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RAV FIELD BOOK  
2014 - #1



*Rite in the Rain*

ALL-WEATHER  
**TRANSIT**

NO. 303



Name *Renee Vandermause*

Address *Tetra Tech*

Phone *Geomorph Studies*

Project *8/8/14 - 8/14/14*

*Field Book #1*

"Rite in the Rain" - a unique all-weather writing surface created to shed water and to enhance the written image. Makes it possible to write sharp, legible field data in any kind of weather.

a product of

**J. L. DARLING CORPORATION**  
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Only larger gravels/cobbles observed at eroding moraines

PT/line LB RB NOTES  
PT 1 FP MOR MOR CONTINUES... w/ except. of more on RL  
↳ FP bounded by moraines ~ 250-500' inland

some gravel/sand bars throughout channel  
sand boils

LINE MORAIN CONSTRUCTION  
L 2 SAND DEP. LOC

L 3 MOR. Shallow landslides  
↳ lot of sand with some gravel

L 4 MOR same as line 3  
L 5 MOR CONSTRUCTION

↳ narrower stretch of river, no FP on either bank, no exposed sand/gravel bars, presence of sand boils  
↳ see video on right cam

ice dings on trees over hanging channel - scars ~ 15-2' up from base  
no obs. ice scars/dings on trees higher up bank (moraine)  
no obs. presence of ice-raftered boulders or gravel



3

L13 MOR → FP  
 L16 MOR → FP  
 FP = BANK N 2-25' and rises to  
 N 4'-5' → channel expansion zone  
 In exp. zone, braid bars  
 FP has slight under cutting - trees  
 lean out then try to grow up straight  
 ↳ only occurring on bank edge  
 ↳ slow undercutting  
 beaver lodge?

L6 MOR FP  
 L7 MOR FP  
 L8 TRIB blackwater, very  
 little sediment, flat gradient  
 L9 FP FP FP LB or section from MOR  
 L10 FP FP FP  
 L11 FP FP FP  
 L12 FP FP FP  
 L13 FP FP FP SPLIT FLOW CHANNEL  
 L14 FP FP FP alder & spruce FP  
 L15 FP FP FP 10- sandy banks  
 L16 FP FP FP water on RB behind  
 small bank-ponded in front of  
 TCE that wraps around and  
 runs along bank @ L17 - likely old  
 channel

4/8

Between line 9 and 10, FP  
 on LB/RB  
 L10 higher density and slightly  
 larger trees

L13 - some small wood debris @  
 head of SC  
 L14 - some pockets of fresh sand  
 on TBB (v. low banks)

Site in the Rain



L17 LB  
 L18 FP TCE  
 L19 FP low grassy surf  
 L20 FP TCE  
 Bar surf → alders / willows / spruce <sup>no dung</sup>  
 L21 FP short veg (alders) @ TCE height  
 L22 FP FP  
 L23 FP TCE  
 L24 FP MOR  
 L25 FP MOR (15m)  
 L26 FP MOR (TRB)  
 L27 FP TCE TCE v. sandy  
 L28 FP TCE ~~MOR~~ / FP  
 FP along RB to SC on RR  
 TCE plectrakes on RL  
 these surfaces continue on within  
 PRM 279 - take out for day

L22  
 LB FP - Alder

L28 - Terrace likely delta deposits  
 and was cut down as moraine breached  
 largest material observed on  
 mid-channel bar ~ 22mm

7 8/9/17

START AT PEM 279: 1230

PT/LINE	LB	RB
1	FP	ICE
2	MOR	FP
3	MOR	MOR
4	FP	MOR
5	MOR	MOR

↳ FB INSET FROM MOR  
↳ ALL SPRUCE

USING 277 landslides on TLB

→ appears to be ice deposit gravel/boulders

6 TCE MOR TLB - OUTWASH INSET <sup>FROM</sup> MOR

Sediment Sample @ PEM 276.2

8/9/14 S1 - GPAB

Small gravel tube on TLB

7 MOR - GRIPPING ICE MASSES @ TOG - supply of sand and gravel

MORAINES ON BOTH BANKS CONTINUE D/S

9 TCE MOR/FP/MORFP  
↳ can see lower soil from elev. data  
↳ moves into FP

8/9

8

LINE	COM
1	LOOP MORaine AROUND BOTH BANKS
2	RB - FB inset from ICE inset from MOR
MASS FAILURE OF MORAINES ON TLB @ 278	
MICHAN BAR IN CONSTRUCTION @ 278	
1 <sup>st</sup> ALL SAND	
BBS, ANTI PUNCS AND SAND BOILS	
TLB on R.B @ 278 not showing ANY SEAMENT	
GREAT DOWN THROUGH MORaine & ARMORED MOUTH	
CONSTRUCTION JUST D/S OF 278	
WICKLY SITE OF MORAINEDAM	
$1.7 \frac{m^3}{m} \cdot \frac{5250 ft.}{m} \cdot \frac{K}{3600 S} \approx 3 ft/s$	
SMALL LANDSLIDES IN MORAINES	

