

September 5, 2000

James P. Bearzi, Chief
Hazardous Waste Bureau
New Mexico Environment Department
P.O. Box 26110
Santa Fe, NM 87502



Dear Mr. Bearzi:

Enclosed are two copies of the revised post-closure care permit application for Sparton Technology, Inc. Coors Road Plant, Albuquerque, New Mexico. The application has been revised pursuant to Attachment H of the Consent Decree entered March 3, 2000, and updated to reflect current conditions.

Each of the 11 "Outstanding Items Required to Be Submitted" identified in the March 3, 2000 Consent Decree Attachment H are listed below along with the location where the response has been included in the Revised Application.

1. An updated original signature of the facility owner or operator for the Part A application and the certification. [NOD Items 1 and 15; Application Page 1 and Attachment 1, Page 7; 40 CFR §270.11]

Revised Application Page 1 and Attachment 1, Page 7

2. The identification, address, and phone number of the person(s) responsible for storage and updating the facility's copy of the Post-Closure Care Plan during the post-closure care period. [NOD Item 9; 40 CFR §264.144]

Revised Application Page 12 Section 3.9.5

3. A copy of the current Post-Closure cost estimate. [NOD Item 10; Application Page 11, Section 2.16.1; 40 CFR §264.145]

Revised Application Page 9 Section 2.16.1

4. Supplement and summarize the information on all Solid Waste Management Units (SWMU's) as required by 40 CFR §270.14(d). One way this can be accomplished is by summarizing and submitting the information contained in previous reports on the Site submitted by Sparton to regulatory authorities.

Revised Application Page 13 Section 4.0

5. The administrative record appears to be incomplete regarding soil sampling done at the Old Container Storage Area and therefore soil sampling records need to be submitted. (40 CFR §264.101).

Revised Application Page 12 Section 3.9.2

6. A description of training, personnel, and record keeping demonstrating compliance with 40 CFR §264.16. [Application Page 10, Section 2.12; 40 CFR §2.12; 40 CFR §270.14(b)(12)].

Revised Application Page 8 Section 2.12

7. A statement that, upon completion of post-closure care requirements, a certification of post-closure care will be submitted in accordance with 40 CFR §264.120. [40 CFR §264.120].

Revised Application Page 12 Section 3.9.4

8. A statement that Application records will be kept for at least three years. [40 CFR §270.10 (l)].

Revised Application Page 12 Section 3.9.6

9. Information in the Part A on activities requiring a Permit, whether the facility is on Indian land, and whether this is a new or existing facility and whether the application is a first or revised application. [40 CFR §§270.13 (a), (f), and (g)].

Revised Application Attachment 1 Page 1

10. An established financial assurance mechanism for post-closure care as required by 40 CFR Part 264, Subpart H (§§264.140-151). As long as and once such a financial mechanism is in place under the Consent Decree, it will satisfy the financial mechanism for the Post-Closure Application. [NOD Items 11 through 13; Application Page 11, Section 2.16.1].

Revised Application Page 9 Section 2.16.2

11. A map showing the location of all the monitor wells. This can be included in groundwater monitoring plan.

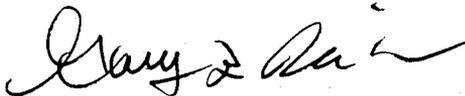
The monitoring well location map is included in the Consent Decree entered March 3, 2000, ATTACHMENT A, FIGURE 1.

James P. Bearzi
September 5, 2000
Page 3

If you have any questions, please contact me.

Sincerely,

METRIC Corporation

A handwritten signature in cursive script, appearing to read "Gary L. Richardson".

Gary L. Richardson, P.E.
Executive Vice President

GLR/rkh

REVISED
RCRA POST-CLOSURE PERMIT APPLICATION
FOR
SPARTON TECHNOLOGY, INC.,
COORS ROAD PLANT
ALBUQUERQUE, NEW MEXICO

PREPARED FOR
SPARTON TECHNOLOGY, INC.
RIO RANCHO, NEW MEXICO

PREPARED BY
METRIC CORPORATION
ALBUQUERQUE, NEW MEXICO

SEPTEMBER 2000

TABLE OF CONTENTS

CERTIFICATION	1
INTRODUCTION	2
1.0 PART A PERMIT APPLICATION (40 CFR 270.13)	2
2.0 PART B PERMIT APPLICATION	2
2.1 General Description of the Facility [40 CFR 270.14(b)(1)]	2
2.1.1 <u>General Information</u>	2
2.1.2 <u>Site Description</u>	3
2.1.3 <u>Facility Process</u>	4
2.2 Chemical and Physical Analysis of Waste [40 CFR 270.14(b)(2)]	4
2.3 Waste Analysis Plan [40 CFR 270.14(b)(3)]	5
2.4 Security [40 CFR 270.14 (b)(4)]	5
2.5 General Inspection Schedule [40 CFR 270.14 (b)(5)]	5
2.6 Preparedness and Prevention [40 CFR 270.14(b)(6)]	6
2.7 Contingency Plan [40 CFR 270.14(b)(7)]	6
2.8 Prevention of Run-off and Contamination of Water Supplies [40 CFR 270.14(b)(8)]	7
2.9 Ignitable, Reactive, and Incompatible Waste Precautions [40 CFR 270.14(b)(9)]	7
2.10 Traffic Pattern [40 CFR 270.14(b)(10)]	7
2.11 Facility Location Information [40 CFR 270.14(b)(11)]	7
2.11.1 <u>Seismic/Faults</u>	7
2.11.2 <u>Floodplain</u>	8
2.12 Personnel Training [40 CFR 270.14(b)(12)]	8
2.13 Post-Closure Plan [40 CFR 270.14(b)(13)]	8
2.14 Notice in Deed [40 CFR 270.14(b)(14)]	9
2.15 Closure Cost Estimate [40 CFR 270.14(b)(15)]	9
2.16 Post-Closure Cost Estimate and Financial Assurance Demonstration [40 CFR 270.14(b)(16)]	9
2.16.1 <u>Post-Closure Cost Estimate</u>	9
2.16.2 <u>Demonstration of Financial Assurance</u>	9
2.19 Topographic Map [40 CFR 270.14(b)(19)]	9
2.20 Supplemental Information [40 CFR 270.14(b)(20)]	10
3.0 ADDITIONAL INFORMATION REQUIREMENTS [40 CFR 270.14(c)]	10
3.1 Summary of Groundwater Monitoring Data [40 CFR 270.14(c)(1)]	10
3.2 Aquifer Identification [40 CFR 270.14(c)(2)]	10
3.3 Topographic Map Delineations [40 CFR 270.14(c)(3)]	10
3.4 Description of Plume of Contamination [40 CFR 270.14(c)(4)]	11
3.5 Groundwater Monitoring Program [40 CFR 270.14(c)(5)]	11
3.6 Detection Monitoring Program [40 CFR 270.14(c)(6)]	11
3.7 Compliance Monitoring Program and Corrective Action Program [40 CFR 270.14(c)(8)]	11

