April 1, 1946 –
April 5, 1946.

Soda Springs

April 1/1946

Phone by J.J. - "Snowing".
But not hard. Clear at Pond.
Will return to Camp with J.J. Lopez.

8:30 a.m. Bid for Soda Spgs.

Road clear until face up.
Dozer Grade. Then chains
to Soda Spgs.

Dozer Lane has a load
and two loads of ore
ready on N. side and
forward head of Dozer
last meet this a.m. at 55.-6°F

New ore - Getting
wet - 30 in. deep opp. Nod
- mdx -

Need

6 Bottles of record mix -

Glass tube to sample dyes.

Expenses

April	Fare	$2.01
lunch		80¢
Dinner		1.50
Gym		
Breakfast		1.00

11 a.m. Blaine Eddy
started S.S. No. 2
after lunch Sue will
go to Kearé and Summit
Valley.

Donner Pass
Snow still deeper
Shelter almost touches
snow. Pits snow inside
Possibly 2 in. up.
Day comfortable. Sample
warm - Snow warm

Snow Cores -
Uncrushable - No adhering
D. 232 in W.E. 10.5 in Dens 46.3%
Crystals very coniform
1 mm diam. Can absorb
water readily and
release some.

Study action of dyes.
Also tubules or veins in
cores after transparent
with water.

New snow in forest.
Consists of star crystals
much larger than 1 mm diam

Lunch 80 ft.

Donner Lake - 4 p.m.

Snow like flour - but trail
became of pressure of
shoes (melted hand by 5:30)
Untouched snow had only
thin crust.

Reset thermos at Pass and
Lake - on Monday.

Recharged drip tank
with radiator powder.

Blaine snow unmelted down
Sue | melted August.
Sept. unmelted August.

Old Dpth 1.50 in.
New depth 1.04 ?

Valve opened again.
→ Watch it.

Snow survey - 12 meas.
Someone (two) have been here today and made survey already - But 10 meas.

Rivabel from Soil Cons. S. D. Denver Office of Reclamation Service.
Now Head of Hydrologic Division under Riter.
R.S. offers 2 pay Engineers 30% maintenance to share laboratory here.

Study.
Temp. of drift snow
To study wind crust.

Temps. at +16° F at intervals above snow.

Color Camera

Glass samples.
T. J.'s idea. Good.

Accumulation of frost on snow impossible and open. How fatal? How much a sublimates daily?
Salt here on snow.
not noticed.
Try balances.

Dye colors by Landa

Hotel -

H-T -1°F Max 34°

Min -3.7°

Calm - cloudless.

Frost 3/4 in an old crust.

Trichoma Dge.

Paloney - 1 part in a million.

Dr Sears considers using it in tracing leaks from a reservoir.

April 5/46

Dye Sampler –

Obtained glass sampler tube from Dr Leifson and Jack Ryan for J. J's dye studies –

But cement dissolved or loosened in water and shoulder will not take the cord.

Dewer somewhat more open.

No snow on trees.

Johnnie and Eleanor gone for day but records changed

Pasture 11:20 am

Min for period −10.5°

Reset 42.2

Max. 47° Reset 45°

What period? a week?

Stevens Q

11:30 am 11.76 in

By winding for sharem up to 11.83 in

Acid in leaings?

Losses?

Thermog Jr Conn O –

at 41° F.

N-T 29 in above sensor

Mid of louvers beneath sensor level

Found J.J. Had gone
To Truckee for "Analyst" -
Measured both Donner Pass
and Donner Lake,
No ice at Pass.
No change nor ice
at Lake.

Drip Tank at Truckee
R.S. -

Mch 2		1.4
6		1.3
9		1.4
13		1.4
14		1.4
15		1.4
→ 16		1.55
17		1.50
22	8 am	1.80
	5 pm	1.80
25		1.80

Mch 28		2.30
Total		0.90 = 0.09 -

Thermocouple wires again broken

3:30 pm
7 Ft H-T 39°
Humid 70%
Overcast, storm clds -

T. Jr. Am snow 37°.
In light but not even
semi-dense

11 Ft. H-T 35.5°
14 Ft H-T 36.0°
Hum. 82 %

3:50 pm
7 Ft 38.5°
On Snow 36.5°
4:10 pm 14 Ft 35 - 11 Ft 34.5

4:10 pm
38°
36.5

Shoes for ski

Shoe wax

Corks for tubes

Plug from Jack.

Color film for my camera

Bill Cinetta, Munich Heidelberg

Ask J.J. re salt in sweat.

