

CONTENTS

Test Site 11 / 2/14

~~SE wind~~ ~~sunset~~

She is just east of Jerry's town

Seri Deployment 11/13/14

Wings: (single mounted)

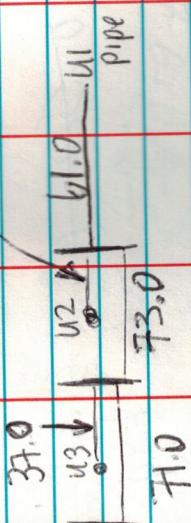
A	a = R6	Z + 0 cm
A	a = RT	Z + 4 cm
A	3a = R4	Z + 10 cm
A	4a = R5	Z + 17 cm
B	1a =	Z + 0 cm
B	2a =	Z + 5 cm
B	3a =	Z + 12 cm
B	4a = R8	Z + 23 cm
	A4a	38.5 cm

~~0.147~~ from Aka to ~~84a~~ = ?

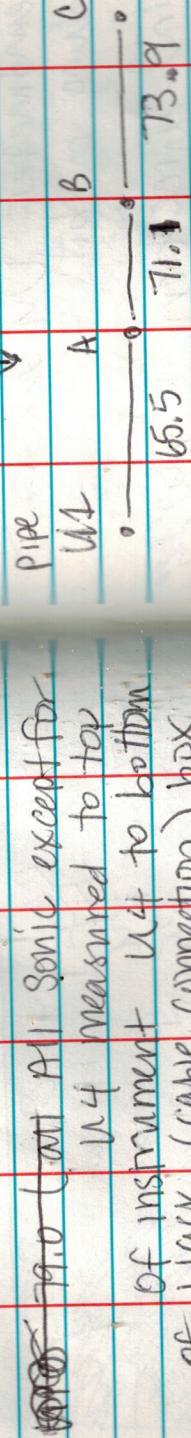
BINES

$$\begin{aligned}B_1, z_{bot} &= 10 \text{ cm} \\B_2, z_{bot} &= 36 \text{ cm} \\B_1, z_{bot} &= 15 \text{ cm} \\B_2, z_{bot} &= 50 \text{ cm} \\C_1, z_{bot} &= 23 \text{ cm} \\C_2, z_{bot} &= 68 \text{ cm} \quad 53 \text{ cm}\end{aligned}$$

Y wind 36.0 cm



Middle of pipe to middle of pipe



Elevations

79.0 (top) A1 Sonic except for
U4 measured to top
of instrument U4 to bottom
of black (cable connection) box

U1	59.9
U2	108.1
U3	203.2
U4	261.0

Sonic - N Facing wind

Today's saltation much
lower than usual according
to Jean

$$13.126 - 30 = 10$$

10:40:50 Charles stands by
take bags off

BSNE seem to not all
line off by $\pm 10^\circ$ in horizontal

Top anemometer V4 seems to
be shaking a bit

Downwind direction is $260^\circ \pm 6^\circ$
roughly west

→ BSNE issues
→ piles on which mounted may
not be totally level
→ vane may not be flat

Did not smooth front surface →
self smoothed after ~30 min
(11:18 AM)

checked BSNE A1 off
not much

11:48 AM Cesar J. 1/159 AM
Jean weight 5 1/159 AM
12:00:50 descent traps

Top BSNE (C2) is blank,
it has holes in bottom!

