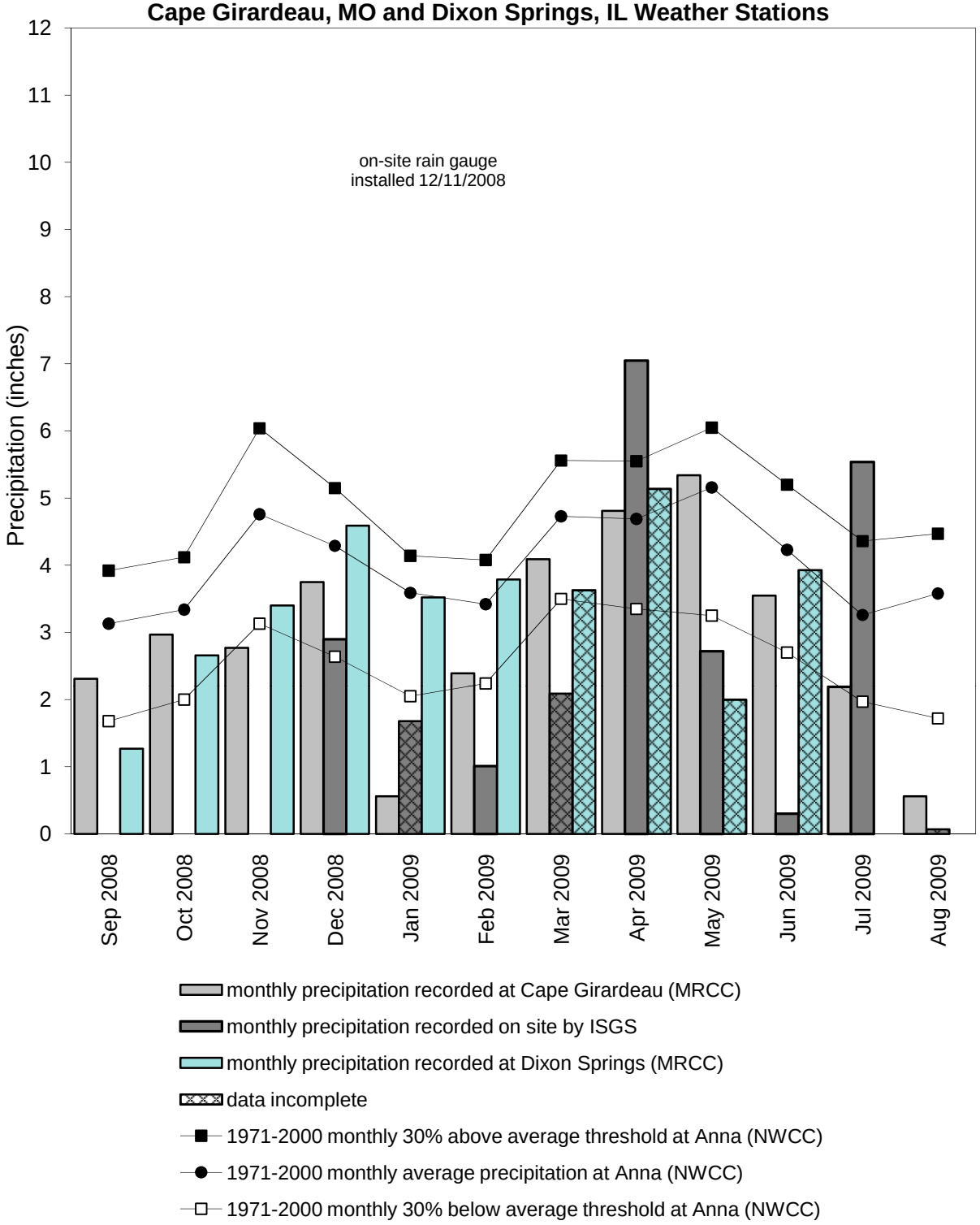
Water-Level Elevations at Surface-Water Gauges



Max Creek Potential Wetland Compensation Site

September 2008 through August 2009

Total Monthly Precipitation Recorded On Site and at the Cape Girardeau, MO and Dixon Springs, IL Weather Stations



