



**FREEPORT BYPASS WEST
POTENTIAL WETLAND COMPENSATION SITE 6W**

ISGS #72

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 monitor wetland hydrology, and to perform a Level II hydrogeologic assessment of the potential wetland mitigation at this site.
- December 2003: ISGS installed 12 soil-zone monitoring wells, one deep monitoring well, a staff gauge, and two surface-water data loggers. Locations of monitoring wells and the data loggers were determined with a GPS unit by ISGS, and a topographic survey of the site was conducted by IDOT during the fall of 2003.

WETLAND HYDROLOGY CALCULATION FOR 2005

We estimate that the total area that satisfied wetland hydrology criteria (Environmental Laboratory 1987) for greater than 5% of the 2005 growing season was 0.4 ha (1.0 ac) out of a total site area of 10.9 ha (27 ac). No areas satisfied wetland hydrology criteria for greater than 12.5% of the 2005 growing season. These estimates are based on the following factors:

- According to the Midwestern Climate Center, 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.
- Total precipitation at the nearby Wastewater Treatment Plant Weather Station in Freeport, Illinois, was approximately 78% of normal for the monitoring period of September 2004 through August 2005. Precipitation at this station was below normal in September and December 2004 and also during the period from March through July 2005, when it was approximately 48% of normal. Precipitation amounts were at or above normal for the remaining months of the monitoring period.
- In 2005, water levels measured in soil-zone wells 2S, 2VS, and 9S satisfied the wetland hydrology criteria for greater than 5% of the growing season. No wells at the site satisfied the wetland hydrology criteria for a period exceeding 12.5% of the growing season.
- Water-level records for the data logger at Gauge C (RDS) indicated inundation for an elevation below approximately 230.59 m (756.53 ft) for a duration that satisfied the wetland hydrology criteria for greater than 5% of the growing season.