Rate in the Rain



8/9

PT 1 near PM 273.7

Waterfall CK - supplies sand and fine to medium gravels to Susitna

From waterfall ck down to

MORAINES ON ~~POINT~~ R. BANK

TCE on L. BANK

Line LB RB

11 FP MOR LB FB insert from TCE then MOR

ups of bend @ PM 272.5 is expansion zone that is a wide sediment trap

12 TCE MOR

13 MOR TCE/FP (containing TCE)

14 TCE FP

15 TCE FP LB FP insert from TCE

16 TCE TIC/MOR

17 TCE MOR

8/9

LINE 11 ON L. BANK FP continues ups then becomes TCE

8/9 Notebook Photo backlogs MP 11 7007 - 9008





8/10/14

8/10/14

8/10/14

11

- L1: VB
- L2: FP
- L3: TCE
- L4: TCE
- L5: MOR
- L6: TCE
- L7: FP

old channel - plugged with sand and vegetated around old island surface

small islands downstream of constriction in expansion zone - local sed source. ups terraces

- L7: MOR
- L8: TCE

Loading into Susitna sourced not only from upriver but lateral in-flow from Terraces (outwash) and moraines

- L8: MOR
- L9: FP

possible old channel behind FP surface running against MOR.

12

8/10/14

Line 1: VB FP ice shored

ice-push fans and 3-4' scars

Line 2: Erosion outwash terraces

ice push and scars on trees relatively high up the bank.

Line 3: Medium to large gravels on toe of bank.

Sand and gravel source;

Delta deposits. Undercutting at base of TCE - fluvial or ice or both?

Mid channel bars - sand and v. fine gravels

TCEs - low source - trees relatively small

compared to MR - low

some < 1' dbh - spruce

mostly < 0.5' dbh - spruce

Line 5: TCE material mostly sand with

v. fine gravel - forsets visible

Line 6: Pop out slide in RP MOR -

saturated soil, then pop out

Rate in the Rain







UNC  
14 LB  
FP  
15 MOR  
MOR

- LB is depositional  
island on R-bank is  
mowed off (ice)

FINE  
GRAVEL STORAGE ZONES

ISLAND BRAIDED

LARGE ICE EFFECTS ON  
SEGMENTATION (ICE RIDGES/PUSH)  
AND VEG (ICE MOWED)

FINE GRAVEL DELTA ZONE  
↳ v/s OF CONSTRUCTION

ISLAND SURFACES OBSERVED WITH THE  
INFLUX OF SPAT LOCALLY PERCEIVED  
GRAVELS → FORMS MORE STABLE  
PLATFORM FOR BARS TO VEGETATE

16 FP FP v/s of Moraine  
interior pinch on both banks  
further d/s

Backwater area, higher sand bars

FP has basal fine gravel layers  
Sand layers on upper layers

DM secondary channel - presence  
of lateral weir ~~developed~~ composed  
of fine to medium gravel

LINE 15

LB FP IS INSET FROM MOR FARTHER

SOME LWD - dbh < 1'  
in channel (outside) and on banks

→ Boils still observed



LINE 17  
 L<sub>2</sub> FP into MOR  
 L<sub>3</sub> FP into MOR  
 MOR MOR  
 MOR MOR

GRAVEL/CORRECTION  
 BED - FROM MOR?  
 Identified w/ next  
 pebble

20 MOR FP  
 21 MOR TLE

downstream of constriction on  
 head of vegetated bar is fine?  
 to medium gravels - fresh sand  
 dep. on top of surface - stopped  
 paired gravels down island near  
 PPM 264.5 and lag deposits

22 MOR FP  
 23 FP FP  
 24 FP KE(ow) - SAND/VERY FINE  
 25 FP MOR GRAVEL

FINE GRAVELS OBS. AT HEAD OF BARS

Ice effects throughout reach on  
 Floodplain and Terrace surfaces  
 ice show on vegetation in  
 moraine constriction up to 3m  
 above WSE

First Poines observed in 15.  
 NEAR PPM 264.5  
 (limited quantity) thin → N30' high  
 some younger trees near head and  
 some near bottom of 15.

LINE 24 - LOT OF SLUMPING  
 ALONG R-BANK UTMASH TERRACE  
 LARGE LOCAL SUPPLY SAND/FINE GRAVELS



19 BEGINNING OF UR - 1

LINE 26  
1/2 END MOR  
MACL.

