WETLAND HYDROLOGY CALCULATION FOR 2007

The estimated total area that satisfied wetland hydrology criteria (Environmental Laboratory 1987) for greater than 5% of the 2007 growing season is 6.9 ha (17.1 ac) out of a total mitigation area of approximately 6.9 ha (17.1 ac). The estimated total area that satisfied wetland hydrology criteria for greater than 12.5% of the 2007 growing season is 3.8 ha (9.4 ac). 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.

- Total precipitation at the nearby Wastewater Treatment Plant weather station in Freeport, Illinois, was approximately 124% of normal for the monitoring period of September 2006 through August 2007. Precipitation at this station was below normal in January, May, and June 2007. Precipitation amounts were near or above normal for the remaining months of the 2006-2007 monitoring period. Melting snow and above-average precipitation in March and April 2007 caused the Pecatonica River to flood the site immediately prior to the beginning of the growing season. Heavy rains in August 2007 again caused the Pecatonica River to flood the site, resulting in nearly the entire site satisfying the wetland hydrology criteria for greater than 5% of the 2007 growing season.

- In 2007, water levels measured in all soil-zone (S) wells satisfied the wetland hydrology criteria for greater than 5% of the growing season. Water levels in soil-zone wells 1S, 2S, 3S, 4S, 5S, 6S, 8S, 9S, 10S, 11S, 13S, 14S, and 18S also satisfied the wetland hydrology criteria for greater than 12.5% of the growing season.

- Water-level records for the RDS data loggers at gauges C and H indicated inundation at elevations below approximately 225.60 m (740.16 ft) and 225.61 m (740.19 ft), respectively, for greater than 5% of the growing season. Additionally, gauges C and H indicated inundation at elevations below approximately 224.97 m (738.09 ft) and 224.82 m (737.60 ft), respectively, for greater than 12.5% of the growing season.
• Approximately 10.0 ha (24.6 ac) of the total site area outside of the mitigation areas satisfied wetland hydrology criteria for greater than 5% of the growing season and 3.7 ha (9.1 ac) satisfied wetland hydrology criteria for greater than 12.5% of the growing season. Note that these acreages include some preexisting wetland areas shown on the accompanying figure.

• 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.

PLANNED FUTURE ACTIVITIES

• Hydrogeologic 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 2007 Wetland Hydrology
based on data collected between September 1, 2006 and September 14, 2007
Map based on USGS digital orthophotograph Ridott, NE quarter quadrangle
produced from 4/8/99 aerial photography (ISGS 2005)
Pecatonica River Forest Preserve Wetland Compensation Site
September 1, 2006 to September 14, 2007

Water-Level Elevations in Monitoring Wells and at the Data Loggers

Elevation (in m referenced to NGVD, 1929)

Well 1S
Well 2S
Well 3S
Well 4S
Well 5S
Well 6S
Well 7S
Well 8S
Well 9S
Well 10S
Well 10U
Well 11S
Well 12S
Well 13S
Well 14S
Well 16S
Well 16U
Well 16L
Well 17S
Well 18S
Well 19S
Well 20S
Gauge A
Gauge B
Gauge C
Gauge D (In-Situ)
Gauge E (In-Situ)
Gauge E (RDS)
Gauge F (In-Situ)
Gauge H (RDS)

water not detected
Pecatonica River Forest Preserve Wetland Compensation Site
September 1, 2006 to September 14, 2007

Depth to Water
in Monitoring Wells

Depth (in m referenced to land surface)

Well 1S
Well 2S
Well 3S
Well 4S
Well 5S
Well 6S
Well 7S
Well 8S
Well 9S
Well 10S
Well 10U
Well 11S
Well 12S
Well 13S
Well 14S
Well 16S
Well 16U
Well 16L
Well 17S
Well 18S
Well 19S
Well 20S
Pecatonica River Forest Preserve Wetland Compensation Site
September 1, 2006 to September 14, 2007

Water-Level Elevations
in the Pecatonica River and on Data Loggers
Pecatonica River Forest Preserve
Wetland Compensation Site
September 2006 through August 2007

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

Graph last updated October 9, 2007