Graph last updated October 19, 2009

EAST CAPE GIRARDEAU **ISGS #81**
WETLAND COMPENSATION SITE
IL 146 (FAP 312)
Sequence #633
Alexander County, near East Cape Girardeau, Illinois
Primary Project Manager: Eric T. Plankell
Secondary Project Manager: not assigned

SITE HISTORY

- November 2008: ISGS submitted a Level I Initial Site Evaluation Report to IDOT.
- December 2008: ISGS began on-site monitoring with the installation of a monitoring network.
- July 2009: ISGS removed most of the monitoring network in anticipation of wetland construction and planting to begin in August 2009.

WETLAND HYDROLOGY CALCULATION FOR 2009

The estimated area that satisfied wetland hydrology criteria (Environmental Laboratory 1987) for greater than 5% of the 2009 growing season is 5.2 ha (12.8 ac) out of a total mitigation area of approximately 7.3 ha (18.0 ac). The estimated area that satisfied wetland hydrology criteria for greater than 12.5% of the 2009 growing season is 4.9 ha (12.0 ac). Using new guidance proposed by the U.S. Army Corps of Engineers (2008), we estimate that 5.2 ha (12.8 ac) also satisfied wetland hydrology criteria for 14 or more consecutive days during the growing season. These estimates are based on the following factors:

- According to the MRCC, the median date that the growing season begins in nearby Cape Girardeau, Missouri is March 26, and the season lasts 228 days; 5% of the growing season is 11 days, and 12.5% of the growing season is 29 days. According to methods outlined in the Midwest Regional Supplement (U.S. Army Corps of Engineers 2008), we estimate that March 6 was the starting date of the 2009 growing season based on soil temperature.
- Total precipitation for the monitoring period, as recorded at the weather station in Jackson, Missouri was 95% of normal. Precipitation at the Jackson, Missouri weather station was at or above normal in the months of September and December 2008, and February, April, May, and August 2009. Precipitation at the Jackson, Missouri weather station was below normal for the remaining months in the monitoring period.
- Beginning in April 2009, elevated water levels on the Mississippi River at Thebes, Illinois resulted in water backing up in the East Cape Main Ditch (ECMD), thereby resulting in flooding at the site that was sustained through June.
- In 2009, water levels measured in all soil-zone (S and VS) monitoring wells, except well 5VS, satisfied the wetland hydrology criteria for greater than 5% of the growing season, for more than 14 consecutive days of the growing season, and for more than 12.5% of the growing season.

- Surface-water levels, measured by data loggers at gauges A and B, indicated inundation at or below approximately 100.84 m (330.84 ft) and 100.73 m (330.48 ft), respectively, for greater than 5% of the growing season, inundation at or below approximately 100.78 m (330.64 ft) and 100.65 m (330.22 ft), respectively, for 14 or more consecutive days of the growing season, and inundation at or below approximately 100.63 m (330.15 ft) and 100.51 m (329.76 ft), respectively, for greater than 12.5% of the growing season.

