

**HANCOCK COUNTY NEAR CARTHAGE
WETLAND MITIGATION SITE**

ISGS #42

IL 336

FAP 315

Sequence #235

Hancock County, near Carthage, Illinois

Primary Project Manager: Steven E. Benton

Secondary Project Manager: Jessica Ackerman

SITE HISTORY

- March 1997: The ISGS was tasked by IDOT 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.
- November 2006: The ISGS was tasked by IDOT to perform post-construction monitoring.
- July 2007: Tree planting was completed.

WETLAND HYDROLOGY CALCULATION FOR 2011

The area of the site that satisfied wetland hydrology criteria (Environmental Laboratory 1987) in 2011 for greater than 5% of the growing season was estimated to be 12.3 ha (30.5 ac) out of a total area of 18.7 ha (46.1 ac), and the area of the site that satisfied wetland hydrology criteria for greater than 12.5% of the growing season was estimated to be 6.7 ha (16.5 ac). Using the 2010 Midwest Region Supplement (U.S. Army Corps of Engineers 2010) to the 1987 Manual, we estimate that 12.0 ha (29.7 ac) satisfied wetland hydrology criteria for 14 or more consecutive days during the growing season. These estimates are based on the following factors:

- The median date that the growing season begins at the La Harpe, Illinois, weather station is April 9 and the season lasts 196 days (MRCC 2011); 5% of the growing season is 10 days and 12.5% of the growing season is 25 days, according to the 1987 Manual. According to methods outlined in the 2010 Midwest Region Supplement, we estimate that March 14 was the starting date of the 2011 growing season based on soil temperatures measured at the wetland mitigation site.
- Total precipitation recorded at the Bentley, Illinois, weather station during the monitoring period was 111% of normal, and during Spring 2011 (March through May) it was 84% of normal. The wettest month was June; precipitation was 304% of normal for the month.
- In 2011, water levels measured in soil-zone monitoring wells 1U, 2U, 3U, 4U, 5U, 6U, 7S, 8U, 10S, 11S, 12S, 14S, 16S, 17S, 22S, 23S, 24S, 25S, 26S, 27S, 28S, 29S, 31S, 32S, and 36S satisfied wetland hydrology criteria for greater than 5% of the growing season, according to the 1987 Manual. Water levels measured in soil-zone monitoring wells 1U, 2U, 4U, 5U, 6U, 7S, 8U, 16S, 23S, and 36S satisfied wetland hydrology criteria for greater than 12.5% of the growing season, according to the 1987 Manual.

Water levels measured in soil-zone monitoring wells 1U, 2U, 3U, 4U, 5U, 6U, 7S, 8U, 10S, 11S, 12S, 14S, 16S, 17S, 22S, 23S, 24S, 25S, 26S, 28S, 29S, 31S, and 36S satisfied wetland hydrology criteria for 14 or more consecutive days during the growing season as per the 2010 Midwest Region Supplement.

- Surface-water elevations recorded at the Gauge B data logger in June and July reveal that areas of the site at and below 165.70 m (543.66 ft) were inundated long enough to satisfy wetland hydrology criteria for greater than 5% of the growing season, and that areas at and below 165.63 m (543.43 ft) were inundated long enough to satisfy wetland hydrology criteria for greater than 12.5% of the growing season, according to the 1987 Manual. Areas of the site at and below an elevation of 165.70 m (543.66 ft) were inundated for 14 or more consecutive days during the growing season as per the 2010 Midwest Region Supplement.
- Surface-water elevations recorded at the Gauge E data logger in June reveal that water overflowed the ditch (surface-water elevation \geq 165.7 m [543.7 ft]) long enough to satisfy wetland hydrology criteria for greater than 5% of the growing season, according to the 1987 Manual. Surface-water elevations also reveal that flooding lasted 14 or more consecutive days during the growing season as per the 2010 Midwest Region Supplement.

ADDITIONAL INFORMATION

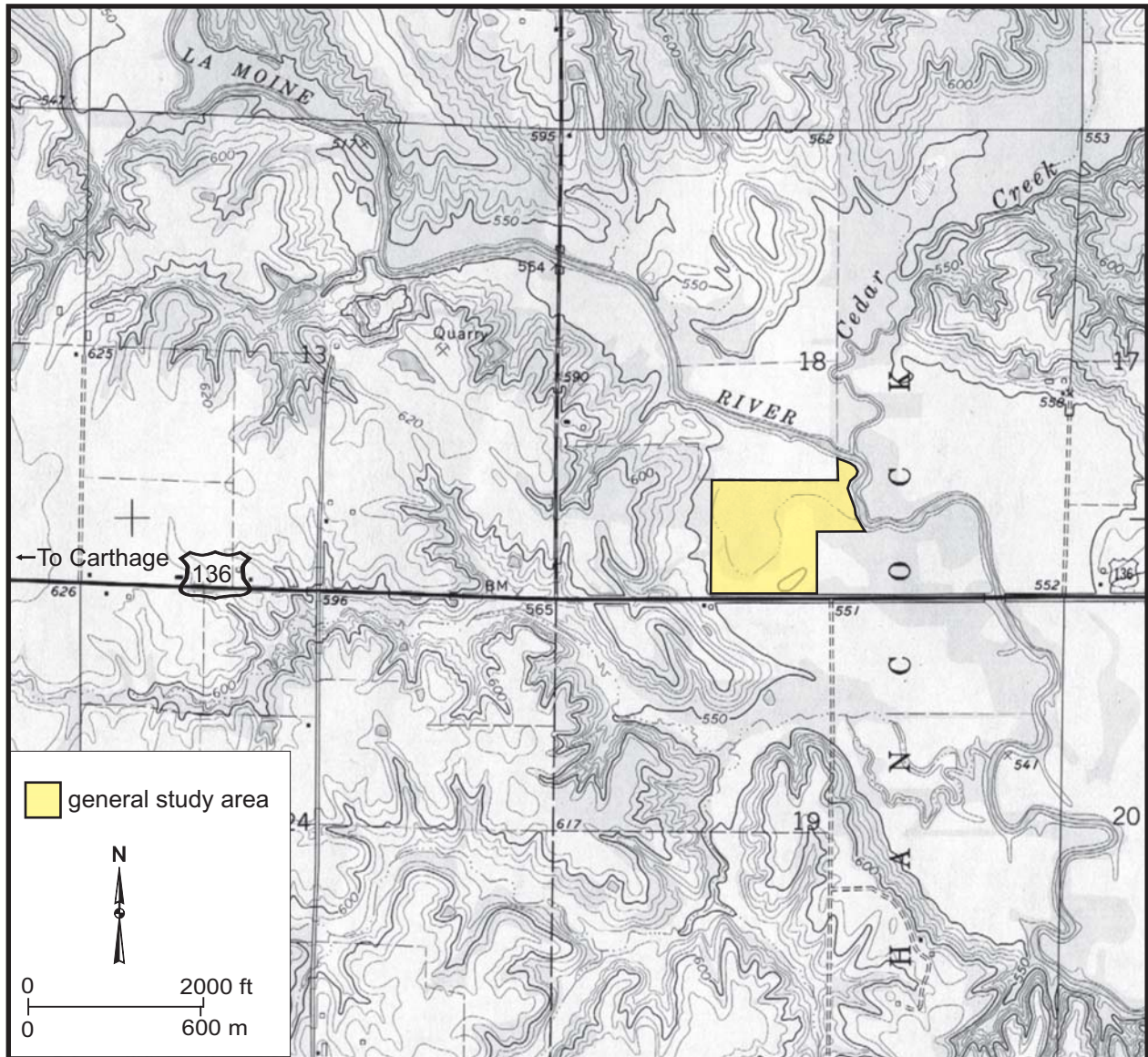
- Stage data recorded at Colmar, Illinois, reveals that there were four flood events during 2011: May 26 through 29, June 15 through 18, June 20 through 23, and June 27 through 30. Surface-water elevations recorded by the Gauge B and Gauge E data loggers reveal that the site was affected by all four flood events, but none were long enough to satisfy any wetland hydrology criteria.
- This is the 5th year of the 5 year post-construction monitoring, which began in Spring 2007.

