

**FORMER TIERNAN PROPERTY, NEW RIVER CROSSING
POTENTIAL WETLAND COMPENSATION SITE**

ISGS #57

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 2008

The area that satisfied wetland hydrology criteria (Environmental Laboratory 1987) for greater than 5% of the growing season was estimated to be 22.9 ha (56.5 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 also estimated to be 22.9 ha (56.5 ac). The estimates for 2008 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.
- Total precipitation recorded at the Belleville, Illinois weather station during the monitoring period was 139% of normal. Precipitation was at or above normal in October and December 2007, and in January, February, March, April, May and July 2008. Total precipitation in the spring was 155% of normal.
- In 2008, water levels measured in wells 1S, 2S, 3S, 4S, 5S, 8S, 9S, 10S, 11S, 12S, 13S, 14S, 15S, 16S, 17S, 18S, 19S, 20S, 21S, 22S, 23VS, 24S, 24VS, 25S, 25VS, 26S, 26VS, 27SR2, 27VS, 28S, 28VSR, 29S, 29VS, 30S, 30VS, 31S, 31VS, and 32SR satisfied wetland hydrology criteria for more than 5% and 12.5% of the growing season.
- Surface-water stage data from gauge D indicate that inundation occurred to an elevation ≥ 121.30 m (397.98 ft) for a period sufficient to satisfy wetland hydrology criteria for greater than 5% of the growing season and to an elevation ≥ 120.90 m (396.67 ft) for greater than 12.5% of the growing season.
- While most of the southern half of the site (the former borrow pit) is mapped as preexisting wetland, the hydrology is controlled primarily by the water level in Blue Waters Ditch southeast of the site. Extreme springtime precipitation events resulted in widespread flooding in the southern half of the site. Analysis of stage data from gauge D reveals that, except for occasional periods lasting up to 2 to 3 days, the southern half of the site was almost continuously inundated to an elevation of 121.15 m (397.49 ft) from April 2 to August 7, a total of 128 days, or about 60% of the growing season.

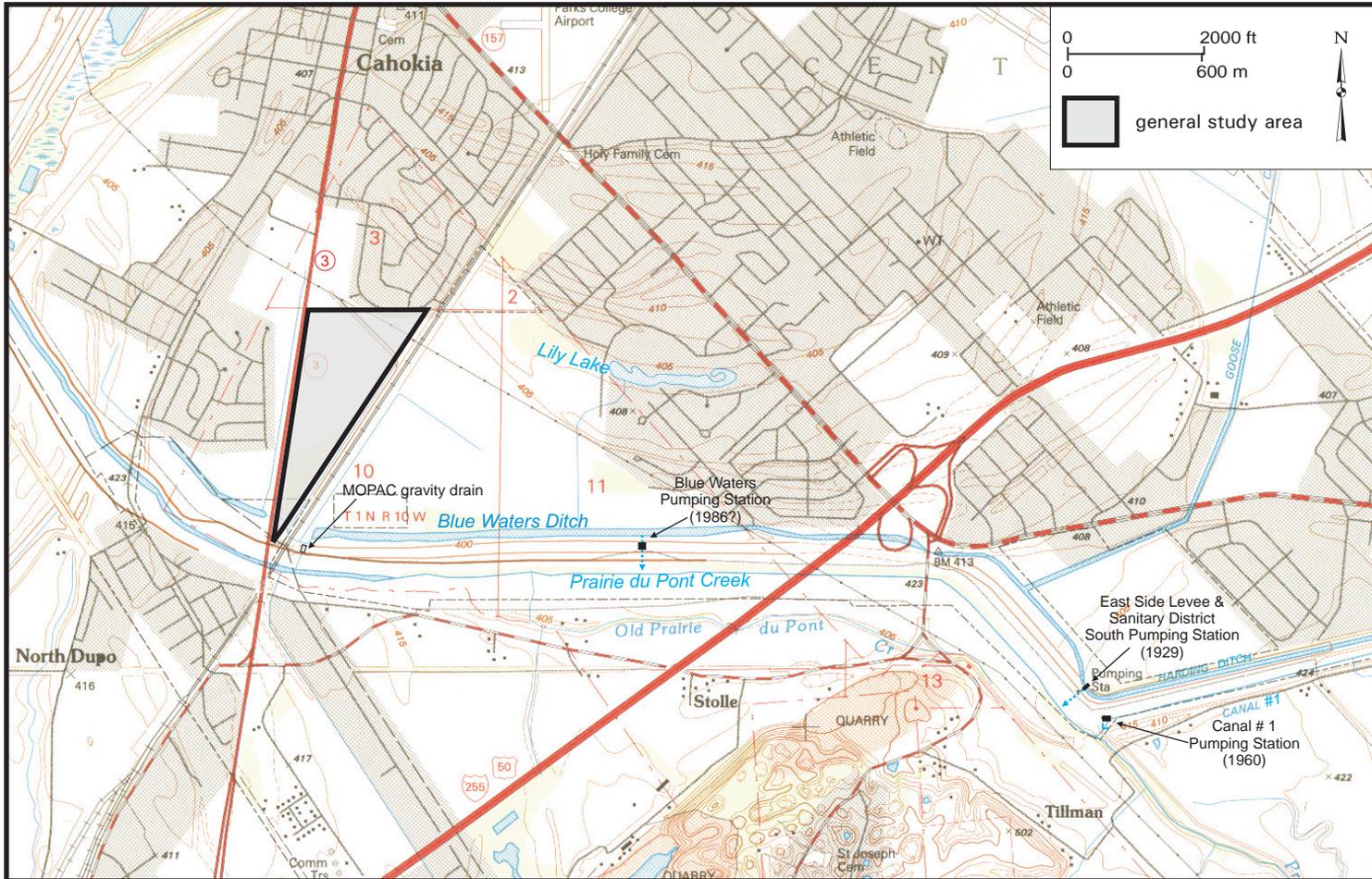
PLANNED FUTURE ACTIVITIES

- Monitoring will continue until no longer required by IDOT.