Bag

Pack bag

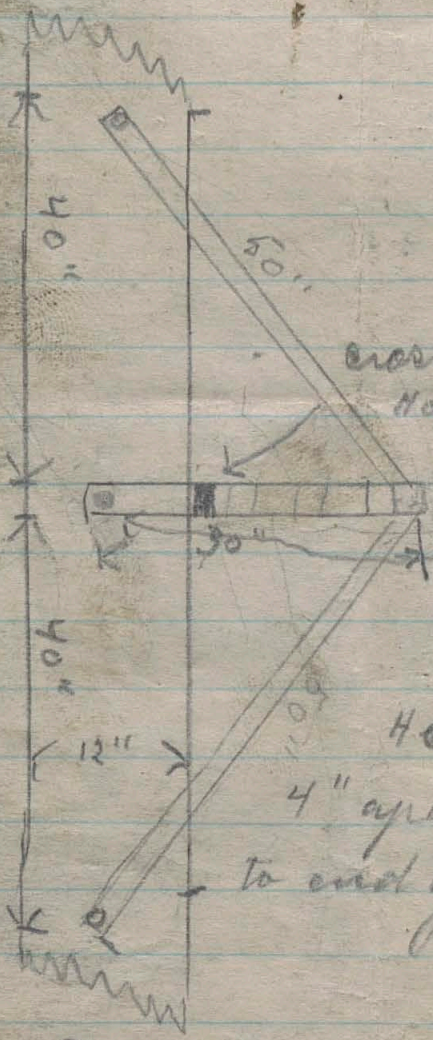
Sleeping bag

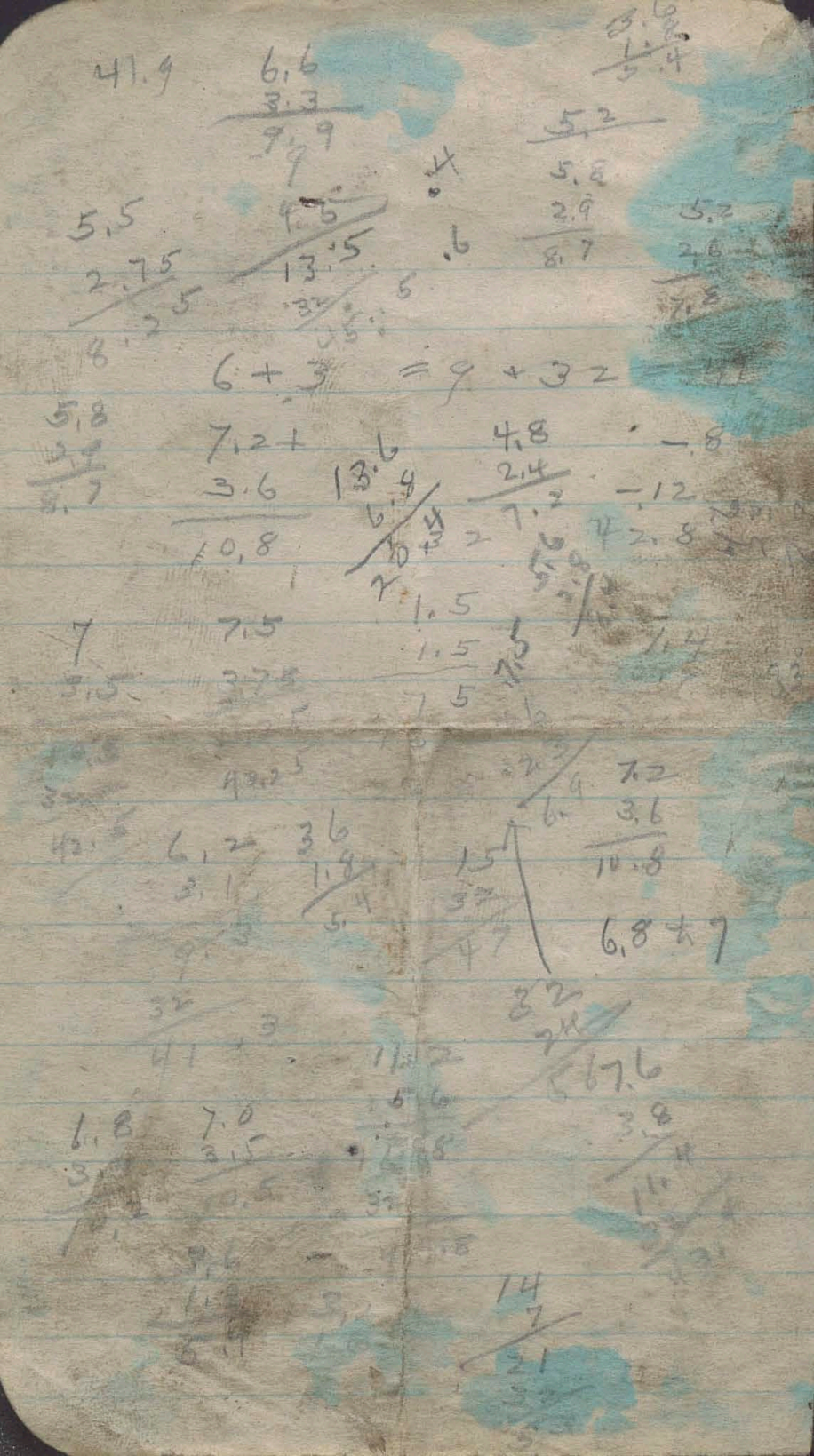
Repair bag

1.82	1.80
1.75	1.75
.07	.05

2 ½ x 11" bolts washers

6 3/8 x 6 bolts —11—





May 23, 1946

Velvet Finish

Red Quill

Writing paper

NOTES

No. 331½

Name 1946

Grade

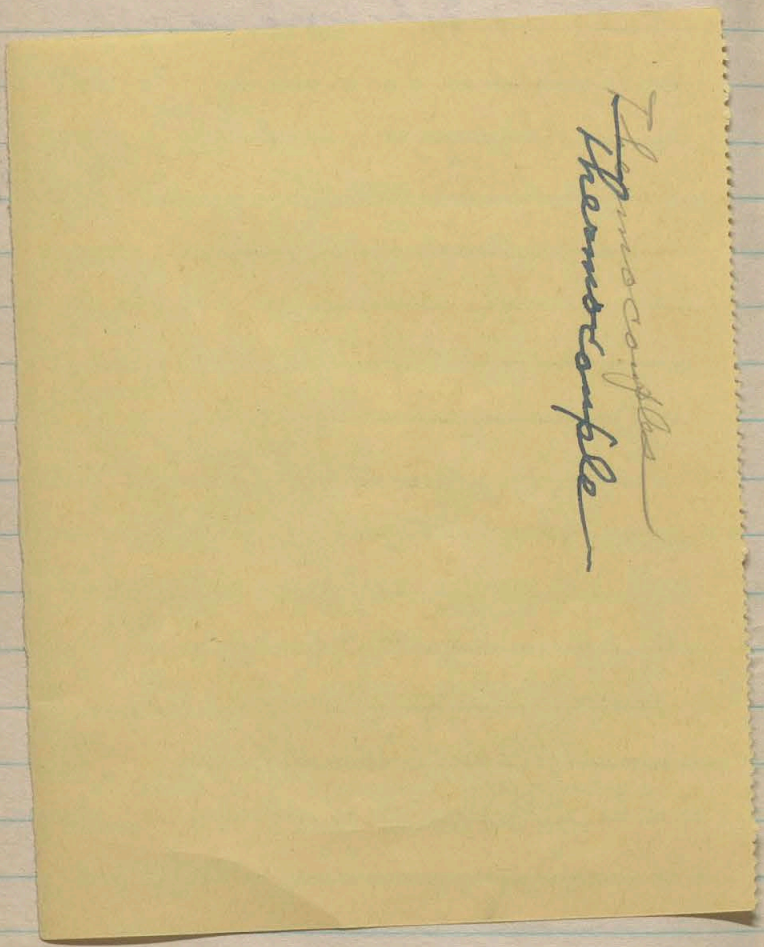
— Expenses —

apr. 21 - Ticket Reno to
Soda Spgs & Ret. $2.01

april 22 -

Phone Reno 5¢
Tennes 10¢
Soda Spgs 10¢
5 Post cards 25¢
1 Notebook 10¢

To Nan for
telephone messages 1.00
Lunches Tennes 1.33
for 2
Dinner 95¢



April 22 - Trip to Soda Springs,
8:45 am
Truckee yellow-green to
Hirschdale. Water pantheic
up here copious.
Snow on N. slopes from
Hirschdale W.

At Truckee brakes
of bus smoking badly.
Finally a skiff bus ordered
from Reno.
Phone Beacon Hill to
Ed Johnnie. At 11 a.m.
Johnnie on his way to
Truckee to get me.

Phoned Forest Station -
Only a 20-ft petal of

Snow left at Canoe-
Station No. 1. And drift
for will be empty of snow
in a few hours.
Melting very slow till
suddenly the water burst.
Measured three times a
day - Should have been four -
Later every hour."
Next year I must be
continuously on the job
This sweet bit
record continued till early
morning. "Evening sweet
makes night bring better".

12 Noon -
Johnnie has arrived.
All tanks working except D. Lake

Send to Truro R.S
1 set winter hygrothermograph
1 set summer "
Reset H-T.
by first of May

Snow cover at Canoe T-

For Women Lake
1 - 5ft ladder to platform
of drift tank -
D. J. can make legs
for Thermometer shelter -

[later: at Hotel evidently]

Apr. 25?

5:25 pm

H-T 52°F Max. Min 55°.

Min. 13" above H-T in same shelter.

In shade

At surface of snow but ants of contact 8.0 44°F

On surface 4.0 38°

In surface 0.6 32.9°

On surface 2.0, 5:50 pm 1.0
35°F 33.5°

5:50 pm.