Very Nov 13
S 02.49693
W 040.45363

1:00:50

Elevations @ END

	A1	B1	C1
BSNE	10.2	15.0	20.8
V1	58.9	100.5	205.0
V2			
V3			

Top off sensor

Generation 39.7

B 46.6

BNE Sample weight

Weight / bag	10.9g	$\pm 0.1g$
(empty bag)		
U1	1.014g	
U2	1.014g	
U3	1.014g	
U4	1.014g	
A1	123.0g	0.214g
A2	8.0g	0.14g
B1	78.2g	0.19g
B2	1.3g	0.6g
C1	33.4g	0.9g
C2	1.1g	

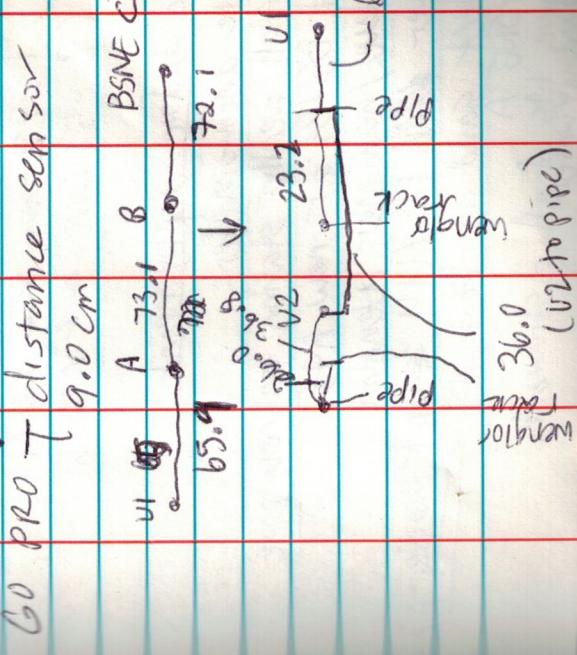
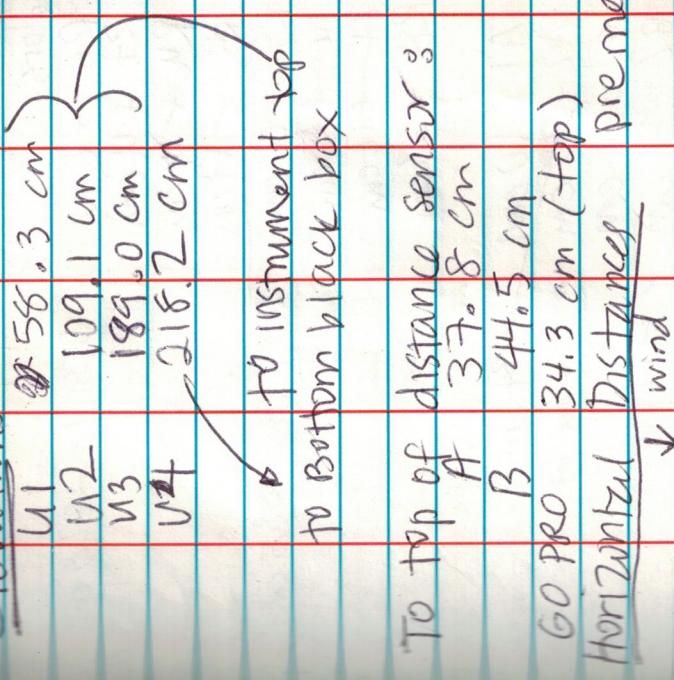
Trap had holes in it!

50% reduction trend seems
to be consistent with
Wengler observations

Post-analysis

- Target A may have been affected by a bit. needed to check again tomorrow
- Wengler Blk was under-temp!
(#9) → replaced it with FG
for tomorrow
- replaced BNE with holes

