

Tahoe City April 4, 1917

Prof. J. E. Church, Meteorologist.

Dear Sir:

As Mr Smith has not returned from the snow survey across the lake, am forwarding to you, under separate cover

A — 3 sheets of data covering weights, evaporation temperatures and Psychrometer readings of Station No 1 Pan No 1 and Pan No 2

B — 5 typewritten sheets of field notes regarding conditions of snow in Pan No 1 & Pan No 2 at Station No 1 and ground snow at Station No 1. for March 1917

C — Meteorographs records of  
 March 5<sup>th</sup> 1917  
 March 15<sup>th</sup> 1917  
 March 22<sup>nd</sup> 1917

D - Thermographic records of  
 March 19th 1917  
 March 13th 1917  
 March 26th 1917

E - Snow Thermographic records of  
 March 13th 1917  
 March 19th 1917.

Screens for evaporation pans arrived in to-day's mail. Am doubtful if there is a sufficient number of perforations to prevent snow from icing at bottom of snow cake. Will place raised bottoms in Pan No 1 and No 2 at Station No 1 Pan No 1 and No 2 at Station No 2 Experimental Pan No 1 Experimental Pan No 2 Experimental Pan No 3 Station No 2 This will take up seven of the raised bottoms.

Will place the remaining two in Pan No 1 and Pan No 2 at Station No 2 as

snow melts and condenses more rapidly at Station No 6 than at any of the other stations

I in answer to 1 in your letter. We have a number of snow courses but as we have eighteen fans under observation this month, all of which need refilling almost daily, besides temperatures, field notes etc, I seldom get more than two or three hours at the most, to devote to working up data; so I am afraid you will be a little disappointed at the tardiness of some of the reports this month.

In regard to condition of soil. For the past three weeks the soil throughout the meadow has been damp but not soggy or real wet. The little creek that empties into the River just below the bridge on the South Bank of the river has been trickling beneath the snow for over a week. Small brooks flowing through the meadow have made no definite course noticeable beneath the snow as yet - however the largest of these brooks at the Upper

end of the meadow can be traced by a slight depression in the snow.

6 — Mr Smith says the anemometer cups came last mail day.

8

Have cross sectional measurements data, regarding weights, temperatures etc.

of 1. A cross section at Station 6 - Meadow, weighed, measured, and with temperatures which was mailed to you some time ago

Also have data regarding #

2 - Cross section of snow at Station 1, Semi Open

3 - Cross section of snow on River near Station No 2 Open

4 - Cross section of snow at Station No 4, Pine Forest

5 - Cross section of snow at Station 3, in shelter of hedge of young fir between Station No 3 & River.

Data regarding cross sections at last four stations has not been worked up. Will type write copies of data immediately upon completing monthly reports.

Temperatures were taken every inch in cross section at Station No 1 and strata minutely described

data of other cross sections not quite as complete.

Most of the ice crusts noted earlier, in February, have disappeared.

The only crust now remaining both in the meadow and at Stations No 1 - No 2 and No 4 - No 6 are within eight inches of the surface. Below this crust, snow is almost uniform in texture and firmness.

Camelian Bay & Incline surveys were made last Wednesday.

Saturday Ward Creek measurements were taken.

The storm Monday probably retarded work on the snow survey at Hagens meadow as Mr Smith did not return this evening as expected.

Your son Willie called with Jim Gregory this afternoon. This party

reached Carnelian Bay this morning coming over from Brockway in a small launch.

They expect to bring the remainder of the party to Tahoe tomorrow. Your son and Mr Gregory returned to Carnelian Bay this evening. Your son said one of the party was new on skis and pretty badly worn out so they would all have reached Tahoe today. Two of the party expect to leave Tahoe Friday returning to Reno via Truckee the other three will leave Tahoe Saturday morning.

Let me know if the arrangement of the raised bottom Pans is satisfactory to you.

The Meteorograph records which you ask about Feb 3 - Feb 27 were sent to you at the beginning of March. I think you will find them among records sent at that time.

Am working on data regarding Evaporation Station No 2. There is almost

twice as much data to be gone over this month so it will be some time before the reports are complete. Have from four to five sheets of field notes beside regulation data for each station, and, as the stations require more attention now than earlier in the season, it leaves me less time for office work.

Let me know if there is any thing in particular that you would like worked up before completing regulation reports. Printing data submitted is satisfactory

Very Truly Yours

Adm. Dahl.

Summit Cal.  
June 2, 1921

My dear Prof. Church:—

Enclosed herewith are the Lake & Summit measurements. I am later than you suggested, on account of stormy weather - 6" snow at Lake over Sunday & Monday. For this reason my plans to have Ed meet me here failed, so my wife & I worked those here together. However, he should be entitled to his per diem today as he was no doubt ready & missed me for no fault on his part.

Hope the measurements are satisfactory. We drove up on the State car, hence we could drive up to the Mill in Wood creek & Lonely Gulch at Auburn.

kindest personal regards.

Harry H. Comstock



Tahoe Basin

May 31, 1921

Ward Creek

} Miney G. Armstrong  
} Bob Watson

Course No.

snow gage reads 3'-6"  
weather - windy -

West.

1.	26 1/2 -3	26 -3	12.0	mud
2.	34 1/2	31 1/2	17.5	
3.	29	28	14.5	"
4	37 1/2			
"	37 -1	33 1/2 -1	21.0	"
5	36 -1	35 -1	19.1	"
6.	43	42	24.0	

South

1.	27 1/2	27	16.0	mud-
2.	33	31 1/2	18 1/2	

East

1	41 1/2			
"	42	41	21.5	
2	39 1/2	35 1/2	19.5	"

North

1	45			
"	45			
"	45	44 1/2	26.0	
2	47	46 1/2	26.0	

av. 36.3

19.63 = 46.5% of normal snow cover

W  
Normal 54.1%

Course.

1.	23	23	12.0
2.	21	20	11.0
3.	0		
4.	12. -2	11 -2	7.0 mud
5.	17	16	8.5 "
6.	11½	11½	6.0 "
7.	24	24	14.0 "
8.	19½	18	10.5 "
9.	10½ -1½	10½ -1½	5.5 "
10.	14½ -½	14½ -½	8.5 "
11.	16	16	9.0
12.	33 -1	32 -1	17.0
13.	0.		

av. 15.2

av. 7.93

# Rubicon Peak

June 1, 1921

Harry C. Armstrong  
Bob Watson

Sunny + calm.

## Course 1.

1	39				
"	74				
	101	101	54.7		
2	133	132	66.0		
3	94				
"	101				
"	101	99 1/2	53.4		
4	67	66	34.2		
5	32 1/2	32 1/2	14.4		gravel
6	86				
"	81	80 1/2	42.2		
7	81				
"	85	85	44.0		twigs
8	67	66	32.5		
9	35	32	15.4		rock
10	70	68 1/2	34.8		"
11	96	83 ✓	46.0		twigs
12	83 1/2	83 1/2	42.3		"
13	45				
"	45	44 1/2	22.0		"
14	58				
"	63				
"	63				
"	55				
"	53				rock
"	62				"
"	61	61 1/2	32.2		twigs
15	61	53 1/2			
"	63	61 1/2	34.0		mud

# Rubicon (cont.)

16	62	62	31.2	rock
17	94	82	40.0	"
18	78			
"	90	85	40.3	twigs
19	57	55	26.0	"
	-1	-1		
20	76	72 1/2	36.9	"
21	54	54	24.5	
22	81	71		
	82	82	40.8	mud
	-1	-1		
23	82			
24	31 1/2	30 1/2	38.5	"
"	32 1/2			
	-1	32	16.0	"
		-1		
25	100	54	25.0	twigs - near tree.
	-1	-1		
26	71	70	34.2	
27	68	68	32.0	
28	72 1/2	70	34.0	
29	97	96	44.0	twigs
	-1/2	-1/2		
30	88 1/2	87	42.4	
31	25	24	12.0	
32	79 1/2			
	78	77 1/2	38.0	
	-1/2	-1/2		

Av. 73.2 in.

