9/22/2025

Wisconsin DNR – Lake Level Monitoring
Staff Gauge Survey Data Sheet

Lake Information

Lake Name: Sand 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: 9" Spike Set

Latitude: _____ Longitude: _____ Mean Sea Level Yes ☐ No ☐ Elevation: 1123.52 Photograph ☐

Location Description: Polk County Coordinates #103,N=260720.483,E=482536.258, Elev=1123.52

Reference Mark #2 (RM2) Reference Mark Type: 9" Spike Set

Latitude: _____ Longitude: _____ Mean Sea Level Yes ☐ No ☐ Elevation: 1115.89 Photograph ☐

Location Description: Polk County Coordinates #102,N=260651.269,E=482512.379,Elev=1115.90 (from 5/15/25 leveling)

Reference Mark #3 (RM3) Reference Mark Type: PK Nail set in Stump

Latitude: _____ Longitude: _____ Mean Sea Level Yes ☐ No ☐ Elevation: 1115.47 Photograph ☐

Location Description: Polk County Coordinates #101,N=260674.875,E=482620.624,Elev=1115.47 (from 5/15/25 leveling)

Staff Gauge

Latitude: _____ Longitude: _____ Mean Sea Level Yes ☐ No ☐ Elevation: 1113.96 Photograph ☐

Location Description: _____

Date: _____ Time: _____ 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})	1123.52			
Back sight 1 (BS1)	+ 0.56			
Height of Instrument (HI1)	1124.08	- Staff Gauge	13.35	= 1110.73
	HI1	- Ref Mark 2	8.20	= 1115.88
	HI1	- Ref Mark 3	8.59	= 1115.49

Water FS1 10.70
Elev. = 1113.38

Survey Equations:

$HI1 = GE_{RM1} + BS1$

$CE1 = HI1 - FS1$

Survey Stage 2 – Reset instrument at different height

	Staff Gauge		Fore sight (FS2)	Calculated Elevation (CE2)
Calculated Elevation1	1110.73			
Back sight 2 (BS2)	+ 13.32			
Height of Instrument (HI2)	1124.05	- Ref Mark 1	0.54	= 1123.51
	HI2	- Ref Mark 2	8.17	= 1115.88
	HI2	- Ref Mark 3	8.57	= 1115.48

Survey Equations:

$HI2 = CE_{SG1} + BS2$

$CE2 = HI2 - FS2$

Quality Assurance Checks:

Reference Mark 1:	BS1 0.56		FS1 13.35	
GE = CE2	BS2 + 13.32		FS2 + 0.54	
	13.88	=	13.89	

QA Equations:

$BS1 + BS2 = FS1_{SG} + FS2_{RM1}$

$GE_{RM1} = CE2_{RM1}$

*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.

EGAD # 3200-2018-45

WISCONSIN DEPT. OF NATURAL RESOURCES

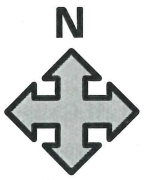
Wisconsin DNR – Lake Level Monitoring

Staff Gauge Survey Data Sheet

Lake Level Reading: 2.64 ft

Revised 2016

Site Diagram (including Staff Gauge and Reference Marks)



Notes

Data Management

Survey Data 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: _____

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