14 Nov Pre measurement



Test Deployment - Nov 14, 2014

Premasurement

Wandlers

$$A_{la} = R_6 + 0 \text{ cm}$$

$$A_{la} = R_7 + 4 \text{ cm}$$

$$A_{3a} = R_4 + 0 \text{ cm}$$

$$A_{4a} = R_5 + 17 \text{ cm}$$

$$B_{la} = R_9 + 0 \text{ cm}$$

$$B_{2a} = 14 + 5 \text{ cm}$$

$$B_{3a} = 21 + 17 \text{ cm}$$

$$B_{4a} = R_8 + 23 \text{ cm}$$

$$BSNE A_1 = 10 \text{ cm} \quad 34 \text{ cm}$$

~~$$A_2 = 20 \text{ cm} \quad * \leftarrow \text{new ht}$$~~

~~$$B_1 = 16 \text{ cm} \quad * \leftarrow \text{new ht}$$~~

~~$$B_2 = 41 \text{ cm} \quad * \leftarrow \text{new ht}$$~~

~~$$C_1 = 22 \text{ cm} \quad * \leftarrow \text{new ht}$$~~

~~$$C_2 = 53 \text{ cm} \quad * \leftarrow \text{new ht}$$~~

To do before deployment

Wire anemometers

Install weather station on new pipe

Get BNES at new ht

Revolv hammer tongs

Lower ~~man~~ U3 / U4 ~~get shorter pipe!~~

Collect sand in front of

Dome A

Measure ht of all instruments
rounding to whole

support pipe

base

see other

support pipe

base

Wen. recirc

36.5

Wen. recirc

36.5

Wen. recirc

34.0

Wen. recirc

31.5

weather
station
here

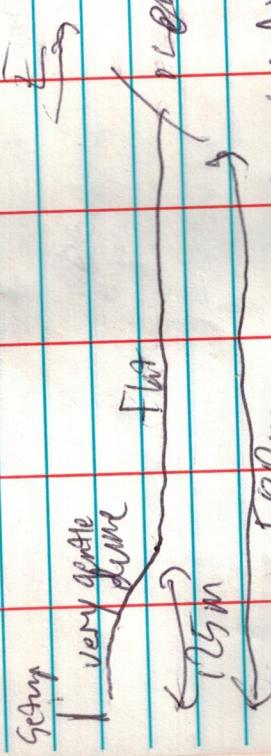
Date 5/19/

10:11:00 AM - finished setting
trap covers off,
U1 + U2 not plugged in!

10:33:32 AM - restart tag by
when trap was off

did not flatten bed because
it was never disturbed

OP5 point same as yesterday



11:33:32 AM - traps covered, collected trash
11:43:30 AM - reset trap bags

Wengler A1 seems to be undercounting
Many lie too close to bed but #1 is
a big just as close and is not
undercounting

Close traps at 12:43:30
Close traps & tally
Re search Wengler A1
Brush all Wenglers

Open traps at 12:51:30
Open traps at 1:54:30

Open traps at 2:16:15 PM

Close traps at 3:16:15 PM

Open traps at 3:26:45 PM

Close traps at 4:26:45 PM

Surface sample 4:35 PM

U. 37

BSNEP = 12.1 cm / 40 bottom

BSNEP = 15.6 cm
PSNEP = 23.0 cm

Sample weights

Using SmoothWetted Pocket No
calibrated with 1000g weight
Dense Tared 40 Suppware bin
and one 0.4g recess bag
(same type of bag containing
sample)

At 4:38:30 pm
depth below A1 = 3.0 cm
(bottom of fork)
Scour length around A1 = 9.0 cm
(upwind)

Elevation @ 4:37 pm

Distance below A = 14.4
distance below A = 37.0

U1	59.0
U2	110.1
U3	186.5
WT	

At 4:44:30 pm
depth below B1 = 0.7 cm
(bottom of fork)
Scour length around B1
 ± 6.3 cm (upwind)

~~Sample wt = 10.2 g ± 0.2 g~~
Weight (g) ~~10.3 g ± 0.2 g~~

Time	A1	A2	B1	C1	C2
11:18A					
11:18P					
11:19P					
11:20P					
11:21P					
11:22P					
11:23P					
11:24P					
11:25P					
11:26P					
11:27P					
11:28P					
11:29P					
11:30P					
11:31P					
11:32P					
11:33P					
11:34P					
11:35P					
11:36P					
11:37P					
11:38P					
11:39P					
11:40P					
11:41P					
11:42P					
11:43P					
11:44P					
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11:58P					
11:59P					
12:00A					
12:01A					
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12:07A					
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12:12A					
12:13A					
12:14A					
12:15A					
12:16A					
12:17A					
12:18A					
12:19A					

weight (g)

