

Location (Regional Scale)	Date (MM/DD)	Observers (first initial & last name):		Comments/Notes:	
Site (Study Plot)	Time (pit opened)			Temperature profile times	
Pit ID	SITEYYMMDD	Snow Depth (cm)	LWC Device & SN	START	END
JPLM420150305	90	0101 53	1605 528	1515	1600
Height above ground	Density profile A (kg/m³)	Density profile B (kg/m³)	Extra Density	Permittivity profile A (unitless)	Permittivity profile B (unitless)
top - bottom (cm)				(cm)	(cm)
0.7-2 - 40.7	2	1.5	75	16	0
40.7 - 47.2	1.5	1.5	115	10	-1
47.2 - 53.2	1.5	1.5	105	86	-1
53.2 - 59.2	1.5	1.5	105	93	1
59.2 - 65.2	1.5	1.5	105	86	0.8
65.2 - 71.2	1.5	1.5	105	86	0.1
71.2 - 77.2	1.5	1.5	105	86	0.3
77.2 - 83.2	1.5	1.5	105	70	-3
83.2 - 89.2	1.5	1.5	105	59	-3
89.2 - 95.2	1.5	1.5	105	86	-82
95.2 - 101.2	1.5	1.5	105	86	1
101.2 - 107.2	1.5	1.5	105	59	-59
107.2 - 113.2	1.5	1.5	105	59	1
113.2 - 119.2	1.5	1.5	105	59	0.3
119.2 - 125.2	1.5	1.5	105	59	0.5
125.2 - 131.2	1.5	1.5	105	59	0.5
131.2 - 137.2	1.5	1.5	105	59	0.5
137.2 - 143.2	1.5	1.5	105	59	0.5
143.2 - 149.2	1.5	1.5	105	59	0.5
149.2 - 155.2	1.5	1.5	105	59	0.5
155.2 - 161.2	1.5	1.5	105	59	0.5
161.2 - 167.2	1.5	1.5	105	59	0.5
167.2 - 173.2	1.5	1.5	105	59	0.5
173.2 - 179.2	1.5	1.5	105	59	0.5
179.2 - 185.2	1.5	1.5	105	59	0.5
185.2 - 191.2	1.5	1.5	105	59	0.5
191.2 - 197.2	1.5	1.5	105	59	0.5
197.2 - 203.2	1.5	1.5	105	59	0.5
203.2 - 209.2	1.5	1.5	105	59	0.5
209.2 - 215.2	1.5	1.5	105	59	0.5
215.2 - 221.2	1.5	1.5	105	59	0.5
221.2 - 227.2	1.5	1.5	105	59	0.5
227.2 - 233.2	1.5	1.5	105	59	0.5
233.2 - 239.2	1.5	1.5	105	59	0.5
239.2 - 245.2	1.5	1.5	105	59	0.5
245.2 - 251.2	1.5	1.5	105	59	0.5
251.2 - 257.2	1.5	1.5	105	59	0.5
257.2 - 263.2	1.5	1.5	105	59	0.5
263.2 - 269.2	1.5	1.5	105	59	0.5
269.2 - 275.2	1.5	1.5	105	59	0.5
275.2 - 281.2	1.5	1.5	105	59	0.5
281.2 - 287.2	1.5	1.5	105	59	0.5
287.2 - 293.2	1.5	1.5	105	59	0.5
293.2 - 299.2	1.5	1.5	105	59	0.5
299.2 - 305.2	1.5	1.5	105	59	0.5
305.2 - 311.2	1.5	1.5	105	59	0.5
311.2 - 317.2	1.5	1.5	105	59	0.5
317.2 - 323.2	1.5	1.5	105	59	0.5
323.2 - 329.2	1.5	1.5	105	59	0.5
329.2 - 335.2	1.5	1.5	105	59	0.5
335.2 - 341.2	1.5	1.5	105	59	0.5
341.2 - 347.2	1.5	1.5	105	59	0.5
347.2 - 353.2	1.5	1.5	105	59	0.5
353.2 - 359.2	1.5	1.5	105	59	0.5
359.2 - 365.2	1.5	1.5	105	59	0.5
