

NEVADA COOPERATIVE SNOW SURVEYS.

SNOW SURVEY - 1919-20.

I. TAHOE BASIN.

a. West Side.

Station 1. WARD CREEK:  
April 1, 1920

<u>No.</u>	<u>Depth</u>	<u>Core</u>	<u>Water Content</u>	<u>Remarks</u>
West Course				
1.	87	66	33	Course should have been 150 ft. N. On basis of first 6 meas. of W. course, which correspond closely with first 6 meas. of original course, but corrected by -1.57 in. in order to apply normal, Water Content $34.76 = 82.4$ per cent.
2.	92.3	87	36	
3.	85.7	82.7	33	
4.	93	88.3	37.5	
5.	99.5	96	38.5	
6.	105	104	40	
7.	108.5	89.5	42.2	
8.	102.5	92.3	37	
9.	109.5	106	42.5	
			9) <u>339.7</u>	
			37.74	

South Course				
1.	98.5	97	38.5	---36.3 avg.
2.	93.5	88.5	34	
3.	97.5	93	37	
			<u>109.50</u>	

East Course				
1.	93	87.5	35	Cold now in air and snow sampler works better.
2.	91	88	34.5	
3.	91	79.5	35	
			3) <u>104.5</u>	
			34.83	

15) 1447.5  
96.5      36.91  
Rem. 38.2%

339.70  
109.50  
104.50  
15) 553.70  
36.91 = 87.4 per cent of normal

North Course				
1.	92.7	46.3	30	per cent
2.	77.5	61	29.5	
3.	104.5	94.5	40	
4.	99	86	32.5	
5.	108.5	96	41	
6.	98.5	94.5	35	
7.	93	89	35	
8.	93.5	88.5	32	
9.	91	66	22.5	

Station 2. RUBICON PEAK:

No.	Depth	Core	Water Content	Remarks
North Course (cont'd)				
10.	87.5	83	30	
11.	92	88	32	
12.	67	33.5	23	Snow Packed in Tube
13.	50.5	44.5	20.5	
			13) 403.0	
			31.00	Normal, 39.83. Seasonal percentage <u>77.8</u>

May 1, 1920  
Red Snow Pole  
West from Pole toward Dark Fir.

1.	73	70.3	33.0	
2.	67.0	61.5	30.0	
3.	60.0	54.5	24.4	
4.	73.5	66.5	34.0	
5.	78.5	76.6	34.0	Near clumb of small firs.
6.	91.6	72.0	39	
	-3.0	-3.0		
	88.6	69		
Rem.	87.8	68	33	
	86	69	34.4	Brush and scrub. <u>Clean out Course.</u>
7.	87	78.7	37.2	
8.	92	78	43.0	
9.	84.6	75	35.4	
			9) 310.4	
			34.49	

East of Snow Pole

1.	77.0	69.5	34.4	Cold now in air and snow sampler works better.
2.	75.0	71.5	34.0	
	-1.0	-1.0		
3.	72.0	66.0	32.0	
	-1.0	-1.5		
			3) 100.4	
			33.47	

Melting based on W. and E. of Red Snow Pole:  
Av. Apr. 1 37.02 in.  
Av. May 1 34.23 in.  
Melting and Precipitation, 2.79 in.

June 2, 1920 (J.E. Church, Jr., and Harry Armstrong)

West Course				
8.	16.0	15.5	8.2 per cent	<i>in</i>
East Course				
1.	6.0	5.5	3.4 per cent	<i>in</i>
North Course				
2.	17.0	17.0	8.9 per cent	<i>in</i>
South Course (No snow) per cent				

*less, 52.6*

Station 2. RUBICON PEAK:

April 4, 1920 PEAK (cont'd)  
Course No. 1

No.	Depth	Core	Water Content	Remarks
1.	105.5	105.5	36.0	
2.	133.0	132.5	50.3	
3.	121.5	121.0	40.5	
4.	96.5	96.5	32.0	
5.	73.5	73.0	23.2	
6.	109.0	109.0	36.0	
7.	91.0	91.0	31.3	
8.	87.0	86.5	28.5	In trees.
9.	66.0	66.0	21.5	
10.	93.0	92.0	30.5	
11.	111.0	109.0	38.0	
12.	92.5	92.5	32.0	
13.	94.0	93.0	33.0	
14.	81.0	79.0	27.5	
15.	95.5	95.0	32.0	
16.	81.5	80.5	26.0	
17.	89.0	89.0	30.0	In thick clump of trees.
18.	84.8	84.8	28.0	
19.	76.3	75.5	25.2	
20.	88.0	88.0	30.0	
21.	96.0	95.5	33.5	
22.	110.0	109.5	38.2	
23.	89.5	89.0	30.5	
24.	83.5	82.5	27.5	
25.	102.0	95.0	30.0	Among hemlock
26.	112.0	110.0	38.2	
27.	75.0	73.5	23.2	
28.	114.0	113.5	36.8	
29.	86.0	86.0	29.0	Under large pine.
30.	89.5	89.5	30.0	
31.	92.5	92.0	31.0	
32.	125.0	124.0	44.0	

32) 3044.6  
95.1

Density 34.0 per cent

32) 1033.4  
32.29

= approximately 85.7 per cent.  
= 73.3 per cent of normal.

Course No. 2. (Extra)

1.	72.5	72.0	25.5
2.	59.0	52.0	22.2
3.	67.0	61.0	24.5
4.	61.5	55.5	23.2
5.	57.5	54.0	21.5
6.	66.0	61.5	24.0
7.	77.5	76.0	27.0
8.	68.0	67.0	23.0
			8) 190.00
			23.86

Density 36.1 per cent

Station 2. RUBICON PEAK (cont'd)

June 3, 1920 (Church and Armstrong)

Course No. 1

May 3, 1920

No.	Depth	Core	Water Content	Remarks
1.	101.0	c.c.	41.0	
2.	94.0	89.0	38.5	
3.	91.5	89.0	36.2	
4.	59.5	58.0	24.2	
5.	100.0	c.c.	37.2	In trees.
6.	104.0	c.c.	41.0	
7.	107.0	105.0	43.2	
8.	91.0	88.0	41.2	
9.	77.0	75.0	34.0	
10.	96.0	c.c.	38.5	
11.	97.0	94.0	40.0	
12.	98.5	97.0	39.0	
13.	96.0	c.c.	38.0	
14.	71.0	c.c.	27.8	In thick clump of trees.
15.	107.0	c.c.	43.5	
16.	99.0	c.c.	39.0	... 2 holes about 5' E. of this
17.	90.3	87.5	36.0	... 2 old sets of holes - 8'
18.	94.0	c.c.	39.0	... apart. Our hole taken one-
19.	64.5	c.c.	24.8	... half way between.
20.	116.0	c.c.	46.5	... This one by set of 2 holes
21.0	121.0	117.5	48.0	... farthest E.
22.	108.0	106.0	42.5	... Near farthest hole ahead.
23.	103.0	c.c.	41.0	
24.	102.0	c.c.	40.2	
25.	100.0	c.c.	40.0	... Near an April hole
26.	61.0	60.0	23.5	Under large pine.
27.	100.0	c.c.	38.5	... Near an April hole
28.	85.0	81.0	33.5	

28) 2634.3  
94.1

28) 1055.8  
37.71 = approximately 85.7 per cent.  
or a gain of 12.4 per cent.

Rem. 40.1%

Substitute and  
New Course 2 (Extra)

1.	63.0	62.0	25.8	... This hole is 23' ahead
2.	54.0	52.5	23.0	... of No. 27, just beyond
3.	60.5	59.0	24.5	... triple-blazed turning-
4.	53.0	51.0	23.2	... point trail.
5.	42.0	37.0	18.0	
6.	48.0	c.c.	21.0	
7.	68.0	65.0	28.0	... April hole.
8.	66.0	63.0	26.5	

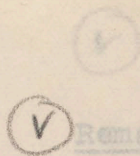
8) 454.5  
56.8

8) 190.0  
23.875

Rem. 41.8%

33. 39.8 ... 12' from blazed trail

Note: This course should be more thoroughly blazed, and blaze trail  
table rock to beginning of -4- course.



Station 2. RUBICON PEAK (cont'd)

Course No. 1  
 June 3, 1920 (Church and Armstrong)

(V)

No.	Depth	Core	Water Content	Remarks
1.	65.4	c.c.	31.4	
2.	82.0	79.8	39.2	No. 2 today is 2" beyond old hole.
3.	61.0	58.5		
Rem.	61.0	60.3	28.6	
4.	39.5	39.1	18.2	
5.	0			
6.	47.9	47.7	22.6	
7.	54.3	c.c.	25.4	
8.	31.0	30.4	15.3	
9.	5.5	c.c.	2.4	
10.	27.4	27.2	13.3	
11.	52.0	50.8	23.6	
12.	45.2	43.5	21.6	
13.	38.2	c.c.	21.5	
14.	24.0	25.0?	12.7	
15.	29.0	28.5	12.4	
16.	18.0	c.c.	8.9	
17.	38.3	c.c.	18.4	
18.	51.7	51.2	22.2	... 2 holes about 5' E. of this
19.	28.0	c.c.	12.4	... 2 old sets of holes - 8' apart. Our hole taken one-half way between.
20.	54.0	c.c.	26.8	... This one by set of 2 holes farthest E.
Rem.	39.3	39.7	19.3	... Near farthest hole ahead.
21.	42.0	41.0	20.7	... three feet above mark.
Rem.	43.7	43.0	22.0	
22.	48.5	48.3	23.8	... Near an April hole
Rem.	62.8	c.c.	31.6	
23.	52.5	c.c.	25.0	... Near an April hole
Rem.	41.0	c.c.	19.7	
24.	35.0	c.c.	17.4	... April hole not found 0 depth (?)
25.	61.2	60.7	26.9	... May hole very near hemlock.
26.	63.5	59.0	29.0	... Cone broken - rock bottom.
Rem.	67.0	66.4	32.0	
27.	7.0	c.c.	3.4	
28.	51.3			... This hole is 23½' ahead
Rem.	50.9	c.c.	25.4	of No. 27, just beyond triple-blazed turning-point tree.
28a.	55.5	56.0?	26.6	
29.	44.7	c.c.	22.4	
29a.	36.5	c.c.	18.2	
30.	41.8	41.4	20.8	... April hole.
30a.	36.5	c.c.	17.3	
31.	15.0	14.0	6.9	... April hole.
32.	34.0	32.0	16.7	... " " 3 holes 23' back.
32a.	60.3			
Rem.	60			
"	59.7	59.2	30.7	
33.	39.8	38.2	17.4	... 12' from blazed tree.

1408.8  
 -61  
 1347.8

Note; This course should be more thoroly blazed, and blaze trail from table rock to beginning of course. <sup>33)</sup> 1347.8 <sup>L</sup> 40.8 <sup>41)</sup> 850.1 (20.7 average) <sup>33)</sup> 644.8 <sup>L</sup> 19.54 <sup>Rem.</sup> 47.9

Station 4. LAKE LUCILE.

Station 5. MOUNT ROSS.

Course No. 1  
April 2, 1920

<u>No.</u>	<u>Depth.</u>	<u>Core</u>	<u>Water Content</u>	<u>Remarks.</u>
1.	58.5	58.0	19.2	
2.	96.5	95.0	36.0	
3.	69.5	65.0	24.0	
4.	98.0	96.0	35.5	Dirt.
5.	77.0	57.0	28.0	
6.	82.0	75.0	33.5	
7.	90.0	71.0	32.5	
8.	106.0	101.5	40.5	
9.	111.0	84.5	36.5	
10.	111.0	105.0	40.0	
11.	122.0	121.0	45.2	
12.	138.0	136.0	60.0	40' from door of cabin.
13.	117.0	113.0	38.5	12' from door of cabin.
14.	139.0	138.0	51.0	In. = 86.8 per cent of normal.
15.	144.0	135.0	50.5	
16.	131.0	123.0	46.0	
17.	117.0	111.0	38.5	
18.	120.5	119.0	38.0	100 ft. from rock pile.
19.	125.0	122.0	42.0	
20.	119.5	118.0	41.0	
21.	127.0	125.0	40.0	
22.	120.5	119.5	39.5	
23.	106.0	104.0	35.3	Snow nearly 45 inches.
24.	88.0	84.0	27.5	... Struck tree. Measured from three feet above mark.
Rem.	94.0	90.0	29.5	
25.	101.0	99.5	32.5	
26.	82.5	78.5	26.5	
27.	88.5	84.5	29.0	
28.	103.5	102.5	35.5	Brush
29.	102.0	100.0	34.5	
30.	97.0	96.0	30.0	
31.	128.0	125.0	46.0	
32.	136.0	135.0	49.0	Core lost.
33.	118.0	117.0	41.2	
34.	125.5	124.5	46.0	
35.	100.5	99.0	36.0	
36.	108.5	106.5	38.0	
37.	118.0	117.0	42.0	

37) 1446.30 (39.09 = 81.8 per cent of normal.