3.8	Corrective Action Program [40 CFR 270.14(c)(8)]	11
3.9	Additional Commitments	11
3.9.1	<u>Semi-annual Reporting [40 CFR 264.100(g)]</u>	11
3.9.2	<u>Old Drum Area Soil Sampling Records (40 CFR 264.101)</u>	12
3.9.3	<u>Facility Contact [40 CFR 264.118(b)(3)]</u>	12
3.9.4	<u>Certification of Completion of Post-Closure Care (40 CFR 264.120)</u>	12
3.9.5	<u>Storage of Facilities Copy of Post-Closure Care Plan (40 CFR 264.144)</u>	12
3.9.6	<u>Maintenance of Application Records [40 CFR 270.10(l)]</u>	12
3.9.7	<u>Compliance With Other Applicable Federal Laws [40 CFR 270.3]</u>	12
4.0	SOLID WASTE MANAGEMENT UNIT CLOSURE [40 CFR 270.14(d)]	13
5.0	REFERENCES	15

ATTACHMENTS

ATTACHMENT 1	.....	PART A APPLICATION
ATTACHMENT 2	.....	TOPOGRAPHIC MAPS 1, 2, AND 3
ATTACHMENT 3	.....	POND WASTE ANALYSIS
ATTACHMENT 4	.....	POST-CLOSURE QUARTERLY INSPECTION CHECKLIST
ATTACHMENT 5	.....	CLOSURE PLAN, POND AND DRUM STORAGE AREAS
ATTACHMENT 6	.....	POST-CLOSURE CARE PLAN, COORS ROAD PLANT
ATTACHMENT 7	.....	NOTICE OF RESTRICTION IN PROPERTY DEED
ATTACHMENT 8	.....	TRUST AGREEMENT
ATTACHMENT 9	.....	CURRENT LETTER OF CREDIT
ATTACHMENT 10	.....	CERTIFICATE OF INSURANCE
ATTACHMENT 11	..	LETTERS OF TRANSMITTAL AND APPROVAL FOR RFI AND LETTERS OF TRANSMITTAL FOR CORRECTIVE MEASURES STUDY REPORT
ATTACHMENT 12	..	SECURITIES AND EXCHANGE COMMISSION FORM 10K FOR FISCAL YEAR ENDING JUNE 30, 2000
ATTACHMENT 13	.....	SOIL SAMPLES COLLECTED AT THE OLD DRUM STORAGE AREA

REVISED
RCRA POST-CLOSURE PERMIT APPLICATION
FOR
SPARTON TECHNOLOGY, INC., COORS ROAD PLANT
ALBUQUERQUE, NEW MEXICO

CERTIFICATION

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Richard D. Mico

Richard D. Mico, Vice President and General Manager
Sparton Technology, Inc.

Date: Sept. 5, 2000

REVISED
RCRA POST-CLOSURE PERMIT APPLICATION FOR
SPARTON TECHNOLOGY, INC., COORS ROAD PLANT

INTRODUCTION

This document constitutes a RCRA Post Closure Permit Application addressing permitting requirements of Title 20, Chapter 4, Part 1 of the New Mexico Hazardous Waste Management Regulations adopted by the New Mexico Environmental Improvement Board. Applicable subparts of these regulations directly incorporate regulations of the U.S. Environmental Protection Agency in 40 CFR Parts 260 through 266 and Parts 268 and 270. Sparton first submitted a post closure permit application in March 1986.

The application includes a Part A Hazardous Waste Permit Application Form, and Part B information required. Attachments of supporting data are provided at the end of the document.

1.0 PART A PERMIT APPLICATION (40 CFR 270.13)

A copy of the completed Part A application is provided as ATTACHMENT 1.

2.0 PART B PERMIT APPLICATION (40 CFR 270.14)

2.1 General Description of the Facility [40 CFR 270.14(b)(1)]

2.1.1 General Information

Name of Facility:	Coors Road Plant
Owner and Operator:	Sparton Technology, Inc.
EPA I.D. Number:	NM083212332

Mailing Address: 4901 Rockaway Blvd., SE
Rio Rancho, New Mexico
87124-4469

Facility Location: 9621 Coors Road, NW
Albuquerque, New Mexico

Site Telephone No.: (505) 892-5300

Type of Facility: Manufacturing

2.1.2 Site Description

Sparton Technology, Inc., operated an electronics manufacturing plant at its Coors Road facility from 1961 to 1999. Since the plant was opened, manufactured products have been commercial, industrial, and military electronics which include circuit board assemblies, transducers, sensors, and pressure systems. The printed circuit manufacturing process employed the use of metal plating which generates an aqueous plating waste characterized as hazardous due to its heavy metals content and corrosivity. Electronics assembly employed the use of solvent cleaning which generates spent halogenated and non-halogenated solvents.