H-T 50°F, Min. 52.5°F

[Sunshine column just at the contacts. 5cm (15°)]

½ in. in snow +0.3 32.45

On surface +1.0 = 33.8°F

At surface - no contact 3 = 37.4°F

1 in. above +4.1 = 39.4

Tiny air current 5-7 oscillates

2 in. above 4 } 39.2°F 38.1

3 in. " 5
4 in. " 5 } 41.0°F 39.5
5 in. " 5

6 " 6
7 " 4-7 dim
8 " 7
9 " 6
10 " 7
11 " 6.4
12 " 7
13 " 6 } 43.5°F
14 " 5
15 " 5
16 " 6.2
17 " 7
18 " 6
19 " 7
20 " 7.4
21 " 6.4–7.4
22 " 7.4

Av. 6.07 = 41.1°F
Av. 6.4 of fronts = 43.5°F

23 above 7.4–8

On surface 2 35°F

6:25 pm
H–T 45° Min. 47°

In surface +1 33.5 = 33.8°F
Deeper in surface +0.6 32.9°F
" still +0.4 32.6°F

Dye. Slowly changes to pink even up to surface crystals where dye is heavier.

The snow is cleared of old dirty crystals as 50% intervening matter has been removed.

But at 6:40 pm only 3 crystals turned red from new dye. Remainder green. Yet tips of red beneath.

Sunshine recorded much below contents at sunset. Has it been readjusted?

Donner Lake open and sparkling, but Norden still snow covered.

Friday April 26

8:30 a.m. Rode up with Mr Vogel of S.F. former brother in law of Judge Carlen and also of Sam Rosenthal. Memorial many. Salute at parting.

Donner Lake nearly full.

Some snow-slides and cornice fragments stalled on hillsides.

Norden still snow covered.

Snow getting shallow. 3 ft.

Tank-rise shows a definite discharge and rest of snow melt.

Tank 8 Donner Pass filling daily. Snow is more "spongy".

Photo

View of shelter No. 4 exposure. No snow below 7 ft to earth but 3-4 ft around it.

Drift Tank - Donner P.

51.5, 49.4, 49.8, 50

12:35 pm

Stevens Q 12.16 in

Very evident temp. of 0.1 in daily - Weather hottest of record for April - Rebound.

SE cable loose - Broken?

1/sec.

254.5, 50.4, 50.3, 50.4

Effect of surge in pipe - by letting gradation down too fast - Tried wooden stick but it floated - Tamp. too full for it -

2:30 pm 252, 52, 53, 53

3:30 pm 252, 52, 52.

Temp. 18" in snow 32.6°F.

Thermocouples

4:40 -

In road -		39.2 - 44.8°F
On white snow	4.8 - 5.0	7.5 - 8.5
On smoky snow		44°F
50% cinders	8, 7	42.5, 44.0
75%	10, 8	47, 44
90%	7, 11	42.5, 48.5

In Pasture		35.9 - 36.2
On fairly clean snow	2.6 - 2.8	
" 40% dirt "	7.3	43.0
" 75% " "	5.6	40.4
		35 - 38°F
On pure white snow	2-4	as slows the frog

Evening temps -

Max. Apr. 25	59.5°F	-7ft.
" " 26.	55.0	

14 Ft. Max since Monday 67°F
Min. " " 21.7°
Max by H-T 63°F

6 pm —

On snow T-C 2 = 35°

" Thermom 36°

3½ F. T 46

Therm. 43.2

7 Ft H-T 48

Thermom.

~~11~~ Ft 48

14 49.5

Min. 48.9°

6:06 pm

T-C Close to snow 1.5 = 34.2+

T. above snow 34°

3½ Ft ~~Tgh~~ 44.0°F

Thermom 43.2

6:10

On snow T-C 1 = 33.5

Over snow

" T 34°

" Tgh Jc

Snow compacting.

6:20 - T-C 0.4 32.6°

T 32.5°

Tgh 34°

3½ Ft T 37.8

7 Ft H-T 42.5

Humid. 60%

11 Ft H-T 42.1°

14 Ft. H-T 40°

Humid. 65%

Min 40.4°

6:40

On snow T-C −0.6 = 31.1° F

Crust ½ in.

Tgh 32°

T 31°

3½ Ft 34

Nina Horan & Hall, L.A.

Emma Silver.

Expenses

Apr 26 -

Fare Reno N 5 Eggs	$1.09
Lunch	80¢
Dinner	$1.50

12 Midnight.

Boy + Girl out on the snow making in the clouds marching at angles — and asking when skiing would be good tomorrow.

I told them not till 9 a.m. so they could have a good sleep. Enthusiastic.

Drip Tank

?	2.578
6:30 pm	2.57
9 pm	2.58
10 pm	2.59
11 pm	2.59
12 Mid.	2.59

Flow 6:30 to 10 pm after must have read

7 Ft H-T 24°F

Hole in Snow Tgh 22°?

6:30 am . 259

No percolation after 10 pm.

Descent 3-3½ hrs. Hard deep?

6:30 pm - 6.38 am

14 Ft Wire 19.6°

H-T 20 Humid 96%

11 Ft H-T 17.5°F

7 Ft H-T 20°F Humid 84%

In hole on snow Tgh 20°F

Still 20°. in hole

Others have risen approx. 4°F

Why 7 Ft and Hole in Snow so high? Protected from air drainage? Hole in Snow Thy frosted opaque.

Ground frozen. Pool beyond causse not even Crust thaw deep?

Todays dye Apr 27

At 6:30 am

Green in shade, red on slope tilted toward sun.

Old dye on local frozen gray but begins soon to reappear.

How long for melt water to reach bottom? 6:30 till noon? Longer? Depends on thickness of crust or cold of previous night?

How long to soften crust? But will melt water percolate without delay thru it?

Waiting for 7:15 am bus.

11:30 photo

11:40 am

Drip tank 3.88 in

Test

May 4—

6:30 a.m.

Hotel H-T ↑ 63°F (Max) 28°F (Min)

Min 26.6°F.

Below 32°F 8 hrs. Time.

Crust 7 mm

Sun up at 5:30 am

Thermocouple Test. in Room.

Check 64.6°F	21 = 63.5°F
65.0	21.4 = 64.1°F
65.0	21.6 = 64.4°
68.2	24 = 68
68.6	24.6 = 68.9

9:50 am

On mount

#4

Crust 7 in.
Min. 25.5° on board

9:50 am Dye still green.
Current
Tgh 44° T. 39.
T Candle 38°

10 am Dye turns red.
Tgh 44° T, 41.5°
TC 41°

7 Ft H-T 52°
Over bare ground.
11 Ft H-T 50°
14 Ft H-T 52°
[Min 22°] Curr 53°
Humid. 28% at both.

3½ Ft T, 1/5 in. above snow 53°
at snow TC 38°
½ in above Tgh 43°.
[Tgh sluggish.
Metal?]

On snow. 33.5° F
10:20 am.
On snow 34.1
" 35°.
Because of narrowing of shade and indirect sun.

↓ 3½ Ft T 54°
7 Ft H-T 53.5 Humid. 28%
11 Ft H.T. 54°
14 Ft H T 54° " 26%
Min. 54°
all over ground; not snow.

10:40 am
On snow TC 35°
½ in. above snow
Tgh. 42.5°

Snow crystals still frozen together. But dye has already penetrated 2½ in.

1.4
0.7
2.1 34.1

In snow 3/10 in. in pencil hole

TC 35°F

1/2 in (deeper) + less air 32.6°F

10:40 + ? + 50 min (?)

In ice at dye

In (1/10 in) snow, 38°

Wind shows. Tiny breeze causes slight fluctuation of needle.