Station 5. MOUNT ROSE.

Course No. 1

No.	Depth.	Core.	Water Content.	Remarks.
1.	34.0	18.0	9.0	Brush
2.	65.5	c.c.	26.0	Brush
3.	124.0	115.0	46.0	
4.	102.5	101.0	38.5	Dirt.
5.	87.0	84.0	33.0	"
6.	73.5	48.5	20.0	
7.	66.0	55.0	24.0	
8.	67.5	63.0	24.0	Rocks
9.	44.0	41.0	17.0	Ice on Rocks
10.0	52.5	51.0	19.5	Rocks
11.	62.0	60.0	24.0	Rocks
12.	51.5	45.0	21.0	40' from door of cabin.
			12) 303.0	
			25.25 in.	= 86.8 per cent of normal.

Course No. 2

1.	3 to 4 inches in patches			100 ft. from rock pile.
2.	37.5	34.5	17.0	depths at 33 per cent.
3.	29.0	24.0	7.0	in. = 52.2 per cent.
4.	58.0	55.5	21.0	
5.	12.0	10.5	4.0	
6.	Trace.			Snow nearby 45 inches.
7.	35.0	30.0	9.0	Struck branch 10 ft. from stump and stake.
8.	73.5	68.5	29.0	
9.	30.0	c.c.	10.0	
10.	34.5	31.0	12.0	
11.	31.5	17.0	8.0	Brush
12.	47.5	40.0	15.0	
13.	47.5	42.0	15.5	
14.	97.0	94.0	44.0	
15.	26.5	c.c.		Core lost.
Rem.	25.5	25.0	10.0	
16.	39.5	37.5	13.0	
17.	118.5	115.5	46.5	
18.	116.5	115.0	49.0	
19.	25.0	23.0	8.5	
20.	31.0	30.5	12.5	
21.	63.0	61.0	28.5	Elkin's Island
22.	21.5	21.0	7.0	
23.	18.5	c.c.	6.0	
24.	23.0	19.5	7.5	
25.	40.0	21.0	10.5	Brush
26.	34.5	34.0	14.0	
27.	8.5	c.c.	4.0	
28.	15.0	14.0	5.0	
29.	18.5	17.5	6.5	Rocks.
30.	50.0	49.5	20.0	Rocks.
31.	30.5	28.5	11.5	Rocks.
32.	22.0	19.0	8.0	
33.	47.0	46.5	20.5	
34.	36.5	35.5		Core lost.

Course No. 2 (MOUNT ROSE) cont'd.

No.	Depth.	Core.	Water Content.	Remarks.
Rem. 34	38.0	34.0	14.0	
35.	23.5	21.0	7.0	Rocks.
36.	55.0	54.0	23.5	Rocks.
37.	18.0	13.0	5.5	Brush
38.	17.0	8.0	4.0	Brush
39.	10.5	9.0	4.0	Rocks.
40.	34.5	34.0	14.0	Rocks, Monument.
41.	59.0	59.0	25.5	Rocks.
42.	17.5	16.0	6.0	Rocks.
43.	13.0	11.5	4.0	Rocks.
44.	12.0	11.5	4.0	Rocks.
45.	Trace, 2 to 3 in.			Rocks
46.	Trace, 1 to 2 in.			Ice on Rocks
47.	Trace, 3 to 4 in.			Rocks
48.	Trace, 3 to 4 in.			Rocks
49.	32.0	31.5	11.5	
50.	13.5	7.5	3.5	Rocks and Bushes.
51.	Trace, 2 to 3 inch.			Rocks.
52.	Trace, 2 to 3 in.			Rocks. (96 ft. from Monument)

606.50  
 6.27... estimated for shallow  
 52) 612.77 depths at 33 per cent.  
 11.78 in. = 52.2 per cent.

Course No. 4 (MOUNT ROSE)

Course No. 3 (MOUNT ROSE)

1.	45.5	42.0	13.0	
2.	62.0	c.c.	22.0	
3.	73.5	73.0	25.5	
4.	58.0	57.5	21.5	
5.	62.0	61.5	22.0	
6.	49.0	49.0	18.5	
7.	27.5	27.0	9.0	
8.	Trace, 5 to 6 in.			Rocks.
9.	Trace, 4 in.			Rocks.
10.	9.0	8.5	3.0	Rocks.
11.	Trace, 1 to 2 in.			Rocks.
12.	Trace, 2 to 3 in.			Rocks.
13.	Trace, 2 to 3 in.			Rocks.
14.	Trace, 2 to 3 in.			Rocks.
15.	4.0	3.0	1.0	Rocks.
16.	Trace, 3 to 6 in.			Rocks.
17.	6.0	4.5	1.5	Rocks.
18.	19.5	18.0	7.5	
19.	7.0	7.0	2.0	
20.	10.0	9.5	2.5	
21.	9.0	8.5	3.5	
22.	9.0	8.5	3.5	
23.	Trace, 3 to 4 in.			Rocks.
24.	Trace, 2 to 3 in.			Rocks.
25.	Trace, 1 to 2 in.			Rocks.



Course No. 3 (MOUNT ROSE) cont'd.

No.	Depth.	Core.	Water Content.	Remarks.
26.	Trace, 1 to 2 in.			Rocks. of turning point
27.	Trace, 1 to 2 in.			Rocks.
28.	Trace, 1 to 2 in.			Rocks.
29.	Trace, 1 to 2 in.			Rocks.
30.	Trace, 2 to 3 in.			Rocks.
31.	Trace, 2 to 3 in.			Rocks. Monument.
32.	Trace, 1 to 2 in.			Rocks.
33.	Trace, 1 in.			Rocks.
34.	Trace, 2 in.			Rocks.
35.	11.0	8.0	3.0	Rocks. overturned stump.
36.	8.0	c.c.	2.5	
37.	12.5	c.c.	4.5	
38.	6.0	5.5	2.0	
39.	12.0	10.5	6.0	
40.	9.5	8.5	4.0	
41.	5.5	4.3	1.5	
42.	6.0	5.0	2.5	33' from Ski Scrub.
43.	31.5	30.0	12.5	17' below " "
			<hr/> 194.50	
			14.10	...estimated for shallow depths at 33 per cent.
			<hr/> 208.60	

Course No. 4 (MOUNT ROSE)

1.	4.5	4.0	1.5	4' S. of Ski Scrub.
2.	58.5	57.5	24.0	
3.	59.0	58.0	23.0	
4.	70.5	c.c.	29.0	
5.	31.5	c.c.	11.0	
6.	8.0	c.c.	3.0	
7.	35.5	32.5	12.0	
8.	30.0	30.0	11.5	
9.	7.0	c.c.	3.0	
10.	77.5	76.5	38.5	
11.	60.5	c.c.	28.0	
12.	55.5	54.5	21.0	
13.	88.5	c.c.	36.5	
14.	138.5	c.c.	63.5	
15.	115.0	92.5	41.0	
16.	81.5	77.5	30.5	
17.	16.0	11.5	5.5	
18.	10.0	8.5	3.5	
19.	89.0	88.5	35.0	
20.	104.5	100.5	40.5	
21.	83.5	80.5	32.0	
22.	54.5	52.5	22.0	
23.	54.5	54.0	22.5	
24.	53.5	52.0	19.0	
25.	48.5	47.5	19.0	
26.	81.0	77.5	31.0	
28.	113.5	112.0	46.0	
29.0	87.0	85.5	34.5	
30.0	70.5	69.0	30.5	Much Dirt.

Course No. 4 (MOUNT ROSE) cont'd.

No.	Depth.	Core.	Water Content.	Remarks.
31.	73.5	71.5	39.0	
32.	33.0	c.c.	12.5	4' W. of Turning Point
Rem.	43.0	38.5	15.5	
33.	131.0	129.3	59.0	
34.	146.0	142.0	65.5	
35.	82.5	77.5	34.5	
36.	50.5	49.5	17.0	
37.	90.0	86.0	35.0	
38.0	75.0	72.5	22.5	
39.0	75.5	73.5	29.0	
40.	77.5	77.0	28.0	46' from upturned stump.
Second Series			1053.00	
First			208.60	
			83)1261.60	
			15.2 in. = 54.2 per cent of normal	
				<u>Average Percentage of Courses:</u>
				No. 1 86.8
				No. 2 52.2
				No. 3 54.2
				Avg. 64.4 per cent
			20)1019.0	
			52.0	
			20)312.80	
			15.64 = 72.6 per cent	

Density - 35.7 per cent  
 $52.0 \times 35.7 \text{ per cent} = 18.56 \text{ in.}$

Course No. 2  
 April 1, 1920

1.	55.5	43.5	17.9	2 samples.
2.	39.5	29.5	14.4	
3.	68.0	54.0	re-measured.	
Rem.	67.0	48.5	20.1	
4.	60.0	52.5	20.0	
5.	57.0	37.0	re-measured.	
Rem.	58.0	40.0	15.1	
6.	60.2	41.0	20.0	
7.	64.0	42.0	20.1	
8.	62.0	35.0	16.0	
9.	54.0	26.0	11.9	
10.	52.5	47.0	18.9	
11.	56.0	34.0	re-measured.	
Rem.	64.5	45.0	18.0	
			11)538.5	
			50.0	
			11)193.80	
			17.60 = 77.1 per cent	

Density - 34.5 per cent  
 $58.0 \times 34.5 \text{ per cent} = 20.01 \text{ in.}$

Courses 1 and 2:

331.86  
 193.50  
 31)242.26  
 10.94 = 74.2 per cent

Corrected on basis of selected

Measurements: Course No. 1 18.56 in. (Course No. 1 only, = 81.3%)

(Normal 2284 in.)

Station No. 6 MARLETTE LAKE.

Station No. 6 - MARLETTE LAKE, cont'd.

Course No. 1

April 1, 1920

No.	Depth.	Core.	Water Content	Remarks.
1.	59.5	48.5	17.5	
2.	63.0	61.0	24.1	
3.	61.0	37.0	19.0	
Rem.	62.0	49.0	22.0	
4.	56.0	39.5	17.5	
5.	52.0	31.0	14.5	
6.	40.0	22.5	10.5	
7.	35.0	20.0	9.5	3 samples.
8.	38.0	31.0	12.0	
9.0	37.0	19.0	9.4	2 samples.
10.	44.5	20.0	9.0	
11.	56.0	35.5	16.0	2 samples.
12.	58.5	42.0	19.3	
13.	72.0	48.0	20.5	
14.	60.0	42.0	16.9	
15.	57.0	44.0	17.9	
16.	52.0	41.0	15.5	3 samples.
17.	52.5	36.0	15.1	
18.	50.0	35.5	15.5	
19.	48.0	37.0	15.5	
20.	46.0	35.5	14.7	
Rem.	20) 1039.0		20) 312.60	
	52.0		15.63 = <u>72.6</u> per cent	

Density - 35.7 per cent  
 $52.0 \times 35.7$  per cent = 18.56 in.

Course No. 2  
 April 1, 1920

1.	55.5	43.5	17.9	2 samples.
2.	39.5	29.5	14.4	
3.	68.0	54.0	remeasured.	
Rem.	67.0	48.5	20.3	
4.	60.0	52.5	20.0	
5.	57.0	37.0	remeasured.	
Rem.	58.0	40.0	15.1	
6.	60.2	41.0	20.0	
7.	64.0	42.0	20.1	
8.	62.0	35.0	16.0	
9.	54.0	26.0	11.9	
10.	52.5	47.0	18.9	
11.	56.0	34.0	remeasured.	
Rem.	64.5	45.0	19.0	
	11) 638.5		11) 193.60	
	58.0		17.60 = <u>77.1</u> per cent	

Density - 34.5 per cent  
 $58.0 \times 34.5$  per cent = 20.01 in.