27 FP MOR → SLUMPING  
↓ SAND SUPPLY

MOVING INTO EXPANSION ZONE - FINE  
GRANCL DUMP & STORAGE AREA  
MULTIPLE CHANNELS, MULTIPLE  
VEG. BATES (WILLOWS - APPARENTLY)

28 TCE MOR  
29 SMALL TRIB LINE IS JUST D/S OF  
TRIB W/ SAND & FINE  
GRAV.

30 TCE MOR  
↓  
OUTWASH TCE CRODING - SAND, FINE GRAV

31 FP MOR  
32 MOR → PERMAFROST MELTING??  
33 FP TCE → SLUMPING ALONG ICE  
FINE GRAVELS @ BASE

34 FP FP ← inset from MOR.  
FINE GRAINS ON BAR D/S OF SMALL SC  
AND IN BASE OF THE VEG IS. BANK.

MACLAREN - BRAIDED, SOME LWD

APPEARS TO BE FINER GRANCL A LOT  
OF SAND -  
BAR JUST D/S OF CONF HAS  
MATERIAL W/ MAX SIZE ~ 64mm

→ APPEARS TO BE SLIGHTLY  
COARSER MATERIAL THAN REACH OF  
SUSTINA ABOVE MAC. CONF

LINE 28: Terrace surface has old  
weather gravels  
Groying and ice sheared down bank.

LINE 31 HUGE SAND SLUMPING ON  
MORNING - LARGE LOCAL SOURCE  
OF SAND

LINE 32 LINE IS JUST D/S OF SLUMP  
P920 - 921

Return to the Rain.





UR-I.I  
CROSS-SECTION NEAR PIM 257.9

BOTTOM TRANSDUCER = 0.9' BELOW WATER

P.T	DEPTH	4' FROM BANK	PTS 39-53 MEAS. w/ FAITH
39	2.6	TLB → TRB	→ NEEDED TO ADJUST
40	8.2		
41	8.1		
42	6.7		
43	7.1		
44	7.3		
45	7.0		
46	6.5		
47	4.2		
48	3.1		
49	3.3		
50	2.9		
51	2.5		
52	1.8		
53	1.2		
54	3.3	PTS 54-56 MEAS. w/ STADIA DIRECT DEPTH MEAS. DEPTH AT TRB EDGE	
55	3.5		
56	1.1		

UR-I.I TRB

ROD  
AT PT 56

INST ON TUB STA 0

ROD  
LOC H INT X

WS 7.18'

TOP BANK 1 2.82'

TOP BANK 2 8.5' measured from TOB 1

Beyond TOB 2  
→ Slopes slightly up  
than well  
small grasses  
8.5



EVIDENCE OF ICE EFFECTS - ICE DINGS, COMPACTING AND SCRAPING MATERIAL BETWEEN TOB 1 AND TOB 2

PROFILE UR-I.I TRB  
counter bank

root reinforced - sands/grasses  
small gravels

Est manning's: 0.04 - 0.06

Rate in the Rain



VR1-1 TLB

INST AT STA 0	MIDDLE STADIA	INT. Z	UPPER STADIA	LOWER STADIA
LOC	7.15	-76°		
V/S PT	7.18	76°	7.74	6.62
D/S PT	7.32	270°	8.55	6.06
WS (LOW)	7.18			
TOB 1	4.88			

VR1-1 PHOTOS

- P835 view d/s along TLB
- P836 view u/s along TLB
- P837 view across channel from TLB → TPB

VR-1-1 TLB



Est Mannings : 0.04 - 0.05

Est V :  $\sqrt{\frac{mi}{h} \cdot \frac{5280ft}{m} \cdot \frac{1}{3600s}} = 5.9 ft/s$   
 (measured mph) w/ Garmin floating d/s  
 V seems high, may have had extra speed from pushing off-shore

FIELD BOOK PHOTO BACKUPS: 850-861 MAPPING



LINE	LB	RB	
1	TCE	TCE	BOTH OUTWASH ICES INSET FROM MORAINES - SOME SLUMPING
2	TCE	MOR	→ failure on moraine
3	TCE	TCE	
4	MOR	TCE	
5	TCE	MOR	
6	MOR	MOR/LOW	→ RB start line 6, Bedrock outcrop - base level control
→			LAG DEPOSITS THROUGHOUT
→			LWD + LOG/DEBRIS JAMS
7			BE CONSTRICTION
8			GRANODIORITE BOULDERS - LAG
			MOR MBR
			→ ICE PAVING OF GRAV DOWN LB
			→ SOME DEEPS ON PAB, LITTLE SAND OVERLAP, PACKED ROCK
			AT current flow, water needs to be 1-2' higher to overlap bar and flow down secondary channel
			No LWD on surface or @ head of IS.
			Ice shear and ice scars on L Bank
			coarse lag from erosion of moraine material