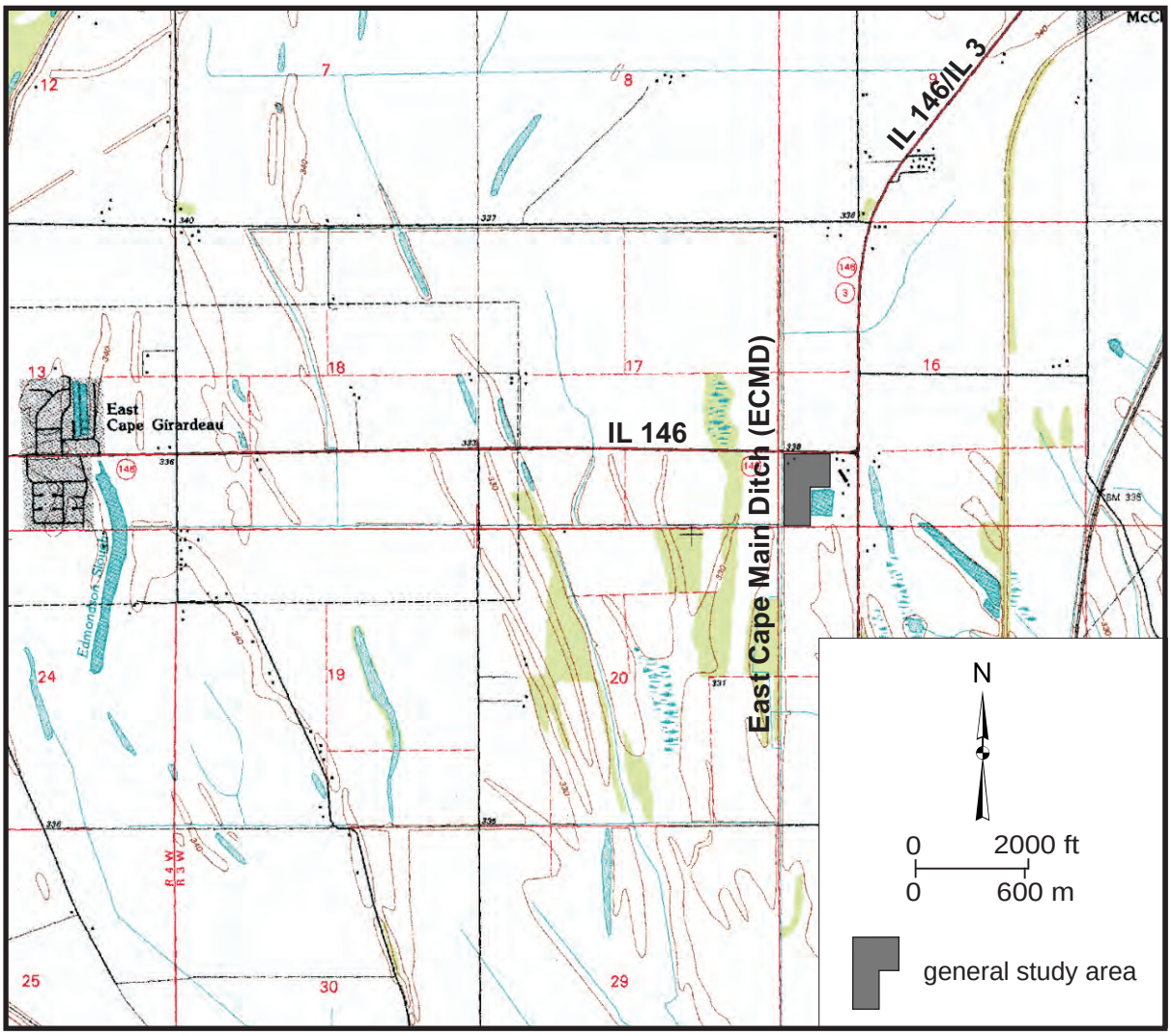
PLANNED FUTURE ACTIVITIES

- The ISGS will install a new monitoring network at the site following wetland construction and planting activities.

- Monitoring will continue at the site until no longer required by IDOT.

