JO DAVIESS
STEPHENSON
WINNEBAGO
BOONE
MC HENRY
LAKE
CARROLL
OGLE
DE KALB
KANE
COOK
WHITESIDE
LEE
DU PAGE
WILL
LA SALLE
BUREAU
KENDALL
GRUNDY
ROCK ISLAND
MERCER
HENRY
PUTNAM
KANKAKEE
KNOX
STARK
MARSHALL
LIVINGSTON
WARREN
PEORIA
IROQUOIS
WOODFORD
HENDERSON
MC LEAN
FULTON
HANCOCK
MC DONOUGH
FORD
TAZEWELL
VERMILION
MASON
CHAMPAIGN
SCHUYLER
LOGAN
DEWITT
ADAMS
BROWN
CASS
MENARD
PIATT
MACON
PIKE
MORGAN
DOUGLAS
EDGAR
SCOTT
MOULTRIE
CHRISTIAN
SHELBY
COLES
SANGAMON
GREENE
MACOUPIN
CLARK
CUMBERLAND
MONTGOMERY
CALHOUN
JERSEY
FAYETTE
EFFINGHAM
JASPER
CRAWFORD
MADISON
BOND
RICHLAND
LAWRENCE
MARION
CLINTON
CLAY
WAYNE
57
JEFFERSON
WASHINGTON
EDWARDS
WABASH
MONROE
ST. CLAIR
HAMILTON
WHITE
RANDOLPH
PERRY
FRANKLIN
JACKSON
SALINE
GALLATIN
WILLIAMSON
UNION
JOHNSON
POPE
HARDIN
ALEXANDER
PULASKI
MASSAC

FORMER TIERNAN PROPERTY, NEW RIVER CROSSING **ISGS #57**
POTENTIAL WETLAND COMPENSATION SITE
FAP 999
Sequence #33G
St. Clair County, near Cahokia, Illinois
Primary Project Manager: Bonnie J. R. Sperling
Secondary Project Manager: not assigned

SITE HISTORY

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

- March–November 2001: Thirty-two S wells, ten VS wells, five M wells, two staff gauges, and six benchmarks were installed and surveyed. Six soil-moisture probes were installed in three clusters in the northern field. Water-quality sampling was terminated because no quality standards were exceeded in any of the initial samples.

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

WETLAND HYDROLOGY CALCULATION FOR 2006

The area that satisfied wetland hydrology criteria (Environmental Laboratory 1987) for greater than 5% of the growing season was estimated to be 9.1 ha (22.4 ac) out of a total site area of 26.4 ha (65.3 ac). The area was also identical to that which satisfied the criteria for greater than 12.5% of the growing season. The estimates for 2006 are based on the following factors:

- According to the Midwestern Climate Center, the median date that the growing season begins in nearby Belleville, 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.

- Precipitation during the monitoring period was 93% of normal. Precipitation more than three times the normal amount in late September 2005 resulted in water being reported in the wells at the northern portion of the site. Despite below-normal precipitation through most of the fall and winter months, low evapotranspiration rates ensured that water levels (in wells that recorded the presence of water) remained at measurable levels. Alternating months of near-normal and below-normal precipitation beginning in March 2006 was reflected in fluctuating water levels. High summer evapotranspiration rates coupled with below-normal precipitation resulted in falling water levels throughout the summer.

- In 2006, water levels measured in wells 24S, 24VS, 25VS, 27S, 27VS, 28S, 28VS, 29S, 29VS, 30S, 30VS, 31S, 31VS, and 32S satisfied the wetland hydrology criteria for greater than 12.5% of the growing season, while well 25S only satisfied wetland hydrology criteria for greater than 5% of the growing season. Surface-water readings at Gauge A indicate there was inundation sufficient to satisfy wetland hydrology criteria for greater than 12.5% of the growing season.

- Most of the southern half of the site (the former borrow pit) is mapped as pre-existing wetland, the hydrology of which is controlled primarily by the water level in Blue Waters

Ditch southeast of the site. Below-normal precipitation through most of the year resulted in minimal flooding and no water being observed in many of the wells on the southern half of the site.

