

1 **Re: Page B-68, Replace Champion Grader V-9797, \$404,400**

2 Q. Please provide a cost benefit analysis showing the benefit of purchasing a
3 new grader versus the repair of the current grader.

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6 A. A net present worth analysis was performed to determine whether the grader
7 should be replaced or overhauled. An overhaul, at a projected cost of
8 \$150,000 is required to enable the grader to achieve its expected useful life
9 of 18 years. Normal maintenance costs for a new machine would be \$8,000
10 per year while the anticipated maintenance, based on our experience with
11 this particular machine, is \$15,000 providing for an incremental maintenance
12 cost of \$7,000 per year. This combined with overhaul cost provides for a
13 cumulative present worth of \$152,141 in anticipated maintenance costs over
14 the next three years. At a purchase cost of \$404,400 and assuming the
15 grader is sold after year three for an assumed residual value of \$337,000
16 (assuming residual value equal to the undepreciated capital cost using
17 straight line depreciation), the benefit derived from purchasing versus
18 maintaining is \$41,100 as per the attached. It should be noted that the
19 anticipated residual value probably will not be obtained at auction, due to the
20 age and overall condition of the grader. When Hydro purchases a
21 replacement grader, a more substantial machine will be selected which is
22 better suited to the duties required in our application.

Maintain V9797

		Maintenance*	Escalation	Escalated Maintenance	Present Worth @ 7%	Cumulative Present Worth @ 7%
1	2008	157,000	1.0240	160,768	140,421	140,421
2	2009	7,000	1.0486	7,340	5,992	146,413
3	2010	7,000	1.0727	7,509	5,728	152,141

* 50%Material / 50% Labour

Purchase New Grader

Term

36 months

Payment Number	Interest Charges @ 7%	Payment	Balance	Accumulated Interest	Accumulated Payment
			404,400		
1	2,359	11,233	393,167	2,359	11,233
2	2,293	11,233	381,933	4,652	22,467
3	2,228	11,233	370,700	6,880	33,700
4	2,162	11,233	359,467	9,043	44,933
5	2,097	11,233	348,233	11,140	56,167
6	2,031	11,233	337,000	13,171	67,400
7	1,966	11,233	325,767	15,137	78,633
8	1,900	11,233	314,533	17,037	89,867
9	1,835	11,233	303,300	18,872	101,100
10	1,769	11,233	292,067	20,641	112,333
11	1,704	11,233	280,833	22,345	123,567
12	1,638	11,233	269,600	23,983	134,800
13	1,573	11,233	258,367	25,556	146,033
14	1,507	11,233	247,133	27,063	157,267
15	1,442	11,233	235,900	28,505	168,500
16	1,376	11,233	224,667	29,881	179,733
17	1,311	11,233	213,433	31,191	190,967
18	1,245	11,233	202,200	32,436	202,200
19	1,180	11,233	190,967	33,616	213,433
20	1,114	11,233	179,733	34,730	224,667
21	1,048	11,233	168,500	35,778	235,900
22	983	11,233	157,267	36,761	247,133
23	917	11,233	146,033	37,678	258,367
24	852	11,233	134,800	38,530	269,600
25	786	11,233	123,567	39,317	280,833
26	721	11,233	112,333	40,037	292,067
27	655	11,233	101,100	40,693	303,300
28	590	11,233	89,867	41,283	314,533
29	524	11,233	78,633	41,807	325,767
30	459	11,233	67,400	42,265	337,000
31	393	11,233	56,167	42,659	348,233
32	328	11,233	44,933	42,986	359,467
33	262	11,233	33,700	43,248	370,700
34	197	11,233	22,467	43,445	381,933
35	131	11,233	11,233	43,576	393,167
36	66	11,233	0	43,642	404,400

Analysis:

Maintain V9797 - Cumulative Present Worth		\$152,141
3 year cost of principal and interest	448,042	
Residual value after 3 years based upon an 18 year useful life	<u>337,000</u>	
Net Cost		<u>111,042</u>

Net Benefit

\$41,100