

## Wisconsin DNR – Lake Level Monitoring Staff Gauge Survey Data Sheet

### Lake Information

Lake Name North Sand County Burnett

### Data Collectors

Primary Data Collector Jason Towne Email jtowne@burnettcounty.org Phone No. (715) 349-2599  
 Additional Data Collector(s) Luke Meier

### Reference Mark and Staff Gauge Information

**Reference Mark #1 (RM1)** Reference Mark Type: Bronze Cap in Concrete  
 Latitude: 45 55 23.0 Longitude: 92 11 03.8 Mean Sea Level Yes  No  Elevation: 990.72 Photograph   
 Location Description: \_\_\_\_\_

**Reference Mark #2 (RM2)** Reference Mark Type: Mag Nail in G  
 Latitude: 45 55 24.0 Longitude: 92 11 04.9 Mean Sea Level Yes  No  Elevation: 995.07 Photograph   
 Location Description: \_\_\_\_\_

**Reference Mark #3 (RM3)** Reference Mark Type: Nail in P.P.  
 Latitude: 45 55 24.8 Longitude: 92 11 06.2 Mean Sea Level Yes  No  Elevation: 987.93 Photograph   
 Location Description: \_\_\_\_\_

### Staff Gauge

Latitude: 45 55 23.3 Longitude: 92 11 02.4 Mean Sea Level Yes  No  Elevation: 984.58 Photograph   
 Location Description: \_\_\_\_\_

Date: 4/12/17 Time: 12:15 AM/PM  AM  PM Check one: Install  Midseason  Removal

### Survey Stage 1 - Instrument at first height\*

	Reference Mark 1	Fore sight (FS1)	Calculated Elevation (CE1)	
Given Elevation (GE <sub>RM1</sub> )	<u>990.72</u>			
Back sight 1 (BS1)	+ <u>5.31</u>			
Height of Instrument (HI1)	<u>996.03</u>	<u>11.45</u>	= <u>984.58</u>	Survey Equations: HI1 = GE <sub>RM1</sub> + BS1 CE1 = HI1 - FS1
	HI1 - Ref Mark 2	<u>0.96</u>	= <u>995.07</u>	
	HI1 - Ref Mark 3	<u>8.10</u>	= <u>987.93</u>	

### Survey Stage 2 – Reset instrument at different height

	Staff Gauge	Fore sight (FS2)	Calculated Elevation (CE2)	
Calculated Elevation1	<u>984.58</u> ←			
Back sight 2 (BS2)	+ <u>11.31</u>			
Height of Instrument (HI2)	<u>995.89</u>	<u>5.18</u>	= <u>990.71</u>	Survey Equations: HI2 = CE <sub>SG1</sub> + BS2 CE2 = HI2 - FS2
	HI2 - Ref Mark 2	<u>0.83</u>	= <u>995.06</u>	
	HI2 - Ref Mark 3	<u>7.96</u>	= <u>987.93</u>	

