

Location:	Co	Site:	FF	Date:	2024 12 23				
Time:	1150	Observers:	Linn, Clark, Kraszka	Interval board SWE measurement					
Precip Rate	None	Very Light (0.5 cm / hr)	Light (1 cm / hr)	Moderate (5 cm / hr)	Heavy (10 cm / hr)	Depth (cm)	SWE (mm)	Density (kg/m³)	Evidence of melt loss? (Y/N)
Precip Type	Rain	Snow	Graupel	Hail	Rain/Snow	Sample A 18.0 + 17.6	17.0 + 17.5	106	N
						Sample B 18.0 + 17.4	17.0 + 17.3	106	
						Sample C 18.0 + 20.6	16.5 + 27	127	
Sky	Clear	Few <td>Light<br (&lt;="" -="" 1="" 2="" 4="" of="" sky)<="" td=""/><td>Scattered<br (&gt;="" 1="" 2="" of="" sky)<="" td=""/><td>Broken<br (&gt;="" 1="" 2="" of="" sky)<="" td=""/><td>Overcast (complete cover)</td><td>Ground condition</td><td>Frozen</td><td>Saturated</td></td></td></td>	Light <td>Scattered<br (&gt;="" 1="" 2="" of="" sky)<="" td=""/><td>Broken<br (&gt;="" 1="" 2="" of="" sky)<="" td=""/><td>Overcast (complete cover)</td><td>Ground condition</td><td>Frozen</td><td>Saturated</td></td></td>	Scattered <td>Broken<br (&gt;="" 1="" 2="" of="" sky)<="" td=""/><td>Overcast (complete cover)</td><td>Ground condition</td><td>Frozen</td><td>Saturated</td></td>	Broken <td>Overcast (complete cover)</td> <td>Ground condition</td> <td>Frozen</td> <td>Saturated</td>	Overcast (complete cover)	Ground condition	Frozen	Saturated
Wind	Calm (0 mph)	Light (1 - 16 mph)	Moderate (17 - 25 mph)	Strong (26 - 38 mph)	Extreme <td>Ground roughness</td> <td>Smooth<br (&lt;="" 5="" cm)<="" td=""/><td>Rough (5 - 20 cm)</td><td>Rugged<br (&gt;="" 20="" cm)<="" td=""/></td></td>	Ground roughness	Smooth <td>Rough (5 - 20 cm)</td> <td>Rugged<br (&gt;="" 20="" cm)<="" td=""/></td>	Rough (5 - 20 cm)	Rugged 
Tree Canopy	No trees	Sparse (5 - 20%)	Open (20 - 70%)	Closed <td>Ground Vegetation</td> <td>Bare</td> <td>Grass</td> <td>Shrub</td> <td>Deadfall</td>	Ground Vegetation	Bare	Grass	Shrub	Deadfall
Instrument	Y/N	SN	Instrument	Y/N	SN	Additional Comments		Height of Ground Vegetation (cm)	20 cm
Digital LWC	Y		Snow Scope	Y		Weather			
Stratigraphy pictures	Y		Lyte Probe	N					
Standard ram	Y		SMP	Y	011				
Powder Ram	Y		Force Ram	Y		Pit			
Slush Ram	Y		Force Snow Scope	Y		Hardness			
HS Transects	Y		Snow Scope Transects	Y					
Pit Pictures	Y		SSA / NIR Box	Y					
Other						Misc			
						LIDAR MET CLEAR 1150 HS 111cm @ STATION BETTER CLOUDS 1154			