The site is located on a 12-acre tract about one half mile northwest of the Rio Grande and on the west side of Coors Road, NW in Bernalillo County, New Mexico. MAPS 1, 2, and 3 provided in ATTACHMENT 2 show the plant vicinity. Locally, the area is hilly and slopes in several wide terraces toward the Rio Grande. The site is approximately 60 feet above the river elevation, and about 60 feet lower than the lowest end of the Paradise Hills residential area, located about three quarters of a mile to the west of the site. Elevations within the property boundaries range from 5,040 to 5,055 feet above sea level. But the elevations within the hazardous waste storage facility do not vary more than one or two feet. Approximately 200 feet southeast of the site, across Coors Road, is the Corrales Canal, an irrigation waterway. The Calabacillas Arroyo is located about one quarter mile north of the site. The groundwater table occurs approximately 65 feet below the ground surface at the property and regionally is moving in a west

southwesterly direction. In the immediate plant area it is moving in a northwesterly direction.

There are no existing or planned residential uses of land adjacent to the facility. Current zoning restricts development of residential land uses in proximity to the facility. Commercial land use is currently established on adjacent lands to the north and south of the plant site. Commercial land use is also planned to the west of the facility.

The Sparton facility is located both within Bernalillo County and City of Albuquerque zoning jurisdictions. Zoning designations are delineated on MAP 3, ATTACHMENT 1. The county M-1 zone and the city SU-1 for C-2 provide for light manufacturing and assembly. Adjacent land to the north is also zoned for manufacturing. To the west and south of the facility, zoning is for commercial development. Lands to the east of the facility are zoned for agriculture. These current zone designations for lands adjacent to the facility are supported and recommended to be maintained in the future by the Coors Corridor Plan (April 1984).

2.1.3 Facility Process

Currently the property is being reconfigured to be used as a car dealership.

2.2 Chemical and Physical Analysis of Waste [40 CFR 270.14(b)(2)]

The electroplating waste previously generated was a liquid at 70° F with a density of 8.8 pounds per gallon and a solids content of 9 percent. A waste material profile and analytical report are provided in ATTACHMENT 3.

Processing and degreasing operations related to electronics manufacturing generate a spent solvent wash.. Predominant constituents of that waste mixture can be inferred from groundwater analyses. Groundwater analyses were first conducted in 1983, and, in 1985, routine quarterly sample analyses were initiated under a State approved program for a number of on-site monitoring wells. Based on these historical

groundwater analyses, the primary hazardous constituents of the spent solvent appear to include trichloroethylene (TCE) and 1,1,1-trichloroethane (TCA), with lesser amounts of methylene chloride (MeCl), acetone, and 1,1-dichloroethylene (DCE). Groundwater analysis data is provided in ATTACHMENTS 1, 9, and 11 of the RCRA Facility Investigation for the site and in ATTACHMENT A of the Consent Decree entered March 3, 2000.

2.3 Waste Analysis Plan [40 CFR 270.14(b)(3)]

Sparton requests a waiver of the requirement for a waste analysis plan, as the surface impoundment was certified closed in 1987.

2.4 Security [40 CFR 270.14 (b)(4)]

The capped surface impoundment will be bounded by the operating facility on one side and an 8-foot-high chain link fence on the other three sides. Access to the area will be by a locking personnel gate in the fence on the northwest side and a locking vehicular gate on the southeast side. Signs will be posted at all gates reading "DANGER, Unauthorized Personnel Keep Out" in English and Spanish. The signs will have black letters on a yellow background, and will be visible from at least 25 feet in all approaching directions. Security inspections of the fences, gates, locks, and signs will take place on a quarterly basis to assure equipment integrity and to look for evidence of vandalism and/or tampering. Should any security problem be found during inspection, or by notification to the facility security office, appropriate personnel will be immediately informed and repairs and/or replacement will commence as soon as possible and be completed prior to the next quarterly inspection. A security checklist component is included in the overall post-closure care inspection checklist provided in ATTACHMENT 4. Future use of the property may require revisions to security provisions of the property.

2.5 General Inspection Schedule [40 CFR 270.14 (b)(5)]

After closure, and in addition to the security inspection, a general inspection of the condition of the capped surface impoundment will be made on a semi-annual basis. To

facilitate this inspection, vehicular access to the area will be restricted for a length of time sufficient to complete a thorough inspection. This inspection will include the drainage swale on the north and west sides of the area to assure that it is clear of debris and that the sides are physically intact. A visual inspection of the entire 3-inch-thick asphalt wearing surface will also be performed. The location of any gouges, cracks, surface movement, and/or pavement deterioration (chemical or natural) will be noted. Any such breaches of the wearing surface which expose (however slightly) the asphalt base will be repaired and will commence immediately. Undisturbed wearing surface material, for a distance of 6 inches in all directions around the breach, will be removed and this area resurfaced as specified for the initial paving in the Closure Plan (ATTACHMENT 5). If, at any time between inspections, any sort of breach of the wearing surface is reported, there will be an immediate inspection to determine if repair is necessary.

Inspection of the ground-water monitoring wells will include the working order of the security caps and physical damage to the protective casing or surface grouting. If, during the ground-water sampling, it is determined that a well has become inoperable, the well will be repaired, plugged and abandoned or replaced if its function is still needed (in accordance with the specifications in the Closure Plan) prior to the next sampling period. A recommended inspection checklist component for monitoring wells is included in ATTACHMENT 4.

2.6 Preparedness and Prevention [40 CFR 270.14(b)(6)]

Sparton requests a waiver of the requirement for the preparedness and prevention requirements, as the surface impoundment was certified closed in 1987.

2.7 Contingency Plan [40 CFR 270.14(b)(7)]

The capped surface impoundment will not present a current or future threat to human health or the environment, due to the design of the cap. Sparton is committed to an inspection program during the post-closure period. This program will be conducted by

trained Sparton staff. In the event that deterioration of the cap, monitoring wells, or security fence is found by the personnel, repair of the damaged equipment or material will be initiated in a timely manner.

No emergency situations are anticipated to occur at the facility. The groundwater monitoring program that has been established for this site. Under the March 3, 2000 Consent Decree, this facility is designed to detect any change in groundwater quality or extent of the plume.