On snow 41° to 42.8°F extremes

3 1/2 Ft		55°	
7 Ft	N-T	54°	Humid. 27%
11 Ft	N-T	54.5	
14 Ft	N-T	54°	Humid. 26%
	Min.	55.1°	

11:00 am + ? + 50 min

TC On snow but sunk down 2/10 in

41°F

" " Tgh 44°F

In snow 41.3 to 47°

(1 in deep pencil hole) 42.5 to 43.25°

(9/10 in deep)

11:35 am + 50 min

On snow TC 48.8°

7 am	1.70 L
9:30 am	1.75
10:15 am	1.79
10:45	1.86
11:45	2.04

Dye gone down thru crust 5 in. Mostly in shade

Suggest -

Dye in sun - descent,

Density by weights, not springs.

Depth + springs too uncertain.

.75

Metal scale came loose at 12 noon in Drip Tank. Unscreened pipe 4 ft. up. Ground water covered top of tank.

Late Lunch. Then Work. Caught scale in split in end of Stick

→ Link on scale pulled open. Must get continuous link chain. How long?

Donner Pass

At 3 pm or later to Donner Pass. 5 views of courses and therm. shelter.

Crews rest vertical. Labels carried down at bottom by twine. Must get angle-iron brace support.

Visit to Donner Pass Absent. Have seen one all the winter.

U.S. W.B. Inspector accepts Univ. Gage readings and would like to keep it. Congratulations. Didn't expect it.

5 130 pm. + 50 min = 6:20 pm

TC -

In sun - In snow 1/10 in. deep. 34.1°F

On snow 36.5

In shade - Over snow.

1/10 in T graph 39°

3/10 T 40°

Eye red.

3½ ft T 50° Overground

7 ft H-T 50.5 Humid. 46% "

11 ft H-T 50.2

14 ft H-T 49 (hut 10 min. later)

Humid. 52

T 49

11 ft H-T 48

7 ft " 48 Humid 50%

3½ ft T 47 (but in sun 10° above hut)

T graph. 1/10 in 37°

" 3/10 in 37°

TC 1/10 in. in snow 32°F (Shade)

On snow 33.5°F (Shade)

On dirty snow (50% dirt) 33.5°
(Shade).

Snow congealing. tho still
turning red.

On dirty snow (50% dirt) 32°
(Shade)

Tgh as above 37° (Shade)
T " " 37 (Shade)

3½ Ft. 42° (In dim sun)
7 Ft H-T 44° Humm. 65%
11 Ft 42.5
14 Ft 43.2 Humm. 76%
Wind, 12.6

No. 9 Min. H. J. Green U.S. Weath. Bureau
U.S. 402779
→ For ashtons.

TC. On snow 32°
Tgraph 35°
T 34.2

6:25 + 7 = 7:15 pm
Snow congealed on surface
Dye semi-green

Drip Pans

6:30 + 50 min = 7:20 pm
Drip tank 327
327

TC. On surface 32°
Dye green
Crust 1/10 in

Watch 50 min. Start
Spring unwound?

8:30 pm

Tgraph 3/10 32°
3½ft T 34°
7ft H-T 32°

8:53 pm
Drip tank 329

7:15 to 9 for water to
run out = 2 hrs.

Stream has fallen 3/4 since 6 pm. Expected it to hold up longer because of distance.

Snow hard, slippery, crystals glisten in flashlight.

X 9:50 pm
Drift tank 3.29

Road becoming dry. Flood fallen to culvert only.

Snow hard.

Cable on Stevens again broken by snow strain.
Hook and SE spring.

Sunday May 5/46

Spring. Birds. weather Lovely. Mild.

Some pools unfrozen. Some 1/10 in thick to unfrozen edge. regr pastures have shallow ice

Sun on snow at 5:30 am

Drift tank

6:45 am 3.29, 3.29

7 am

In sun

Temp on clear snow (1/10 in)
TC 44°
T 42

In shade On snow
Tgraph 1/10 in 36° (min. night 27°

3½ ft T 46°
in open
Hangar ½ in from 4x4 timber.
2 ft clear from wood.

7 ft H-T 42° (Min. 28°)
Humid. 48%

11 ft H-T 41.5 (Min 25.5°)

14 ft H-T 41° (Min 28°)
Humid 48%
Min. Current 47.3°

7:18 am
On Snow 1/10 in.
TC 45.5
T 43°

Dye - 7:30 am.
In sun - 2 hrs sun - clean snow
Coarse 3½ in depth.

In semi-sun
Depth 3 in.
In shade

Temp. in sun -
1/10 on snow TC 45.5
1/20 " " T 43°
Stick of TC and glass tube

of T are sinking into snow
⅓ of their diam.
Crystals leave water marks
on palm of hand.
Crystals come loose when
scraped by point of pencil.

7:45 am

TC 44
T 42.8

Semi-shade
TC 39.5°
T 41° F but fell quickly.

Shadow

TC	38°	TC	38.5
T	37°	T	39.8-40.7 brage

8 am

TC	40.25	39.5	39.2
T	39°	39.	38

Crust. 9 in. * Min. on snow 27°; in air 28°

Core 16 in. Upper half less responsive to dye. Denser than lower half, has less free water, Query: Can one get greater density by weight in lower half?

→ * Why depth at only 27°?
"Parums" says J.J.
Coarse and wet.
Snow is an independent

8:30 am In shade

TC 39.5
T 39.5 (Sunk 1/3 in. snow)

Relaid on snow
TC 40.7 to 41°
T 40°

TC 43.4 but fluctuating with breeze.
T 46.5

TC 42.8
T 47.8

8:45
In shade.

T 43 Dye not quite
Tgt 42 changing, but
new dye grayed.

27° → However in snow dye has penetrated full depth of 16 in

Top 1 in, 100% red. Upper snow still firm. 10% red?
Bottom 8 in, 25%

Theory: Melt water at surface penetrates crust to moist snow below and adds its weight to start

gravity descent of capillarity water. In other words the bottom primes the runoff.

NB

The crust need not be melted fully, but is perforated,

Drip Tare at 8 am

#

6:45 (just C)	3.29 in
7 am	3.29
7:30 am	3.29
8 am	3.29
8:30	3.29
9 am	3.32

Pumped 0.35 on 5:30 to 9:00 on renewing circulation = 3.5 hrs.

7:15 fm to 9 fm drying = 1 3/4 hrs stopping.

Water stoppage 1 2 hrs with snow 1-1½ ft.

When snow deeper delay is longer — slower starting.

9:30 am

Temp. In subst TC Wire 2/10 in Snow 35°

T. ½ buried 41.2

On snow

TC 41°

T 45.4°

See H-T° for air temp. at this time.

Brkft

12:15.

Rod planted 18.5 in above snow surface.

Sub-snow T graph photostat No. 6. + brought home

Pasture

Hot day - 4-

Drip pan eidg

Today or tomor

last day of me

here in Pasture

Found cutter

J. J. will return

Blair Eddy.

Pump for tank

efficient but valv

pipe must be lig

Dormer Lake

Matted Slide - Litter on snow

on surface

1:55 pm

TC	36.8	36.5*
T	32.8	32.8*

T bulb down in snow more

than wires of TC.

1/10 in above snow for both. Tiny bugs

Wire down

TC	44	45.5
T	34	34.0

1/10 in beneath snow surface.

TC	35.6	38.6	37.4
T	32.2	33.0	33.0

TC 39.5-40.7 Wire buried

T 33 Bulb covered with wet snow

7.5 5.8 8.7

2.9

3.2

5.2 3.6 9 13.5

2.6 1.6 1.9 4.5 32

2.4

7.8 1.2 4.8 5.4

Pasture

Hot day - A-T 62°F
16hr above 30°

Drip pan edge shows
Today or tomorrow is
last day of melt. means
here in Pasture.

Found cutter 7 Bar E
J. J. will return it to
Blair Eddy.