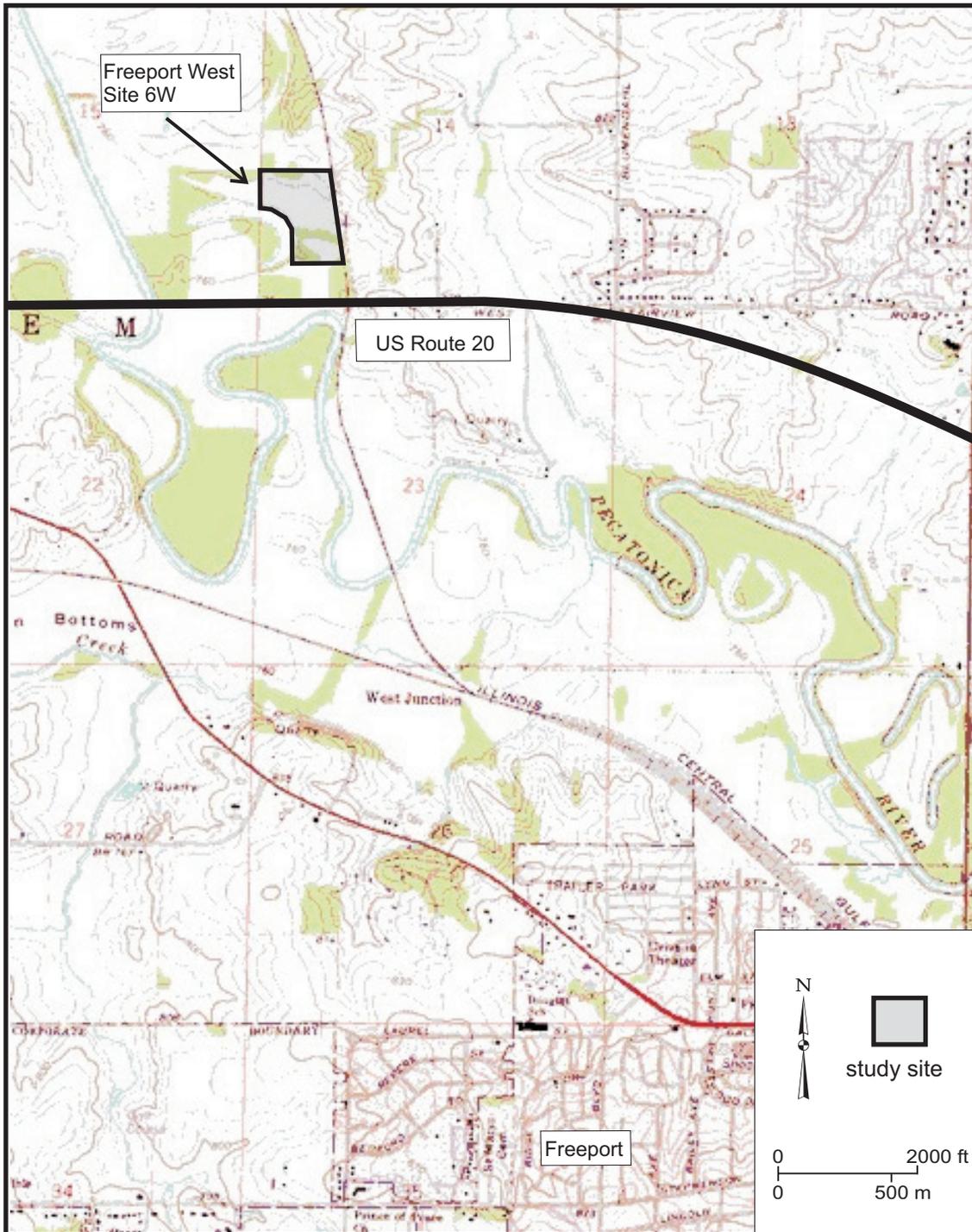
PLANNED FUTURE ACTIVITIES

- A Level II hydrogeological characterization report is in preparation.
- A GPS and topographic survey of potential ditch check locations at the site will be carried out in Fall 2005.
- Monitoring is expected to continue until no longer required by IDOT.

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

General Study Area and Vicinity

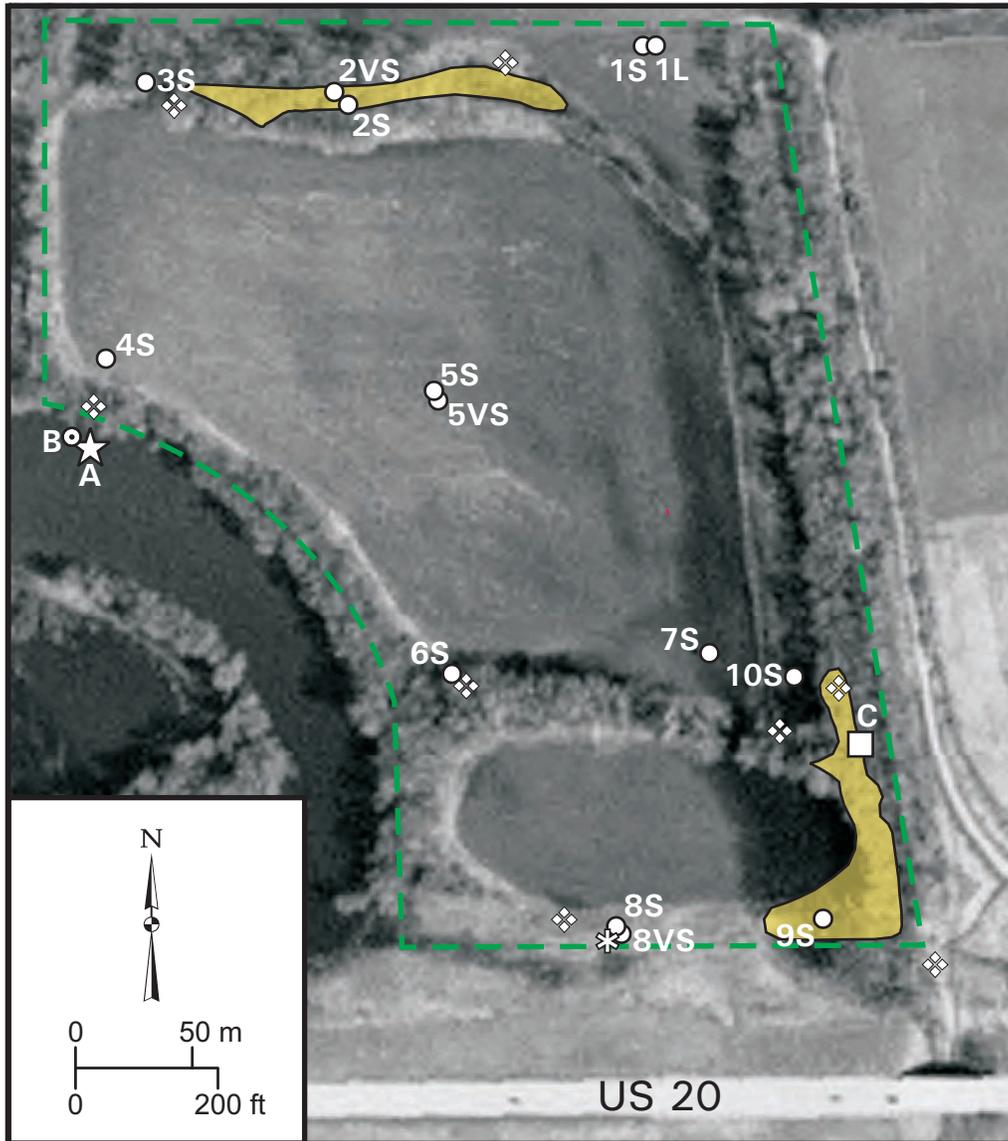
from the USGS Topographic Series, Freeport West, IL 7.5-minute Quadrangle (USGS 1978)
contour interval is 10 feet