2.8 Prevention of Run-off and Contamination of Water Supplies
[40 CFR 270.14(b)(8)]

The surface impoundment cap, completed in December 1986, and the old drum area cap, completed in January 1987, provide protection from runoff across the hazardous waste facility and infiltration to the ground.

2.9 Ignitable, Reactive, and Incompatible Waste Precautions
[40 CFR 270.14(b)(9)]

No ignitable, reactive, or incompatible wastes will be stored at the facility. Therefore, Sparton requests a waiver of this requirement.

2.10 Traffic Pattern [40 CFR 270.14(b)(10)]

Traffic in proximity to the capped surface impoundment at Sparton will be limited to vehicles associated with performing maintenance and monitoring, and will be limited to probably a few vehicles per day. Due to this condition, Sparton requests a waiver of the traffic pattern requirement. Future use of the property may require revisions to the traffic pattern provisions of the permit.

2.11 Facility Location Information [40 CFR 270.14(b)(11)]

2.11.1 Seismic/Faults

As the facility is located in Bernalillo County, New Mexico, it is identified in APPENDIX VI of Part 264 as a political jurisdiction in which compliance with 264.18(a) must be demonstrated. According to Kelley (1977), the facility is not located within 3000 feet of a fault which has had displacement in Holocene time.

2.11.2 Floodplain

Flooding in the vicinity of the Sparton Coors Road Plant facility is covered by MAP 1, ATTACHMENT 2. As indicated on this map, the Coors Road Plant facility is located outside the 500-year floodplain. No designated 500-year floodplain boundary is within 500 feet of the plant facility.

2.12 Personnel Training [40 CFR 270.14(b)(12)]

Personnel training will be an integral part of Sparton's post-closure plan for this facility. The program will assure that the personnel involved in the post-closure activities will be properly trained to inspect the security measures, condition of the closure covers, and groundwater monitoring wells. Such personnel will have received substantial training in environmental field procedures through a combination of academic training and work experience, and may be a combination of Sparton permanent staff and environmental consultant staff. Staff will have completed a 40-hour OSHA hazardous waste health and safety course. A fully qualified hydrologist or environmental scientist will always supervise field sampling efforts, will review results of sampling, and will assess the significance of monitoring data. As needed over the period of the monitoring program, these professional hydrologists and environmental scientists may train other staff to assist in field sampling efforts of groundwater monitoring and system operation.

Formal training records will be maintained in each staff member's personnel file.

2.13 Post-Closure Plan [40 CFR 270.14(b)(13)]

Copies of the Closure Plan and the Post-Closure Plan are included in the application as ATTACHMENTS 5 and 6, respectively.

2.14 Notice in Deed [40 CFR 270.14(b)(14)]

Sparton has filed with the Clerk of Bernalillo County a Notice of Restriction regarding the Coors Road facility property, in order to notify any potential purchaser of the property that the land has been used to manage hazardous waste, and that its use is, therefore, restricted. A copy of this Notice of Restriction is provided as ATTACHMENT 7. The notice will remain in place until Sparton is released from regulatory requirements.

2.15 Closure Cost Estimate [40 CFR 270.14(b)(15)]

The closure has been completed, therefore Sparton requests a waiver of this requirement.

2.16 Post-Closure Cost Estimate and Financial Assurance Demonstration [40 CFR 270.14(b)(16)]

2.16.1 Post-Closure Cost Estimate

A post-closure cost estimate has been submitted pursuant to the consent decree entered March 3, 2000.

2.16.2 Demonstration of Financial Assurance

Financial assurance information has been submitted pursuant to the consent decree entered March 3, 2000.

2.19 Topographic Map [40 CFR 270.14(b)(19)]

ATTACHMENT 2 provides necessary information on three topographic maps covering 1000 feet distance around the Sparton facility at a scale of 1 inch equals 200 feet and a contour interval of 5 feet. Information provided addresses 40 CFR 270.14(b)(19), and (c)(2), (c)(3), and (c)(4)(I).

MAP 1 delineates the 500-year floodplain in the map area. Surface water courses

include intermittent arroyos and irrigation channel. Flood control structures are also shown.

MAP 2 indicates monitoring wells on and off site, groundwater flow direction and rate, water table contours, and extent of plume of contamination.

Zoning designations and land use are delineated on MAP 3. Designations are principally commercial/light manufacturing, agriculture, and single family residential. Existing land use is indicated by shading on the map, as residential, commercial, agriculture, and undeveloped area. The agriculture designation is for irrigated agriculture only. Commercial land use includes office, retail sales, public utility structures/easement, light manufacturing and assembly, day care center, restaurant, and bank.

2.20 Supplemental Information [40 CFR 270.14(b)(20)]

Since this information is related to corrective action which is addressed in the March 3, 2000 Consent Decree, Sparton requests a waiver of this requirement.

3.0 ADDITIONAL INFORMATION REQUIREMENTS [40 CFR 270.14(c)]

3.1 Summary of Groundwater Monitoring Data [40 CFR 270.14(c)(1)]

A summary of the groundwater monitoring data is provided in ATTACHMENT A to the Consent Decree entered March 3, 2000.

3.2 Aquifer Identification [40 CFR 270.14(c)(2)]

Since this information is related to corrective action which is addressed in the March 3, 2000 Consent Decree, Sparton requests a waiver of this requirement.

3.3 Topographic Map Delineations [40 CFR 270.14(c)(3)]

Since this information is related to corrective action which is addressed in the March 3,

2000 Consent Decree, Sparton requests a waiver of this requirement.

3.4 Description of Plume of Contamination [40 CFR 270.14(c)(4)]

Since this information is related to corrective action which is addressed in the March 3, 2000 Consent Decree, Sparton requests a waiver of this requirement.

3.5 Groundwater Monitoring Program [40 CFR 270.14(c)(5)]

Since this information is related to corrective action which is addressed in the March 3, 2000 Consent Decree, Sparton requests a waiver of this requirement.

3.6 Detection Monitoring Program [40 CFR 270.14(c)(6)]

Since this information is related to corrective action which is addressed in the March 3, 2000 Consent Decree, Sparton requests a waiver of this requirement.