365.2 - 371.2	1.5	1.5	105	59	0.5
371.2 - 377.2	1.5	1.5	105	59	0.5
377.2 - 383.2	1.5	1.5	105	59	0.5
383.2 - 389.2	1.5	1.5	105	59	0.5
389.2 - 395.2	1.5	1.5	105	59	0.5
395.2 - 401.2	1.5	1.5	105	59	0.5
401.2 - 407.2	1.5	1.5	105	59	0.5
407.2 - 413.2	1.5	1.5	105	59	0.5
413.2 - 419.2	1.5	1.5	105	59	0.5
419.2 - 425.2	1.5	1.5	105	59	0.5
425.2 - 431.2	1.5	1.5	105	59	0.5
431.2 - 437.2	1.5	1.5	105	59	0.5
437.2 - 443.2	1.5	1.5	105	59	0.5
443.2 - 449.2	1.5	1.5	105	59	0.5
449.2 - 455.2	1.5	1.5	105	59	0.5
455.2 - 461.2	1.5	1.5	105	59	0.5
461.2 - 467.2	1.5	1.5	105	59	0.5
467.2 - 473.2	1.5	1.5	105	59	0.5
473.2 - 479.2	1.5	1.5	105	59	0.5
479.2 - 485.2	1.5	1.5	105	59	0.5
485.2 - 491.2	1.5	1.5	105	59	0.5
491.2 - 497.2	1.5	1.5	105	59	0.5
497.2 - 503.2	1.5	1.5	105	59	0.5
503.2 - 509.2	1.5	1.5	105	59	0.5
509.2 - 515.2	1.5	1.5	105	59	0.5
515.2 - 521.2	1.5	1.5	105	59	0.5
521.2 - 527.2	1.5	1.5	105	59	0.5
527.2 - 533.2	1.5	1.5	105	59	0.5
533.2 - 539.2	1.5	1.5	105	59	0.5
539.2 - 545.2	1.5	1.5	105	59	0.5
545.2 - 551.2	1.5	1.5	105	59	0.5
551.2 - 557.2	1.5	1.5	105	59	0.5
557.2 - 563.2	1.5	1.5	105	59	0.5
563.2 - 569.2	1.5	1.5	105	59	0.5
569.2 - 575.2	1.5	1.5	105	59	0.5
575.2 - 581.2	1.5	1.5	105	59	0.5
581.2 - 587.2	1.5	1.5	105	59	0.5
587.2 - 593.2	1.5	1.5	105	59	0.5
593.2 - 599.2	1.5	1.5	105	59	0.5
599.2 - 605.2	1.5	1.5	105	59	0.5
605.2 - 611.2	1.5	1.5	105	59	0.5
611.2 - 617.2	1.5	1.5	105	59	0.5
617.2 - 623.2	1.5	1.5	105	59	0.5
623.2 - 629.2	1.5	1.5	105	59	0.5
629.2 - 635.2	1.5	1.5	105	59	0.5
635.2 - 641.2	1.5	1.5	105	59	0.5
641.2 - 647.2	1.5	1.5	105	59	0.5
647.2 - 653.2	1.5	1.5	105	59	0.5
653.2 - 659.2	1.5	1.5	105	59	0.5
659.2 - 665.2	1.5	1.5	105	59	0.5
665.2 - 671.2	1.5	1.5	105	59	0.5
671.2 - 677.2	1.5	1.5	105	59	0.5
677.2 - 683.2	1.5	1.5	105	59	0.5
683.2 - 689.2	1.5	1.5	105	59	0.5
689.2 - 695.2	1.5	1.5	105	59	0.5
695.2 - 701.2	1.5	1.5	105	59	0.5
701.2 - 707.2	1.5	1.5	105	59	0.5
707.2 - 713.2	1.5	1.5	105	59	0.5
713.2 - 719.2	1.5	1.5	105	59	0.5
719.2 - 725.2	1.5	1.5	105	59	0.5
725.2 - 731.2	1.5	1.5	105	59	0.5
731.2 - 737.2	1.5	1.5	105	59	0.5
737.2 - 743.2	1.5	1.5	105	59	0.5
743.2 - 749.2	1.5	1.5	105	59	0.5
749.2 - 755.2	1.5	1.5	105	59	0.5
755.2 - 761.2	1.5	1.5	105	59	0.5
761.2 - 767.2	1.5	1.5	105	59	0.5
767.2 - 773.2	1.5	1.5	105	59	0.5
773.2 - 779.2	1.5	1.5	105	59	0.5
779.2 - 785.2	1.5	1.5	105	59	0.5
785.2 - 791.2	1.5	1.5	105	59	0.5
791.2 - 797.2	1.5	1.5	105	59	0.5
797.2 - 803.2	1.5	1.5	105	59	0.5
803.2 - 809.2	1.5	1.5	105	59	0.5
809.2 - 815.2	1.5	1.5	105	59	0.5
815.2 - 821.2	1.5	1.5	105	59	0.5
821.2 - 827.2	1.5	1.5	105	59	0.5
827.2 - 833.2	1.5	1.5	105	59	0.5
833.2 - 839.2	1.5	1.5	105	59	0.5
839.2 - 845.2	1.5	1.5	105	59	0.5
845.2 - 851.2	1.5	1.5	105	59	0.5
851.2 - 857.2	1.5	1.5	105	59	0.5
857.2 - 863.2	1.5	1.5	105	59	0.5
863.2 - 869.2	1.5	1.5	105	59	0.5
869.2 - 875.2	1.5	1.5	105	59	0.5
875.2 - 881.2	1.5	1.5	105	59	0.5
881.2 - 887.2	1.5	1.5	105	59	0.5
887.2 - 893.2	1.5	1.5	105	59	0.5
893.2 - 899.2	1.5	1.5	105	59	0.5
899.2 - 905.2	1.5	1.5	105	59	0.5
905.2 - 911.2	1.5	1.5	105	59	0.5
911.2 - 917.2	1.5	1.5	105	59	0.5
917.2 - 923.2	1.5	1.5	105	59	0.5
923.2 - 929.2	1.5	1.5	105	59	0.5
929.2 - 935.2	1.5	1.5	105	59	0.5
935.2 - 941.2	1.5	1.5	105	59	0.5
941.2 - 947.2	1.5	1.5	105	59	0.5
947.2 - 953.2	1.5	1.5	105	59	0.5
953.2 - 959.2	1.5	1.5	105	59	0.5
959.2 - 965.2	1.5	1.5	105	59	0.5
965.2 - 971.2	1.5	1.5	105	59	0.5
971.2 - 977.2	1.5	1.5	105	59	0.5
977.2 - 983.2	1.5	1.5	105	59	0.5
983.2 - 989.2	1.5	1.5	105	59	0.5
989.2 - 995.2	1.5	1.5	105	59	0.5
995.2 - 1001.2	1.5	1.5	105	59	0.5
1001.2 - 1007.2	1.5	1.5	105	59	0.5
1007.2 - 1013.2	1.5	1.5	105	59	0.5
1013.2 - 1019.2	1.5	1.5	105	59	0.5
1019.2 - 1025.2	1.5	1.5	105	59	0.5
1025.2 - 1031.2	1.5	1.5	105	59	0.5
1031.2 - 1037.2	1.5	1.5	105	59	0.5
1037.2 - 1043.2	1.5	1.5	105	59	0.5
1043.2 - 1049.2	1.5	1.5	105	59	0.5
1049.2 - 1055.2	1.5	1.5	105	59	0.5
1055.2 - 1061.2	1.5	1.5	105	59	0.5
1061.2 - 1067.2	1.5	1.5	105	59	0.5
1067.2 - 1073.2	1.5	1.5	105	59	0.5
1073.2 - 1079.2	1.5	1.5	105	59	0.5
1079.2 - 1085.2	1.5	1.5	105	59	0.5
1085.2 - 1091.2	1.5	1.5	105	59	0.5
1091.2 - 1097.2	1.5	1.5	105	59	0.5
1097.2 - 1103.2	1.5	1.5	105	59	0.5
1103.2 - 1109.2	1.5	1.5	105	59	0.5
1109.2 - 1115.2	1.5	1.5	105	59	0.5
1115.2 - 1121.2	1.5	1.5	105	59	0.5
1121.2 - 1127.2	1.5	1.5	105	59	0.5
1127.2 - 1133.2	1.5	1.5	105	59	0.5
1133.2 - 1139.2	1.5	1.5	105	59	0.5
1139.2 - 1145.2	1.5	1.5	105	59	0.5
1145.2 - 1151.2	1.5	1.5	105	59	0.5
1151.2 - 1157.2	1.5	1.5	105	59	0.5
1157.2 - 1163.2	1.5	1.5	105	59	0.5
1163.2 - 1169.2	1.5	1.5	105	59	0.5
1169.2 - 1175.2	1.5	1.5	105	59	

