

Wisconsin DNR - Lake Level Monitoring
Staff Gauge Survey Data Sheet

GAGE ELEV @ TOP
 OF BOARD

Lake Information

Lake Name LONG LAKE County POLK

Data Collectors

Primary Data Collector _____ Email _____ Phone No. _____
 Additional Data Collector(s) _____

Reference Mark and Staff Gauge Information

Reference Mark #1 (RM1) Reference Mark Type: _____
 Latitude: 45° 27' 16.517" Longitude: 92° 31' 22.101" Mean Sea Level Yes No Elevation: 1152.04 Photograph
 Location Description: SW Corner of Concrete Sidewalk

Reference Mark #2 (RM2) Reference Mark Type: _____
 Latitude: 45° 27' 16.160" Longitude: 92° 31' 21.867" Mean Sea Level Yes No Elevation: 1155.32 Photograph
 Location Description: Gin Spike in SW Face of 12" Basswood Tree South of Boat Launch

Reference Mark #3 (RM3) Reference Mark Type: _____
 Latitude: 45° 27' 16.857" Longitude: 92° 31' 22.300" Mean Sea Level Yes No Elevation: 1150.78 Photograph
 Location Description: NE Corner of Concrete Dock Pad

Staff Gauge
 Latitude: 45° 27' 16.929" Longitude: 92° 31' 21.903" Mean Sea Level Yes No Elevation: 1151.47 Photograph
 Location Description: Staff Gauge is located along South Side of fishing Pier towards the Boat Launch side

Date: 6-6-2019 Time: 2:00 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 _{RM1})	<u>1152.04</u>			Survey Equations: HI1 = GE _{RM1} + BS1 CE1 = HI1 - FS1
Back sight 1 (BS1)	<u>+ 6.80</u>			
Height of Instrument (HI1)	<u>1158.84</u>	<u>7.37</u>	<u>1151.47</u>	
	HI1 - Ref Mark 2	<u>3.52</u>	<u>1155.32</u>	
	HI1 - Ref Mark 3	<u>8.06</u>	<u>1150.78</u>	

Survey Stage 2 - Reset instrument at different height

	Staff Gauge	Fore sight (FS2)	Calculated Elevation (CE2)	
Calculated Elevation1	<u>1151.47</u> ←			Survey Equations: HI2 = CE _{SG1} + BS2 CE2 = HI2 - FS2
Back sight 2 (BS2)	<u>+ 6.86</u>			
Height of Instrument (HI2)	<u>1158.33</u>	<u>6.30</u>	<u>1152.03</u>	
	HI2 - Ref Mark 2	<u>3.01</u>	<u>1155.32</u>	
	HI2 - Ref Mark 3	<u>7.55</u>	<u>1150.78</u>	

Quality Assurance Checks:

Reference Mark 1:	BS1 <u>6.80</u>	FS1 <u>7.37</u>		QA Equations: BS1 + BS2 = FS1 _{SG} + FS2 _{RM1} GE _{RM1} = CE2 _{RM1}
GE = CE2	BS2 + <u>6.86</u>	FS2 + <u>6.30</u>		
	<u>13.66</u>	<u>13.67</u>		

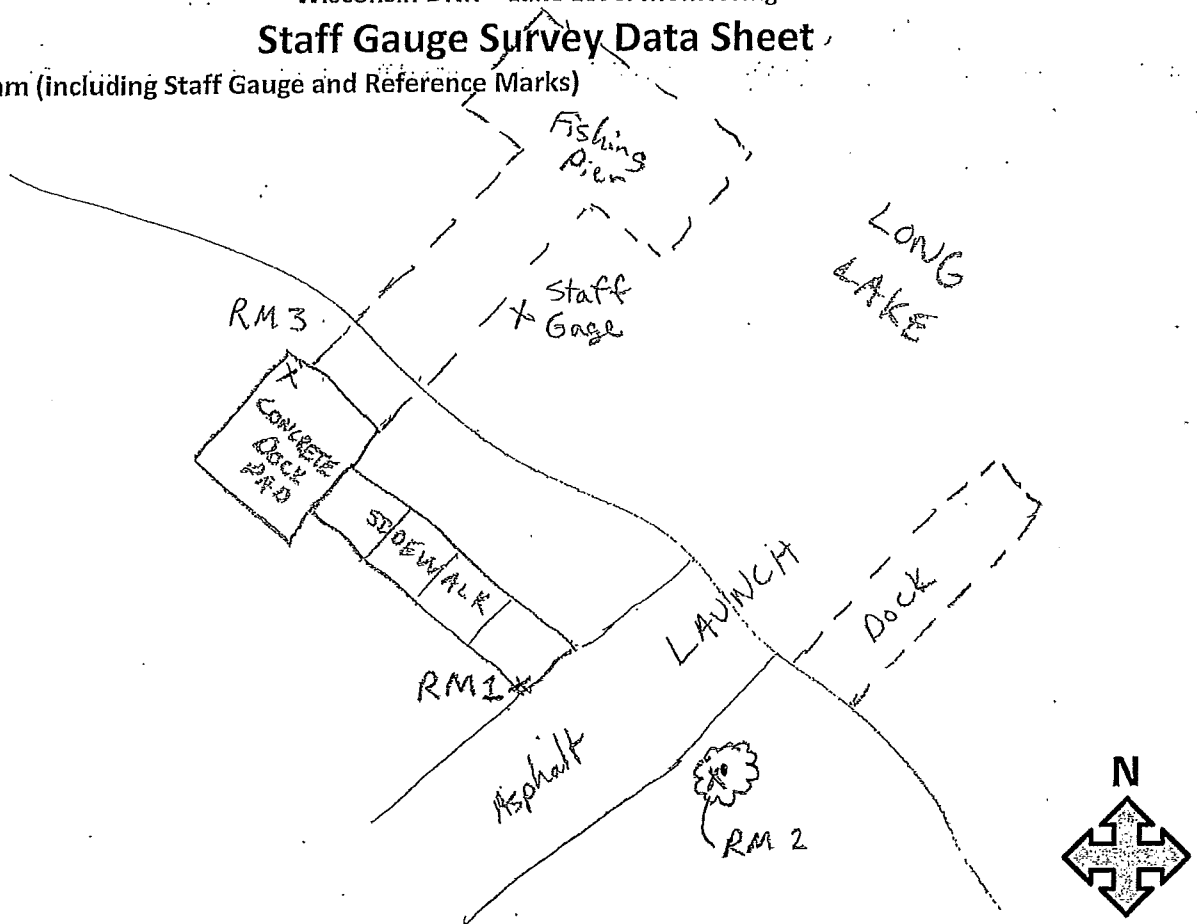
*Accept Survey Stage 1 if QA checks within 0.01 ft. Use calculated elevations 1 for the rest of the season unless the gauge moves.

Lake Level Reading: 1.81 ft

WATER - 8.78 ELEV - 1149.55' - WATER

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Site Diagram (including Staff Gauge and Reference Marks)



Notes

RM 1 - SW Corner of Concrete Sidewalk
 RM 2 - Gin Spike in South Face of 12" Basswood Tree
 RM 3 - NE Corner of Concrete Dock Pad

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: _____