

SOC

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Summary Report

Old County Road Watershed
Rehabilitation Unit

84-7

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Introduction

The Old County Road, Unit 84-7, is located along the Bald Hills Ridge, in Childs Hill Prairie, just west of Williams Ridge. This portion of the old county road alignment consisted of 0.75 miles of all-weather road upslope of the present road. In addition, 0.2 miles of jeep trails leading upslope from the road were treated (Map B). Drainage from the road contributes to Copper Creek, which enters Redwood Creek 16 miles upstream from Orick (Map A). The unit boundaries encompass 24 acres.

The unit is underlain by the coherent sandstone of the Franciscan Assemblage (Hardin, et al, 1982). Elevation ranges between 2,250 feet and 2,600 feet. Slopes are gentle, 5-25%, with a convex profile and a southeasterly aspect. Soil depths varied from very shallow (<45cm) on the ridges to moderate (<100cm) in the swales.

The old county road crossed three first-order ephemeral and intermittent streams of the Copper Creek drainage. No significant erosion features were present; there was minor surface erosion (rilling) on the road and jeep trails. Timber harvest activities occurred in all surrounding woodlands with no direct impact on the unit.

Landuse over the past 100 years has been limited to grazing (first sheep, then cattle). This was brought to a halt several years ago with the construction of a park boundary fence along Bald Hills Road, and driveway fences leading to pastures outside the park boundary. Prior to that time the area was used by the Chilula or Redwood Creek Indians. Two pre-historic archaeological sites exist within Unit 84-7. These are CA-HUM-480 and CA-HUM-482, both are listed on the National Register of Historic Places. The Chilula lived a hunter-gatherer lifestyle, and it's possible that these sites were special use areas. A green chert serrated projectile was recovered from the CA-HUM-480. Points of this type could date back some 1,500-2,500 years ago (archaeological information supplied by Ann Smith). Due to the significance of these archaeological sites, one of the jeep trails was treated using labor intensive techniques rather than heavy equipment.

Rehabilitation Work

The main goals of the rehabilitation work were to remove the unaesthetic scar of the old county road, and to maintain an "active park presence" along the east side of Redwood Creek. Table 1 shows the overall cost summary of rehabilitation work on Unit 84-7. The grand total project cost was \$5,485.65. Of this, 84 percent was spent on the actual implementation of the rehabilitation work (57 percent on the heavy equipment and 27 percent on labor-intensive work). The evaluation and documentation phases required 10 person-days to complete.

Heavy equipment work was completed July 9-12, and proceeded from west to east along the old county road. A Caterpillar D-7E with rippers (owned and operated by Wendell Larkin) was used to complete all heavy equipment work. Primary rehabilitation work consisted of ripping all road reaches and a deck, outsloping the main county road, and excavating three road crossings. Straw mulch was spread over the entire site as a secondary treatment, and was walked in by the bulldozer. Miscellaneous tasks included the removal of old fence posts and a cattle guard. All work-

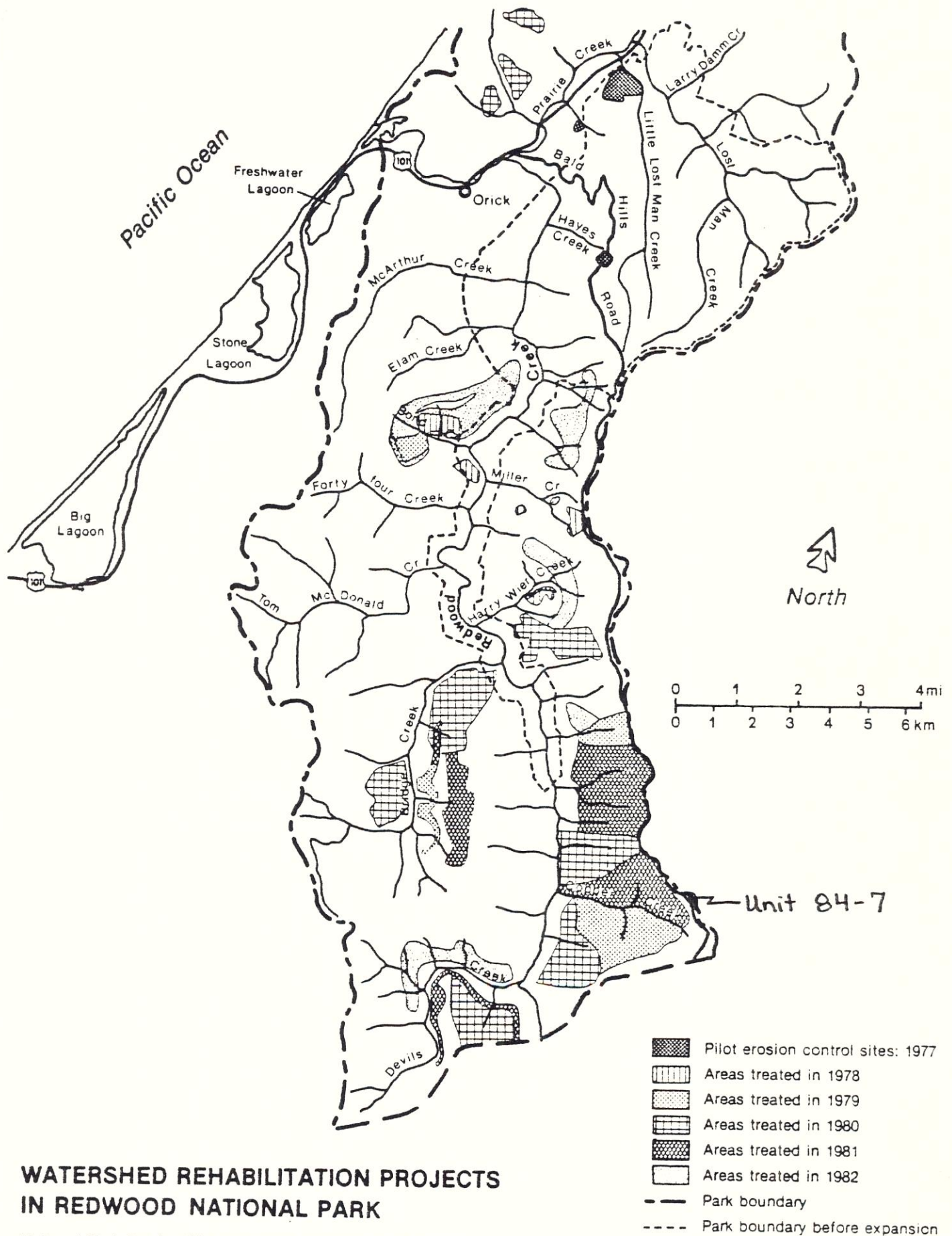
sites are located on Map B, with unit costs listed in Table 2. Tables 3 and 4 show site specific costs for all road treatments and crossing excavations, respectively. Specific site descriptions are included under the remarks column or in the footnotes.

Labor intensive work was completed by Redwood National Park laborers (RNP) and Youth Conservation Crews (YCC), Table 5. The distribution and application of straw mulch was the only rehabilitation labor intensive work completed on Unit 84-7, with a total cost of \$1,462.26, or \$8.36 per straw bale. A new cattle containment fence had to be constructed along Bald Hills Road since sections of the old fence ran along the old county road, and were removed in order to complete the heavy equipment rehabilitation work. The cost for the fence removal and construction was \$4,749.85. This cost is not included in the grand total project cost since it is not a watershed rehabilitation treatment. However, it is interesting to note that the fence work cost almost as much as the grand total project cost.

All labor intensive and heavy equipment work completed on Unit 84-7 went very smoothly and was of high quality.

84-7: Old County Road Rehabilitation Unit

Map A: Unit Location

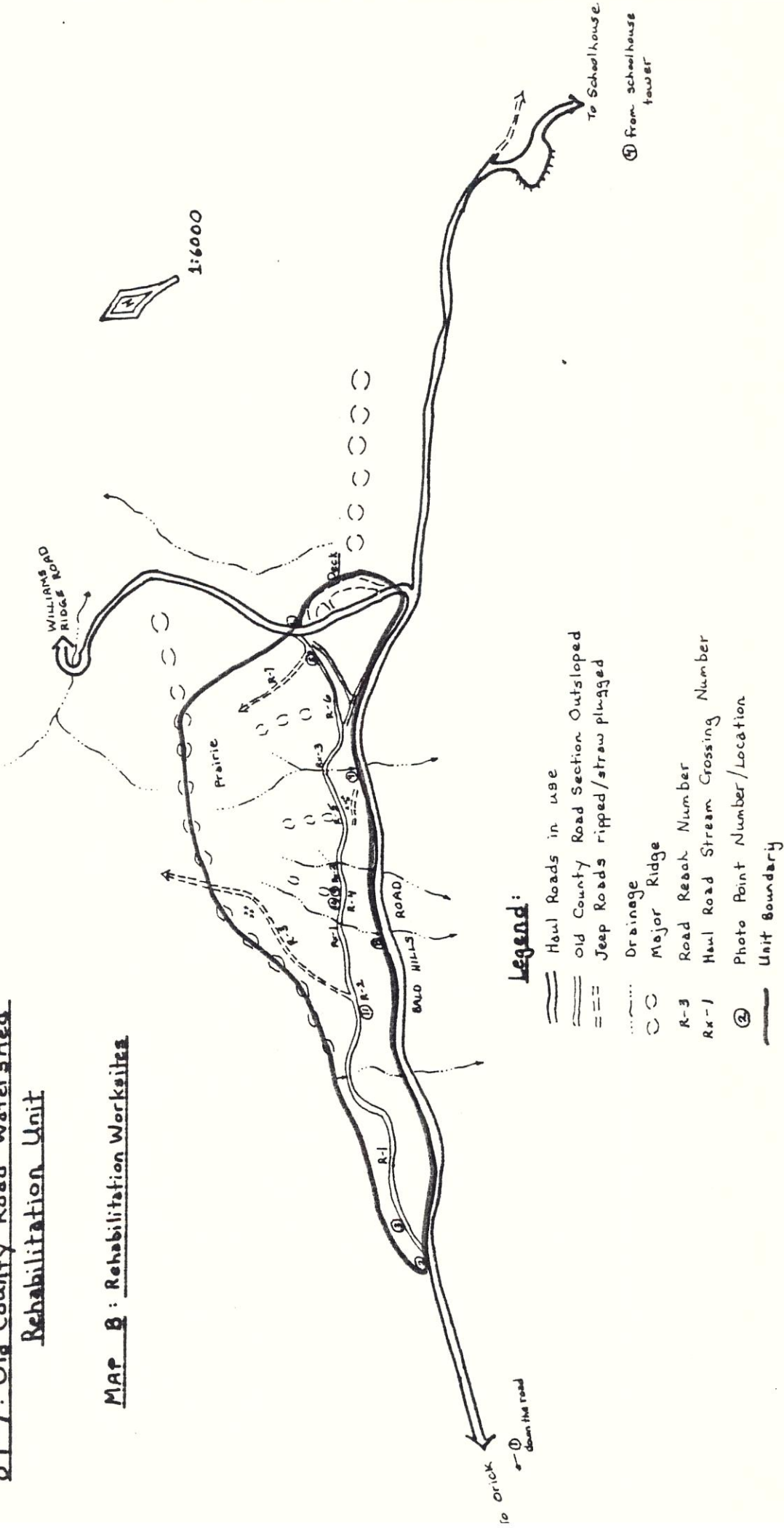


WATERSHED REHABILITATION PROJECTS IN REDWOOD NATIONAL PARK

National Park Service/United States Department of the Interior

84-7: Old County Road Watershed Rehabilitation Unit

MAP B: Rehabilitation Worksites



TA.
SUMMARY COSTS OF REHABILITATION WORK
84-7

	RNP Employees				Heavy Equipment Rentals	Materials	YCC	Total Task Costs	% Total Cost	Phase Totals	Phase %
	Task	Geologist & Technician	Laborers								
EVAL- UATION PHASE	Mapping	\$ 189.26	--	--	--	--	--	\$ 189.26	3	\$ 436.73	8
	Prescription	247.47	--	--	--	--	--	247.47	5		
HEAVY EQUIPMENT PHASE	Primary Treatment	670.70	--	--	\$1,856.25	--	--	2,526.95	46		
	Secondary Treatment	--	--	--	356.25	--	--	356.25	7	3,145.70	57
	Miscellaneous	--	--	--	262.50	--	--	262.50	5		
LABOR INTENSIVE PHASE	Secondary Treatments (Straw)	16.95	\$535.80	--	--	--	\$402.00	954.76	17		
	Materials (Straw)	--	--	--	--	\$507.50	--	507.50	9	1,462.26	27
DOCUMENT- TATION PHASE	Cost Analysis and Report	440.96	--	--	--	--	--	440.96	8	440.96	8
Totals		\$1,565.35	\$535.80	\$2,475.00	\$507.50	\$402.00	\$5,485.65	--	--	\$5,485.65	--
% of Total		29%	10%	45%	9%	7%	--	--	--	--	5

Table 2

SUMMARY OF AVERAGE COSTS OF HEAVY EQUIPMENT TREATMENTS

84-7

	Treatment	# of Work-sites	Total Quantity	Total Cost	Average Costs:		Cost/Quantity Range
					Work-Site	Quantity	
PRIMARY TREATMENTS	Open Road	--	--	\$ 18.75	--	--	--
	Ripping	--	3,490ft.	243.75	--	\$.07/LF	--
	Outsloping	6	2,740ft.	1,200.00	\$200	.44/LF	<u>\$.34-.56</u> LF
	Haul Road Crossings	3	175yd ³	150.00	50	.86/yd ³	<u>.75-1.00</u> Yd ³
	Deck	1	--	243.75	--	--	--
TOTAL PRIMARY TREATMENTS =				<u>\$1,856.25</u>			
SECONDARY TREATMENT	Walk-in Straw Mulch	--	3,490ft.	\$356.25	--	\$.10/LF	--
MISC.	Miscellaneous (cattle guard and fence posts removal)	--	--	\$262.50	--	--	--
TOTAL HEAVY EQUIPMENT COSTS =				<u>\$2,475.00</u>			

TABLE 3
ROAD TREATMENT COSTS
84-7

Site Number	Equipment	Hours	Site Cost	Length Feet	Road Width Feet	Unit Cost \$/LF	Production Rate (LF/hr)	Remarks
R-1	D-7E	5 1/2	\$ 412.50	765	20 TC	\$.54	139	A 765 ft. throughout, 3-6 feet deep, COS.
R-2	D-7E	3	225.00	550	20	.41	183	Cutbank 2-6 feet high, COS.
R-3	D-7E	[3/4]	56.25	750	12	.08	1,000 ¹	Jeep trail was ripped, costs included under ripping.
R-4	D-7E	1 1/2	112.50	200	20	.56	133	Cutbank 2-6 feet high, COS.
R-5	D-7E	2	150.00	350	20	.43	175	Cutbank 3-7 feet high, COS.
R-6	D-7E	4	300.00	875	15-20	.34	219	Cutbank 1-5 feet high, COS.
R-7	--	--	--	[385]	12 ²	--	--	Jeep ruts treated by labor intensive methods using straw pancakes to plug the ruts.

TOTALS

5 worksites D-7E 16hrs. \$1,200.00 2,740ft. 15-20ft. \$.44/LF 171 LF/hr.

¹ R-3 Ripping costs are included in Table 3 under Primary Treatments; Ripping.

² R-7 Labor intensive treatment is included in Table 5 under Secondary Treatments; Straw Application.

COS - Complete Outslope

TC - Throughcut

TABLE 4
ROAD CROSSING EXCAVATION COSTS
84-7

Site Number	Equipment	Hours	Site Cost	Quantity Yd ³ (Est.)	Cost/ Yd ³	Rate: Yd ³ /Hr.	Remarks
RX-1	D-7E	1/2	\$37.50	50	\$.75	100	No Culvert
RX-2	D-7E	1/2	37.50	50	.75	100	8" Pipe
RX-3	D-7E	1	75.00	75	1.00	75	12" Pipe w/Culvert car
TOTALS:							
3 crossings	D-7E	2 Hrs.	\$150.00	175yd ³	\$.86/yd ³	88yd ³ /Hr.	
PLUS:	RNP backhoe	5 Hrs.	\$ 52.95	Remove culvert car from RX-3. (Backhoe operator wages only, not included in overall unit costs.)			
		--	\$202.95	175yd ³	\$1.16/yd ³	--	--

TABLE 5
LABOR INTENSIVE COSTS
84-7

Work Types	Type of Laborers	Person Hours	Cost	Total Cost	Quantity	Cost/Quantity	Remarks
Straw Distribution	RNP	45	--	\$ 410.85	175 bales	\$2.35/bale	Straw was initially delivered to the west side, M-7-1 1/2, and then transported by RNP laborers to the site.
Straw Application	RNP YCC	17 120	\$141.91 402.00	543.91	175 bales	3.11/bale	Application rate approx. 4,000 lbs/acre.
Straw Acquisition	--	--	--	507.50	175 bales	2.90/bale	--
TOTAL LABOR INTENSIVE COSTS				=\$1,462.26			

Secondary Treatment

Miscellaneous labor costs not included in the overall site cost were the removal and construction of a new containment fence and cattle guard.

Fence Removal	RNP YCC	60 55	\$ 539.20 184.25	\$ 723.45	Approx. 2,000 ft. of fence and one cattle guard.
Fence Construction	RNP RUI	80 400	694.40 3,332.00	4,026.40	Approx. 2,000 ft. of fence and one cattle guard.
TOTAL MISCELLANEOUS TREATMENTS				= \$4,749.85	



Unit: 84-7 PP#3 Through cut 6/12/84



Unit: 84-7 PP#3 8/1/85



Unit: 84-7 PP#7 RX-3 6/12/84



Unit: 84-7 PP#8 6/12/84



Unit: 84-7 Ref. 1-A 6/12/84 PP#9 RX-2 OCR



Unit: 84-7 Ref. 1-B 8/31/84 PP#9 RX-2 OCR



Unit: 84-7 Ref. 2-A 6/12/84 PP#10 RX-2 OCR



Unit: 84-7 Ref. 2-B 8/31/84 PP#10 RX-2 OCR