Courses 1 and 2:

$\frac{331.66}{193.60}$   
 $31) 525.26$   
 $16.94 = 74.2$  per cent

Corrected on basis of selected measurements:

Course No. 1 18.56 in.  
 " " 2 20.01 " (Course No. 1 only, = 81.3%)  
 Av. 19.29 " = 84.5 per cent.  
 (Normal 22.84 in.)

Station No. 6 - MARLETTE LAKE, cont'd.

Course No. 1

May 3, 1920

(2)

No.	Depth.	Core.	Water Content.	Remarks.
1.	52.5	50.0	19.3	
2.	45.5	45.0	16.4	
3.	42.5	42.0	18.0	
4.	39.0	37.0	11.9	
5.	32.5	30.0		Measured 3 times.
Rem.	32.0	30.0	14.6	
6.	24.5	24.5		Measured several times.
Rem.	24.0	24.0	9.6	
7.	19.0	18.0	8.0	" " "
8.	23.0	20.0	10.1	" " "
9.	21.0	20.0	9.0	" " "
10.	29.5	29.0	11.1	" " "
11.	36.5	36.0	15.5	
12.	42.5	41.0	16.8	
Rem.	42.5	41.0	16.8	
13.	59.0	58.0	26.5	Ice - under large pine.
14.	48.0	47.0	18.5	
15.	45.5	44.5	18.0	
16.	41.5	41.0	16.5	
17.	47.5	46.0	18.6	
18.	38.5			
Rem.	38.0	37.0	14.5	
19.	41.0	38.0	14.4	
20.	36.0	c.c.	15.0	

32.5  
24.5  
42.5  
38.5  

---

138.0

901.5  
138  
20) 763.5

20) 302.3  
15.12

Course No. 2 38.2  
May 3, 1920

1.	36.0	c.c.	12.0	
2.	24.0	24.0	8.5	
3.	49.5			
Rem.	50.5	c.c.	19.5	
4.	46.0	c.c.	18.0	
5.	34.0	34.0	10.5	
6.	47.0			Mansanita bottom.
Rem.	48.0	47.0	17.5	
7.	44.0	44.0	18.6	
8.	50.0			
Rem.	50.0	c.c.	21.8	
9.	42.0	41.0	16.4	71.1 per cent of normal.
10.	43.0	41.0	16.2	
11.	49.0	48.0	21.0	

49.5  
47.0  
50  

---

146.5

613.0  
146.5  
11) 466.5  
42.4

40) 180.0  
16.36

Average of both courses 15.74 in.

av. 40.3 both courses. Density 39.1%

Course No. 1

March 30, 1920

No.	Depth.	Core.	Water Content.	Remarks.
1.	38.0	35.0	13.5	Ice 12" above ground. Measured several times.
2.	42.5	39.5	15.0	
3.	54.8	53.5	18.5	Icy with open hole.
4.	36.5	30.0	11.8	Measured 3 times.
5.	40.0	37.5	15.3	Loose and icy.
6.	37.0	30.5	14.8	Measured several times.
7.	41.5	35.0	15.0	" " "
8.	44.0	35.0	13.0	" " "
9.	43.5	40.0	13.5	" " "
10.	43.0	36.5	12.5	" " "
11.	46.0	36.0	14.0	" " "
12.	43.0	36.0	14.0	Icy.
13.	38.0	32.0	13.0	
14.	36.0	33.0	14.0	
15.	23.0	22.0	10.5	Ice - under large pine.
16.	44.0	35.0	12.5	
17.	43.5	34.0	13.0	
18.	58.5	57.5	19.0	
19.	50.0	44.0	15.0	
20.	33.0	30.0	13.0	
21.	7.5	6.5	2.3	
22.	21.0	18.0	6.3	
23.0	36.0	34.5	11.5	
24.	27.0	26.0	10.0	
25.	16.0	11.0	2.0	
26.	29.5	25.5	9.0	
27.	51.0	37.0	15.0	Manzanita bottom.
28.	45.0	39.0	15.3	
29.	29.5	28.5	11.0	
30.	30.0	24.0	10.0	Icy.
31.0	23.0	20.0	8.0	
32.	61.5	55.5	20.3	
33.	33.5	28.0	11.2	
34.	40.0	35.5	10.5	
35.	32.5	30.5	9.2	
36.	49.0	40.5	15.0	
37.	27.5	20.0	7.0	Manzanita bottom.
38.	43.0	41.0	15.0	
39.	36.5	34.0	12.0	
40.	36.0	32.0	12.2	

40) 1510.8  
 37.8

Density - 32.6 per cent.

40) 493.7  
 12.34

= 71.1 per cent of normal.

Average 1 and 2, 13.41 in. = 67.4 per cent of normal.

Station No. 8 - FREEL PEAK  
 Course No. 1 (Hagan's Meadow)  
 March 31, 1920

No.	Depth.	Core.	Water. Content.	Remarks.
1.	37.0	31.0	15.0	Ice 12 inches above ground.
2.	47.5	26.5	12.0	Measured several times.
3.	32.0	24.5	9.5	
4.	48.0	20.0	10.0	Icy with open hole.
5.	39.5	32.0	15.0	
6.	46.8	32.0	16.0	Loose and Icy.
7.	47.0	40.0	19.0	
8.	37.5	34.0	14.5	
9.	37.5	32.0	12.0	
10.	36.5	27.0	13.0	Dry Dirt.
11.	41.5	38.0	14.0	
12.	44.5	33.5	14.8	Grass.
13.	38.0	24.5	13.0	Icy.
14.0	44.0	40.0	15.2	
15.	33.5	28.5	13.0	
16.	40.5	35.0	14.5	
17.	19.0	15.0	7.0	
18.	27.0	24.5	85.0	
19.	16.0	13.5	5.0	
20.	10.0	85.0	3.2	
			20) 244.20	
			12.21	

Note: Mr. Armstrong will explain change here.

Course No. 2  
 March 31, 1920

1.	42.0	30.0	13.0
2.	43.0	27.0	12.0
3.	44.0	20.0	11.5
4.	39.0	28.0	16.5
5.	53.5	48.0	18.0
6.	30.0	24.5	12.0
7.	26.0	20.0	10.0
8.	32.0	21.0	11.0
9.	35.0	22.0	12.0
10.	38.0	30.0	18.0
11.0	42.0	30.0	17.0
12.	39.0	29.0	16.5
13.	45.0	38.0	17.0
14.	43.0	32.0	15.0
15.	35.0	27.0	13.0
16.	39.0	31.0	15.5
17.	42.0	35.5	16.5
18.	44.5	37.0	17.0
19.	46.0	39.0	17.5
20.	43.0	35.0	16.0
			20) 292.00
			14.60

Average 1 and 2, 13.41 in. = 67.4 per cent of normal.

II. CARSON BASIN  
A. West Carson.

Station 2 - WILLIAMS.

Course No. 1  
April 30, 1920

No.	Depth.	Core.	Water Content.	Remarks.
1.	58.0	49.0	24.0	Mud.
	-1.5 <sup>56.5</sup>	-3.0		
2.	25.0	13.0	9.0	
3.	36.0	21.0	12.0	Mud and water.
	-2.0 <sup>34.0</sup>	-2.0		
4.	49.0	38.0	13.5	
5.	48.0			
Rem.	49.0	30.0	18.3	Dry Dirt.
	-2.5 <sup>46.5</sup>	-5.0		
6.	47.5	32.0	19.0	Grass.
	-1.0 <sup>46.5</sup>	-1.0		
7.	50.0	42.0	20.1	Water. 5 Meas.
8.	49.0	31.5	21.4	" Saplings.
9.	53.0	41.5	28.0	"
10.	40.0	19.0	12.0	" Open - Rocky.
11.	65.0 <sup>63.0</sup>	64.0	25.0	
	-2.0	-2.0		
		49.5		6 Meas.

11) 560.5  
51.0

11) 202.3  
18.39

Note: Mr. Armstrong will explain change here.

Course No. 2  
April 30, 1920

1.	68.0	61.0	27.0	Mud.
2.	64.0	49.5	26.2	"
	-2.5 <sup>61.5</sup>	-2.5		
3.	57.5	39.0	21.1	"
	-1.0 <sup>56.5</sup>	-3.5		
4.	58.0	48.5	23.3	"
5.	57.0	43.0		
Rem.	58.0	49.0	24.1	"
	-1.0 <sup>57.0</sup>	-3.0		
6.	54.0	36.0	21.2	"
	-1.0 <sup>53.0</sup>	-1.0		
7.	62.0			
Rem.	61.0	45.0	28.1	Water
8.	55.0	47.0	24.4	"
9.	49.0	34.0	21.2	"
10.	60.0	52.5	26.0	"
11.	49.0	35.0	22.1	" Meas.
12.	59.0	52.0	28.2	"
13.	64.0	56.5	26.6	

13) 751  
57.8

13) 319.5  
26.1  
24.58

Note: End of course marked by lx6 - 4' long nailed to small tamarack blazed.

av. 54.4

av. 21.49

-15- Meas. 39.5%

Course No. 1  
May 1, 1920

No.	Depth.	Core.	Water Content.	Remarks.
1.	76.0	74.5	36.0	Meadow.
2.	59.0	57.0	22.0	
3.	40.0	38.5	16.0	
4.	48.0	46.0	21.0	
5.	56.0	53.5	23.0	
6.	59.5	57.0	22.5	
7.	63.0	63.0	25.5	
8.	56.5	55.5	22.5	
9.	57.0	56.0	24.5	Rocky. 4 Meas.
10.	59.0	58.0	23.0	
11.	59.0	56.0	23.0	Rock. 4 Meas.
12.	69.0	67.0	27.0	Meadow.
13.	72.5	72.0	29.0	Dirt and needles.
14.	73.0	70.0	29.0	Rocks. 5 Meas.
15.	96.5	96.0	36.5	Fir Saplings.
16.	57.0	53.5	23.0	Sage brush.
17.	67.0	66.0	32.0	Aspen - Rocky.
18.	33.0	31.5	21.0	
19.	57.5	57.0	24.0	
20.	53.0	49.5	24.0	6 Meas.

20) 1211.5  
60.6

20) 504.50

Normal on basis of 1915-16 (=150 per cent) is 25.84  
Therefore seasonal percentage is 97.6 per cent.

Course No. 2  
May 1, 1920

1.	59.0	57.5	23.0	Wet Dirt.
2.	74.0	74.0	28.0	6 Measurements.
3.	70.0	68.5	27.0	Ice and needles.
4.	67.5	66.0	27.0	Meadow soil.
5.	76.0	75.5	29.0	" "
6.	67.0	66.0	26.0	" "
7.	65.0	63.0	25.0	Rocky.
8.	64.0	63.0	24.0	" "
9.	66.0	63.5	25.5	" "
10.	68.0	65.5	26.0	W 4 Meas. and needles.
11.	66.0	64.0	25.0	" "
12.	61.0	59.0	23.5	" "
13.	66.0	66.0	24.0	" "
14.	72.0	70.5	26.0	Meadow grass.
15.	64.0	62.0	23.5	Rocks. 4 Meas.
16.	62.0	60.0	22.0	
17.	69.5	69.0	28.0	Ice and Mud.
18.	71.0	68.5	27.0	3 Meas.
19.	62.0	60.5	22.0	
20.	59.0	58.0	23.0	

20) 1329.0  
66.5

20) 504.50  
25.23 Av.

av. 63.6      25.23  
dens. 39.7%



Station 3 BURNSIDE LAKE  
 Course No. 1  
 April 30, 1920

No.	Depth.	Core.	Water Content.	Remarks.
1.	62.0	60.0	29.0	Meadow. <u>Remarks.</u>
2.	62.0	60.0	27.0	
3.	59.0	58.0	57.0?	Water.
4.	64.0	62.5	28.0	
5.	61.0	60.0	26.5	
6.	65.0	63.0	31.0	
7.	64.0	62.0	29.0	
8.	66.0	65.5	32.0	
9.	65.0	62.5	30.0	
10.	61.0	59.5	28.0	
11.	65.0	63.25	29.0	Rocky. 4 Meas.
12.	63.5	62.0	31.0	
13.	62.0	60.5	30.0	
14.	66.0	64.5	32.5	
15.	61.0	59.0	31.0	Dirt and needles.
16.	62.0	62.0	29.5	
17.	62.0	60.0	28.5	
18.	67.0	66.0	32.5	Sage brush.
19.	68.0	66.5	32.0	Dry.
20.	65.0	64.0	30.0	
			20) 623.50	
			29.92 Av.	Mud and Water.
			Normal 27.81?	
			Seas. Pctge. <u>107.6</u> per cent	

20) 1270.5  
 63.5

Course No. 2  
 April 30, 1920

1.	63.0	61.5	27.5	Wet Dirt.
2.	49.0	48.0	29.0	6 Measurements.
3.	53.0	51.5	31.0	Ice and needles.
4.	62.0	61.5	32.0	Meadow sod.
5.	54.0	52.0	27.0	" "
6.	54.5	53.0	28.0	" "
7.	60.0	57.5	28.0	" "
8.	50.0	48.0	25.0	Rocky.
9.	52.5	51.0	27.0	"
10.	53.0	52.0	27.5	"
11.	57.0	56.0	29.5	Wet dirt and needles.
12.	60.0	59.5	30.0	" "
13.	59.5	58.0	28.0	" "
14.	54.5	53.0	31.0	" "
15.	61.0	60.0	30.5	Meadow grass.
16.	67.5	66.0	31.5	Rocks. 4 Meas.
17.	70.0	69.0	32.5	
18.	64.5	63.0	28.0	Ice and Mud.
19.	57.0	56.0	26.0	Average
20.	55.0	52.0	24.0	

20) 1157.0  
 57.9

20) 573.0  
 28.65 Av.