Location (Regional Scale)	Date (YYYYMMDD)	Observers (first initial & last name):		Temperature profile times		Comments/Notes:							
Site (Study Plot)	Time (pit opened)	START	END	GPS	device & uncertainty:								
Pit ID	SITEYYYYMMDD	1215	1217	1226	250 m 22-12B								
FST	Snow Depth (cm)	LWC	UTME Device & SN	UTMN	Zone (two digits)								
FST20241231	102	MFCA	0425487	4413532	13	GIRMINGHAMS in 2.1m							
Density		LWC	Temperature	Stratigraphy									
Height above ground	Density profile A (kg/m3)	Density profile B (kg/m3)	Extra Density (kg/m3)	Permittivity profile A (unitless)	Permittivity profile B (unitless)	Height above ground (cm)	T (°C)	Height above ground (cm)	Grain Size (mm)	Grain Type	Hand Hardness	Manual Wetness	Stratigraphy Comments
top - bottom (cm)				(cm)	(cm)	(cm)	OC	top - bottom (cm)	Max	Min	Avg		
11.5 - 83.5	11	9	82			106	-11	106	105.5	1	0.3	0.5	DF <sub>EX</sub>
11.5 - 83.5	11	15	86			100	-13	106	105.5	1	0.3	0.5	F
11.5 - 83.5	11	24	80			40	-12	105.5	91	1.5	0.5	1	DF <sub>BK</sub>
11.5 - 83.5	11	23	81			80	-13	105.5	91	1.5	0.5	1	F
11.5 - 83.5	11	23	81			70	-6	91	79	1	0.3	0.5	DF <sub>OC</sub>
11.5 - 83.5	11	52	80			60	-5	91	79	1	0.3	0.5	4F
11.5 - 83.5	11	48.5	79.6			50	-4	91	79	1	0.3	0.5	D
11.5 - 83.5	11	32	76.7			40	-3.5	91	79	1	0.3	0.5	Same PPS
11.5 - 83.5	11	27	74			30	-3	79	65	0.5	0.1	0.3	Relax
11.5 - 83.5	11	14.4	73.2			20	-2.5	79	65	0.5	0.1	0.3	IF
11.5 - 83.5	11	11.2	71.3			10	-2	65	57	0.8	0.3	0.5	IF
11.5 - 83.5	11	6.2	70.6			0	-1.5	65	57	0.8	0.3	0.5	D
11.5 - 83.5	11	5.2	70.0					57	33	1	0.3	0.5	IF
11.5 - 83.5	11	3.2	69.4					33	11	2	0.3	0.5	D
11.5 - 83.5	11	2.2	68.8					33	11	2	0.3	0.5	IF
11.5 - 83.5	11	1.2	68.2					33	11	2	0.3	0.5	IF
11.5 - 83.5	11	0.2	67.6					33	11	2	0.3	0.5	D
11.5 - 83.5	11	0.2	67.0					33	11	2	0.3	0.5	IF
11.5 - 83.5	11	0.2	66.4					33	11	2	0.3	0.5	D
11.5 - 83.5	11	0.2	65.8					33	11	2	0.3	0.5	IF
11.5 - 83.5	11	0.2	65.2					33	11	2	0.3	0.5	D
11.5 - 83.5	11	0.2	64.6					33	11	2	0.3	0.5	IF
11.5 - 83.5	11	0.2	64.0					33	11	2	0.3	0.5	D
11.5 - 83.5	11	0.2	63.4					33	11	2	0.3	0.5	IF
11.5 - 83.5	11	0.2	62.8					33	11	2	0.3	0.5	D
11.5 - 83.5	11	0.2	62.2					33	11	2	0.3	0.5	IF
11.5 - 83.5	11	0.2	61.6					33	11	2	0.3	0.5	D
11.5 - 83.5	11	0.2	61.0					33	11	2	0.3	0.5	IF
11.5 - 83.5	11	0.2	60.4					33	11	2	0.3	0.5	D
11.5 - 83.5	11	0.2	59.8					33	11	2	0.3	0.5	IF
11.5 - 83.5	11	0.2	59.2					33	11	2	0.3	0.5	D
11.5 - 83.5	11	0.2	58.6					33	11	2	0.3	0.5	IF
11.5 - 83.5	11	0.2	58.0					33	11	2	0.3	0.5	D
11.5 - 83.5	11	0.2	57.4					33	11	2	0.3	0.5	IF
11.5 - 83.5	11	0.2	56.8					33	11	2	0.3	0.5	D
11.5 - 83.5	11	0.2	56.2					33	11	2	0.3	0.5	IF
11.5 - 83.5	11	0.2	55.6					33	11	2	0.3	0.5	D
11.5 - 83.5	11	0.2	55.0					33	11	2	0.3	0.5	IF
11.5 - 83.5	11	0.2	54.4					33	11	2	0.3	0.5	D