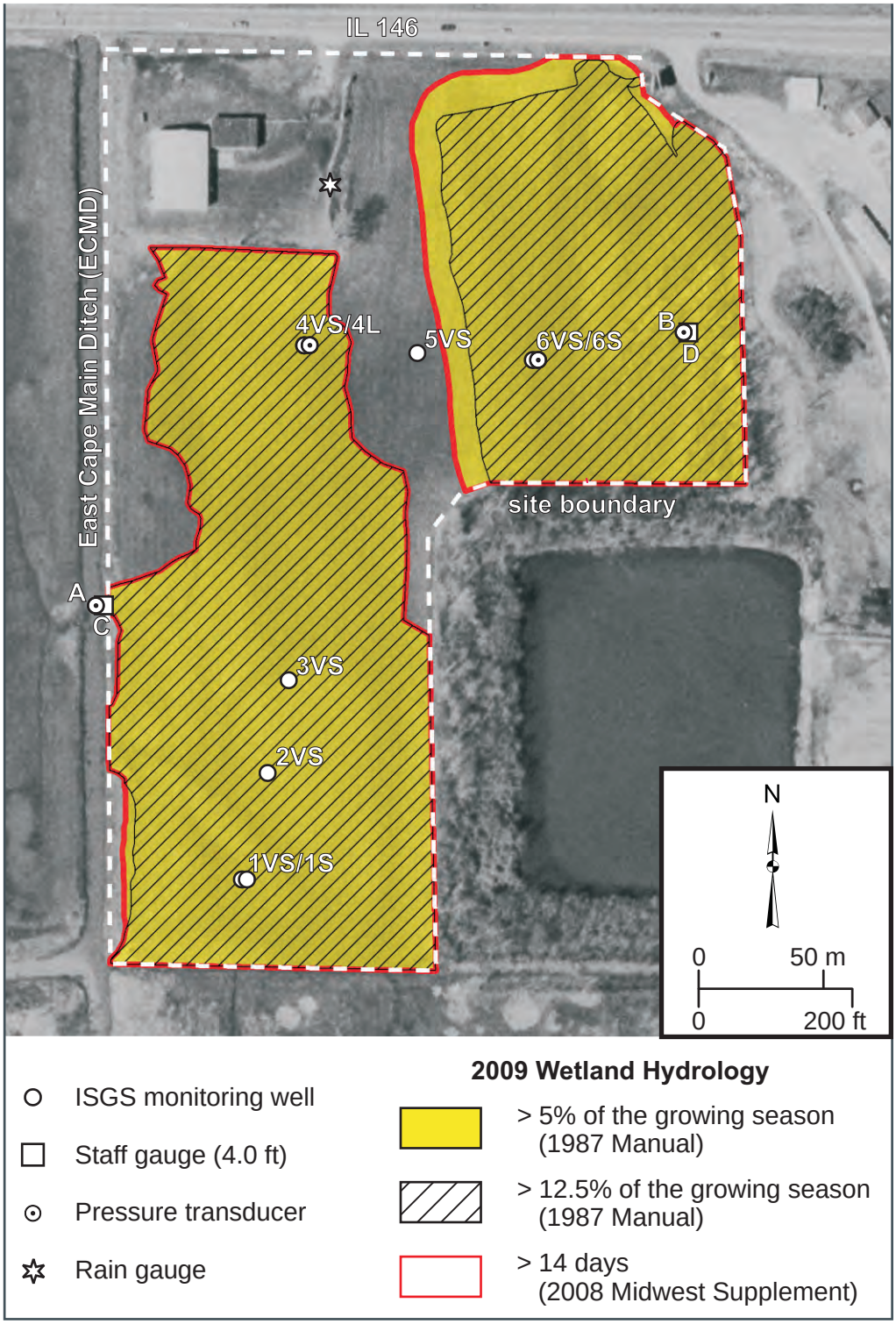
East Cape Girardeau Wetland Compensation Site
[FAP 312 (IL 146)]
General Study Area and Vicinity

from the USGS Topographic Series, Mc Clure, IL-MO 7.5-minute Quadrangle (USGS 1993)
contour interval is 20 feet, with supplementary contour interval of 10 feet



East Cape Girardeau Wetland Compensation Site
[FAP 312 (IL 146)]
Estimated Areal Extent of 2009 Wetland Hydrology
September 1, 2008 through August 31, 2009