**3.7 Compliance Monitoring Program and Corrective Action Program
[40 CFR 270.14(c)(8)]**

Since this information is related to corrective action which is addressed in the March 3, 2000 Consent Decree, Sparton requests a waiver of this requirement.

3.8 Corrective Action Program [40 CFR 270.14(c)(8)]

Since this information is related to corrective action which is addressed in the March 3, 2000 Consent Decree, Sparton requests a waiver of this requirement.

3.9 Additional Commitments

3.9.1 Semi-annual Reporting [40 CFR 264.100(g)]

Semi-annual groundwater monitoring data are required under ATTACHMENT A of the Consent Decree entered March 3, 2000, and an annual analysis report is required under the work plans in the consent decree.

3.9.2 Old Drum Area Soil Sampling Records (40 CFR 264.101)

Soil samples collected at the old drum area are presented in ATTACHMENT 13.

3.9.3 Facility Contact [40 CFR 264.118(b)(3)]

During the post-closure care period, the contact for the Sparton Coors Road Plant hazardous waste facility will be as follows:

Mr. Richard D. Mico, Vice President and General Manager
4901 Rockaway Blvd. SE
Rio Rancho, New Mexico 87124-4469
(505) 892-5300

3.9.4 Certification of Completion of Post-Closure Care (40 CFR 264.120)

Upon completion of post-closure care requirements, a certification of completion of post-closure care will be submitted in accordance with 40 CFR 264.120.

3.9.5 Storage of Facilities Copy of Post-Closure Care Plan (40 CFR 264.144)

During the post-closure care period, storage and updating of the facility's copy of the Post-Closure Care Plan will be the responsibility of:

Mr. Richard D. Mico
4901 Rockaway Blvd.
Rio Rancho, NM 87124
(505) 892-5300

3.9.6 Maintenance of Application Records [40 CFR 270.10(l)]

Post-Closure Care Permit Application records will be kept by Sparton for at least three years.

3.9.7 Compliance With Other Applicable Federal Laws [40 CFR 270.3]

Sparton's technical consultant has reviewed the Wild and Scenic Rivers Act, National

Historic Preservation Act, Endangered Species Act, and Fish and Wildlife Coordination Act and believes that these acts do not apply under existing conditions.

4.0 SOLID WASTE MANAGEMENT UNIT CLOSURE [40 CFR 270.14(d)]

The Coors Road plant manufactured a variety of electronic components from sometime after 1961 through at least 1995 (HLA, December 29, 1982 and May 7, 1985). By-products of those activities were spent solvents and plating waste. It appears that prior to the effective date of the Federal Resource Conservation and Recovery Act (RCRA), spent solvents were stored in a 5x5 foot concrete sump approximately two feet deep made of concrete blocks, awaiting off site shipment (HLA, December 17, 1985 and December 19, 1985). It is unclear when this sump was constructed or how spent solvent was handled before construction of the sump. Use of the sump for storage of spent solvents ceased in October of 1980, shortly before RCRA became effective. After October of 1980, spent solvent was placed in drums that were accumulated in the "old drum area". After May of 1981 the spent solvent was placed in drums and accumulated in a "new drum area" (HLA, December 19, 1985; Martinez, January 16, 1981).

The plating waste was put into a surface impoundment for storage and then shipped offsite for disposal. It is unclear when this practice began. Available records suggest the now closed surface impoundment was initially constructed in 1975 and expanded in 1977 (HDR, May 1, 1992). There are unconfirmed reports that before the closed surface impoundment was built, an earlier pond existed in the area that is capped. The now closed surface impoundment received waste until August of 1983, when it was taken out of service (HLA, May 7, 1985 and December 17, 1985). After that date, plating waste was drummed and accumulated on site for less than 90 days.

The Coors Road plant also accumulated drummed waste. From October 1980 through May of 1981 drums of spent solvent were placed in what is referred to as the "old drum

area". The use of the "old drum area" was discontinued in May of 1981 when a new drum area, which was part of a chemical staging area, became operational (Martinez, January 16, 1981; HLA, December 19, 1985).

In December of 1985, Sparton submitted a plan to formally close, under RCRA, the surface impoundment, unused since August 1983, and two drum areas (HLA, December 19, 1985). The "closure in place" of the surface impoundment was certified on December 18, 1986 (Mico, December 18, 1986).

The new drum area was "closed by removal", or "clean closed", meaning that no hazardous waste or hazardous waste constituents from its operation were left in the environment. A certification to that effect was signed on October 15, 1986.

The old drum area apparently could not be "closed by removal" or "clean closed" because investigation of the soils at that area revealed metal shavings in the soil that were thought to present a potential respiratory risk if soil containing the metals became airborne (Burger, December 4, 1986, December 17, 1986 and May 8, 1987). A certificate of this "closure in place" was provided on February 17, 1987 (Mico, February 18, 1987). The closure plan for the old drum area was modified to cap those soils that exhibited hazardous waste characteristics and a plan for the post-closure care of the old drum area, dated May 1987, was developed (Burger, December 4, 1986, December 17, 1986 and May 8, 1987).

At this point in time, Sparton plans to "clean close" the old drum area.

5.0 REFERENCES

Bernalillo County. 1988. Bernalillo County Zoning Atlas, Volume 1.

Burger, Tom. December 4, 1986. Memorandum to Richard Mico, Sparton Technology, Inc. Rio Rancho, New Mexico.

Burger, Tom. December 17, 1986. Fax transmittal of Draft of Appendix GG of Old Drum Storage Area Closure to Cleoves Martinez, Sparton Technology, Inc.

Burger, Tom. May 8, 1987. Letter to Richard Mico, Sparton Technology, Inc. Rio Rancho, New Mexico.

City of Albuquerque, 1994. Albuquerque Geographic Information System, Planning Department, Zoning Maps.

City of Albuquerque, Planning Department. April 1984. Coors Corridor Plan.

Bryan, Kirk. 1938. Geology and Groundwater Conditions of the Rio Grande Depression in Colorado and New Mexico. Regional Planning, Pt. 6, Rio Grande Joint Investigation Upper Rio Grande Basin, Natural Resources Commission, Vol. 1, Part 2, Section 1.

Environmental Protection Agency. July 1993. Code of Federal Regulations, 40 CFR Parts 260 to 299.

Federal Emergency Management Agency, National Flood Insurance Program. September 15, 1983. Flood Boundary and Floodway Maps, City of Albuquerque, New Mexico, Bernalillo County. Community-Panel Numbers 350002 0002 and 0008.

Harding Lawson Associates. December 29, 1982. Environmental Risk Assessment Survey, Sparton Southwest, Inc. Albuquerque, New Mexico .

Harding Lawson Associates. May 7, 1985. Hazardous Waste Facility Closure Plan, Sparton Technology, Inc., Coors Road Plant. Albuquerque, New Mexico.

Harding Lawson Associates. December 17, 1985. Hazardous Waste Facility Post Closure Care Plan, Coors Road Plant. Albuquerque, New Mexico.

Harding Lawson Associates. December 19, 1985. Pond and Drum Storage Areas Closure Plan, Sparton Technology, Inc., Coors Road Plant. Albuquerque, New Mexico.

Harding Lawson Associates. October 19, 1987. Off-Site Investigation, Coors Road Plant, Sparton Technology, Inc., Albuquerque, New Mexico.

HDR Engineering, Inc. Revised May 1, 1992. RCRA Facility Investigation Sparton Technology, Inc. Coors Road Facility, Albuquerque, New Mexico. Prepared by Harding Lawson Associates. December 14, 1990

Kelley, V. C. 1977. Geology of Albuquerque Basin, New Mexico. New Mexico Bureau of Mines and Mineral Resources, Memoir 33.

Lambert, P. W. 1968. Quaternary Stratigraphy of the Albuquerque Area, New Mexico. Ph.D. Dissertation, University of New Mexico.

Martinez, Cleoves. January 16, 1981. Inter-department Correspondence Proposal for Chemical Storage Area to Bill Stewart. Sparton Southwest, Inc.

Mico, Richard D. July 21, 1983. Letter to Regional Administrator, USEPA Region VI, Dallas, Texas.

Mico, Richard D. December 18, 1986. Letter to Peter Pache, State of New Mexico Environmental Improvement Division, Hazardous Waste Section, Santa Fe, New Mexico.

Mico, Richard D. February 18, 1987. Letter to Jack Elvinger, State of New Mexico Environmental Improvement Division, Hazardous Waste Section, Santa Fe, New Mexico.

New Mexico Environmental Improvement. September 23, 1994. Environmental Protection Title 20, Hazardous Waste Chapter 4, Part 1, Hazardous Waste Management Regulations (EIB/HWMR-7).

U.S. Department of Agriculture, Soil Conservation Service. June 1977. Bernalillo County and Parts of Sandoval and Valencia Counties, New Mexico.

U.S. Department of Commerce, Weather Bureau. 1958. Wind Summary and Annual Wind Rose, 1949-1958.

**ATTACHMENT 1
PART A APPLICATION**

EPA ID Number (Enter from page 1)	Secondary ID Number (Enter from page 1)
N M D Q 8 3 2 1 2 3 3 2	

XI. Nature of Business (Provide a brief description)

The current activity at the facility is a car dealership (NAICS-441110)
 The immediate preceding activity was a machine shop (NAICS-332710)
 When the surface impoundment was in operation the facility was a printed circuit electronic assembly manufacturing facility (NAICS-334418)

XII. Process Codes and Design Capacities

- A. PROCESS CODE** - Enter the code from the list of process codes below that best describes each process to be used at the facility. Thirteen lines are provided for entering codes. If more lines are needed, attach a separate sheet of paper with the additional information. For "other" processes (i.e., D99, S99, T04 and X99), describe the process (including its design capacity) in the space provided in item XIII.
- B. PROCESS DESIGN CAPACITY** - For each code entered in column A, enter the capacity of the process.
- AMOUNT** - Enter the amount. In a case where design capacity is not applicable (such as in a closure/post-closure or enforcement action) enter the total amount of waste for that process.
 - UNIT OF MEASURE** - For each amount entered in column B(1), enter the code from the list of unit measure codes below that describes the unit of measure used. Only the units of measure that are listed below should be used.
- C. PROCESS TOTAL NUMBER OF UNITS** - Enter the total number of units used with the corresponding process code.

PROCESS CODE	PROCESS	APPROPRIATE UNITS OF MEASURE FOR PROCESS DESIGN CAPACITY	PROCESS CODE	PROCESS	APPROPRIATE UNITS OF MEASURE FOR PROCESS DESIGN CAPACITY	
Disposal:						
D79	Underground Injection Well Disposal	Gallons; Liters; Gallons Per Day; or Liters Per Day	T81	Cement Kiln	Gallons Per Day; Liters Per Day; Pounds Per Hour; Short Tons Per Hour; Kilograms Per Hour; Metric Tons Per Day; Metric Tons Per Hour; Short Tons Per Day; Btu Per Hour; Liters Per Hour; Kilograms Per Hour; or Million Btu Per Hour	
D80	Landfill	Acre-feet; Hectare-meter; Acres; Cubic Meters; Hectares; Cubic Yards	T82	Lime Kiln		
D81	Land Treatment	Acres or Hectares	T83	Aggregate Kiln		
D82	Ocean Disposal	Gallons Per Day or Liters Per Day	T84	Phosphate Kiln		
D83	Surface Impoundment Disposal	Gallons; Liters; Cubic Meters; or Cubic Yards	T85	Coke Oven		
D99	Other Disposal	Any Unit of Measure Listed Below	T86	Blast Furnace		
Storage:						
S01	Container	Gallons; Liters; Cubic Meters; or Cubic Yards	T87	Smelting, Melting, Or Refining Furnace	Gallons Per Day; Liters Per Day; Pounds Per Hour; Short Tons Per Hour; Kilograms Per Hour; Metric Tons Per Day; Metric Tons Per Hour; Short Tons Per Day; Btu Per Hour; Gallons Per Hour; Liters Per Hour; or Million Btu Per Hour	
S02	Tank Storage	Gallons; Liters; Cubic Meters; or Cubic Yards	T88	Titanium Dioxide Chloride Oxidation Reactor		
S03	Waste Pile	Cubic Yards or Cubic Meters	T89	Methane Reforming Furnace		
S04	Surface Impoundment Storage	Gallons; Liters; Cubic Meters; or Cubic Yards	T90	Pulping Liquor Recovery Furnace		
S05	Drip Pad	Gallons; Liters; Acres; Cubic Meters; Hectares; or Cubic Yards	T91	Combustion Device Used In The Recovery Of Sulfur Values From Spent Sulfuric Acid		
S06	Containment Building Storage	Cubic Yards or Cubic Meters	T92	Halogen Acid Furnaces		
S99	Other Storage	Any Unit of Measure Listed Below	T93	Other Industrial Furnaces Listed In 40 CFR §260.10		
Treatment:						
T01	Tank Treatment	Gallons Per Day; Liters Per Day; Short Tons Per Hour; Gallons Per Hour; Liters Per Hour; Pounds Per Hour; Short Tons Per Day; Kilograms Per Hour; Metric Tons Per Day; or Metric Tons Per Hour	T94	Containment Building - Treatment		Cubic Yards; Cubic Meters; Short Tons Per Hour; Gallons Per Hour; Liters Per Hour; Btu Per Hour; Pounds Per Hour; Short Tons Per Day; Kilograms Per Hour; Metric Tons Per Day; Gallons Per Day; Liters Per Day; Metric Tons Per Hour; or Million Btu Per Hour
T02	Surface Impoundment Treatment	Gallons Per Day; Liters Per Day; Short Tons Per Hour; Gallons Per Hour; Liters Per Hour; Pounds Per Hour; Short Tons Per Day; Kilograms Per Hour; Metric Tons Per Day; or Metric Tons Per Hour	Miscellaneous (Subpart X):			
T03	Incinerator	Short Tons Per Hour; Metric Tons Per Hour; Gallons Per Hour; Liters Per Hour; Btu Per Hour; Pounds Per Hour; Short Tons Per Day; Kilograms Per Hour; Gallons Per Day; Liters Per Day; Metric Tons Per Hour; or Million Btu Per Hour	X01	Open Burning/Open Detonation	Any Unit of Measure Listed Below	
T04	Other Treatment	Gallons Per Day; Liters Per Day; Pounds Per Hour; Short Tons Per Hour; Kilograms Per Hour; Metric Tons Per Day; Metric Tons Per Hour; Short Tons Per Day; Btu Per Hour; Gallons Per Day; Liters Per Hour; or Million Btu Per Hour	X02	Mechanical Processing	Short Tons Per Hour; Metric Tons Per Hour; Short Tons Per Day; Metric Tons Per Day; Pounds Per Hour; Kilograms Per Hour; Gallons Per Hour; Liters Per Hour; or Gallons Per Day	
T80	Boiler	Gallons; Liters; Gallons Per Hour; Liters Per Hour; Btu Per Hour; or Million Btu Per Hour	X03	Thermal Unit	Gallons Per Day; Liters Per Day; Pounds Per Hour; Short Tons Per Hour; Kilograms Per Hour; Metric Tons Per Day; Metric Tons Per Hour; Short Tons Per Day; Btu Per Hour; or Million Btu Per Hour	
			X04	Geologic Repository	Cubic Yards; Cubic Meters; Acre-feet; Hectare-meter; Gallons; or Liters	
			X99	Other Subpart X	Any Unit of Measure Listed Below	

UNIT OF MEASURE	UNIT OF MEASURE CODE	UNIT OF MEASURE	UNIT OF MEASURE CODE
Gallons	G	Short Tons Per Hour	D
Gallons Per Hour	E	Metric Tons Per Hour	W
Gallons Per Day	U	Short Tons Per Day	N
Liters	L	Metric Tons Per Day	S
Liters Per Hour	H	Pounds Per Hour	J
Liters Per Day	V	Kilograms Per Hour	R
		Million Btu Per Hour	X

EPA ID Number (Enter from page 1) <table border="1" style="width:100%; border-collapse: collapse; text-align: center;"> <tr> <td>N</td><td>M</td><td>D</td><td>0</td><td>8</td><td>3</td><td>2</td><td>1</td><td>2</td><td>3</td><td>3</td><td>2</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> </table>	N	M	D	0	8	3	2	1	2	3	3	2									Secondary ID Number (Enter from page 1) <table border="1" style="width:100%; border-collapse: collapse; text-align: center;"> <tr> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> </table>																				
N	M	D	0	8	3	2	1	2	3	3	2																														

XV. Map

Attach to this application a topographic map, or other equivalent map, of the area extending to at least one mile beyond property boundaries. The map must show the outline of the facility, the location of each of its existing and proposed intake and discharge structures, each of its hazardous waste treatment, storage, or disposal facilities, and each well where it injects fluids underground. Include all springs, rivers and other surface water bodies in this map area. See instructions for precise requirements.

XVI. Facility Drawing

All existing facilities must include a scale drawing of the facility (See instructions for more detail).

XVII. Photographs

All existing facilities must include photographs (aerial or ground-level) that clearly delineate all existing structures; existing storage, treatment and disposal areas; and sites of future storage, treatment or disposal areas (see instructions for more detail).