Mr. Armstrong will explain new course.

av. 60.7      29.29  
 mens. 48.3%

Station No. 3 - BURNSIDE LAKE (cont'd)

Course No. 1  
May 1, 1920

No.	Depth.	Core.	Water Content.	Remarks.
1.	45.0	38.5	21.3	Water.
2.	53.0 <sup>52.0</sup>	38.5	31.0	"
	-1.0	-1.0		
3.	45.0	36.0	31.0	"
4.	47.0	39.5	31.0	"
5.	42.0	34.0	25.5	Dry dirt.
	-2.0 <sup>40.0</sup>	-3.0		
6.	55.5	25.0	24.0	Mud.
7.	54.5	35.5	29.5	Water.
8.	52.0	41.0	30.6	
9.	46.0	22.0		
Rem.	48.0	32.5	24.2	
10.	51.0	28.0	20.6	
11.	50.0	37.0	21.0	
12.	52.0	41.5	20.6	
13.	56.0	50.5	22.1	
14.	52.0	49.0	21.4	
15.	54.5	42.5	22.3	Dry.
16.	54.0	53.5	20.1	
17.	49.0	30.0	18.2	Mud and Water.
18.	49.0	25.0	19.0	
19.	40.0	28.0	20.0	
20.	37.0	21.5	12.0	
	20) 983.5		20) 465.40	
	49.2		23.27	Average.

Course No. 2  
May 1, 1920

1.	59.0	48.0	23.2	
2.	55.0 <sup>53.0</sup>	41.0	21.3	
	-2.0	-2.0		
3.	60.5	48.0	23.8	Ice.
4.	53.0	40.5	19.7	
5.	49.0	45.0	18.0	
6.	65.0	51.0	26.1	
	-2.0 <sup>63.0</sup>	-2.0		
7.	62.5	44.5	25.2	Grass.
	-1.5 <sup>61.0</sup>	-1.5		
8.	49.0	35.0	19.0	
9.	51.5	48.0	21.8	
10.	55.0	45.5	21.6	
	55.6		10) 219.7	
	-2		21.97	Average

10) 554  
55.4

22.62 new, 43.3%

Mr. Armstrong will explain new course.

Both courses av. 52.3

1919-20

Mar

2. Williams

Course 1

18.39

" 2

24.58

Average

21.49

25.52

3. Buena Vista Lake

Course 1

23.27

" 2

21.97

Average

22.62

27.47

Course No. 2.  
 April 29, 1920

No.	Depth.	Core.	Water Content.	Remarks.
1.	70.0	56.0	30.0	Mud.
Rem.	72.0	59.0	31.5	"
2.	100.0	95.0	44.0	"
3.	83.5	67.5	48.9	Water 29
4.	53.0	46.0	24.0	" 8
5.	60.5	52.0	28.0	" 8
6.	76.5	64.0	33.7	Mud.
7.	34.5	33.0	14.5	"
Rem.	57.0	41.0	21.0	Dry dirt.
8.	64.0	48.5	26.0	" "
9.	94.0	88.0	58.8	1" Mud.
10.	50.0	45.0	33.5	Rock.
11.	72.5	69.0	27.5	Grass.
12.	79.0	78.0	31.6	Mud.
13.	74.0	68.0	33.5	"
14.	74.0	70.0	31.3	"
15.	88.0	78.0	27.6	2" Water.
16.	84.0	79.0	36.2	5" Water.
17.	90.0	82.0	40.5	6" Water.
18.	83.5	75.5	43.8	
19.	69.0	60.0	31.0	
20.	62.5	51.0	24.3	

20)  $\frac{1487}{74.4}$  20)  $\frac{646.20}{32.36}$  in. Av.  
 Av. dens. of 9 best meas. 42.7 per cent.

Course No. 1  
 April 29, 1920

1.	60.0	31.5	26.1	
		-1.5		
2.	77.0	72.0	33.0	
3.	79.0	76.5	34.0	
4.	78.0	71.5	33.5	
	-1.0	77.0		
5.	70.0	65.0	27.0	
6.	74.0	68.5	29.4	
7.	88.0	78.0	34.6	
	-2.0	86.0		
8.	68.0	62.5	27.5	
Rem.	68.0	62.0	28.0	
	-1.0	67.0		
9.	67.0	61.5	26.0	Wet Dry dirt.
	-2.0	65.0		
10.	69.0	68.5	29.0	
11.	56.0	52.5	22.5	Water - 6 in.
	-4.0	52.0		" 4 in.
12.	71.0	61.0	25.1	Wet on bottom.
	-3.5	67.5		Dry dirt on road.
13.	46.5	44.0	16.2	
	-4.0	42.5		
14.	66.0	61.0	28.5	
15.	62.0	58.5	22.3	
	-3.0	59.0		
16.	66.0	62.5	28.2	

Station 4 BLUE LAKES (cont'd)  
 Course No. 1 (cont'd)  
 April 29, 1920.

No.	Depth.	Core.	Water Content.	Remarks.
17.	68.0	57.5	29.0	On road.
	-3.0 <i>65.0</i>	-3.0		
18.	73.0	68.0	32.0	Rocky.
	-3.0 <i>70.0</i>	-3.0		
19.	73.0	63.0	33.1	Sage brush.
20.	68.0	67.0	33.0	
	-2.0 <i>66.0</i>	-2.0		

*20) 1351*  
*676*

*20) 570.5*  
*28.53* Av.

Density of 14 best meas., 42.2 per cent.

Average of 1 and 2, 30.45 in.

*.. sept*

*71.0*

*Mean 42.9%*

Course No. 1  
 April 29, 1920

1.	76.0	75.0	28.0	Sloping Ground.
2.	88.0	86.0	32.0	
3.	92.0	91.0	34.0	Low Firs.
4.	93.0	92.0	35.0	
5.	80.0	80.0	28.0	
6.	85.0	83.0	29.0	There are drifts of
7.	93.0	89.0	32.0	6 Measurements.
8.	91.0	89.0	30.0	Logs.
9.	85.0	83.0	31.0	
10.	77.0	75.0	24.0	
11.	75.0	75.0	26.0	
12.	73.0	70.0	25.0	Rocky.
13.	77.0	75.0	26.0	
14.	78.0	74.0	27.0	
15.	71.0	70.0	25.0	Grass and needles.
16.	74.0	72.5	29.0	
17.	76.0	74.0	28.0	
18.	89.0	88.0	30.0	
19.	89.0	87.5	31.0	
20.	84.0	83.0	31.0	

*1646*  
*20) 1646.0*  
*82.3*

*20) 581.0*  
*29.05*

Density - 35.3

Course No. 2  
 April 29, 1920

1.	90.0	90.0	33.0	Wet Dirt.
2.	107.5	107.0	38.0	
3.	98.0	97.0	37.0	
4.	80.0	78.0	34.0	Water - 6 in.
5.	89.0	87.0	34.0	" 4 in.
6.	84.0	83.0	31.0	Wet on bottom.
7.	95.0	93.0	36.0	Dry dirt on road.
8.	64.0	63.0	26.0	
9.	72.0	71.5	31.0	
10.	111.0	110.5	42.0	Hollow.

Station 4 - BLUE LAKES (cont'd)  
 Course No. 2, continued.  
 April 29?, 1920.

<u>No.</u>	<u>Depth.</u>	<u>Core.</u>	<u>Water Content.</u>	<u>Remarks.</u>
11.	72.0	70.5	26.0	On road.
12.	74.0	72.0	26.0	
13.	77.0	77.0	31.0	Rocky.
14.	91.0	91.0	33.0	
15.	87.0	86.5	29.5	Sage brush.
16.	98.0	96.0	33.0	
17.	106.0	103.0	35.0	
18.	101.0	99.0	34.5	Fir saplings.
19.	103.5	102.5	35.0	Meadow grass.
20.	70.0	69.0	23.0	Brush.
	<u>Av. 88.5</u>		20) <u>648.0</u>	
			32.40 in.	

20) 1770

Average of Courses 1 and 2, - 30.73 in. = 75.3%  
*depth* . . . . . 85.4 *remains* 36.0%

Course No. 1  
 June 1, 1920

3.	15.-1	15.0	8.2	There are drifts on this course that are still 5 ft. deep. They were 15 to 20 ft. one way or the other from our measurements, but right in the course.
4.	30.0	26.5	13.3	
5.	38.0	37.0	16.0	
	-2.5	-2.5		
6.	31.0 -1	30.0	14.6	
9.	13.0 -1	13.0	6.2	
15.	16.0	15.0	8.6	
19.	4.5	4.0	2.0	
20.	7.0	6.5	3.2	
	-1.0	-1.0		

7.6) 148  
 20) 7.4

8) 72.1  
 9.01 Av.

20) 72.1 | 3.61

Course No. 2

2.	22.5	22.5	12.1	Passed over some large drifts on this course. Put sampler down and got 67, 63, and 69 in. three different places.
	-2.0	-2.0		
3,4,5,6,7, all water.				
8.	16.5	16.0	8.5	
	-2.0	-2.0		
9.	26.0	24.0	13.2	
10.	37.0	34.0	17.8	
11.	25.0	24.5	11.6	
	-1.5	-1.5		
12.	20.0	18.0	10.7	
13.	27.0	23.0	12.0	
	-1.0	-1.0		
14.	45.5	45.0	23.1	
	-3.0	-3.0		
15.	16.0	15.0	9.0	
16.	26.0	25.0	14.8	
17.	15.5	15.0	9.0	
18.	10.0	6.0	4.0	
20.	10.0	9.0	4.3	

20) 287.5  
 14.4

12) 138.0  
 11.50 Av.

20) 138 | 6.90

Av. 5.26

Av. 1+2 . . . 10.9 5.56 *remains* 51.0%

III. WALKER BASIN  
a. West Walker.

Station No. 1 - PICKLE BENCH.  
March 30, 1920, to Apr. 6, 1920 (Chas. W. Fulton and W. F. Bryant)  
Course No. 1:

<u>No.</u>	<u>Depth.</u>	<u>Core.</u>	<u>Water Content.</u>	<u>Remarks.</u>
1.	21.0	19.0	7.0	
2.	29.5	27.0	8.5	
3.	31.5	22.0	8.5	
4.	26.5	21.0	4.0	
5.	42.0	35.0	9.0	
6.	33.5	26.	6.0	
7.	31.0	20.0	3.0	Brush.
8.	32.5	21.0	6.0	
9.	28.5	22.5	5.0	
10.	28.0	19.0	5.0	
11.	25.0	20.0	4.0	
12.	20.5	14.0	4.0	
13.	27.5	23.0	9.0	
14.	18.0	12.0	2.0	
15.	21.5	18.5	5.5	
16.	25.5	21.5	4.5	
17.	27.5	21.0	7.0	
18.	18.5	16.0	3.0	
19.	24.5	21.0	8.0	
20.	18.0	13.5	5.5	Brush.
Course No. 2.				
21.	23.0	19.5	7.5	
22.	26.0	20.0	7.0	
23.	33.0	26.0	5.5	
24.	39.0	26.5	11.0	
25.	37.5	18.5	9.0	
26.	47.5	20.5	6.0	
27.	35.0	15.0	5.5	Brush.
28.	38.0	22.5	9.5	
29.	41.0	26.	11.5	
30.	35.5	24.0	12.0	
31.	30.0	27.0	6.0	
32.	34.5	19.0	2.0	
33.	31.5	21.0	9.0	
34.	29.5	13.0	6.5	
35.	25.0	18.0	7.5	
36.	31.0	18.0	5.0	
37.	31.5	13.5	2.0	
38.	28.0	19.0	5.5	
39.	24.5	15.0	4.0	
40.				