### Quality Assurance Checks:

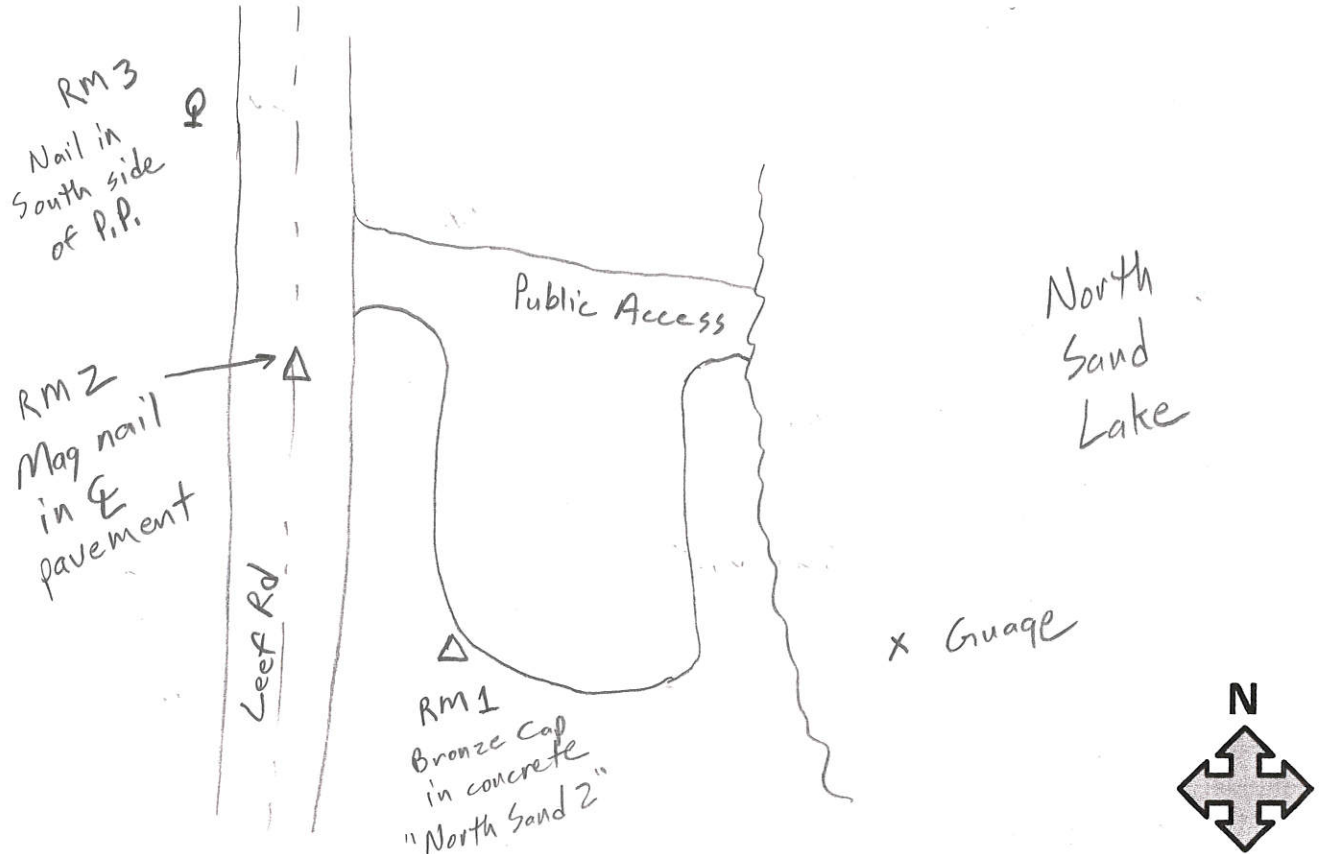
Reference Mark 1: BS1 5.31 FS1 11.45  
 GE = CE2 BS2 + 11.31 FS2 + 5.18  
16.62 = 16.63  
 QA Equations:  
 BS1 + BS2 = FS1<sub>SG</sub> + FS2<sub>RM1</sub>  
 GE<sub>RM1</sub> = CE2<sub>RM1</sub>

\*Accept Survey Stage 1 if QA checks within 0.01 ft. Use calculated elevations 1 for the rest of the season unless the gauge moves.

Lake Level Reading: 986.86 ft

Wisconsin DNR – Lake Level Monitoring  
**Staff Gauge Survey Data Sheet**

Site Diagram (including Staff Gauge and Reference Marks)



**Notes**

NAVD88 Datum Ortho Height in feet

RM 1 is NGS Benchmark "North Sand 2" PID-DN5260

**Data Management**

Survey Data uploaded to SWIMS? Yes  No  Date: \_\_\_\_\_ Name: \_\_\_\_\_  
 Photographs uploaded to SWIMS? Yes  No  Date: \_\_\_\_\_ Name: \_\_\_\_\_  
 Data Sheet scan uploaded to SWIMS? Yes  No  Date: \_\_\_\_\_ Name: \_\_\_\_\_

**Equipment Maintenance**

Replace bolts/screws on staff gauge? Yes  No  Date: \_\_\_\_\_ Name: \_\_\_\_\_  
 Replace gauge plate on staff gauge? Yes  No  Date: \_\_\_\_\_ Name: \_\_\_\_\_  
 Replace post or wooden board? Yes  No  Date: \_\_\_\_\_ Name: \_\_\_\_\_