

**Environmental
Resources
Management**

5151 Flynn Parkway
Suite 620
Corpus Christi, Texas 78411
(361) 814-8200
(361) 814-8220 (fax)

December 18, 2001

Mr. Dick Langley
Sparton Corporation
2400 East Ganson Street
Jackson, Michigan 49202

W.O. #555-003

Re: Sparton Technologies, Inc.
Albuquerque, New Mexico
Coors Road Facility Financial Assurance Estimate



Dear Mr. Langley:

Environmental Resources Management (ERM) is pleased to provide the attached estimate of financial assurance to be included in the submission by Sparton Technologies, Inc. (Sparton) to the Environmental Protection Agency (EPA) and New Mexico Environmental Department (NMED) per Section XXIV, Paragraph 90, of the March 3, 2000 Consent Decree and meets the requirements for cost estimates for closure found under 40 CFR §264.142. The attached estimate of \$4,183,526 is based on an effective value date on June 30, 2001, which is consistent with Sparton's fiscal year-end and also the RCRA regulatory requirements. This estimate is \$440,384 lower than ERM's previous estimate provided to Sparton in March 2000. Items reducing the estimate included completion of 2 years of the 30 years of projected time for closure operations, completion of capital expenditures for the Vadose Soil Vapor Extraction (SVE) and Source Containment systems, completion of the 1 year required operation of the Vadose SVE system, and lower actual costs for the lease of water rights. Items increasing the estimate included operation of a chromium treatment system, actual costs for easements, and an increase in electricity cost. The modifications made as part of the update of the financial assurance estimate, are described both below and in the attached estimate as notes of the changes made. (See Attachment 1 - 28 Year Summary.)

The starting point for this update was ERM's original estimate provided to Sparton in March 2000. Mr. Tony Hurst was contacted and he provided information, including monthly reports, on operations of the systems at the Coors Road Facility. Mr. Gary Richardson was also contacted concerning the operations of monitoring and containment wells at the facility. Labor rates and the estimate for plugging and abandoning site wells were also confirmed. The changes made to the estimate included the following:

- Updating the remaining capital expenditures as of June 30, 2001. The remaining expected capital expenditures include installation of the Source Containment well, pump, and air stripper.
- Operating and maintenance (O&M) expenditures for limited chromium treatment as part of the offsite containment. As of June 30, 2001 the chromium had been below 0.044 mg/L for five consecutive months. ERM estimated O&M expenditures for chromium treatment based on expected reduced operation of the chromium treatment system through the first nine months of FY 2002 and no treatment after FY2002.
- Actual cost of pipeline and Arroyos easements included in the Offsite Containment O&M Expenditures.
- Termination, per the terms of the Consent Decree, of the Vadose SVE after one year of operation, except for 40 soil gas samples to be taken in July and August 2001.
- Actual cost of electricity in June 2001.
- Actual cost for the lease of water rights included under source containment.
- Expected operation of the source containment system for one half of FY2002 (installation expected to be completed by the end of December 2001).
- Reduction in expected electricity use by the Source Containment system based on actual equipment to be installed during the first half of FY2002.

Based on the information obtained by ERM, original assumptions are still valid with respect to the end date (2029), expected operations and maintenance of various systems, closure (including well plugging and abandonment costs), labor rates, analysis costs, and other costs associated with evaluation and recommendations.

It has been our pleasure assisting Sparton Corporation with this matter. If you should have questions, please feel free to contact the undersigned.

Environmental Resources Management



Mark W. Cheesman, J.D.
Associate

cc: Mr. R. Jan Appel - Sparton Corporation
Ms. Susan Widener - Sparton Corporation
Mr. James Harris - Thompson and Knight, L.L.P.
Mr. Tony Hurst - Hurst Engineering Services
Mr. Richard Bost - Environmental Resources Management

28-Year Summary
Attachment 1

December 18, 2001
WO #555-003
Sparton Technologies, Inc.