	A 1	A 2	B 1	B 2	C 1	C 2
date/time	(g)	(g)	(g)	(g)	(g)	(g)
11/13 11:48A	7.3g				32.9g	N/A*
11/13 1:01P	66.9g	4.1g	0.8g	0.3g	20.9g	N/A*
11/14 11:34A						
11/14 12:13A						
11/14 1:54P						
11/14 3:16P						
11/14 4:16P						

* trap had holes!

* Scale face seems to be drifting
Gonna try again, this time first
before each sample.

$$= 10.2g \pm 0.2g$$

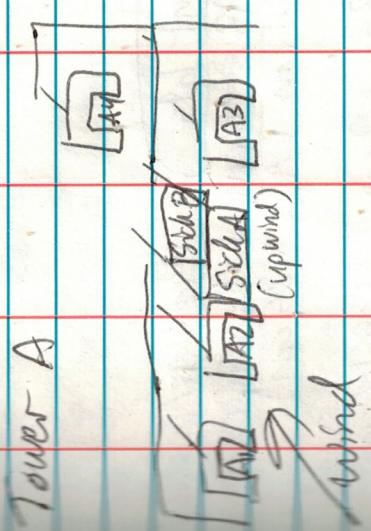
	A 1	A 2	B 1	B 2	C 1	C 2
date/time	(g)	(g)	(g)	(g)	(g)	(g)
11/13 11:48A	123.3g	84.9	78.7g	1.4g	33.7g	*
11/13 1:01P	67.3g	4.7g	10.6g	0.6g	2.6g	*
11/14 11:34A	393.2g	25.5g	192.2g	9.8g	96.6g	3.3g
11/14 12:43P	299.6g	24.5g	162.5g	9.3g	90.8g	2.7g
11/14 1:54P	350.5g	29.1g	207.6g	11.3g	104.1g	3.7g
11/14 3:16P	307.3g	26.2g	177.3g	10.6g	92.5g	3.4g
11/14 4:26P	314.1g	38.0g	194.5g	6.4g	118.0g	6.3g

* trap had holes!

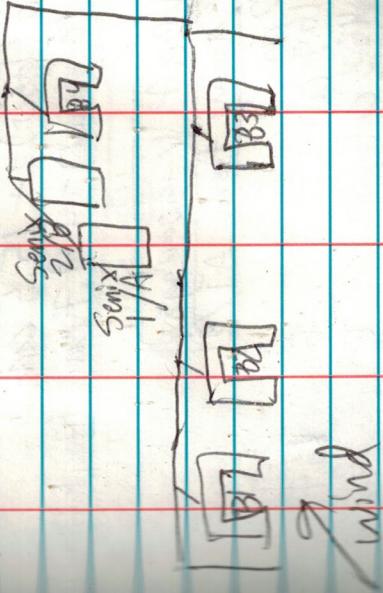
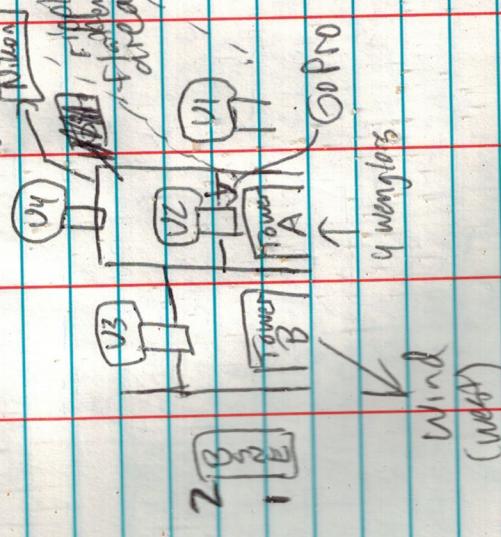
(Nov 18, 2014) Ripple/Roughness
Sondy