SC b/w 254-255

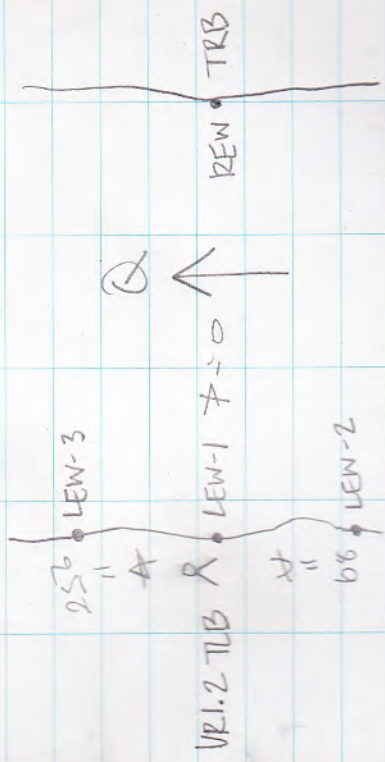
LINE 1  
 LB ice effects down bank - Mass failure of bank ups of constriction ~300'  
 line 2 - huge local Sed Supply  
 Much COARSE MATERIAL COMING OUT OF STORAGE → MORAINES AND TERRACES → RIDGE & GAVEL THROUGHOUT TCE SURFACES  
 LINE 1 through LINES SIGNIFICANT CONSTRUCTION  
 AT PRM 255.7 - small TRIB-CUTTING THROUGH MORaine SURFACING SEDIMENT ~64mm  
 SIDE CHANNEL B/W PRM 254 and 255  
 - old islands ~7' above WSE, ice-shored and sheared banks  
 - algae in shallow waters  
 ICE DRIVEN CHANNEL  
 MORAINES & OUTCROP SOURCES FOR V. LARGE MATERIAL DISTRIBUTED LOCAL BY ICE

Rate in the River



UR 1.2 c PRU 253.4

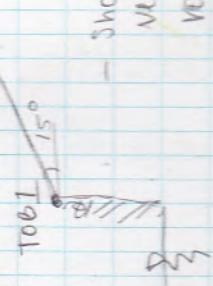
STA	POD @ TRB	INST @ TLB	MIDDLE SMO. POD	UPPER STADIA	LOWER STADIA
REW	8.75				
TOB1R	2.02				
<del>TOB1</del>	<del>9.08</del>				
LEW-1	9.08				
TOB-L	7.00				
LEW-2	8.72		10.20	7.30	68
LEW-3	9.72		11.05	8.40	256



BIRDS EYE VIEW

TRB c UR-1.2

Est n : 0.04 - 0.08



- short vegetation along near vertical bank face
- roof reinforced
- Surface continues to rise @ 15° moving inland
- Sparse spruce, small shrubs and willows
- ice paving @ toe

PHOTOS:

- view v/s = 9349
- view d/s = 9350
- view of bank: 9351



UR 1.2 TRB → TLB

BOTTOM TRANSDUCER = 0.9' BELOW WATER

PT	d	PT	d
10	2.4	32	2.5
11	2.5	33	3.6
12	2.7	34	2.2
13	2.8	35	1.8
14	2.5		
15	2.9		
16	2.8		
17	3.1		
18	2.9		
19	2.9		
20	3.3		
21	3.2		
22	3.0		
23	3.2		
24	3.2		
25	3.3		
26	3.4		
27	3.4		
28	3.2		
29	3.3		
30	3.6		
31	2.9		

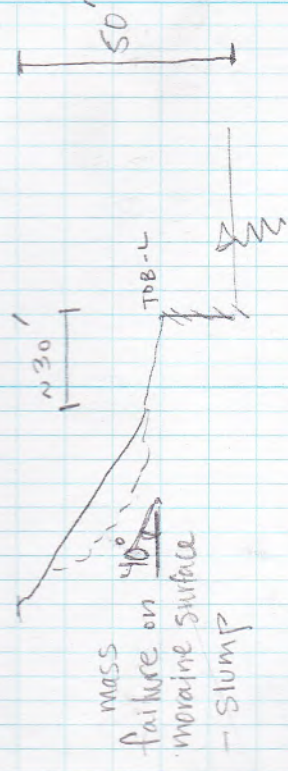
8/24/14

PROFILE  
VIEW V/S

UR 1.2



TLB



Bank is vertical - root reinforced, sedges  
Willows, alders, evergreens  
Slopes up moraine @ roughly 40°