Av. 35.12 in.

= 80.8 % Normal winter snow cover

Course # 2 dens. 48.0%

all dry -

Summit

JUNE 2. 1921.

W. G. Armstrong  
cloudy - calm -

Course 1.

1	}	dry.			
8					
9			38		
			" 40		
			" 39		
			- 1/2	35	20.2 mud.
				- 1/2	
10			38	29	16.5 twigs.
11	}	dry.			
18					
19			20	20 1/2	11.0 mud.
			- 1/2		
20			19	19	11.1 "
			- 1/2	- 1/2	
21			18	18	9.9 "
			- 1	- 1	
22			13	13 1/2	7.1 "
			- 1/2		
			<u>        </u>	<u>        </u>	<u>        </u>
			av. 6.5		3.45 in.

# Summit (cont)

## Course 2

1	}	dry.			
10					
11			12	12	5.8 mud.
			-1	-1	
12	}	dry.			
13					
14					
15			15 1/2	14 1/2	7.2 "
			-1/2		
16			15	14 1/2	8.6 "
17		dry			
18			23	23	12.1 "
			-1	-1	
19	}	dry			
20					
21					
22			14	13	7.0 mud.
23			20	20	11.3 "
24			14	13 1/2	8.1 + twigs
25			21 1/2	21 1/2	12.4 mud
			-1/2	-1/2	
26			34 1/2	34 1/2	20.0 twigs.
27			27	27	15.0 mud.
			-2	-2	

av. 7.1 in.
Revs. 54.7% 3.98 in.

av. 1+2... 6.8 in. depth.
av. 2+3 — 3.72 in. = 8.9% of normal snow cover.

W. F. McCLURE,  
ENGINEER

GEORGE B. McDOUGALL,  
ARCHITECT

EARLE FREEMAN,  
SECRETARY

STATE OF CALIFORNIA  
DEPARTMENT OF ENGINEERING  
SACRAMENTO

May 10th, 1920.

Prof. J. E. Church, Jr.,  
358 Washington Street,  
Reno, Nevada.

(V) all -

Subject: Measurements

Dear Professor Church,

I am enclosing herewith copies of the measurements that I made with Ed Roeny last week. I regret that I have been very tardy in sending these in, but the very next morning after I returned I was sent north and have just this morning returned to the office.

I neglected to tell you when I saw you that I left the scales at Markleeville for Mr. W. S. Coyan, and did not bring in the old scales that he had at Blue Lakes.

With kindest personal regards to you and Mrs. Church, I remain,

Yours very truly,

STATE DEPARTMENT OF ENGINEERING.

By

*Henry G. Armstrong*  
Hydrographer.

HAA/ECB

Enc-1

Summit Sta.

Course #2

May 3, 1920.

Roeny &amp; Armstrong

#	Depth	Core	Water Content	Remarks
1				too near tree
2	(53)			
R M	47	42.5	21.5	
3	(47)			
R M	<del>46</del>	46	21.5	
4	34 -1 33	39 -6.5	16.2	
5	54	50	27	2 hard crusts
6	54 53 -1	53 -1	24.7	" " "
7	54 53 -1	52.5 -1	23.5	" " "
8	57.5 -1 56.5	51 -1	25.2	
9	(52)			
R M	78 -3 75	75.5 -3	36.5	mud; indrift near tree.
10	79 -2.5 76.5	74.5 -2.5	31.8	in drift near tree
11	61.5 -0.5 61.0	60.5 -0.5	29.3	
12	?			could not get sampler thru ice crust at 44" depth
13	?			omitted c/o uneven drift between trees
14	67	59	30.2	
15	47 -2 45	47 -2	20.2	
16	57.5 -2 55.5	51 -2	25.5	
17	(62 61) -1	51 -1	25.7	mud
R M	62 61 -1	56.5 -1	26.0	



#	Depth	Core	Water Content	Remarks
18	74	65	<del>384.8</del> 34.5	
19	73 72 -1	67 -1	30.5	
20	76	67.5	32.7	
21				omitted
22				omitted

$$\begin{array}{r} 22 \text{ ) } 1005.5 \\ \underline{45.7} \\ \text{Moist mud at all holes} \end{array}$$

$$\begin{array}{r} 19 \text{ ) } 482.5 \\ \underline{20.25 \text{ in.}} \\ 21.93 \end{array}$$

\* Incl. No. 1

On basis of 20 meas. !  
 D. 50.3 W.C. 24.13

Course #3

1				omitted
2	47.0 -1 46.0	43 -1	24.0	
3	53 52.0 -1	45 -1	24.6	crust
4	54.5 -1.5 53.0	48.5 -1.5	26.8	"
5	51 -2 49	42 -2	21.5	"
6	59.5 58.0 -1.5	58 -1.5	27.0	"
7	58	54.5	27.0	
8	52 -1.5 50.5	47 -1.5	24.2	
9	55 -1.5 53.5	54 -1.5	24.7	no crust
10	62	60.5	29.7	

#	Depth	Core	Water Content	Remarks
			229.5	
11	58 -1.5 56.5	56.5 -1.5	30.3	crust
12	49	43.5	25.0	
13	55 54 -1	53.5 -1	27.0	
14	55 -0.5 54.5	52 -0.5	? 24.7	Intercept from No. 9
15	65.5 -0.5 65.0	61 -0.5	34.0	
16	62.5	59.5	33.0	
17	58 57 -1	46 -1	28.0	
18	64 62 -2	53 -2	31.8	
19	49.5 49 -0.5	49 -0.5	26.5	
20	?			behind tree--nearly melted away
21	61.5 -1 60.5	53.5 -1	32.2	no crust
22	64.5	60.5	32.0	
23	71.5	67.5	37.3	
24	72 -2 70	66 -2	35.0	
25	67 65 -2	59 -2	32.8	
26)				
27)	?			on high drift
28)				

28)  $\frac{1323}{47.3}$   
plus 14' triple-blazed tree.

On basis of 25 meas.!  
D. 52.9 w.c. 26.36

24)  $\frac{659.1}{27.46}$  as ball samples:  
D. 51.6 w.c. 25.25 Mean 48.9%

Course #3 Red Mt.

May 4, 1920.

Roeny & Armstrong

#	Depth	Core	Water Content	Remarks
1	98.5 -1.5 97.0	94 -1.5	43.0	
2	91 -1.5 89.5	90.5 -1.5	41.5	
3	82 -2 80	81 -2	37.7	
4	74.5 -0.5 74.0	73.5 -0.5	34.6	
5	75.5 -1.5 74.0	70 -1.5	35.1	
6	81.5 -1.5 80.0	79 -1.5	36.5	
7	74.5 -1.0 73.5	71 -1.0	35.0	
8	65.5	65.5	31.0	
9	84.5 -0.5 84.0	82.0 -0.5	40.0	
10	88 87 -1	83 -1	38.8	
11	75	69.5	40.1	
12	75	74	34.7	
13	70.5 -1 69.5	67 -1	32.2	
14	53 51 -2	53 -2	24.8	

14)  $\frac{1075}{76.8}$

Mud at all holes

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

Already added  
↓

Furness Flat

May 5, 1920.

Roeny & Armstrong

Gage read 6' 9"

#	Depth	Core	Water Content	Remarks
<u>Course #1</u>				
1	78	66.5	36.4	
2	78.5	74.0	39.4	
3	77.5	71.5	<del>37.7</del> 36.7	
4	83 <sup>81</sup>	71	39.8	
	-2	-2		
5	79.5	69	37.9	
6	79.5	73	41.1	
7	81.5	76.5	38.9	
8	73	69.5	35.2	
9	75	71	34.8	

9) 340.2  
37.80

Course #2

1	77	68	38.2	slushy snow
2	74	66	38.8	
3	81	76	38.7	
4	77	68.5	35.5	
76 #5	76.5	68	35.5	
6	80	71	41.3	
7	83	73	43.7	
8	81	77	42.0	
9	80	72.5	41.3	
10	78	75	43.3	

10) 398.3  
39.83

av. 38.82

Average of Red Mt, L. Sterling, and Furness Flat 39.44 in.