39) 246.5  
6.3 in. Average.

Note: Muddy at Bridgeport, 30 in. on summit, 50 in. snow on Sonoma Bridge Grade.

Station No. 1 (cont'd)  
 April 20, 1920 1919  
 Course No. 1

<u>No.</u>	<u>Depth.</u>	<u>Core.</u>	<u>Water Content.</u>	<u>Remarks.</u>
1.	0			
2.	11.5	10.0	3.2	
3.	19.5	13.5	6.8	
4.	12.0	6.0	1.6	
5.	22.5	13.0	5.3	
6.	20.0	10.0	4.0	
7.	19.0	11.0	6.9	
8.	13.0	5.5	1.9	
9.	16.0	5.5	1.2	
10.	11.5	8.5	4.0	
11.	18.0	12.5	5.1	
12.	15.0	7.5	2.8	
13.	19.5	13.0	4.9	
14.	19.0	10.0	4.8	
15.	19.0	12.5	5.6	
16.	9.0	3.5	0.6	
17.	14.0	10.0	4.0	
18.	17.0	12.5	5.8	
19.	14.0	12.0	5.3	
20.	10.0	7.5	2.2	

Course No. 2

1.	0			
2.	0			
3.	14.5	10.0	4.4	
4.	24.5	17.5	7.2	
5.	26.0	18.0	8.5	E. side of cedar tree.
6.	23.5	16.5	7.0	
7.	26.0	18.5	8.9	Summit.
8.	22.0	14.5	6.5	W. Slope under ironwood tree.
9.	29.5	20.0	8.0	
10.	27.0	21.0	9.3	
11.	19.5	14.0	5.8	W. Slope under ironwood tree.
12.	20.5	13.5	5.2	
13.	21.0	12.0	5.7	
14.	17.0	9.5	4.0	Course 1. Hereafter omit
15.	15.0	10.0	2.7	
16.	21.0	10.0	4.2	
17.	13.5	10.5	3.6	
18.	24.0	21.0	9.0	
19.	10.0	7.5	2.1	
20.	0			

36) 179.0  
 4.97

E. side of 2 bull pine.  
 In ironwood brush.  
 On brow of an E. slope.

Omitting Nos. 28-30

28-30 to be discontinued.



Normal  
New course  
29.26

1919-20

1920-21

1921-22

1922-23

Williams

86.2

118.9

123.2

Normal  
New course  
20.80

Burnside

143.8

172.9

195.5

129.5

old course  
however  
So amt.

May, 1920.

1919-20

Williams  
old course

{  
1,  
2,  
av.

W.C., New.

18.39  
24.58  
21.49 . . . 39.5%

Normal  
(old course)  
~~27.69~~  
25.52

84.2  
~~77.6~~

New Course

{  
1,  
2,  
av.

25.23  
25.23  
25.23 . . . 39.7%

25.52  
+ 3.74  

---

29.26

86.2

Burnside Lane

old course

{  
1,  
2,  
av.

29.92  
28.65  
29.29 . . . 48.3%

27.47  
~~29.80~~  
(old course)  
~~28.3~~

106.6  
~~98.37~~

New Course

{  
1,  
2,  
av.

23.27  
24.97  
22.62 . . . 43.3%

27.47  
- 6.67  

---

20.80

108.8

25.23

21.49

---

3.74

29.29

22.62

---

6.67

Course No. 1  
March 31, 1920

Bearing of course, S. 60° 30' W. Starting point  
40' E. of rock monument.

No.	Depth.	Core.	Water Content.	Remarks.
1.	42.0	34.0	13.0	
2.	51.0	40.5	18.0	
3.	50.5	36.0	18.0	
4.	43.5	34.0	15.0	
5.	20.0	16.0	6.0	
6.	56.0	49.0	16.0	
7.	34.0	31.5	11.5	
8.	45.5	40.0	14.0	
9.	68.0	62.0	22.0	
10.	36.0	28.0	11.0	
11.	15.0	14.0	7.5	
12.	40.0	35.0	12.5	
13.	46.5	35.0	15.0	
14.	50.0	35.0	17.5	
15.	56.0	36.5	15.5	
16.	44.0	32.0	12.0	
17.	50.5	30.0	11.0	
18.	53.0	47.0	16.0	
19.	42.5	26.0	17.0	1 ft. SE. of large rock.
20.	42.0	27.0	12.5	
21.	44.0	24.0	17.0	
22.	40.0	27.0	16.5	
23.	15.0	12.5	6.0	
24.	10.5	10.0	3.5	
25.	28.0	21.0	13.0	N. side of cedar tree.
26.	48.0	27.0	12.0	
27.	60.0	36.0	16.0	Summit.
28.	0		*	W. Slope under ironwood tree.
29.	10.0	5.5	3.0 *	Descending ironwoods.
30.	0		*	W. Slope under ironwood tree.

Course No. 2

March 31, 1920 (13 Meas. NE. from No. 1 of Course 1. Hereafter omit 28-30, thus leaving 40 meas.)

1. (28.)	40.0	27.0	14.0	
2. (29.)	60.0	35.0	17.5	
3. (30.)	31.0	21.0	7.0	
4. (31.)	50.0	30.0	11.5	
5. (32.)	40.0	27.0	14.0	
6. (33.)	46.0	36.0	14.0	
7. (34.)	41.0	30.5	12.0	
8. (35.)	46.0	27.0	10.0	
9. (36.)	47.0	27.0	13.0	
10. (37.)	48.0	39.0	18.0	
11. (38.)	16.0	11.5	5.5	N. side of 2 bull pine.
12. (39.)	40.5	27.0	11.0	In ironwood brush.
13. (40.)	44.5	30.0	12.0	On brow of an E. slope.
			43) 527.5	
			12.3	Av.

Omitting Nos. 28-30 40) 524.5  
13.11 in. Av.

\*28-30 to be discontinued.

Station 2. LEAVITT AND PICKLE MEADOWS (cont'd)

Course No. 1  
 April 21, 1919.

Bearing of course, S. 80°30'W. Starting point  
 40' E. of rock monument.

<u>No.</u>	<u>Depth.</u>	<u>Core.</u>	<u>Water Content.</u>	<u>Remarks.</u>
1.	33.5	25.0	14.1	
2.	18.0	14.0	6.4	
3.	15.0	5.0	3.8	
4.	14.5	7.0	3.0	
5.	17.0	12.0	5.9	
6.	26.0	17.0	7.7	
7.	14.5	10.0	5.1	
8.	39.0	37.5	16.1	
9.	17.0	14.0	5.2	
10.	26.5	18.0	8.0	
11.	17.5	10.0	6.3	
12.	19.0	9.0	5.4	
13.	18.5	12.5	6.0	
14.	31.0	23.5	10.6	
15.	28.5	24.5	11.0	
16.	25.0	17.0	8.0	
17.0	16.0	11.0	4.9	
18.	27.5	22.5	8.4	1 ft. NE. of large rock.
19.	20.0	8.5	3.2	
20.0	20.5	11.5	4.4	
21.	20.0	16.0	6.2	
22.	15.5	6.0	2.8	
23.	12.0	9.0	4.0	
24.	0			Just S. of twin cedar.
25.	20.5	15.5	17.7 ?	Ascending very steep.
26.	19.0	11.5	6.0	
27.	0			On summit in thick forest
28.	0	Descending, ironwoods.		of ironwoods.
29.	0			Descending to Leavitt Meadows, Ironwood.
30.				
to	Bare.			
40.				
Substitute meas. for 31-40. Starting 50 ft. In a group of cedars				
from No. 1 and proceeding on Course N. 80°30'E. Descending.				
31.	16.0	7.0	4.1	
32.	41.0	33.5	16.1	
33.	17.0	11.0	6.0	
34.	24.0	19.0	8.1	
35.	17.0	11.0	9.9	Under two blazed cedars.
36.	0			10 ft. SE. of large cedar.
37.	0			9 ft. 6 in. S. " "
38.	20.0	15.0	5.4	
39.	16.5	7.0	2.4	
40.	21.0	16.5	8.0	

33) 240.2  
 7.28 Av.

Station No. 3 - WILLOW FLAT.  
 Course 1.  
 April 22, 1919.

<u>No.</u>	<u>Depth.</u>	<u>Core.</u>	<u>Water Content.</u>	<u>Remarks.</u>
1.	0			
2.	9.0	7.0	2.5	
3.	0			
4.	38.0	29.0	15.2	
5.	47.0	45.0	20.8	
6.	32.0	25.0	12.3	
7.	22.0	15.0	7.0	
8.	27.0	17.0	9.3	
9.	23.5	18.5	9.6	
10.	24.5	15.0	7.0	
11.	23.0	17.0	8.8	
12.	24.5	16.0	8.2	
13.	15.5	9.0	5.0	
14.	22.0	14.0	7.0	
15.	19.0	9.0	4.4	
16.	20.0	12.0	5.3	
17.	23.0	17.0	8.2	
18.	21.0	12.0	5.8	
19.	19.5	13.5	6.5	
20.	24.5	17.0	7.3	
21.	21.0	14.0	6.1	
22.0	39.0	25.0	10.7	
23.	27.0	25.0	9.9	
24.	29.5	21.5	10.5	
25.	31.5	26.0	12.0	
26.	59.0	47.5	20.2	Ascending very steep
27.	53.5	46.5	20.5	" " "
28.	36.0	35.0	12.8	On brow of hill.
29.	0			Under dead cedar.
30.	33.0	22.5	11.8	Under small dead cedar. W. Side.
31.	19.0	13.0	4.9	
32.	32.5	25.0	12.0	
33.	58.5	52.5	25.1	Under cedar trees.
34.	31.5	21.5	10.5	
35.	9.5	7.5	5.8	In a group of cedars 1 blaze.
36.	36.0	29.5	14.0	
37.	42.0	39.5	16.3	
38.	48.0	38.5	18.9	
39.	65.5	57.0	28.2	
40.	20.0	14.0	6.1	Under two blazed cedars.

\*Snow very soft on all steep N. slopes. This mass was taken 4 times but we could not get it any better, from all accounts the sampler would not make (cut) a core.

Station 3. WILLOW FLAT. (cont'd.)

Course 1.

April 1, 1920

<u>No.</u>	<u>Depth.</u>	<u>Core.</u>	<u>Water Content.</u>	<u>Remarks.</u>
1.	16.5	11.0	4.0	
2.	22.0	21.0	10.5	
3.	18.0	15.5	7.0	
4.	54.0	29.5	14.0	
5.	77.0	73.0	27.0	
6.	63.5	53.0	23.5	
7.	42.5	35.0	12.0	On W. side of tan. tree.
8.	43.5	30.5	14.0	
9.	42.5	29.5	11.0	
10.	41.0	31.5	12.0	
11.	46.0	27.0	12.0	
12.	42.5	24.0	10.0	
13.	35.5	15.0	4.5	
14.	39.0	29.5	11.0	
15.	41.5	27.0	11.0	
16.	38.5	19.0	7.0	
17.	43.0	27.0	13.0	
18.	39.0	22.5	10.5	
19.	38.0	20.5	9.0	
20.	45.0	28.5	11.5	
21.	43.0	23.5	9.5	
22.	45.5	28.0	12.5	
23.	47.5	31.0	15.0	
24.	49.5	40.5	16.0	
25.	59.5	56.5	18.0	
26.	71.5	68.0	20.0	
27.	84.0	43.0	12.0	On steep N. Slope*
28.	48.0	35.0	13.0	
29.	19.0	13.0	4.0	Under dead cedar.
30.	37.0	35.0	19.0	
31.	48.0	39.0	13.0	
32.	49.0	28.5	10.0	
33.	66.0	49.0	17.5	
34.	47.0	40.0	14.5	
35.	13.0	11.0	2.0	Under cedar trees.
36.	35.5	19.0	9.0	
37.	64.0	53.5	18.0	
38.	58.5	42.0	13.0	
39.	75.0	51.0	19.0	
40.	22.5	15.5	6.0	
		40)1311.5	40)495.5	
		32.79 Av.	12.4 Av.	

\*Snow very soft on all steep N. slopes. This meas. was taken 4 times but we could not get it any better, from all accounts the sampler would not make (cut) a core.

Station 4. CIRQUE MOUNTAIN.  
 April 5, 1920

A sample of snow in the "Rough" 125 in.  
 Snow = 44 in. water.

<u>No.</u>	<u>Depth.</u>	<u>Core.</u>	<u>Water Content.</u>	<u>Remarks.</u>
1.	59.5	53.0	18.5	
2.	74.0	44.0	18.0	
3.	109.0	104.5	37.0	
4.	79.5	74.0	26.5	
5.	78.5	47.5	18.5	
6.	9.5	7.5	3.0	On W. side of tam. tree.
7.	76.0	70.5	26.0	
8.	81.5	69.0	26.0	
9.	53.5	49.0	17.0	
10.	67.0	55.5	21.0	
	Summit?		10) <u>211.5</u>	
			21.2	
11.	90.0	85.5	34.0	
12.	86.5	82.0	30.5	
13.	85.5	82.0	30.5	
14.	84.0	75.5	31.0	
15.	81.5	59.0	23.0	
16.	82.5	53.0	20.0	
17.	106.0	101.0	36.5	
18.0	76.5	55.0	19.5	
19.	99.5	66.0	25.0	
20.	105.5	55.0	21.0	
21.	89.0	20.0	22.0	
22.	87.0	82.0	33.0	
23.	91.5	90.0	36.0	
24.	88.0	75.5	30.0	
25.	97.5	94.0	35.5	
26.	92.0	59.0	23.0	
27.	89.0	86.0	33.0	
28.	95.0	85.0	35.5	
29.	101.0	99.0	38.0	
30.	108.0	105.0	37.5	
31.	108.0	107.0	36.5	
32.	71.0	69.0	23.0	
33.	100.0	97.0	38.0	
34.	91.0	89.0	33.0	
35.	101.5	99.0	35.0	
36.	91.0	88.0	33.0	
37.	94.0	93.0	34.5	
38.	83.0	82.0	29.0	
39.	63.0	62.0	19.5	
40.	91.5	87.0	32.0	
			30) <u>908.0</u>	
			30.3	
		Total	211.5	
			908.0	
			40) <u>1119.5</u>	
			27.99	

Station 5 - CENTER MOUNTAIN  
 April 16, 1919.

Starting point is SE. of Creek and at  
 junction of two slopes - one to N. and one to W.

<u>No.</u>	<u>Length.</u>	<u>Core.</u>	<u>Water Content.</u>	<u>Remarks.</u>
1.	94.0	93.5	37.0	
2.	89.0	82.0	34.0	
3.	111.0	109.5	45.1	
4.	54.0	41.0	17.8	
5.	87.5	80.0	26.0	
6.	64.5	54.5	19.3	
7.	63.0	54.0	18.5	
8.	57.0	51.5	16.3	
9.	93.0	91.0	31.7	
10.	91.5	89.0	31.1	
11.	90.5	89.0	32.1	
12.	92.5	89.0	32.0	
13.	94.0	83.0	29.2	
14.	92.0	83.0	33.1	
15.	90.0	74.0	31.4	
16.	100.5	95.0	37.1	
17.	91.0	88.0	31.0	
18.	96.5	88.0	31.2	
19.	124.0	91.0	32.1	
20.	72.0	67.0	25.5	
21.	80.0	75.0	30.6	
22.	93.5	87.0	36.1	
23.	98.5	95.0	39.1	
24.	99.5	97.0	37.0	
25.	106.5	104.5	42.1	
26.	84.0	78.5	29.7	
27.	123.5	116.0	49.0	
28.	114.0	<del>44.4</del> 108.5	<del>108.5</del> 44.4	
29.	109.5	107.0	42.2	
30.	112.0	107.0	40.0	
31.	102.5	99.0	36.4	On steep N. slope.
32.	112.0	103.5	46.0	
33.	112.0	104.0	46.0	
34.	108.0	99.0	36.0	
35.	115.0	<del>45.3</del> 106.5	<del>106.5</del> 45.3	On steep W. slope.
36.	118.0	<del>43.8</del> 115.5	43.8	
37.	109.0	105.0	39.8	In canyon, N. slope.
38.	98.0	96.0	35.0	
39.	99.0	96.0	38.0	
40.	101.5	94.5	36.2	
			40) 1384.2	
			34.6	



Station 6. BUCKEYE,  
April 6, 1920Station 6. BUCKEYE - BIG MEADOWS.  
April 17, 1919.

<u>No.</u>	<u>Depth.</u>	<u>Core.</u>	<u>Water Content.</u>	<u>Remarks.</u>
1.	18.5	15.0	5.8	
2.	44.0	40.5	16.4	
3.	42.5	30.0	15.7	
4.	44.0	36.5	14.4	
5.	43.0	32.0	14.1	
6.	38.5	33.0	14.8	
7.	31.5	28.0	10.6	
8.	34.0	25.0	9.5	
9.	30.5	23.0	7.8	
10.	46.5	30.0	15.0	
11.	62.0	52.5	21.1	
12.	42.5	28.0	12.0	
13.	76.0	51.5	23.4	
14.	46.0	28.0	13.3	
15.	51.0	36.5	16.1	
16.	72.0	61.5	25.2	
17.	86.0	69.5	31.0	
18.	32.0	24.0	11.0	
19.	63.0	44.0	19.6	
20.	52.0	46.5	21.4	
21.	46.0	19.0	8.3	
22.	66.0	53.0	23.9	
23.	57.0	22.0	14.5	
24.	44.0	36.0	15.1	
25.	35.5	38.5	14.8	
26.	34.5	22.5	12.0	
27.	38.0	36.0	15.0	
28.	73.0	61.0	28.8	
29.	44.0	33.0	15.5	
30.	59.0	47.5	21.1	
31.	58.0	56.5	19.0	On steep N. Slope.
32.	44.0	36.0	12.0	"
33.	42.0	35.0	14.9	
34.	59.5	58.0	24.1	
35.	102.0	36.0	14.6	On steep W. slope.
36.	77.5	72.5	30.8	
37.	67.0	56.5	28.0	In canyon. N. slope.
38.	52.0	48.5	23.2	"
39.	61.0	48.5	25.0	"
40.	64.0	57.0	26.5	"
			40)705.3	
			17.6 Av.	

Station 6 - BUCKEYE, BIG MEADOW (cont'd)  
 April 6, 1920

<u>No.</u>	<u>Depth.</u>	<u>Core.</u>	<u>Water Content.</u>	<u>Remarks.</u>
1.	37.0	27.0	4.0	
2.	17.0	12.5	6.0	
3.	54.5	52.0	19.5	
4.	55.5	21.0	10.0	
5.	50.5	19.0	9.0	
6.	56.0	41.0	19.5	
7.	45.5	32.0	13.0	
8.	52.5	42.0	18.0	
9.	41.0	27.0	12.0	
10.	57.0	44.0	18.5	
11.	52.0	22.0	9.5	
12.	48.0	39.0	14.0	
13.	96.0	90.0	32.0	
14.	50.0	45.0	14.0	
15.	33.0	20.0	7.0	
16.	78.0	56.0	25.0	
17.	49.0	38.0	13.0	
18.	60.0	57.0	20.5	
19.	59.0	44.0	19.0	
20.	58.5	54.0	18.5	
21.	53.5	35.0	17.5	
22.	49.0	40.0	19.0	
23.	78.0	61.0	22.5	
24.	45.0	18.0	9.0	
25.	39.5	18.0	8.0	
26.	53.0	44.0	16.5	
27.	59.5	48.5	20.0	
28.	86.5	81.0	27.5	
29.	51.0	31.5	11.0	
30.	69.0	57.0	22.5	
31.	64.5	47.5	24.0	
32.	58.0	45.5	14.5	
33.	70.0	65.0	22.5	
34.	89.5	88.0	30.0	
35.	95.0	93.5	24.0	
36.	78.0	63.5	20.5	
37.	59.0	56.0	15.0	
38.	56.0	54.0	16.5	
39.	60.0	53.0	17.5	
40.	80.0	77.5	25.0	
			40) 685.0	
			17.1	Av.

Notes by J. E. Church, Jr., on  
Summit and Fordyce Surveys June 1, 1920:

Snow gone on slopes facing S and in flat when ground is open or thinly forested. But drifts are occasionally found N. of stream, especially where shade is good. Across stream where ground slopes slightly away from sun or is even level and is well wooded, the snow is almost continuous and covers entire south wall of valley.

Course 2.--Apparently one spot in gully where meas. has been made, but it is out of place. Otherwise 0. Call course Trace. Cleared of rock and scrub. At one point, meas. comes close to tiny eroded gully, at another just N. of road meas. is only 5 in. S. of large boulder. Soil moist on lower half of both courses.

Course 3.--Cleared course of brush and all except occasional boulders.

43'3" to end of course:

18.6 c.c. 10.0

Other drifts in neighborhood where tamarack is thicker. Max. drift nearby - 42 x 46 in. Average thru tamarack S. of stream, 2 ft. Better use every 25 feet than every 50 feet because of tiny hillocks and gully. However, ground very level and clear.

Van Norden: (capacity 5,280 A.F.) Max. depth 27 ft. Normally fills three times. 41 in. total precip. (water) for season (1919-20). 1919-20 Van Norden will fill about  $2\frac{1}{2}$  times.

Lake Spaulding: 1918-19, filled only once, but lost 60,000 A.F. over spillway during winter and 18,000 miner's inches every day thru ditches.

1919-20.--Nearly empty last autumn. None lost in winter, but 19,000 miner's inches daily put thru ditches. Now is full and estimated (by Roeny) that 15,000-20,000 A.F. will go over spillway.

Lake Fordyce: (capacity 20,400 A.F.?)

1919-20.--Filled for long time. Leakage thru dam too great to estimate filling of Lake. If dam would hold tight everything corralled above the dam should be 40,000 A.F. or two times full.

This is nearly the lightest season known at Fordyce (Look up records at Fordyce.)

Station 1. SUMMIT STATION.  
 Course 2.  
 Date APR 1(?) 1920. (Church)

No.	Depth.	Core.	Water Content.	Remarks.
1.	59.0	59.0	20.5	Dead tree has fallen but tamarack with double top, on hill, is nearly in line.
Rem.	81.3	79.0	30.0	
2.	72.0	68.0	25.0	Jarred in driving. No crust, so lighter. Core lost.
	71.0		-23.5-	
3.	60.5	60.5	23.5	Rode wrench. Crust and snow underneath pressed down.
	-5.0	-5.0		
4.	76.6	Soil 16.5 in.		Have to ride wrench. Cant twice enough to penetrate Dec. snow.
Rem.	60.5	c.c.	24.0	
	-2.0	-2.0		Have to ride wrench. Cant twice enough to penetrate Dec. snow.
5.	72.5	62.0	26.5	
Rem.	80.5	79.5	34.5	Have to ride wrench. Cant twice enough to penetrate Dec. snow.
6.	68.5	65.0	29.6	
7.	72.0	71.5	26.0	Driving easier in timber.
	-2.8	-2.8		
8.	81.5	80.0	32.5	Very easy driving.
	-2.0	-2.0		
9.	99.5	97.5	41.0	Pit in scrub.
	-1.8	-1.8		
10.	71.0	68.0	28.5	In scrub.
11.	70.5	71.5	28.0	
	-2.8	-2.8		In scrub.
12.	53.0	52.5	20.0	
13.	54.6	54.0	22.5	Crust, broke thru. No crust.
14.	64.5	64.0	27.0	
	-2.5	-2.5	23.5	No crust at all.
15.	64.0	62.5	28.0	
	-2.5			Near scrub.
16.	75.0	68.5	31.8	
	-3.0			Scrub.
17.	80.0	71.5	35.3	
	-1.8			4 ft. to tree.
18.	81.5	82.7/?	34.0	
19.	90.7	86.0	35.0	4 ft. to tree.
20.	93.7	86.0	34.0	
21.	90.5	85.8	20.0	4 ft. to tree.
22.	58.0	58.0		
		-1.5		

22) 1597.10  
 72.6

22) 634.2  
 28.83

Average = 68.6 per cent.  
 Density 39.7 per cent.