Pump for tank away
efficient but valve in
pipe must be tight closed

afternoon
Donner Pass
No large balance. So
wait until tomorrow.

Donner Lake

In semi-shade
TC 38°
T 34.8°

NB | T graph 6 3/4" above ground ^ for last hour 68-70°F
Over bare ground.

Donner Lake Canoe

In strong sun - middle of road - dirty surface - forest dust.
On snow surface
TC 50.0 ^ 53.5
T 37°

In surface (In shadow) by tree top.
1/10 in
TC 39.5 - 40.4 | 35.0
T 32.5 | 32.1

→ Dollars own these grounds, So ask them for permit for Tents, shelter.
T.T. will ask for privilege on County Road for pan and tank

2:30 pm
At same spot -
Sun stronger
On snow - just in surface for TC; and surface for T.
TC 42.2 - 42.5°
T - 38°

In sun again.
In surface
1/10 in, in snow 1/10
TC 1/10 37.4° | 38.9
T 2/10 in 33° | 1/10 in 34

T-graph 70°F

Study

contrast between temps over soil and over snow.

The 70°F in shelter seems high as compared with the high 30's over snow; What would have been the maximum over snow?

(#) Took #1 photo of gate and snow clad range above snow course.

Take also view of Mt Rose from W shore of Donner Lake.

Norden still snow covered except small area at head.

- Note.

(*) April 1934. at Donner Observatory was heavy wet snow almost like rain. So the two gages caught the same amount

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Rested at office

* Tipped slightly above snow surface perhaps 1/10"

Pasture - Evening

6:15 pm
In shade, Sun 15° up - on cleaned snow

TC	33.5°	35.0*	32.0**
T	33.0	33.0	32.5

Snow crystals leave water marks on my hand but have congealed - i.e. ½ of the tiny area but the other ½ has a surface still soft.

Over soil -
7 Ft H-T 52°F (max. 62°)
Humid 46%
11 Ft - H-T - 52.8° (Max 63°)
14 Ft H-T 52° (Max. 62°)
Humid. 48%

Min. current 52°F.

NB -
Is temp. change over bare ground more sluggish than over snow? Radiation effects less? Is this the difference between Gudel and me? He can't see the next step?

= Is excess of temp. over soil much greater than over snow with reference to congealing of snow?

** Bath readjusted.

6:45 pm Sun just down.
More congealing.

TC	32°F	32°	31.4°
T	32.2°	32°	32°

7 Ft 44°F
11 Ft 44°F
14 Ft 44°F
} 20 min. later than 52°F etc.

Min. current 42.5° Humid 78%.
Eye on surface crystals green but under crystals red.

Drift tape has risen .03 in. last 50 min. Snow only 6 in. deep.

May 6 21

Sun on level 5:30 am.
but over hill on pan 6 am
At thermoms 10° high. at 6 am

6:05 am. In direct sun. 18° up.
On the frost (dusty)
TC 33.5
T 32.3
In thin shade of dunes
TC 31.7 / 30.8
T 30° / 29.6

In stronger sun
TC 35°
T 32.5

Before 6:15.
new dye has turned slightly red
Quite red in front of reflecting board.
6:20 am
Signs of red returned in several places. Frozen muck softening slightly.

6:25 am
TC 35°
T 33.6
On shaded slope
32°
31°
Sun glints on bulbs
33.5
31.0

6:30 am
Frost drifting from metal cans and towers

6:40 am
New dye has descended 8/10 in
Muck soft to tread on
Ice surface moist.
Shell ice 5/100 in at 1 1/2/10 in

Temp.
On snow - In shade
Tgraph 32° (Min 26°)
T 32°

7 Ft H.T 32° (Min 28°)
Humid. 78%

11 Ft 30° (Min 26°)

14 Ft 33° (Min 28°) Humid 90%
Min. current 35.4°)

7 am -

On snow - In sun

TC	38.5 (but wire sunk 1/10")
T	34.0

readjusted — In same spot

TC	38.9	35.0
T	33°	33.0

Drift Lance 2.24

7:10 am

In sun -	On snow	1/10" deep
TC	38°	39.5
T	34.4	34.0

Depth Loss at glass tube since 12 Noon yesterday 2.7 in.

Orig. May 5 18 in.
May 6 20.7 in.

In tiny 2x2" area of tilted

(a) shaded snow

TC	38°	37.4	38°
T	34°	33°	34°

Crust 7 in. thick.

(b) Slanting thread sun, sinking into snow

TC	44°	41
T	33°	33.6

Tiny pinpoint crystals flash out and disappear like tinseling stars. Each flash is a melting & disintegration. A wonderful panorama a foot beneath your close gaze.

The day of melting is here a field of infinite sparkling jewels.

7:55 am.

Drip Tank 2,24 in

Chain 16 ft long - links full open.

Sunny 1/10 in into snow 2/10 in -

TC	37.4-38.0	42.5	36.8
T	34	33.2	34.0

1/2 in above snow

TC	56°	52.4
T	43.8°	49.8°

Query! Which is more accurate - mine or mine?

8:30 am

Drip tank 2.26 + = 2.26, 2.25, 2.24

Dye Down 5 in but still in crust.

In shade Dry snow.

graph 38°

T 39°

7 Ft N-T 46° Hum 40%

11 Ft N-T 46°

14 Ft N-T 48° Hum 44%

In sun 8/10 in above snow

TC 53°

T 48°

Note similarity with shade temps

8:50 am Drip Tank 2.29 (J.J.)

Total depth approx 5 in.

NB - Temp at surface at 8 am similar to temps at Dawson two days ago from yesterday.

No need to carry thru today

9:15 am In shade 39°F - T 38°

Dye red. Melting even in shade

11:30 am
Photo of drip pan party
face - #2.

11:40 am
Drip tank 2.8,8 in

*3 - Mole Nest in Snow.

Today hot.

afternoon
Donner Pass -
No gain in drip tank.
Tank Pumped in test of valve.
Could pump water but
air in drip pan valve.
Due to solidity of snow?
Must screen thermo shelter.
J.J. made sketch of angle-
iron support for storm mast.
Photo of above mast & pump

Donner Lake
Depth of drip tank
constant at 1.02 in.
Leak probably.
Must exhume tank.
Steps + ladder for platform
and thermo shelter.

Must see Dollars re
right to erect tank.

2 photos of Mt. Rose and
Donner Lake.

Truckee R.S.
Set pan down 20° F.
The Friez Precip. gage
located near U-T. Moved
from maintenance station
to higher up in Truckee.
Obs. hours at 5:15 pm

Thurs. May 9

Cool damp air and a sprinkle or rain last night.

Some clouds today.

But only a few drops of rain at Soda Springs last night.

Does this break the drought? 30+ days of it.

—

Clyde took me to Donner Lake and Cisco left at 8 a.m.

Drip pan at Donner #1 was full of water. Wire failed to clear it as far as valve.

Valve must have failed. Turning does not open the pipe. And Johnnie suggested the Clyde ^ standard faucet valve. Must mark the change. The tank also leaks.

Met Johnnie at Donner Pass and transferred our load to him.

1. Calcium ordered but none available now.
2. Four of 2" Lye Trichlorine
3. Iron work and bolts for crossmember.
4. 20 ft chain for tank.

Johnnie will renovate the Tanks and build fires around them for summer.

Fred Paget needs him next week on

a survey.

Gerdel wonders about snow at Soda Springs next winter if I go to India. Johnnie can be instructed.