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

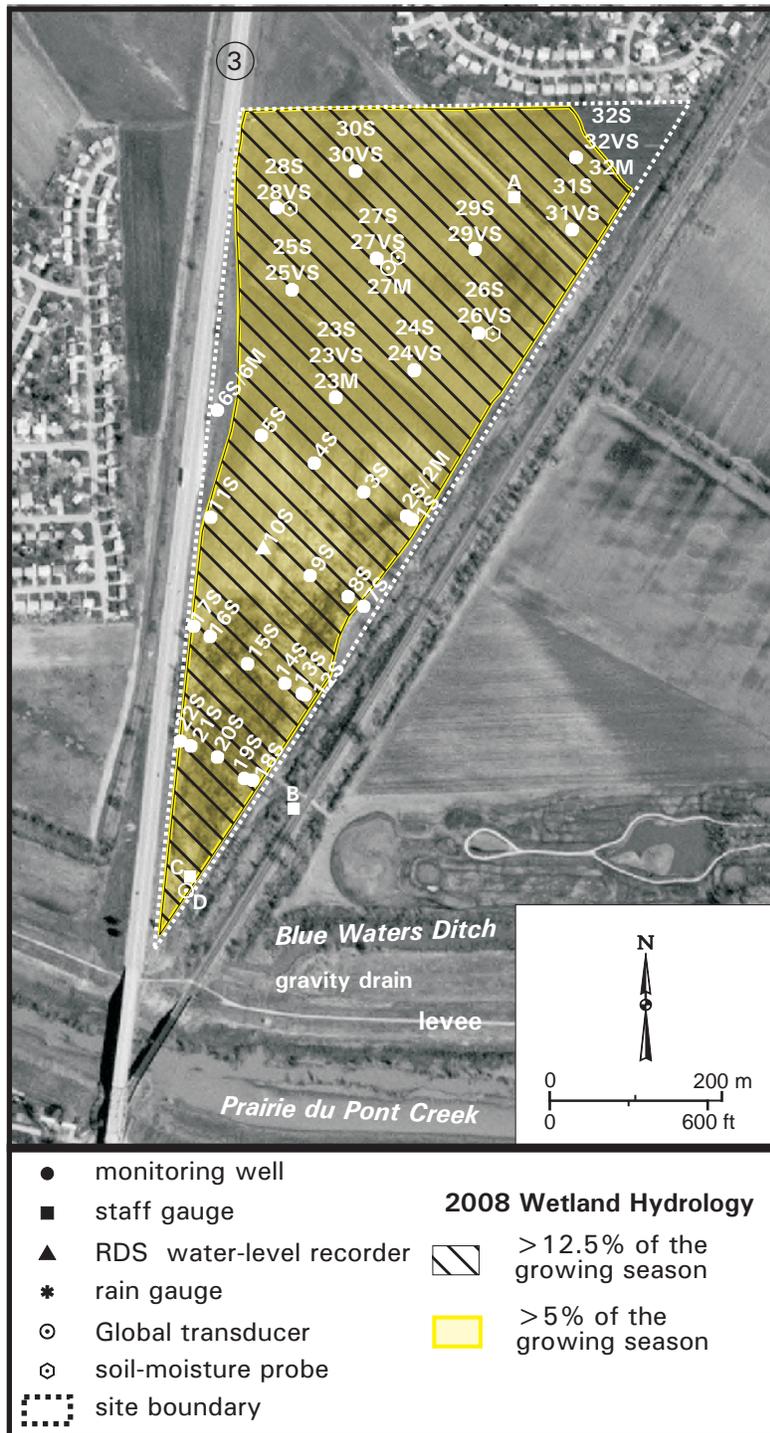
General Study Area and Vicinity

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



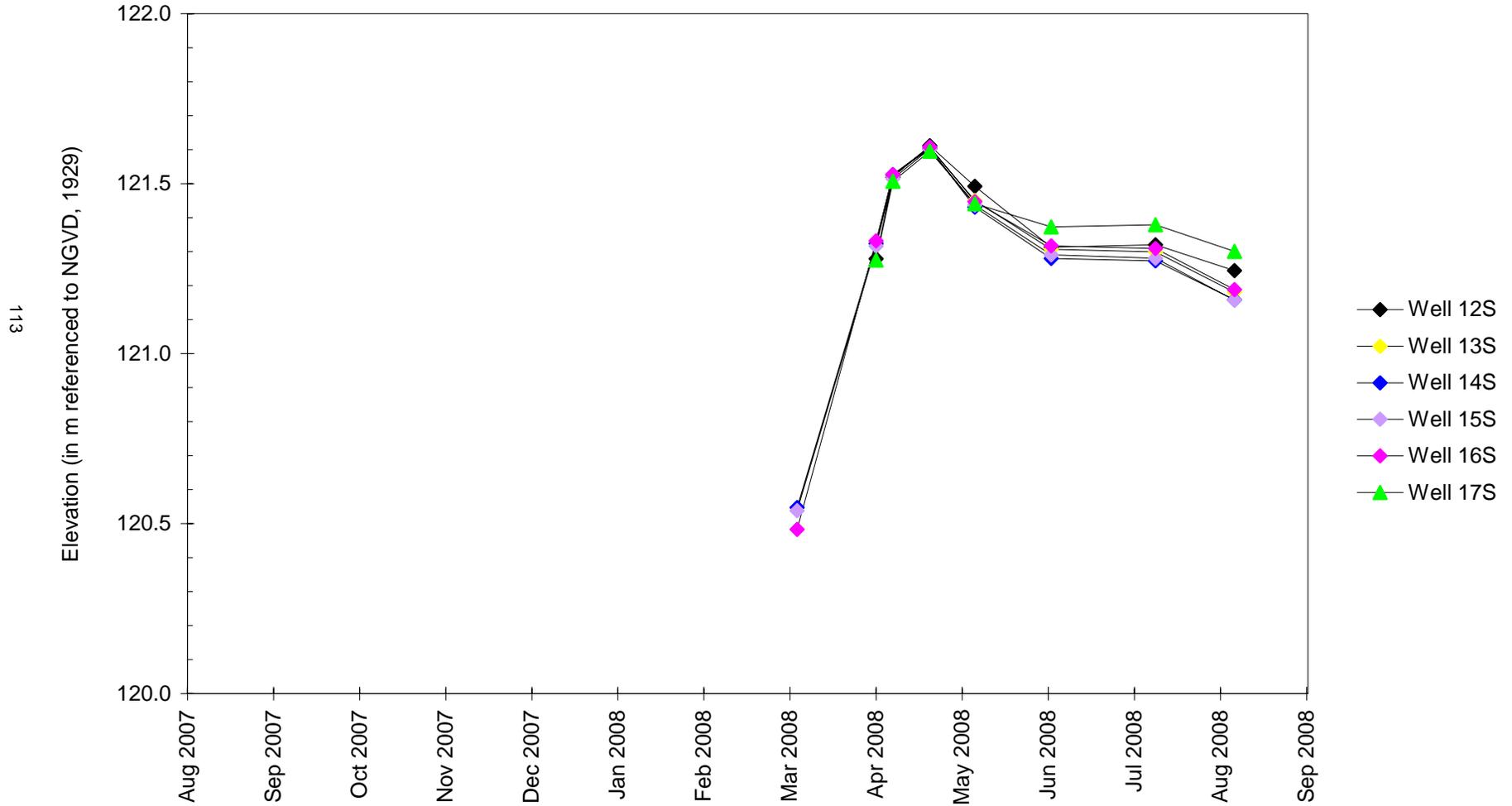
Former Tiernan Property, New River Crossing Potential Wetland Compensation Site (FAP 999)

Estimated Areal Extent of 2008 Wetland Hydrology
based on data collected between September 1, 2007 and September 1, 2008
Map based on USGS digital orthophotograph, Cahokia SW quarter quadrangle
produced from 04/02/98 aerial photography (ISGS 2000)