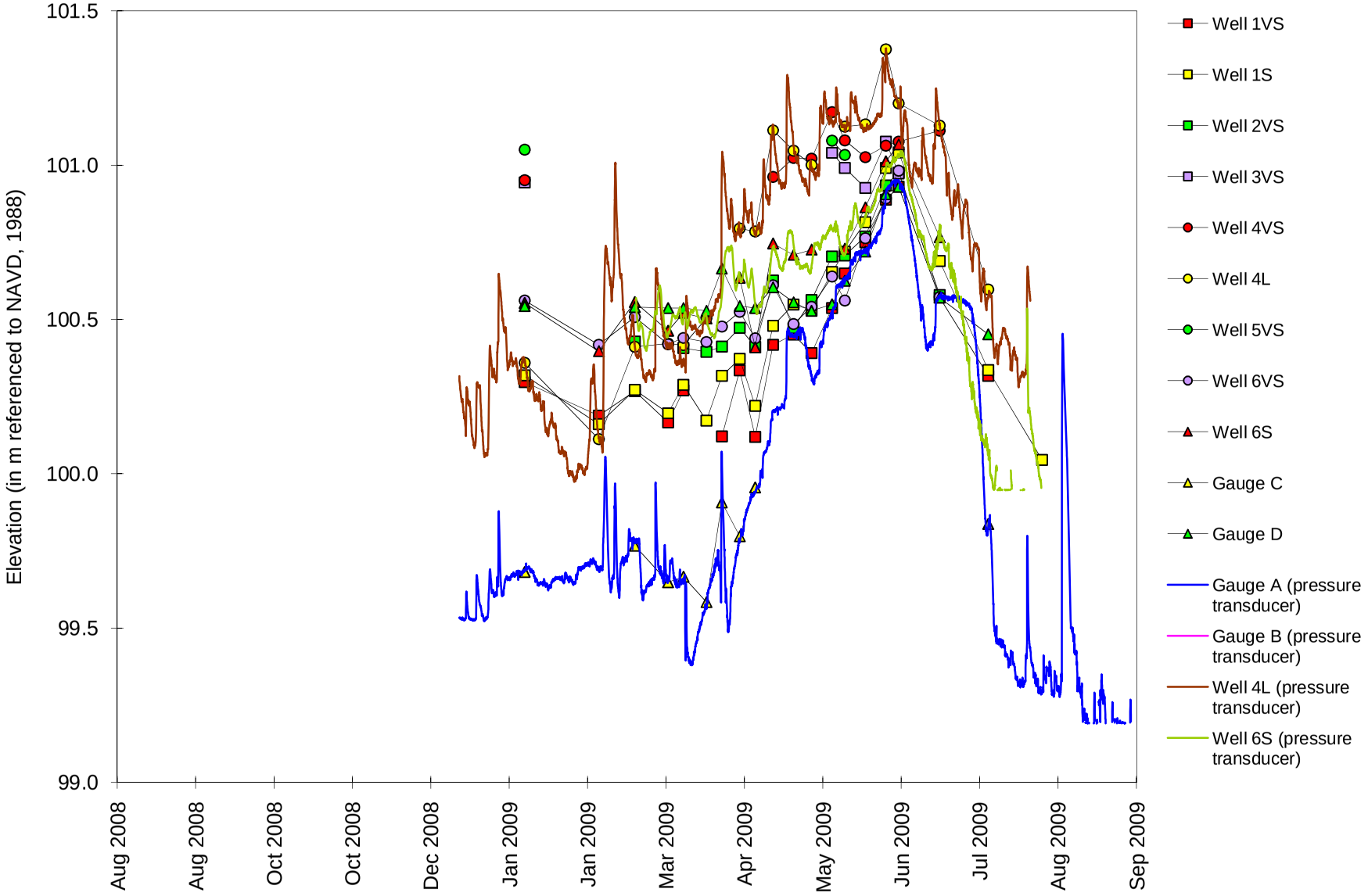
Map based on USGS digital orthophotograph, McClure, SW quarter quadrangle (ISGS 2005)