Location:	CO	Site:	JPL Met	Date:	20250305					
Time:	1515	Observers:	MC Raine	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	10.6	10.5	99	
Sky	Clear	Few <th>Scattered<br (<="" 1="" 2="" 4-1="" of="" sky)<="" th=""/><th>Broken<br (>="" 1="" 2="" of="" sky)<="" th=""/><th>Overcast (complete cover)</th><th>Sample B</th><td>10.2</td><td>10.5</td><td>103</td><td>Y</td></th></th>	Scattered <th>Broken<br (>="" 1="" 2="" of="" sky)<="" th=""/><th>Overcast (complete cover)</th><th>Sample B</th><td>10.2</td><td>10.5</td><td>103</td><td>Y</td></th>	Broken <th>Overcast (complete cover)</th> <th>Sample B</th> <td>10.2</td> <td>10.5</td> <td>103</td> <td>Y</td>	Overcast (complete cover)	Sample B	10.2	10.5	103	Y
Wind	Calm (0 mph)	Light <th>Moderate<br ('17="" -="" 25="" mph)<="" th=""/><th>Strong<br ('26="" -="" 38="" mph)<="" th=""/><th>Extreme<br (>="" 38="" mph)<="" th=""/><th>Ground condition</th><td>Frozen</td><td>Smooth<br (<="" 5="" cm)<="" td=""/><td>Rough<br ('5="" -="" 20="" cm)<="" td=""/><td>Rugged<br (>="" 20="" cm)<="" td=""/></td></td></td></th></th></th>	Moderate <th>Strong<br ('26="" -="" 38="" mph)<="" th=""/><th>Extreme<br (>="" 38="" mph)<="" th=""/><th>Ground condition</th><td>Frozen</td><td>Smooth<br (<="" 5="" cm)<="" td=""/><td>Rough<br ('5="" -="" 20="" cm)<="" td=""/><td>Rugged<br (>="" 20="" cm)<="" td=""/></td></td></td></th></th>	Strong <th>Extreme<br (>="" 38="" mph)<="" th=""/><th>Ground condition</th><td>Frozen</td><td>Smooth<br (<="" 5="" cm)<="" td=""/><td>Rough<br ('5="" -="" 20="" cm)<="" td=""/><td>Rugged<br (>="" 20="" cm)<="" td=""/></td></td></td></th>	Extreme <th>Ground condition</th> <td>Frozen</td> <td>Smooth<br (<="" 5="" cm)<="" td=""/><td>Rough<br ('5="" -="" 20="" cm)<="" td=""/><td>Rugged<br (>="" 20="" cm)<="" td=""/></td></td></td>	Ground condition	Frozen	Smooth <td>Rough<br ('5="" -="" 20="" cm)<="" td=""/><td>Rugged<br (>="" 20="" cm)<="" td=""/></td></td>	Rough <td>Rugged<br (>="" 20="" cm)<="" td=""/></td>	Rugged
Tree Canopy	No trees	Sparse <td>Open<br (>="" -="" 20="" 70%)<="" td=""/><td>Closed<br (>="" 70%)<="" td=""/><td>Ground Vegetation</td><td>Bare</td><td>Moist</td><td>Shrub</td><td>Deadfall</td></td></td>	Open <td>Closed<br (>="" 70%)<="" td=""/><td>Ground Vegetation</td><td>Bare</td><td>Moist</td><td>Shrub</td><td>Deadfall</td></td>	Closed <td>Ground Vegetation</td> <td>Bare</td> <td>Moist</td> <td>Shrub</td> <td>Deadfall</td>	Ground Vegetation	Bare	Moist	Shrub	Deadfall	
Instrument	Y/N	SN	Instrument	Y/N	SN	Additional Comments		Height of Ground Vegetation (cm)	10	
Digital LWC	~		Snow Scope	Y	308! 151	Weather				
Stratigraphy pictures	?		Lyte Probe	N		Pools & percolation in pit wall				
Standard ram	Y		SMP	N		Pit				
Powder Ram	Y		Force Ram	Y						
Slush Ram	N		Force Snow Scope	Y		Hardness				
HS Transects	Y		Snow Scope Transects	N						
Pt Pictures	Y		SSA / NIR Box	Y	0101	98% HS shade				
Other						Misc				