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Estimated Areal Extent of 2005 Wetland Hydrology

based on data collected between September 1, 2004 and September 1, 2005
Map based on USGS digital orthophotograph, Freeport West, NE quarter quadrangle
produced from 4/17/98 aerial photography (ISGS 2004)



○ ISGS monitoring well

□ RDS data logger

☆ Stage gauge

⊙ In-Situ pressure transducer

◇ ISGS benchmark

2005 Wetland Hydrology



> 5% of the growing season

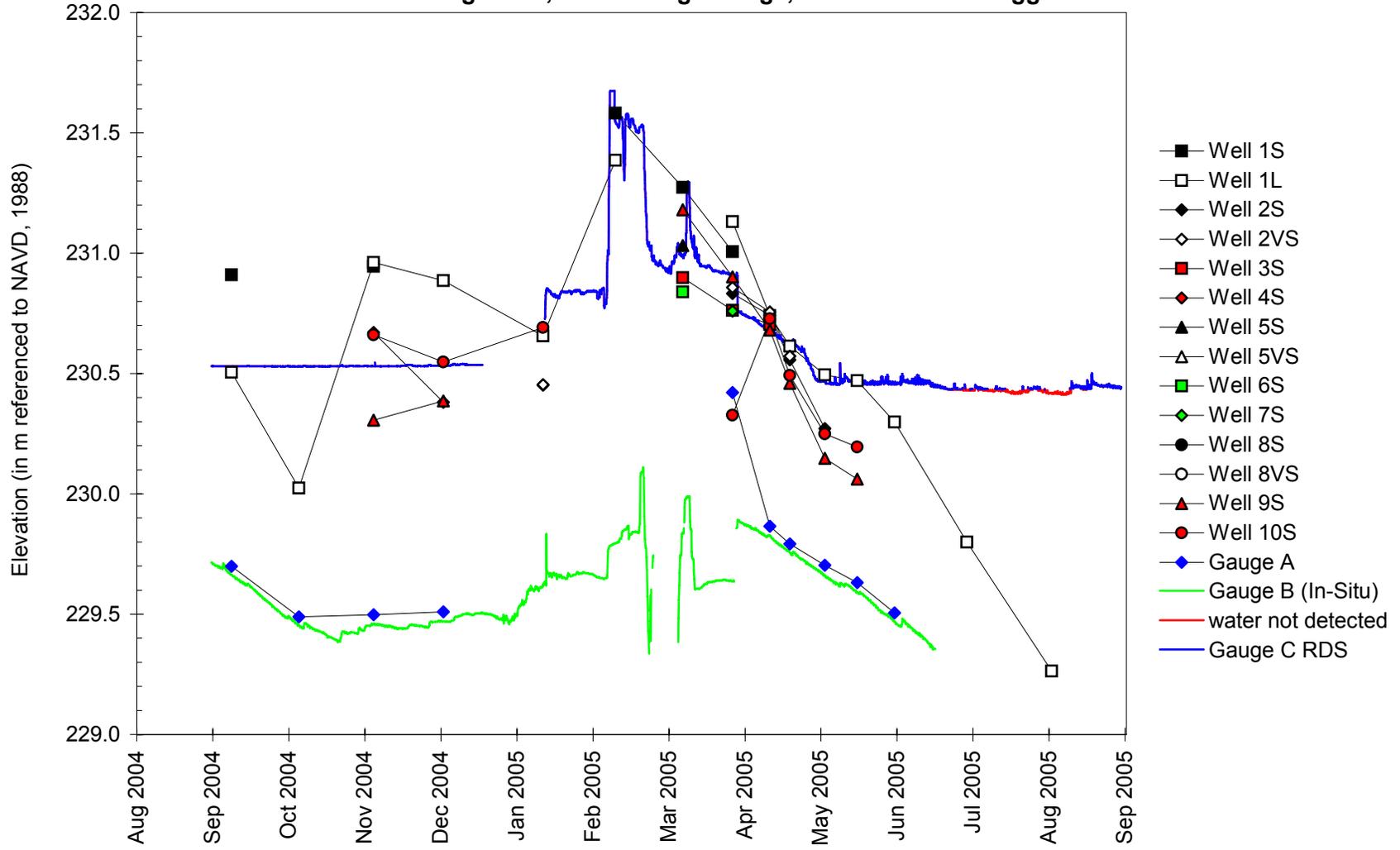


estimated areal extent
of site boundary

Freeport Bypass West Potential Wetland Compensation Site 6W

September 1, 2004 to September 1, 2005

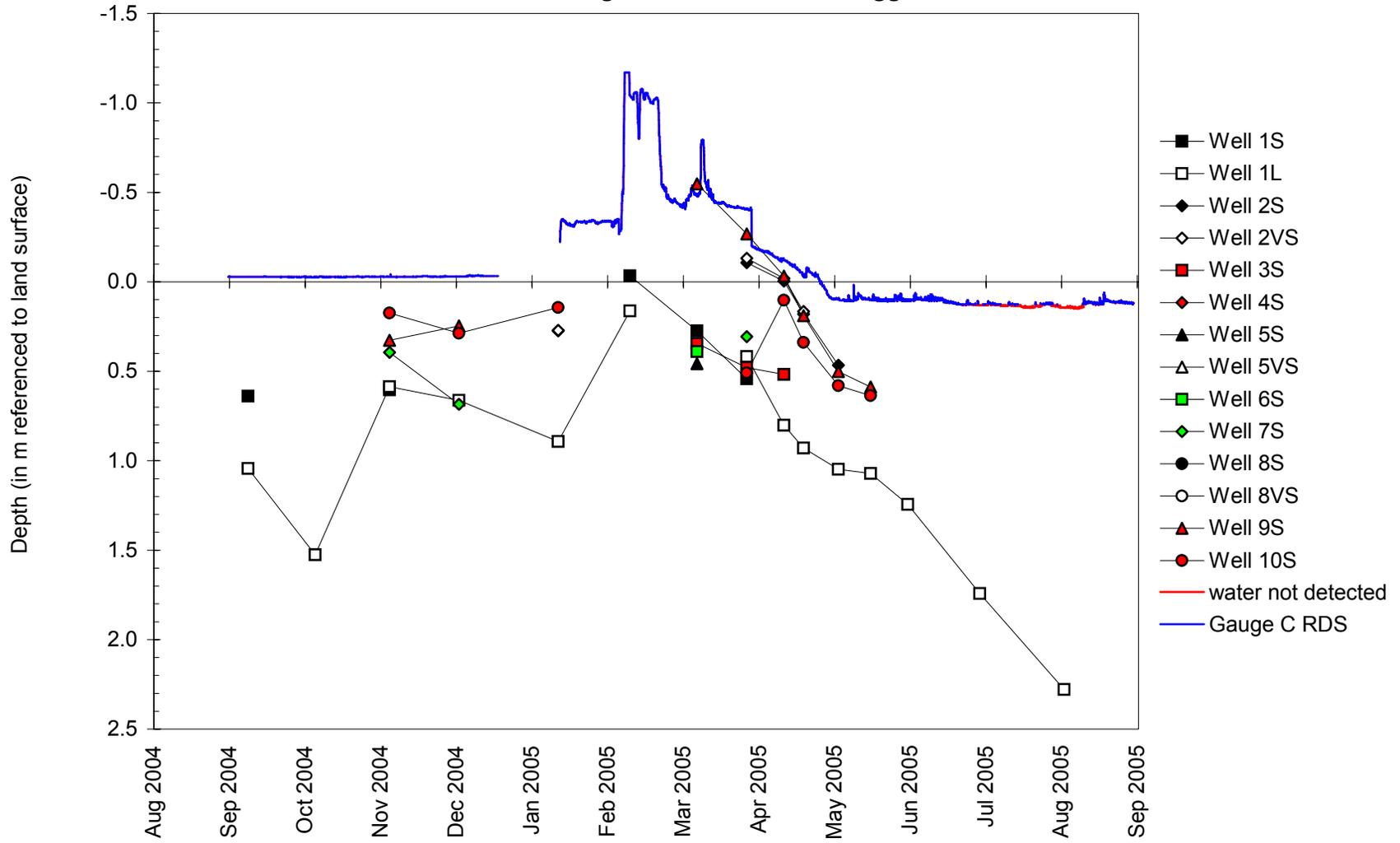
Water-Level Elevations in Monitoring Wells, on the Stage Gauge, and at the Data Loggers