Environmental Resources Management
5151 Flynn Parkway, Suite 620
Corpus Christi, Texas 78411
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Sparton Technologies, Inc.
Coors Rd. Facility
Albuquerque, New Mexico
Fiscal Year 2002
28 Year Summary

Changes Notes	Material and Service Expenditures					Labor Expenditures				TOTAL TYPICAL ANNUAL COST	2002-2004	2005-2009	2010-2014	2015-2019	2020-2024	2025-2029	TOTALS
	Unit	No.	Cost/Unit	Contingency	Percent	Hours	Hourly Rate	Contingency	Percent								
Remaining Capital Expenditures																	
Offsite Containment I No remaining tasks											\$0	\$0	\$0	\$0	\$0	\$0	\$0
Vadose (SVE) No remaining tasks											\$0	\$0	\$0	\$0	\$0	\$0	\$0
1																	
2	Source Containment										\$76,000	\$0	\$0	\$0	\$0	\$0	\$76,000
	Equipment - (1) 120' well and (1) 50gpm pump	LS	1	23,000	3,000	13%				26,000	26,000	0	0	0	0	0	0
	Equipment - Install (1) 50gpm Air Stripper	LS	1	28,500	2,850	10%	375	45	1,775	11%	50,000	50,000	0	0	0	0	0
	Total Remaining Capital Expenditure										\$76,000	\$0	\$0	\$0	\$0	\$0	\$76,000
	O&M Expenditures										\$171,390	\$264,500	\$264,500	\$264,500	\$0	\$0	\$964,890
	Offsite Containment II																
	Permits / Licenses																
3	Pipeline Easement	LS	1	500		0%				500	1,500	2,500	2,500	2,500	0	0	0
4	Arroyos Easement	LS	1	3,000		0%				3,000	9,000	15,000	15,000	15,000	0	0	0
5	Operate System - Power (45hp) & Utilities	Month	12	1,850	2,000	9%				24,200	72,600	121,000	121,000	121,000	0	0	0
	Influent/Effluent Sampling	Month	12	315	420	11%				4,200	12,600	21,000	21,000	21,000	0	0	0
	O&M - Equipment (a)	Month	12	1,000	1,200	10%				13,200	39,600	66,000	66,000	66,000	0	0	0
	O&M - Labor (b)						156	45	780	11%	7,800	23,400	39,000	39,000	39,000	0	0
	Ground water monitoring - see below																
6	O&M - Equipment & Labor (Chromium Treatment)	Month	12	920	1,650	15%				12,690	12,690	0	0	0	0	0	0
7	Vadose (SVE)										\$8,520	\$0	\$0	\$0	\$0	\$0	\$8,520
8	Monitoring - Soil gas samples	Sample	40	180	1,320	18%				8,520	8,520	0	0	0	0	0	0
	Source Containment										\$80,010	\$159,800	\$159,800	\$159,800	\$159,800	\$159,800	\$879,010
9, 10	Operate System - Power	Month	12	495	600	10%				6,540	16,350	32,700	32,700	32,700	32,700	32,700	32,700
10	Influent/Effluent Sampling	Month	12	315	420	11%				4,200	10,500	21,000	21,000	21,000	21,000	21,000	21,000
10	O&M - Equipment (a)	Month	12	1,000	1,200	10%				13,200	33,000	66,000	66,000	66,000	66,000	66,000	66,000
10	O&M - Labor (b)						156	45	780	11%	7,800	19,500	39,000	39,000	39,000	39,000	39,000
11	Lease of water rights	LS	1	220		0%				220	660	1,100	1,100	1,100	1,100	1,100	1,100
	Evaluation, Analysis & Recommendation										\$289,806	\$276,560	\$247,460	\$247,460	\$247,460	\$247,460	\$1,556,206
	Quality Check (c)						5	60	60	20%	360	1,080	1,800	1,800	1,800	1,800	1,800
	Aquifer Model (ERM Estimate) (d)						520	75	4,200	11%	43,200	129,870	35,000	5,900	5,900	5,900	5,900
	Annual Reports Incl. Perf. & Alt. Eval. (e)						50	60	600	20%	3,600	10,800	18,000	18,000	18,000	18,000	18,000
	Ground Water Monitoring and Sampling																
	Data Collection and Sampling (f)						255	45	1,275	11%	12,750	38,250	63,750	63,750	63,750	63,750	63,750
	Sampling Equipment (g)	Sample	93	14	150	12%				1,452	4,356	7,260	7,260	7,260	7,260	7,260	
	Analysis (Lab Costs) (h)	Sample	93	270	2,790	11%				27,900	83,700	139,500	139,500	139,500	139,500	139,500	
	QA/QC and Data Analysis (i)						26	75	300	15%	2,250	6,750	11,250	11,250	11,250	11,250	
	Analysis of Additional Modeling Information (j)						180	75	1,500	11%	15,000	15,000	0	0	0	0	0
	Closure										\$0	\$0	\$0	\$0	\$0	\$94,100	\$94,100
12	Plug and Abandon 63 wells	Well	63	1,200	11,500	15%				87,100	87,100					87,100	
	Remove Piping (LS)			1,500	500	33%				2,000						2,000	
	Closure Certification Report (k)						60	75	500	11%	5,000	0	0	0	0	5,000	
	Soil Sampling at Infiltration Galleries (l)																
	Project Management										\$21,600	\$64,800	\$108,000	\$108,000	\$108,000	\$108,000	\$604,800
	Management (m)						170	75	900	7%	13,650	40,950	68,250	68,250	68,250	68,250	68,250
	Data Tabulation (n)						25	75	110	6%	1,985	5,955	9,925	9,925	9,925	9,925	
	Monthly Reporting (o)						25	75	110	6%	1,985	5,955	9,925	9,925	9,925	9,925	
	Annual Reporting (p)						50	75	230	6%	3,980	11,940	19,900	19,900	19,900	19,900	
	Total O&M Expenditure										\$614,526	\$808,860	\$779,760	\$779,760	\$515,260	\$609,360	\$4,107,526
Summary																	
	Total Remaining Capital Expenditure										\$76,000	\$0	\$0	\$0	\$0	\$0	\$76,000
	Total O&M Expenditure										\$614,526	\$808,860	\$779,760	\$779,760	\$515,260	\$609,360	\$4,107,526
	TOTAL										\$690,526	\$808,860	\$779,760	\$779,760	\$515,260	\$609,360	\$4,183,526 (q)

