

Cooperative Missouri Basin Plains Snow Survey

Date: _____ Time: _____ Site Number: _____

Location Name (including city/state): _____

Latitude: _____ Longitude: _____

Observer Name / Phone Number: _____

Estimated % Snow Cover At Course: _____ Estimated % Snow Cover General Area: _____

Indicate your choice:

Drifting: None Light Moderate Heavy Extreme

Soil Moisture: Dry Moist Wet Saturated (Conditions going into winter)

Soil Frost: Flinty Hard Moderate Loose Rubbery

Pick Axe Penetration: _____ inches Estimated Frost Depth: _____ inches

REMARKS AND ENROUTE OBSERVATIONS:

Sampling Point	¹ Snow Depth	Ground Ice Layer (if present)		
		Thickness	Estimated Density (%)	² Ice Water Equivalent
#1				
#2				
#3				
#4				
#5				
Totals				
Averages				

²Ice Water Equivalent

$$^2\text{Ice Water Equivalent} = \text{Ice Thickness} \times \text{Estimated Density (\%)} / 100$$

³Snow Water Equivalent (SWE) Calculation

$$^3\text{SWE (inches)} = ^4\text{Total Weight of Snow (lbs)} / ^5\text{Conversion Factor (lbs/in)}$$

$$^3\text{SWE (inches)} = \text{_____ (lbs)} / 1.172 \text{ (lbs/in)} = \text{_____ (inches)}$$

⁴Total Weight of Snow Calculation

$$^4\text{Total Weight of Snow (lbs)} = \text{Weight of Accumulated Samples in Bucket} - \text{Bucket Tare Weight}$$

$$\text{Bucket Tare Weight (lbs)} = \text{_____ lbs}$$

$$^4\text{Total Weight of Snow (lbs)} = \text{_____} - \text{_____} = \text{_____ lbs}$$

⁵Conversion Factor Calculation

$$^5\text{Conversion Factor (lbs/in)} = \text{Water Density} \times \text{Area of Tube} \times \text{number of measurements}$$

$$\text{Area of Tube} = \text{Pi} \times (\text{inside dia (inches)} / 2)^2 = 3.14159 \times (2.875 \text{ inches} / 2)^2 = 6.49 \text{ in}^2$$

$$\text{Water Density} = 0.03612 \text{ lb/in}^3 \text{ at } 32^\circ\text{F}$$

$$^5\text{Conversion Factor} = 0.03612 \text{ lb/in}^3 \times 6.49 \text{ in}^2 \times 5 \text{ measurements} = 1.172 \text{ lbs/in}$$

TOTAL WATER EQUIVALENT CALCULATION & SUMMARY

¹ Average Snow Depth _____	inches
² Ice Water Equivalent _____	inches
+ ³ Snow Water Equivalent _____	inches
= Total Water Equivalent (SWE + Ice) _____	inches

Reporting Instructions:

Scan this form and email it or the results to: Missouri.Water.Management@usace.army.mil

Fax number: 402-996-3898