Location: C

Date: 20250305

Site: 30C Met
Pit: 30C Met 70250305

Time: 1626

Observers: E. McCue S. Bennett
Y/N

Comments

X-Coord Y-Coord Time Data Type SN Profile # Force Gage N cm cm Y/N

max manual digital Grnd

0	30	1626	Force gage		17	75	N	
30	30	1631	Force gage		17	75	Y	
0	60	1638	Shuttle	308	159	91	16	Y
30	60	1639			160	91	82	Tunneling
60	60	1639			161	92	75	
90	60	1639			163	93	95	
120	60	1640	↓		165	94	95	
0	90	1642	Force gage		1000	216	95	
30	90	1643			172	97		
60	90	1643			173	90		
90	90	1645			86	80		
120	90	1645	↑		93	84		
0	120	1645	Force gage	151	1052	1000	93	60
30	120	1646		154	1054	39	75	74
60	120	1646		1055	1055	51	75	64
90	120	1646		1056	1056	51	75	75
120	120	1647	↑	1057	51	75	75	

Ram Penetrometer Field Data Sheet

Location: CO									Tube weight	T	kg			
Site: JPL Met									Hammer weight	H	kg			
Associated pit/transect/point: JPLmet20250305									Number of falls	n				
Date: 20230305	Time: 1626 1631								Fall height	f	cm			
Observer: E. M. Lee Skinner									Location of point	p	cm			
UTME:	UTMN:	Zone: TS								RN = T + H + nfH/p kg				
Ram type:	Ram mass: kg								RR = 9.81 (T + H + nfH/p) N					
T	H	n	f	p	T	H	n	f	p	T	H	n	f	p
1	0	0	0	12			1	20	17			1	15	55
1	0.5	0	0	12					18			2	15	56
	4	3	13				2	10	19			1	20	57
	2	10	14				1	20	20					58
	1	10	16						21					59
	1	5	29						22					60
	2	3	30						23					61
	1	5	31						24			2	10	62.5
	2	5	32				2	25	25			1	20	63.5
	3	5	33				1	25	26					64.5
	2	10	34				2	25	27					65.5
	1	10	35						28					66.5
	2	5	36						29					67
	1	10	37						30			2	20	68.5
			38						31			1	20	69.5
			39				1	25	32					70.5
	3	10	40				3	25	33					71
	2	10	41				3	25	34					72
	8	5	42				5	25	35					74
	3	5	43				3	25	36					75
	1	2	92						37					
	1	5	93						38					
			94						39					
			96						40					
			97				8	25	41					
							3	25	42					
0.1	0	0	0	4			3	25	43					
0.1	0.1	0	0	4			2	25	44					
	1	5	7						45.5					
			8				1	20	46					
			9						47					
			10						48					
	5	5	11						49.5					
	3	20	12				1	10	50.5					
	2	20	13						51.5					
	5	25	14						52					
	3	25	15						53					
	2	25	16				1	10	54					