Tuesday May 21/46

To Soda Springs 9 am bus.

Truckee R. & Boca just bankfull. North slopes (ie facing south) are almost bare. Lake Basden filled with snow on south shore.

"Bad news - good news!" Dennis wants us to move equipment in Pasture to bare ground. He is bringing cows as well as horses.

Ashton is now in charge of Central Sierra Snow Laboratory and invites me to lunch" - Johnnie.

Visited both Pasture and Laboratory.

Rent House has now been squared up. The guylines will be removed and the bare spots made by us will be resodded.

We shall offer Dennis hay and grain for the grass [illegible].

Ashton blazing up the snow drifts in the road. He has a commodious house and very valuable recordings of rain, wind, temp. at three broad levels.

The Parshall flume now works quite satisfactorily.

The house should have been located on a rock outlook near-by in an

large opening.

Is making a quantitative snow survey. 176 meas by measured points and diamond-shaped graphs.

Both Parsons and Nelson desire it.

Many precip. gages two. Sldom in the aniseas now out from 6 min. to 8 hr. Should be even less. No air space should be left.

Rode on the snow-mobile.

Looks like my favorite Tahoe laboratory old days, except his continuous measurements of weather elements.

One project at Soda Springs is more versatile and is bearing more fugitive phenomena.

Ashton feels that I should be living with them.

Gendel suggested to Johnnie that he direct Soda Springs project if I abandoned it for India. Does he consider it his fourth station?

Donner Pass being well cared for. Crow's nest rebuilt. Solid but rather small.

Johnnie at Ashton's suggestion has put a cap on outlet and forced the air up thru drip pan. He pumped till he sweat. Since

then the water in the tank has been rising - [On May 22-23 it was rising very slowly but days had been windy and cold.]

* Johnnie has courses of 5 samples. Now 80 to 150 in. deep. Density well over 50%.

*(a) Study development of density in windblown snow and rate of melting or better power of capillary suspension.

(b) Now need density measurements for depths of 60 in (5 feet) to compare with deeper

(c) and mass of snow when water-laden and when percolated almost dry. (ie when dripping has ceased).

NB ↓ Showed Johnnie how to weigh cores at home on the weight-scale. Use a bucket with water that will balance the lead weight and put cores in bucket to weigh them. Check also by weighing by spring balance. Compare density of wet and dry snow.

Donner Lake

Described by Johnnie. All fencing ready but tank must be dug up for repairs.

Drift pan dry.

Permission to use land granted by Dallam agent

to Johnnie and by higher-
ups, probably Dollar family.
Must now ask Henry Lochr
Nevada County Commis-
sioner for use of side
of County road. Henry
was our neighbor boy
and shared our Tahoe
camp.

Home by 5pm bus.

May 23.

Phone from Johnnie
and Dennis. We can
continue to use the
Pasture.

The valve at Donner
Lake was 1/4 wrong-
i.e. opening was NW
instead of N. Must have
a shoulder on the valve
to feel its correct position,

Donner L.

Get estimate from
State Printer of cost
of printing Monographs.
Maximum cost

2500 copies $4500
1500 " 3850
Library binding
500 copies @ 70¢ each.
Includes 70pp extra.
But additional blocks?
Station has set aside $3000
I will add war bonds for
balance of $3850.

FORM NO. 144 April 16 - May 1, 1943.

FEDERAL—STATE COOPERATIVE SNOW COVER SURVEYS

FEDERAL, STATE AND PRIVATE AGENCIES

SURVEY NOTES

Directions and Suggestions for Snow Cover Sampling

(1) The usefulness of snow cover surveying depends primarily on the care and honesty of the men actually doing the field work

(2) The work of the snow cover surveyor is often laborious, especially in stormy weather, and men willing to undertake such work can usually be depended upon to do their best and record the results faithfully.

Directions for Using the Snow Sampler

A. Care of Sampler:

(1) In transporting sampler, extreme care should be used to guard it against injury; it can be easily dented.

(2) When sampling on steep slopes do not cling to the sampler to avoid sliding down hill; the tube is easily bent.

(3) Keep the sampler covered inside and out with a thin coating of

Soda Springs
July 28, 1946

be used in spacing by tape measurements, so that the samples taken different years on the same course will be at the same spots.

(1) Plunging the tube should be avoided. In driving, a steady downthrust is preferable to twisting, because with the latter a small amount of snow enters the slots. However, a minimum amount of twisting aids in the driving and also facilitates the quick cutting of the thinner crusts. Plunging should be entirely unnecessary. In case the sampler sticks or freezes down, a light twist will usually release it.

(2) The presence of temperatures below 32 degrees F. in the snow, while the temperature of the air is above freezing, often causes the snow to adhere firmly to the orifice of the cutter after a depth of from 10 to 12 feet has been reached. This difficulty can be met in three ways.

(*a*) Withdraw the sampler when cutter becomes clogged and clean cutter and tube thoroughly. Push the tube rapidly through the snow without stopping until bottom is reached but do not plunge tube. Repeat until a complete core is obtained. *A complete core is one whose length is not less than 90 per cent of the depth of the snow.*

(*b*) In case sampling is being done in the forest, keep the sampler in the shade as much as possible to keep it cold.

The best method of all is to sample when the temperature of ... below freezing, or late in the season when the temperature ... snow has risen to 32 degrees F. At these times

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10230 9-37 12500 S.P.O.

In some cases, where not too far from a night's lodging, time can be saved by taking the samples in the morning or evening instead of during the warm part of the day.

C. **Weighing the Sample:**

Before taking the sample, place the empty sample tube in the cradle hanging from the scales. If the Mt. Rose scale is used, turn the pointer back to zero. If the standard tubular scale is used, record the weight empty in proper column in field book. When the sample has been taken, place the sampler in the cradle and record the weight for tube and core. For the Mt. Rose scale this reading equals the water content of the snow core. For the standard tubular scale the water content is given by the difference between the reading empty and the reading for tube and core. The zero setting in the case of the Mt. Rose scale, and the "empty" reading for the standard tubular scale should be checked at frequent intervals (not more than 5 measurements).

If dirt is picked up by the cutter it should be cleaned out with knife before weighing the sample, and proper deduction made before recording length of core or depth of snow.

D. **Recording:**

The snow cover survey sheets are made in pads of two sizes, the smaller being white and the larger pink. Only the white waterproof pads are to be used for field notes. The larger pink pads are to be used to make copies from the white field sheets as soon as possible after each survey. Instructions regarding the disposition of the pink copy sheets will be issued for each State and where necessary for each drainage basin, since the needs will require some variation in this respect.

Appropriate covers are to be provided for protection of field notes. Sketch maps showing points of observation are pasted to the inside of the covers.

Use pencil only for recording field measurements. Fill in complete description of course, party, date, etc.

If the depth of core is very much less than the depth of snow, the reason should be determined and noted under "Remarks." In case of doubt regarding the core, determine the density (water content divided by depth gives density) and compare with that of other adjacent measurements about which there is no doubt. "Remarks" should include special items as to the character of snow, nature and condition of soil or other bottom reached by the cutter, whether wet, dry, frozen, etc.

Any extended remarks as to weather conditions at the time of survey or shortly before the survey, unusual difficulties encountered, etc., may be placed on the back of the sheet, as one side only is to be used in recording the snow measurements.

FEDERAL AND STATE
COOPERATIVE SNOW SURVEYS

State .....

Drainage Basin Yellowstone Lake Outlet

Snow Course .....