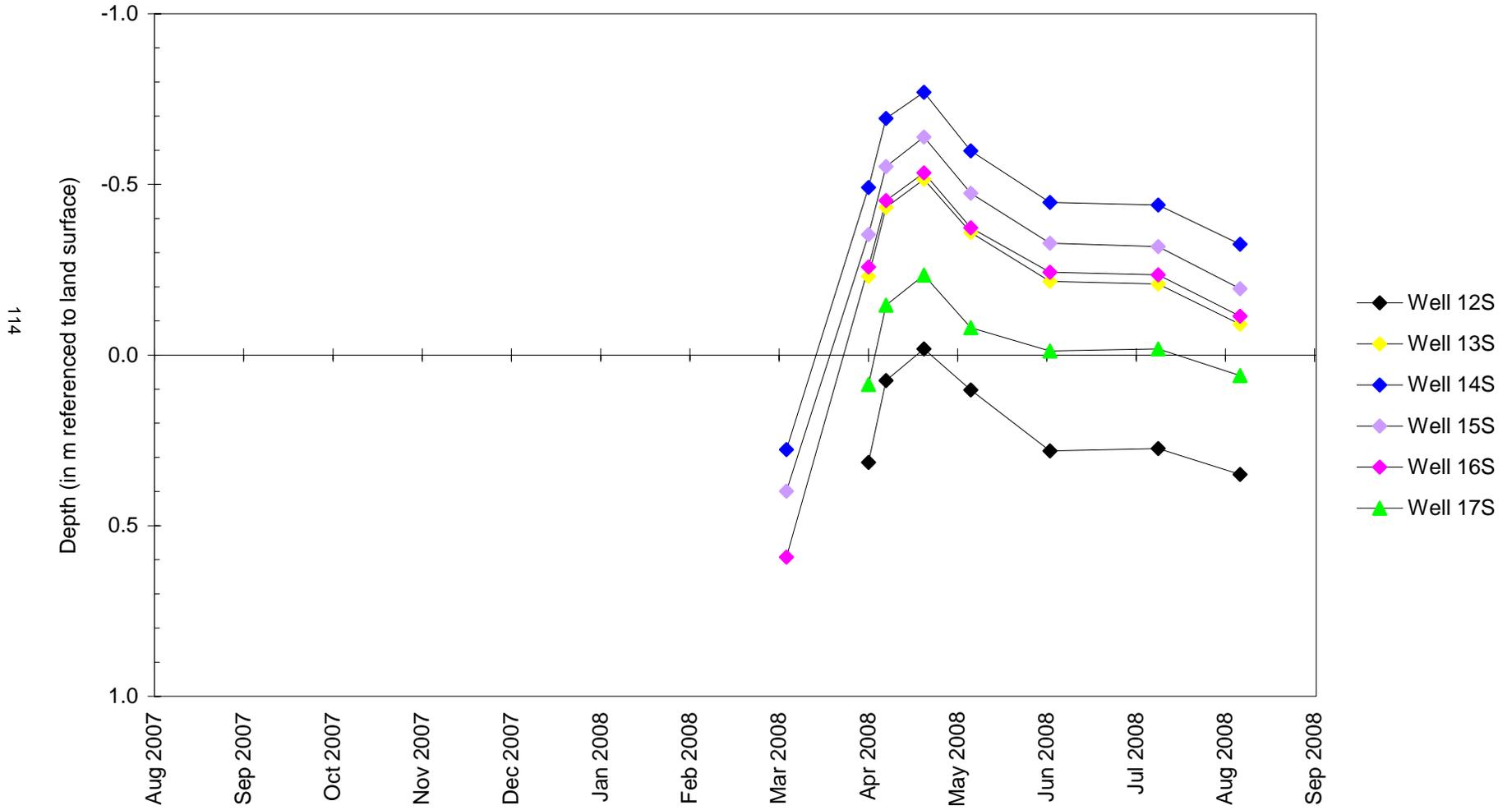
Former Tiernan Property, New River Crossing Potential Wetland Compensation Site
September 1, 2007 to September 1, 2008

Water-Level Elevations



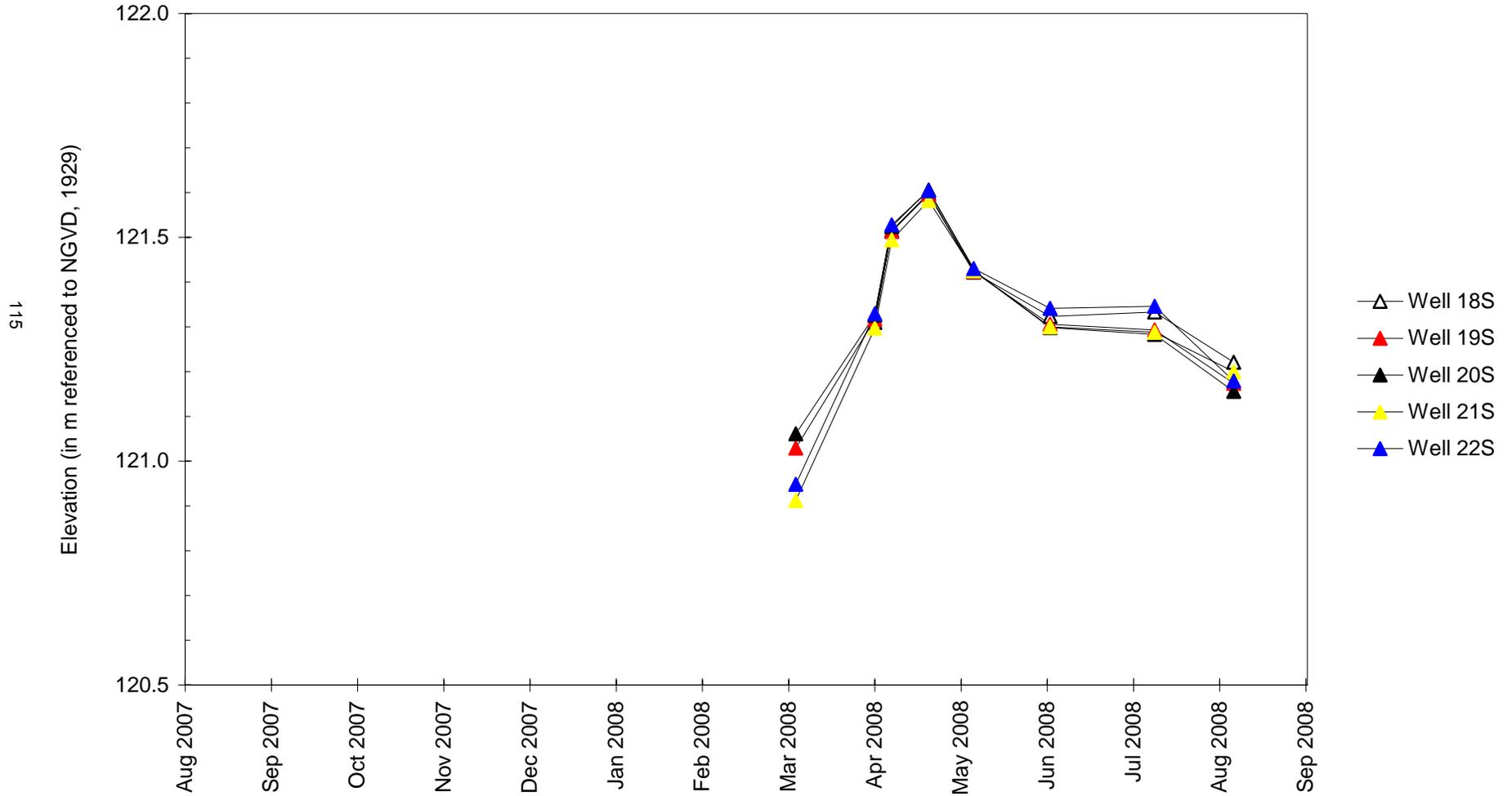
Former Tiernan Property, New River Crossing Potential Wetland Compensation Site
September 1, 2007 to September 1, 2008