PHOTOS: view d/s - 9352  
view v/s - 9353  
slumping - 9354

Return to Rain



YSI 556 MPS C UR 1.2

T (°C) Con.	DO (mg/L)	DO (%)	PH
12.41	14.0	21.9	198.7
			6.38

PH (mV) ORP  
9.3 219.2

WC  
Testing System on left edge of water



LINE	LB	RB	
36	MOR	TCE	
37	OUTWASH	FP	
38	VB/FP	LOW TCE	ice shear on TCE surf FP looks depositional ↳ inset from TCE
			↳ end of line LB turns to TCE (eroding)
39	VB/FP	TCE	
40	MOR	GRAV/FP	
41	ORIN/TCE	FP	L BANK ISLAND - IS TCE VIS / High

line 36

TCE - ice shaved, paved, large boulders  
MOR (LB) - slumping  
LARGE GRAVEL SOURCE

37  
OUTWASH - HUGE SANDS  
GRAVEL SOURCE  
ERODING

38  
ICE SCRAPING all along  
R. BANK → LAG, large boulders  
LWD

39  
started line lake  
TCE on R. Bank - ERODING  
Large local source FINE TO MEDIUM  
↳ LOT OF SAND & GRAVELS  
ICE EFFECT ALONG BANK

40  
Slumping MOR - supplying  
SED + LWD  
A LOT OF FINE SEDIMENTS  
(CLAY/SILTS)

Return to the bank



BS

44

LD TCE  
RB TCE

LD. TCE eroding  
RB TCE stable

45

OW TCE  
MOR  
LOW TCE

MORs near head of  
Island moving off

TCE - ERODING

MOR relatively stable  
veg isolated  
↓ SOME SWAMPING

46

47

TCE MOR  
TCE INTO

ice sheared  
eroding  
LOT OF SAND

GLACIO LAQUSTRINE

48

OUTWASH TCE  
SANDY - FINE  
SLAB FAILURES

D/S BELOW GLACIO LAQUSTRINE

49

TCE MOR  
↑ vejd up

MOR → ERODING

50

LOW TCE  
↓

ERODING  
↓ SAND & GRAVELS

8/11/14

8/11/14

36

Plot in the Rain



8/11/14

S1 MOP low FP INSET ON MOP AT ON LB. TCC

and continues d/S

Uniform width anti dunes observed ice paved on both banks

S2 MOP low TCC  
S3 MOP low TCC

Fieldbook (MDH/RAV)

+ MARKING BACKUPS

978 - 988

WR 2.1

PHOTOS #  
 9443 view v/s TRB  
 9444 view d/s TRB  
 9445 view bank TRB  
 9446 view across XSEC TRB → TLB

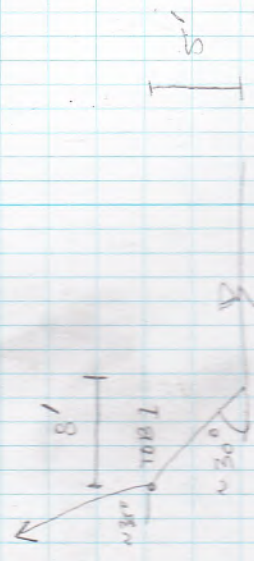
BOTTOM TRANS = 6.9' BELOW WATER

PT	d	PT	d
1	3.4	16	<del>4.3</del> 4.3
2	4.1	17	4.3
3	4.0	18	4.4
4	4.4	19	4.6
5	5.7	20	5.6
6	6.6	21	6.6
7	7.7	22	7.0
8	7.9	23	6.7
9	7.7	24	4.8
10	6.1	25	4.1
11	5.9	26	3.2
12	5.3	27	2.7
13	4.8		
14	4.1		
15	4.2		

NOTE: PT 1 is 8' from LEW

WR 2.1

TLB - PROFILE VIEW D/S



FROM LEW TO TOB 1 no veg.  
 scoured - ice and fluvial  
 ice effects on trees - scars,  
 root shoving by ice  
 armored toe - cobbles and small boulders  
 slumping of moraine  
 small gravels deposited throughout bank  
 TOB 1 up moraine is vegetated,  
 roots, trees, grasses, cauliflower  
 near TOB 1  
 Approx 5' up to TOB 1 west  
 and 8' up to TOB 1 north  
 Est. n ~ 0.08