$$\text{Scinx range} = 10.16 \text{ cm to } 30.66 \text{ cm}$$
$$\Rightarrow 20.5 \text{ cm}$$

$$\text{Precision} = 0.01 \text{ cm}$$
$$\text{output} = 0-5 \text{ V} \quad (\text{because runny})$$
$$\text{off } 12 \text{ V}$$
$$0.002439 \text{ volts}$$
$$\approx 0.01 \text{ cm}$$



Instrument Configuration Plan



Instrument assignments

A1 = Wenglor R9

A2 = R8

A3 = 21

A4 = 14

B1 = R6

B2 = R4

B3 = R7

B4 = R5

Instrument hts

A1 = A2 = A3 = +10 cm (Abs ~ 10 cm)

A4 = +15.1 cm (Abs ~ 25 cm)

B1 = B2 = B3 = +0 cm (Abs ~ 10 cm)

B4 = +17.8 cm (Abs ~ 28 cm)

^{SIDE}
Dist A/B (Close) = +15.5 cm

Genix A/B (Sonar) = +9.7 cm (go bottom)

Instrument Y-spacings

+ve Y away from A1/B1

A1 = +10 cm

A2 = +16.9 cm

A3 = +43.3 cm

A4 = +43.3 cm (above B)

~~Dist A/B = +1.0 cm (from edge of sensor)~~

(from left edge of AZ 40)

(from center of Genix)

Instrument X-spacings

All strengths + 0.1 ft B / Genix 8 ft sh

DIST A upwind by 7.5 cm

SENIX A upwind by 15.0 cm

(BSNE planned hts.)

$z_{A1} = 8 \text{ cm (ht of bottom)}$

$z_{A2} = 32 \text{ cm (ht of bottom)}$

Anemometer planned hts.

V1 = 4.7 cm

V2 = 9.8 cm

V3 = 17.8 cm

V4 = 25.9 cm

(Wengler/D14 tower setup)

Moving poles @

33.0 cm

A part

NH

(Other setup)