Depth to Water



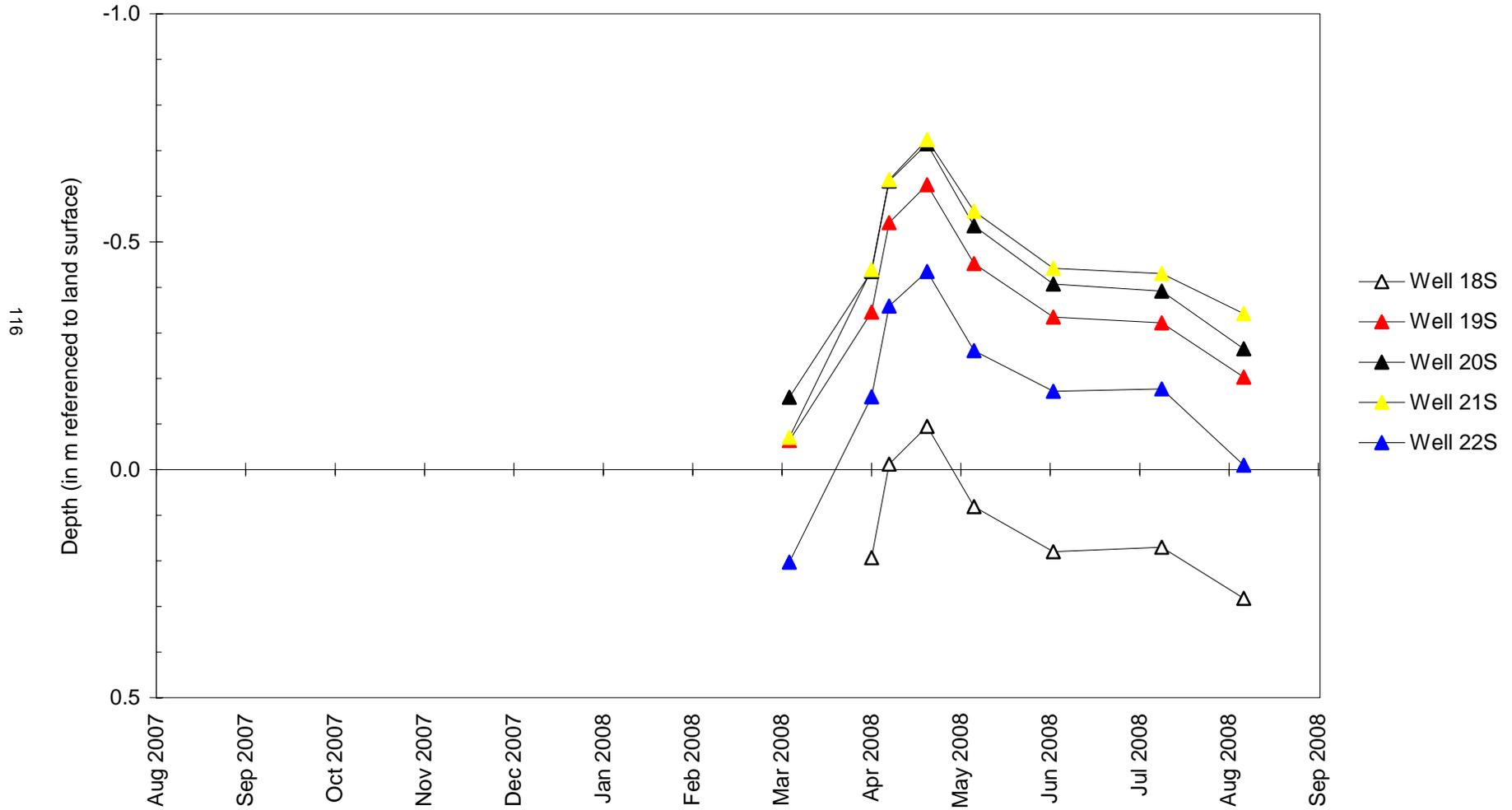
Former Tiernan Property, New River Crossing Potential Wetland Compensation Site September 1, 2007 to September 1, 2008

Water-Level Elevations



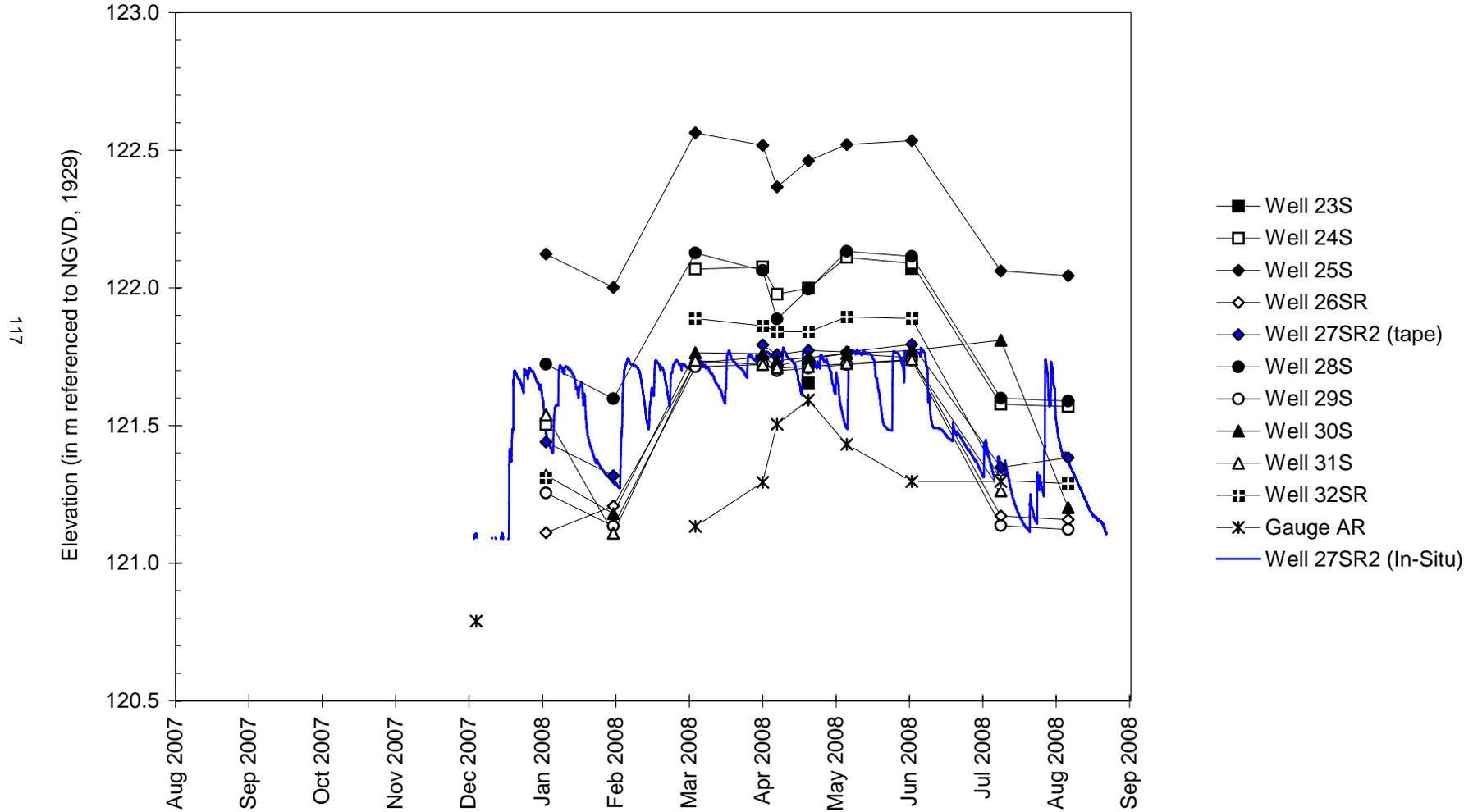
Former Tiernan Property, New River Crossing Potential Wetland Compensation Site
September 1, 2007 to September 1, 2008