Freeport Bypass West Potential Wetland Compensation Site 6W

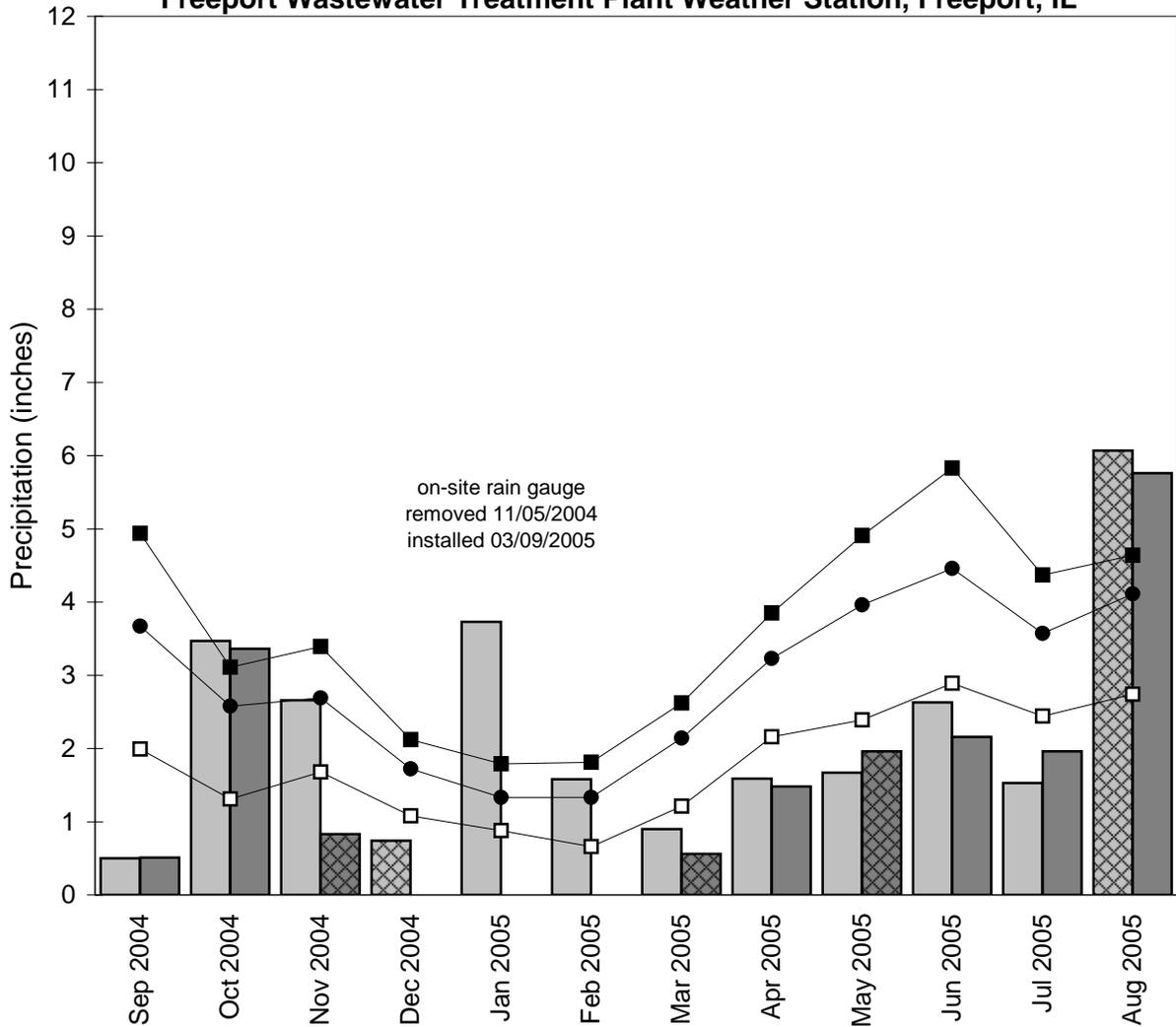
September 1, 2004 to September 1, 2005

Depth to Water in Monitoring Wells and the Data Loggers



Freeport Bypass West Potential Wetland Compensation Site 6W September 2004 through August 2005

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



- monthly precipitation recorded at weather station (Midwestern Regional Climate Center)
- monthly precipitation recorded at Site 6W by ISGS
- 1971-2000 monthly average precipitation (National Water and Climate Center)
- 1971-2000 monthly 30% above average threshold (National Water and Climate Center)
- 1971-2000 monthly 30% below average threshold (National Water and Climate Center)
- ▨ data incomplete