Station 1 - SUMMIT STATION (cont'd)  
 Course No. 3  
 Date APR. 1(2) 1920, (Church)

<u>No.</u>	<u>Depth.</u>	<u>Core.</u>	<u>Water Content.</u>	<u>Remarks.</u>
1.	49.0	48.0		Too near trees.
Rem.	66.0	61.7	24.0	Crust. Packed snow, evidently 17 inches deep and 6 in. water.
2.	50.0	46.5		
Rem.	74.0	68.0	32.4	Jarred in driving.
3.	77.0	75.0	31.7	No crusts; so lighter.
4.	68.0			Core Lost.
Rem.	66.5	57.8	25.5	
"	74.5	70.3	32.0	Rode wrench. Crust and snow underneath pressed down.
"	73.5	61.5	29.5	
5.	84.0	79.0	32.0	No crusts; lighter.
	-3.5			
6.	72.0	66.3	29.5	Rode wrench; so core short.
	-2.0			
7.	76.5	73.5	31.0	
	-2.3			
8.	82.0	70.5	34.5	Used wrench.
	-1.8			
9.	77.5	7 in. dirt.		
Rem.	71.0	69.2	25.5	
	-1.8			
10.	74.5	68.0	29.0	70 in. S. of clump of scrub meas. from tallest and nearest one of scrub.
	-2.3			Crust. Broke thru.
11.	91.0	88.0	35.0	No Crust.
12.	83.0	74.0	31.0	
	-2.5			
Rem.	82.5	74.0	32.0	
	-2.5			
13.	96.5	92.0	34.0	Among trees; so very light. 44 ft. to triple blaze.
	-1.0			

13) 1004.30  
 77.3 Av.

13) 402.6  
 30.97 Av.

Density 40.0 per cent.

Average of 2 and 3, 29.90 = 71.6 per cent normal.

Station 1. SUMMIT STATION (cont'd)  
 Course 2. (May 3, 1920)  
 Surveyed by Roeny and Armstrong.

<u>No.</u>	<u>Depth.</u>	<u>Core.</u>	<u>Water Content.</u>	<u>Remarks.</u>
1.				Too near tree.
2.	53.0			
Rem.	47.0	42.5	21.5	
3.	47.0			
Rem.	46.0	c.c.	21.5	Crust.
4.	34.0	39.0	16.2	
	-1.0	-6.5		
5.	54.0	50.0	27.0	Two hard crusts.
6.	54.0	53.0	24.7	" " "
	-1.0	-1.0		
7.	54.0	52.5	23.5	" " "
	-1.0	-1.0		
8.	57.5	51.0	25.2	
	-1.0	-1.0		
9.	52.0			
Rem.	78.0	75.5	36.5	Mud; in drift near tree
	-3.0	-3.0		
10.	79.0	74.5	31.8	
	-2.5	-2.5		
11.	61.5	60.5	29.3	
	-0.5	-0.5		
12.	?_			Could not get sampler thru ice crust at 44" depth. Omitted account of un- even drift between trees.
13.	?			
14.	67.0	59.0	30.2	
15.	47.0	c.c.	20.2	
	-2.0	-2.0		
16.	57.5	51.0	25.5	
	-2.0	-2.0		
17.	62.0	51.0	25.7	Mud.
	-1.0	-1.0		
Rem.	62.0	56.5	26.0	
	-1.0	-1.0		
18.	74.0	65.0	34.5	
19.	73.0	67.0	30.5	
	-1.0	-1.0		
20.	76.0	67.5	32.7	
21.				Omitted.
22.				Omitted.
			19*) <u>482.5</u>	*Including No. 1.
			20.25 in. Av.	
				Moist mud at all holes.

Station 1. SUMMIT STATION (cont'd)  
 Course No. 3 (May 3, 1920)  
 Surveyed by Roeny and Armstrong.

Ed. Roeny  
 J. B. Brown  
 Harry A. Armstrong

<u>No.</u>	<u>Depth.</u>	<u>Core.</u>	<u>Water Content.</u>	<u>Remarks.</u>
1.				Omitted.
2.	47.0	43.0	24.0	
	-1.0	-1.0		
3.	53.0	45.0	24.6	Crust.
	-1.0	-1.0		
4.	54.5	48.5	26.8	"
	-1.5	-1.5		
5.	51.0	42.0	21.5	"
	-2.0	-2.0		
6.	59.5	58.0	27.0	"
	-1.5	-1.5		
7.	58.0	54.5	27.0	
8.	52.0	47.0	24.2	
	-1.5	-1.5		
9.	55.0	54.0	24.7	No Crust.
	-1.5	-1.5		
10.	62.0	60.5	29.7	
11.	58.0	56.5	30.3	Crust.
	-1.5	-1.5		
12.	49.0	43.5	25.0	
13.	55.0	53.5	27.0	
	-1.0	-1.0		
14.	55.0	52.0	24.7*	*Interp. from No. 9
	-0.5	-0.5		
15.	65.5-	61.0	34.0	
	-0.5	-0.5		
16.	62.5	59.5	33.0	
17.	58.0	46.0	28.0	
	-1.0	-1.0		
18.	64.0	53.0	31.8	
	-2.0	-2.0		
19.	49.5	49.0	26.5	
	-0.5	-0.5		
20.				Behind trees. Nearly melted away.
21.	61.5	53.5	32.2	No crust.
	-1.0	-1.0		
22.	64.5	60.5	32.0	
23.	71.5	67.5	37.3	
24.	72.0	66.0	35.0	
	-2.0	-2.0		
25.	67.0	59.0	32.8	
	-2.0	-2.0		
26.)				
27.)	?			On high drift.
28.)				

Plus 14' triple blazed tree.

24)  $\frac{659.1}{27.46}$  Av.

Station No. 3 - RED MOUNTAIN.  
 Course No. 1  
 April 3, 1920

J. E. Church, Jr.  
 Ed. Roeny  
 J. B. Brown  
 Harry A. Armstrong

No.	Depth.	Core.	Water Content.	Remarks.
1.	101.0	99.0	37.7	
Rem.	101.0	99.0	39.2	
2.	104.5	103.3	40.8	
3.	98.0	94.5	39.6	
4.	92.0	85.5	36.0	
Rem.	92.5	90.0	37.8	
5.	94.0	91.0	36.0	
6.	100.0	98.0	39.1	
7.	98.5	97.1	36.8	
	-1.5	-1.5		
8.	87.0	86.0	38.8	
	-1.0	-1.0		
Rem.	96.5	91.5	38.4	
9.	95.5	91.8	37.2	
	-2.3	-2.3		
10.	89.5	87.0	34.2	
	-1.5	-1.5		
11.	95.0	93.0	38.2	
	-0.3	-0.3		
12.	98.0	96.1	39.2	
	-1.0	-1.0		
13.	86.5	86.0	35.2	
	-2.4	-2.4		
14.	65.0	63.5	26.2	
	-3.5	-3.5		

14)  $\frac{1302.0}{93.0}$

14)  $\frac{518.30}{37.02}$  in. Av.

Mean 39.8%

Red Mt - Sawmill H. - Furnace H.

D. 93.0 W.C. 38.79 41.7%



Station No. 3 - RED MOUNTAIN.  
 Course No. 1  
 May 4, 1920.

Roeny and Armstrong.  
 Water  
 Content.                      Remarks.

<u>No.</u>	<u>Depth.</u>	<u>Core.</u>	<u>Water Content.</u>	<u>Remarks.</u>
1.	98.5 -1.5	94.0 -1.5	43.0	
2.	91.0 -1.5	90.5 -1.5	41.5	
3.	82.0 -2.0	81.0 -2.0	37.7	
4.	74.5 -0.5	73.5 -0.5	34.6	
5.	75.5 -1.5	70.0 -1.5	35.1	
6.	81.5 -1.5	79.0 -1.5	36.5	
7.	74.5 -1.0	71.0 -1.0	35.0	
8.	65.5	65.5	31.0	
9.	84.5 -0.5	82.0 -0.5	40.0	
10.	88.0 -1.0	83.0 -1.0	38.8	
11.	75.0	69.5	40.1	
12.	75.0	74.0	34.7	
13.	70.5 -1.0	67.0 -1.0	32.2	
14.	53.0 -2.0	53.0 -2.0	24.8	

Mud at all holes.

14)  $\frac{505.0}{36.07}$  Average.

Red Mt - Furnace Fl. 77.7

- 37.45 *Mean 48.2%*

Course No. 1  
 June 3, 1920

<u>No.</u>			
1.	43.0	40.0	21.2
2.	10.0	9.0	5.4
3.	Blank		
4.	"		
5.	"		
6.	"		
7.	"		
8.	"		
9.	15.0	14.0	8.7
10.	Blank		
11.	"		
12.	"		
13.	"		
14.	"		

*Mean 51.9%*

Red Mt - Furnace Fl

Station 4. - SAWMILL FLAT.

Course No. 1

April 4, 1920

Dr. Eddy and Harry Armstrong.

<u>No.</u>	<u>Depth..</u>	<u>Core.</u>	<u>Water Content.</u>	<u>Remarks.</u>
1.	64.0	59.5	29.1	
	-2.0 62.0	-2.0		
2.	82.0	79.0	36.0	
	-2.0 80.0	-2.0		
3.	84.0	82.0	35.8	
	-1.0 83.0	-1.0		
4.	88.0	79.5	37.1	
	-2.0 86.0	-2.0		
5.	98.5	80.5	39.0	
Rem.	90.0	83.0	39.0	
6.	91.5	77.0	40.1	
7.	91.0	82.5	37.5	
8.	96.5	89.5	39.5	
9.	83.5	77.5	37.0	
Rem.	83.5	76.0	36.3	
10.	88.0	83.0	37.0	
	-2.0 86.0	-2.0		
11.	90.5	85.5	39.2	
	-1.5 89.0	-1.5		
12.	116.5	102.0	52.5	
	-1.5 115.0	-1.5		

Deep Drift beyond Hole No. 12

12) 1062  
88.5

12) 460.60  
38.38

Course No. 2

1.	100.0	98.5	43.2
	-0.5 99.5	-0.5	
2.	110.5	107.5	42.4
3.	105.0	87.0	41.8
4.	92.5	84.0	41.0
5.	88.5	71.0	35.0
6.	78.0	71.0	34.1
	-4.0 74.0	-4.0	

6) 570  
95.0

6) 238.00  
39.67

Average of both courses 39.03 = 83.4 per cent  
of normal (

av. 91.8 (with courses).

Station 5. - FURNESS FLAT. (cont'd)  
 April 4, 1920  
 Course No. 1

Ed. Roeny and Harry Armstrong.

No.	Depth.	Core.	Water Content.
1.	90.0	84.0	37.0
2.	94.0	80.0	48.3
Rem.	94.0	83.0	41.1
3.	93.0	84.0	36.1
	-1.5 91.5	-1.5	
4.	97.5	87.0	41.0
	-3.0 94.5	-3.0	
5.	93.0	84.5	40.4
6.	96.5	88.0	41.8
7.	95.0	78.0	40.0
	-2.0 93.0	-2.0	
8.	106.0	94.0	44.2
	-3.0 103.0	-3.0	
9.	90.0	82.0	36.2
	<u>845.5</u>		<u>359.90</u>
	9) 93.9		39.99

Course No. 2

1.	92.0	86.0	37.5
2.	89.5	79.5	36.0
3.	100.0	92.0	40.0
4.	93.5	85.0	39.3
5.	92.0	84.5	38.0
6.	94.5	87.5	40.8
Rem.	96.0	87.5	41.0
7.	99.5	95.0	42.4
8.	96.0		41.7
9.	97.5	90.0	40.8
	-2.0 95.5	-2.0	
10.	94.0	86.5	37.2
	-2.0 92.0	-2.0	
	<u>946</u>		<u>393.90</u>
	10) 94.6		39.39

Average for two courses, 39.69

av. hz. 94.3

Station 5. - FURNESS FLAT. (cont'd)

~~Station~~  
May 5, 1920  
Course No. 1

Roeny and Armstrong.  
Gage read 6'9"

No.	Depth.	Core.	Water Content.
1.	78.0	66.5	36.4
2.	78.5	74.0	39.4
3.	77.5	71.5	36.7
4.	83.0	71.0	39.8
	-2.0 81.0	-2.0	
5.	79.5	69.0	37.9
6.	79.5	73.0	41.1
7.	81.5	76.5	38.9
8.	73.0	69.5	35.2
9.	75.0	71.0	34.8
	9) <u>703.5</u>	av. 44.4	9) <u>340.2</u>
	78.2		37.80

Course No. 2

1.	77.0	68.0	38.2	slushy snow.
2.	74.0	66.0	38.8	
3.	81.0	76.0	38.7	
4.	77.0	68.5	35.5	
5.	76.5	68.0	35.5	
6.	80.0	71.0	41.3	
7.	83.0	73.0	43.7	
8.	81.0	77.0	42.0	
9.	80.0	72.5	41.3	
10.	78.0	75.0	43.3	
	10) <u>787.5</u>		10) <u>398.3</u>	
	78.8		39.83	

Average of two courses, 38.82

av. re. 78.5

Average of Red. Mt., Lake Sterling,  
and Furness Flat, survey of May 5, 1920, 39.44 in.