Sterling Lake May 4, 1920. Roeny & Armstrong  
 Gage read 7' 3"

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#	Depth	Core	Water Content	Remarks
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Course #1

1	100	88	51.5	
	-2	-2		
2	85.5	76	42.1	

\* \* \* \* \*

1	89	85.5	46.5	4" of water
2	89	86.5	44.0	
3	89	85.5	45.4	
4	89	83.5	46.0	
5	87	82	44.0	
6	89	84	45.0	
7	90	81	44.5	

9) 409.0  
 47.0

Course #2

1	102	98	48.0	
2	90	87	40.1	
3	90	88	43.6	
4	89	85	40.9	40.9
5	85	80	41.4	
6	54.5 94	51.5	25.0	

6) 239.0  
 39.83

20, 43.42

U. S. DEPARTMENT OF AGRICULTURE, WEATHER BUREAU.

West Walker Data, Walker Basin 1918-19

Stations.	Jan.	Feb.	March.	April.	May.	June.	July.	August.	Sept.	Oct.	Nov.	Dec.	Annual.
① Pickle Bush			April 20.										
No. 1 - 1	0												
2	11.5	10	3.2				2		0				
3	19.5	13.5	6.8				3		14.5	10	4.4	-	
4	12	6	1.6				4		24.5	17.5	7.2		
5	22.5	13	5.3				5		26	18	8.5		
6	20	10	4				6		23.5	16.5	7		
7	19	11	6.9				7		26	18.5	8.9		
8	13	5.5	1.9				8		22	14.5	6.5		
9	16	5.5	1.2				9		29.5	20	8.9		
10	11.5	8.5	4				10		27	21	9.3	-	
11	18	12.5	5.1				11		19.5	14	5.8	-	
12	15	7.5	2.8				12		20.5	13.5	5.2		
13	19.5	13	4.9				13		21	12	5.7		
14	19	10	4.8				14		17	9.5	4		
15	19	12.5	5.6				15		15	10	2.7	-	
16	9	3.5	0.6				16		21	10	4.2		
17	14	10	4	-			17		13.5	10.5	3.6	-	
18	17	12.5	5.8				18		24	21	9	-	
19	14	12	5.3	-			19		10	7.5	2.1	-	
20	10	7.5	2.2	-			20		0				
No. 2 21	299.5									36)	179.0	4.97	
22	90.15 in.										144		
23											350		
24											32.4		
25											260		
26											252		
27											8		
28													

REMARKS.

Hum. 31.7%

U. S. DEPARTMENT OF AGRICULTURE, WEATHER BUREAU.

West Walker Data, Walker Basin, 1918-19

Stations.	Jan.	Feb.	March.	April.	May.	June.	July.	August.	Sept.	Oct.	Nov.	Dec.	Annual.
② Seavitt	Station II and Pickle Meadows April 21, 1919. 97 Course S. 80:30 W. Starting point 40 ft. E of rock monument.												
1	33.5	25	14.1				29	0	Ascending to Seavitt Meadows in ironwood.				
2	18	14	6.4				30	0					
3	15	5	3.8				31						
4	14.5	7	3				32						
5	17	12	5.9				33						
6	26	17	7.7				34						
7	14.5	10	5.1				35						
8	39	37.5	16.1				36	Bare					
9	17	14	5.2				37						
10	26.5	18	8				38						
11	17.5	10	6.3				39						
12	19	9	5.4				40						
13	18.5	12.5	6										
14	31	23.5	10.6						Substitute meas. for 31-40. Starting 50 ft. from No. 1 and proceeding on Course N 80:30 E. Descending.				
15	28.5	24.5	11										
16	25	17	8				31	16.0	7	4.1			
17	16	11	4.9				32	4.1	33.5	16.1			
18	27.5	22.5	8.4	1 ft NE of large rock.			33	17	11	6			
19	20	8.5	3.2				34	24	19	8.1			
20	20.5	11.5	4.4				35	17	11	9.9			
21	20	16	6.2				36	0					10 ft. SE of large cedar.
22	15.5	6	2.8				37	0					9 ft in S. " " "
23	12	9	4				38	20	15	5.4			
24	0			Just S. of thin cedar.			39	16.5	7	2.4			
25	20.5	15.5	17.7	?			40	21	16.5	8			
26	19	11.5	6										33) 240.2 (7.28
27	0												
28	0												

Ascending in  
thick forest of  
ironwood.

REMARKS.

U. S. DEPARTMENT OF AGRICULTURE, WEATHER BUREAU.

Data, Walker Basin, 1918-19.

West Walker

Stations.	Jan.	Feb.	March.	April.	May.	June.	July.	August.	Sept.	Oct.	Nov.	Dec.	Annual.
<u>Willow Flat</u>				<u>April 22.</u>									
				<u>Station # 3</u>									
1	0						29	0					Under dead cedar blazed.
2	9	7	2.5				30	33	22.5	11.8			Under small dead cedar - W. side.
3	0						31	19	13	4.9			
4	38	29	15.2				32	32.5	25	12			
5	47	45	20.8				33	58.5	52.5	25.1			
6	32	25	12.3				34	31.5	21.5	10.5			
7	22	15	7				35	9.5	7.5	5.8			In a group of cedars blazed.
8	27	17	9.3				36	36	29.5	14			
9	23.5	18.5	9.6				37	42	39.5	16.3			
10	24.5	15	7				38	48	38.5	18.9			
11	23	17	8.8				39	65.5	57	28.2			
12	24.5	16	8.2				40	20	14	6.1			Under the two blazed cedars.
13	15.5	9	5										
14	22	14	7										
15	19	9	4.4										
16	20	12	5.3										
17	23	17	8.2										
18	21	12	5.8										
19	19.5	13.5	6.5										
20	24.5	17	7.3										
21	21	14	6.1										
22	39	25	10.7										
23	27	25	9.9										
24	29.5	21.5	10.5										
25	31.5	26	12										
26	59	47.5	20.2										ascending very steep
27	53.5	46.5	20.5										" " "
28	36	35	12.8										On brow of hill

REMARKS.



U. S. DEPARTMENT OF AGRICULTURE, WEATHER BUREAU.

Data, Walker Basin 1918-19.

East Walker

Stations.	Jan.	Feb.	March.	April.	May.	June.	July.	August.	Sept.	Oct.	Nov.	Dec.	Annual.
<u>Center Mountain</u>				<u>Sta 5 Apr. 16 (S. Fork average)</u>									
<u>Starting point is SE of Creek and at junction of</u>													
<u>two slopes - 1 to N and 1 to W.</u>													
<u>One</u>													
1	94	37	93.5	-		27		123.5	49	116			
2	89	34	82	-		28		114	44.4	108.5	-		
3	111	45.1	109.5	-		29		109.5	42.2	107	-		
4	54	17.8	41			30		112	40	107	-		
5	87.5	26	80			31		102.5	36.4	99	-		
6	64.5	19.3	54.5			32		112	46	103.5			
7	63	18.3	54			33		112	46	104			
8	57	16.3	51.5	-		34		108	36	99			
9	93	31.7	91	-		35		115	45.3	106.5			
10	91.5	31.1	89	-		36		118	43.8	115.5	-		
11	90.5	32.1	89	-		37		109	39.8	105	-		
12	92.5	32	89	-		38		98	35	96	-		
13	94	29.2	83			39		99	38	96	-		
14	92	33.1	83			40		101.5	36.2	94.5			
15	90	31.4	74										
16	100.5	37.1	95	-									
17	91	31	88	-									
18	96.5	31.2	88										
19	124	32.1	91										
20	72	25.5	67	-									
21	80	30.6	75	-									
22	93.5	36.1	87	-									
23	98.5	39.1	95	-									
24	99.5	37	97	-									
25	106.5	42.1	104.5	-									
26	84	29.7	78.5	-									
								<u>Total</u>		<u>1384.7</u>			
								40)		<u>34.6</u>			

REMARKS.