Notes:

Location (regional scale)		Site (study plot)		Transects		Date	Time			
CO		JPL Met		JPL 182		20250305	Start	End		
Observer(s)		Wx Description								
E Mclvee S Skinner		B1CN Light N. W. wind								
1768 Transect A 1711				1705 Transect B 1704						
Point	HS (cm)	Point	HS (cm)	Point	HS (cm)	Point	HS (cm)			
0	100	31		0	7	31				
1	105	32		1	34	32				
2	105	33		2	91	33				
3	104	34		3	81	34				
4	102	35		4	89	35				
5	99	36		5	95	36				
6	100	37		6	100	37				
7	102	38		7	90	38				
8	100	39		8	89	39				
9	101	40		9A	66	40				
10	108	41		10B	65	41				
11	97	42		11C	57	42				
12	106	43		12D	43	43				
13	102	44		13E	81	44				
14	103	45		14F	84	45				
15	105	46		15G	53	46				
16	100	47		16H	65	47				
17	103	48		17I	70	48				
18	100	49		18J	58	49				
19	101	50		19		50				
20	103	51		20		51				
21	99	52		21		52				
22		53		22		53				
23		54		23		54				
24		55		24		55				
25		56		25		56				
26		57		26		57				
27		58		27		58				
28		59		28		59				
29		60		29		60				
30				30						

Location (regional scale)		Site (study plot)		Transects		Date	Time			
CO		JPL Met		Radar 182		20250305	Start	End		
Observer(s)		Wx Description								
E M Lue S Leinen		AVN Light No None								
1659 Transect A 1701		1702 Transect B 1704								
Point	HS (cm)	Point	HS (cm)	Point	HS (cm)	Point	HS (cm)			
0	98	31		0	89	31				
1	101	32		1	96	32				
2	98	33		2	98	33				
3	98	34		3	105	34				
4	100	35		4	98	35				
5	99	36		5	100	36				
6	100	37		6	101	37				
7	100	38		7	101	38				
8	100	39		8	105	39				
9	95	40		9	105	40				
10	96	41		10	103	41				
11	87	42		11	105	42				
12	100	43		12	102	43				
13	100	44		13	104	44				
14	97	45		14	105	45				
15	91	46		15	102	46				
16		47		16	98	47				
17		48		17	98	48				
18		49		18	95	49				
19		50		19		50				
20		51		20		51				
21		52		21		52				
22		53		22		53				
23		54		23		54				
24		55		24		55				
25		56		25		56				
26		57		26		57				
27		58		27		58				
28		59		28		59				
29		60		29		60				
30				30						

Location (regional scale)		Site (study plot)		Transects		Date	Time			
CO		JPL Met		JPL A		20250305	Start	End		
Observer(s)		Wx Description								
E. M. C. C. S. I. C. U. N. Y.		B1CN Light No Wind								
Transect A				Transect B						
Point	HS (cm)	Point	HS (cm)	Point	HS (cm)	Point	HS (cm)			
0	113	31	111	0	100	31				
1	112	32	100	1	91	32				
2	109	33	99	2	110	33				
3	85	34	89	3	113	34				
4	109	35	103	4	93	35				
5	102	36	103	5	44	36				
6	100	37	110	6	99	37				
7	100	38	88	7	100	38				
8	96	39	68	8	111	39				
9	115	40	99	9	109	40				
10	110	41	106	10	109	41				
11	108	42	111	11	89	42				
12	90	43	108	12	63	43				
13	111	44	105	13	75	44				
14	94	45	107	14	99	45				
15	86	46	104	15	103	46				
16	101	47	109	16	112	47				
17	109	48	108	17	104	48				
18	108	49	114	18	78	49				
19	105	50	106	19		50				
20	78	51	106	20		51				
21	94	52	98	21		52				
22	100	53	80	22		53				
23	95	54	96	23		54				
24	109	55	102	24		55				
25	86	56	105	25		56				
26	99	57	105	26		57				
27	102	58	105	27		58				
28	110	59	61	28		59				
29	86	60	62	29		60				
30	87		92	30						