PLANNED FUTURE ACTIVITIES

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

**Hancock County near Carthage
Wetland Mitigation Site
(IL 336, FAP 315)
General Study Area and Vicinity**

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

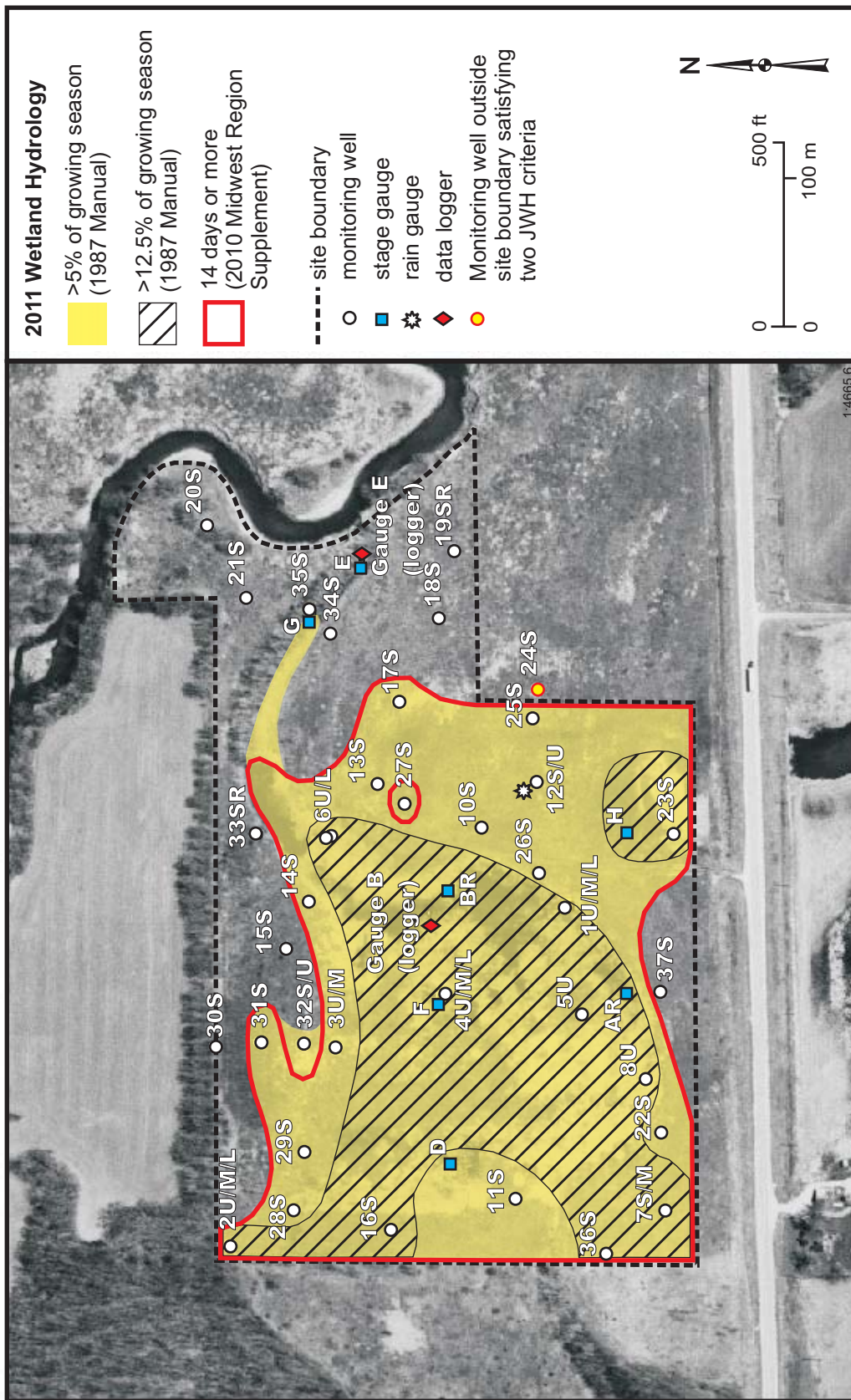


Hancock County near Carthage Wetland Mitigation Site (IL 336, FAP 315)

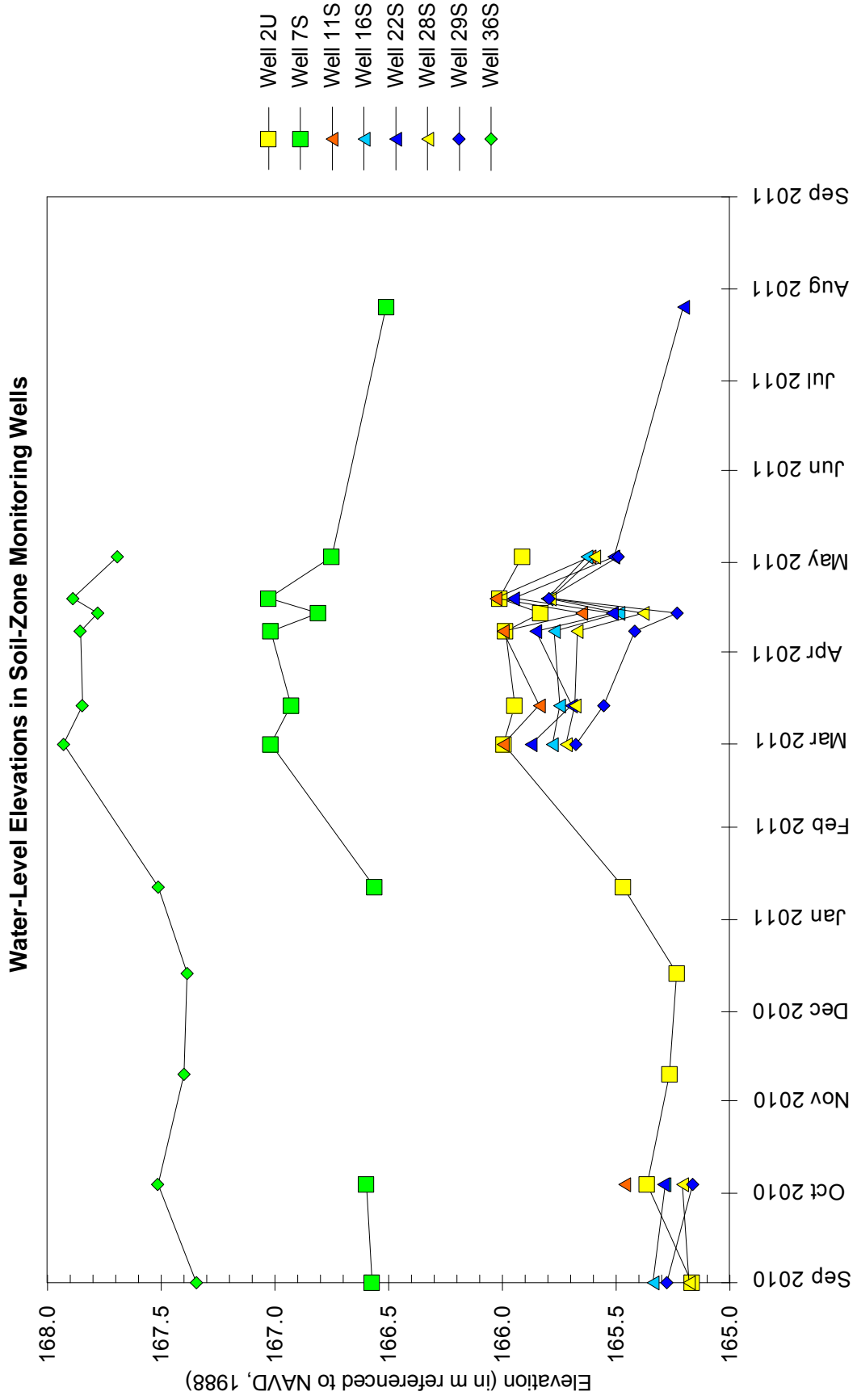
Estimated Areal Extent of 2011 Wetland Hydrology

September 1, 2010 through August 31, 2011

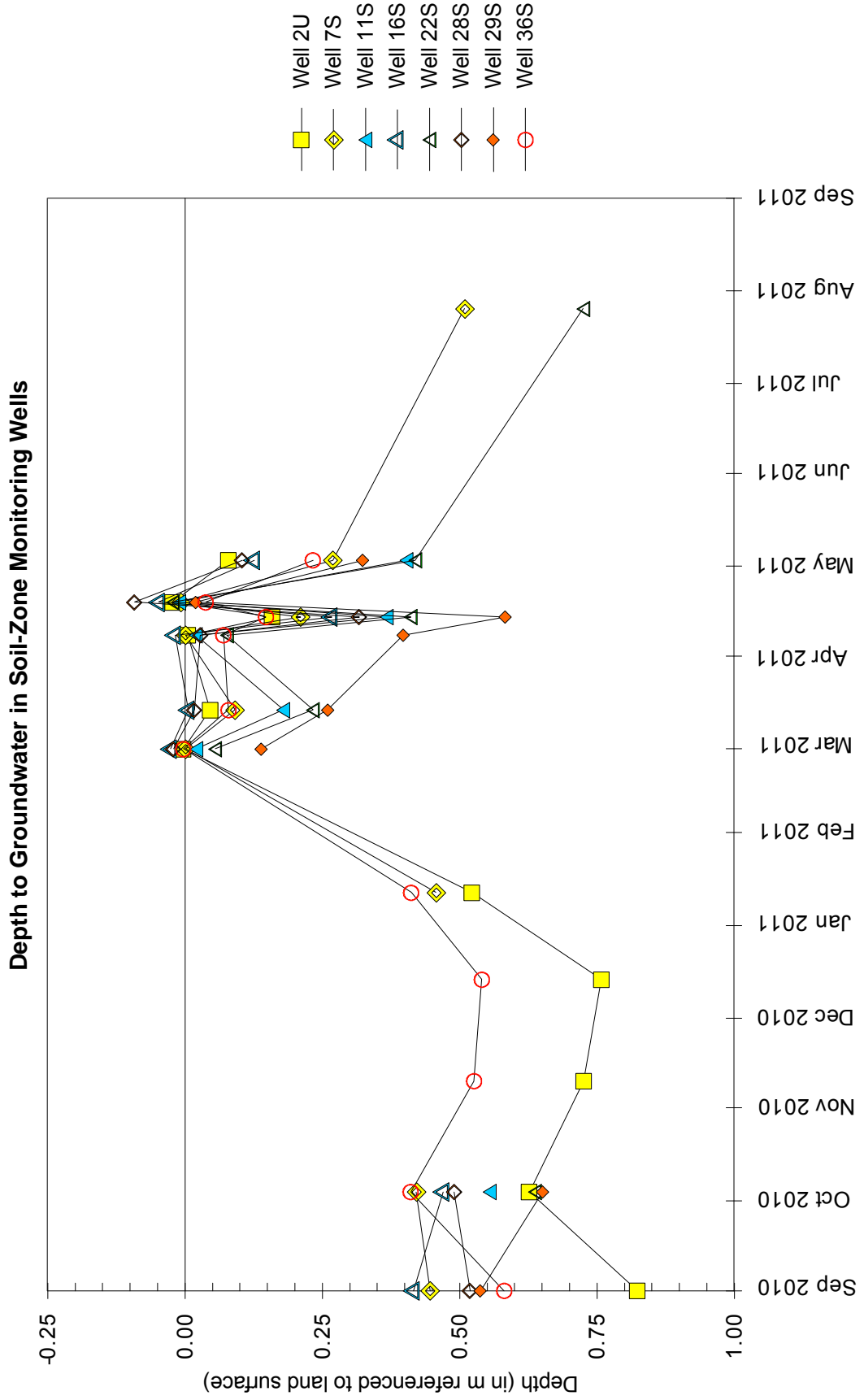
Map based on USGS digital orthophotograph, Carthage East SE quarter quadrangle produced from 2005 aerial photography (ISGS 2005)



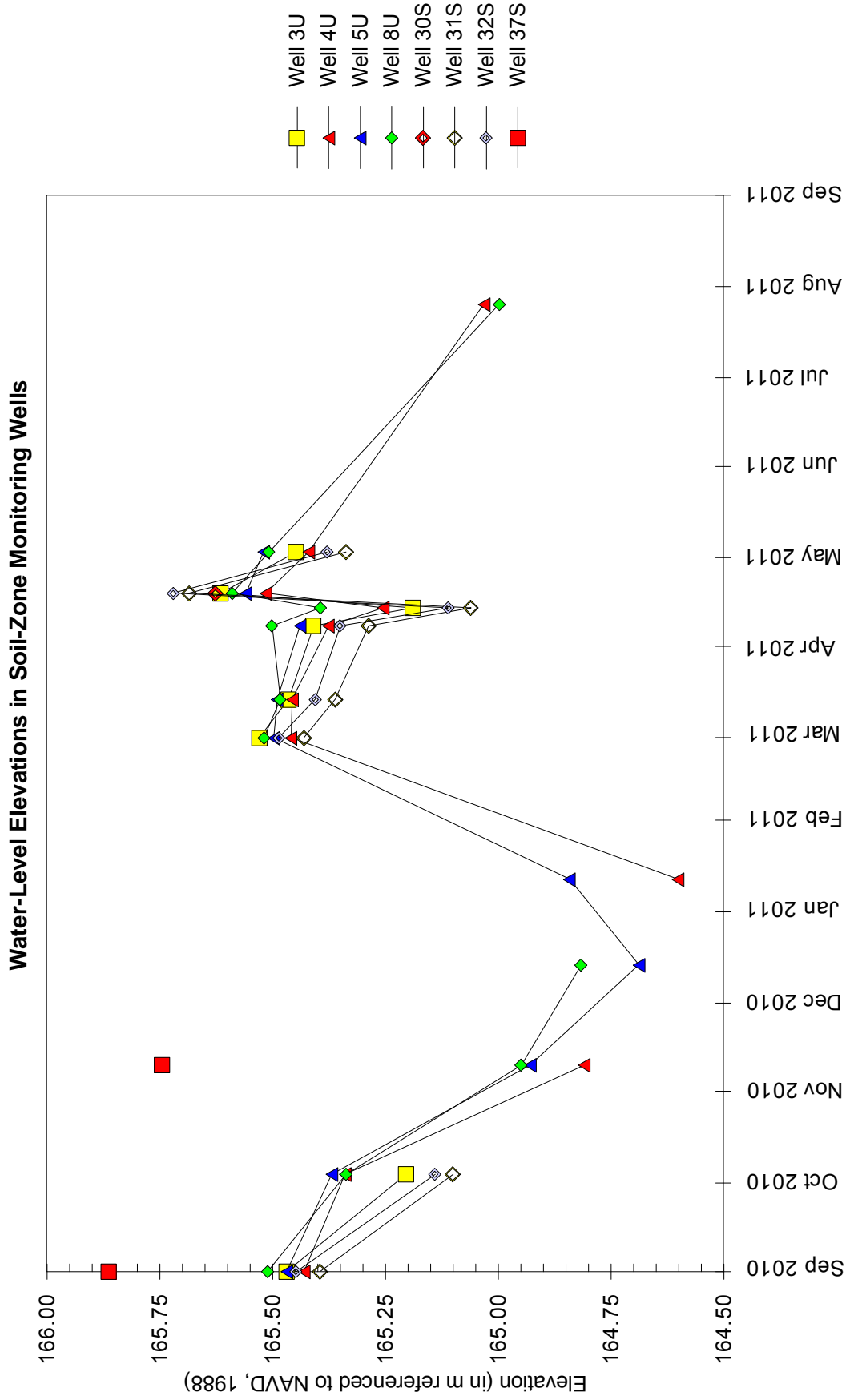
Hancock County near Carthage Wetland Mitigation Site September 1, 2010 through August 31, 2011



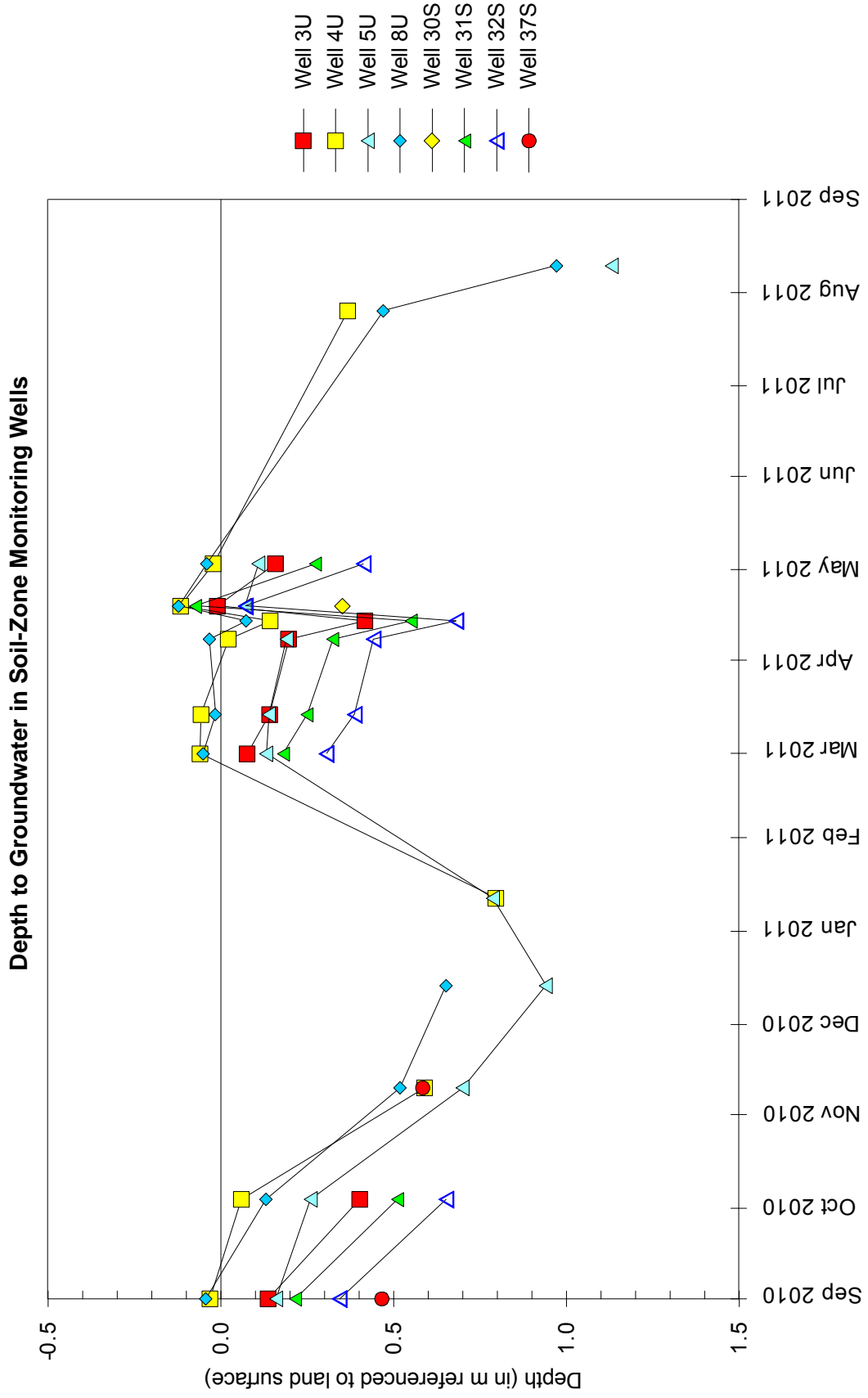
Hancock County near Carthage Wetland Mitigation Site September 1, 2010 through August 31, 2011



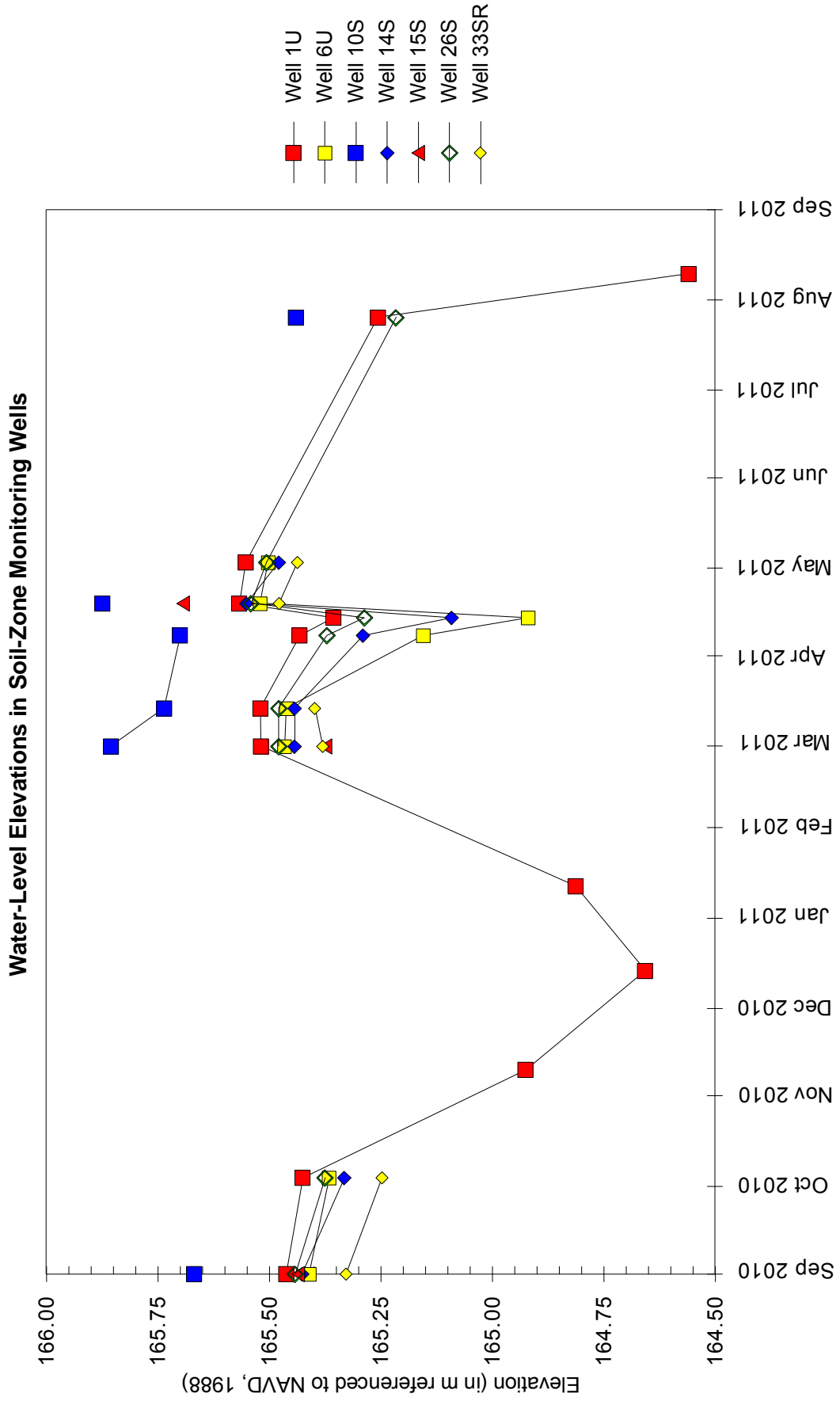
Hancock County near Carthage Wetland Mitigation Site September 1, 2010 through August 31, 2011



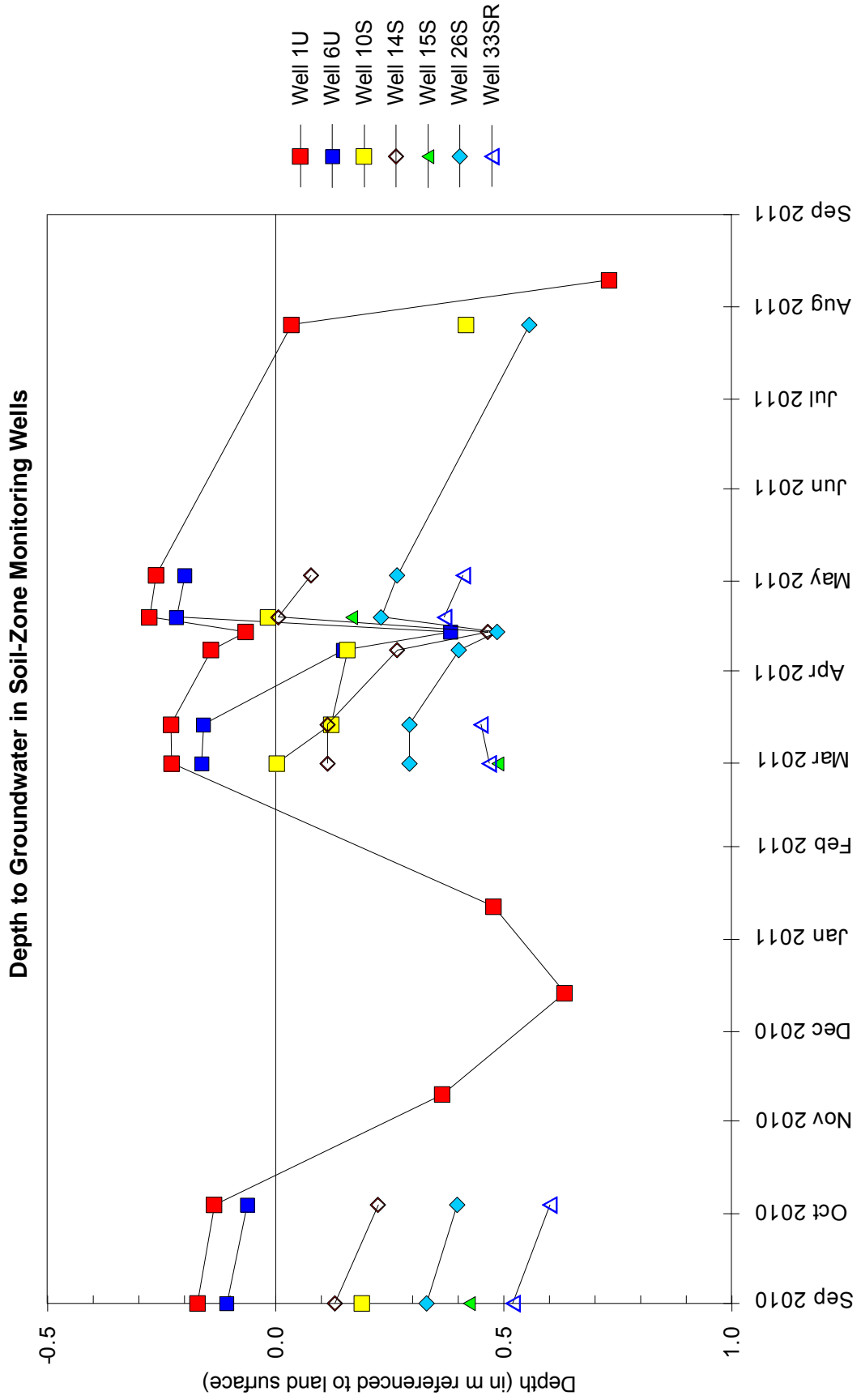
Hancock County near Carthage Wetland Mitigation Site September 1, 2010 through August 31, 2011