U. S. DEPARTMENT OF AGRICULTURE, WEATHER BUREAU.

Data, Walker Basin 1918-19

Stations.	Jan.	Feb.	March.	April.	May.	June.	July.	August.	Sept.	Oct.	Nov.	Dec.	Annual.
<i>East Walker - Buckeye - Big Meadows.</i>													
<i>April 17. S.P. 52' S of creek. 7 dead T. 25' from creek Kerns branch Ste. 6</i>													
1	18.5	15	5.8	-			28		73	61	28.8		
2	44	40.5	16.4	-			29		44	33	15.5		
3	42.5	30	15.7				30		59	47.5	21.1		
4	44	36.5	14.4				31		58	56.5	19	On steep N. slope	
5	43	32	14.1				32		44	36	12		"
6	38.5	33	14.8	-			33		42	35	14.9		
7	31.5	28	10.6	-			34		59.5	58	24.1		
8	34	25	9.5				35		10.2	36	14.6	On steep W. slope	
9	30.5	23	7.8				36		77.5	72.5	30.8		
10	46.5	30	15				37		67	56.5	28	In canyon. N. slope	
11	62	52.5	21.1				38		52	48.5	23.2		"
12	42.5	28	12				39		61	48.5	25		"
13	76	51.5	23.4				40		64	57	26.5		"
14	46	28	13.3										
15	51	36.5	16.1							40)	705.3		
16	72	61.5	25.2								17.6		
17	86	69.5	31										
18	32	24	11										
19	63	44	19.6										
20	52	46.5	21.4	-									
21	46	19	8.3										
22	66	53	23.9										
23	57	22	14.5										
24	44	36	15.1										
25	35.5	38.5	14.8	-									
26	34.5	22.5	12										
27	38	36	15	-									

REMARKS.

U. S. DEPARTMENT OF AGRICULTURE, WEATHER BUREAU.

Charles W. Fulton -  
Asst by W. F. Bryant -

West Walker -

Data, Walker Basin 1919-20

Stations.	Jan.	Feb.	March.	April.	May.	June.	July.	August.	Sept.	Oct.	Nov.	Dec.	Annual.
March 29 - Started on Survey - Finished April 6.													
Muddy at Bridgeport, 30 in, on summit, 50 in, snow on Sauer's bridge grades.													
Station I													
Pickle Bench - March 30.													
1	21	19	7	-			25		37.5	18.5	9		
2	29.5	27	8.5	-			26		47.5	20.5	6		
3	31.5	22	8.5				27		35	15	5.5	Brush	
4	26.5	21	4	-			28		38	22.5	9.5		
5	42	35	9				29		41	26	11.5		
6	33.5	26	6				30		35.5	24	12		
7	31	20	3	Brush.			31		30	27	6	-	
8	32.5	21	6				32		34.5	19	2		
9	28.5	22.5	5	-			33		31.5	21	9		
10	28	19	5				34		29.5	13	6.5		
11	25	20	4	-			35		25	18	7.5		
12	20.5	14	4				36		31	18	5		
13	27.5	23	9	-			37		31.5	13.5	2		
14	18	12	2				38		28	19	5.5		
15	21.5	18.5	5.5	-			39		24.5	15	4		
16	25.5	21.5	4.5	-			40		39) 151.5				
17	27.5	21	7						29.5	39) 246.5			
18	18.5	16	3	-							6.32		
19	24.5	21	8	-					21.4%				
20	18	13.5	5.5	Brush									
21	23	19.5	7.5	-									
22	26	20	7										
23	33	26	5.5										
24	39	26.5	11										

REMARKS.

U. S. DEPARTMENT OF AGRICULTURE, WEATHER BUREAU.

✓

Data, Walker Basin, 1919-20.

West Walker.

Stations.	Jan.	Feb.	March.	April.	May.	June.	July.	August.	Sept.	Oct.	Nov.	Dec.	Annual.
Station II <u>Summit and Pickle Meadows. March 31.</u>													
SW (as field notes above corrected show compass to true)													
No. 1 - 1	42	34	13				29	10	5.5	3	*		
2	51	40.5	18				30	0					
3	50.5	36	18										
4	43.5	34	15			No. 2.	13	meas.					
5	20	16	6	-									
6	56	49	16										
7	34	31.5	11.5	-									
8	45.5	40	14	-		(28)	1	40	27	14			
9	68	62	22	-		(29)	2	60	35	17.5			
10	36	28	11			(30)	3	31	21	7			
11	15	14	7.5	-		(31)	4	50	30	11.5			
12	40	35	12.5	-		(32)	5	40	27	14			
13	46.5	35	15			(33)	6	46	36	14			
14	50	35	17.5			(34)	7	41	30.5	12			
15	56	36.5	15.5			(35)	8	46	27	10			
16	44	32	12			(36)	9	47	27	13			
17	50.5	30	11			(37)	10	48	39	18			
18	53	47	16	-		(38)	11	16	11.5	5.5			N. side of 2 tall pine.
19	42.5	26	17			(39)	12	40.5	27	11			In ironwood brush
20	42	27	12.5			(40)	13	44.5	30	12			On brow of an E. slope
21	44	24	17					550.0					
22	40	27	16.5					28-30	540.0	43)	527.5		
23	15	12.5	6	-							12.3		
24	10.5	10	3.5	-									Continued Nov. 28-30
25	28	21	13										40)
26	48	27	12										524.5
27	60	36	16										13.11
28	0												

11411.5  
~~11311.5~~  
 23) 300.5  
 13.07  
 70  
 69  
 138  
 138  
 138

REMARKS.  
 \* 28-30 to be discontinued  
 1141.5  
 550  
 43) 1681.5  
 29.3  
 kept 39.1 w.c. 13.11  
 loss. 33.5%

U. S. DEPARTMENT OF AGRICULTURE, WEATHER BUREAU.

(V)

West Walker. Data, Walker Basin, 1919-20.

Stations.	Jan.	Feb.	March.	April.	May.	June.	July.	August.	Sept.	Oct.	Nov.	Dec.	Annual.
Willow Flat Station			April 1-3										
1	16.5	11	4	-			29	19	13	4	-	-	under dead cedar
2	22	21	10.5	-			30	57	55	19	-		
3	18	15.5	7	-			31	48	39	13			
4	54	29.5	14				32	49	28.5	10			
5	77	73	27	-			33	66	49	17.5			
6	63.5	53	23.5				34	47	40	14.5			
7	42.5	35	12				35	13	11	2			under cedar trees
8	43.5	30.5	14				36	35.5	19	9			
9	42.5	29.5	11				37	64	53.5	18			
10	41	31.5	12				38	58.5	42	13			
11	46	27	12				39	75	51	19			
12	42.5	24	10				40	22.5	15.5	6			
13	35.5	15	4.5					40) 1831.5		40) 495.5			
14	39	29.5	11					45.8		12.39			
15	41.5	27	11										
16	38.5	19	7										
17	43	27	13										
18	39	22.5	10.5										
19	38	20.5	9										
20	45	28.5	11.5										
21	43	23.5	9.5										
22	45.5	28	12.5										
23	47.5	31	15										
24	49.5	40.5	16										
25	59.5	56.5	18	-									
26	71.5	68	20	-									
27	84	43	12										On steep N. slope*
28	48	35	13										

Note - Other average length of cores

40) 1831.5  
45.8

40) 495.5  
12.39

Core  
49) 1,311.50  
32.79 Average

Remainder 27.1%

REMARKS.