Return to the Basin

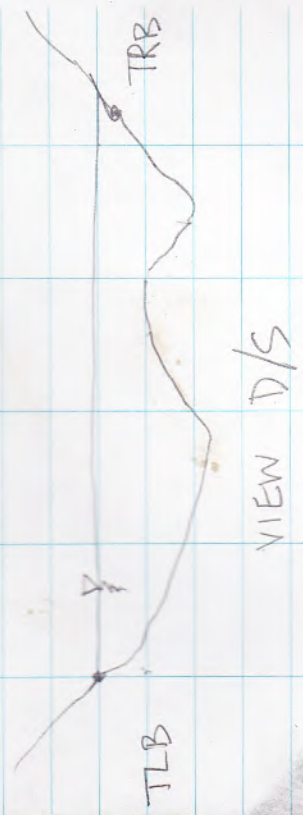


VR 2.1

STA	MID	UP	LO	X
LEW	9.16	11.35	6.98	0
REW	9.20	9.31	9.05	0
RB1	7.94	8.05	7.82	0
RB2	6.34	6.40	6.30	0
RB3	1.29	1.35	1.23	180
REN-V/S	9.02	9.95	8.14	288
REN-P/S	9.23	10.32	8.15	96

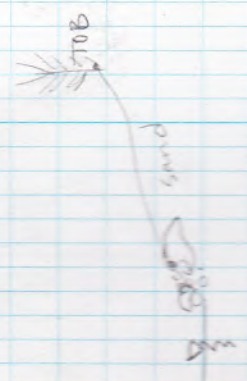
PT 28<sup>in</sup> trunk

TOP R. BANK

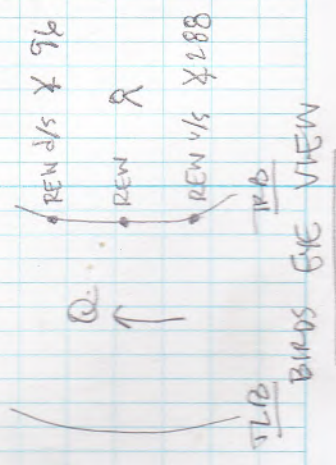


VR 2.1

TRB - PROFILE      VIEW D/S



- Top of bank - armored with small gravels
- large gravels, cobbles, some boulders
- sandy upper layer
- short brush, trees @ TOP
- ice paving
- piles of drift wood @ TOP
- EST n. ~ 0.06 - 0.08



SAND WAVES @ PPM 245.5

~~5.8~~  
~~8.4~~  
~~5.5~~  
~~5.6~~  
~~5.0~~  
~~5.4~~

Amp : 4.7  
Trough : 4.9  
Trough : 6.2



Amp : 4.2  
Trough : 5

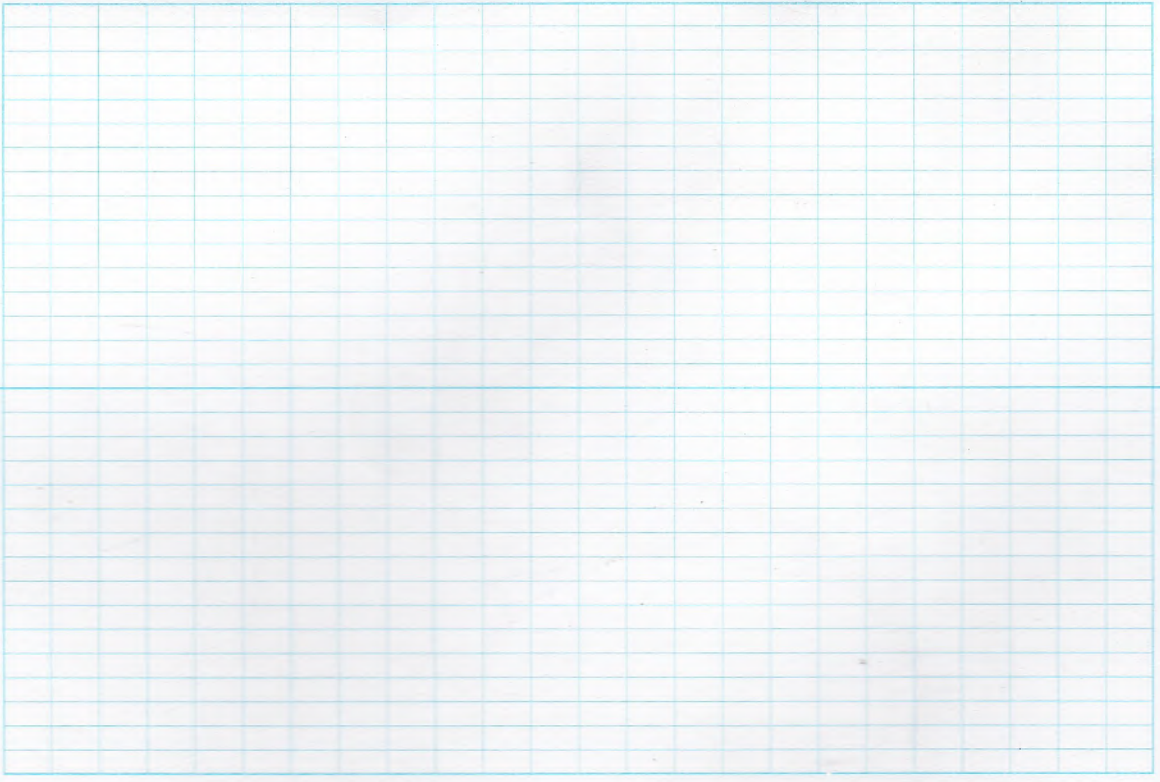
A : 4.0      15 sec-Period

A : 3.5      15 sec-Period  
T : 4

PT 30 ON TRIMBLE

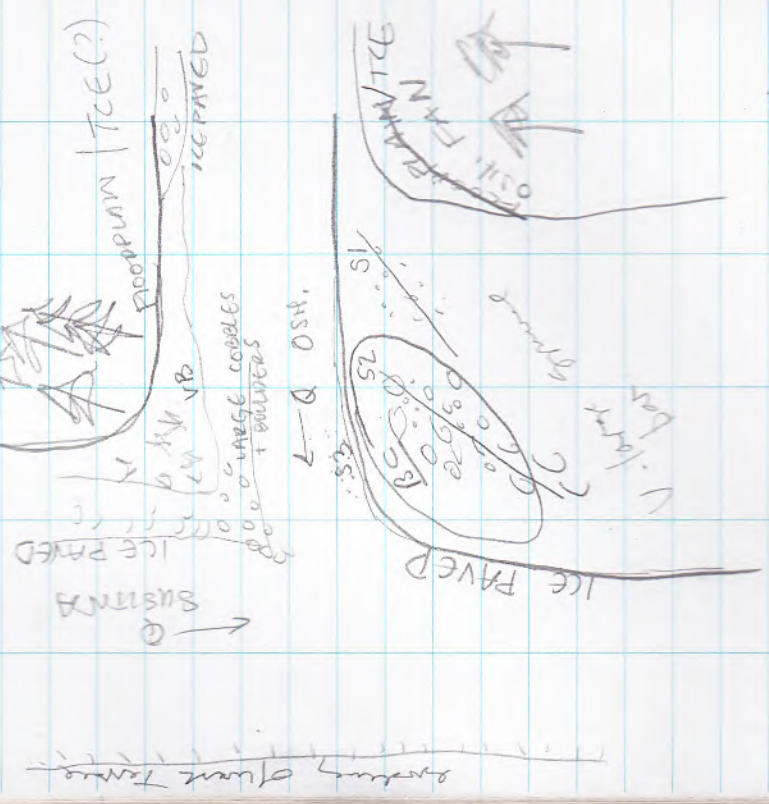
LOC WHERE SAND WAVES OBSERVED  
→ inside of bend

Est Q ~ 10,000 cfs





OSKETHNA



Mouth of Oskethna confined by Fan/TCE  
 Ice Scars ~ 10' above <sup>at least</sup> WSE  
 Plane bed river - Incised down into its fan  
 Heavily armored  
 Vertically stable  
 Significant sediment point source

PHOTOS #	COMMENT
9710	Ice paving → TLB - just ups of Osh. conf.
9716	"
9724	Surface material @ S1
9725	View d/s through S1 transect material on Oskethna fan
9726	View up Oskethna, eroding ICE on TRB
9727	View ups from mouth
9728	View TRB surface from TLB
9729	View TRB from TLB
9730	View down Susitha from Osh conf.
9731	View up Susitha TLB from d/s of Osh conf.
9732	View fan from d/s conf.
9733	large imbricate material on fan
9734	transported (loose) material on fan
9735	wake of transported material behind boulders on fan
9736	
9737	View d/s S2 through transect
9738	Surface material on S2
9739	wet slip on TLB Oskethna (loose fine material)
9740	View up Osh.
9742	large, coarse GB above eroding ICE
9743	view d/s on Oskethna TLB

*Return to Rain*



8/12/14

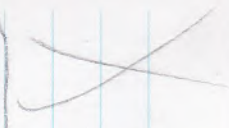
BC	BWS	#
180		
256		5
360		9
512		73
720		18
1024		1
Size		
256		
340		
512		
720		

Plot in the Rain

8/12/14

OSHEANA CONFLUENCE

BAR	Summit @	Month	ICE (?)
Boulder Count			
510	410	380	380
506	600	400	510
410	470	480	400
370	500	400	500
430	400	350	370
460	440	400	500
550	430	580	580
400	480	560	640
450	380	470	500
350	470	500	400
500	720	460	400
410	500	440	450
570	430	490	400
430	490	390	440
380	330	320	410
380	320	380	410
400	300	420	400
400	380	360	400