11.5 - 83.5	11	0.2	53.8					33	11	2	0.3	0.5	IF
11.5 - 83.5	11	0.2	53.2					33	11	2	0.3	0.5	D
11.5 - 83.5	11	0.2	52.6					33	11	2	0.3	0.5	IF
11.5 - 83.5	11	0.2	52.0					33	11	2	0.3	0.5	D
11.5 - 83.5	11	0.2	51.4					33	11	2	0.3	0.5	IF
11.5 - 83.5	11	0.2	50.8					33	11	2	0.3	0.5	D
11.5 - 83.5	11	0.2	50.2					33	11	2	0.3	0.5	IF
11.5 - 83.5	11	0.2	49.6					33	11	2	0.3	0.5	D
11.5 - 83.5	11	0.2	49.0					33	11	2	0.3	0.5	IF
11.5 - 83.5	11	0.2	48.4					33	11	2	0.3	0.5	D
11.5 - 83.5	11	0.2	47.8					33	11	2	0.3	0.5	IF
11.5 - 83.5	11	0.2	47.2					33	11	2	0.3	0.5	D
11.5 - 83.5	11	0.2	46.6					33	11	2	0.3	0.5	IF
11.5 - 83.5	11	0.2	46.0					33	11	2	0.3	0.5	D
11.5 - 83.5	11	0.2	45.4					33	11	2	0.3	0.5	IF
11.5 - 83.5	11	0.2	44.8					33	11	2	0.3	0.5	D
11.5 - 83.5	11	0.2	44.2					33	11	2	0.3	0.5	IF
11.5 - 83.5	11	0.2	43.6					33	11	2	0.3	0.5	D
11.5 - 83.5	11	0.2	43.0					33	11	2	0.3	0.5	IF
11.5 - 83.5	11	0.2	42.4					33	11	2	0.3	0.5	D
11.5 - 83.5	11	0.2	41.8					33	11	2	0.3	0.5	IF
11.5 - 83.5	11	0.2	41.2					33	11	2	0.3	0.5	D
11.5 - 83.5	11	0.2	40.6					33	11	2	0.3	0.5	IF
11.5 - 83.5	11	0.2	40.0					33	11	2	0.3	0.5	D
11.5 - 83.5	11	0.2	39.4					33	11	2	0.3	0.5	IF
11.5 - 83.5	11	0.2	38.8					33	11	2	0.3	0.5	D
11.5 - 83.5	11	0.2	38.2					33	11	2	0.3	0.5	IF
11.5 - 83.5	11	0.2	37.6					33	11	2	0.3	0.5	D
11.5 - 83.5	11	0.2	37.0					33	11	2	0.3	0.5	IF
11.5 - 83.5	11	0.2	36.4					33	11	2	0.3	0.5	D
11.5 - 83.5	11	0.2	35.8					33	11	2	0.3	0.5	IF
11.5 - 83.5	11	0.2	35.2					33	11	2	0.3	0.5	D
11.5 - 83.5	11	0.2	34.6					33	11	2	0.3	0.5	IF
11.5 - 83.5	11	0.2	34.0					33	11	2	0.3	0.5	D
11.5 - 83.5	11	0.2	33.4					33	11	2	0.3	0.5	IF
11.5 - 83.5	11	0.2	32.8					33	11	2	0.3	0.5	D
11.5 - 83.5	11	0.2	32.2					33	11	2	0.3	0.5	IF
11.5 - 83.5	11	0.2	31.6					33	11	2	0.3	0.5	D
11.5 - 83.5	11	0.2	31.0					33	11	2	0.3	0.5	IF
11.5 - 83.5	11	0.2	30.4					33	11	2	0.3	0.5	D
11.5 - 83.5	11	0.2	29.8					33	11	2	0.3	0.5	IF
11.5 - 83.5	11	0.2	29.2					33	11	2	0.3	0.5	D
11.5 - 83.5	11	0.2	28.6					33	11	2	0.3	0.5	IF
11.5 - 83.5	11	0.2	28.0					33	11	2	0.3	0.5	D
11.5 - 83.5	11	0.2	27.4					33	11	2	0.3	0.5	IF
11.5 - 83.5	11	0.2	26.8					33	11	2	0.3	0.5	D
11.5 - 83.5	11	0.2	26.2					33	11	2	0.3	0.5	IF
11.5 - 83.5	11	0.2	25.6					33	11	2	0.3	0.5	D
11.5 - 83.5	11	0.2	25.0					33	11	2	0.3	0.5	IF
11.5 - 83.5	11	0.2	24.4					33	11	2	0.3	0.5	D
11.5 - 83.5	11	0.2	23.8					33	11	2	0.3	0.5	IF
11.5 - 83.5	11	0.2	23.2					33	11	2	0.3	0.5	D
11.5 - 83.5	11	0.2	22.6					33	11	2	0.3	0.5	IF
11.5 - 83.5	11	0.2	22.0					33	11	2	0.3	0.5	D
11.5 - 83.5	11	0.2	21.4					33	11	2	0.3	0.5	IF
11.5 - 83.5	11	0.2	20.8					33	11	2	0.3	0.5	D
11.5 - 83.5	11	0.2	20.2					33	11	2	0.3	0.5	IF
11.5 - 83.5	11	0.2	19.6					33	11	2	0.3	0.5	D
11.5 - 83.5	11	0.2	19.0					33	11	2	0.3	0.5	IF
11.5 - 83.5	11	0.2	18.4					33	11	2</			