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

U. S. DEPARTMENT OF AGRICULTURE, WEATHER BUREAU.

27 in.  
 No snow at Summit 2,110 ft  
 Read  
 of Apr. ?

Data, Walker Basin 1919-20

East Walker

Stations.	Jan.	Feb.	March.	April.	May.	June.	July.	August.	Sept.	Oct.	Nov.	Dec.	Annual.
Station 3 -													
Cirque Mt. April 5													
Cirque Mt. April 5													
Sample of snow in the "Rough"													
1	59.5	53	18.5	-			27		89	86	33	-	
2	74	44	18				28		95	85	35.5		
3	109	104.5	37	-			29		101	99	38	-	
4	79.5	74	26.5	-			30		108	105	37.5	-	
5	78.5	47.5	18.5				31		108	107	36.5	-	
6	9.5	7.5	3				32		71	69	23	-	
7	76	70.5	26	-			33		100	97	38	-	
8	81.5	69	26				34		91	89	33	-	
9	53.5	49	17	-			35		101.5	99	35	-	
10	67	55.5	21				36		91	88	33	-	
Summit. ? April 5		10	211.5	21.2			37		94	93	34.5	-	
11	90	85.5	34	-			38		83	82	29	-	
12	86.5	82	30.5	-			39		63	62	19.5	-	
13	85.5	82	30.5	-			40		91.5	87	32	-	
14	84	75.5	31										
15	81.5	59	23										
16	82.5	53	20										
17	106	101	36.5	-									
18	76.5	55	19.5										
19	99.5	66	25										
20	105.5	55	21										
21	89	20	22										
22	87	82	33	-									
23	91.5	90	36	-									
24	88	75.5	30	-									
25	97.5	94	35.5	-									
26	92	59	23										

40) 3417.5  
 85.4

30) 908  
 30.3

Total 211.5  
 908.0  
 40) 1119.5  
 27.99

Average 32.18%

REMARKS.

U. S. DEPARTMENT OF AGRICULTURE, WEATHER BUREAU.

Data, Walker Basin 1919-20

Stations.	Jan.	Feb.	March.	April.	May.	June.	July.	August.	Sept.	Oct.	Nov.	Dec.	Annual.
<i>East Walker - Buena Vista - Big Meadows. Apr. 6,</i>													
		<u>Core</u>											
1	37	27	4				29		51	31.5	11		
2	17	12.5	6	-			30		69	57	22.5		
3	54.5	52	19.5	-			31		64.5	47.5	24		
4	55.5	21	10				32		58	45.5	14.5		
5	50.5	19	9				33		70	65	22.5		
6	56	41	19.5				34		89.5	88	30		
7	45.5	32	13				35		95	93.5	24		
8	52.5	42	18				36		78	63.5	20.5		
9	41	27	12				37		59	56	15		
10	57	44	18.5				38		56	54	16.5		
11	52	22	9.5				39		60	53	17.5		
12	48	39	14				40		80	77.5	25		
13	96	90	32	-					40.) 2344.0				
14	50	45	14	-					58.6	40.) 685			
15	33	20	7								17.13		
16	78	56	25						None, 29.2%				
17	49	38	13										
18	60	57	20.5	-									
19	59	44	19										
20	58.5	54	18.5	-									
21	53.5	35	17.5										
22	49	40	19										
23	78	61	22.5										
24	45	18	9										
25	39.5	18	8										
26	53	44	16.5										
27	59.5	48.5	20										
28	86.5	81	27.5	-									

REMARKS.

among the Lakay persons.

Met Ed here as per  
schedule. Found all holes,  
no crabs; slightly windy.

I'll try to get this out on

#2

Regards.

Henry C. Armstrong.



Summit, Cal.  
April 30, 1921.

Dear Professor Luchez  
Express paper.

I tried to get this on #24  
here at 2:20 P.M. but missed  
it. #23 was late this P.M.

Went as per schedule to Lake,  
but on account of Murray's  
boat being without a professor,  
Bob Watson, and I went to  
Ward Creek first, ~~on~~ Wed.

April 27, 1921

Murray's new wheel camp  
on Sunday's evening train, he  
left it Wednesday & so Thurs-  
day, but I went to Rubicon,  
measuring upper course  
first. Found no holes on

Wacey G. Armstrong  
 Bob Watson  
Ward Creek-  
 Course 1.

4/27/31

West.

1	83			
re	82	81.0	40.6	mud
2	87.0	86	46.0	
3	81.	80	40.0	
4	83	76		
re	83	83	43.5	
5	87.5	86	43.5	
	-1	-1		
6	93.0	92	48.0	

Note: <sup>74</sup> Mud at all holes.

South

1	84	82 1/2	42.0
2	87		
re	88	86	46.4

Course 1. east.

East 72 935.5

1 93

12 92½ 89 476

2 90½ 89 494

ψ

North

1 100  
- ½ 98½ 507

2 107 102 53.0

ψ

Mid at all holes.

12) 1418  
- 345.5

counted  
twice

=) 1072.5

12) 89.4

12) 552.7

av. 46.06

Now 51.5%

Rubicon Peak  
Course 1.

1	123.	121	58.5	twig
2	142.	140	59.6	
3	137	136	61.0	
4	121	118	52.0	
5	695	68	31.4	
6	128	127	55.0	
7	113	109	52.1/2	
8	107 1/2	104	50.0	
9	71	68	32.2	
10	110	104	43.0	rock
11	132	130	62.3	

4/27 -

## Course 2.

1	90 $\frac{1}{2}$		
10	90	88	51 $\frac{1}{2}$
2	74	73	40 $^{\circ}$

~~2~~

12	124	123 $\frac{1}{2}$	59 $^{\circ}$	
13	66 $\frac{1}{2}$	65	32 $^{\circ}$	
14	76	74	37 $^{\circ}$ 3	
15	101 $\frac{1}{2}$	90 $\frac{1}{2}$	43.7	
16	101	94		
	102 $\frac{1}{2}$	95 $^{\circ}$ - 0 $\frac{1}{2}$	44 $^{\circ}$	
17	111 - 1	109 - 1	49.4	+ wings
18	109 - 0 $\frac{1}{2}$	103 $\frac{1}{2}$ - $\frac{1}{2}$	50.2	
19	80	78	36.2	
20	124 - 1 $\frac{1}{2}$	120 $\frac{1}{2}$ - 1 $\frac{1}{2}$	56.3	
21	117	116	52 $^{\circ}$	
22	111 - 1	108 $\frac{1}{2}$ - 1	50 $^{\circ}$	
23	104	98 $\frac{1}{2}$	44 $^{\circ}$ 5	
24	88 $^{\circ}$	79	38 $^{\circ}$	

25	132	129	<del>57</del> 60.2
26	138	133	59.7
27	106	103	43.5
28	100	98	48.0
29	110 - 1/2	108 - 1/2	48.0

30	125 - 1 1/2	113 1/2 - 1 1/2	52.6
----	----------------	--------------------	------

31	69 - 1	68 - 1	30.2
----	-----------	-----------	------

32	119 1/2	115	
	<u>117</u>	<u>112 1/2</u>	<u>51 1/2</u>
	108.1		48.09

Result 44.5%

# Rubicon

## Course 2. (Lower)

1	$70^{\circ}$ -3	$69\frac{1}{2}$ -3	$32^2$	mod
2	$66\frac{1}{2}$ -2	$65$ 2	$32^1$	"
3	43	40	$20^{\circ}$	rocks
4	$39\frac{1}{2}$ - $\frac{1}{2}$	$39$ - $\frac{1}{2}$	$19.5$	mod
5	$50\frac{1}{2}$ -2	$50\frac{1}{2}$ -2	$24.5$	
6	$54$ - $\frac{1}{2}$	$53\frac{1}{2}$ - $\frac{1}{2}$	$26^{\circ}$	
7	$42$ -1	$40\frac{1}{2}$ -1	$19.6$	
8	$64$ -1	$61$ -1	$39.$ $29.7$	

4



Summit.