8/12 Field book backup, Mapping,  
WQ datasheet ==  
789 - 995 tt.com

START OF DAY

- 2 WQ BR → Metamorphic
- 3 FP BR → erosion
- 4 VP/FP TCE → some roding
- 5 FP BR outcrop
- 6 FP FP
- 7 WQ TCE FP started lake
- 8 erosion removed
- 8 Goose fan
- 9 WQ V/S GOOSE CONF. ON SU M.C. TLB
- 10 WQ @ GOOSE TRB
- 11 FP TCE - GROUNDING
- 12 FP FP Both in set
- 13 WQ TCE FP
- 14 stable banks, ice paved some patches of BR observed higher in surface.
- 15. 17. 18 - slip failure of tal V. sandy good local sediment. bedding LB - small FP grading into higher surface

GOOSE CK RECON

- LARGE FAN
- PLANG BED CHANNEL - uniform lag deposits
- ICE EFFECT ON L BANK - slumping
- LIKELY NOT PRODUCING A LOT OF SEDIMENT though it looks like it may be
- Sediment load likely episodic
- Fan life of construction combined with ice effects leaves sediment dump at Goose Ck. fan
- Large cobbles/boulders on fan
- moraine on left bank - failure could have been cause for sediment dep @ mouth
- embankment material
- fan ~ 200' @ widest near confluence
- some gravel - through

Rate in the rain



8/13/14

UNT 228.5 Recon notes

Boulder Step in channel

Huge Dam break flood lobe on n. side of channel @ confluence  
→ boulders ~0.5m transported

Gravels predominantly gneiss and granodiorite

classic expansion lens in dry channel

non cohesive sediment gravity flow

Material Deposited: Likely from single, recent event

evidence of water overtopping banks on steeper portion of channel  
→ debris and sand on top of overbank surface

u/s and of bank water maybe in small expansion zone in steeper portion of channel

Photo in the rain

8/13/14

Grading Till

WB  
BR  
Till?

ice paving both banks  
BR? Till → small failures

19 WA Samp Site 1/3 UNT 228.5  
20 WR Samp in / UNT 228.5 north

16

17

18



GOOSE CK PHOTOS

- 9801 view d/s Sustna (TLB) to Goose Ck. (Goose Ck. from confluence)
- 9802 view w/s Sustna (TLB) from confluence
- 9803 view up Goose Ck. fan
- 9804 " "
- 9805 view across Goose to Grody TLB
- 9806 view d/s Goose to Sus. Ara
- 9807 view of Goose conf. w/ Su
- 9809 view up Goose ck fan. People standing on top of fan deposits
- 9810 view v/s Sustna TLB from conf.
- 9811 view w/s Goose from conf.
- 9812 view v/s Goose Ck.
- 9813 " "
- 9814 view across Goose to Grody TLB
- 9815 surface material on fan (Goose)
- 9816 embricale large material on fan
- 9817 view down Goose Ck.
- 9818 fine material deposit on fan

WNT 228.5 PHOTOS

- 1047 view w/s WNT 228.5 from conf.
- 1048 view d/s Sustna TRB from conf.
- 1049 sediment deposition on fan
- 1050 view v/s WNT 228.5
- 1051 sediment deposition in abandoned right channel view v/s
- 1052 " " "
- 1053 " " deposited
- 1054 " " boulder material
- 1055 " " "
- 1056 view d/s abandoned f. channel
- 1057 view v/s WNT 228.5 from split channel location
- 1058 " " "
- 1059 " " "
- 1060 view v/s WNT 228.5 smyle chann
- 1061 " " "
- 1062 view d/s WNT 228.5

Notes in the Rain



8/11/14

8/14/14

START OF DAY

2 TILL BR CROTCHING  
 3 VEG HILLSLOPE - ICE EFFECTS CONTINUOUSLY  
 TILL ~ 15' WSE  
 veg sheering

★ VERY HIGH  
 FROM FARELL ICE BEAM  
 WATANA??

3 BR → Scraped clean  
 no build up of colluvium @ top

→ Ice shear 50-60' inland  
 > 20' high

4 TILL VEG ICE SHEETED  
 OUTWASH  
 FTLL - tucked in to on BR  
 ↳ goes to top of ridge  
 failures throughout ridge

7 VEG'D BR  
 FTLL  
 HILLSLOPE  
 heavily vegetated

47 DWR ending  
 11 Ice - shear all the way through extent of the

9/11/14

- Anomalous trib - very high  
 - Inhibitory, local fine source in watershed - eroded since meltout  
 - Huge ice effects on Bank > 20'  
 - above water surface  
 - Ice ridges evident, huge boulders, recent coarse sand dep.

PT 74 WQ Samps 1/5 trib @ 22J  
 PT 75 WQ Samps in trib @ 22J

Site in the basin