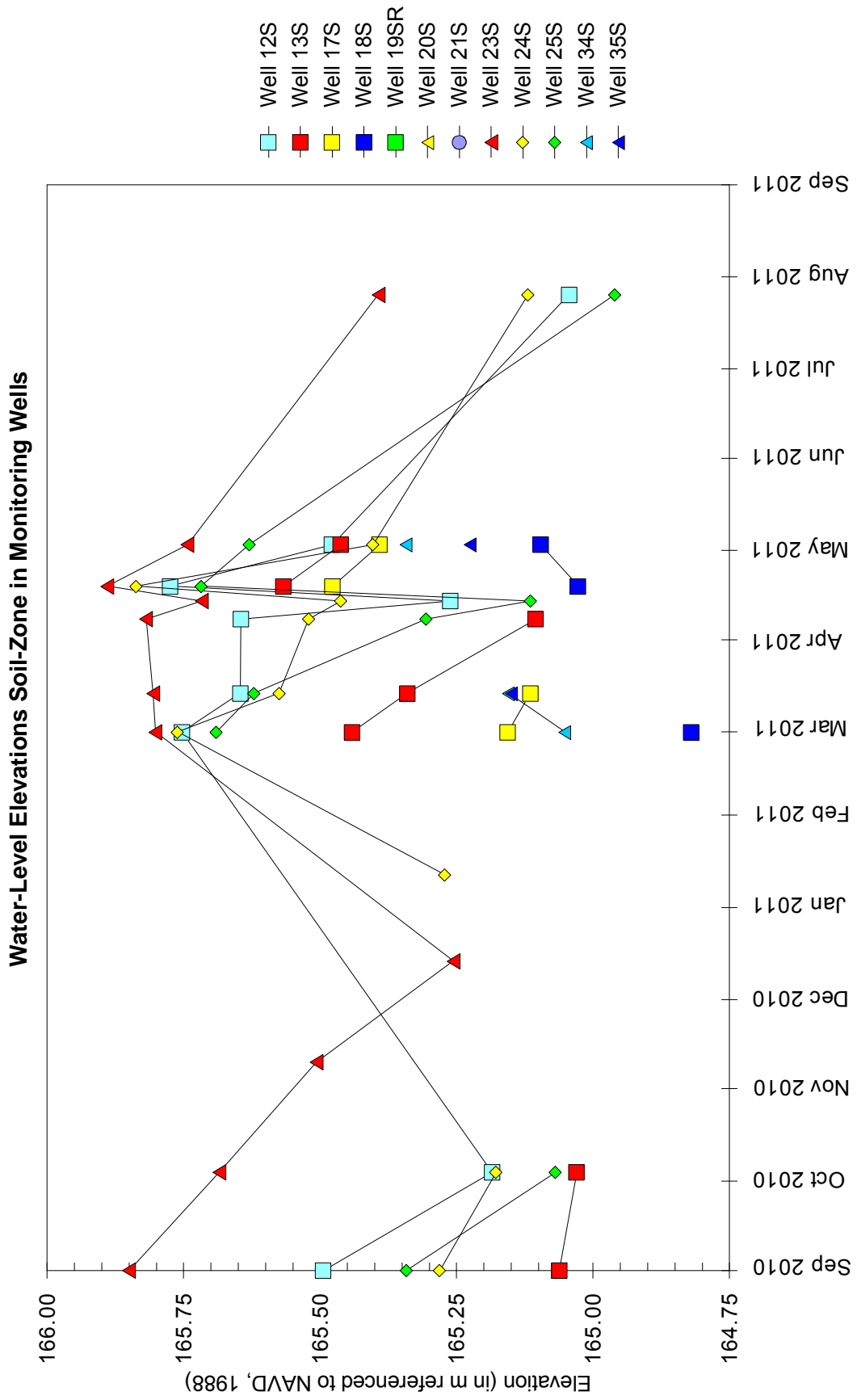
Hancock County near Carthage Wetland Mitigation Site September 1, 2010 through August 31, 2011



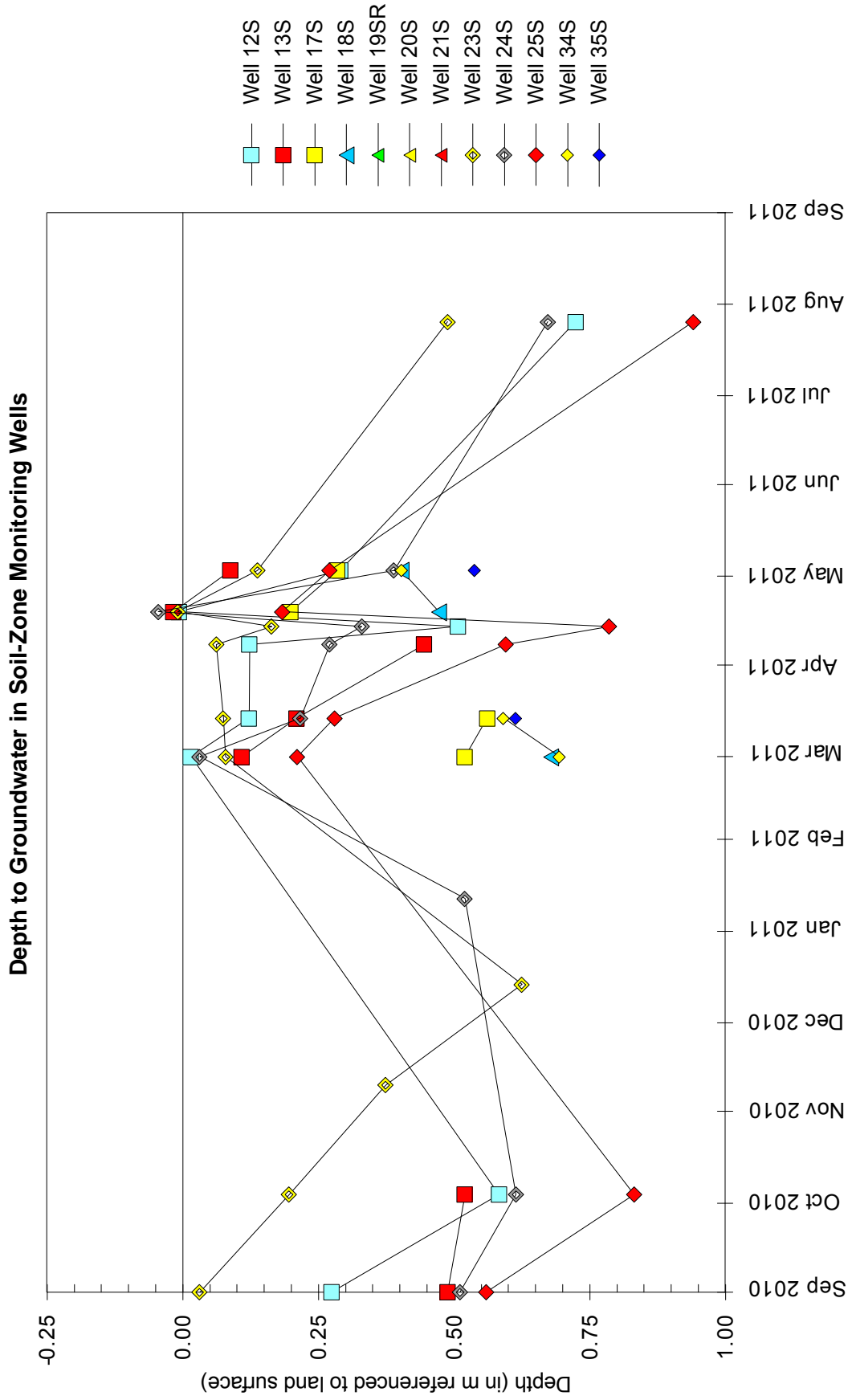
Hancock County near Carthage Wetland Mitigation Site September 1, 2010 through August 31, 2011



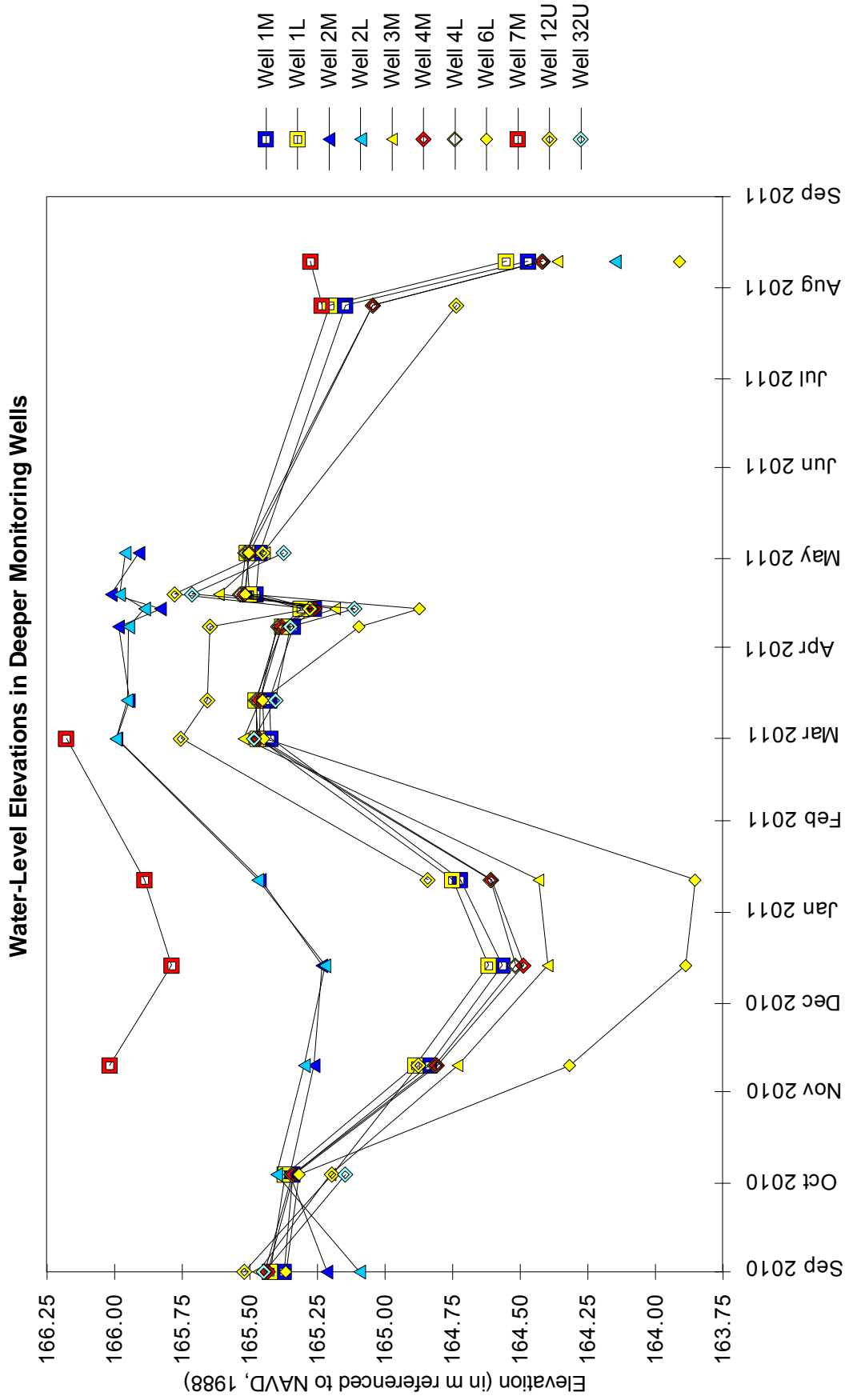
Hancock County near Carthage Wetland Mitigation Site September 1, 2010 through August 31, 2011



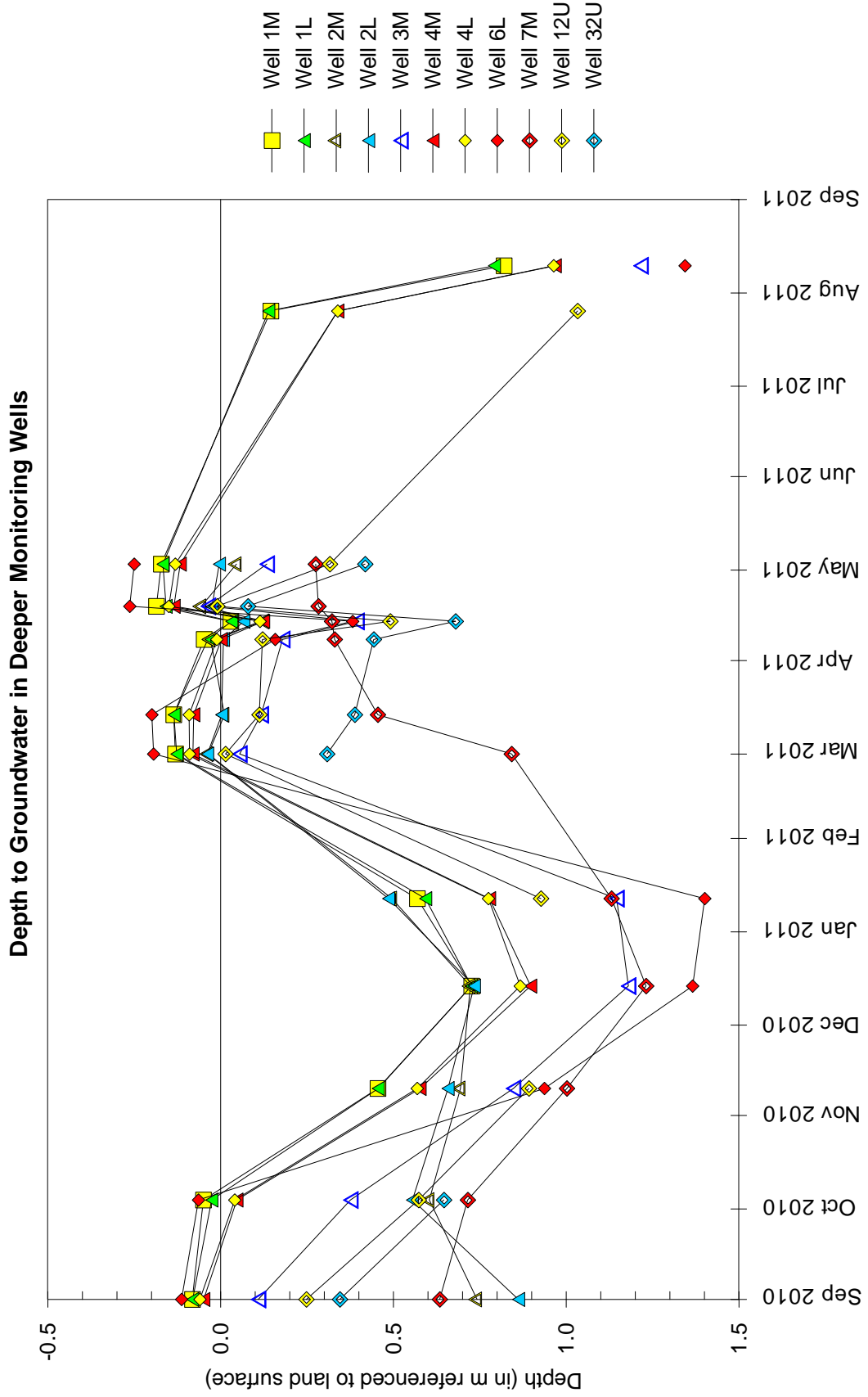
Hancock County near Carthage Wetland Mitigation Site September 1, 2010 through August 31, 2011



Hancock County near Carthage Wetland Mitigation Site September 1, 2010 through August 31, 2011