4/30/21

Wm. Armstrong  
Ed. Roemj

Course 1.

1 51 49½ 26.7" mvd.  
-3 -3

2 57½ 49 26.0

3 60 58½ 29.8

4 56½ 53 27.9  
-2 -2

5 64 59½ 34.5

6 70 68 34.3  
-2

7 56

10 66 64 35.5  
-1 -1

8 62½ 62 30.0  
-2 -2

9 88 81 40.1  
-1 -1

10	84	80 $\frac{1}{2}$	38.1
11	61 $\frac{1}{2}$ -1 $\frac{1}{2}$	61 -1 $\frac{1}{2}$	30.0
12	61 -2 $\frac{1}{2}$	60 -2 $\frac{1}{2}$	29.3
13	54 $\frac{1}{2}$ -2	53 -2	25.0
14	46		
10	46 -1	44 -1	21.4
15	53 -1	51 -1	24.6
16	56		
10	57 $\frac{1}{2}$	56 $\frac{1}{2}$	29.0
17	63	60	32.0
18	77	70	37.3
19	70 -1 $\frac{1}{2}$	69	35.7

0.035

20 71

12 73  
-1

73  
-1

38.1

21 78

- 1/2

71

- 1/2

38.4

20 59

-1

58

-1

31.9

22) 1390

63.2

24

31.62

Av. 1+2

62.8 in

32.45

dens. 51.7%

# Summit

## Course 2

1. 49       $46$   
               $+2$       27.5

2. 50      49      26.0

3. 56      55      30.3

4. 58      57      33.0

5.  $61\frac{1}{2}$

?       $10$   $49\frac{1}{2}$

-2.0       $10$   $48\frac{1}{2}$        $46$       23.0  
                       $-1$                 $-1$

6.  $63$        $62$       35.0  
       $-1$         $-1$

7. 52       $51$       29.6  
              ~~21~~

8. 61      59      33.0  
       $-\frac{1}{2}$         $-\frac{1}{2}$

9. 60      58      35.0  
       $-\frac{1}{2}$         $-\frac{1}{2}$

10. 59      59      32.5  
       $-1\frac{1}{2}$         $-1\frac{1}{2}$

11	63 -1	63 -1	33.0
12	64 -1	60 -1	33.0
13	62	59	32.7
14	58 1/2 -1	58 -1	30.0
15	67 1/2 -1/2	66 1/2 -1/2	35.3
16	62	61	33.4
17	64	64	34.0
18	71 1/2	69	36.0
19	49 -1/2	48 1/2 -1/2	24.1
20	59 1/2	56	31.0
21	67	65	35.3
22 25	71	70	38.0
23	72	70 1/2	40.0

24 78

10 78 73 39.3

25 78 77 40.0

26 83 81 41.5

27 69 67 36.9

624

2

33.27

Ans.  $1+2 \dots 32.45$

Head - Ward creek  
 April 3d 1919

West of Aspen

1	110	48
2	115	51
3	116	51
4	117	52
5	117	49
6	116	49
7	117	41

South of Aspen

1	114	49
2	108	41

East of Aspen

1	109	46
2	108	45

North of Aspen

1	115	48
2	114	48

$$\begin{array}{r} 13 \overline{) 1476} \\ \underline{1135} \phantom{0} \\ 1476 \\ \underline{1135} \\ 3410 \\ \underline{3410} \\ 0 \end{array}$$

$$\begin{array}{r} 13 \overline{) 618} \\ \underline{52} \phantom{0} \\ 618 \\ \underline{52} \\ 98 \\ \underline{91} \\ 7 \end{array}$$

$$\begin{array}{r} 47.54 \\ \underline{47.6} \\ 0.06 \end{array}$$

$$\begin{array}{r} 70 \\ \underline{78} \\ 8 \end{array}$$

Mean 41.97

across ravine -  
from topped aspen toward  
fir -

1	86	38
2	92	39
3	91	39
4	98	44
5	98	43
6	99	46
7	102	45
8	103	43
9	70	32
10	77	32
11	90	43
12	81	37
13	85	38
14	91	<del>39</del>
		39.86

April 3d 1919



Burnside 3/29  
Course 1



1	58	55	26	
2	76	71	36.5	
3	79	74	33	
4	70	64	28	
5	66	59	31	W
6	75	68	32.5	
7	84	79	38	
8	76	71	34	
9	80	73	36	
10	73	65	32.5	
11	68	63	32.5	
12	71	63	32	W
13	73	61	35	F
14	74	67	33	
15	74	70	34	W & X
16	82	80	39	
17	78	76	35	
18	78	73	34.5	
19	76	71	33.5	
20	72	67	34.5	

73.7?      33.53 =  
45.5%

Course 2

1	88	82	45	
2	86	78	35.5	
3	86	80	42	
4	84	78	36.5	
5	86	82	39	
6	87	83	37.5	
7	82	76	37	
8	80	76	35	
9	81	78	36	
10	84	82	40.5	

45.6  
46.4 %

20 | 1480  
74.0
73.7

av. 35.97 in.      38.40

Normal 29.80 in.

Seas. 1920-21 35.97 $\frac{1}{2}$

= 120.7%

Williams 3-28-21

Course 1

(1)

1	89	88	41	wet
2	56	53	28.5	grass
3	55	54	28.5	
4	72	66	34	walk
5	74	71	35	
6	72	65	32.5	weeds
7	72	68	32.6	Water
8	74	65	36	9 mi
9	73	68	33.5	4.
10	77	71	34	
11	79	76	35	

791      71.7      33.44 4/10

Williams

Course 2

1	837	831	37
2	823	79	39
3	837	835	37
4	86	82	37.5
5	81	76	36.5
6	78	73	35
7	78	70	32.6
8	74	70	32.5
9	830	735	34.5
10	85	79	39
11	75	62	38.6
12	87	82	39.5
13	84	82	35.5

45.6  
45.57  
weeds.

13) 1054-3 = 1051      36.13

81.1      av. 80.8      34.79 [area]

Normal 27.69 approx.

1920-21 34.79

Seas. petre 125.6%

# North Course

Blue Lake 26 - 21

1	106	102	54.5	W
2	142	137	69.5	
3	117	112	61	- 6
4	94	84	51	9
5	100	96	60	
6	134	130	60.5	
7	827	824	50.5	
8	90	86	50	
9	119	118	60.5	
10	114	113	60	
11	95 <sub>2</sub>	93 <sub>2</sub>	49'	
12	100	96	52.5	
13	132	125	66	
14	116	112	60.5	
15	122 <sub>2</sub>	120 <sub>2</sub>	61.5	W 2
16	143	139	68.5	" 2
17	132	127	69	" 4
18	137	130	68	8
19	127	124	69	3
20	90 <sub>2</sub>	89 <sub>2</sub>	48.5	
	112.7		59.56	[Am]

Feb 27. dens. 37.7% = 2.1% in excess  
of density on South Course.

Mar. 26 dens 52.0% approx!

Suggest dens. of 42.3% (S. Course) + 2.1% =  
44.4%.

Depth  $112.7 \times 44.4 = 50.04$  in. Water

South course for

BL 3-26-21

1	101	99	46
2	114	110	49. <sup>2</sup>
3	116	114	48
4	94	94	43. <sup>2</sup>
5	107	106	41. <sup>5</sup>
6	128	126	52. <sup>2</sup>
7	118	133	48. <sup>5</sup>
8	107	99	45
9	96	91	39. <sup>5</sup>
10	87	82	32
11	79	78	34
12	88	88	39
13	97	96	42
14	97	93	36. <sup>5</sup>
15	105	105	44
16	99	95	42. <sup>2</sup>
17	120	120	50
18	115	111	46. <sup>5</sup>
19	117	112	50
20	106	104	47
	102.6		43.82

Depth 142 = 107.7 in / Feb. 27 ~~Area~~ 35.6%

Mar. 26 " 42.3%

Revised Total - N. Course 50.04 in. water

S. " 43.82 " "

2) 93.86  
46.93

1915-16 + 1917-18 = 39.50  
= 118.8%

Normal 40.79%, ~~Area~~ 115.1%.