Party Dec 26 - 30, 1942.

Date Walt Wing, Snow Surv. Dept. Yellowstone

*Description or Number of Course	†Sample Number	Depth of Snow Inches	Length of Core Inches	Weight of Empty Tube	Weight of tube and Core	Water Content Inches	Density Per Cent	Remarks
Dec 26	61	16			16	LS	clr	
27	45	2	1.2	3	19	LNW	Cldy	
28	43	6	T		19	LW	"	
29	38	24	2.09	10	29	LNW	Cldy	
30	44	29	2.15		26	LNW	"	
25	33	20	.81	12	38	LW	"	
26	28	38			38	LSE	clr	
27	43	4	.16		36	LW	Pt Cldy	
28	41	36	1.2		34	LSE	Cldy	
29	38	30	1.28	4	38	LNW	"	
30	42	21	T		36	LNW	"	
	Rain (two gauges)				Dec 30			7:00 am - 8 pm 0.32 in.
9 pm	Start of total	32"			Snow still on ground			

*Show number or description as given on sketch map, *i.e.*, "Course No. 1," or "Major Course," or "N 5° E," etc.

†Always start measurements for sampling from the *initial* point as shown by the sketch map of the course and follow the spacing for samples as indicated. Particular care should be taken to note any *irregular* spacing between samples.

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FEDERAL AND STATE

COOPERATIVE SNOW SURVEYS

State Snow Survey

Drainage Basin Soda Springs

Snow Course West of Hot Springs Trestle

Party in Pasture

Date Feb. 20, 1942.

*Description or Number of Course	†Sample Number	Depth of Snow Inches	Length of Core Inches	Weight of Empty Tube	Weight of tube and Core	Water Content Inches	Density Per Cent	Remarks
	1	33.5	28	49.8	62.8			Sod under Most
		-1.5	1.5					
Course	1	6	3.7	"	50.8			Pasture Most
	2	8	6	"	53			
	3	16.5	16.5	"	59			Hot Springs
	4		7	50	53			Country only

*Show number or description as given on sketch map, *i.e.*, "Course No. 1," or "Major Course," or "N 5° E," etc.

†Always start measurements for sampling from the *initial* point as shown by the sketch map of the course and follow the spacing for samples as indicated. Particular care should be taken to note any *irregular* spacing between samples.

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FEDERAL AND STATE
COOPERATIVE SNOW SURVEYS

State .....

Drainage Basin .....

Snow Course .....

Party .....

Date .....

*Description or Number of Course	†Sample Number	Depth of Snow Inches	Length of Core Inches	Weight of Empty Tube	Weight of tube and Core	Water Content Inches	Density Per Cent	Remarks
		12	12	50	55			
		2	2					

*Show number or description as given on sketch map, *i.e.*, "Course No. 1," or "Major Course," or "N 5° E," etc.

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FEDERAL AND STATE
COOPERATIVE SNOW SURVEYS

State 9 Dr Shelter

Drainage Basin Mt 33 - S.Fk 3a ft 3277 ob 6

Snow Course 1/4 m above wet Damm -

Party stg Dept. 34°F -

Date Air Felt & mist - Snow by wet Spades

Description or Number of Course	†Sample Number	Depth of Snow Inches	Length of Core Inches	Weight of Empty Tube	Weight of tube and Core	Water Content Inches	Density Per Cent	Remarks

*Show number or description as given on sketch map, *i.e.*, "Course No. 1," or "Major Course," or "N 5° E," etc.

†Always start measurements for sampling from the *initial* point as shown by the sketch map of the course and follow the spacing for samples as indicated. Particular care should be taken to note any *irregular* spacing between samples.

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FEDERAL AND STATE COOPERATIVE SNOW SURVEYS

State.....

Drainage Basin..... South Yuba

Snow Course.....

Party.....

Date..... Apr. 16, 1943

Description or Number of Course	**Sample Number	Depth of Snow Inches	Length of Core Inches	Weight of Empty Tube	Weight of Tube and Core	Water Content Inches	Density Per Cent	Remarks
2	50 — 1	42.2	42.2	82.2	125.6	23.4		
3	47	41.5	42.6	82.6	110.0	27.4		water ran from core
4	39.6	39.6	39.6	82.6	108	25.4		"
Road								
6	51.5	48.1	82.6	109.8	27.2			"
7	50.7	48.2	82.6	110.6	28.0			Tube handle came off at bottom above cutting edge or shoe. Study trail 4 ft. from

*Show number or description as given on sketch map, *i.e.*, "Course No. 1," or "Major Course," or "N 5° E," etc.

**Always start measurements for sampling from the *initial* point as shown by the sketch map of the course and follow the spacing for samples as indicated. Particular care should be taken to note any *irregular* spacing between samples.

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FEDERAL AND STATE COOPERATIVE SNOW SURVEYS

State.....

Drainage Basin.....

Snow Course.....

Party.....

Date.....

Description or Number of Course	**Sample Number	Depth of Snow Inches	Length of Core Inches	Weight of Empty Tube	Weight of Tube and Core	Water Content Inches	Density Per Cent	Remarks
	8	47.8	43.8	82.6	108.5	22.6		Wet but no drip
		-.3	-.3					
	9	49.5	47.7	82.6	107.6	25.0		Soft very wet, No drip
		-.5	-.5					
	10	50.3	48.7	82.4	108.5	26.1		Jam under No drip here
	11	48	44.2	82.4	106	23.6		Wet and No drip
		-2.0	-2.0					
	12	56.5	53.7	82.4	111.3	28.9		Wet ice at bottom
		-.5	-.5					
	13	Not taken						
	14	Not taken						
	10	mean	total			Edaly	dist	
		48.7						

*Show number or description as given on sketch map, *i.e.*, "Course No. 1," or "Major Course," or "N 5° E," etc.

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FEDERAL AND STATE COOPERATIVE SNOW SURVEYS

State.....

Drainage Basin.....

Snow Course.....

Party.....

Date..... April 26, 1943

*Description or Number of Course	**Sample Number	Depth of Snow Inches	Length of Core Inches	Weight of Empty Tube	Weight of Tube and Core	Water Content Inches	Density Per Cent	Remarks
	1							
	2	25.6	19.2	49.7	58	8.3		
		26.5	23.3	49.7	61	11.3		
		-1.0	-1.0					
	3	23	21.4	49.7	62	12.3		Water
		-1.0						
	4	18.5	17.2	49.7	60	10.3		"
	5							
	6	27.5	27.5	49.7	64.3	14.6		
		-.5	-.5					
	7	24	23.5	49.7	62.1	12.4		Ice at bottom
	8	24	24.7	49.7	59.9	10.2		
		-.5	-.5					

*Show number or description as given on sketch map, *i.e.*, "Course No. 1," or "Major Course," or "N 5° E," etc.

**Always start measurements for sampling from the *initial* point as shown by the sketch map of the course and follow the spacing for samples as indicated. Particular care should be taken to note any *irregular* spacing between samples.

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FEDERAL AND STATE

FEDERAL AND STATE
COOPERATIVE SNOW SURVEYS

State.....

Drainage Basin.....Sarah Yuba.....

Snow Course.....Sarah Springs Mtg.....

Party.....

Date.....April 16 1937.....