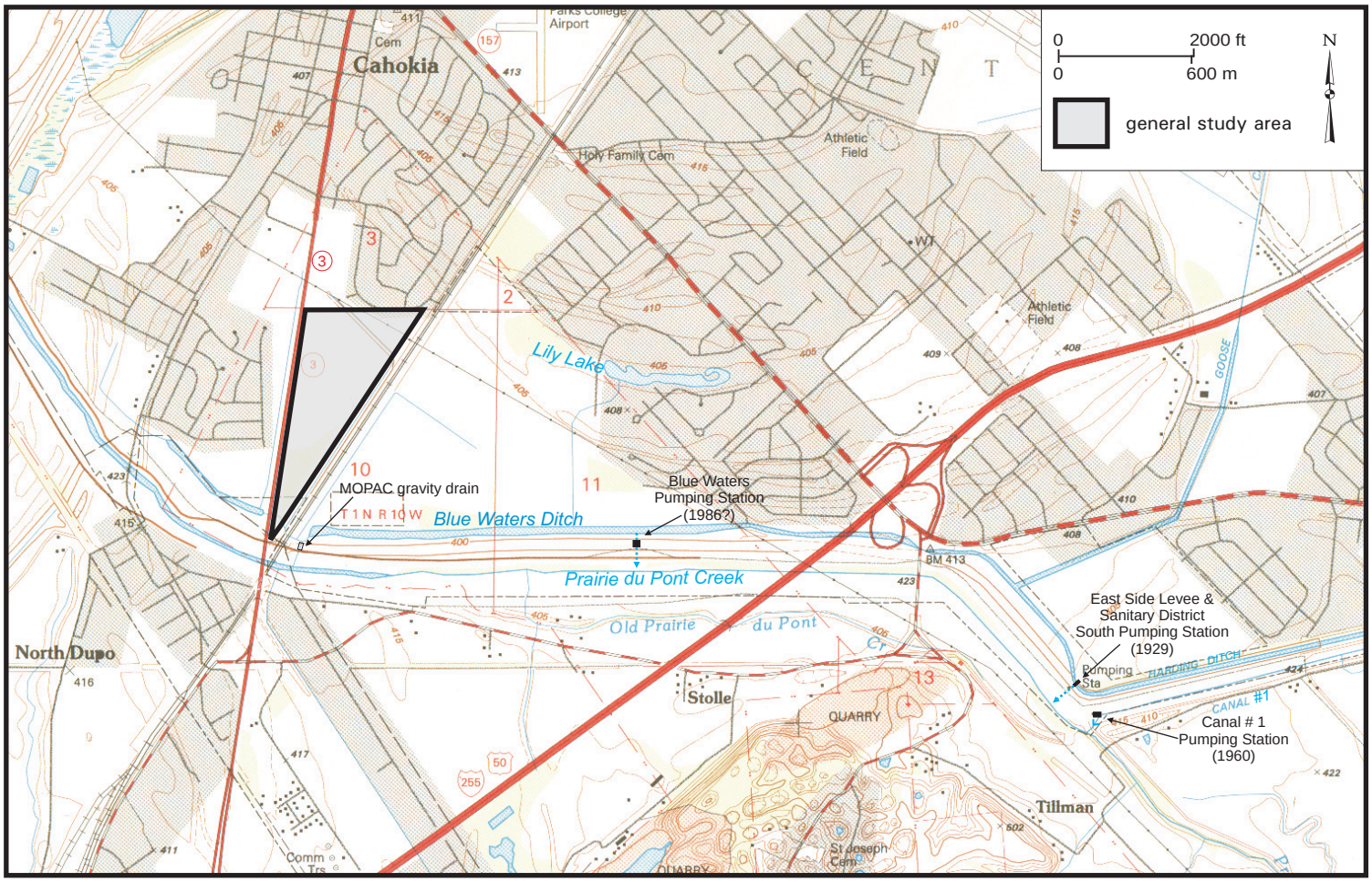
PLANNED FUTURE ACTIVITIES

- ISGS will remove several wells on the southern portion of the site.
- Monitoring will continue until no longer required by IDOT.

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 10 feet

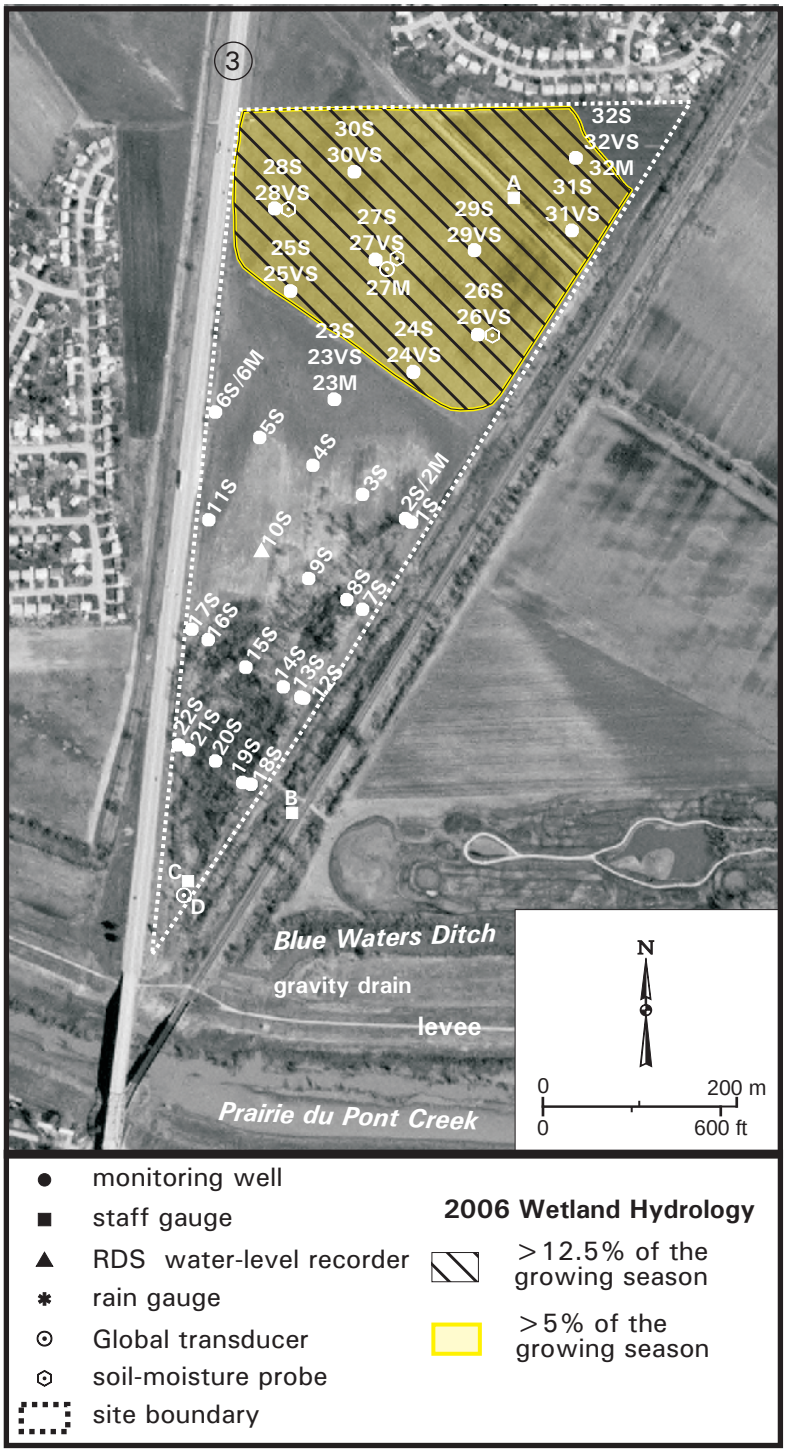


Former Tiernan Property, New River Crossing
Potential Wetland Compensation Site
(FAP 999)