1 Datalogger downwind of tower

• Hammered in a grounding pipe, mouth to the

• Oppo/N junction on pole between V1

and V2, V3

Cover of Genix

= 4.7 m

Field Plan

6:15 AM - 1 hr no trans/with apples

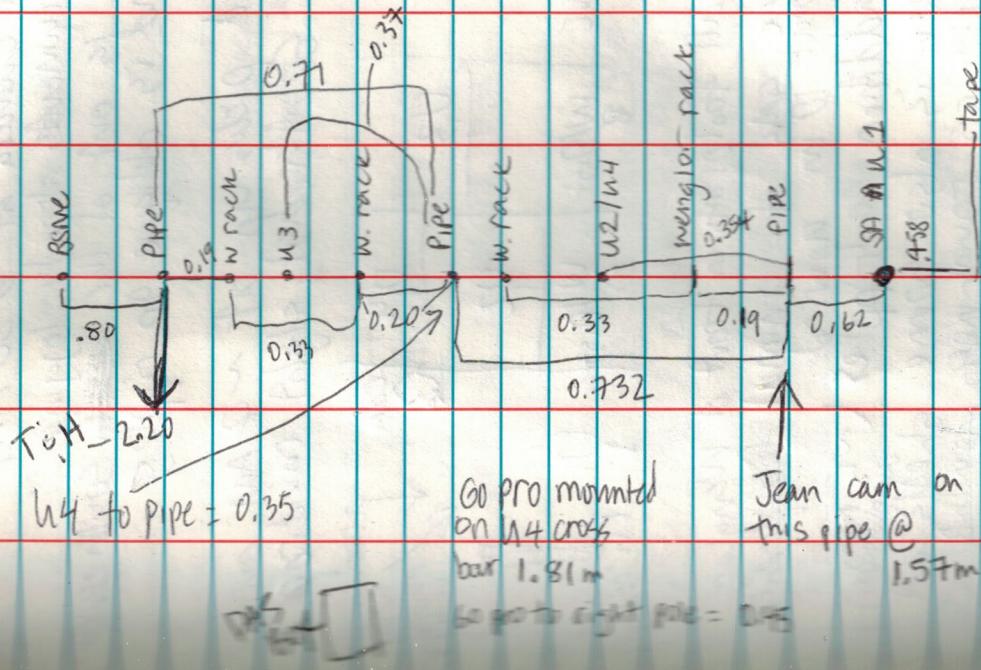
7:15 AM - flattening bed

7:45 AM - 1 hr no trans/flat bed

9-4:30 AM - 6 hr chunks of data
Collection with developing

and fall apples
Use GoPro on U2 mounting pole
for 9-12:30 PM

Bed flattening - 15 m upwind of U1
(to ensure full TBC)
SUR photos of developing apples
every 5 minutes



Instrument Heights

	to mist. top	BNSE bottom
U1	56.0 cm	A = 8 cm
U2	108.8 cm	B = 32 cm
U3	169.6 cm	SH M U1
U4	217.0 cm	458
	↙ to bottom	tape
	black box	

Data acquisition

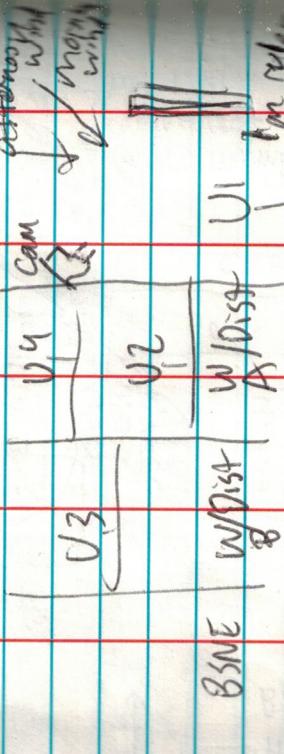
11

Start Camera at 6:30 AM

Instruments already logging
wind is out of the ~~south~~ south
and is oblique to ripples

Wind picks up at ~7 AM out
of Southeast, slight sand ripples

pattered with
wind

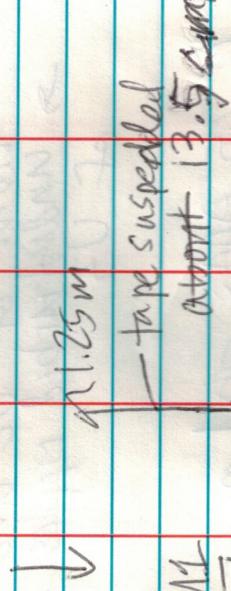


Small footprints in front of Wengles
about 10 m upwind
In addition to ripples (16 mm)
there is also some shells and
debris as long as 20 mm

Moderate rain at 9:12 AM

Birds end of Apple bed
remove measurement pin

Moved measurement pin



↓
U1
U2
U3
34.00 cm

to right of black box

" 8:45 finish flattening bed,
rainfall measuring tape

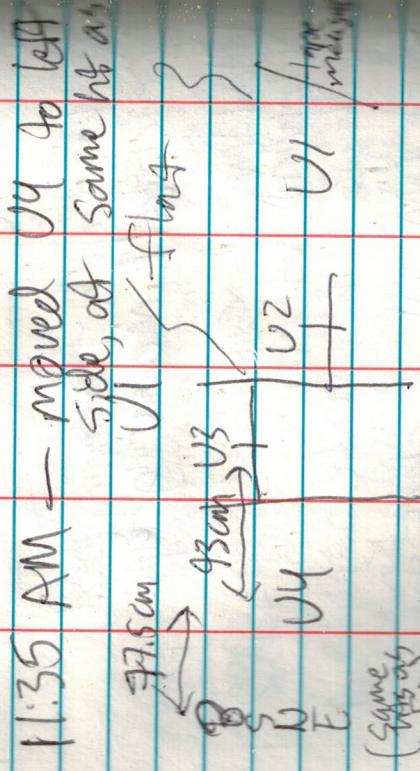
Plastered surface 15 m long
upwind of U1
surface is 1 m wide
8:55 AM - all is clear for obs
Anemometer orientation is 100° E
(direction that wind is coming
from)