Depth to Water



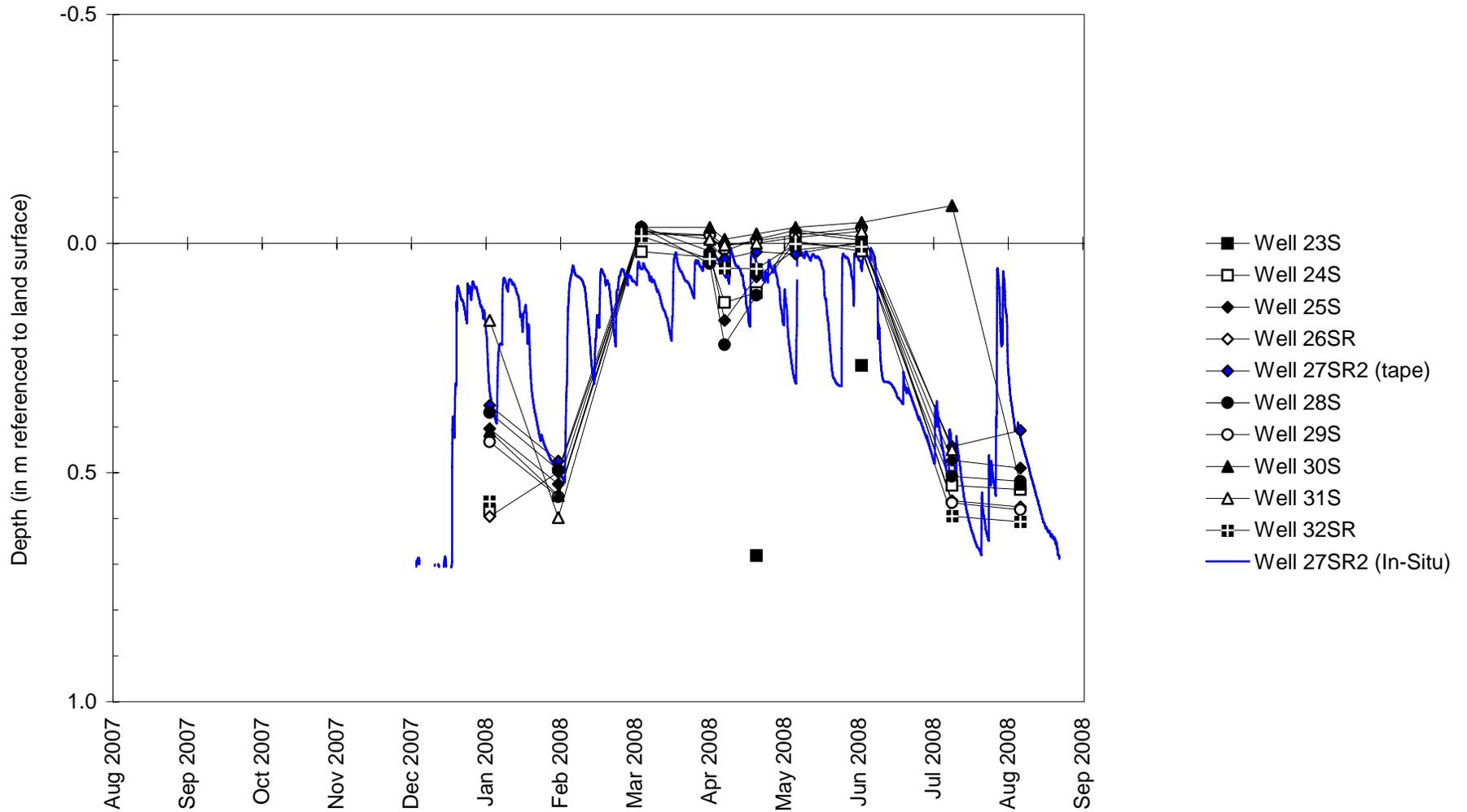
Former Tiernan Property, New River Crossing Potential Wetland Compensation Site
September 1, 2007 to September 1, 2008

Water-Level Elevations



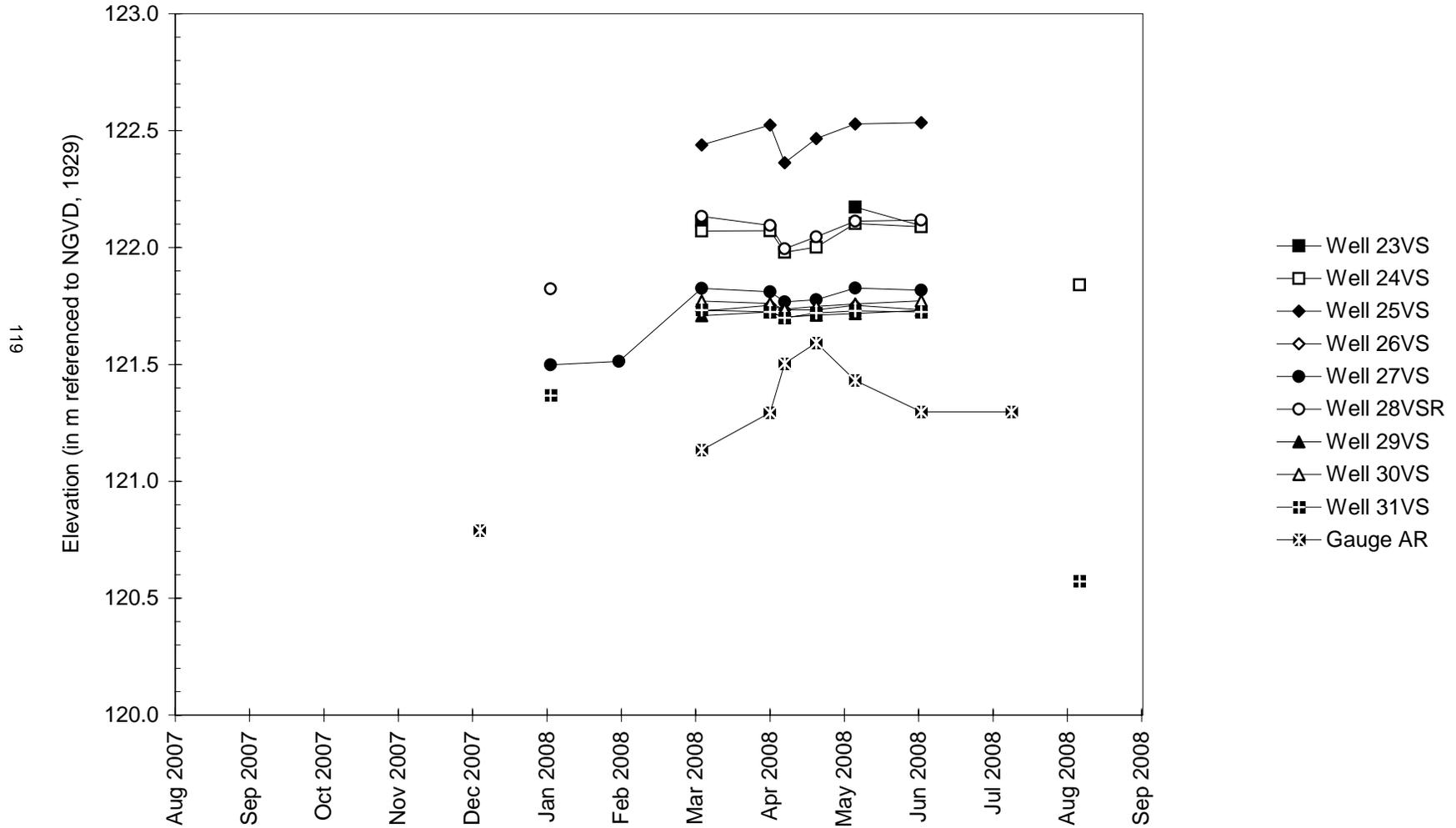
Former Tiernan Property, New River Crossing Potential Wetland Compensation Site
September 1, 2007 to September 1, 2008