Estimated Areal Extent of 2006 Wetland Hydrology

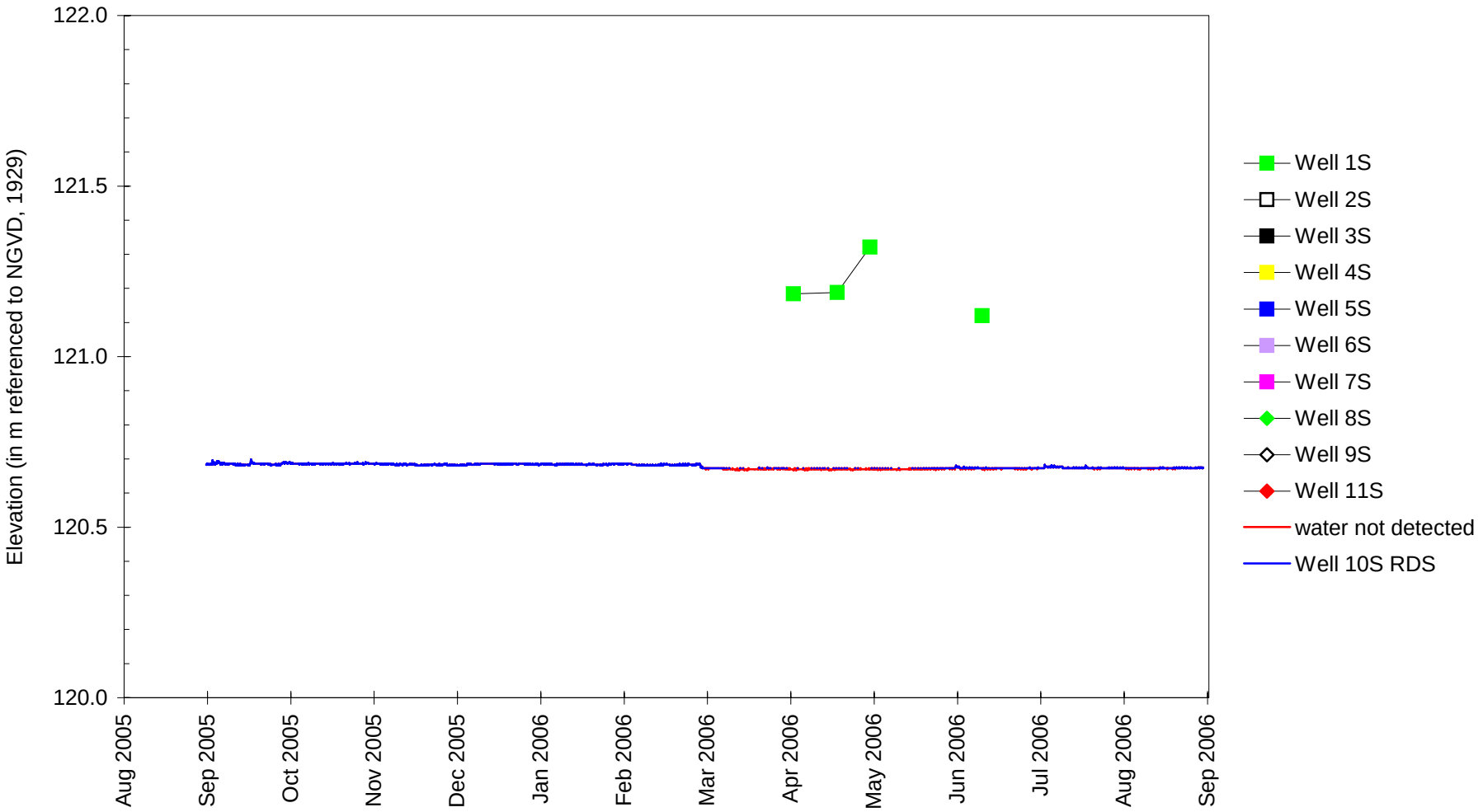
based on data collected between September 1, 2005 and September 1, 2006

Map based on USGS digital orthophotograph, Cahokia SW quarter quadrangle
produced from 4/2/98 aerial photography (ISGS 2000)

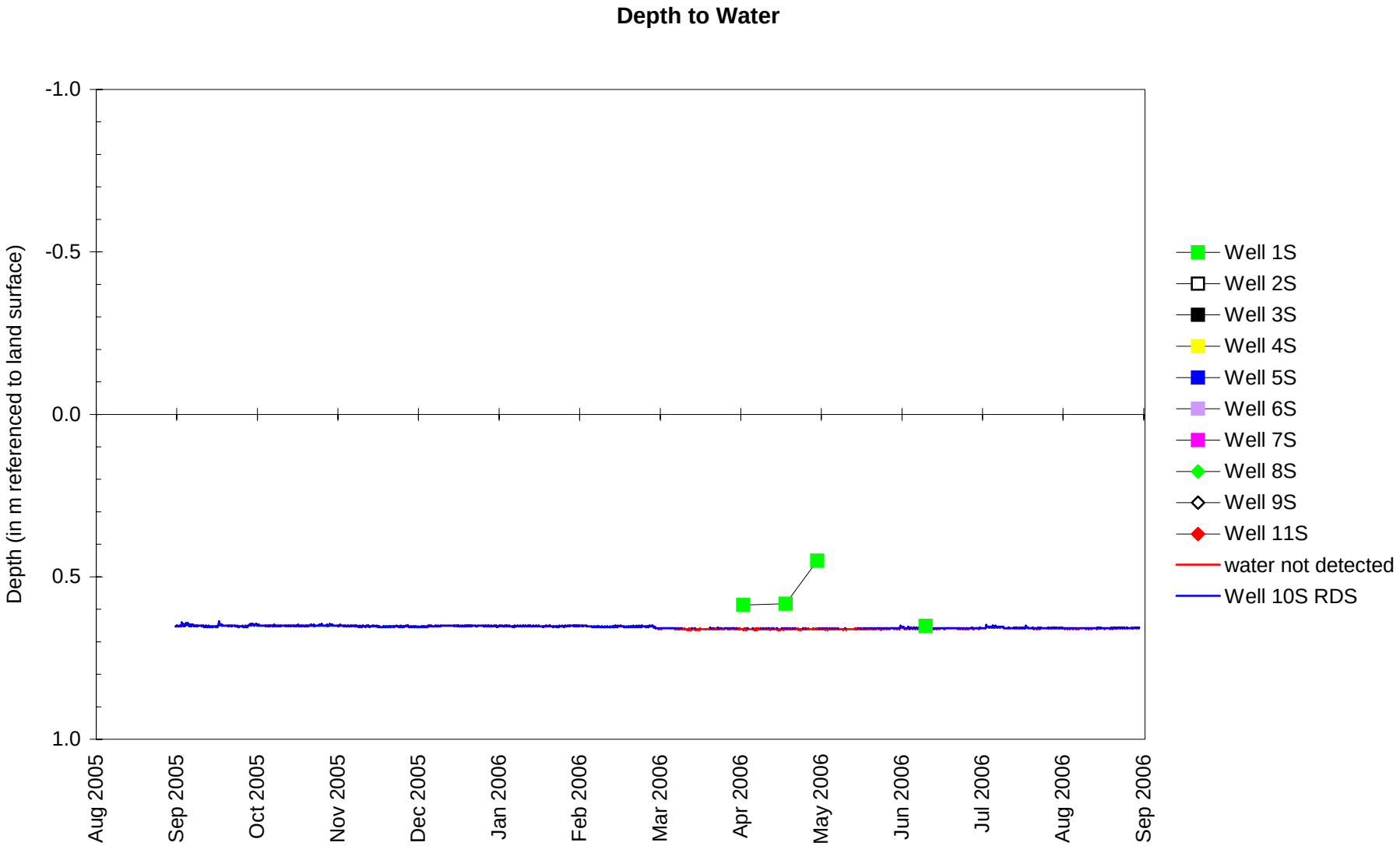


Former Tiernan Property, New River Crossing Potential Wetland Compensation Site
September 1, 2005 to September 1, 2006

Water-Level Elevations



Former Tiernan Property, New River Crossing Potential Wetland Compensation Site
September 1, 2005 to September 1, 2006



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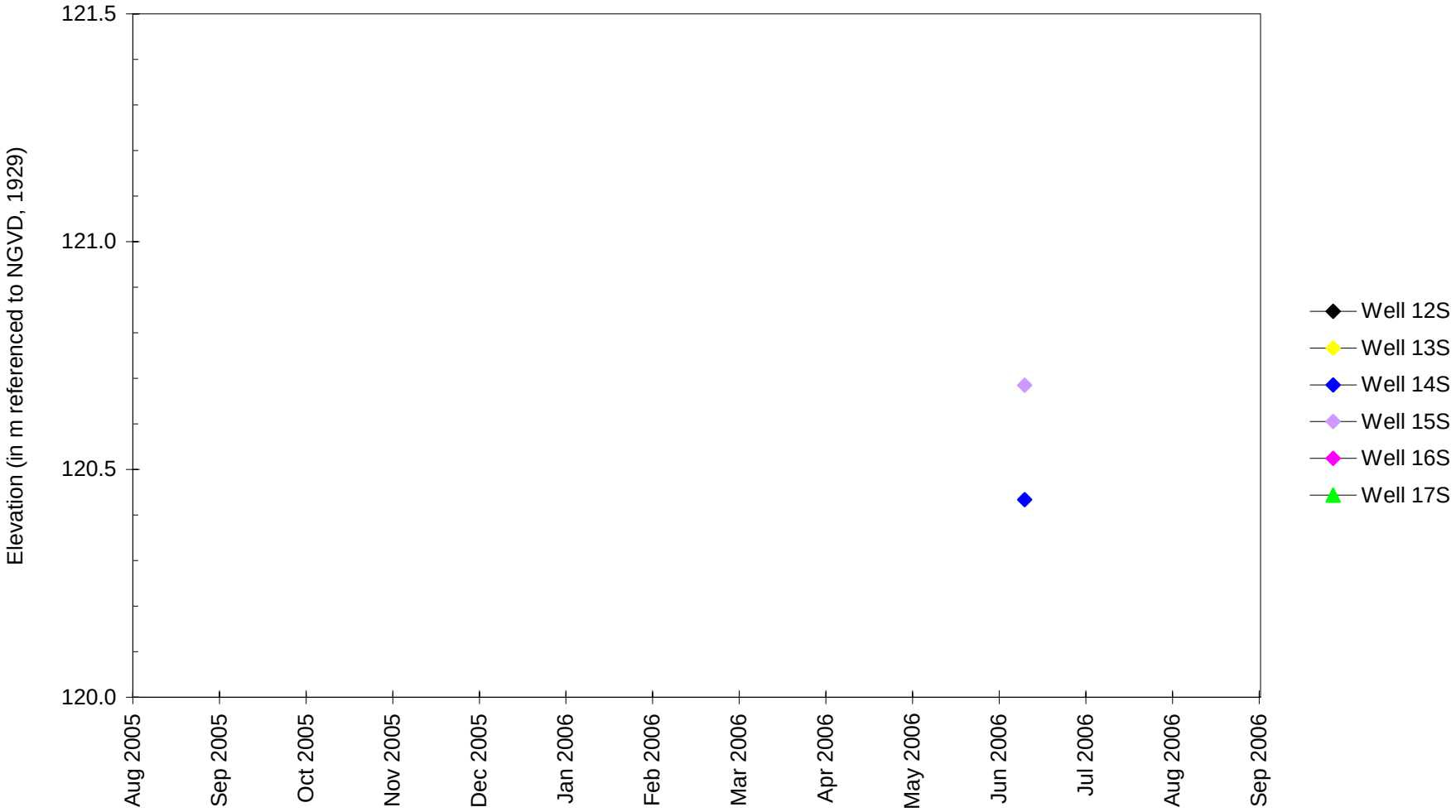
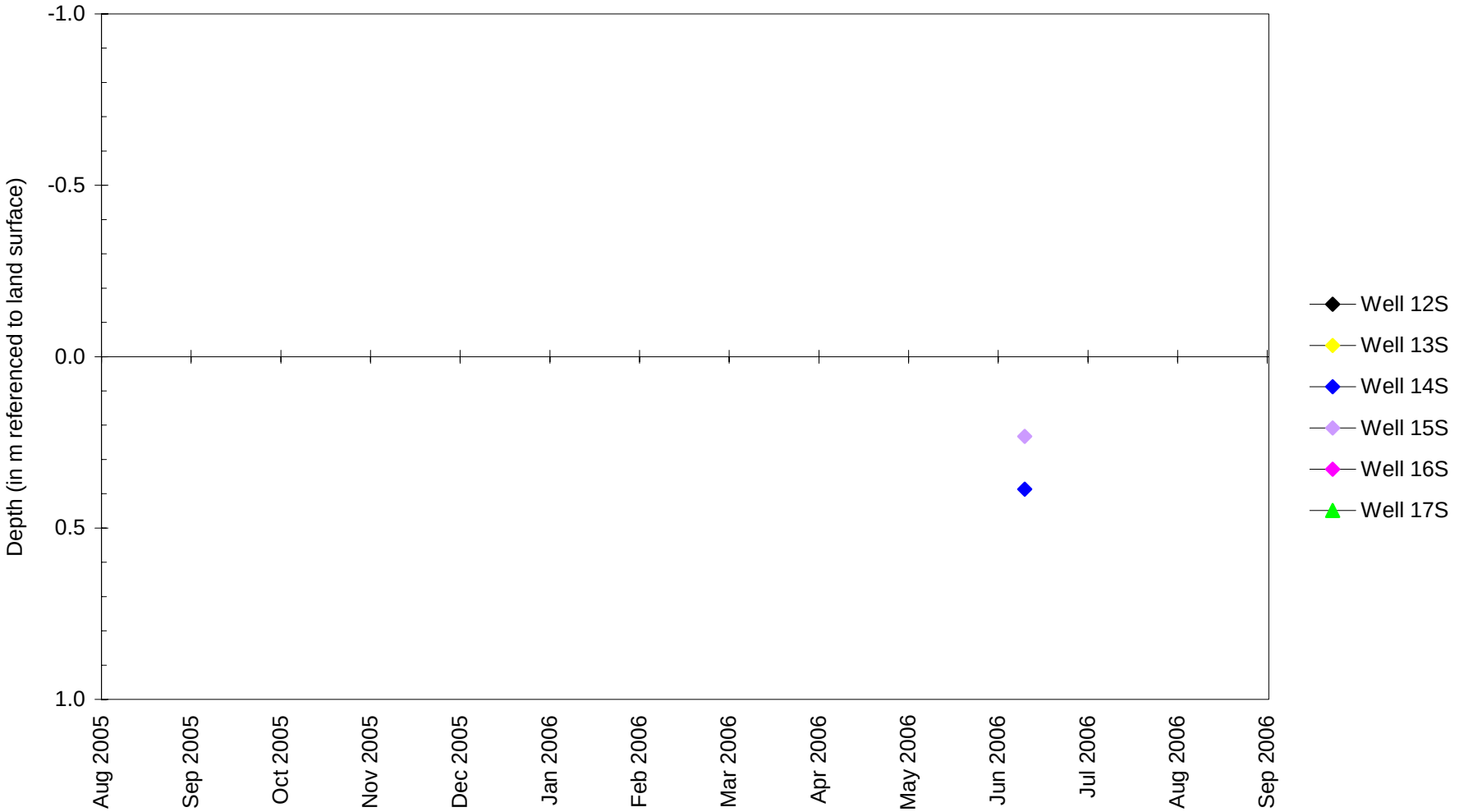
September 1, 2005 to September 1, 2006

Water-Level Elevations



Former Tiernan Property, New River Crossing Potential Wetland Compensation Site
September 1, 2005 to September 1, 2006

Depth to Water



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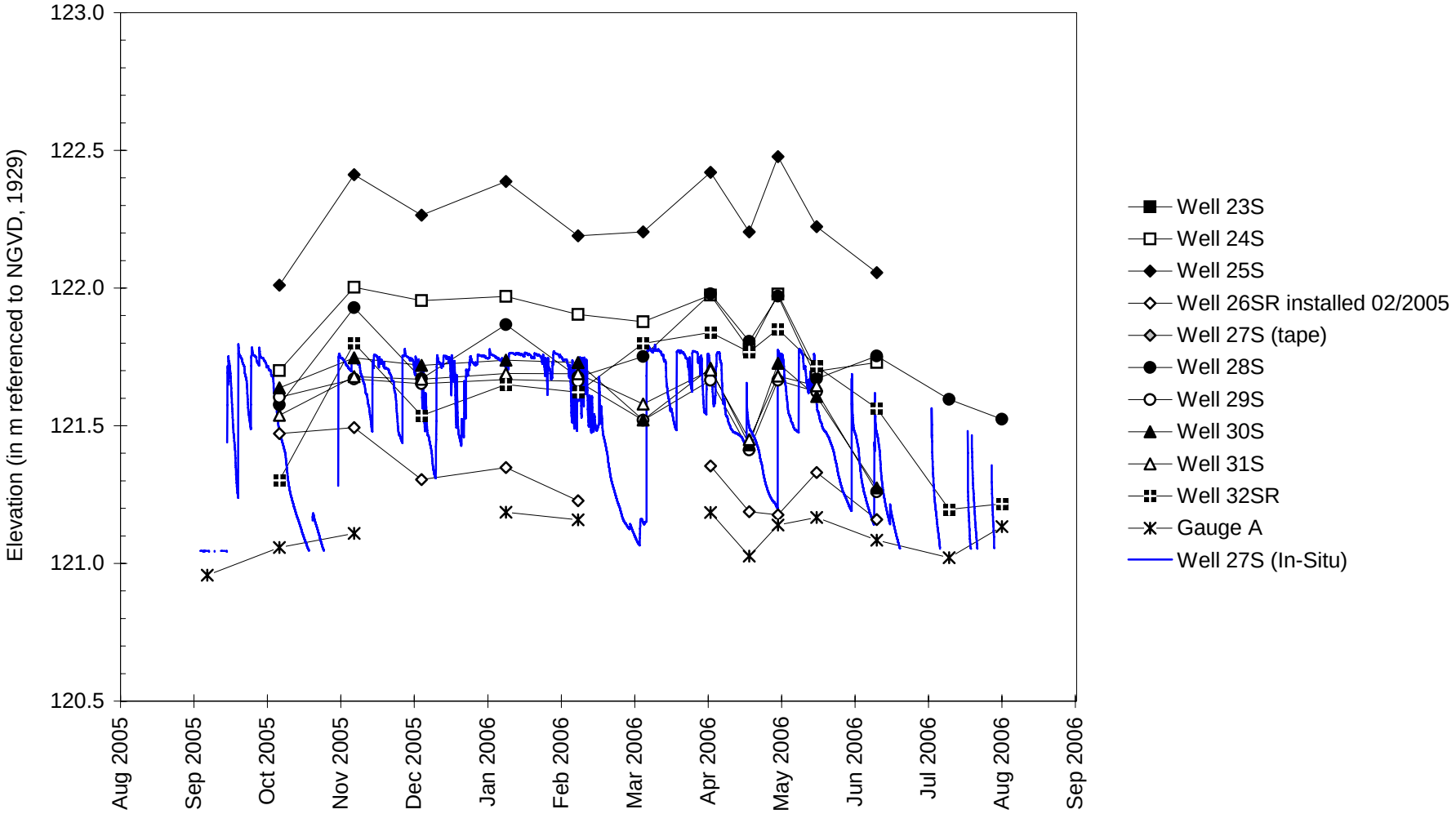
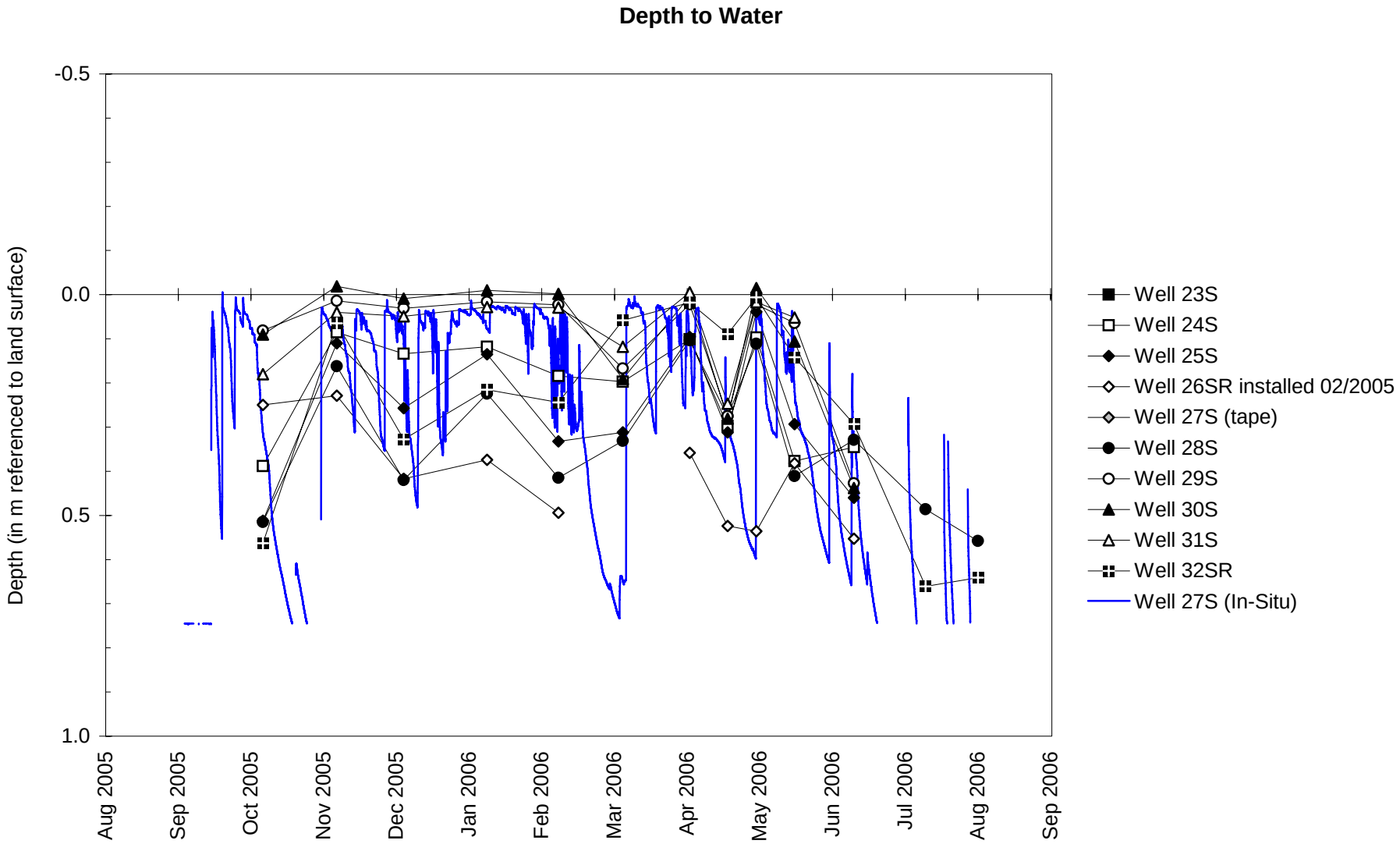
September 1, 2005 to September 1, 2006

Water-Level Elevations



Former Tiernan Property, New River Crossing Potential Wetland Compensation Site
September 1, 2005 to September 1, 2006



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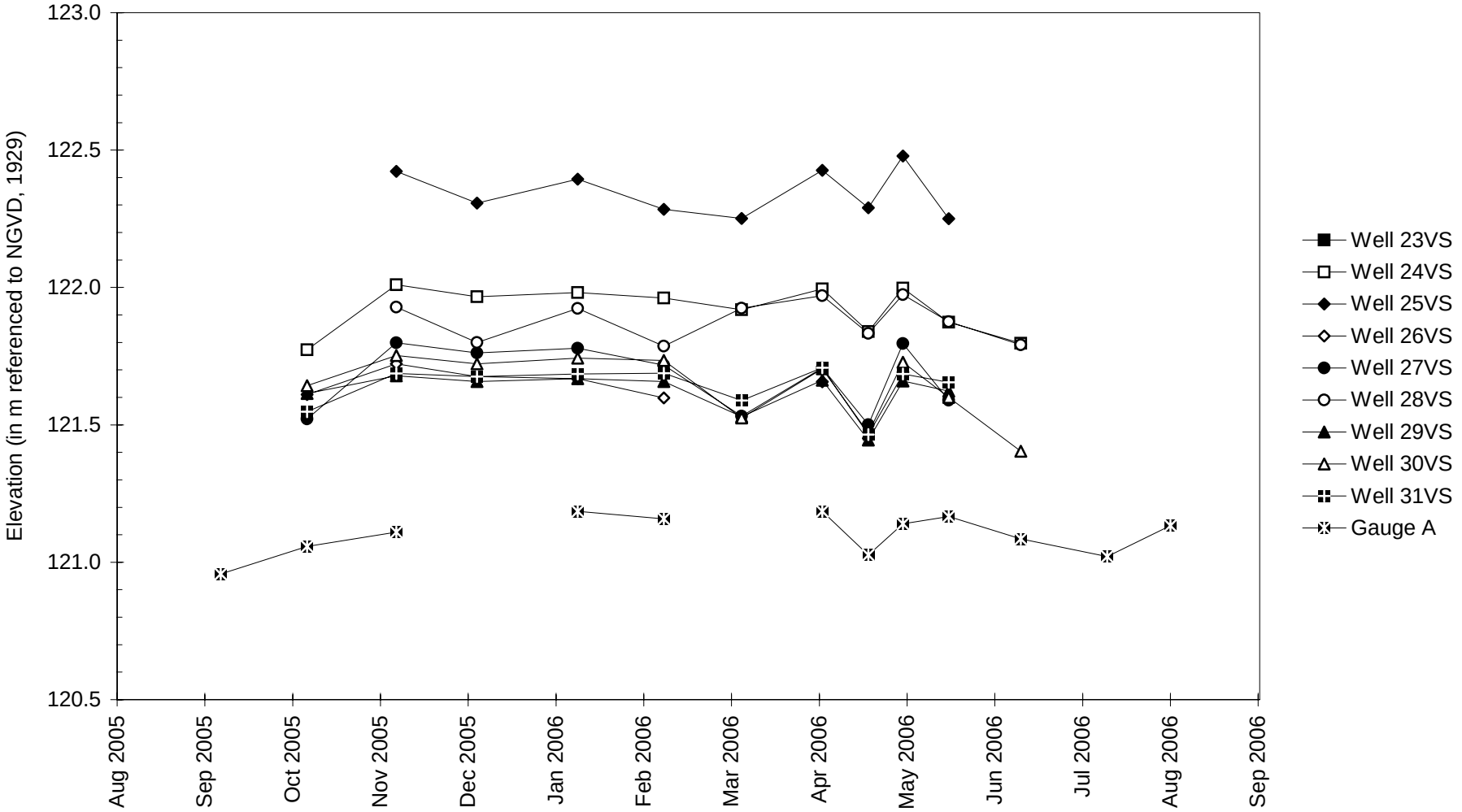
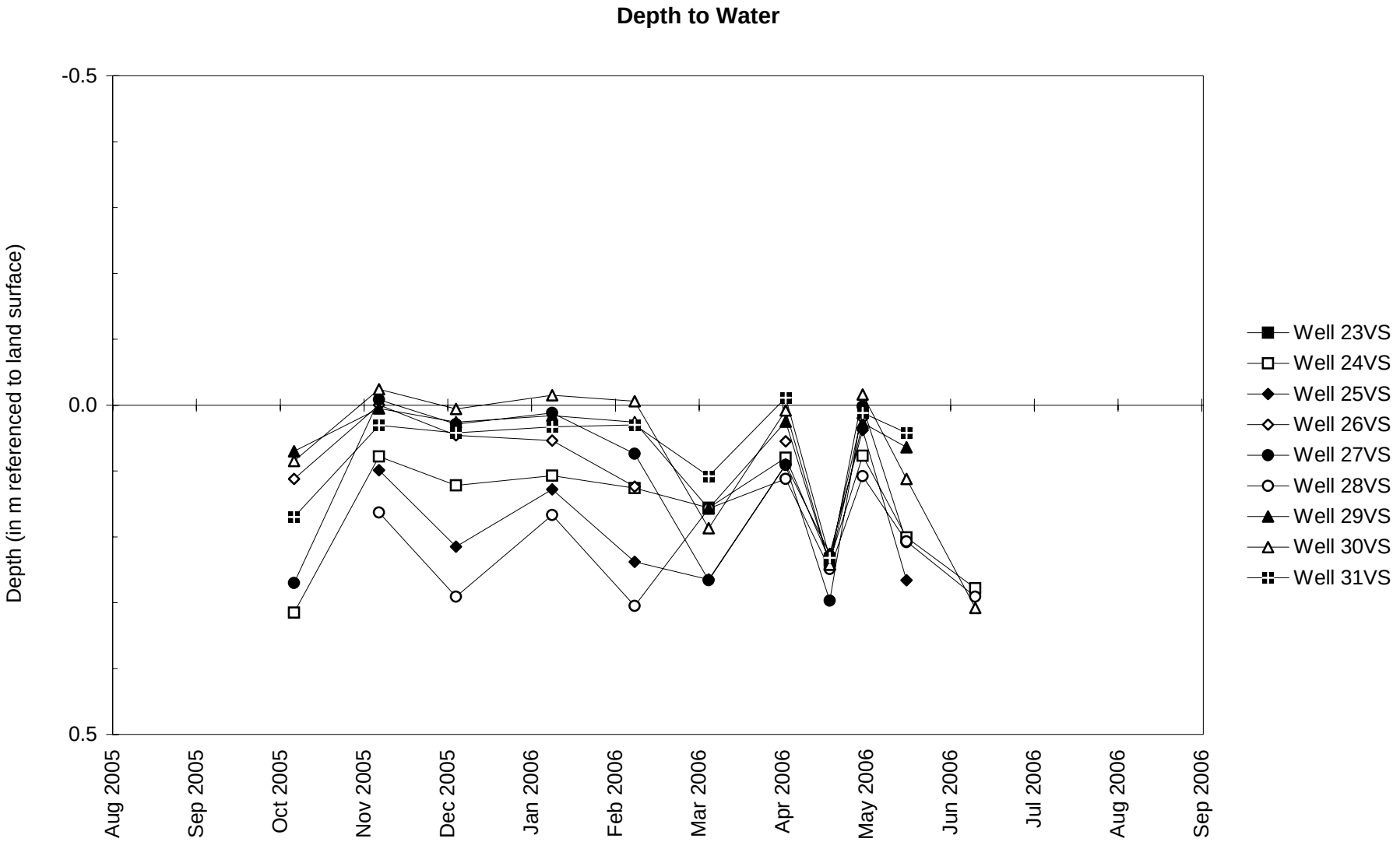
Water-Level Elevations



