

Per our discussion on May 31, 1995, I have enclosed the individual cost estimates for each of the alternatives as well as three examples of the present worth cost calculations (Alternatives 2-4).

I have also enclosed a map with some proposed monitoring well locations to facilitate our discussion at the next meeting. The proposed well locations number 18 which is rounded off to 20 in the cost estimate.

The number of monitoring wells for quarterly sampling has been increased to 40 and a proposed list of wells as follows:

Upper Flow Zone: 5 new wells + Nos. 61, 57, 53, 52, 48, 37, 33, 22, 21, 17, 16, 13

Upper Lower Flow Zone: 3 new wells + Nos. 64, 60, 56, 46, 42, 31, 30

Lower Lower Flow Zone: 5 new wells + Nos. 55, 43, 32, 20

Third Flow Zone: 4 new wells

There may need to be some modification to one quarterly sampling event to allow for an annual facility-wide sampling event.

Vincent Malott

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**STATEMENT OF BASIS
ALTERNATIVE COST SUMMARY**

ALTERNATIVE #2

MONITORING WELLS - SAMPLING

Total Wells: 40
Sampling: \$45,000/Year
Analyses: \$96,000 [4 events @ 40 wells/event @ \$600/well;
VOCs (\$250), Total Metals (\$250), Hexavalent Chrome
(\$100)]
Evaluation: \$15,000
O&M Cost: \$156,000 ▶ \$160,000/Year

MONITORING WELLS - INSTALLATION OF 20 WELLS

Capital Cost: \$15,000/well
Total Cost: \$300,000

RECOVERY WELLS - EXISTING

O&M Cost: \$25,000/Year

Total Cost

O&M Cost: \$185,000/Year
Capital Cost: \$300,000
Present Worth: \$3,143,635

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ALTERNATIVE #4

SOIL VAPOR EXTRACTION - 20 WELL SYSTEM

O&M Cost/Year 1-3: \$28,000/Year 1-3
Capital Cost: \$150,000

Alternative #3

O&M Cost: \$348,000/Year
Total Capital Cost: \$812,000

TOTAL Cost

O&M Cost/Year 1-3: \$376,000/Year
O&M Cost/Year 4-30: \$348,000/Year
Capital Cost: \$962,000
Present Worth: \$6,387,324

ALTERNATIVE #5

AIR SPARGING - 20 WELL SYSTEM

O&M Cost/Year 1-3: \$40,000/Year 1-3
Capital Cost: \$100,000

Alternative #4

O&M Cost/Year 1-3: \$376,000/Year
O&M Cost/Year 4-30: \$348,000/Year
Capital Cost: \$962,000

TOTAL Cost

O&M Cost/Year 1-3: \$416,000/Year
O&M Cost/Year 4-30: \$348,000/Year
Capital Cost: \$1,062,000
Present Worth: \$6,596,204

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COST ANALYSIS WORKSHEET
 ALTERNATIVE 2: ON-SITE GROUND WATER RECOVERY SYSTEM

COST COMPONENT	COST/YEAR COST OCCURS						
	0	1	2	3	4	5	6
Capital Costs	300000						
O&M Costs	0	185000	185000	185000	185000	185000	185000
Annual Expenditures	300000	185000	185000	185000	185000	185000	185000
Discount Factor (5%)	1	0.952	0.907	0.863	0.822	0.783	0.746
Present Worth	300000	176120	167795	159655	152070	144855	138010

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18	19	20	21	22	23	24	25	26	27	28
185000	185000	185000	185000	185000	185000	185000	185000	185000	185000	185000
185000	185000	185000	185000	185000	185000	185000	185000	185000	185000	185000
0.416	0.396	0.377	0.359	0.342	0.326	0.31	0.295	0.281	0.268	0.255
76960	73260	69745	66415	63270	60310	57350	54575	51985	49580	47175

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COST ANALYSIS WORKSHEET
 ALTERNATIVE 3: EXPANDED GROUND WATER RECOVERY SYSTEM

COST COMPONENT	COST/YEAR COST OCCURS						
	0	1	2	3	4	5	6
Capital Costs	812000						
O&M Costs	0	348000	348000	348000	348000	348000	348000
Annual Expenditures	812000	348000	348000	348000	348000	348000	348000
Discount Factor (5%)	1	0.952	0.907	0.863	0.822	0.783	0.746
Present Worth	812000	331296	315636	300324	286056	272484	259608

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18	19	20	21	22	23	24	25	26	27	28
348000	348000	348000	348000	348000	348000	348000	348000	348000	348000	348000
348000	348000	348000	348000	348000	348000	348000	348000	348000	348000	348000
0.416	0.396	0.377	0.359	0.342	0.326	0.31	0.295	0.281	0.268	0.255
144768	137808	131196	124932	119016	113448	107880	102660	97788	93264	88740

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GWB - 00120 - SPARTON

COST ANALYSIS WORKSHEET

ALTERNATIVE 4: EXPANDED GROUND WATER RECOVERY AND SOIL VAPOR EXTRACTION

COST COMPONENT	COST OCCURS						
	COST/YEAR 0	1	2	3	4	5	6
Capital Costs	962000						
O&M Costs	0	376000	376000	376000	348000	348000	348000
Annual Expenditures	962000	376000	376000	376000	348000	348000	348000
Discount Factor (5%)	1	0.952	0.907	0.863	0.822	0.783	0.746
Present Worth	962000	357952	341032	324488	286056	272484	259608

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18	19	20	21	22	23	24	25	26	27	28
348000	348000	348000	348000	348000	348000	348000	348000	348000	348000	348000
348000	348000	348000	348000	348000	348000	348000	348000	348000	348000	348000
0.416	0.396	0.377	0.359	0.342	0.326	0.31	0.295	0.281	0.268	0.255
144768	137808	131196	124932	119016	113448	107880	102660	97788	93264	88740

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