Location: C' Co

Date: 2024.12.31  
Time: 11:55

Force	Depth	Depth
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Pit: F52024:231

**Observers:**

X-Coord	Y-Coord	Time	Data Type	SN	Priority
0	-30	1155	Snap	011	345
30		1156			34
60		1157			345
90		1202			345
120		1203			345

Ward's Profile

## Ram Penetrometer Field Data Sheet

Location:  FER

site: FST

Associated pit/transect/point: FST 2024/12B1

Date: 2024/12/31

Time: 1405

Observer: E.M

Tube weight	T	kg
Hammer weight	H	kg
Number of falls	n	
Fall height	f	cm
Location of point	p	cm

UTME

Ram type: powder

**Zone:**

Ram type: power Ram mass: ka RR = 9.81 (T + H + nfH/p) N

## Notes:

**Ram Penetrometer Field Data Sheet**

Location: CO FEF										Tube weight	T	kg		
Site: FST										Hammer weight	H	kg		
Associated pit/transect/point: FST 2024/02/31										Number of falls	n			
Date: 2024/02/31			Time: 13:09								Fall height	f cm		
Observer: E.M.										Location of point	p	cm		
UTME:	UTMN:	Zone:	$RN = T + H + nfH/p$					kg						
Ram type:					Ram mass: kg					$RR = 9.81 (T + H + nfH/p)$				
T	H	n	f	p	T	H	n	f	p	T	H	n	f	p
1	0	0	0	46			7	3	102					
1	0.5	0	0	46			1	3	105					
	5	1	47											
	14	5	48											
	1	5	49											
			55											
	1	1	56											
			57											
			58											
			59											
	2	1	60											
	1	2	61											
	2	2	62											
	1	3	63											
	1	3	64											
	4	3	65											
	1	5	66											
	1	5	67											
	2	5	68											
			69											
	1	5	70											
	1	5	82											
	1	5	85											
	1	3	86											
			87											
			88											
			89											
			90											
	2	3	91											
			92											
			93											
	1	3	94											
	1	3	95											
			97											
			98											
			99											
	2	3	100											

Notes: