

560 06 023

Boundary Mtn Salvage

03/09/1999
Libby - Boundary Mtn Salvage
Unit 19
56006023

RTS
winter

KOOTENAI NATIONAL FOREST SOIL DISTURBANCE MONITORING FORM

DATE May 9, 1999 CUTTING METHOD clipper
 OBSERVER Kuennen SKIDDING METHOD RTS
 DISTRICT Libby Crowford If tractor: dispersed dedicated
 SALE/S.A. Boundary Mtn Salv HAZARD TREATMENT not forested yet
 Unit # 19 Acres 32 SILVICULTURAL TRMT SD-LP
 H.T. DF/Libo OPERATION PERIOD Jan-Mar. 1999
 Slope 45-25 Ele: 3000-3200' Aspect: north
 Location Lower slope
 COMPACTION (Heavy) lower upper 1 4

COMPACTION (Light) lower upper 50 50

UNDISTURBED lower upper 80 70

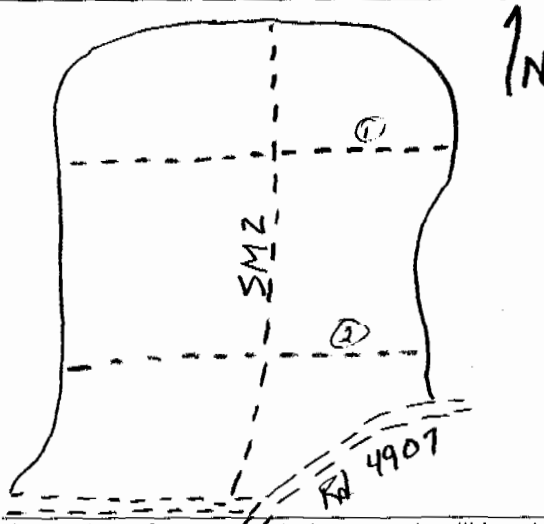
DISPLACED lower upper 0 0

EXCAVATED SKID TRAIL

SMZ/ROCK lower upper 20 18

COMMENTS
Up hill yarding. Removing deck + down LP. Unit mostly done - weather warming. Unit looks very good.

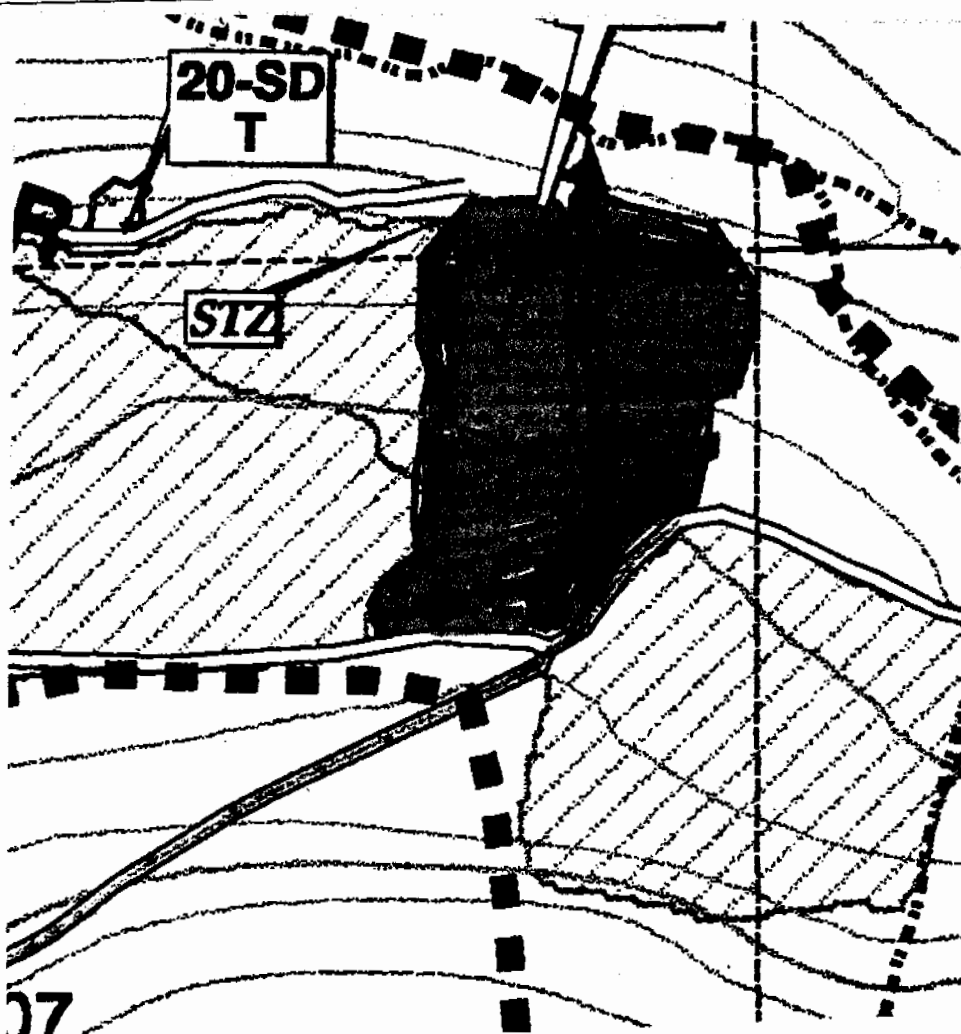
SHAPE OF UNIT AND PATTERN OF TRANSECT



COMPACTION (Heavy) - Any place where future vegetative growth will be significantly impacted, i.e., skid trails (both heavily and lightly used depending on amount of compaction related to soil moisture), landings, and other impacted areas.
COMPACTION (Light) - Any other area not included in heavy COMPACTION or UNDISTURBED.
UNDISTURBED - No signs of any machinery or skidding activity.
DISPLACED - Any place soil has been mounded by machinery, also include in heavy or light compaction.

TRANSECT SUMMARY FORM

	<i>lower</i> Transect 1		<i>upper</i> Transect 2		Transect 3		Transect 4		Transect 5		TOTALS	
	Pts.	%	Pts.	%	Pts.	%	Pts.	%	Pts.	%	Pts.	%
D i s t u r b	HEAVY	2	1	4	3						6	2
	LIGHT	50	38	50	40						100	39
	UNDISTURB	80	61	70	57						150	59
	TOTALS	132	100	124	100						256	100
	DISPLACED	0	0	0	0						0	0
	EROSION	0	0	0	0						0	0
	PUDDLED	0	0	0	0						0	0
	SMZ	20	15	18	15						38	15
	ROCK	0	0	0	0						0	0
	BURN PILES	0	0	0	0						0	0



Unit 19
LF

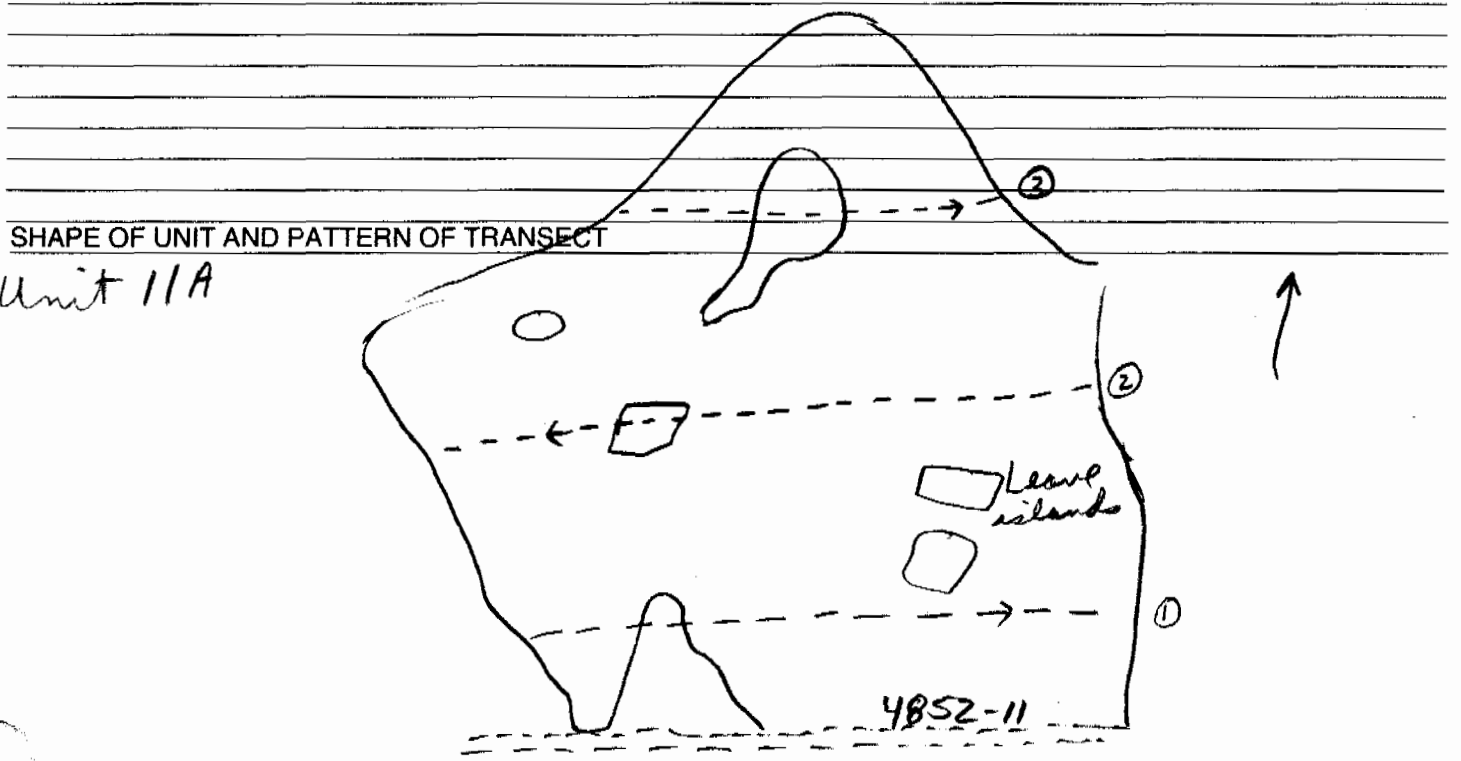
554 05 042 449 76 123/01

KOOTENAI NATIONAL FOREST
 SOIL DISTURBANCE MONITORING FORM

DATE Aug. 9, 1999 CUTTING METHOD clipper
 OPERATOR Kuennen SKIDDING METHOD stump processed / forwarder to road
 DISTRICT Libby If tractor: dispersed dedicated
 SALE/S.A. Bristow Cr. Salv. (LPP) HAZARD TREATMENT scattered excavator piles (not binned)
 Unit # 11A Acres 83 SILVICULTURAL TRMT SD (seed tree - shelterwood)
 H.T. SAF/Libby -> SAF/clun OPERATION PERIOD early summer 1998
 Slope 25-40 Aspect: 150° - 220° Elevation: 4200 - 4800'
 Location upper middle It is Unit 11A above Rd 4852 - upper half

① COMPACTED (Heavy) <input checked="" type="checkbox"/>	20
② <input checked="" type="checkbox"/> L	15
③ <input checked="" type="checkbox"/> L	6
① COMPACTED (Light) <input checked="" type="checkbox"/>	205
② <input checked="" type="checkbox"/>	206
③ <input checked="" type="checkbox"/>	120
① UNDISTURBED <input checked="" type="checkbox"/>	62
② <input checked="" type="checkbox"/>	64
③ <input checked="" type="checkbox"/>	40
① DISPLACED <input checked="" type="checkbox"/>	83
② <input checked="" type="checkbox"/>	71
③ <input checked="" type="checkbox"/>	50
① EXCAVATED SKID TRAIL <u>overland flow :</u>	3
② <input checked="" type="checkbox"/>	2
③ <input checked="" type="checkbox"/>	0
① SM7 <u>leave patch</u> <input checked="" type="checkbox"/>	70
② <input checked="" type="checkbox"/> L	45
③ <input checked="" type="checkbox"/>	24

COMMENTS Occasional rock outcrop - lots of angular rock in surface soil; 10%
 surface rock. Ash generally common - 4-8".
 Coarse bark trail was deeply rutted. - water barbed
 lots of 3" CWL left - generally driven on + pushed to ground.



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 SM7 - Include within transect if within harvest unit.

TRANSECT SUMMARY FORM

	<i>lower</i> Transect 1		<i>middle</i> Transect 2		<i>upper</i> Transect 3		Transect 4		Transect 5		TOTALS	
	Pts.	%	Pts.	%	Pts.	%	Pts.	%	Pts.	%	Pts.	%
D i s t u r b e d HEAVY	20	7	15	5	6	4					41	6
LIGHT	205	71	206	72	120	72					531	72
UNDISTURB	62	22	64	23	40	24					166	22
TOTALS	287	100	285	100	166	100					738	100
DISPLACED	83	29	71	25	50	30					204	28
EROSION	0	0	0	0	0	0					0	0
PUDDLED	0	0	0	0	0	0					0	0
SMZ <i>leave patch</i> ROCK	70	24	45	16	24	14					139	19
BURN PILES	0	0	0	0	0	0					0	0



55405106

08/09/1999
Libby - Bristow Creek Salvage
Unit 11C
55405106

KOOTENAI NATIONAL FOREST
SOIL DISTURBANCE MONITORING FORM

DATE Aug. 9, 1999 CUTTING METHOD Clipper
OBSERVER Kuennen SKIDDING METHOD stumps processed / forwarder to road
DISTRICT Libby If tractor: dispersed / dedicated
SALE/S.A. Bristow Cr. Salv. HAZARD TREATMENT scattered excavator piles (not burned yet)
Unit # 11C Acres 26 SILVICULTURAL TRMT SD (seed tree w/ leave islands)
H.T. SAF/Libo-SAF/chr OPERATION PERIOD early summer 1998
Slope 25-35% Aspect 150°-180° Elevation: 4200-4600
Location middle

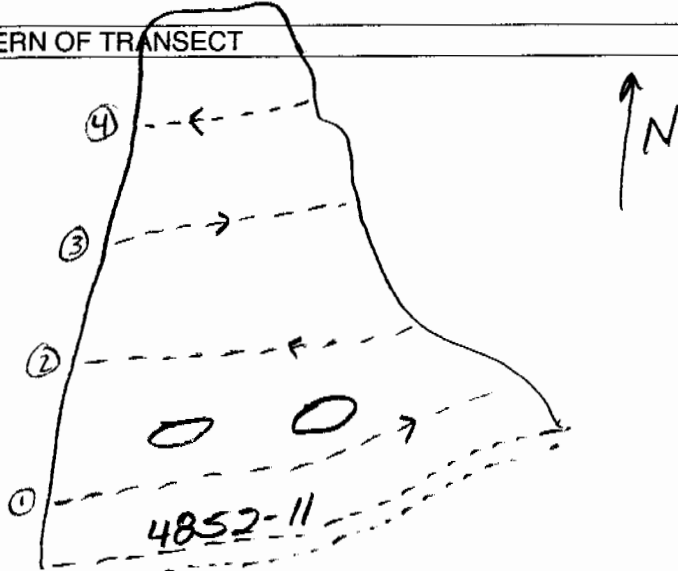
①	COMPACTED (Heavy) <input checked="" type="checkbox"/>	① 1	① 13
②	<input checked="" type="checkbox"/>		③ 6 ④ 3
③	<input checked="" type="checkbox"/>		③ 10
④	COMPACTED (Light) <input checked="" type="checkbox"/>		① 224
⑤	<input checked="" type="checkbox"/>		③ 50 ④ 47
⑥	<input checked="" type="checkbox"/>		② 145
⑦	UNDISTURBED <input checked="" type="checkbox"/>		① 38
⑧	<input checked="" type="checkbox"/>	④ <input checked="" type="checkbox"/>	③ 17 ④ 20
⑨	<input checked="" type="checkbox"/>		② 49
⑩	DISPLACED <input checked="" type="checkbox"/>	② <input checked="" type="checkbox"/>	① 60
⑪	<input checked="" type="checkbox"/>	④ <input checked="" type="checkbox"/>	③ 20 ④ 15
	EXCAVATED SKID TRAIL		② 47

SMZ/ROCK

COMMENTS Lots of 3" plus left. Stand mostly LPP-- removed all except for several leave islands. Bohrock, Lavalli-- good quantity. Some dsh present, generally quite mixed. Lots of angular rock in the surface soil. 5% surface rock. Ash mostly absent. Some excavator piling for hazard treatment. Unit was composed mostly of LPP.

SHAPE OF UNIT AND PATTERN OF TRANSECT

Unit 11C



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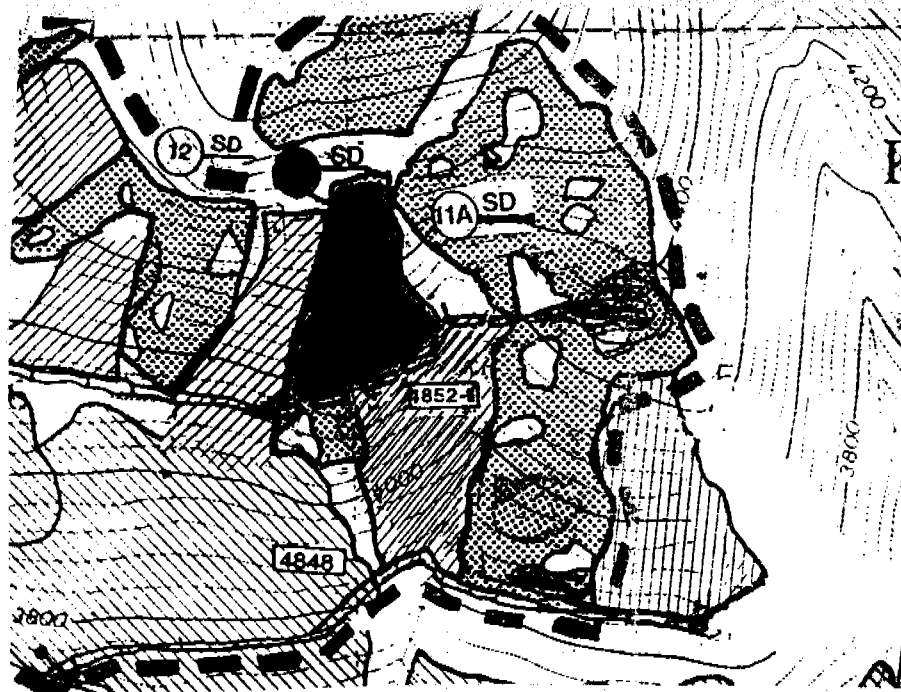
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SMZ - Include within transect if within harvest unit.

TRANSECT SUMMARY FORM

	Transect 1		Transect 2		Transect 3		Transect 4		Transect 5		TOTALS		
	Pts.	%	Pts.	%	Pts.	%	Pts.	%	Pts.	%	Pts.	%	
D i s t u r b	HEAVY	13	5	10	5	6	8	3	4			32	5
	LIGHT	224	81	145	71	50	68	47	67			466	75
	UNDISTURB	38	14	49	24	17	24	20	29			124	20
	TOTALS	275	100	204	100	73	100	70	100			622	100
	DISPLACED	60	22	47	23	20	27	15	21			142	23
	EROSION	0	0	0	0	0	0	0	0			0	0
	PUDDLED	0	0	0	0	0	0	0	0			0	0
	SMZ	0	0	0	0	0	0	0	0			0	0
	ROCK	0	0	0	0	0	0	0	0			0	0
	BURN PILES	0	0	0	0	0	0	0	0			0	0



52101195

09/30/1999
Libby - Prospect Parmentor
Unit 46 52101195

Cable

KOOTENAI NATIONAL FOREST
SOIL DISTURBANCE MONITORING FORM

DATE 9.30.99 CUTTING METHOD hand, small area clipped
 OBSERVER Kuennen SKIDDING METHOD cable
 DISTRICT Libby If tractor: dispersed dedicated
 SALE/S.A. Prospect-Parmentor/Crowfoot HAZARD TREATMENT to be BB, not done yet
 Unit # 46 Acres 11 SILVICULTURAL TRMT LTM
 H.T. GF/Xete/Packstima OPERATION PERIOD July 1999
 Slope 40-60% (50) Aspect: ESE
 Location mid slope Ele: 4100-4400
 COMPACTION (Heavy)

COMPACTION (Light) 40

UNDISTURBED 240

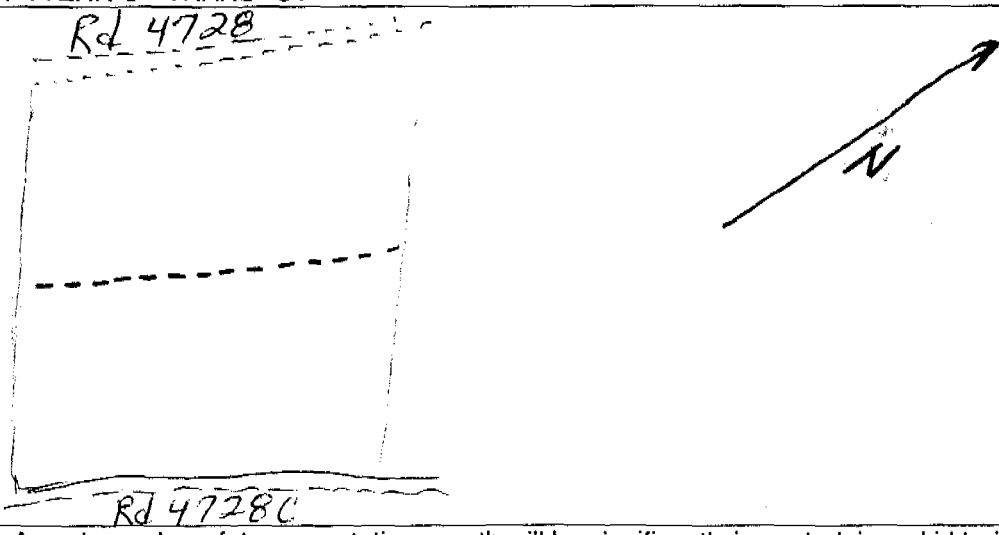
DISPLACED 8

EXCAVATED SKID TRAIL

SMZ/ROCK

COMMENTS Excavator fireline - width of bucket, w/b put in volcanic ash mixed in soil. On scraped slope - lots of angular rock 50-70%; also deep till deposits
Cable corridors, some depressions created in several corridors.
Several apparent "kettles" in northern part of unit

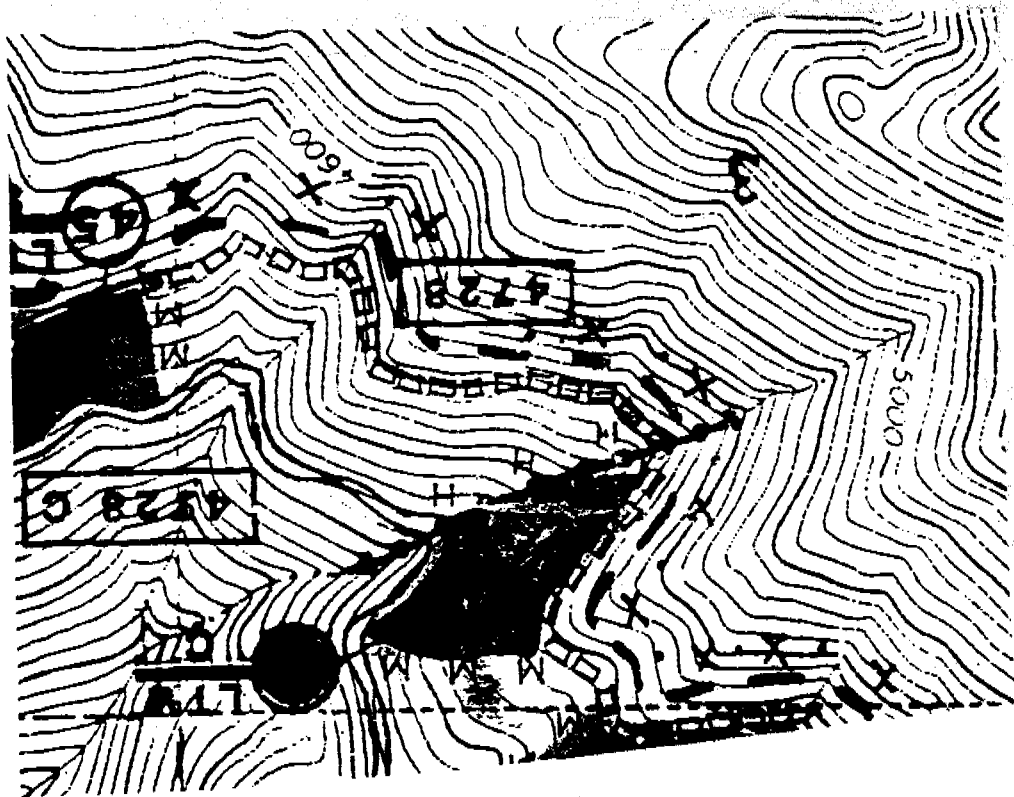
SHAPE OF UNIT AND PATTERN OF TRANSECT



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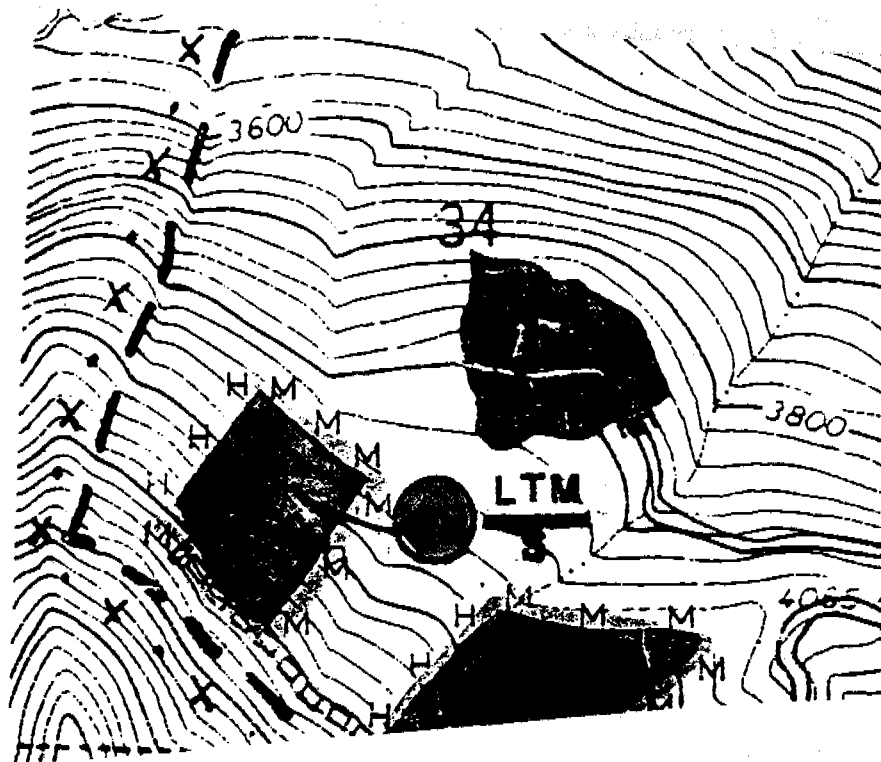
TRANSECT SUMMARY FORM

	Transect 1		Transect 2		Transect 3		Transect 4		Transect 5		TOTALS	
	Pts.	%	Pts.	%	Pts.	%	Pts.	%	Pts.	%	Pts.	%
D i s t u r b	HEAVY	0	0									
	LIGHT	40	14									
	UNDISTURB	240	86									
	TOTALS	280	100									
	DISPLACED	8	3									
	EROSION	0	0									
	PUDDLED	0	0									
	SMZ	0	0									
	ROCK	0	0									
	BURN PILES	0	0									



TRANSECT SUMMARY FORM

	Transect 1		Transect 2		Transect 3		Transect 4		Transect 5		TOTALS	
	Pts.	%	Pts.	%	Pts.	%	Pts.	%	Pts.	%	Pts.	%
D i s t u r b	HEAVY	5	2									
	LIGHT	20	10									
	UNDISTURB	185	88									
	TOTALS	210	100									
	DISPLACED	8	4									
	EROSION	0	0									
	PUDDLED	0	0									
	SMZ	0	0									
	ROCK	0	0									
	BURN PILES	0	0									



55903017

KOOTENAI NATIONAL FOREST
SOIL DISTURBANCE DATA FORM

10/05/1999
Libby - Cripplehorse Salvage
Unit 4A
55903017

DATE 10-5-99

CUTTING METHOD Clipper-feller buncher

OBSERVER Kuennen

SKIDDING METHOD RTS Delicately, some crawler

DISTRICT Libby

HAZARD TREATMENT whole tree yard - left as is

SALE Cripplehorse Salvage
Unit/No. 4A Acres: 13

SILVICULTURAL TREATMENT SD/remove dead + down

Slope: 10-30% Elevation: 5500-5700
Aspect: ESE Locations: upper slope H.T.: DF/Kam
COMPACTION(Heavy): _____

OPERATION PERIOD NOV. 1998

COMPACTION(Light) _____ 50

UNDISTURBED _____ 58

DISPLACED 0

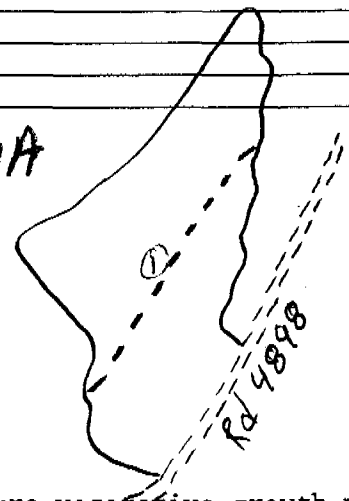
EXCAVATED SKID TRAIL 0

SMZ 0

COMMENTS Operations look good.

SHAPE OF UNIT AND PATTERN OF TRANSECT

Unit 4A



COMPACTION(Heavy) - any place where future vegetative growth will be significantly impacted, i.e., skid trails (both heavily and lightly used depending on amount of compaction related to soil moisture), landings, and other impacted areas.

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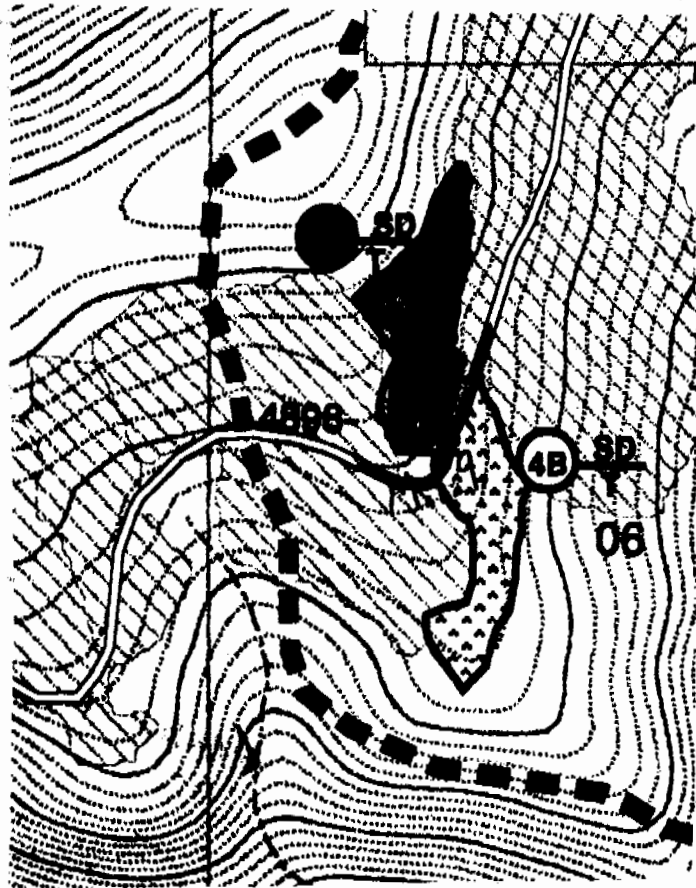
UNDISTURBED - no signs of any machinery or skidding activity.

DISPLACED - any place soil has been mounded by machinery, also include in heavy or light compaction.

SMZ - include within transect if within harvest unit.

TRANSECT SUMMARY FORM

	Transect 1		Transect 2		Transect 3		Transect 4		Transect 5		TOTALS	
	Pts.	%	Pts.	%	Pts.	%	Pts.	%	Pts.	%	Pts.	%
D i s t u r b	HEAVY	2	2								2	2
	LIGHT	50	45								50	45
	UNDISTURB	58	53								58	53
	TOTALS	110	100								110	100
	DISPLACED	0	0								0	0
	EROSION	0	0								0	0
	PUDDLED	0	0								0	0
	SMZ	0	0								0	0
	ROCK	0	0								0	0
	BURN PILES	0	0								0	0



55903039

KOOTENAI NATIONAL FOREST
SOIL DISTURBANCE DATA FORM

10/05/1999
Libby - Cripplehorse Salvage
Unit 5
55903039

DATE 10.5.99

CUTTING METHOD clipper pre-bunched w/ excavator

OBSERVER Kuennen

SKIDDING METHOD RTS, some dozer

DISTRICT Libby

HAZARD TREATMENT whole tree yard - left as is

SALE Cripplehorse Salvage Farmer
Unit/No. 5 Acres: 36 A.

SILVICULTURAL TREATMENT SD/removed dead + down.

Aspect: WSW upper slope

OPERATION PERIOD NOV. 1998

Elevation: 5500-5800 H.T.: SAF/Vacc → DF/Caru (near R.O.) Slope: 25-40

COMPACTION(Heavy) 18

COMPACTION(Light) 73

UNDISTURBED 140

DISPLACED Erosion! 18/3

EXCAVATED SKID TRAIL

SMZ

COMMENTS Salvage of standing + down LPP amongst SAF regen w/ WL + ES on the overstory. Ledge rock exposed throughout unit. 8-12" ash present mixed w/ lots of surface rock. Area had been salvaged previously (don't see any past disturbance). Appears operation occurred when soils wet. Landform broken + benchy. Salvage of dead + down LPP. Appears that some salvage of LPP had occurred ~10 years ago. Did not see any impacts from that operation.

SHAPE OF UNIT AND PATTERN OF TRANSECT



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UNDISTURBED - no signs of any machinery or skidding activity.

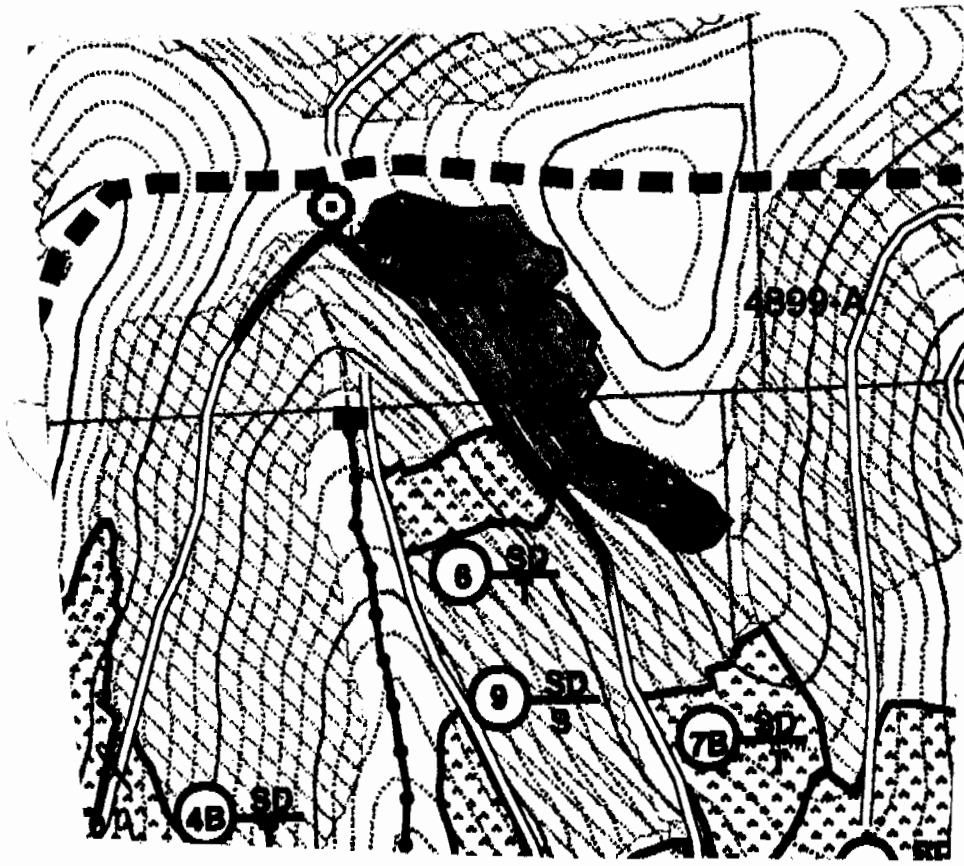
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SMZ - include within transect if within harvest unit.

TRANSECT SUMMARY FORM

"old"

	Transect 1		Transect 2		Transect 3		Transect 4		Transect 5		TOTALS		
	Pts.	%	Pts.	%	Pts.	%	Pts.	%	Pts.	%	Pts.	%	
D i s t u r b	HEAVY	18	8							0	0	18	8
	LIGHT	73	32							0	0	73	32
	UNDISTURB	140	60							0	0	140	60
	TOTALS	231	100							0	0	231	100
	DISPLACED	18	8									18	8
	EROSION	3	1									3	1
	PUDDLED	0	0									0	0
	SMZ	0	0									0	0
	ROCK	0	0									0	0
	BURN PILES	0	0									0	0



58001018

KOOTENAI NATIONAL FOREST
SOIL DISTURBANCE DATA FORM

10/05/1999
Libby - Weigel Creek Salvage
Unit 9
58001018

DATE 10.5.99

CUTTING METHOD hand - blow down area

OBSERVER Kuennen

SKIDDING METHOD RTS

DISTRICT Libby

HAZARD TREATMENT Generator piles + burned

SALE Weigel Salvage Farmer
Unit No. 9 Acres: 8

SILVICULTURAL TREATMENT SD

Aspect: NE slope: 2:10
Elev.: 5050-5100' Location: upper slope
H.T.: SAF/WL + ES

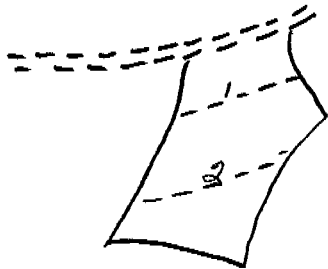
OPERATION PERIOD Sept. 1998

lower COMPACTION (Heavy)	1	30
upper	1	13
lower COMPACTION (Light)	13	130
upper	8	81
lower UNDISTURBED	1	18
upper	2	32
DISPLACED	2	19
	U	7
EXCAVATED SKID TRAIL	NA	
SMZ Piles	1	16

COMMENTS Deep ash over very dense till. Area is very wet. Overstory in adjacent stands is WL + ES, mostly SAF reproducing, 3-4" duff, CWD low light. Soil near saturation. Good charcoal layer at soil surface. Lots of tree tips. Lots of natural displacement due to wind throw. Lots of logging - area wet year round, logging some of the detrimental is associated w/ pile areas adjacent to the unit.

SHAPE OF UNIT AND PATTERN OF TRANSECT

Unit 9

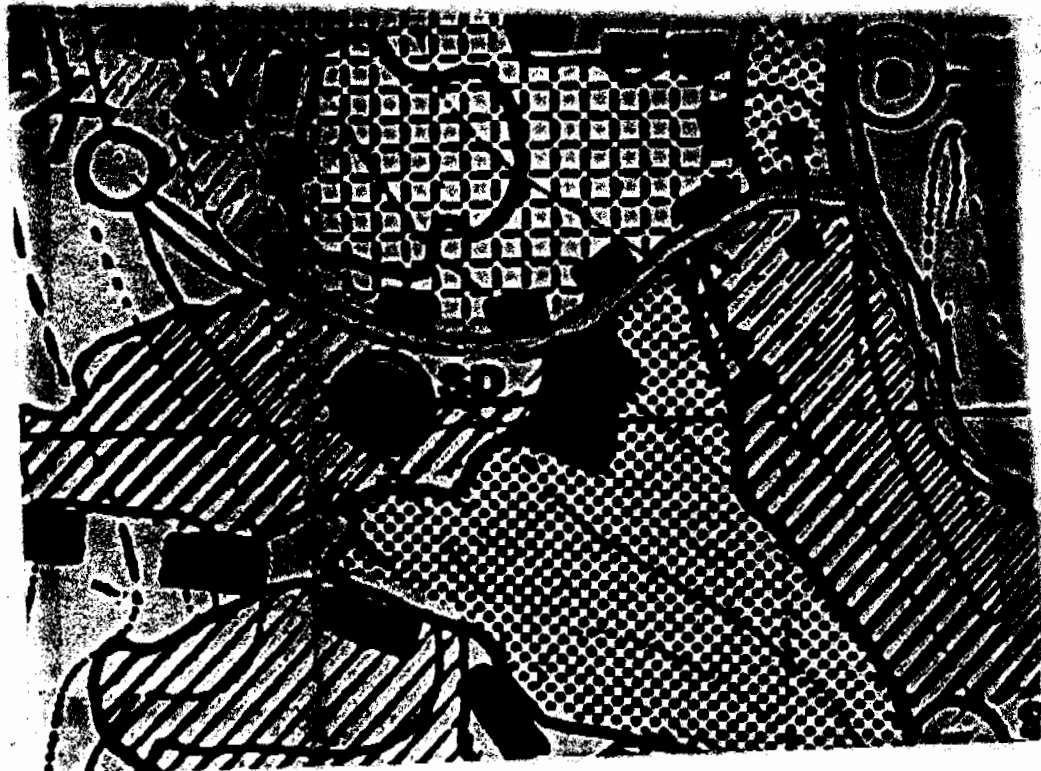


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- COMPACTION (Light) - any other area not included in heavy COMPACTION or UNDISTURBED.
- UNDISTURBED - no signs of any machinery or skidding activity.
- DISPLACED - any place soil has been mounded by machinery, also include in heavy or light compaction.
- SMZ - include within transect if within harvest unit.

TRANSECT SUMMARY FORM

Lower Upper

	Transect 1		Transect 2		Transect 3		Transect 4		Transect 5		TOTALS	
	Pts.	%	Pts.	%	Pts.	%	Pts.	%	Pts.	%	Pts.	%
D i s t u r b	HEAVY	30	17	13	10						43	14
	LIGHT	130	73	81	64						211	69
	UNDISTURB	18	10	32	26						50	17
b	TOTALS	178	100	126	100						304	100
	DISPLACED	19	11	7	6						26	9
	EROSION	0	0	0	0						0	0
	PUDDLED	0	0	0	0						0	0
	SMZ	0	0	0	0						0	0
	ROCK	0	0	0	0						0	0
	BURN PILES	16	9	0	0						16	5



58001026

10/05/1999
Libby - Jet A Helicopter Salvage
Unit 7
58001026

KOOTENAI NATIONAL FOREST
SOIL DISTURBANCE DATA FORM

DATE 10.5.99

CUTTING METHOD hand

OBSERVER Kuennen

SKIDDING METHOD Helicopter

DISTRICT Libby

HAZARD TREATMENT BB - Fall 99; excavator line w/ throw back

SALE Jet A Helicopter Salvage Farmer

SILVICULTURAL TREATMENT SD

Unit No. 7
Acres 8

OPERATION PERIOD Sept. 1997

Habitat Type SAF/Chun/Mate
Slope: upper 10-20; lower 25

Elevation: 5050 - 5150
Aspect: westerly

COMPACTON (Heavy) Trans. 1		
Trans. 2		0
Trans. 3		0
COMPACTON (Light) Trans. 1		33
Trans. 2		25
Trans. 3		
UNDISTURBED Trans. 1		202
Trans. 2		154
Trans. 3		
DISPLACED	0	

EXCAVATED SKID TRAIL NA

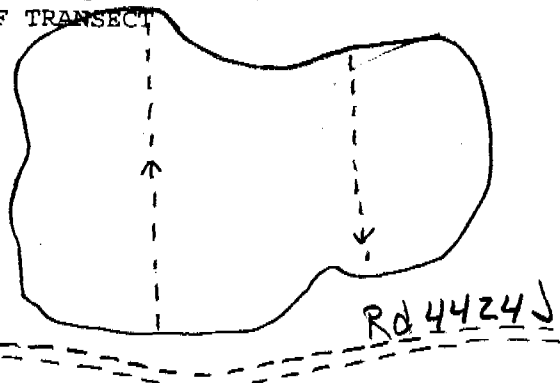
SMZ NA

COMMENTS Excavator peline w/ throw back. Sale because of wind throw. BB looks very good lots of LWD. Displacement has occurred as a result of wind throw. Salvage of dead + down LPP.

BB occurred about a week before transecting. Very good burn; needles + twigs removed w/ light charring of O2 (duff) horizon.

SHAPE OF UNIT AND PATTERN OF TRANSECT

Unit 7



COMPACTON (Heavy) - any place where future vegetative growth will be significantly impacted, i.e., skid trails (both heavily and lightly used depending on amount of compaction related to soil moisture), landings, and other impacted areas.

COMPACTON (Light) - any other area not included in heavy COMPACTON or UNDISTURBED.

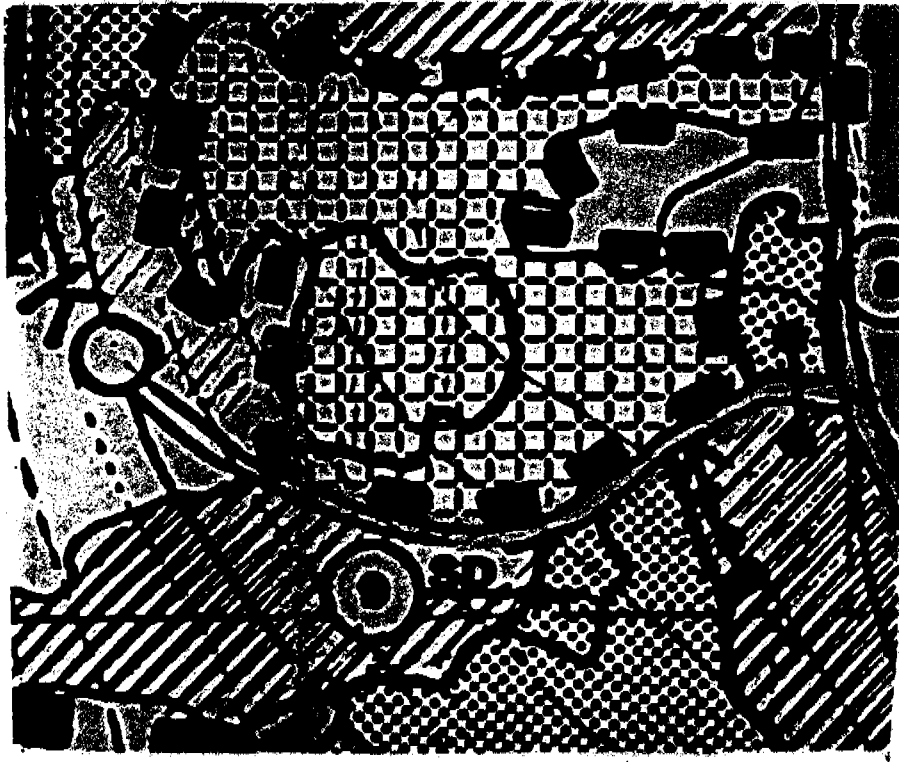
UNDISTURBED - no signs of any machinery or skidding activity.

DISPLACED - any place soil has been mounded by machinery, also include in heavy or light compaction.

SMZ - include within transect if within harvest unit.

TRANSECT SUMMARY FORM

	<i>lower 2</i> Transect 2		<i>upper 1</i> Transect 3		Transect 3		Transect 4		Transect 5		TOTALS	
	Pts.	%	Pts.	%	Pts.	%	Pts.	%	Pts.	%	Pts.	%
D HEAVY	0	0	0	0							0	0
i s LIGHT	25	14	33	14							58	14
u UNDISTURB	154	86	202	86							356	86
r b												
TOTALS	179	100	235	100							414	100
DISPLACED	0	0	0	0							0	0
EROSION	0	0	0	0							0	0
PUDDLED	0	0	0	0							0	0
SMZ	0	0	0	0							0	0
ROCK	0	0	0	0							0	0
BURN PILES	0	0	0	0							0	0



55701089

KOOTENAI NATIONAL FOREST
SOIL DISTURBANCE MONITORING FORM

DATE 10-5-99 CUTTING METHOD clipper
SERVER Ruennen SKIDDING METHOD crawler tractor
DISTRICT Libby McBride If tractor: dispersed dedicated
SALE/S.A. Upper Fivemile Salvage HAZARD TREATMENT BB Fall 1999; excavator line w/ throwback
Unit # 20B Acres 14 SILVICULTURAL TREATMENT SD / LPP
H.T. SAF/Chm - SAF/Vad OPERATION PERIOD Sept. 1997
Slope 25-35; upper Aspect: ENE Ele: 3300 - 5400'
COMPACTION (Heavy) 1 13

COMPACTION (Light) 1 144

UNDISTURBED 1 380

DISPLACED _____

EXCAVATED SKID TRAIL _____

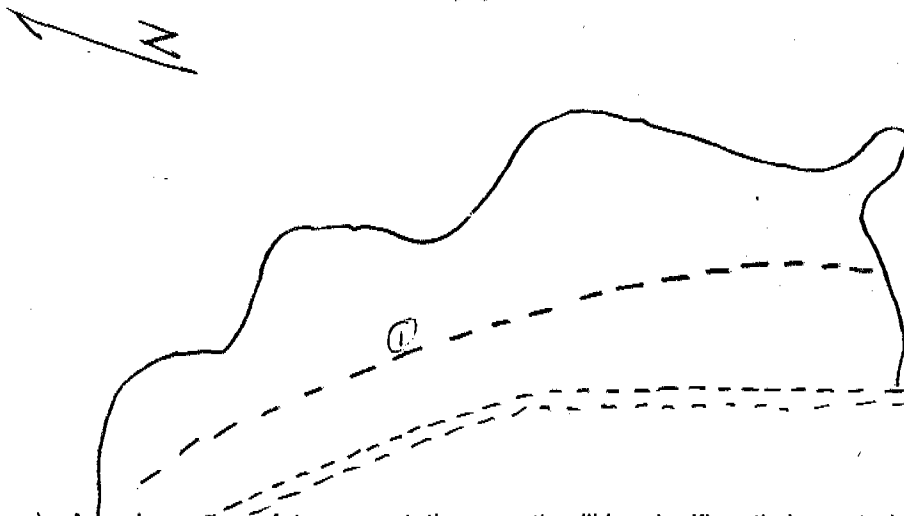
SMZ/ROCK _____

COMMENTS Good ash cap over till. Lots of WL seedlings germinated in skid trails -- some lost to burning. BB looks very good. Operations look good - low detrimental impact. Lots of CWD and fines left in unit.

BB completed short while before transecting -- some stumps still smoking. Needles + turps consumed, charring of O2.

SHAPE OF UNIT AND PATTERN OF TRANSECT

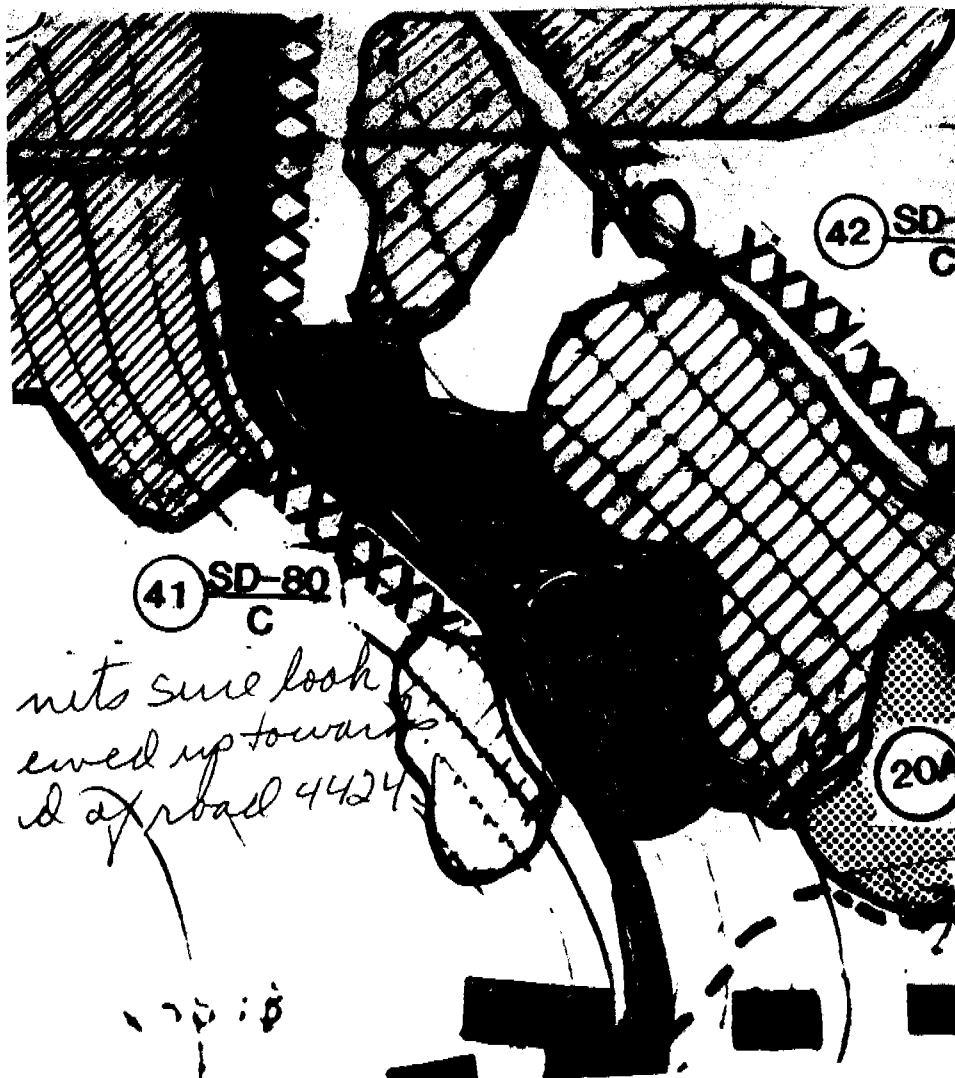
Unit 20B



COMPACTION (Heavy) - Any place where future vegetative growth will be significantly impacted, i.e., skid trails (both heavily and lightly used depending on amount of compaction related to soil moisture), landings, and other impacted areas.
COMPACTION (Light) - Any other area not included in heavy COMPACTION or UNDISTURBED.
UNDISTURBED - No signs of any machinery or skidding activity.
DISPLACED - Any place soil has been mounded by machinery, also include in heavy or light compaction.

TRANSECT SUMMARY FORM

	Transect 1		Transect 2		Transect 3		Transect 4		Transect 5		TOTALS	
	Pts.	%	Pts.	%	Pts.	%	Pts.	%	Pts.	%	Pts.	%
Disturbance	HEAVY	13	2								13	2
	LIGHT	144	27								144	27
	UNDISTURB	380	71								380	71
	TOTALS	537	100								537	100
DISPLACED	0	0									0	0
EROSION	0	0									0	0
PUDDLED	0	0									0	0
SMZ	0	0									0	0
ROCK	0	0									0	0
BURN PILES	0	0									0	0



55701091

KOOTENAI NATIONAL FOREST
 SOIL DISTURBANCE MONITORING FORM

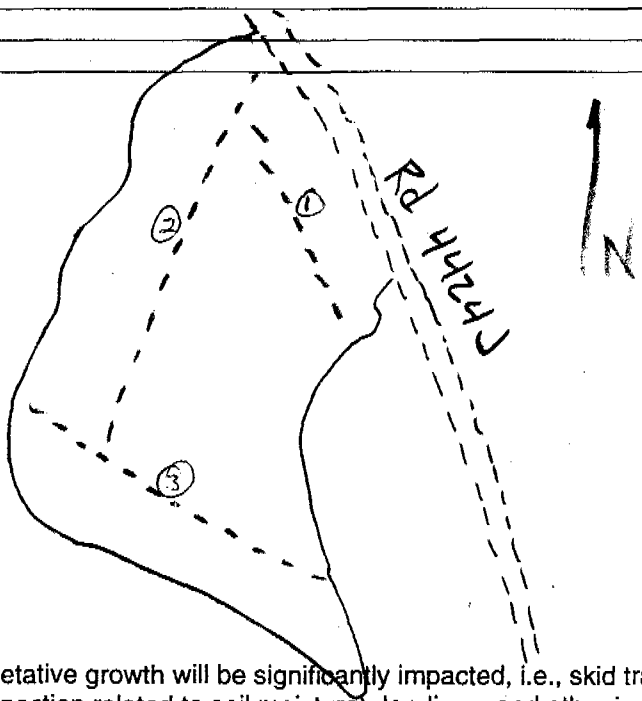
DATE 10.5.99 CUTTING METHOD clippers
 OPERATOR Kuennen SKIDDING METHOD Crawler tractor
 DISTRICT Libby McBride If tractor: dispersed dedicated
 SALE/S.A. Upper Fivemile Salvage HAZARD TREATMENT BB Fall 1999 Excavator line w/thrower
 Unit # 297 Acres 6 SILVICULTURAL TREATMENT SD/LPP
 H.T. SAF/Vacc - Libo OPERATION PERIOD August 1997
 Slope 5-15 w/ several rock bluffs Location: ridge top Aspect: ENE
 COMPACTION (Heavy) L

COMPACTION (Light)	<input checked="" type="checkbox"/>	4
Middle	<input checked="" type="checkbox"/>	6
DISPLACED	<input checked="" type="checkbox"/>	3
UNDISTURBED	<input checked="" type="checkbox"/>	30
	<input checked="" type="checkbox"/>	40
	<input checked="" type="checkbox"/>	40
	<input checked="" type="checkbox"/>	170
	<input checked="" type="checkbox"/>	160
	<input checked="" type="checkbox"/>	110
	<input checked="" type="checkbox"/>	5
EXCAVATED SKID TRAIL	<input type="checkbox"/>	8/13
SMZ/ROCK	<input type="checkbox"/>	

COMMENTS 8-12" ash over till w/ occasional residual. Area underlain by
bedrock. 7-10 T of CWD. Landings about 1/2 ft at end of road

B prior to transecting; looks very good - removal of needles
w/ps w/ churning of O2. Sufficient CWD left.

SHAPE OF UNIT AND PATTERN OF TRANSECT

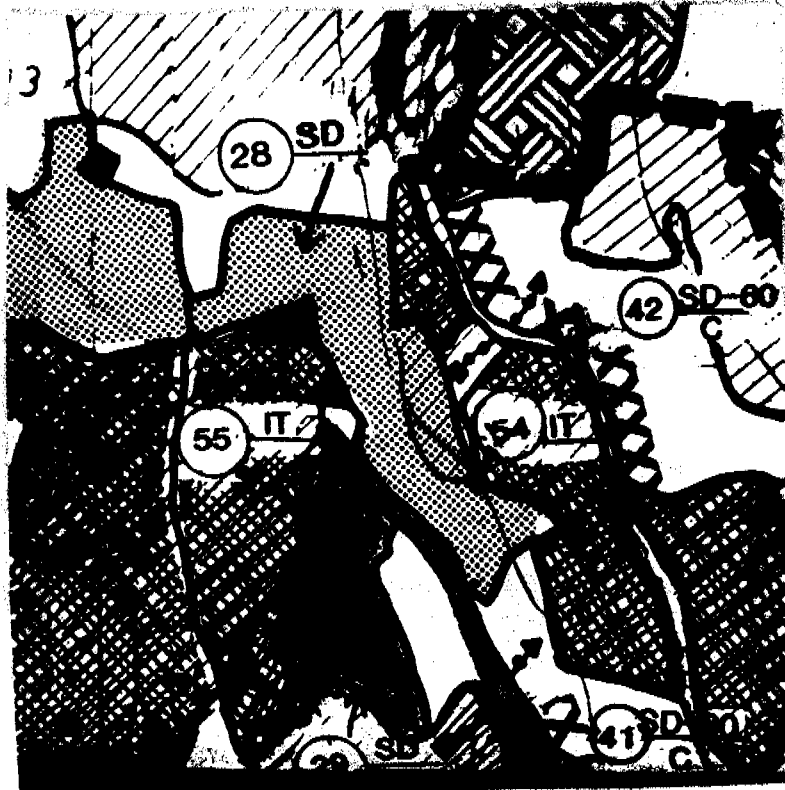


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 COMPACTION (Light) - Any other area not included in heavy COMPACTION or UNDISTURBED.
 UNDISTURBED - No signs of any machinery or skidding activity.
 DISPLACED - Any place soil has been mounded by machinery, also include in heavy or light compaction.

TRANSECT SUMMARY FORM

Lower⁽¹⁾ Middle⁽²⁾ Upper⁽³⁾

	Transect 1		Transect 2		Transect 3		Transect 4		Transect 5		TOTALS		
	Pts.	%	Pts.	%	Pts.	%	Pts.	%	Pts.	%	Pts.	%	
D i s t u r b	HEAVY	3	2	6	3	4	2					13	2
	LIGHT	40	26	40	19	30	15					110	20
	UNDISTURB	110	72	160	78	170	83					440	78
	TOTALS	153	100	206	100	204	100					563	100
	DISPLACED	13	8	8	4	5	2					26	5
	EROSION	0	0	0	0	0	0					0	0
	PUDDLED	0	0	0	0	0	0					0	0
	SMZ	0	0	0	0	0	0					0	0
	ROCK	0	0	0	0	0	0					0	0
	BURN PILES	0	0	0	0	0	0					0	0



704 06 24

Fork Fork

07/02/1999
Libby - Fork Fork Salvage
Unit 1
70406024

KOOTENAI NATIONAL FOREST SOIL DISTURBANCE MONITORING FORM

DATE July 2, 1999 CUTTING METHOD clipper
 OBSERVER R. Kueyner SKIDDING METHOD RTS
 DISTRICT Cabinet If tractor: dispersed _____ dedicated X
 SALE/S.A. Fork Fork Salvage Hill HAZARD TREATMENT BB - not done yet
 Unit # 1 Acres 36 SILVICULTURAL TRMT LTM
 H.T. w/#/w RC/Clun OPERATION PERIOD Early summer May-June
 Slope 0-140% Elev: 2500 - 2700 Aspect: southwest
 Location valley bottom

lower upper
 COMPACTION (Heavy) 17
 10

COMPACTION (Light) 190
 170

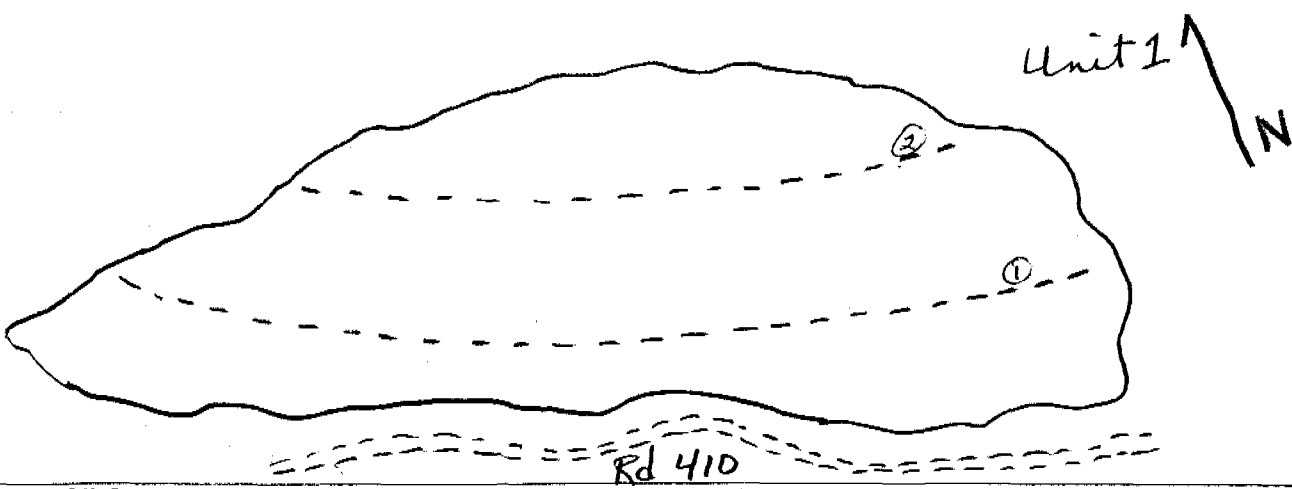
UNDISTURBED 190
 180

DISPLACED 5
 7

EXCAVATED SKID TRAIL _____
 SMZ/ROCK _____

COMMENTS
The unit generally looks good. The layout of the unit provided a need for an excavated trail along S edge of unit

SHAPE OF UNIT AND PATTERN OF TRANSECT



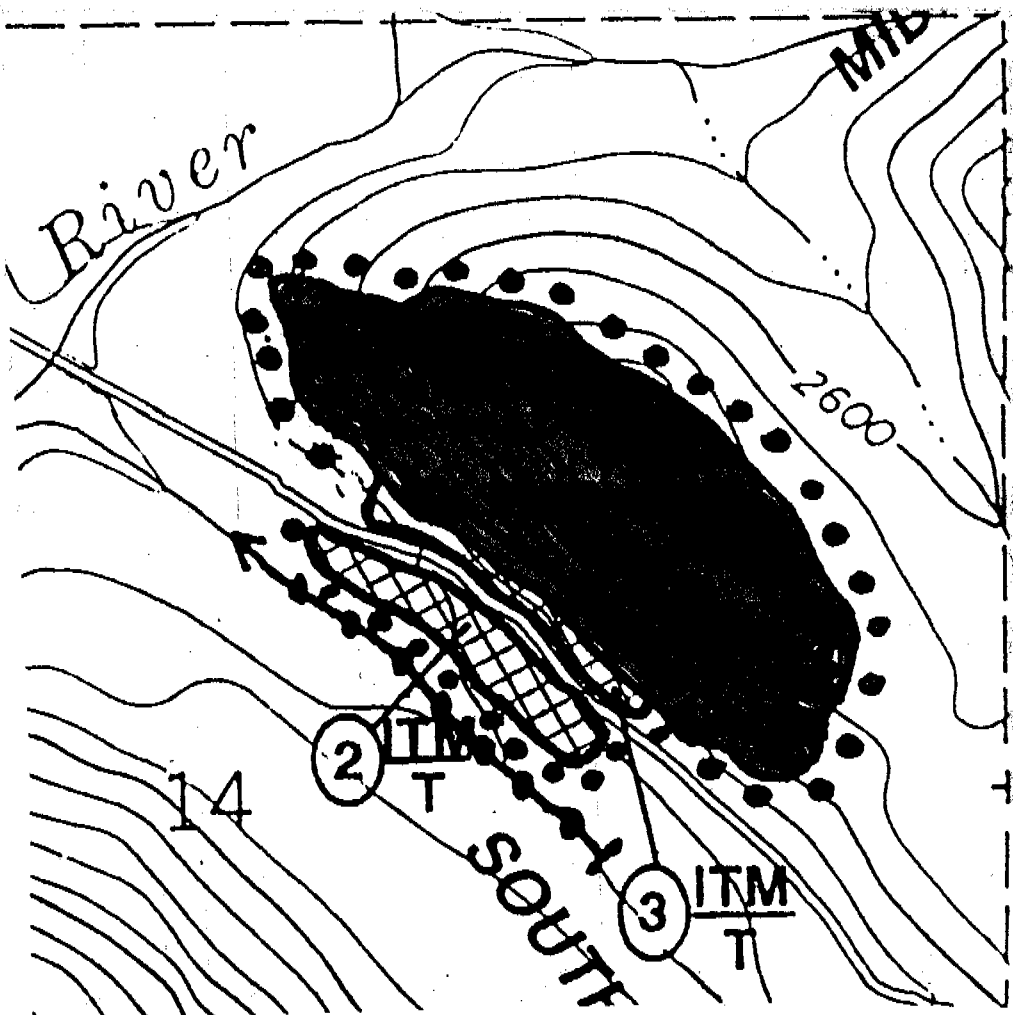
COMPACTION (Heavy) - Any place where future vegetative growth will be significantly impacted, i.e., skid trails (both heavily and lightly used depending on amount of compaction related to soil moisture), landings, and other impacted areas.
 COMPACTION (Light) - Any other area not included in heavy COMPACTION or UNDISTURBED.
 UNDISTURBED - No signs of any machinery or skidding activity.
 DISPLACED - Any place soil has been mounded by machinery, also include in heavy or light compaction.
 SMZ - Include within transect if within harvest unit.

TRANSECT SUMMARY FORM

lower south

upper north

	Transect 1		Transect 2		Transect 3		Transect 4		Transect 5		TOTALS	
	Pts.	%	Pts.	%	Pts.	%	Pts.	%	Pts.	%	Pts.	%
Disturbance	HEAVY	17	4	10	3						27	4.5
	LIGHT	190	48	170	47						360	47.5
	UNDISTURB	190	48	180	50						370	49
TOTALS		397	100	360	100						757	100
DISPLACED		5	1	7	2						12	1.5
EROSION		0	0	0	0						0	0
PUDDLED		0	0	0	0						0	0
SMZ		0	0	0	0						0	0
ROCK		0	0	0	0						0	0
BURN PILES		0	0	0	0						0	0



704 08 03
1-17

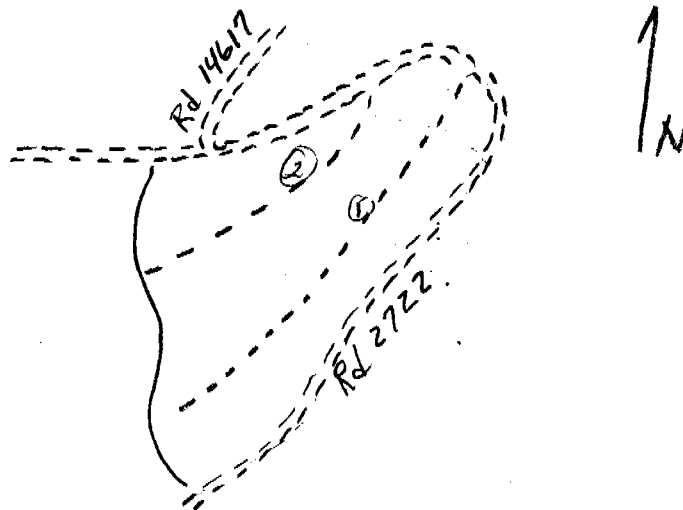
Berray Mtn. Helicopter Re-ad
 07/22/1999
 Libby - Berray Mountain
 Unit 2 70408003
KOOTENAI NATIONAL FOREST
SOIL DISTURBANCE MONITORING FORM

DATE	7/22/99	CUTTING METHOD	hand
OBSERVER	Ruennen	SKIDDING METHOD	RTS
DISTRICT	Cabinet	If tractor:	dispersed <input type="checkbox"/> dedicated <input checked="" type="checkbox"/>
SALE/S.A.	Berray Mt. (Hill)	HAZARD TREATMENT	not treated yet
Unit #	2	SILVICULTURAL TRMT	seed tree
Acres	8	GENERATION PERIOD	July 1999
H.T.	WH/Chen (bottom), DF/Phon (hillside)		
Slope	15-30	Ele: 2400'-2500'	
Location	Slope bottom		
COMPACTION (Heavy)	lower <input checked="" type="checkbox"/>	16	Old: lower <input checked="" type="checkbox"/> 9
upper	L	7	upper <input type="checkbox"/> 5
COMPACTION (Light)	lower <input checked="" type="checkbox"/>		100
upper	<input checked="" type="checkbox"/>		40
UNDISTURBED	lower <input checked="" type="checkbox"/>		40
upper	<input checked="" type="checkbox"/>		60
DISPLACED	lower <input checked="" type="checkbox"/>		12
upper	L		6
EXCAVATED SKID TRAIL	lower <input checked="" type="checkbox"/>		9
upper	L		5
SMZ/ROCK			

COMMENTS

There are old skid trails w/ the unit. These old trails show no signs of erosion + do not need any waterbars. NE portion of unit has 15-20 percent of cobbles + stones on the surface. Landing areas in southern part of unit needs some ripping. 10% of the detrimental disturbance observed over 60% is from past logging activities.

SHAPE OF UNIT AND PATTERN OF TRANSECT

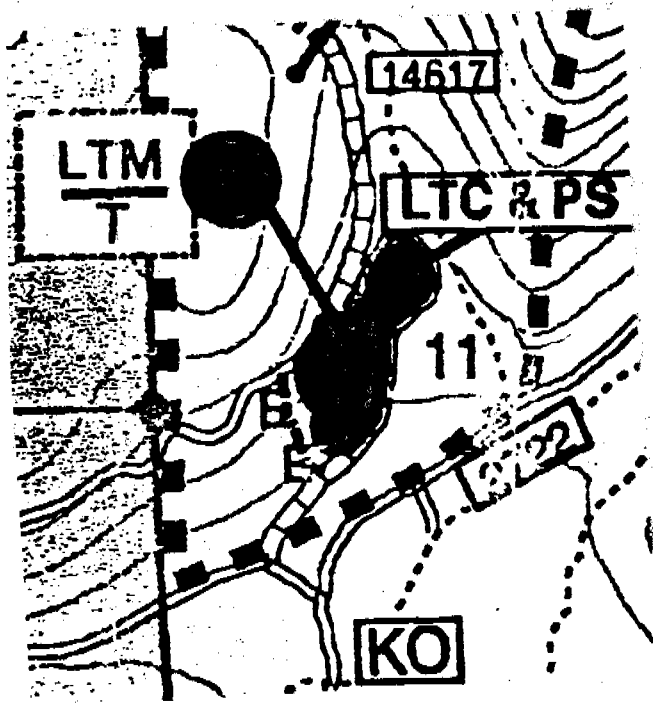


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COMPACTION (Light) - Any other area not included in heavy COMPACTION or UNDISTURBED.
UNDISTURBED - No signs of any machinery or skidding activity.
DISPLACED - Any place soil has been mounded by machinery, also include in heavy or light compaction.
 SMZ - Include within transect if within harvest unit

TRANSECT SUMMARY FORM

lower *upper* *lower* *upper*
old trail *old trail*

	Transect 1		Transect 2		Transect 3		Transect 4		Transect 5		TOTALS	
	Pts.	%	Pts.	%	Pts.	%	Pts.	%	Pts.	%	Pts.	%
Disturbance												
HEAVY	16	10	7	6			9	6	5	5	23	9
LIGHT	100	64	40	37							140	53
UNDISTURB	40	26	60	56							100	38
TOTALS	156	100	107	100							263	100
DISPLACED	12	8	6	6							18	9
EROSION												
<i>excavated trail</i> PUDDLED	9	6	5	5							14	5
SMZ	0	0	0	0							0	0
ROCK	0	0	0	0							0	0
BURN PILES	0	0	0	0							0	0



713 04 062

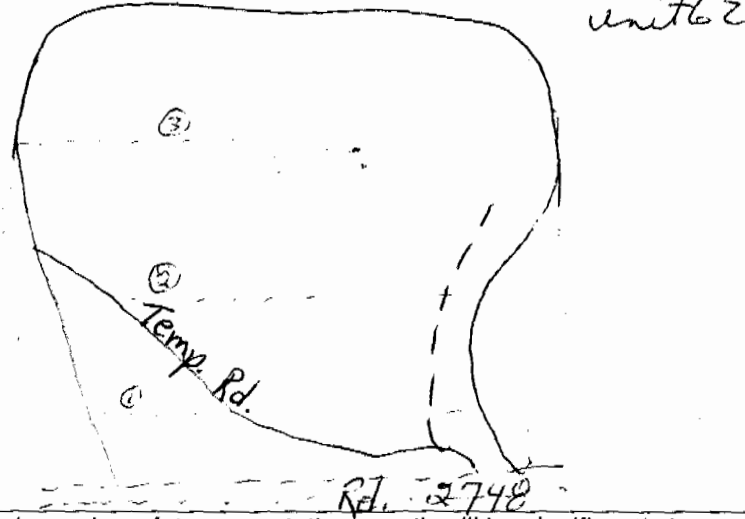
Smeads-Rice
 KOOTENAI NATIONAL FOREST
 SOIL DISTURBANCE MONITORING FORM

DATE 9.29.99 CUTTING METHOD clipper + hand
 SERVER Kuennen SKIDDING METHOD RTS
 DISTRICT Cabinet If tractor: dispersed dedicated
 SALE/S.A. Smeads Rice HAZARD TREATMENT not treated yet
 Unit # 62 Acres 12 SILVICULTURAL TRMT IT
 H.T. GF/goldthread - WRC OPERATION PERIOD Sept. 1999
 Slope 25-40 Aspect: East
 Location mid slope Ele: 2750 - 3050'

COMPACTION (Heavy) upper: <input checked="" type="checkbox"/>	10
middle: <input type="checkbox"/>	8
lower: <input checked="" type="checkbox"/>	10
COMPACTION (Light) upper: <input checked="" type="checkbox"/>	10.5
middle: <input checked="" type="checkbox"/>	10.2
lower: <input checked="" type="checkbox"/>	10.3
UNDISTURBED upper: <input checked="" type="checkbox"/>	12.4
middle: <input checked="" type="checkbox"/>	90
lower: <input checked="" type="checkbox"/>	70
DISPLACED upper: <input checked="" type="checkbox"/>	13
middle: <input checked="" type="checkbox"/>	18
lower: <input checked="" type="checkbox"/>	20
EXCAVATED SKID TRAIL middle: <input type="checkbox"/>	8
lower: <input checked="" type="checkbox"/>	12
SMZ/ROCK	

COMMENTS Excavated trail put to bed. 6-10" volcanic ash over residual.

SHAPE OF UNIT AND PATTERN OF TRANSECT

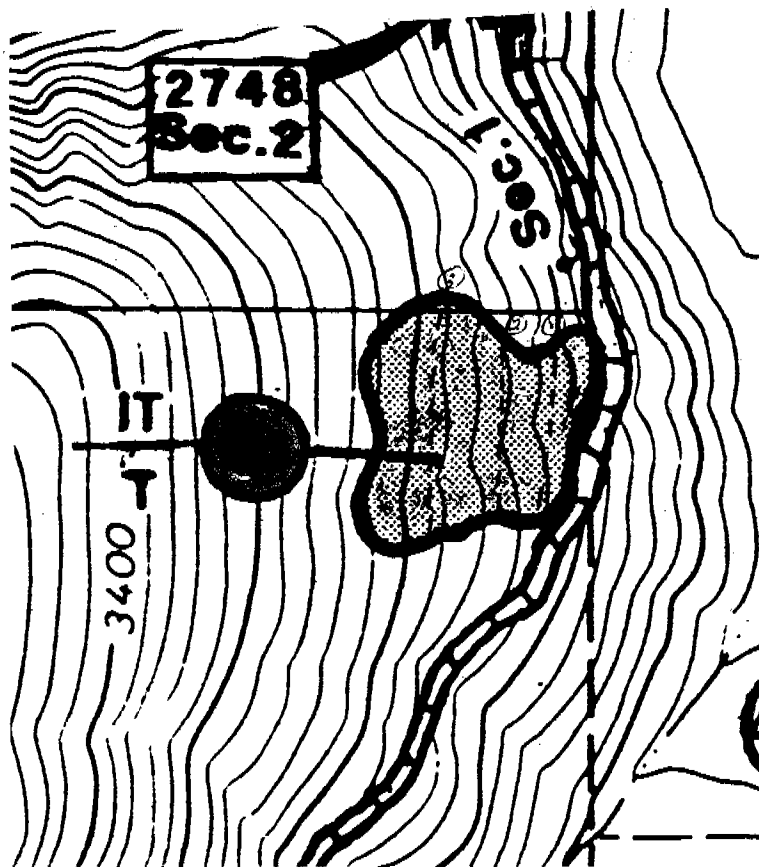


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 COMPACTION (Light) - Any other area not included in heavy COMPACTION or UNDISTURBED.
 UNDISTURBED - No signs of any machinery or skidding activity.
 DISPLACED - Any place soil has been mounded by machinery, also include in heavy or light compaction.
 - if within harvest unit.

TRANSECT SUMMARY FORM

Lower mid upper

	Transect 1		Transect 2		Transect 3		Transect 4		Transect 5		TOTALS		
	Pts.	%	Pts.	%	Pts.	%	Pts.	%	Pts.	%	Pts.	%	
D i s t u r b	HEAVY	10	6	8	4	10	4					28	4.5
	LIGHT	103	56	102	51	105	44					310	50
	UNDISTURB	70	38	90	45	124	52					284	45.5
	TOTALS	183	100	200	100	239	100					622	100
	DISPLACED	20	11	18	9	13	5					51	8
	EXPOSED <i>Excavated</i> PUDDLED	12	7	8	4	0	0					20	3
	SMZ	0	0	0	0	0	0						
	ROCK	0	0	0	0	0	0						
	BURN PILES	0	0	0	0	0	0						



713 04 067 Smeads-Rice

KOOTENAI NATIONAL FOREST
 SOIL DISTURBANCE MONITORING FORM

DATE 9/29/99 CUTTING METHOD clipper
 OBSERVER Kulennen SKIDDING METHOD RT3
 DISTRICT Cabinet If tractor: dispersed dedicated
 SALE/S.A. Smeads-Rice Hill HAZARD TREATMENT not treated yet
 Unit # 67 Acres 20 SILVICULTURAL TRMT LTM
 H.T. DF/Phma - GF- OPERATION PERIOD Sept. 1999
 Slope north-25-15; south-15-40 Aspect: North of Rd - E, Easterly, southerly, westerly
 Location mid slope Elevation: 3250-3500' South of Rd - northerly

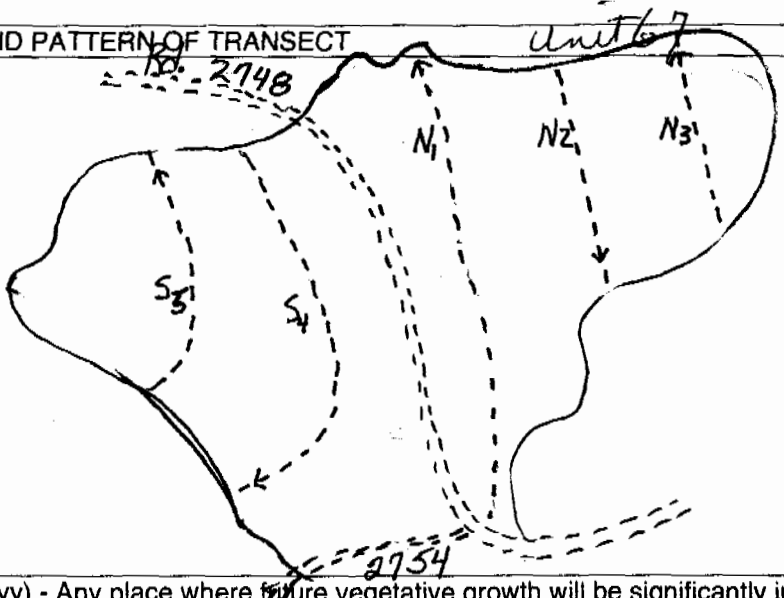
Category	Code	Count
COMPACTION (Heavy)	N1	19
	N2	8
	N3	11
	S4	21
	S5	13
COMPACTION (Light)	N1	240
	N2	101
	N3	150
	S4	160
	S5	127
UNDISTURBED	N1	28
	N2	23
	N3	30
	S4	50
	S5	30
DISPLACED	N1	9
	N2	10
	N3	3
EXCAVATED SKID TRAIL	S4	30
	S5	20

SMZ/ROCK

COMMENTS
 12 Transect 1 parallel road to the north - very gentle slope (<10), deep ash, WRC/Libo/Kete
 13 Transect 2 across where unit narrows, ash less deep, 25-15% slope
 14 Transect across upper part of north side, good ash, 2-10% slope GF/Penny/Kete
 15 1/2 Rd to the south, 25-40% slope, a lot more displacement
 16 upper part of slope south, 2-20% slope, ash not as deep as north, angular rock closer to surface.

Lots of organic debris on gd., Very little 7.5" debris, adequate 3-5" CWD

SHAPE OF UNIT AND PATTERN OF TRANSECT



COMPACTION (Heavy) - Any place where future vegetative growth will be significantly impacted, i.e., skid trails (both heavily and lightly used depending on amount of compaction related to soil moisture), landings, and other impacted areas.
 COMPACTION (Light) - Any other area not included in heavy COMPACTION or UNDISTURBED.
 UNDISTURBED - No signs of any machinery or skidding activity.
 DISPLACED - Any place soil has been mounded by machinery, also include in heavy or light compaction.

TRANSECT SUMMARY FORM

N1

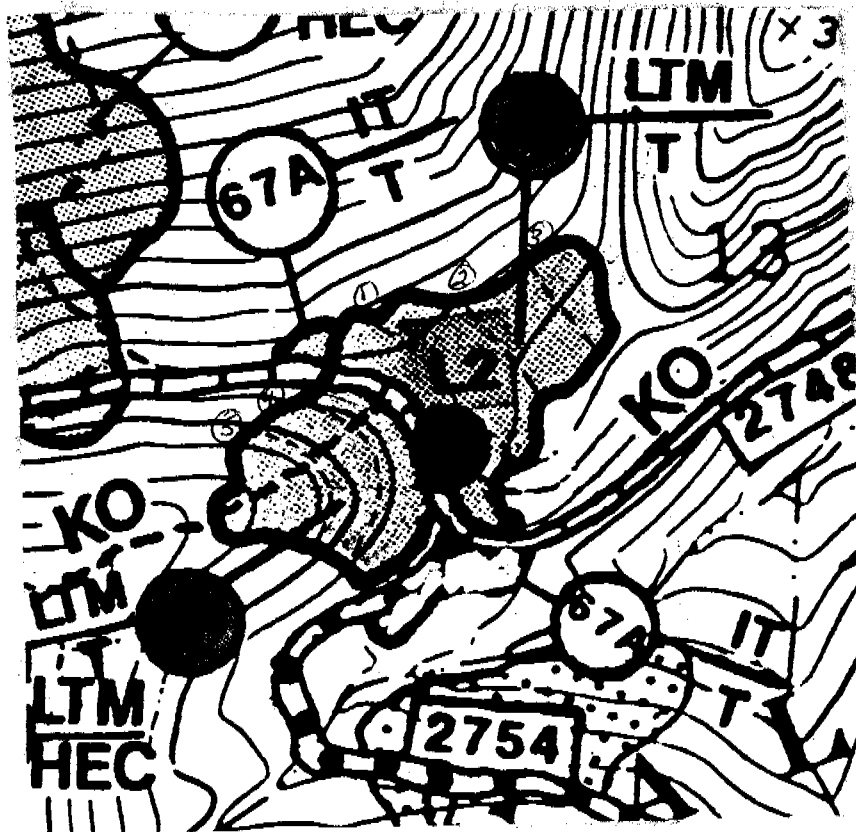
N2

N3

S4

S5

	Transect 1		Transect 2		Transect 3		Transect 4		Transect 5		TOTALS	
	Pts.	%	Pts.	%	Pts.	%	Pts.	%	Pts.	%	Pts.	%
DISPLACED	9	3	10	8	3	1	30	13	20	12	72	7
EROSION	0	0	0	0	0	0	0	0	0	0	0	0
PUDDLED	0	0	0	0	0	0	0	0	0	0	0	0
SMZ	0	0	0	0	0	0	0	0	0	0	0	0
ROCK	0	0	0	0	0	0	0	0	0	0	0	0
BURN PILES	0	0	0	0	0	0	0	0	0	0	0	0
HEAVY	19	7	8	6	11	6	21	9	13	8	72	7
LIGHT	240	83	101	77	150	78	160	69	127	75	778	77
UNDISTURB	28	10	23	17	30	16	50	22	30	17	161	16
TOTALS	287	100	132	100	191	100	231	100	170	100	1011	100



13101111

~~Walk Through~~

07/28/1999
Rexford - Middle Fork Pest Control
Unit 6
13101111
RTS

KOOTENAI NATIONAL FOREST
SOIL DISTURBANCE MONITORING FORM

TE 7/28/99
 SERVER Kuennen
 DISTRICT Rexford
 SALE/S.A. Middle Fork P.C.
 Unit # 6 Acres 32
 H.T. SAF/Vasc
 Slope 10-35 SSW
 Location upper slope
 COMPACTON (Heavy) 6-8" ash Ravalli quartzite

CUTTING METHOD hand
 SKIDDING METHOD RTS
 If tractor: dispersed dedicated
 HAZARD TREATMENT BB: fall '97
 SILVICULTURAL TRMT seed tree SD
 OPERATION PERIOD summer 1992
 E/E: 5150-5600

COMPACTON (Light)

UNDISTURBED

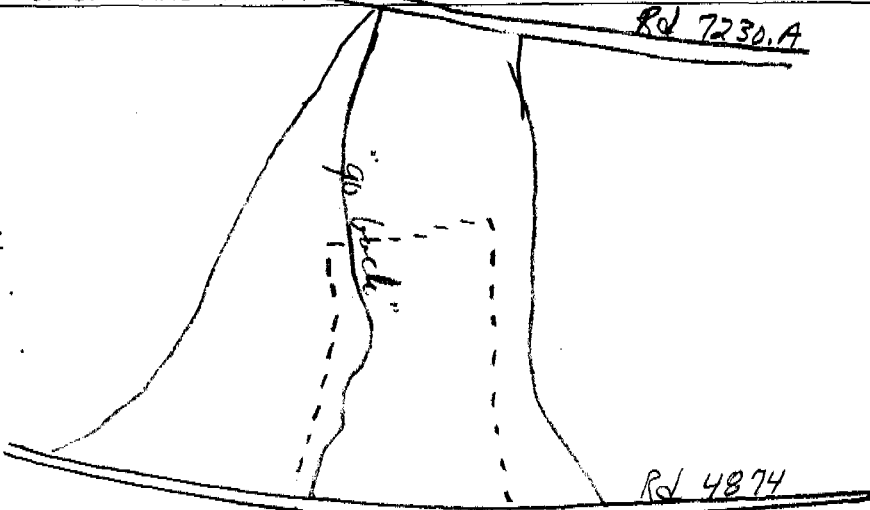
DISPLACED

EXCAVATED SKID TRAIL

SMZ/ROCK

COMMENTS Lots of surface rock -- upwards of 50% in upper part of unit.
 Firelines look good -- built by excavator. Water bars used -- there had been water running in the firelines not all the water bars would have carried water far enough to keep from coming back onto firelines.
 Only real obvious trail is the "go back". Displacement occurred water was carried in wheel tracks -- there could have been more water bars. The yarding tracks were very hard to detect. They could be picked up because of noxious weeds found on unit.
 13" + GWP very minimal. Unit probably burned too hot since there are no surface organics (fines) left.

SHAPE OF UNIT AND PATTERN OF TRANSECT

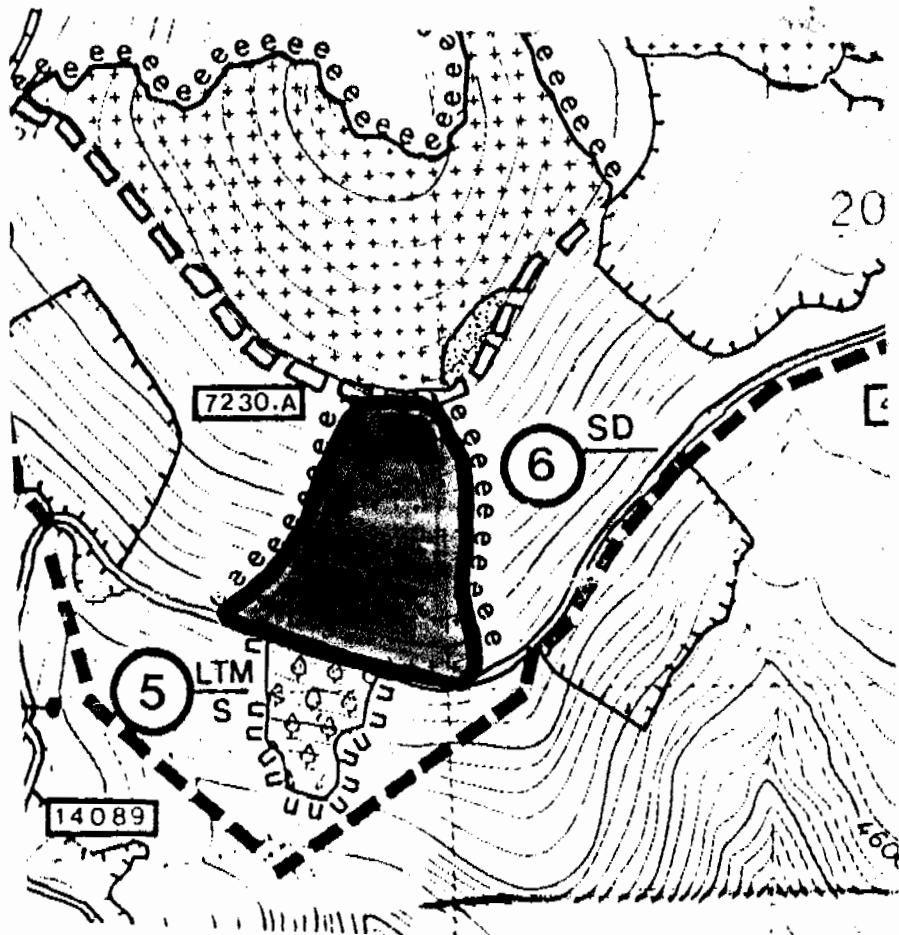


In general the unit looks good, < 5% detrimental disturbance.

COMPACTON (Heavy) - Any place where future vegetative growth will be significantly impacted, i.e., skid trails (both heavily and lightly used depending on amount of compaction related to soil moisture), landings, and other impacted areas.
 COMPACTON (Light) - Any other area not included in heavy COMPACTON or UNDISTURBED.
 UNDISTURBED - No signs of any machinery or skidding activity.
 DISPLACED - Any place soil has been mounded by machinery, also include in heavy or light compaction.

TRANSECT SUMMARY FORM

	Transect 1		Transect 2		Transect 3		Transect 4		Transect 5		TOTALS	
	Pts.	%	Pts.	%	Pts.	%	Pts.	%	Pts.	%	Pts.	%
D i s t u r b												
HEAVY												
LIGHT												
UNDISTURB												
TOTALS												
DISPLACED												
EROSION												
PUDDLED												
SMZ												
ROCK												
BURN PILES												



131 01 117

Walk Through

07/28/1999
Rexford - Middle Fork Pest Control
Unit 22
13101117
RTS

KOOTENAI NATIONAL FOREST SOIL DISTURBANCE MONITORING FORM

DATE 7/28/99 CUTTING METHOD clipper
 OBSERVER Kenhen SKIDDING METHOD RTS
 DISTRICT Rexford If tractor: dispersed dedicated
 SALE/S.A. Middle Fork P.C. HAZARD TREATMENT BB Fall '97
 Unit # 22 Acres 18 SILVICULTURAL TRMT seed tree SD
 H.T. SAF/Vasc OPERATION PERIOD Summer '92
 Slope 5-25 Aspect: northeast Kevalk quartzite
 Location upper slope Ele: 5300-5800 6-8" ash
 COMPACTION (Heavy)

COMPACTION (Light)

UNDISTURBED

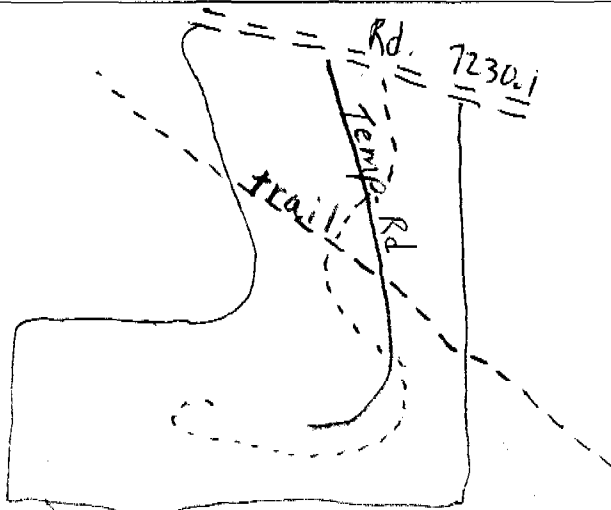
DISPLACED

EXCAVATED SKID TRAIL

SMZ/ROCK

COMMENTS Lots of surface rock in southwest part of unit. Also some bedrock exposed. BB fall of 1997 - cool - lots of fines and CWD left. Temp road excavated on lower end, partially recontoured. Generally not very distinguishable. Firelines look good, built w/ excavator and waterbars placed properly. Upper part of unit w/ 100 feet of ridge top. (Rd. 7230.1)
Ditch functioning well as are most of the culverts. There are insufficient culverts as evidenced by the ditch scouring in places.

SHAPE OF UNIT AND PATTERN OF TRANSECT



Unit looks very good!

COMPACTION (Heavy) - Any place where future vegetative growth will be significantly impacted, i.e., skid trails (both heavily and lightly used depending on amount of compaction related to soil moisture), landings, and other impacted areas.
COMPACTION (Light) - Any other area not included in heavy COMPACTION or UNDISTURBED.

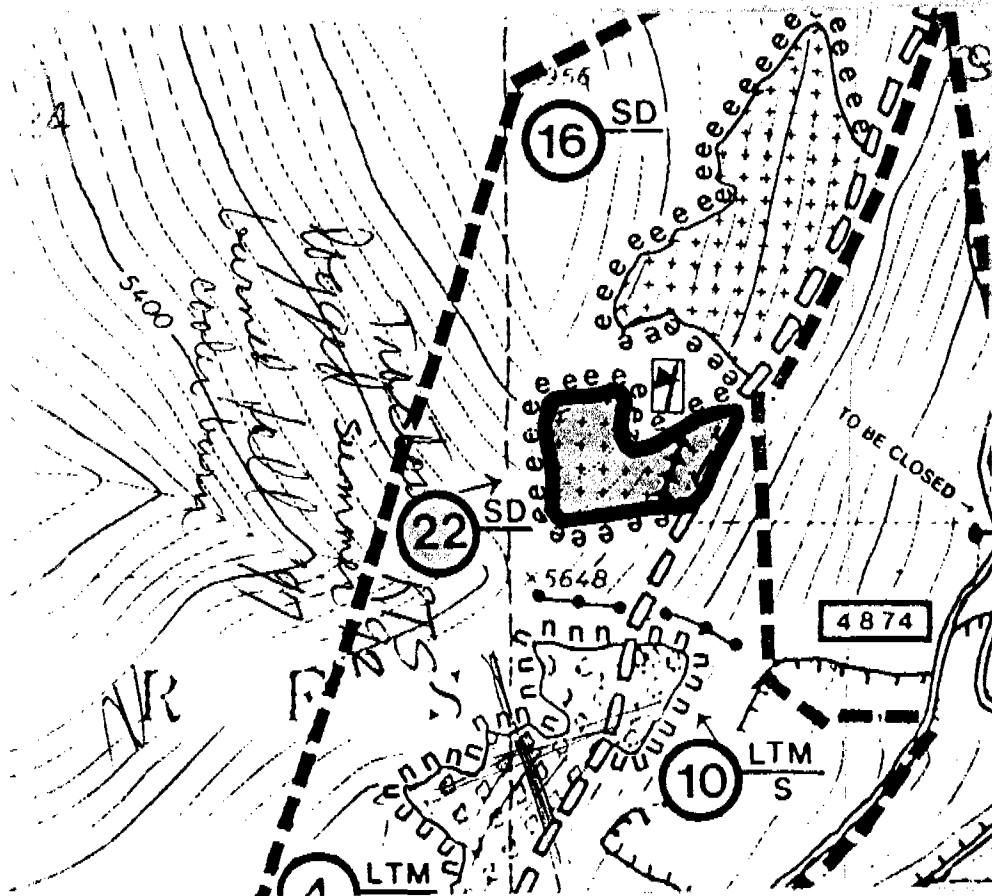
UNDISTURBED - No signs of any machinery or skidding activity.

DISPLACED - Any place soil has been mounded by machinery, also include in heavy or light compaction.

SMZ - include within transect if within harvest unit

TRANSECT SUMMARY FORM

	Transect 1		Transect 2		Transect 3		Transect 4		Transect 5		TOTALS	
	Pts.	%	Pts.	%	Pts.	%	Pts.	%	Pts.	%	Pts.	%
D												
i												
s												
t												
u												
r												
b												
TOTALS												
DISPLACED												
EROSION												
PUDDLED												
SMZ												
ROCK												
BURN PILES												



12604156

Walk Through

KOOTENAI NATIONAL FOREST
 SOIL DISTURBANCE MONITORING FORM

SERVER 8/11/99 CUTTING METHOD Process at stump
 DISTRICT Kuchman SKIDDING METHOD Skyline - below rd, tractor - above
 SALE/S.A. Rexford Woodgr If tractor: dispersed dedicated
 Unit # 11 HAZARD TREATMENT BB w/ fireline fuel break 1996
 Acres 41 SILVICULTURAL TRMT SD / ST
 H.T. OPERATION PERIOD 1995 Summer
 Slope 20-40 Aspect: SSE 8-12" Volcanic ash
 Location lower to mid Elevation: 4500-4900
 COMPACTION (Heavy)

COMPACTION (Light)

UNDISTURBED

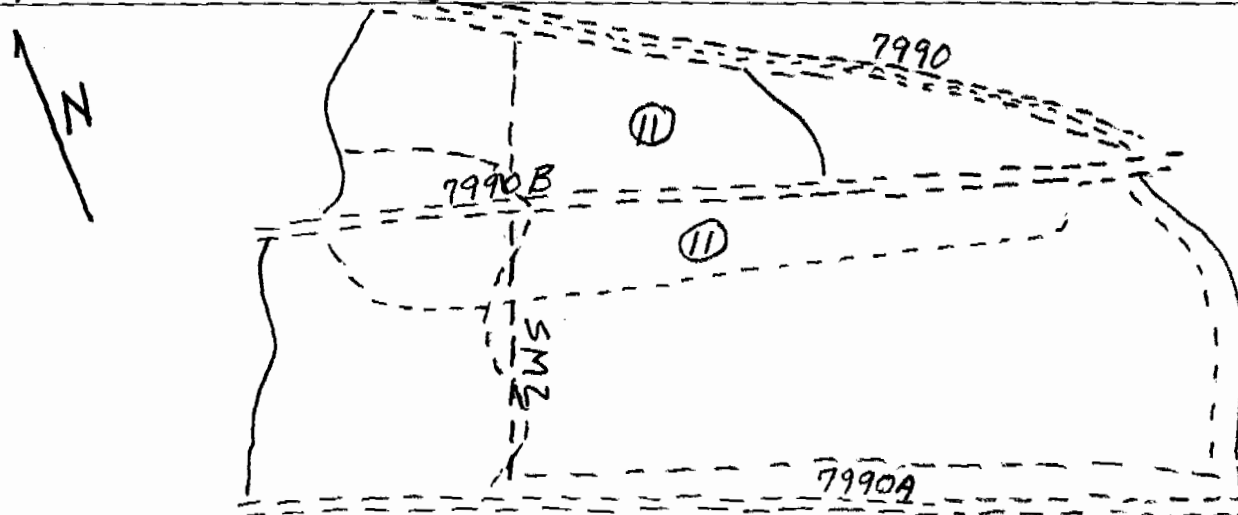
DISPLACED

EXCAVATED SKID TRAIL

SMZ/ROCK all w/ greater than 14" stumps left.

COMMENTS Unit contained mostly LPP w/ some Larch + Doug-fir. L + DP left as seed trees - some of which blew down. Cable corridor every 20-30 feet. Other than the machine fireline below Rd 7990B there is no soil disturbance. Firelines were by excavator w/ throwback. The area is underlain by Prichard quartzite. There is a good volcanic ash layer. Because of the hard bedrock lots of the soil water moves laterally through the soil and is often intercepted by the rocks. This water moves across the roads by pipes where it is concentrated, sometimes causes erosion below the outlets. There is a little detrimental disturbance above the Rd. 7990B. There is some sloughing of the cut slope on Rd. 7990A. Part of a district BNPI audit.

SHAPE OF UNIT AND PATTERN OF TRANSECT



COMPACTION (Heavy) - Any place where future vegetative growth will be significantly impacted, i.e., skid trails (both heavily and lightly used depending on amount of compaction related to soil moisture), landings, and other impacted areas.

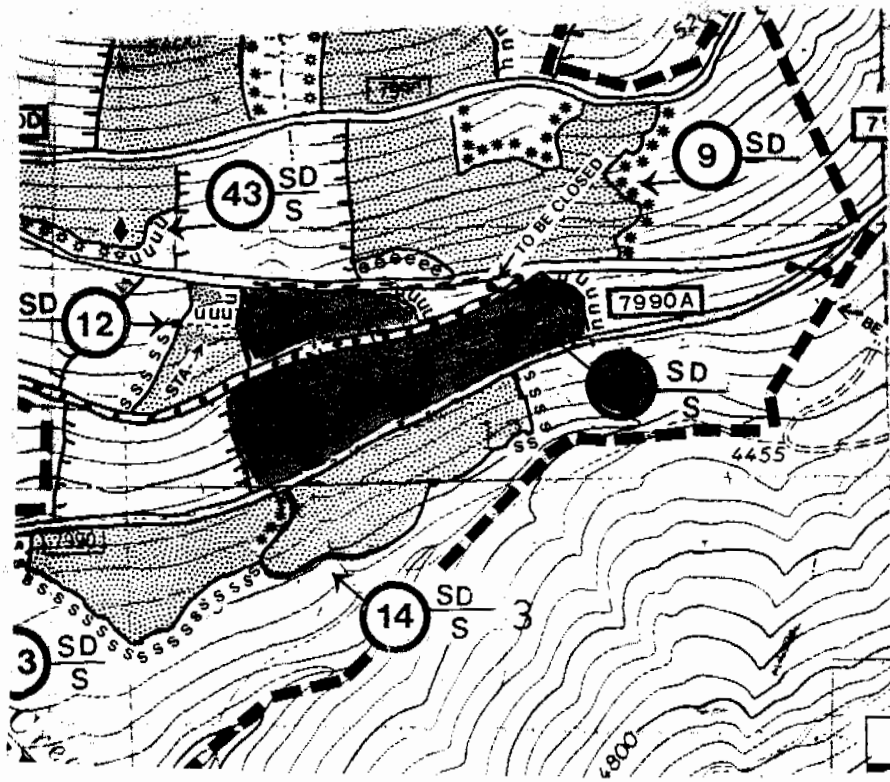
COMPACTION (Light) - Any other area not included in heavy COMPACTION or UNDISTURBED.

UNDISTURBED - No signs of any machinery or skidding activity.

DISPLACED - Any place soil has been mounded by machinery, also include in heavy or light compaction.

TRANSECT SUMMARY FORM

	Transect 1		Transect 2		Transect 3		Transect 4		Transect 5		TOTALS	
	Pts.	%	Pts.	%	Pts.	%	Pts.	%	Pts.	%	Pts.	%
Dis												
urbed												
TOTALS												
DISPLACED												
EROSION												
PUDDLED												
SMZ												
ROCK												
BURN PILES												



126-04-155

Walk Through
 KOOTENAI NATIONAL FOREST
 SOIL DISTURBANCE MONITORING FORM

DATE 8/11/99 CUTTING METHOD Process at Stumps
 OBSERVER K. W. ... SKIDDING METHOD Tractor
 DISTRICT Rexford If tractor: dispersed dedicated
 SALE/S.A. Brier Patch P.C. HAZARD TREATMENT BB w/ skyline fuel track 199
 Unit # 12 Acres 9 SILVICULTURAL TRMT SD / LPP ST
 H.T. SAE / 0.1m / mete OPERATION PERIOD Summer 1995
 Slope 15-35 Aspect & SSE
 Location mid Elevation: 4700 - 4900
 COMPACTION (Heavy) _____

COMPACTION (Light) _____

UNDISTURBED _____

DISPLACED _____

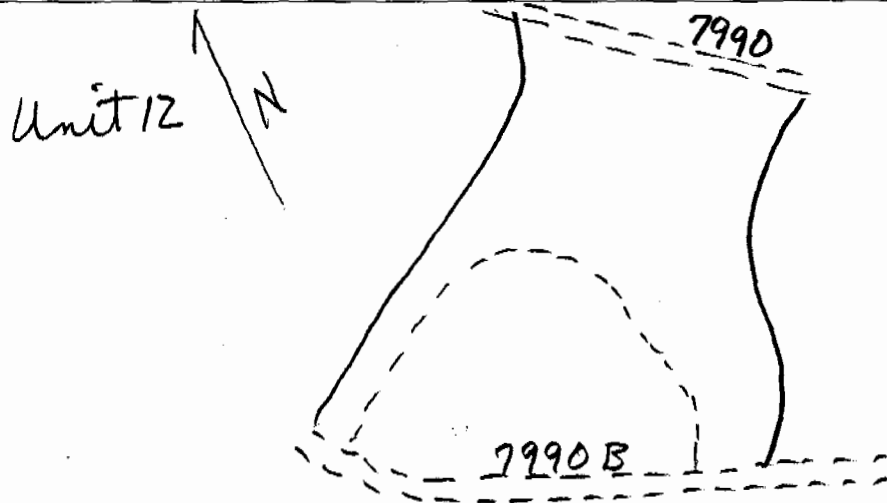
EXCAVATED SKID TRAIL _____

SMZ/ROCK _____

COMMENTS

*The unit looks good. There is some detrimental disturbance in the unit. The review was part of a district BMP audit.
 all WL > 14" stumps height left.*

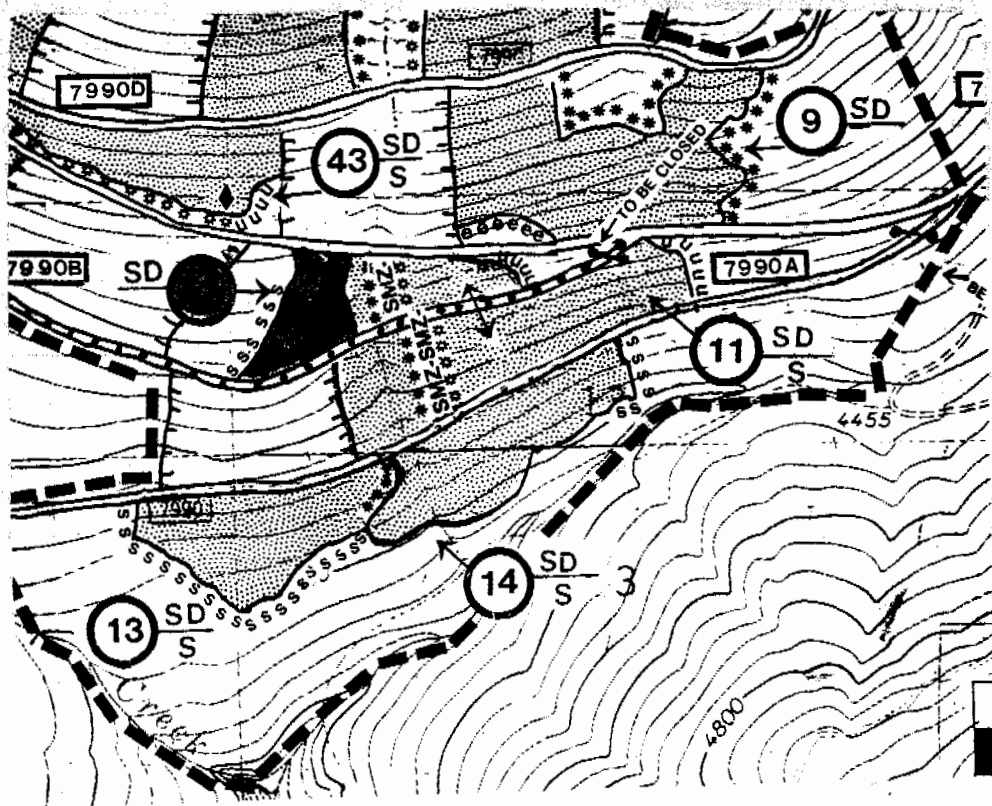
SHAPE OF UNIT AND PATTERN OF TRANSECT



COMPACTION (Heavy) - Any place where future vegetative growth will be significantly impacted, i.e., skid trails (both heavily and lightly used depending on amount of compaction related to soil moisture), landings, and other impacted areas.
COMPACTION (Light) - Any other area not included in heavy COMPACTION or UNDISTURBED.
UNDISTURBED - No signs of any machinery or skidding activity.
DISPLACED - Any place soil has been mounded by machinery, also include in heavy or light compaction.

TRANSECT SUMMARY FORM

	Transect 1		Transect 2		Transect 3		Transect 4		Transect 5		TOTALS	
	Pts.	%	Pts.	%	Pts.	%	Pts.	%	Pts.	%	Pts.	%
D i s t u r b												
HEAVY												
LIGHT												
UNDISTURB												
TOTALS												
DISPLACED												
EROSION												
PUDDLED												
SMZ												
ROCK												
BURN PILES												



353 06 010

~~Walk Through~~
KOOTENAI NATIONAL FOREST
SOIL DISTURBANCE DATA FORM

09/13/1999

Fortine - Lost Lamb Salvage

Unit 3

35306010

Forwarder

DATE Sept. 13, 1999

CUTTING METHOD clipper/processor

OBSERVER Kuennen

SKIDDING METHOD Forwarder

DISTRICT Fortine

HAZARD TREATMENT WTP, landing clean-up

SALL Post Lamb Salvage
Unit No: 3 Acres: 10

SILVICULTURAL TREATMENT SD (dead + down LPP)

HT: DF/Arnr - SAF/Lito

OPERATION PERIOD summer 1998

Slope: lower Aspect: SSW Ele: 4400 - 4500'

COMPACTION (Heavy)

COMPACTION (Light)

UNDISTURBED

DISPLACED

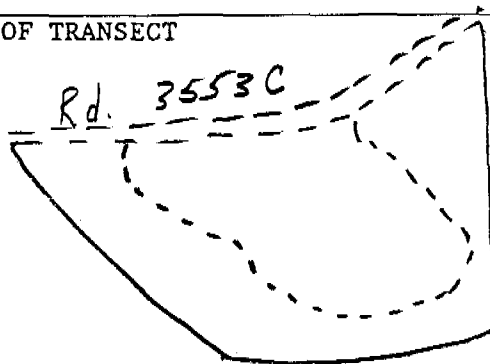
EXCAVATED SKID TRAIL

SMZ

COMMENTS Unit is bordered by SMZs on three sides. Topography is broken w/ scattered rock outcrop. Part of a forest BMP review. Unit generally looks good. Removal of all standing dead + down dead LPP.

SHAPE OF UNIT AND PATTERN OF TRANSECT

Unit 3



COMPACTION (Heavy) - any place where future vegetative growth will be significantly impacted, i.e., skid trails (both heavily and lightly used depending on amount of compaction related to soil moisture), landings, and other impacted areas.

COMPACTION (Light) - any other area not included in heavy COMPACTION or UNDISTURBED.

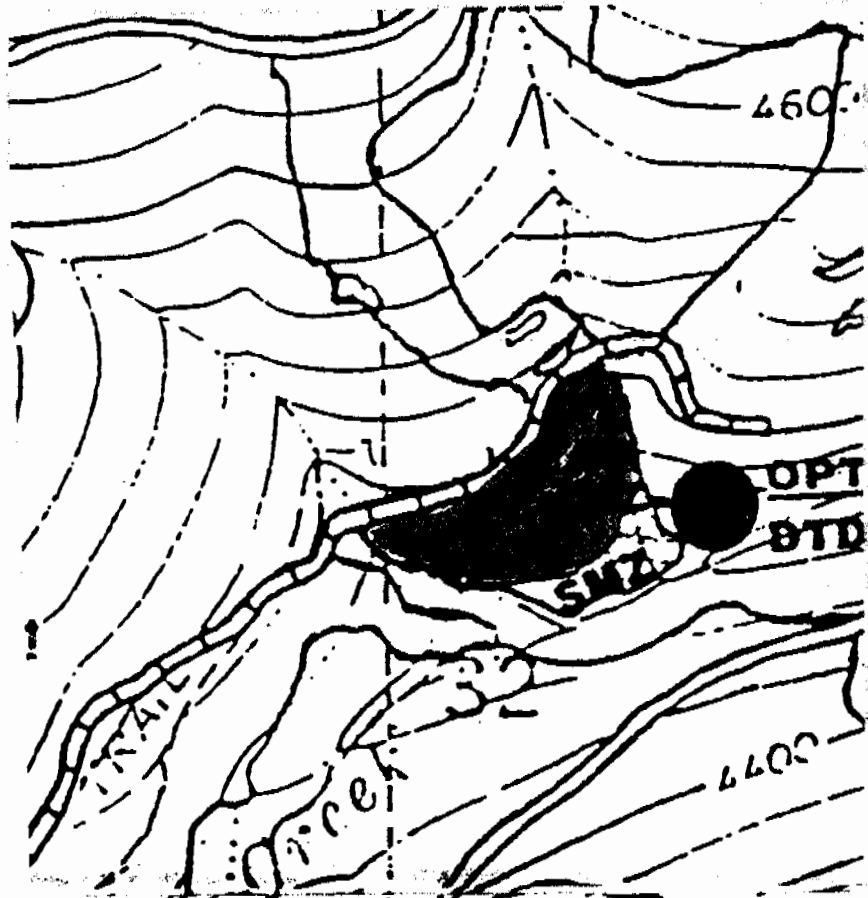
UNDISTURBED - no signs of any machinery or skidding activity.

DISPLACED - any place soil has been mounded by machinery, also include in heavy or light compaction.

SMZ - include within transect if within harvest unit.

TRANSECT SUMMARY FORM

	Transect 1	Transect 2	Transect 3	Transect 4	Transect 5	TOTALS		
	Pts.	%	Pts.	%	Pts.	%	Pts.	%
D i s t u r b								
HEAVY								
LIGHT								
UNDISTURB								
TOTALS								
DISPLACED								
EROSION								
PUDDLED								
SMZ								
ROCK								
BURN PILES								



406 01 176

Forwarder

09/24/1999

Three Rivers - Roaring Meadows Salvage

Unit 38B

40601176

KOOTENAI NATIONAL FOREST
SOIL DISTURBANCE MONITORING FORM

DATE 9.24.99 CUTTING METHOD clipper
 OBSERVER Kuennen, Benedict SKIDDING METHOD forwarder
 DISTRICT Three Rivers If tractor: dispersed dedicated ✓
 SALE/S.A. Roaring Meadows Salv HAZARD TREATMENT not treated yet (Excavator pile)
 Unit # 38B Acres 12 SILVICULTURAL TRMT LTM / LF (SC w/ reserves)
 H.T. W.H. / Clintonia OPERATION PERIOD winter - Jan - Feb. 1999
 Slope 10-25% Aspect: northwest
 Location mid slope Elevation: 3600 - 3700
 COMPACTION (Heavy) _____

COMPACTION (Light) _____

UNDISTURBED _____

DISPLACED _____

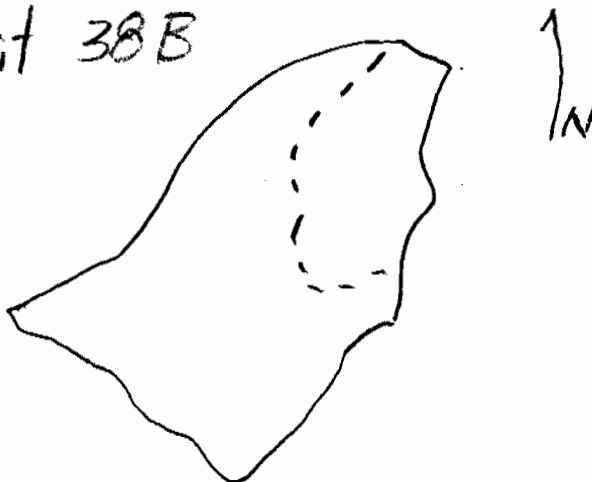
EXCAVATED SKID TRAIL _____

SMZ/ROCK _____

COMMENTS We walked along a snow road / temporary road to access Unit 38B. In a few places the road was heavily disturbed. There was plenty of CWD + fines as of now. Less than 10% percent of detrimental disturbance was observed. Unit looks good.

SHAPE OF UNIT AND PATTERN OF TRANSECT

Unit 38B



COMPACTION (Heavy) - Any place where future vegetative growth will be significantly impacted, i.e., skid trails (both heavily and lightly used depending on amount of compaction related to soil moisture), landings, and other impacted areas.

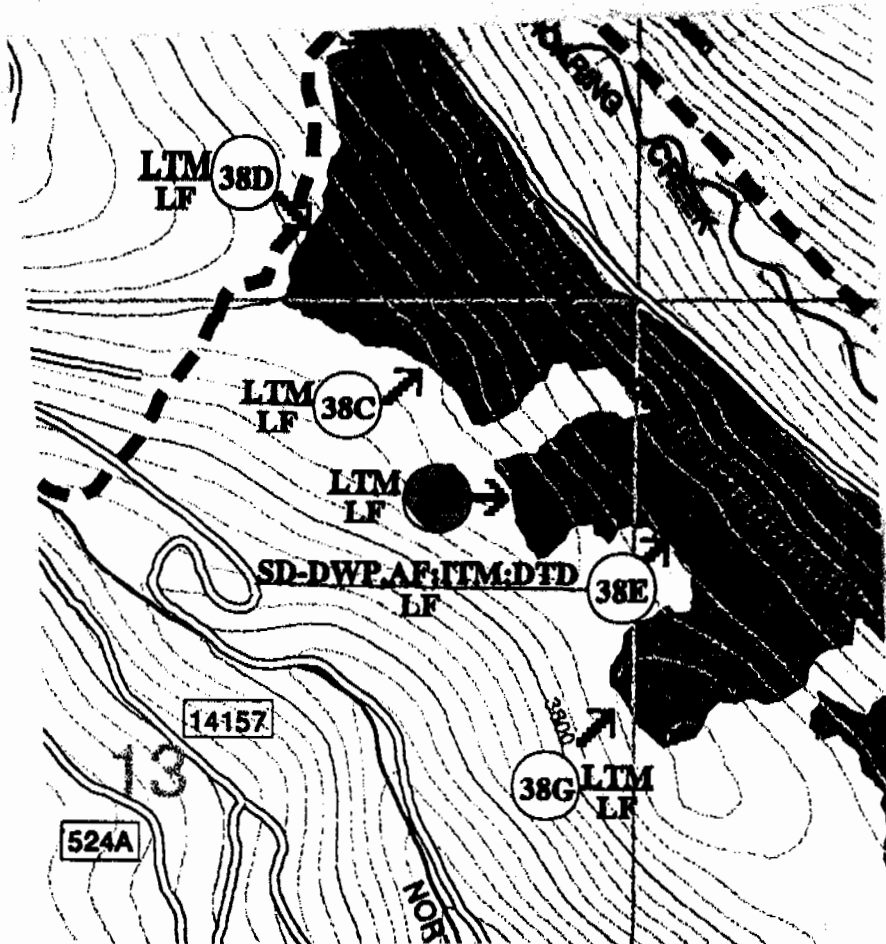
COMPACTION (Light) - Any other area not included in heavy COMPACTION or UNDISTURBED.

UNDISTURBED - No signs of any machinery or skidding activity.

DISPLACED - Any place soil has been mounded by machinery, also include in heavy or light compaction.

TRANSECT SUMMARY FORM

	Transect 1		Transect 2		Transect 3		Transect 4		Transect 5		TOTALS	
	Pts.	%	Pts.	%	Pts.	%	Pts.	%	Pts.	%	Pts.	%
Disturbed												
HEAVY												
LIGHT												
Undisturbed												
UNDISTURB												
TOTALS												
DISPLACED												
EROSION												
PUDDLED												
SMZ												
ROCK												
BURN PILES												



406 01 179

Forwarder

09/24/1999

Three Rivers - Roaring Meadows Salvage

Unit 38G

40601179

KOOTENAI NATIONAL FOREST
SOIL DISTURBANCE MONITORING FORM

DATE 9.24.99 CUTTING METHOD clipper
 OPERATOR Kremen, Benedict SKIDDING METHOD forwarder
 DISTRICT Three Rivers Shero If tractor: dispersed dedicated
 SALE/S.A. Roaring Meadows Salv. HAZARD TREATMENT not treated yet. (Excavator pile)
 Unit # 38G Acres 21 SILVICULTURAL TREATMENT LTM / LF (CC w/ reserves)
 H.T. WH / Clintonia OPERATION PERIOD Jan - Feb 1999
 Slope 5-2.5% Aspect: northeast Ele: 3700-3950
 COMPACTION (Heavy) [redacted]

COMPACTION (Light) _____

UNDISTURBED _____

DISPLACED _____

EXCAVATED SKID TRAIL _____

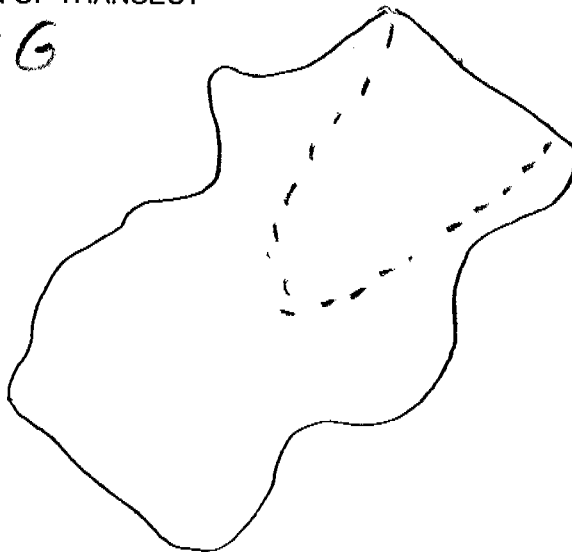
SMZ/ROCK _____

COMMENTS

Unit looks good.

SHAPE OF UNIT AND PATTERN OF TRANSECT

Unit 38G



COMPACTION (Heavy) - Any place where future vegetative growth will be significantly impacted, i.e., skid trails (both heavily and lightly used depending on amount of compaction related to soil moisture), landings, and other impacted areas.

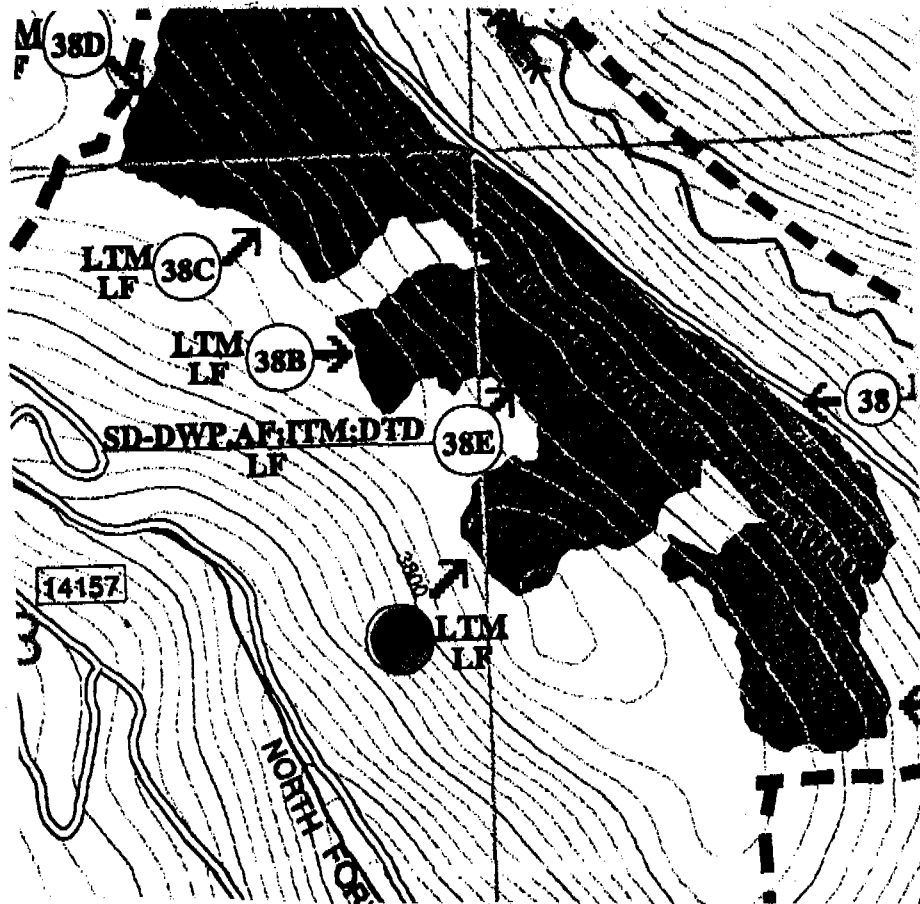
COMPACTION (Light) - Any other area not included in heavy COMPACTION or UNDISTURBED.

UNDISTURBED - No signs of any machinery or skidding activity.

DISPLACED - Any place soil has been mounded by machinery, also include in heavy or light compaction.

TRANSECT SUMMARY FORM

	Transect 1		Transect 2		Transect 3		Transect 4		Transect 5		TOTALS	
	Pts.	%	Pts.	%	Pts.	%	Pts.	%	Pts.	%	Pts.	%
D i s t u r b												
HEAVY												
LIGHT												
UNDISTURB												
TOTALS												
DISPLACED												
EROSION												
PUDDLED												
SMZ												
ROCK												
BURN PILES												



405 03 196

09/24/1999
Three Rivers - Roaring Meadows Salvage
Unit 51A
40503196

KOOTENAI NATIONAL FOREST
SOIL DISTURBANCE MONITORING FORM

DATE 9.24.99 CUTTING METHOD clipper
 OBSERVER Kyennen, Benedict SKIDDING METHOD Forwarder
 DISTRICT Three Rivers Skid tractor: dispersed dedicated
 SALE/S.A. Roaring Meadows HAZARD TREATMENT not treated yet (Excavator pile)
 Unit # 51A Acres 3 Salv. SILVICULTURAL TRMT LT M (seed trees w/ reserves)
 H.T. W.H. / Clintonia OPERATION PERIOD Oct - early Dec. 1998
 Slope 10-20% Aspect: northwest
 Location mid slope Elevation: 4200-4300
 COMPACTION (Heavy)

COMPACTION (Light)

UNDISTURBED

DISPLACED

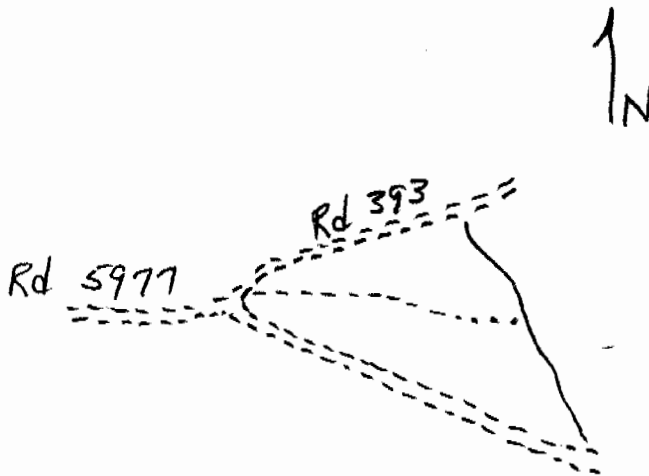
EXCAVATED SKID TRAIL

SMZ/ROCK

COMMENTS

between
 There is plenty of CWD and fines at this point. There are
 approximately 6 major skid trails between the two roads. The logs were
 skidded onto Rd 393 w/ several landings below & adjacent to the
 Rd. Less than one percent of detrital disturbance was
 observed. Some disturbance occurred of the cut slope by
 the skidding machinery.
 Unit: looksgood.

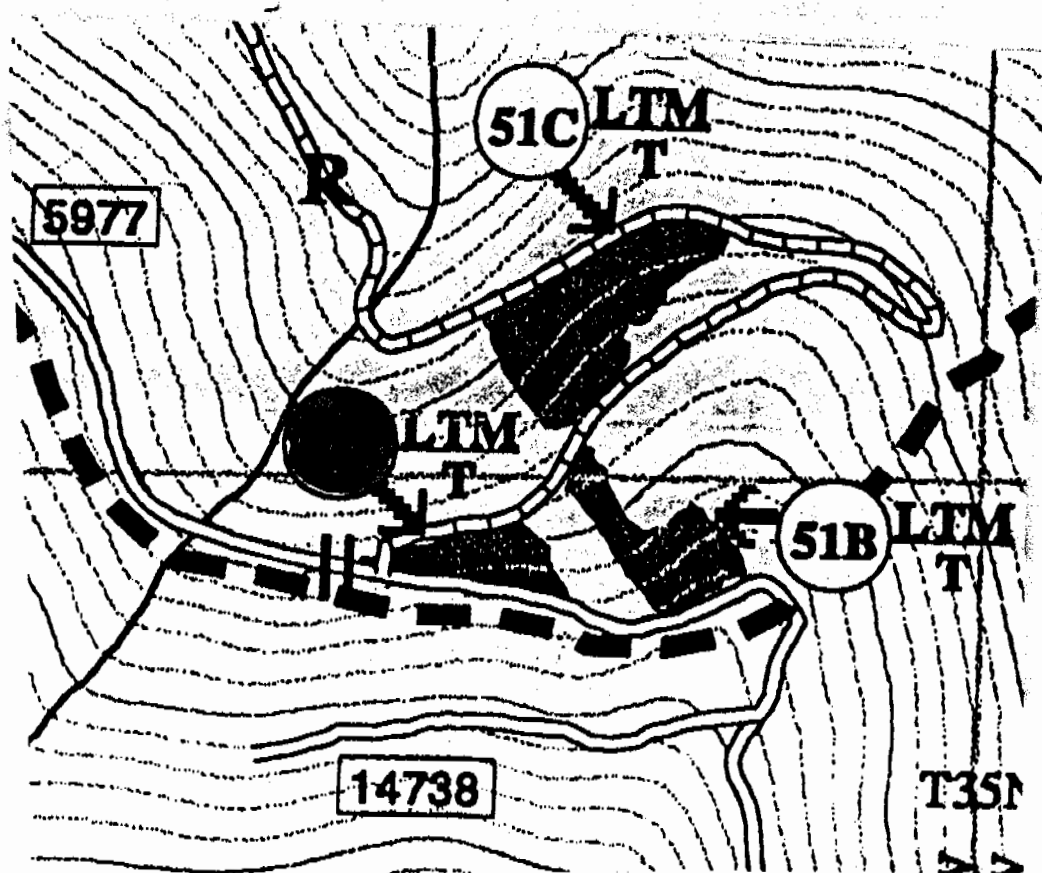
SHAPE OF UNIT AND PATTERN OF TRANSECT



COMPACTION (Heavy) - Any place where future vegetative growth will be significantly impacted, i.e., skid trails (both heavily and lightly used depending on amount of compaction related to soil moisture), landings, and other impacted areas.
COMPACTION (Light) - Any other area not included in heavy COMPACTION or UNDISTURBED.
UNDISTURBED - No signs of any machinery or skidding activity.
DISPLACED - Any place soil has been mounded by machinery, also include in heavy or light compaction.

TRANSECT SUMMARY FORM

	Transect 1		Transect 2		Transect 3		Transect 4		Transect 5		TOTALS	
	Pts.	%	Pts.	%	Pts.	%	Pts.	%	Pts.	%	Pts.	%
D i s t u r b	HEAVY											
	LIGHT											
	UNDISTURB											
	TOTALS											
	DISPLACED											
	EROSION											
	PUDDLED											
	SMZ											
	ROCK											
	BURN PILES											



405 03 197

09/24/1999
Three Rivers - Roaring Meadows Salvage
Unit 51B
40503197

KOOTENAI NATIONAL FOREST
SOIL DISTURBANCE MONITORING FORM

DATE 9.24.99 CUTTING METHOD Clipper
 FORESERVER Kuennen, Bened SKIDDING METHOD forwarder
 DISTRICT Three Rivers Shinalf tractor: dispersed dedicated
 SALE/S.A. Roaring Meadows HAZARD TREATMENT not treated yet (Excavator pile)
 Unit # 51B Acres 3 Subr. SILVICULTURAL TRMT LT M (seed tree) / reserved
 H.T. Hemlock / Clintonii OPERATION PERIOD Oct - early Dec 1998
 Slope 15 - 25% Aspect: northwest
 Location mid slope Elevation: 4100 - 4350
 COMPACTION (Heavy) _____

COMPACTION (Light) _____

UNDISTURBED _____

DISPLACED _____

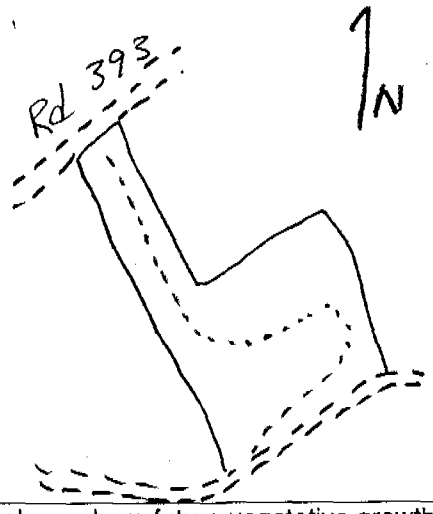
EXCAVATED SKID TRAIL _____

SMZ/ROCK _____

COMMENTS

*This unit was winter logged. There were approximately 2 main skid trails that funnelled into one through the narrow part of the unit. The unit is shaped like a flag w/ a staff with the 1 staff at the lower part of the unit. The only place there was any observable compaction for displacement was on this single trail. It is estimated that to one percent of the unit had detrimental disturbance. There is plenty of CWB and fines. The landing is just above Rd. 393
 Unit looks good*

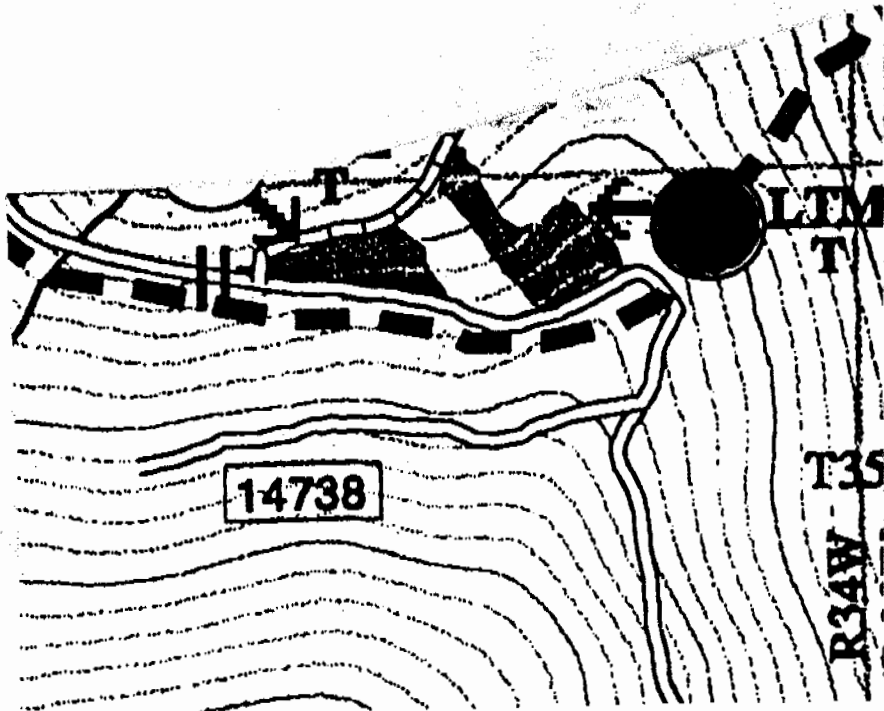
SHAPE OF UNIT AND PATTERN OF TRANSECT



COMPACTION (Heavy) - Any place where future vegetative growth will be significantly impacted, i.e., skid trails (both heavily and lightly used depending on amount of compaction related to soil moisture), landings, and other impacted areas.
COMPACTION (Light) - Any other area not included in heavy COMPACTION or UNDISTURBED.
UNDISTURBED - No signs of any machinery or skidding activity.
DISPLACED - Any place soil has been mounded by machinery, also include in heavy or light compaction.

TRANSECT SUMMARY FORM

	Transect 1		Transect 2		Transect 3		Transect 4		Transect 5		TOTALS	
	Pts.	%	Pts.	%	Pts.	%	Pts.	%	Pts.	%	Pts.	%
D i s t u r b b	HEAVY											
	LIGHT											
	UNDISTURB											
	TOTALS											
	DISPLACED											
	EROSION											
	PUDDLED											
	SMZ											
	ROCK											
	BURN PILES											



40503198

Forwarder

09/24/1999
Three Rivers - Roaring Meadows Salvage
Unit 51C
40503198

KOOTENAI NATIONAL FOREST
SOIL DISTURBANCE MONITORING FORM

DATE 9.24.99 CUTTING METHOD clipper
 OBSERVER Kuennen, Benedict SKIDDING METHOD forwarder
 DISTRICT Three Rivers Shire If tractor: dispersed dedicated
 SALE/S.A. Roaring Meadows HAZARD TREATMENT not treated yet. (Excavator Pile)
 Unit # 51C Acres 6 Selv. SILVICULTURAL TRMT LTM (seed trees w/ reserves)
 H.T. W.H. / Clintonia OPERATION PERIOD Oct. - early Dec. 1998
 Slope 10-25% Aspect: northwest
 Location mid slope Elevation: 3950 - 4100
 COMPACTION (Heavy) _____

COMPACTION (Light) _____

UNDISTURBED _____

DISPLACED _____

EXCAVATED SKID TRAIL _____

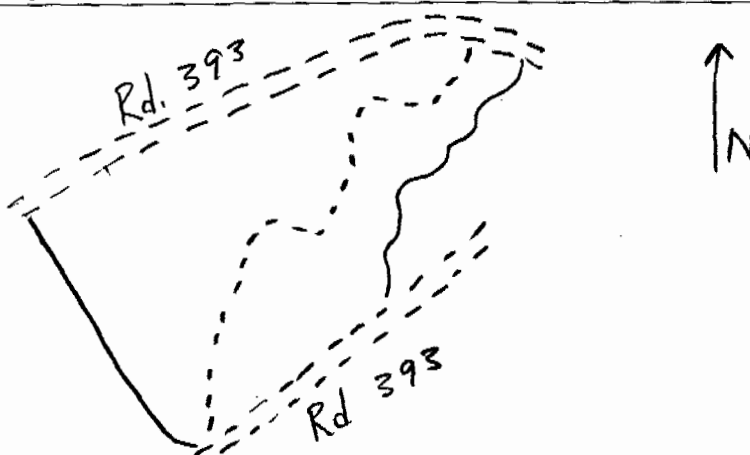
SMZ/ROCK _____

COMMENTS

There is plenty of CWD & fires. The unit was winter logged.
less than two percent detrimental disturbance was observed.
There were 10 main trails or so.
Unit looks good

SHAPE OF UNIT AND PATTERN OF TRANSECT

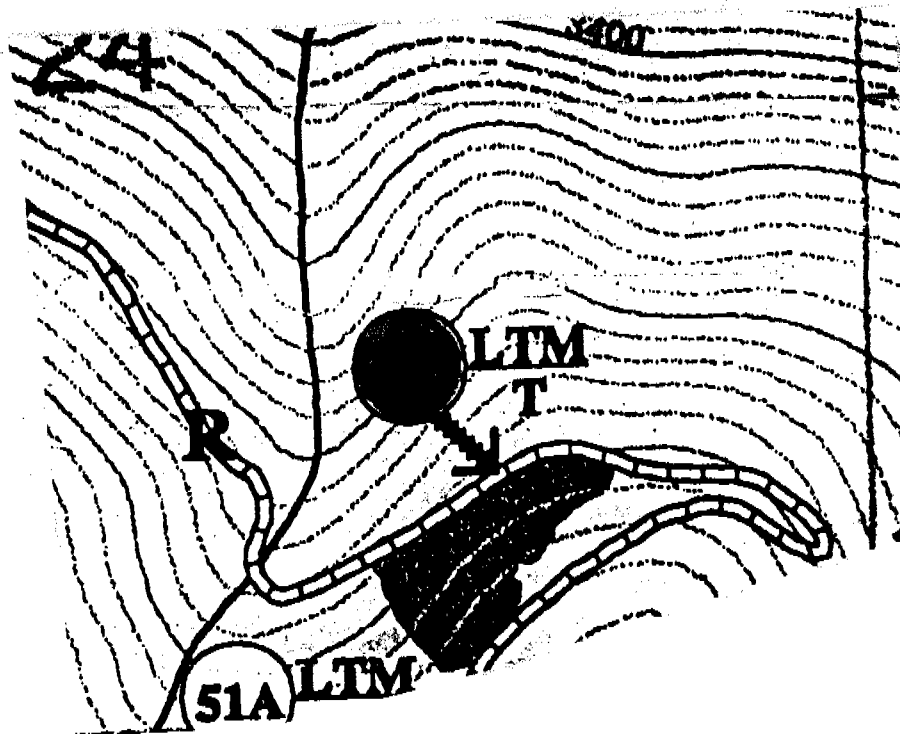
Unit 51C



COMPACTION (Heavy) - Any place where future vegetative growth will be significantly impacted, i.e., skid trails (both heavily and lightly used depending on amount of compaction related to soil moisture), landings, and other impacted areas.
COMPACTION (Light) - Any other area not included in heavy COMPACTION or UNDISTURBED.
UNDISTURBED - No signs of any machinery or skidding activity.
DISPLACED - Any place soil has been mounded by machinery, also include in heavy or light compaction.

TRANSECT SUMMARY FORM

	Transect 1		Transect 2		Transect 3		Transect 4		Transect 5		TOTALS	
	Pts.	%	Pts.	%	Pts.	%	Pts.	%	Pts.	%	Pts.	%
D i s t u r b	HEAVY											
	LIGHT											
	UNDISTURB											
	TOTALS											
	DISPLACED											
	EROSION											
	PUDDLED											
	SMZ											
	ROCK											
	BURN PILES											



04/27/1999

Libby - Boundary Mountain Salvage

Unit 15

56006099

56006099

KOOTENAI NATIONAL FOREST
SOIL DISTURBANCE MONITORING FORM

April 27, 1999

Rohrman/Crawford
Libby Crawford

Boundary Mtn Salv.
15 Acres 29

CUTTING METHOD

clipper cut to length

SKIDDING METHOD

forwarder

If tractor:

dispersed dedicated

HAZARD TREATMENT

not done yet. (Grapple pile)

SILVICULTURAL TRMT

SD/LPP

OPERATION PERIOD

Dec. 1998

Depth 25-35

Aspect | NE

Location mid to upper

Elevation | 4450 - 4650

COMPACTION (Heavy)

COMPACTION (Light)

UNDISTURBED

DISPLACED

EXCAVATED SKID TRAIL

SMZ/ROCK

COMMENTS (Include soil, geology, organic debris, other pertinent info)

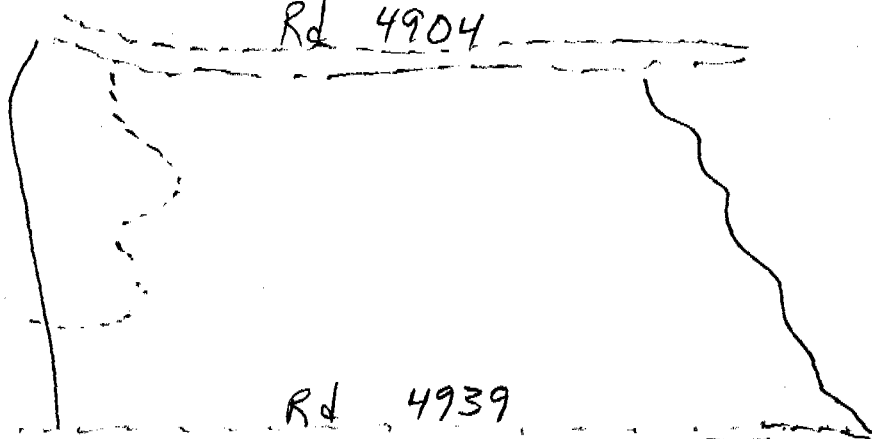
Unit looks good. Winter operations. Some old excavated horizontal trails from much older operations.

SHAPE OF UNIT AND PATTERN OF TRANSECT

Unit 15

Rd 4904

Rd 4939



COMPACTION (Heavy) - Any place where future vegetative growth will be significantly impacted, i.e., skid trails (both heavily and lightly used depending on amount of compaction related to soil moisture), landings, and other impacted areas.

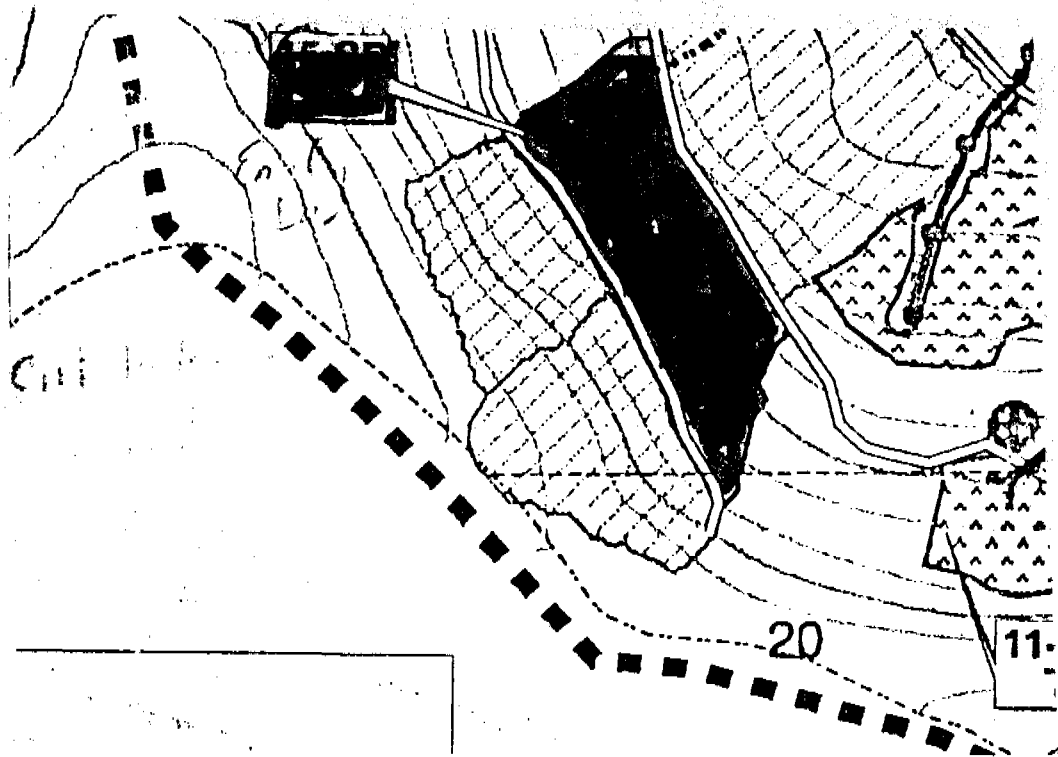
COMPACTION (Light) - Any other area not included in heavy COMPACTION or UNDISTURBED.

UNDISTURBED - No signs of any machinery or skidding activity.

DISPLACED - Any place soil has been mounded by machinery, also include in heavy or light compaction.

TRANSECT SUMMARY FORM

	Transect 1		Transect 2		Transect 3		Transect 4		Transect 5		TOTALS	
	Pts.	%	Pts.	%	Pts.	%	Pts.	%	Pts.	%	Pts.	%
D i s t u r b	HEAVY											
	LIGHT											
	UNDISTURB											
	TOTALS											
	DISPLACED											
	EROSION											
	PUDDLED											
	SMZ											
	ROCK											
	BURN PILES											



560 06 052

KOOTENAI NATIONAL FOREST
SOIL DISTURBANCE MONITORING FORM

04/24/1999

Libby - Boundary Mountain Salvage

Unit 25 56006052

forwarder

DATE April 27, 1999 CUTTING METHOD cut to length
 SERVER Russell/Crawford SKIDDING METHOD forwarder
 DISTRICT Libby Crawford If tractor: dispersed dedicated
 SALE/S.A. Boundary Mtn Salv HAZARD TREATMENT not done yet
 Unit # 25 Acres 36 SILVICULTURAL TRMT SD/LPP
 H.T. _____ OPERATION PERIOD Dec. 1998
 Slope 20-35 Aspect | ENE W. 1/2 N. 1/4
 Location mid to upper Elevation | 4400 - 4600'
 COMPACTION (Heavy) _____

COMPACTION (Light) _____

UNDISTURBED _____

DISPLACED _____

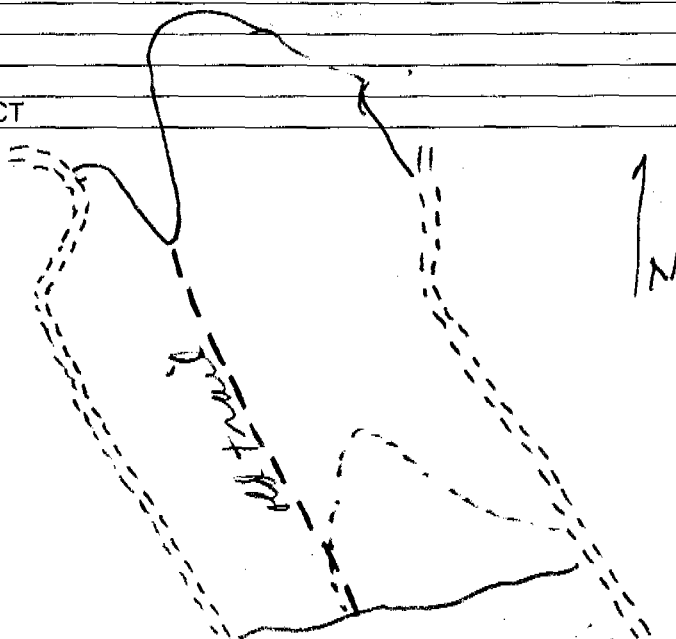
EXCAVATED SKID TRAIL _____

SMZ/ROCK _____

COMMENTS (include soil, geology, organic debris, other pertinent info)

4-8" ash surface. Unit looks good. Winter operations.

SHAPE OF UNIT AND PATTERN OF TRANSECT



COMPACTION (Heavy) - Any place where future vegetative growth will be significantly impacted, i.e., skid trails (both heavily and lightly used depending on amount of compaction related to soil moisture), landings, and other impacted areas.

COMPACTION (Light) - Any other area not included in heavy COMPACTION or UNDISTURBED.

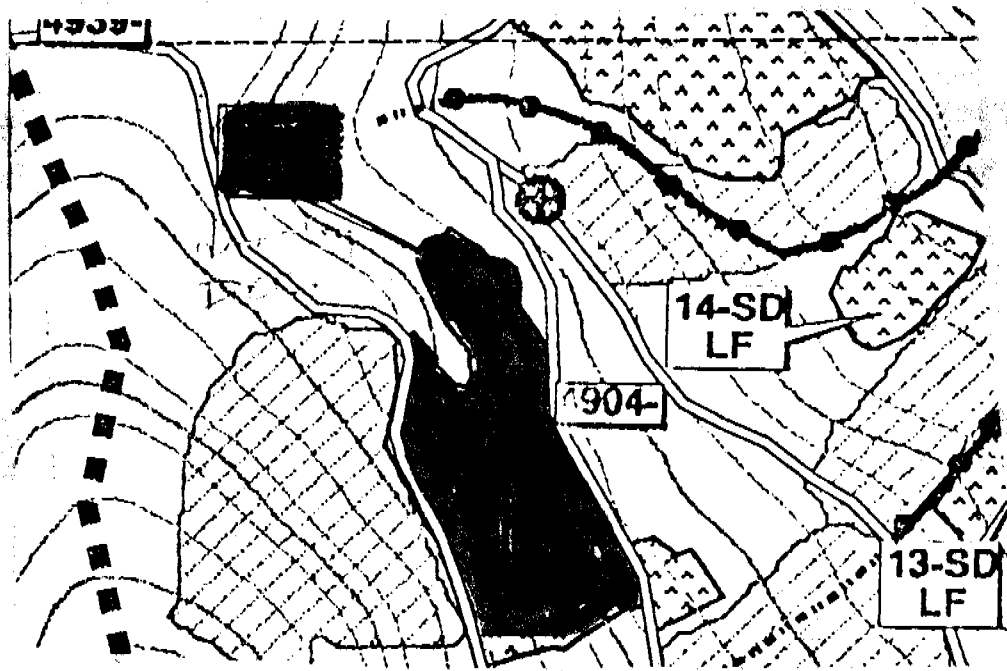
UNDISTURBED - No signs of any machinery or skidding activity.

DISPLACED - Any place soil has been mounded by machinery, also include in heavy or light compaction.

SMZ - Include within transect if within harvest unit.

TRANSECT SUMMARY FORM

	Transect 1		Transect 2		Transect 3		Transect 4		Transect 5		TOTALS	
	Pts.	%	Pts.	%	Pts.	%	Pts.	%	Pts.	%	Pts.	%
D i s t u r b	HEAVY											
	LIGHT											
	UNDISTURB											
	TOTALS											
	DISPLACED											
	EROSION											
	PUDDLED											
	SMZ											
	ROCK											
	BURN PILES											



55405089

09/28/1999
Libby - Bristow Creek Salvage
Unit 8
55405089

KOOTENAI NATIONAL FOREST
SOIL DISTURBANCE MONITORING FORM

DATE Sept. 28, 1999 CUTTING METHOD clipped
 SERVER Reumen SKIDDING METHOD RTS free length / landing process
 DISTRICT Libby If tractor: dispersed X dedicated _____
 SALE/S.A. Bristow Cr. Salvage HAZARD TREATMENT WTY
 Unit # 8 Acres 29 SILVICULTURAL TRMT SD-LPP
 H.T. _____ OPERATION PERIOD summer 1999
 Slope 20-35 Aspect | SSW
 Location mid to upper Elevation | 4300-4700
 COMPACTION (Heavy) _____

COMPACTION (Light) _____

UNDISTURBED _____

DISPLACED _____

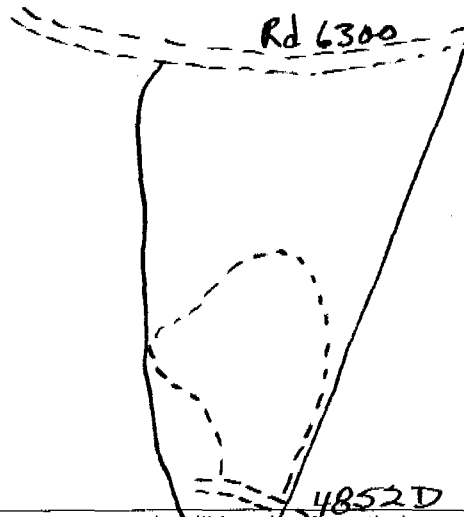
EXCAVATED SKID TRAIL _____

SMZ/ROCK _____

COMMENTS (Include soil, geology, organic debris, other pertinent info)

Rd 4852 D is to be put to bed. Unit looks good. One main skid trail. CWD is good. Part of a District BMP audit.

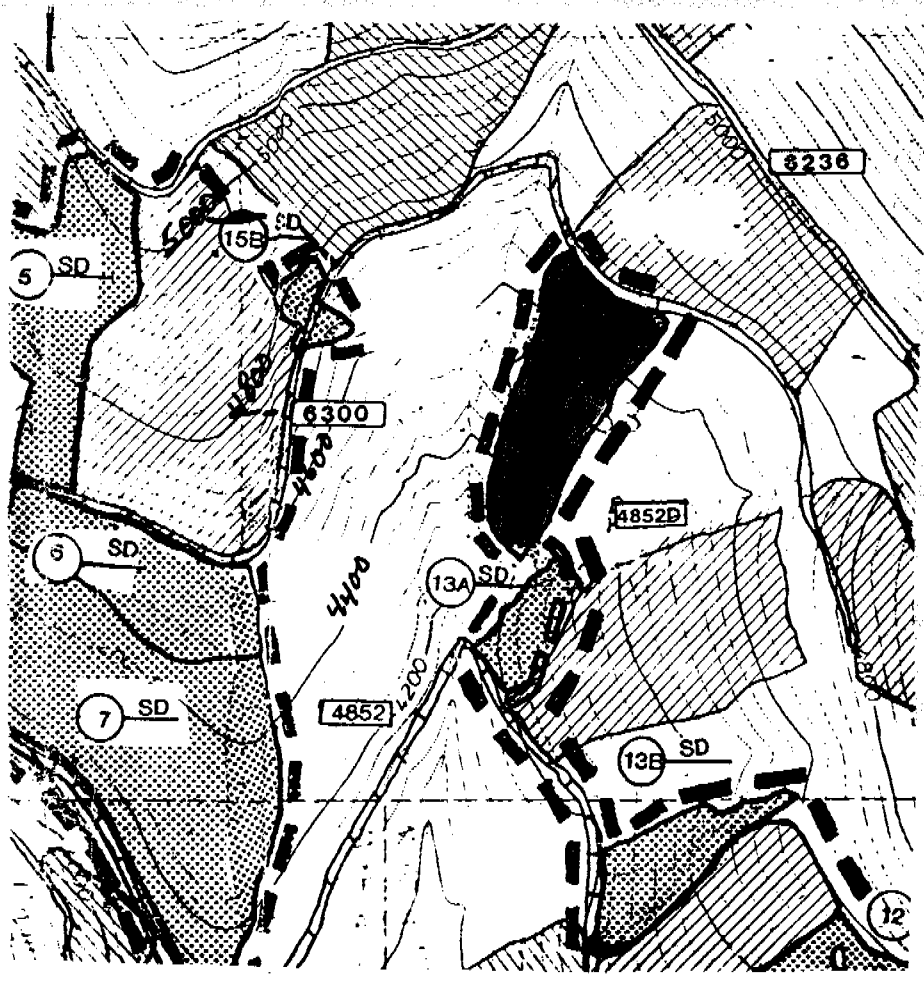
SHAPE OF UNIT AND PATTERN OF TRANSECT



COMPACTION (Heavy) - Any place where future vegetative growth will be significantly impacted, i.e., skid trails (both heavily and lightly used depending on amount of compaction related to soil moisture), landings, and other impacted areas.
COMPACTION (Light) - Any other area not included in heavy COMPACTION or UNDISTURBED.
UNDISTURBED - No signs of any machinery or skidding activity.
DISPLACED - Any place soil has been mounded by machinery, also include in heavy or light compaction.
SMZ - Include within transect if within harvest unit.

TRANSECT SUMMARY FORM

	Transect 1		Transect 2		Transect 3		Transect 4		Transect 5		TOTALS	
	Pts.	%	Pts.	%	Pts.	%	Pts.	%	Pts.	%	Pts.	%
AVY												
SHT												
NDISTURB												
TOTALS												
DISPLACED												
EROSION												
PUDDLED												
SMZ												
ROCK												
BURN PILES												



72201030

09/27/1999

Cabinet - Red Devil

Unit 3A

72201030

KOOTENAI NATIONAL FOREST
SOIL DISTURBANCE MONITORING FORM

DATE Sept. 27, 1999 CUTTING METHOD _____
 SERVER Kelanner / Newell SKIDDING METHOD Skyline - 90° north, tractor - south
 TRACTOR _____ If tractor: _____ dispersed _____ dedicated _____
 SALE/S.A. Red Devil HAZARD TREATMENT not done yet
 Unit # 3A Acres 17 SILVICULTURAL TRMT LTM -- ST final w/ Reserves
 H.T. WH/Chun OPERATION PERIOD Aug-Sept. 1998
 Slope 25-40 Aspect East
 Location upper Elevation 4700 - 5000'
 COMPACTION (Heavy) _____

COMPACTION (Light) _____

UNDISTURBED _____

DISPLACED _____

EXCAVATED SKID TRAIL _____

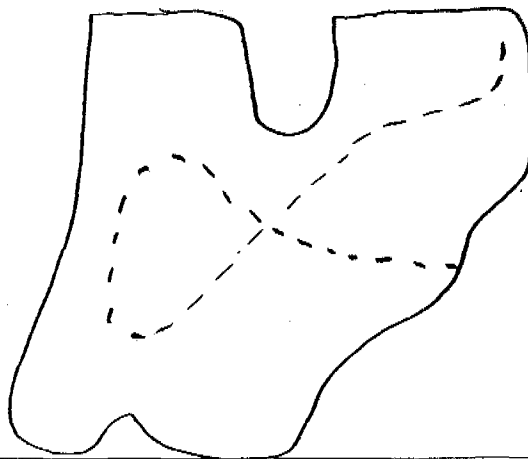
SMZ/ROCK _____

COMMENTS (Include soil, geology, organic debris, other pertinent info)

Similar to Unit 3B from the standpoint of excavator work. Unit was partially tractor-drawn & partially skyline-drawn.

SHAPE OF UNIT AND PATTERN OF TRANSECT

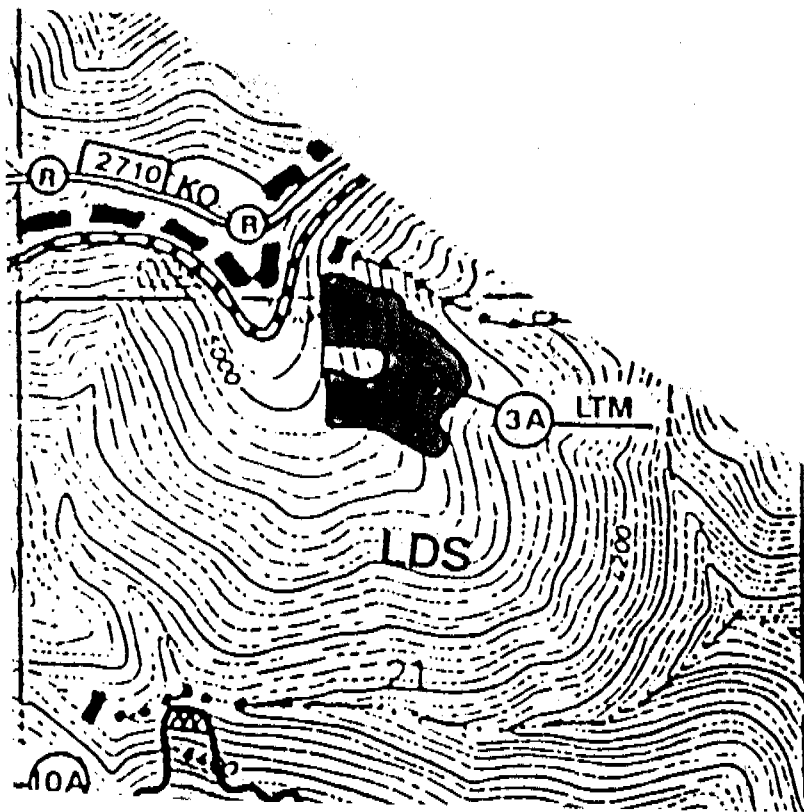
Unit 3A



- COMPACTION (Heavy)** - Any place where future vegetative growth will be significantly impacted, i.e., skid trails (both heavily and lightly used depending on amount of compaction related to soil moisture), landings, and other impacted areas.
- COMPACTION (Light)** - Any other area not included in heavy COMPACTION or UNDISTURBED.
- UNDISTURBED** - No signs of any machinery or skidding activity.
- DISPLACED** - Any place soil has been mounded by machinery, also include in heavy or light compaction.
- SMZ** - Include within transect if within harvest unit.

TRANSECT SUMMARY FORM

	Transect 1		Transect 2		Transect 3		Transect 4		Transect 5		TOTALS	
	Pts.	%	Pts.	%	Pts.	%	Pts.	%	Pts.	%	Pts.	%
D i s t u r b												
HEAVY												
LIGHT												
UNDISTURB												
TOTALS												
DISPLACED												
EROSION												
PUDDLED												
SMZ												
ROCK												
BURN PILES												



722 01031

KOOTENAI NATIONAL FOREST
SOIL DISTURBANCE MONITORING FORM

09/27/1999
Cabinet - Red Devil
Unit 3B
72201031

DATE Sept. 27, 1999 CUTTING METHOD skidline
 SERVER Ruennen/News SKIDDING METHOD ST Final w/ Riser
 STRICT Cabinet If tractor: dispersed dedicated
 SALE/S.A. Red Devil HAZARD TREATMENT not done yet, excavator piling
 Unit # 3B Acres 16 SILVICULTURAL TRMT LITM, seed tree regeneration
 H.T. WH/Chen OPERATION PERIOD Aug - Sept 1998
 Slope 35-50 Aspect SE
 Location upper Elevation 4500 - 4950
 COMPACTION (heavy) _____

COMPACTION (Light) _____

UNDISTURBED _____

DISPLACED _____

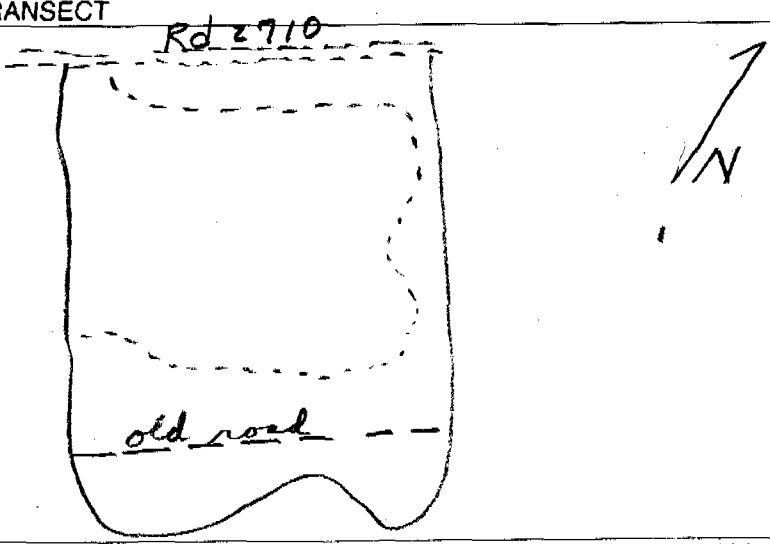
EXCAVATED SKID TRAIL _____

SMZ/ROCK _____

COMMENTS (Include soil, geology, organic debris, other pertinent info)

A cable unit that was intended for excavator piling & 8x8 spacing for tree planting. Logging looks very good. Lots of CWD left. Due to an operator that had never site-preped there is an excessive amount of scuffing. Unfortunately, the district did not have someone staying w/ the operation consistently to help train. The area was fairly steep also. This is a residual soil w/ volcanic ash surface.

SHAPE OF UNIT AND PATTERN OF TRANSECT



- COMPACTION (Heavy)** - Any place where future vegetative growth will be significantly impacted, i.e., skid trails (both heavily and lightly used depending on amount of compaction related to soil moisture), landings, and other impacted areas.
- COMPACTION (Light)** - Any other area not included in heavy COMPACTION or UNDISTURBED.
- UNDISTURBED** - No signs of any machinery or skidding activity.
- DISPLACED** - Any place soil has been mounded by machinery, also include in heavy or light compaction.
- SMZ** - Include within transect if within harvest unit.

TRANSECT SUMMARY FORM

	Transect 1		Transect 2		Transect 3		Transect 4		Transect 5		TOTALS	
	Pts.	%	Pts.	%	Pts.	%	Pts.	%	Pts.	%	Pts.	%
D i s t u r b	HEAVY											
	LIGHT											
	UNDISTURB											
	TOTALS											
	DISPLACED											
	EROSION											
	PUDDLED											
	SMZ											
	ROCK											
	BURN PILES											