Depth to Water



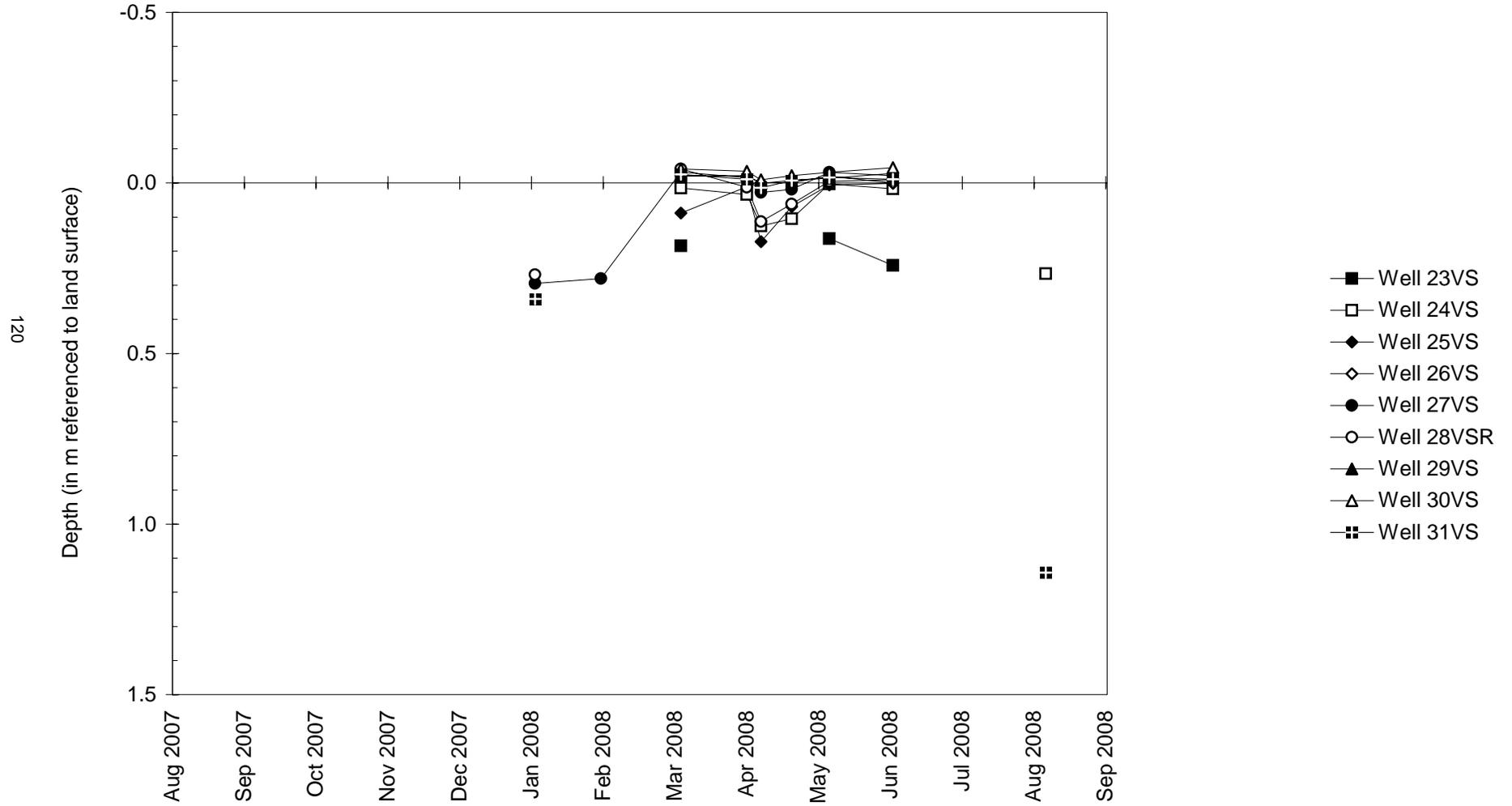
Former Tiernan Property, New River Crossing Potential Wetland Compensation Site
September 1, 2007 to September 1, 2008

Water-Level Elevations



Former Tiernan Property, New River Crossing Potential Wetland Compensation Site September 1, 2007 to September 1, 2008