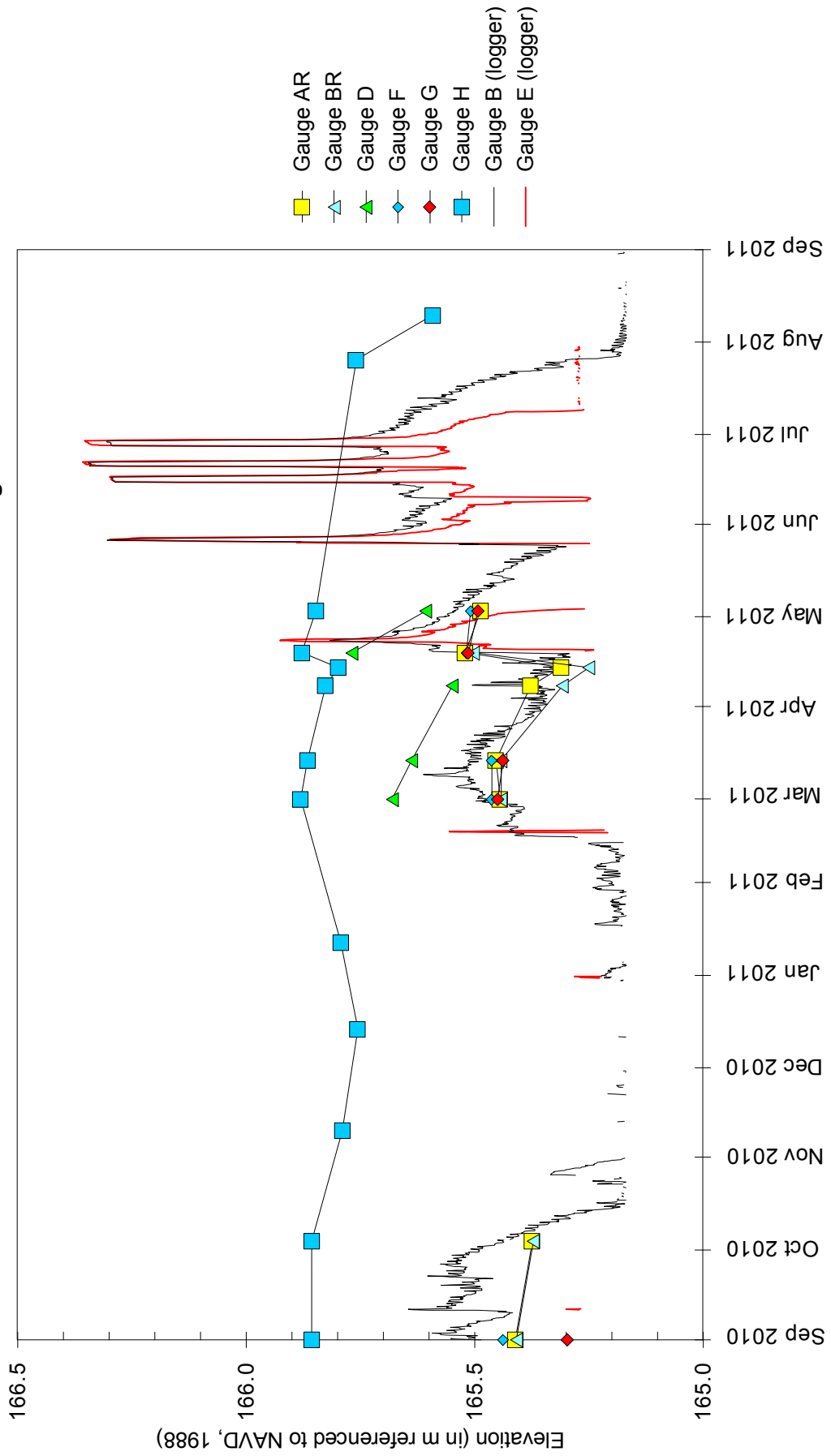


Hancock County near Carthage Wetland Mitigation Site September 1, 2010 through August 31, 2011



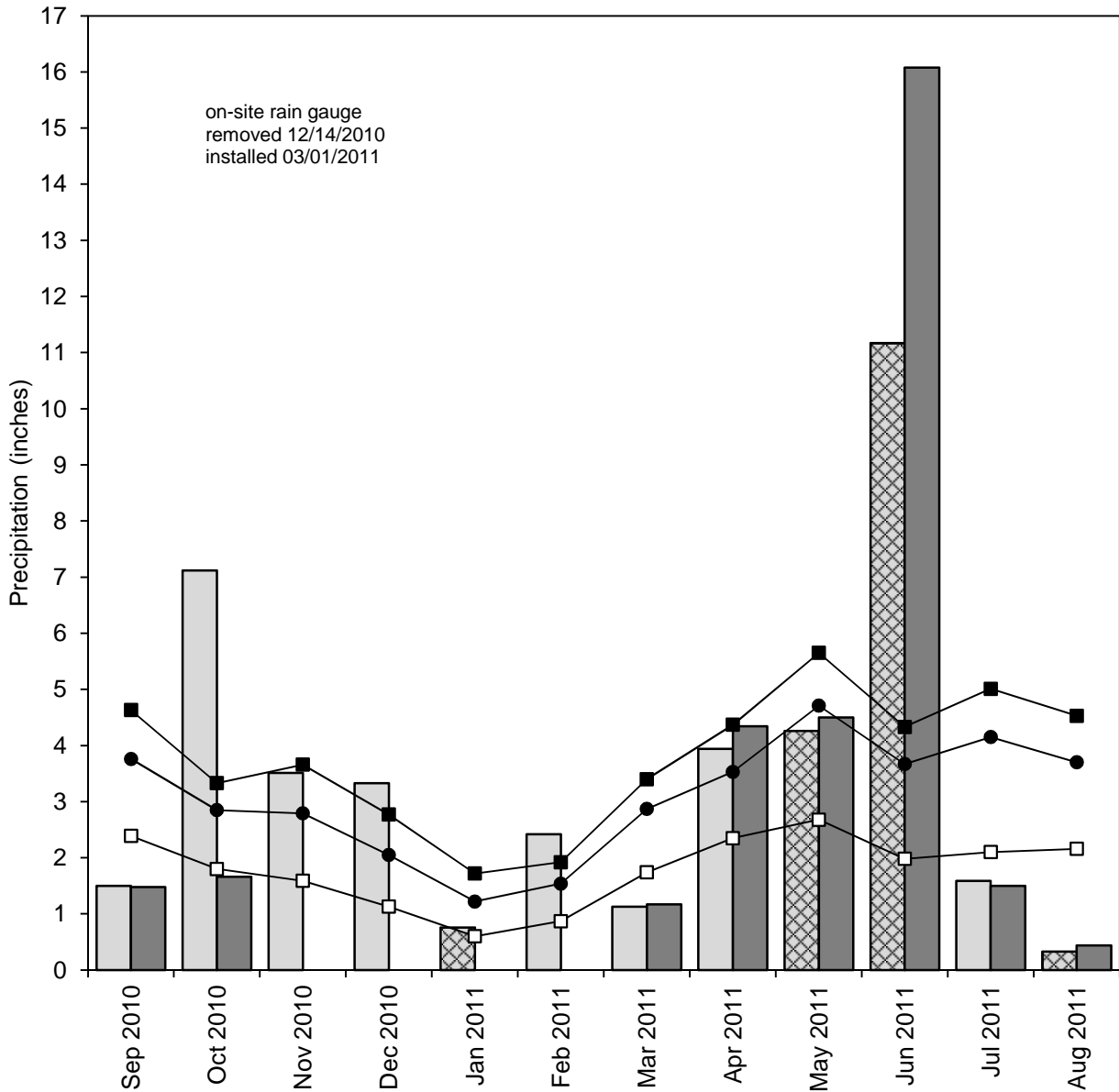
Hancock County near Carthage Wetland Mitigation Site September 1, 2010 through August 31, 2011

Water-Level Elevations at Surface-Water Gauges



Hancock County near Carthage Wetland Mitigation Site September 2010 through August 2011

Total Monthly Precipitation Recorded on Site and at Bentley, IL



- ▒ monthly precipitation recorded at Bentley, IL (MRCC)
- monthly precipitation recorded on site by ISGS
- ▨ data incomplete
- 1971-2000 monthly 30% above average threshold at Bentley, IL (NWCC)
- 1971-2000 monthly average precipitation at Bentley, IL (NWCC)
- ◻ 1971-2000 monthly 30% below average threshold at Bentley, IL (NWCC)

Graph last updated 10/31/2011