Course B (North of Keeper's House).

1.	[77-84]	[76-82]	6-2 [8]	8-5	2-3	
2.	104	102	6-4	9-1	2-13	
3.	112.5	112	6-5	9-6	3-1	
4.	74	74	6-5	9-3	2-14	
5.	86	86	6-3	9-2	2-15	
6.	86.5	85	6-2	8-9	2-7	
7.	65	64	6-3	8-1	1-14	
8.	84	82	6-2	8-5	2-3	
9.	87	86	6-4	8-6	2-2	
10.	92	91	6-4	8-7	2-3	
11.	118	118	6-5	9-9	3-4	Drift.
12.	75	74	6-2	8-5	2-3	
13.	93	90	6-3	8-5	2-2	
14.	85	85	6-2	8-3	2-1	
15.	104	102	6-2	9-0	2-14	
16.	91	90	6-2	8-6	2-4	
17.	98	97.5	6-3	8-5	2-3	
18.	112	109	6-2	9-2	3-0	
19.	113	110	6-3	9-5	3-2	
20.	81	79	6-2	8-0	1-14	

Total 794.0g

av. 39.7g =

38.92 in

Blue Lanes  
April 1, 1919

Course A (South of Keefe's House).

1.	90	83	6-2	8-0	1-14	
2.	104	99	6-5	8-7	2-2	
3.	94	91	6-2	8-5	2-3	
4.	90	80	6-4	8-6	2-2	? Care.
5.	74½	70	6-3	8-0	1-13	
6.	96.5	93	6-5	8-8	2-3	
7.	87.5	86	6-4	8-7	2-3	
8.	78	76	6-2	8-4	2-2	
9.	87	85	6-4	8-6	2-4	
10.	71	68	6-3	8-3	2-0	
11.	95	92	6-6	9-0	2-10	
12.	102	99	6-5	9-4	2-15	
13.	101	96	6-3	8-9	2-6	
14.	88	87	6-2	8-5	2-3	
15.	98	95	6-5	8-8	2-3	
16.	102	98	6-4	8-9	2-5	
17.	94	93	6-5	8-6	2-1	
18.	91	89	6-2	8-5	2-3	
19.	99	97	6-5	8-4	1-15	
20.	104	104	6-5	9-0	2-11	

Total 710 oz  
av. 35.5 oz  
= 34.80 in.

av. of A + B 36.86 in = 90.4%

DEPARTMENT OF THE INTERIOR  
UNITED STATES RECLAMATION SERVICE

Tahoe, Cal.  
Mar 20<sup>th</sup> 1921

Dear Prof Church -

Snow is going very fast  
on the lower levels -  
and lots of bare ground  
Meadow Course average  
Snow 24.6 - Water 9.47  
= 38.6% <sup>down</sup> = 56.2%

Lake is coming up - 5.16  
To day - looks like more  
storm again - The  
measurements taken about  
a month ago, should  
give a better idea of snow  
conditions on the lake  
this winter than any that  
can be taken now as  
there has been quite a loss.  
Hope every thing is  
going O.K. with you folks -  
am still wondering whether  
Blacks got that letter  
They better send me the address  
maybe I have it wrong -

Very truly yours  
Arthur

Cousin Jan 27 " 1922  
Prof J E Church  
Dear friend

We had total 14 inch snow  
fall and 0.93 in water in it  
Since I took snow  
measure at Summit

What time in February  
will you take measure  
again at Summit

14 in snow 0.93 in water  
all the precipitation since  
last measure

Yours truly  
E. P. Rossmore

11  
Saw April 29 1921  
P. J. E. Greer  
Dear friend

I saw statement of  
3 hours Red Mountain  
Saw Mill flat  
Furnace flat  
Mill goes up to summit  
on 27 to day

Has letter from Mr. Armstrong  
Yours truly  
E. E. Rankin

N.S.

Furnau flat bours

Depth of snow	bare	Weight
84	88	44.4
95	87	45.9
93	88	48
96	94	50.9
93	91.5	48.6
91	89	46.8
94	92	50.6
97	89	50
80	77	42.7
<u>91.4</u>		<u>47.54</u>

625

Hymenoptera larvae

Depth of Snow	Core	Weight
92	90	47
98	92.5	48.2
99	95	49.5
97	92	49
99	94	52.3
99	96	54.2
97	92.5	52.1
95	90	52
94	90	51.8
<u>92</u>	<u>89.5</u>	<u>47.5</u>
96.2		50.36

93.8 in, 1+2...48.95

Dens. 52.2%

# Red Mountain Pass

Depth of snow	bare	Weight
120	117	58
114	113	56.8
105	104	54.2
96.5	93.5	48.2
100	98	48.8
104	102	50.5
100	88.5	50
97	93	51.4
110	107	55.8
91	89	45.4
99	95.5	52.8
97	93	52.4
92	91	47.3
<u>91</u>	<u>88.5</u>	<u>47</u>
101.2		51.33



Saw Mill flat course

Depth of snow	course	Weight
88	85.	46.5
104	101	54.6
92	88	50
103	101.5	56.8
110	108	57.5
111	108	59
111	104	59
117	111	61.9
104	102	55.2
105	103	59.4
124	120	66.7
130	125.5	75
<u>134</u>	<u>130</u>	<u>75.6</u>
140.2		59.78

Saw Mill flat course

Depth of snow bare		Weight
110	106.5	56.2
109	107	56.4
100	106	58.3
107	105	57.2
119	117	59.3
111	109	55.5
<u>109.3</u>		<u>57.48</u>

109.8 in ~~\$~~ av. wt 58.63 in.

Av. Red Mt., Furnace Flat + Sawmill Flat  
 depth 101.6 in. Water Content 52.97 in  
 Dens. 52.1%

Gift to Stoteman Feb, 1922.

Seamount Stoteman

Depth		Bar		Weight
84	"	88	"	26.9
69	"	65	"	22.4
70	"	64	"	22.6
70	"	64	"	23
76	"	72	"	24.2
74	"	69	"	23.8
69	"	65	"	23
74	"	69	"	23.9
86	"	79	"	30.5
70	"	69	"	23.4
75	"	72	"	24.1
74	"	68	"	23.9
76	"	68	"	25.6
69	"	62	"	24.6
71	"	67	"	24.8
74	"	72	"	26.5
71	"	67	"	24.2
70	"	68	"	23.2
76	"	71	"	25.5
76	"	73	"	27.2
76	"	73	"	26.9
66	"	60	"	22.1

22) 1613 73.3

av. 24.65 22) 542.3

# Seamount Station No 2

Depth	"	Bar	"	Weight
65	"	67	"	20.5
66	"	63	"	22.4
71	"	67	"	25.9
68	"	64	"	22.8
68	"	65	"	22.6
69	"	67	"	22.8
71	"	68	"	23.3
72	"	68	"	24.
73	"	69	"	24.5
82	"	76	"	27
67	"	64	"	22.4
68	"	64	"	23
70	"	65	"	23.8
74	"	70	"	24.2
72	"	69	"	23.6
75	"	70	"	23.18
73	"	69	"	23.2
70	"	66	"	23
69	"	65	"	20.5
72	"	69	"	23.2
78	"	72	"	25.3
81	"	76	"	29.2

1574

72.