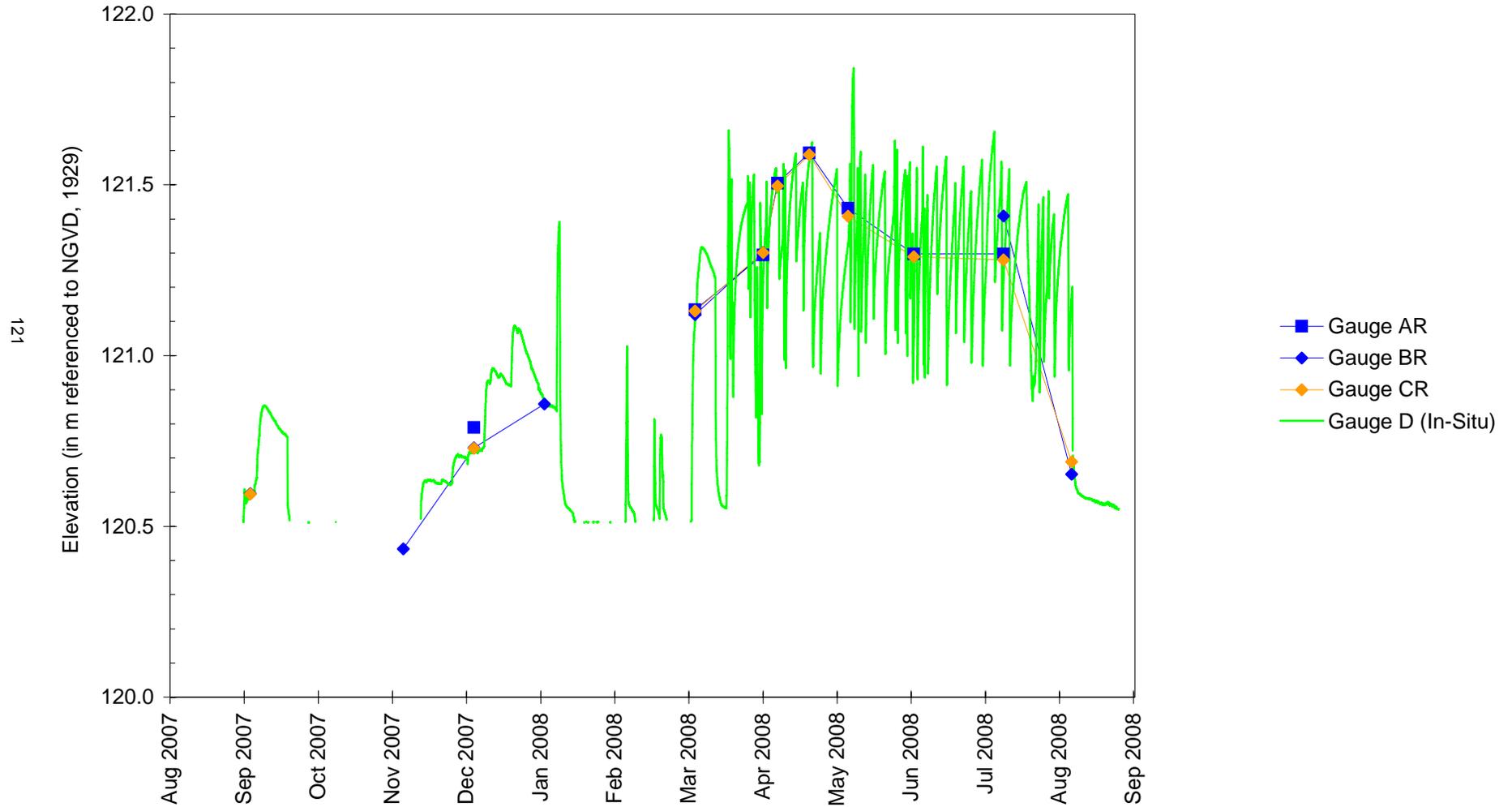
Depth to Water



Former Tiernan Property, New River Crossing Potential Wetland Compensation Site

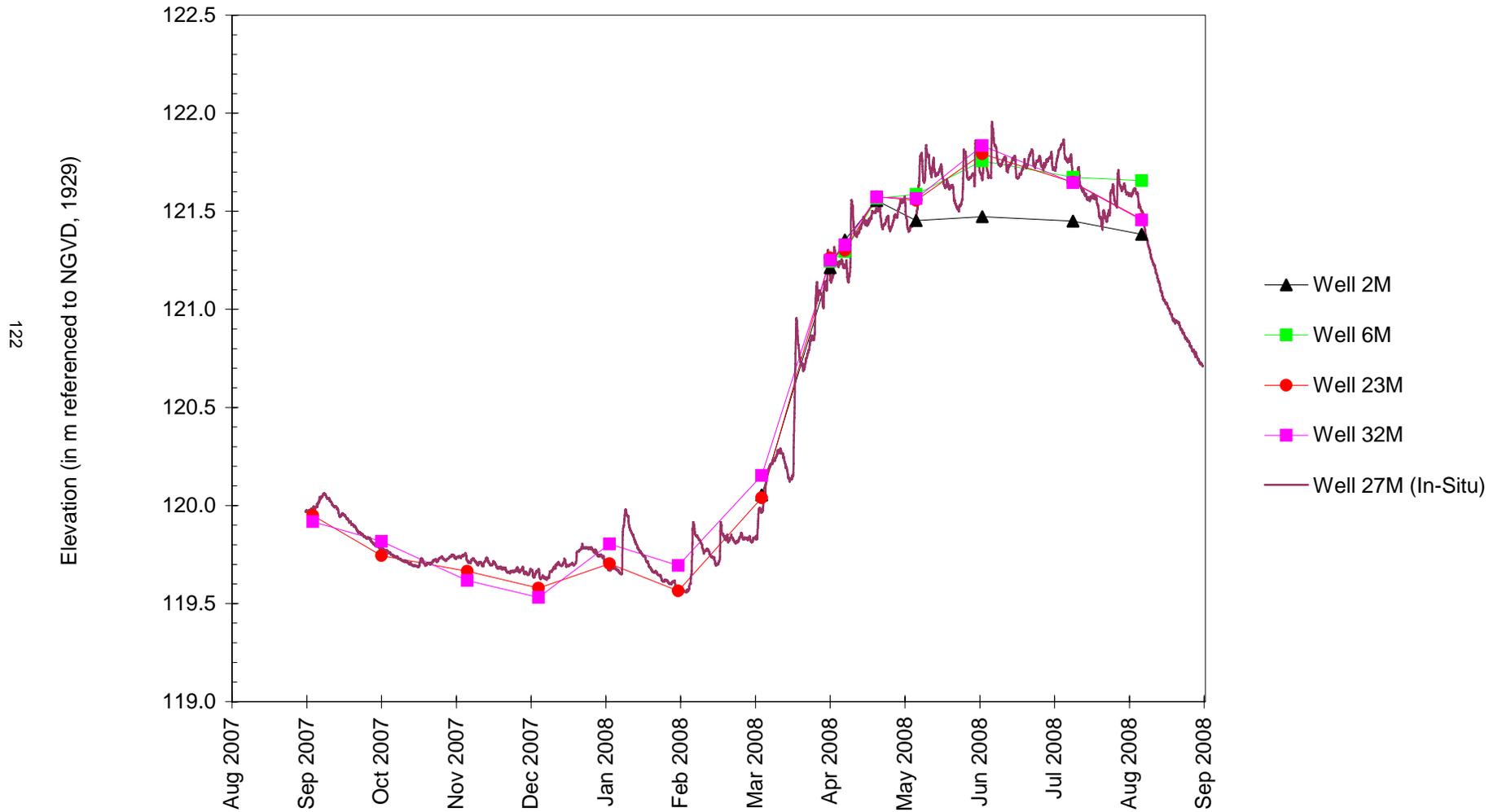
September 1, 2007 to September 1, 2008

Water-Level Elevations



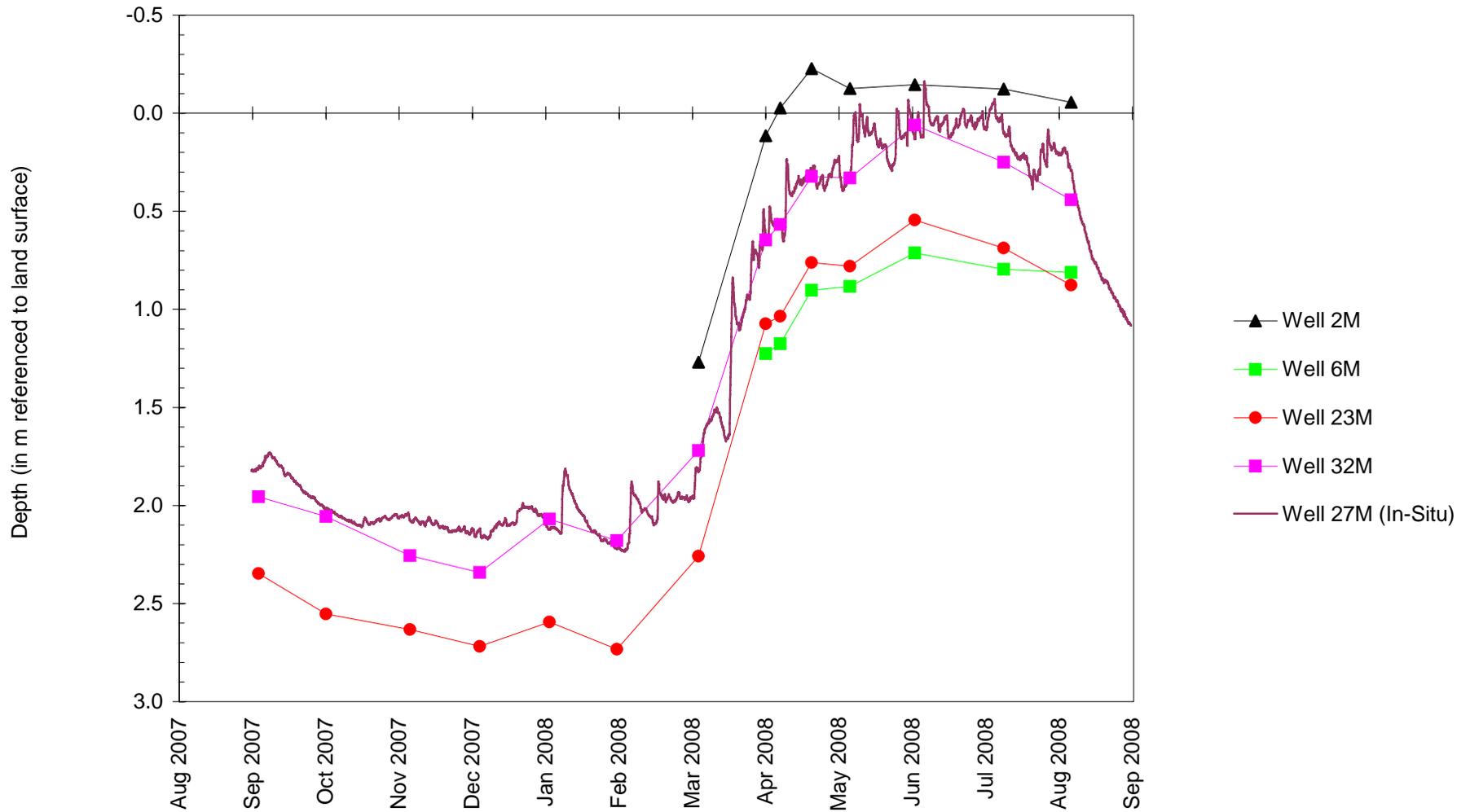
Former Tiernan Property, New River Crossing Potential Wetland Compensation Site
September 1, 2007 to September 1, 2008

Water-Level Elevations



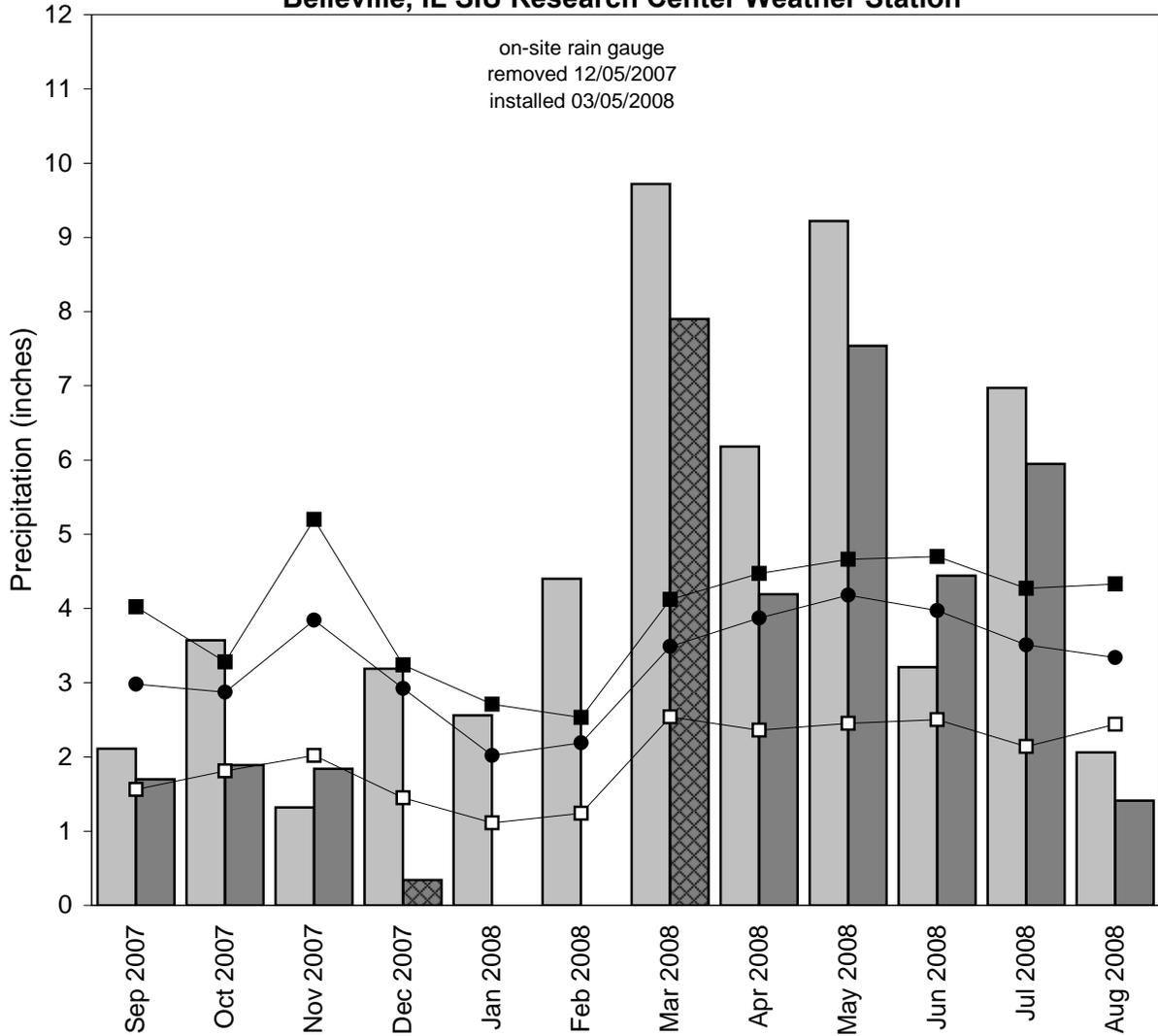
Former Tiernan Property, New River Crossing Potential Wetland Compensation Site September 1, 2007 to September 1, 2008

Depth to Water



**Former Tiernan Property, New River Crossing
Potential Wetland Compensation Site
September 2007 through August 2008**

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



- monthly precipitation recorded at weather station (Midwestern Regional Climate Center)
- monthly precipitation recorded on site by ISGS
- 1971-2000 monthly 30% above average threshold (National Water and Climate Center)
- 1971-2000 monthly average precipitation (National Water and Climate Center)
- 1971-2000 monthly 30% below average threshold (National Water and Climate Center)
- ▣ data incomplete

Graph last updated October 7, 2008