flattening notes

sc completely flat in front of

- partial cover of flat in front of U2 and U4
- undisturbed ripples in front of U3

11.25 AM - still no saturation, moving U4 from right to left side to be in front of ripples



11.35 AM - moved U4 to left side, of same height
as U3 } flat.

(same height)

12.35 PM - end data collection

still no saturation!

11/20/14 Teri Ripple Tracing
Day 2

BSNE heights (bottoms and)

Tower A: 8 cm (A1)
32 cm (A2)
B: 16 cm (B1)
~~23 cm (B2)~~
30 cm

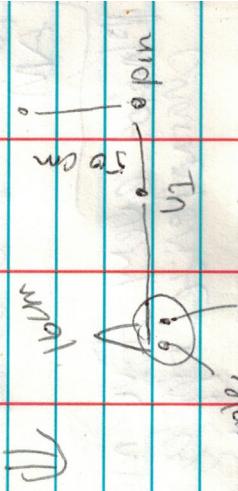
Rained at 3:30 AM \rightarrow
Surface is slightly wet
through & dried significantly
during setup

Over bed appears to form a
supply line to surface
Small area this surface is
dry and actively softening
forming ripples.

Below this is "harpoon" that
is effectively not moving.

Instrument heights
11 56.9 cm (top)
12 109.6 cm
13 189.1 cm
14 219.0 cm
Jean Camper (top lens) 166.0

measuring tape height above bed =
5cm



tape
cm

U
V
W
X
Y
Z
5 cm

U
V
W
X
Y
Z
5 cm

line B = 16.50 cm
A = 8.32 cm
Q after a 55.0 cm
BSNEA sub 8.18

camera & Go Pro @
10:05.00 (on run
watch)
Turn @ 5 min interval.

Go Pro @ 10:06.00 -
first picture w/ camera
not mounted

10:10 BSNE start. - cameras on
the mount

Photos every five minutes to
characterize supplies and work

10:15 SLR 1 second last

10:10 SLR may have no photo

at 10:15 AM bird appears to
be about 200m above town
The 5-10 m square of
is 95% probable same