Changes made:

1. Vadose (SVE) Equipment one 400 scfm blower installation has occurred, there are no remaining tasks
2. The following Source Containment items have been completed and these items removed from estimate
 - a. Water Rights Transfer (200gpm)
 - b. Installation of Infiltration Pond Piping
 - c. Creation of Infiltration Pond/Berms
3. Cost/Unit of Pipeline Easement Permits/Licenses for the Offsite Containment II was increased from \$450 to \$500 (based on actual cost) and the contingency was omitted
4. Cost/Unit of Arroyos Easement Permits/Licenses for the Offsite Containment II was increased from \$2,700 to \$3,000 (based on actual cost) and the contingency was omitted
5. Offsite Containment O&M Expenditures for Operate System - Power (45hp) & Utilities has increased from \$1,000/Unit to \$1,850/Unit and contingency from \$1,980 to \$2,000.
(This was based on using the actual electricity cost for June 2001 at \$0.07657 per KWH.)
6. O&M Expenditures for Chromium Treatment Equipment and Labor of \$920/Unit with a contingency of 15% was added (based on actual costs in FY 2001 projected through first 9 months of FY 2002).
7. O&M Expenditures for the following Vadose (SVE) items have been removed due to operations completed in FY 2001 per terms of the Consent Decree
 - a. Operate System - Power
 - b. O&M - Equipment
 - c. O&M - Labor (b)
8. The No. of samples for Vadose (SVE) Monitoring - Soil gas samples has been reduced from 66 to 40 (remainder for FY 2002)
9. O&M Expenditures for Operate System - Power (12hp) has reduced from \$1,000/Unit to \$495/Unit and contingency from \$1,980 to \$600 (based on actual equipment to be installed and June 2001 electricity costs)
10. O&M Expenditures for the following Source Containment items have been calculated for 1/2 Fiscal Year 2002 (expected operations)
 - a. Operate System - Power
 - b. Influent/Effluent Sampling
 - c. O&M - Equipment
 - d. O&M - Labor
11. Cost/Unit of Source Containment Lease of water rights was reduced from \$1,050 to \$220 and the contingency was omitted (based on actual costs)
12. Cost/Unit of Plug and Abandonment of 63 wells was checked for applicability in 2001
13. The Hourly Rates for Labor Expenditures were checked for applicability in 2001
14. The cost estimates for the 2000-2004 column are now calculated for 2002-2004 i.e. 3 years and the rest for 5 year periods (based on Total typical Annual Costs)