East Cape Girardeau Wetland Compensation Site

September 1, 2008 through August 31, 2009

Water-Level Elevations in Monitoring Wells and at Stage Gauges



East Cape Girardeau Wetland Compensation Site

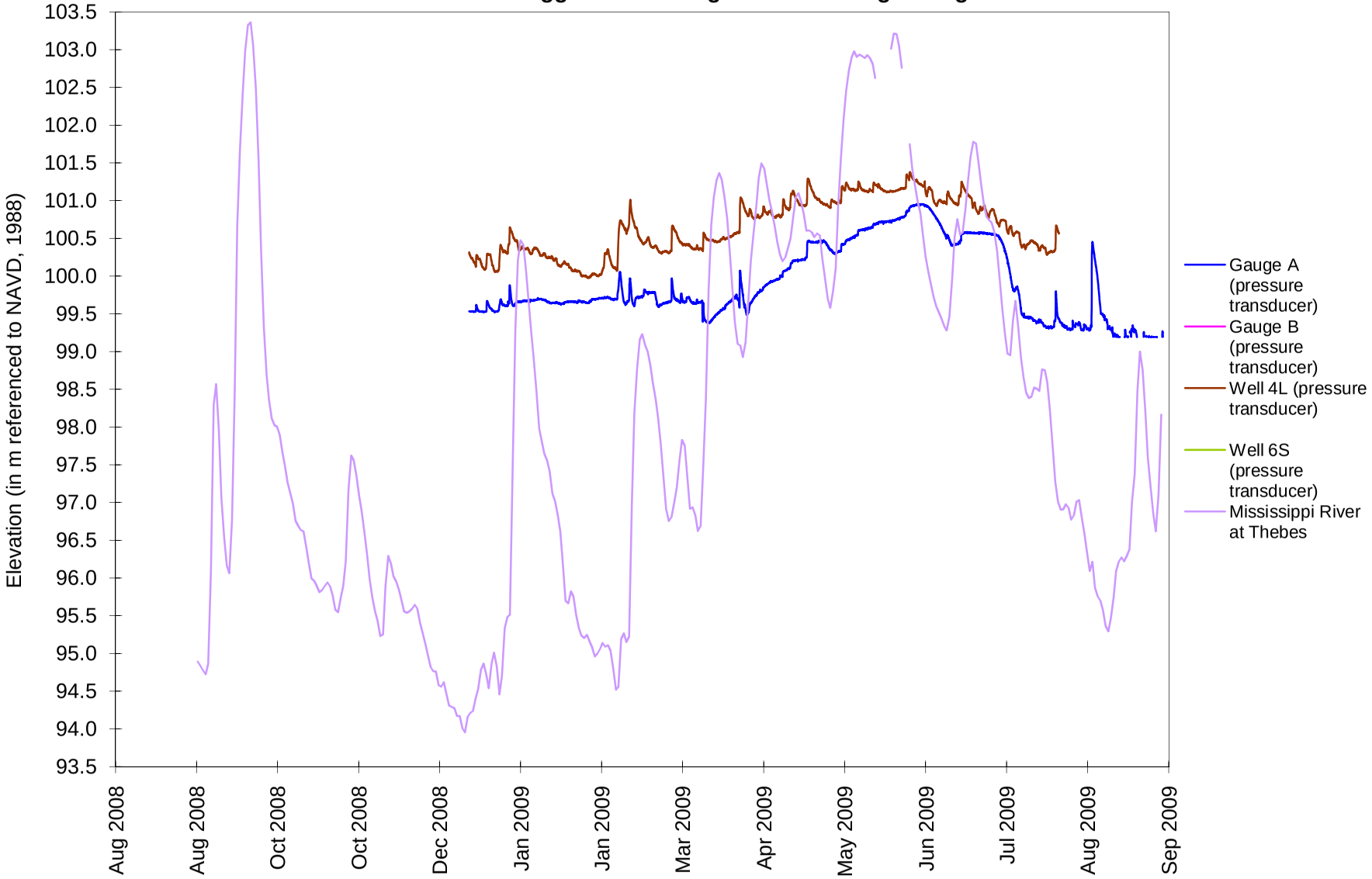
September 1, 2008 through August 31, 2009

Depth to Water in Monitoring Wells

East Cape Girardeau Wetland Compensation Site

September 1, 2008 through August 31, 2009

Water-Level Elevations on Mississippi River and in Data-Logged Monitoring Wells and Stage Gauges



East Cape Girardeau Wetland Compensation Site
September 2008 through August 2009

Total Monthly Precipitation Recorded On Site and at the Jackson, MO and Cape Girardeau, MO Weather Stations