11:10 BSNE stop
11:11 AM - run for Scand
Go Pro

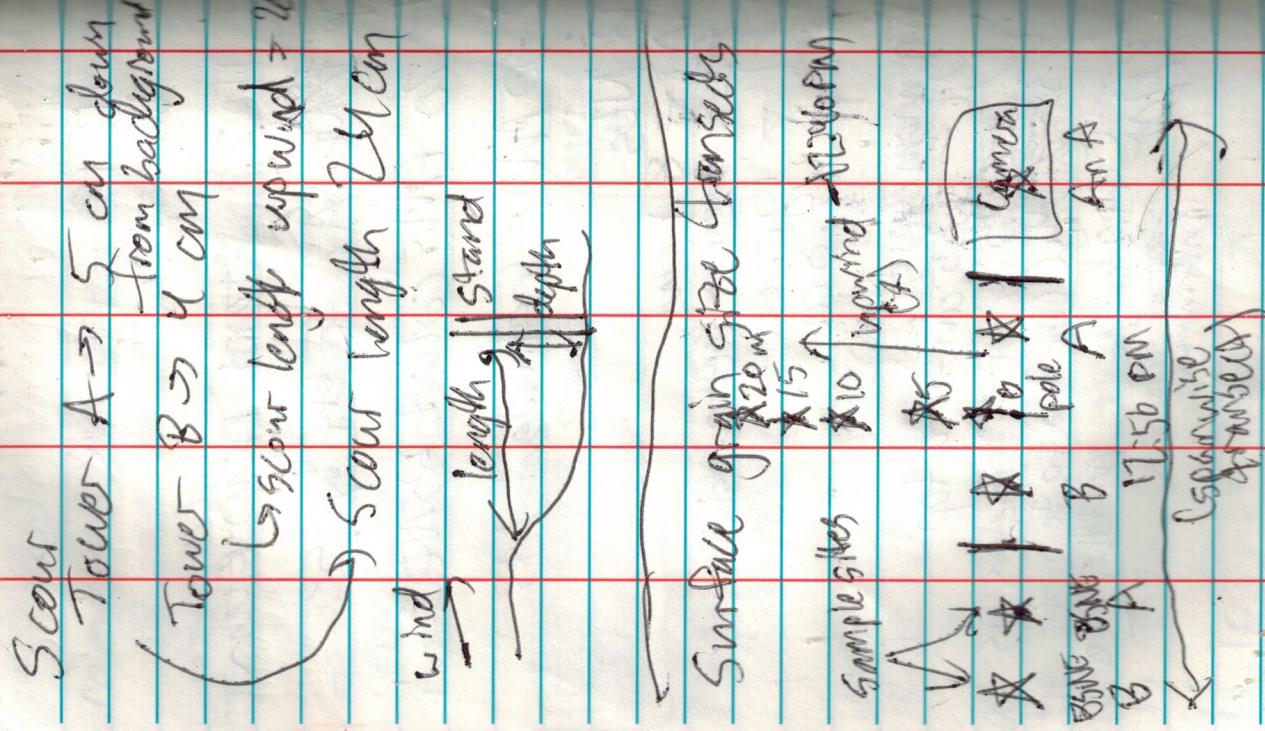
11:18 - clean
measuring

11:20 START new run
Up BSNE A2 So left by 50
12:20 PM - collected BSNEs

12:40 PM - Instrument hits
BSNEs

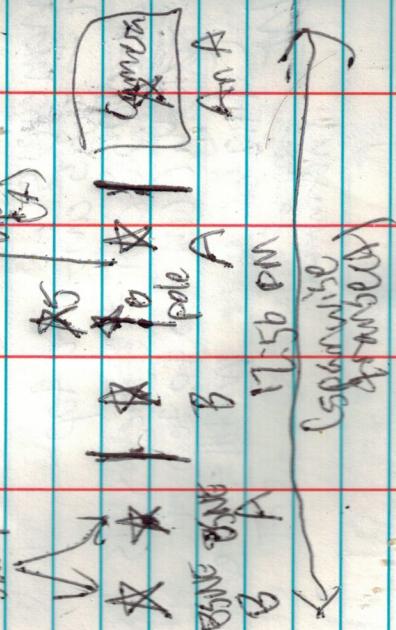
A2 - 8.1 cm
A2 - some offset as stat
A2 - 5.7 cm
A2 - 49.8 cm

Instrument edges
A2 - 54.5 cm → top
A2 - 55.8 cm → some as 53
A2 - 54.0 cm → 40.40 of
Instrument
A2 - 41.2 cm to
top of
instrument



Surface grain size
 20 m
 15 ↑
 10 ↑
 5 ↑
 Sample sites

Surface grain size themselves
 10 ↑
 5 ↑
 2 ↑
 1 ↑
 0.5 ↑
 0 ↑



Sample weights for 11/20/14

Deployment

	A1	A2	B1	B2
11/20	11.04	396.9g	26.0g	184.2g
11/20	12.04	501.0g	24.2g	223g 4.6g
				177.4g

J