Former Tiernan Property, New River Crossing Potential Wetland Compensation Site
September 1, 2005 to September 1, 2006



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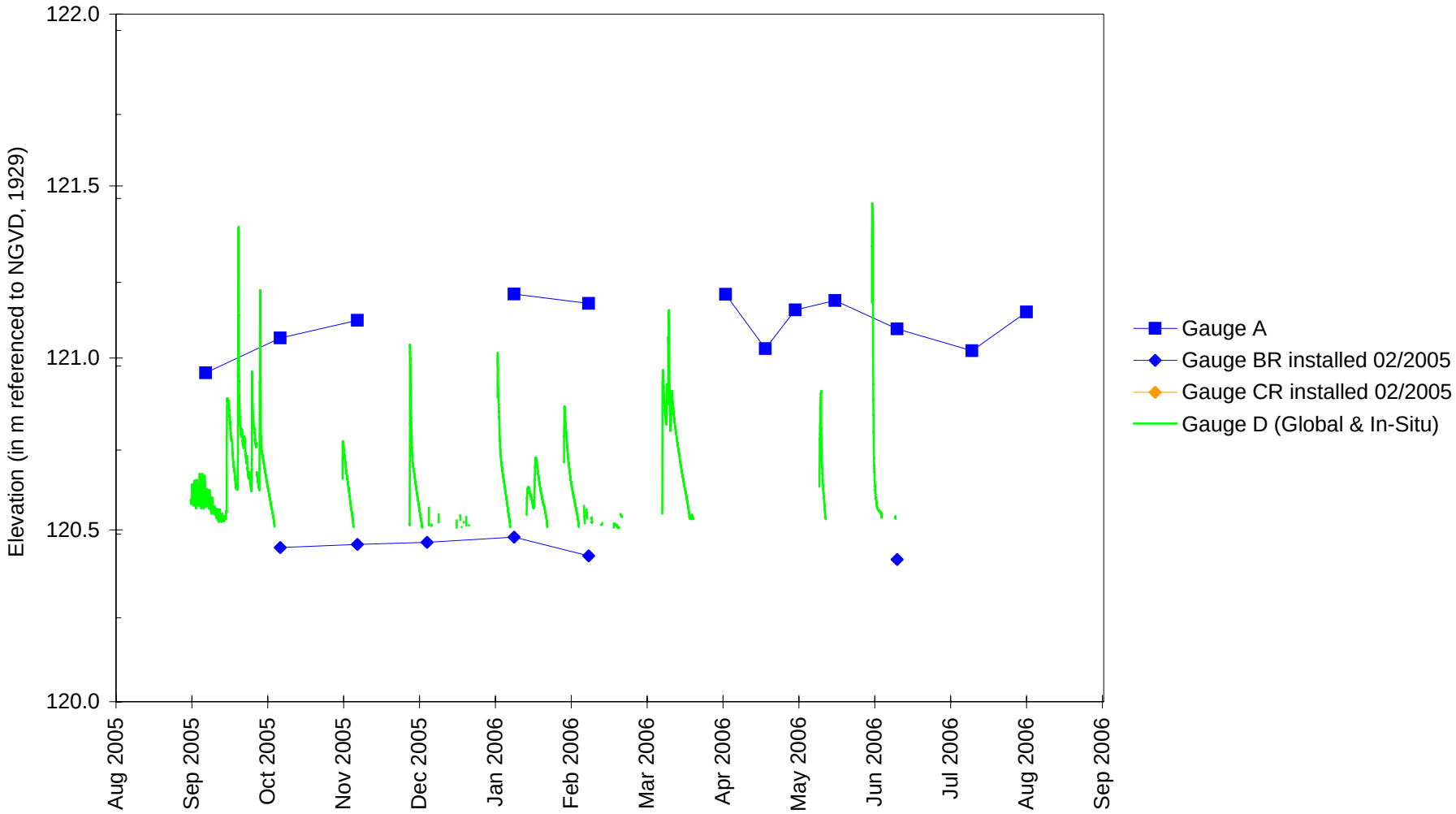
Water-Level Elevations