Station 6. - MAIL BOX FLAT.  
 April 5, 1920

Ed. Roeny and Harry Armstrong.

No.

1.	94.5	72.5	42.7
	-2.5	-2.5	
2.	89.0	84.0	37.5
3.	76.0	67.0	34.0
4.	90.0	86.5	39.0
	-2.0	-2.0	

4)  $\frac{345.0}{86.3}$

4)  $\frac{153.20}{38.30}$

ave. 44.4%

Rem.

6.

Rem.

7.

7)  $\frac{291.5}{127.4}$

7)  $\frac{285.40}{40.91 \text{ AVE.}}$

Course No. 2

1.	97.0	97.0	42.0
Rem.	95.0	88.0	39.0
	-1.5	-1.5	
2.	95.0	74.0	38.0
3.	101.5	86.0	41.0
4.	111.0	107.0	43.0
	-0.5		
5.	114.0	81.0	39.0
	-0.5	-0.5	
6.	109.0	82.0	40.0
7.	106.5	102.0	42.0
8.	105.0	101.0	43.0

8)  $\frac{730.5}{116.4}$

8)  $\frac{611.70}{51.20 \text{ AVE.}}$

Average of both courses, 41.19 ave. 33.3%

May 2, 1920  
 Course No. 1

1.	91.0	84.0	41.0
2.	95.0	87.0	47.9
3.	96.0	91.5	45.2
4.	97.0	92.0	40.5
5.	87.0	83.0	44.7
6.	95.0	87.0	44.7
7.	100.0	89.0	47.2

7)  $\frac{661.4}{79.7}$

7)  $\frac{312.0}{39.3 \text{ AVE.}}$

Station 7. - MEADOW LAKE.  
 April 5, 1920  
 Course No. 1

Ed. Roeny and Harry Armstrong

No.	Depth.	Core.	Water Content.	Remarks.
1.	91.5 -1.0 90.5	87.0	37.6	50' from N.Westerly tree.
2.	105.0 -1.5 103.5	93.5 -1.5	44.5	
3.	102.0	93.0	40.0	
4.	104.0 -1.5 102.5	92.5 -1.5	41.1	
5.	96.0 -2.5 93.5	95.7 -2.5	37.2	
Rem.	95.0 -1.5 93.5	94.2 -1.5	37.6	
6.	100.0 -1.0 99.0	74.0 -1.0	39.8	
Rem.	100.0 -0.5 99.5	85.5 -0.5	41.6	
7.	109.0 -1.5 107.5	104.0 -1.5	44.0	
$7) \frac{891.5}{127.4}$			$7) \frac{286.40}{40.91} \text{ Avg.}$	

Course No. 2

1.	97.0	97.0	42.0
Rem.	95.0 -1.5 93.5	88.0 -1.5	39.8
2.	95.0	74.0	38.0
3.	101.5	96.0	41.9
4.	111.0 -0.5 110.5	107.0	43.8
5.	114.0 -0.5 113.5	91.0 -0.5	39.0
6.	109.0	99.5	40.8
7.	106.5	102.5	42.1
8.	105.0	101.0	43.5
$8) \frac{931.5}{116.4}$			$8) \frac{331.70}{41.46} \text{ Avg.}$

Average of both courses, 41.19 *mean 33.8%*

May 2, 1920  
 Course No. 1

1.	91.0	84.0	41.8
2.	95.0	87.0	47.9
3.	96.0	91.5	45.2
4.	97.0	92.0	40.5
5.	87.0	83.0	44.7
6.	95.0	87.0	44.7
7.	100.0	89.0	47.2
$7) \frac{661.0}{94.4}$			$7) \frac{312.0}{44.57} \text{ Avg. } \frac{3}{2}$

Station No. 7 - MEADOW LAKE (cont'd)  
 May 2, 1920  
 Course No. 2

No.	Depth.	Core.	Water Content.	Remarks.
1.	95.0	87.0	44.9	
<del>2.</del>	<del>95.0</del>	<del>87.0</del>	<del>47.9</del>	
2.	88.0	86.5	42.3	
3.	100.0	95.0	47.0	
4.	102.0	96.0	51.0	
5.	99.0	94.0	45.5	
6.	102.0	95.0	47.8	
7.	101.0	96.0	45.5	
8.	100.0	97.0	50.0	

8)  $\frac{787.0}{98.4}$

8)  $\frac{374.0}{46.75}$  Avg. 374

Average of both courses, 45.66

June 3, 1920

Course No. 1

1.	8.0	7.0	5.0
2.	15.0	14.0	8.1
3.	24.0	21.0	12.4
4.	25.0	22.0	13.2
5.	12.0	11.0	9.0
6.	18.0	17.0	11.1
7.	26.0	25.0	16.2

7)  $\frac{128.0}{18.3}$

7)  $\frac{75.0}{10.76}$  Avg. 75.0

Average of both courses, 96.14 means 47.4%

Course No. 2

1.	22.0	18.0	12.2
2.	16.0	14.0	8.4
3.	16.0	15.0	8.3
4.	26.0	24.3	14.2
5.	13.0	12.0	8.2
6.	22.0	20.2	12.3
7.	17.0	16.5	10.0
8.	14.0	12.0	7.8

8)  $\frac{146.0}{18.3}$

8)  $\frac{81.4}{10.18}$  Avg. 81.4

Average of both courses, 10.45 means 57.1%

Station No. 8. - LAKE STERLING.  
 April 4, 1920  
 Course No. 1

No.	Depth.	Core.	Water Content.	Remarks.
1.	110.0	69.0	59.7	
	-2.0 <i>108.0</i>	-2.0		
2.	99.0	90.0	41.0	
3.	99.0	90.5	40.8	
4.	100.0	94.0	41.0	
5.	102.0	92.5	44.6	
6.	100.0	94.5	41.2	
7.	103.5	99.5	42.7	
8.	99.0	94.0	43.0	
9.	105.0		41.7	
9) <u>915.5</u>			9) <u>395.70</u>	
<i>101.7</i>			43.97 Avg.	

Course No. 2

1.	111.0	106.5	43.1
	-1.5 <i>109.5</i>	-1.5	
2.	98.0	96.0	37.4
3.	103.5	96.5	42.7
	-0.5 <i>103.0</i>	-0.5	
4.	100.0	95.0	41.9
5.	97.0	90.0	40.4
	-0.5 <i>96.5</i>		
6.	87.5	80.5	36.0
6) <u>594.5</u>			6) <u>241.50</u>
<i>99.1</i>			40.25 Avg.

Average of both courses, 42.11

May 4, 1920 *av. w. 100.4*  
 Roeny and Armstrong.

*W. 41.9%*

Course No. 1

1.	100.0	88.0	51.5	
	-2.0 <i>98.0</i>	-2.0		
2.	85.5	76.0	42.1	
* * * * *				
1.	89.0	85.5	46.5	4" of water.
2.	89.0	86.5	44.0	
3.	89.0	85.5	45.4	
4.	89.0	83.5	46.0	
5.	87.0	82.0	44.0	
6.	89.0	84.0	45.0	
7.	90.0	81.0	44.5	
9) <u>805.5</u>			9) <u>409.0</u>	
<i>89.5</i>			47.0 Avg.	

Course No. 2

1.	102.0	98.0	48.0
2.	90.0	87.0	40.1
3.	90.0	88.0	43.6
4.	89.0	85.0	40.9
5.	85.0	80.0	41.4
6.	54.5	51.5	25.0
6) <u>510.5</u>			6) <u>239.0</u>
<i>85.1</i>			39.83 Avg.

Average of both courses, 43.42

*W. 49.7%*

*av. w. ... 87.3*



V. HUMBOLDT BASIN.

Station 1. Near Headwaters of North Fork (Elev. about 7,000 ft.)

Big Bend Creek, Gold Creek Snow Course  
 Near Head of Creek, Surveyed by R. M. Matthews,  
 Columbia Drainage Basin, Forest Ranger.  
 Owyhee Subdrainage Basin.

Apr. 17, 1919		March 29, 1920	
Depth.	Water.	Depth.	Water.
26.0	10.7	37.0	12.9
23.0	9.5	38.0	13.3
25.0	9.9	28.0	8.7
23.0	9.6	29.0	8.8
23.0	9.5	28.0	9.0
27.0	10.3	30.0	9.7
24.0	9.7	38.0	12.2
22.0	9.0	27.0	8.0
26.0	10.4	30.0	9.5
30.0	12.0	30.0	9.3
29.0	11.4	33.0	9.7
22.0	9.2	37.0	12.4
25.0	10.0	33.0	9.8
20.0	8.9	31.0	8.6
23.0	9.4	28.0	8.0
17.0	8.1	29.0	9.1
29.0	11.6	26.0	7.5
	<u>17)196.20</u>	29.0	8.0
	9.95 Average.	37.0	12.1
		42.0	14.2
			<u>20)200.80</u>
			10.04 Average.

South Fork Drainage Basin

J. W. Mink

Earl Templeton

South Furlong Creek

April 15, 1919

27.0	5.5
22.0	6.0
23.0	6.5
20.0	4.5
30.0	9.5
20.0	4.5
22.0	5.5
23.0	6.5
23.0	6.5
28.0	9.5
30.0	12.0
32.0	12.5
39.0	15.0
36.0	13.5
33.0	12.5
31.0	12.4
30.0	12.2
28.0	9.0
27.0	9.0
25.0	8.6
<u>20)249.0</u>	<u>20)181.20</u>
27.5 Avg.	9.06 Avg.

Toyn Creek\*, Mar. 29, 1920

30.0	13.5
20.0	5.5
28.0	7.5
29.0	13.3
27.0	6.5
27.5	7.0
27.0	6.5
21.0	5.0
21.0	5.0
20.0	6.5
26.0	7.0
28.0	7.5
27.0	6.5
29.0	8.0
30.0	9.5
33.0	11.0
35.0	13.5
34.0	12.5
31.0	10.0
<u>19)223.50</u>	<u>19)161.80</u>
27.6 Avg.	8.52 Avg.

V. HUMBOLDT BASIN (cont'd)

Little Humboldt River.

Subdrainage Basin - MARTIN CREEK.

Surveyed by Paul L. Travis.

April 11, 1919

March 29, 1920

<u>Depth.</u>	<u>Water.</u>	<u>Depth.</u>	<u>Water.</u>
59.5	22.7	44.0	12.5
35.5	11.0	34.0	13.5
26.0	5.2	21.0	6.5
29.5	9.8	20.0	5.5
25.5	9.7	16.0	5.0
22.0	8.2	17.0	5.5
19.5	7.2	22.0	7.0
35.5	13.7	24.0	7.5
39.5	13.0	23.0	6.0
9) <u>292.5</u>	9) <u>100.50</u>	9) <u>221.00</u>	9) <u>69.00</u>
32.5	11.17	24.6	7.67

Little Humboldt Basin

Subdrainage Basin - LAMANCE CREEK.

Surveyed by Paul L. Travis.

April 5, 1920

<u>Depth.</u>	<u>Water.</u>
29.0	11.0
21.5	8.3
22.0	7.7
24.5	7.7
18.0	6.6
18.0	6.7
19.0	6.9
23.5	7.5
18.0	6.8
20.0	7.0
21.0	10.0
19.0	6.7
13.5	5.9
11.0	3.9
8.5	2.9
15) <u>286.50</u>	15) <u>105.60</u>
19.1	7.04