



MEMORANDUM

TO: Kristina Handt, Administrator, City of Scandia

FROM: Jed Chesnut, Wetland/Natural Resource Specialist

DATE: January 8, 2014

RE: **Zavoral Mining and Reclamation Project – Annual Wetland Boundary Monitoring Report**

As per the contract (13-01) between the Washington Conservation District (WCD) and the City of Scandia, WCD staff reviewed hydrologic monitoring data pertaining to Technical Service 2 of Exhibit B. The on-site review of the wetland boundaries did not occur during 2013 since mining activities did not commence until after the growing season ended.

Hydrologic monitoring data were provided to the WCD by the City's consulting hydrogeologist (LGB, inc). The attached map from LGB shows the locations of the wells. Groundwater elevations were relatively constant in each well during the monitoring period. Fluctuations in groundwater elevation were within about one foot, which would be consistent with natural variations of wetland hydrology, assuming the elevations in the wells can be reasonably extrapolated to the seepage discharge at the wetlands.

The groundwater elevation data as presented by LGB do not appear to indicate detrimental effects to the seepage wetlands located east of the active mining area. However, given the short duration of active mining during the monitoring period, any potential effect to the seepage wetlands may not yet be apparent.



G:\GIS\Tiller_Zavoral_Mine\maps\g3zavoral01h.mxd, 12/4/2013, 1:46:25 PM, NAD, 1983 UTM Zone 15N

0 400
Feet

- Production Well
- ⊕ Monitoring Well
- △ Piezometer

Source: LIDAR DEM from Minnesota Geospatial Information Office.



Prepared By:
LEGGETTE, BRASHEARS & GRAHAM, INC.
 Professional Groundwater and
 Environmental Engineering Services
 8 Pine Tree Drive, Suite 250
 St. Paul, Minnesota 55112
 (651) 470-1405

CITY OF SCANDIA
 SCANDIA, MINNESOTA

ZAVORAL MINING AND RECLAMATION PROJECT

FILE: g3zavoral01h.MXD

DATE: 12/4/2013

FIGURE: 1