*Description or Number of Course	**Sample Number	Depth of Snow Inches	Length of Core Inches	Weight of Empty Tube	Weight of Tube and Core	Water Content Inches	Density Per Cent	Remarks
1								
2	45	40		65.8	86.8	21.0		Snow and dirt
	-8	-8						
3	40.5	37		65.2	88	22.8		Dirty snow Freezing Sand Grains in bottom
4	36	34.8		66	87.8	21.8		Heavy spring ice crystals
	-3	-3						
5		Bare						
6	43.5	43		66	89.6	23.6		Water wet ice crystals
7	45	42.5		66	90	24		Wet crystals
	-3	-3						
8	46.5	39		66	84.8	18.8		
	-5	-5						

*Show number or description as given on sketch map, *i.e.*, "Course No. 1," or "Major Course," or "N 5° E," etc.

**Always start measurements for sampling from the *initial* point as shown by the sketch map of the course and follow the spacing for samples as indicated. Particular care should be taken to note any *irregular* spacing between samples.

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FEDERAL AND STATE COOPERATIVE SNOW SURVEYS

State.....

Drainage Basin.....

Snow Course.....

Party.....

Date.....

*Description or Number of Course	**Sample Number	Depth of Snow Inches	Length of Core Inches	Weight of Empty Tube	Weight of Tube and Core	Water Content Inches	Density Per Cent	Remarks
	9a	50.5	44	66				Soil 9 in.
			Samples too clogged					
		50	back & shaft to					rebleed it
	8b	41	40	65.8	86.6	20.8		
		-5	-5					
	9	43	35	66	87.8			
	9a	42	38.5	66	88	22		
	10	43	40.4	66	88.2	22.2		
	11	42	36.4	66	84.8			
		-1.2	-1.2					
	11a	42	41.5	66	86.3	20.8		
		-3.5	-3.5					

*Show number or description as given on sketch map, *i.e.*, "Course No. 1," or "Major Course," or "N 5° E," etc.

**Always start measurements for sampling from the *initial* point as shown by the sketch map of the course and follow the spacing for samples as indicated. Particular care should be taken to note any *irregular* spacing between samples.

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FEDERAL AND STATE COOPERATIVE SNOW SURVEYS

State.....

Drainage Basin.....

Snow Course.....

Party.....

Date.....

Description or Number of Course	**Sample Number	Depth of Snow Inches	Length of Core Inches	Weight of Empty Tube	Weight of Tube and Core	Water Content Inches	Density Per Cent	Remarks
	12	46	42.2	66	88	22		
	Snow Stake			42 in (A.C.)			45 in (J.E.C.)	
	42.1							
	NE of Tractor			20	22.10.			
Dec	point corn snow				22.1 44			
	44 41			66	87			
	-1.5 -1.5							
	21.5			66	67			1/2 mm
	Cannot cut							measure
	Crystals = They							squeeze out
	And because of							pressure "
	cannot hold up							but heavy
	down before the							weight
	of the sample							

*Show number or description as given on sketch map, *i.e.*, "Course No. 1," or "Major Course," or "N 5° E," etc.

**Always start measurements for sampling from the *initial* point as shown by the sketch map of the course and follow the spacing for samples as indicated. Particular care should be taken to note any *irregular* spacing between samples.

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FEDERAL AND STATE COOPERATIVE SNOW SURVEYS

State.....

Drainage Basin Santa Ynez

Snow Course No. 1 (Key)

Party.....

Date May 1 — 10:30a — 11:30a am

*Description or Number of Course	**Sample Number	Depth of Snow Inches	Length of Core Inches	Weight of Empty Tube	Weight of Tube and Core	Water Content Inches	Density Per Cent	Remarks
1								~~Brush~~
2	17	15.7		49.8	57.4			Meadow
	18	16						"
3	15	15		49.8	58.9			"
	2	2						Water ~~surface~~ at meadow surface water
4								
4	15.5	15.5		50	56.6			Ice crystals 10-15 Water in Hole
5								
6	21	21		50	62.1			Ice at bottom Water
7	18	18		50	60			Drift "
	5	5						

*Show number or description as given on sketch map, *i.e.*, "Course No. 1," or "Major Course," or "N 5° E," etc.

**Always start measurements for sampling from the *initial* point as shown by the sketch map of the course and follow the spacing for samples as indicated. Particular care should be taken to note any *irregular* spacing between samples.

No.....of.....sheets. Comp. by.....Checked by.....

FEDERAL AND STATE COOPERATIVE SNOW SURVEYS

State.....

Drainage Basin... South Yuba

Snow Course... NC 1 (Key)

Party.....

Date... May 1 — 10:30 A - 11:30 am

*Description or Number of Course	**Sample Number	Depth of Snow Inches	Length of Core Inches	Weight of Empty Tube	Weight of Tube and Core	Water Content Inches	Density Per Cent	Remarks
1								~~Brush~~
2	17	152		49.8	57.4			Water "
	-18	-18						
3	15	15		49.8	58.9			" Water "
	-2	-2						~~Surface~~
								~~Surface~~
4								
4	15.5	15.5		50	56.6			Snow Crystals
								Drip
								Water in
								Hole
5								
6	21	21		50	62.1			Soil at bottom
								Water
7	18	18		50	60			Drip "
	-5	-5						

*Show number or description as given on sketch map, *i.e.*, "Course No. 1," or "Major Course," or "N 5° E," etc.

**Always start measurements for sampling from the *initial* point as shown by the sketch map of the course and follow the spacing for samples as indicated. Particular care should be taken to note any *irregular* spacing between samples.

No.....of.....sheets. Comp. by.....Checked by.....

45330 9-37 12500 S.F.O.

FEDERAL AND STATE COOPERATIVE SNOW SURVEYS

State.....

Drainage Basin.....

Snow Course.....

Party.....

Date.....

*Description or Number of Course	**Sample Number	Depth of Snow Inches	Length of Core Inches	Weight of Empty Tube	Weight of Tube and Core	Water Content Inches	Density Per Cent	Remarks
8		15.5	15.5	50	57.9			Water
		-1.5	-1.5					
9		14.3	14.3	50	56.6			Snow surface " "
		-1.3	-1.3					
10		20.5	18.5	50	60.6			Ice " "
		-1.3	-1.3					
11		16.5	16.5	50	58			Ice " "
		-1.0	-1.0					
12		23.4	22.2	50	60.3			Soil cover " "
		-1.2	-1.2					
13	—							
14	—	Bare						
		Min. last night (AT) 38°						Apparently

*Show number or description as given on sketch map, *i.e.*, "Course No. 1," or "Major Course," or "N 5° E," etc.

**Always start measurements for sampling from the *initial* point as shown by the sketch map of the course and follow the spacing for samples as indicated. Particular care should be taken to note any *irregular* spacing between samples.

No.....of.....sheets. Comp. by.....Checked by.....

did not stop melting all night.

49330 9-37 12500 S.P.O.

Soda Springs

Dr Church's May 1/43

Survey of Key Course

Averages

Depth 17."2

Corss 16.7 = 97.1% Corss

W. Corss 8.9

$\frac{8.9}{42.0}$ = (% of Normal for Truckee Riv. Basin } 21.2 * $\frac{8.9}{17.2}$ = 54.7 = Dens.

H. P. Boardman

Sod
Dr Chur
Survey
Av
Dep
Cors
W. C
8.9 / 42.0 = (% of N
for Tru
Bo

[Apr 16]	[Apr 26]
44.2	25.5
40.5	22
35.7	18.5
45.5	27
44.7	24
~~46.5~~	~~21.5~~
40.5	22
42	22
43	27.5
38.5	25.7
46	25.7
[22.1]	[11.8]

May 1
17.2 [8.9]

Cors

= 34.7
= Bons.