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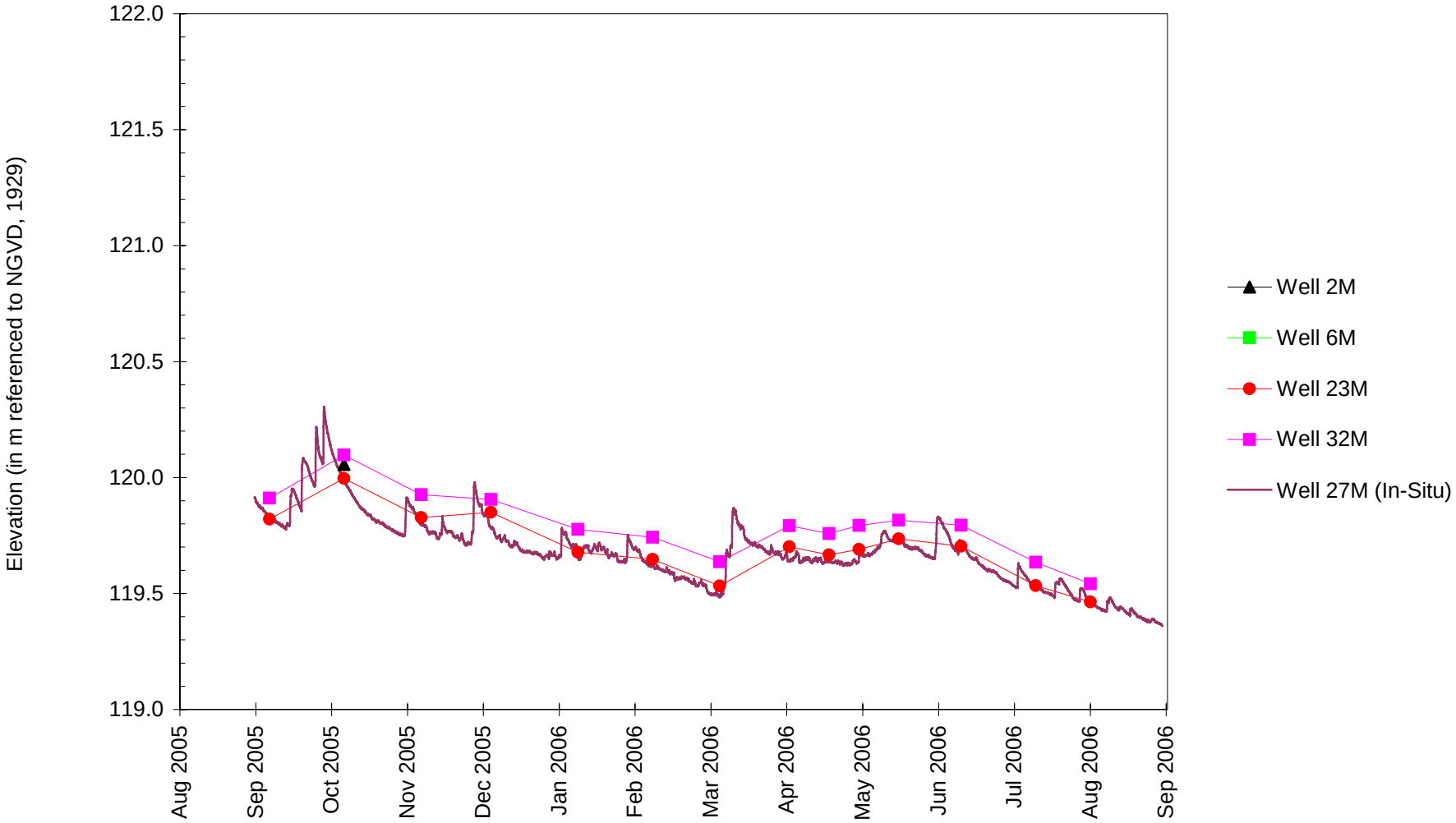
Water-Level Elevations



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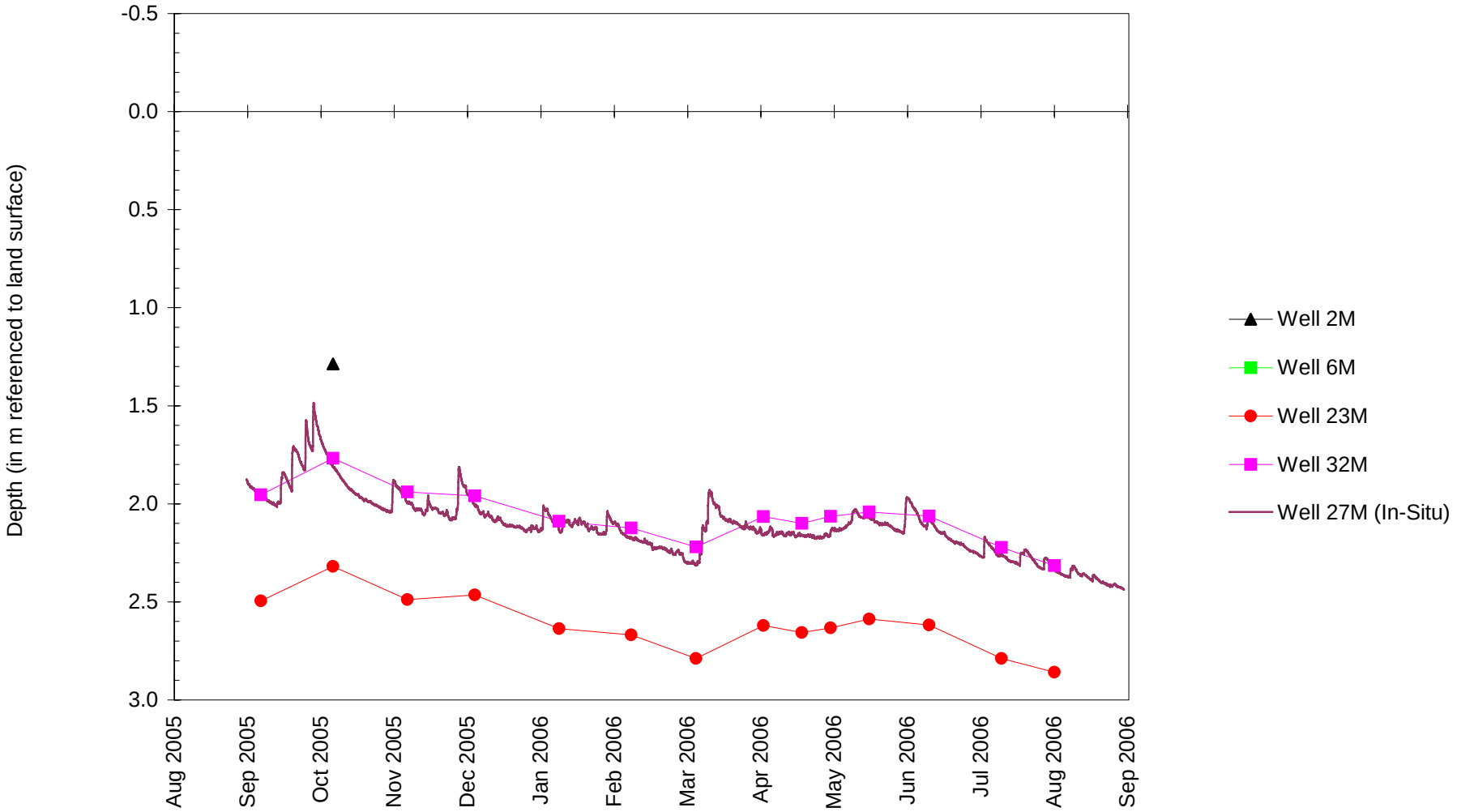
September 1, 2005 to September 1, 2006

Depth to Water