Notes

- (a) The equipment cost of \$13,200 per year each for both the onsite and offsite systems (Total of \$600,600) includes \$140,000 for replacing a total of 15 wells.
- (b) Labor cost for operation and maintenance of the containment systems (off-site and source) assumes \$45.00/hour plus a minimum contingency of 10%. The labor requirement assumes performing routine inspection on each of the two systems an average of 3 hours per week per system, not including 15 minute inspections each week included in sampling labor.
This is consistent with ERM's experience and the experience of Sparton. The inspection and monitoring program will entail checking and recording information pertaining to the status of the system. The parameters that will be monitored are listed in Appendix K of the System O&M Manual.
- (c) Quality Check entails additional evaluation of previously collected analytical data, resulting in 5 hours of work annually for a staff scientist (\$60.00 / hour) plus a minimum of 10% contingency.
- (d) Aquifer Modeling will require 520 hours for the first three years, 100 hours for the next four years, and 14 hours per year for the remaining years. Basis for the reduction of effort relates to the improved calibration of the model over time, assuming only minor adjustments will be required to confirm model outputs are consistent with observations. Modeling will be executed by a Project Scientist (\$75.00 / hour) plus a minimum of 10% contingency.
- (e) The preparation of annual reports includes performance and alternative system evaluation. Due to the data generated throughout the process, with costs contained in other sections of the budget (i.e. modeling, data analysis, etc.), 50 hours annually are allocated to prepare the Annual Report for a Staff Engineer (\$60.00 / hour). A minimum of 10% contingency and additional review by a Senior Engineer are included in a total contingency not to exceed \$600.00.
- (f) Data collection and sampling for the 63 wells located both on- and off-site require 255 hours annually for a field technician (\$45.00), plus a minimum of 10% contingency.
- (g) Assumes 19 days for rental of pH/specific conductance/temperature meter (\$20/day), water level indicator (\$25/day), disposable bailers (\$2/day), miscellaneous equipment (gloves, tape, replacement drums, etc., \$5/well), which averages about \$14/sample.
- (h) Number of samples based on 63 wells plus approximately 30 quality control samples.
- (i) Quality Assurance and Control of data analysis results consists of 1 hour every other week for a Project Engineer (\$75.00 / hour) plus a minimum of 10% contingency.
- (j) Analysis of Additional Modeling Information will entail combining previous annual reports, modeling results and other previously collected data with the current (5th year) annual report; the data analysis and performance evaluation for this report is included under aquifer modeling, annual reports and project management.
- (k) Closure Certification Report entails compiling historical data and a written analysis of 30 years of progress, as a result of the remedial actions, by a Project Engineer (\$75.00 / hour) plus a minimum of 10% contingency.
- (l) Task to be completed only if significant exceedances of discharge limits occur, thus no expenditure is anticipated. If this expenditure is required, the contingency for closure (\$11,500) is ample to cover the anticipated sampling cost (\$1000).
- (m) "Management" consists of meetings with agency representatives, consultants and individuals from Sparton Technologies, in addition to handling routine administrative tasks. The total estimate for these tasks is 170 hours per year.
- (n) "Data Tabulation" is assumed to be on a quarterly basis for about 6 hours per quarter.
- (o) "Monthly Reporting" is assumed to be about 2 hours per month.
- (p) "Annual Reporting" is assumed to be 50 hours annually.
- (q) Total includes contingency.