52 1.0

Account	Station	Weight
1574	74	521.0
74	71	261.3
73	70	241.8
74	71	231.9
76	74	24.2
63	60	26
56	53	21.7
		18.4

$$29) \begin{array}{r} 2067 \\ \hline 71.3 \end{array}$$

$$29) \begin{array}{r} 686.3 \\ \hline 23.67 \text{ in.} \end{array}$$

av. 1+2 - 72.3 in.

alena 33.4%

av. <sup>1+2</sup> 2 courses 24.16 in. = 57.9%

Dormer Feb 3 1922

Prof J E Church

Dear friend

make very light on surface  
need to get good clear  
Lancet temperature low  
for lots of year snowing

My paper Luce Le Point  
Dormer Place Co Cal  
he is Citizen

Letter will find him at  
Sawant Hotel

With best wishes

Yours truly  
E K Rossby

Letter Feb 2 " 1922  
Prof D. E. Spruce  
Denver

Principal snow to 31th  
last snow fall to season  
Total 183 in  
Total water 2917 "

Received your card. Will  
go up Summit to day  
Will measure up Summit  
Station early next week  
also March 1

Mr. Luc DuPont is citizen  
May measure up Summit  
to know if I get there

This last storm snow  
very light

Yours very truly  
D. E. Spruce

# Snow measurements for Feb. 1, 1922.

## North Course

1.	70-65-22. <sup>5</sup>
2.	86-81-26. <sup>3</sup>
3.	73-69-22. <sup>3</sup>
4.	65-63-18. <sup>5</sup>
5.	72-71-21. <sup>5</sup>
6.	78-73-24.
7.	66-60-22.
8.	60-59-19.
9.	76-73-23.
10.	69-62-21. <sup>5</sup>
11.	69-67-17. <sup>5</sup>
12.	74-71-22. <sup>5</sup>
13.	93-91-28
14.	76-74-34.
15.	81-79-22. <sup>8</sup>
16.	89-84-24. <sup>3</sup>
17.	86-85-25. <sup>!</sup>
18.	86-84-24. <sup>?</sup>
19.	60-68-19. <sup>3</sup>
20.	65-64-20. <sup>!</sup>

av. 74.7

20)  $\frac{458.9}{22.95}$

## South Course

1.	66-50-23. <sup>5</sup>
2.	70-66-24. <sup>!</sup>
3.	87-85-28
4.	81-79-25. <sup>5</sup>
5.	66-61-20. <sup>5</sup>
6.	75-73-24. <sup>5</sup>
7.	85-82-26. <sup>2</sup>
8.	79-77-24.
9.	75-73-22. <sup>!</sup>
10.	73-70-24.
11.	69-66-21. <sup>5</sup>
12.	53-56-20
13.	73-71-23. <sup>3</sup>
14.	67-66-20. <sup>5</sup>
15.	57-53-21.
16.	77-74-24.
17.	67-62-23.
18.	75-71-22.
19.	80-76-25-
20.	71-69-23.

av. 72.3  
av. 23.12

av. 72.3

in = 56.7%

20)  $\frac{465.7}{23.29}$

New 2,31,5%



1  
2  
3  
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32 1/2  
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45  
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37  
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23 1/2  
33  
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34  
30

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6-2

course A  
50 ft East of  
House  
Running  
south

Wood Survey  
Feb 1920  
Blue Lakes

Snow Survey / Blue Lakes  
 February 1, 1920  
 Course A. - 50 Feet East of House Running South.

	Depth	Core	Total Weight		Weight of Sampler		Weight of Snow		Inches of Water
			Lbs.	Ozs.	Lbs.	Ozs.	Lbs.	Ozs.	
1.	37	35	7	4	6	4	16	15.68	
2.	40	38	7	4	6	3	17	16.66	
3.	46	42	7	8	6	4	20	19.60	
4.	48	45	8	1	6	5	28	27.44	
5.	44	42	7	3	6	5	14	13.72	
6.	33	32.5	7	2	6	4	14	13.72	
7.	39	36	7	2	6	4	14	13.72	
8.	38	36	7	3	6	6	13	12.74	
9.	39	37	7	3	6	5	14	13.72	
10.	41	39	7	4	6	4	16	15.68	
11.	47	45	8	0	6	5	27	26.46	
12.	40	38	7	5	6	4	17	16.66	
13.	29	27	7	2	6	3	15	14.70	
14.	38	35	7	4	6	5	15	14.70	
15.	24	23.5	7	0	6	3	13	12.74	
16.	34	33	7	2	6	3	15	14.70	
17.	35	35	7	4	6	2	18	17.64	
18.	44	41	8	0	6	3	29	28.42	
19.	35	34	7	4	6	2	18	17.64	
20.	30	30	7	0	6	3	13	12.74	
Total		724							

20) 339.08 = 16.95 in.  
 Relative Density..... 46.8

cross survey Feb 1, Blue Lakes

# REQUISITION

## THE STANDARD ELECTRIC COMPANY OF CALIFORNIA

CROCKER BUILDING, SAN FRANCISCO

No. **B 144**

190

To the Purchasing Agent, The Standard Electric Co. of Cal.:

Please forward by

the following:—

Course B. North Carson Valley

	Depth	Core	Depth (5%)	Depth (5%)	10
1	39	39	7-	6-4	
2	42	39	7-1	6-3	
3	44	39	7-6	6-3	
4	42	38	7-4	6-4	
5	40	38	7-4	6-3	
6	42	40	7-6	6-4	
7	30	30	7-2	6-4	
8	36	34	7-3	6-2	
9	39	38	7-4	6-3	
10	33	31 1/2	7-1	6-3	
11	44	44	7-4	6-4	
12	45	44	7-5	6-3	
13	35	35	7-3	6-4	
14	47	46	7-6	6-4	
15	52	49	7-7	6-5	
16	52	49 1/2	7-9	6-5	
17	53	50 1/2	8-	6-4	
18	52	48	7-8	6-3	
19	48	44	7-4	6-3	
20	28	24	6-8	6-2	

Course  
North  
Carson  
Valley

For use at:

Remarks:

Average  
Total

Inches  
X Water = 98% 5/8

Figure Relative Density.

Order No.

98  
22  
12.6  
98  
11.76

98  
14  
39  
98  
13.72

98  
11  
88  
98  
18.62

16  
98  
128  
14  
1568

98  
5  
88  
5  
88  
5

98  
11  
686  
98  
1666

17  
32

18  
98  
144  
102  
1764

28  
56

15  
98  
120  
135  
1470

28  
56  
27.44

98  
19.60

28  
98

42

52

17  
34  
17.71

16.32  
89

*Expedite*

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Feb. 1, 1920  
 Snow Survey - Blue Lakes  
 Course B. - North Carson Valley

	Depth	Core	Total Weight		Weight of Sampler		Weight of Snow		Water Content (Inches)
			Lbs.	Ozs.	Lbs.	Ozs.	Lbs.	Ozs.	
1.	39	39	7		6	4	12	11.76	
2.	42	39	7	1	6	3	14	13.72	
3.	44	37	7	6	6	3	19	18.62	
4.	42	38	7	4	6	4	16	15.68	
5.	40	38	7	4	6	3	17	16.66	
6.	42	40	7	6	6	4	18	17.64	
7.	30	30	7	2	6	4	14	13.72	
8.	35	34	7	3	6	2	17	16.66	
9.	39	38	7	4	6	3	17	16.66	
10.	33	31.5	7	1	6	3	14	13.72	
11.	44	44	7	4	6	4	16	15.68	
12.	45	44	7	5	6	3	18	17.64	
13.	35	35	7	3	6	4	15	14.70	
14.	47	46	7	6	6	4	18	17.64	
15.	52	49	7	7	6	5	18	17.64	
16.	52	49.5	7	9	6	5	20	19.60	
17.	53	50.5	8		6	4	28	27.44	
18.	52	48	7	8	6	3	21	20.58	
19.	48	44	7	4	6	3	17	16.66	
20.	28	24	6	8	6	2	6	5.78	
Total	798.5	798.5							328.20

Average A+B = 16.68 in.  
 Normal 40.79 in. Seas. Pelge of Normal 40.9 per cent.  
 Relative Density..... 41.1