XVIII. Certification(s)

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Owner Signature	Date Signed
<i>Richard D. Mico</i>	<i>Sept 5, 2000</i>
Name and Official Title (Type or print)	
Richard Mico, Vice President and General Manager	
Owner Signature	Date Signed
Name and Official Title (Type or print)	
Operator Signature	Date Signed
Name and Official Title (Type or print)	
Operator Signature	Date Signed
Name and Official Title (Type or print)	

XIX. Comments

Section IX - It is unclear what code to enter. The current activity at the facility is a car dealership (NAICS 441110) The immediate preceding activity was a machine shop (NAICS 332710) When the surface impoundment was in operation the facility was a printed circuit electronic assembly manufacturing facility (NAICS 334418)

Note: Mail completed form to the appropriate EPA Regional or State Office. (Refer to instructions for more information)

ATTACHMENT 2
TOPOGRAPHIC MAPS 1, 2, AND 3

**TO VIEW THE MAP AND/OR
MAPS WITH THIS DOCUMENT,
PLEASE CALL THE
HAZARDOUS WASTE BUREAU
AT 505-476-6000 TO MAKE AN
APPOINTMENT**

ATTACHMENT 3
POND WASTE ANALYSIS

Albuquerque Analytical, Inc.

4115 SILVER AVE S E.
ALBUQUERQUE NEW MEXICO 87108
Telephones: (505) 266-9106, (505) 268-5776 — Night 294-6310

Manifest # 80-1

ANALYTICAL REPORT

From Sparton Southwest

Address 9621 Coors Rd. N.W. Albuquerque, NM 87103

Work authorized by Reece Lebow Date Received September 4, 1980

Analyzed by J.M. Grover, M.S. Date September 15, 1980 AAI# 12596

huc

SAMPLE ID	Over Flow Pond	Main Pond
Copper (ppm)	9687.5	295.5
Ti (ppm)	58.0	97.5
Palladium (ppm)	< 0.05	< 0.05
Lead (ppm)	13.7	6.52
pH	1.80	1.79

See cover letter

COPIED
SEP 15 1980



GENERATOR'S WASTE MATERIAL PROFILE SHEET

GENERAL DIRECTIONS. In order for us to determine whether we can lawfully, safely and environmentally transport, store, treat or dispose of your waste stream, we must ask certain information about your waste. All of the information we seek is necessary for our purposes and yours. Be complete in your answers: if your response is "none," so indicate. Answers must be in ink or typewritten. Information you provide will be maintained in strictest confidence. Please make a copy of this form for your records, returning the original to the location indicated below.

THIS FORM AND ANY SUPPLEMENTAL INFORMATION SHOULD BE RETURNED TO:

1. GENERATOR NAME: Sparton Southwest Inc.

2. GENERATING FACILITY NAME/ADDRESS/USEPA FACILITY I.D. NUMBER (IF ANY): Sparton Southwest Inc.
9621 Coors Rd. N.W., Albuquerque, New Mexico 87105
EPA No. NMD083212332

3. COMPANY CONTACTS:

GENERAL	_____	TITLE	_____	PHONE	_____
	_____	TITLE	_____	PHONE	_____
TECHNICAL	<u>Cleoves Martinez</u>	TITLE	<u>Envr. Engineer</u>	PHONE	<u>(505)898-1150</u>
	_____	TITLE	_____	PHONE	_____

4. WASTE NAME. _____

PROCESS GENERATING WASTE: Printed circuit board manufacturing

5. WASTE CHARACTERISTICS:

A. PHASES/LAYERS. BILAYERED MULTILAYERED NONE

B. PHYSICAL STATE AT 70°F: SOLID SEMI-SOLID LIQUID
 POWDER OTHER: _____

C. SOLIDS: TOTAL (%) 8.88% TOTAL DISSOLVED (ppm or %): 8.54%

D. SPECIFIC WEIGHT (AS # PER UNIT): 8.829 #/gallon

E. pH 8.48 (Show the following as range of %)

AS: H ₂ SO ₄	_____ %	H ₃ PO ₄	_____ %
HCl	_____ %	NaOH	_____ %
HF	_____ %	NH ₄ OH	_____ %
HNO ₃	_____ %	Ca(OH) ₂	_____ %
OTHER	_____ %		_____ %

F. FLASH POINT greater than 212 °F (CLOSED CUP TEST ONLY)

G. VAPOR PRESSURE (in mm of Hg at 25°C) app. 23.8

H. BTU PER # n/a ASH CONTENT 7.27 %

I. CHARACTERISTIC COLOR blue/gray DISTINCTIVE ODOR none

J. HALOGENATED? no % SULFONATED? no %

K. ALPHA RADIATION AS pCi/l N/A

A. ORGANIC COMPONENTS (WITH RANGES — INDICATE WHETHER % OR ppm)

<u>n/a</u>	<u>—</u>	<u>—</u>	<u>—</u>
<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>
<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>
<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>

(ATTACH ADDITIONAL PAGES IF NECESSARY)

DOES THIS WASTE CONTAIN ENDRIN, LINDANE, METHOXYCHLOR, TOXAPHENE, 2,4-D, 2,4,5-TP SILVEX, OR ANY OTHER ORGANIC COMPOUNDS LISTED BY USEPA AT 40 CFR 261.24? No IF SO, PLEASE NOTE ABOVE.

B. HEAVY METALS (WITH ppm RANGES):

TOTAL	TOTAL LEACHABLE	TOTAL	TOTAL LEACHABLE
Ag <u>25.1</u>	<u>—</u>	Hg <u>less than 0.001</u>	<u>—</u>
As <u>less than 0.01</u>	<u>—</u>	Ni <u>10.6</u>	<u>—</u>
Ba <u>less than 1.</u>	<u>—</u>	Pb <u>7.04</u>	<u>—</u>
Cd <u>0.18</u>	<u>—</u>	Se <u>0.28</u>	<u>—</u>
Cr <u>less than 0.05</u>	<u>—</u>	Zn <u>6.21</u>	<u>—</u>
Cu <u>1730.</u>	<u>—</u>	Other (ATTACH ADDITIONAL PAGES)	

(IF YOU HAVE DETERMINED TOTAL LEACHABLES USING USEPA'S "EP TOXICITY TEST PROCEDURE" — AT 40 CFR, PART 261, APPENDIX II — SO INDICATE BY MARKING "EP" AFTER THE RESULT SHOWN ABOVE.)

C. INORGANIC COMPONENTS (WITH % RANGES): OTHER

TOTAL CYANIDE <u>less than 0.05</u> ppm	<u>—</u>	<u>—</u>	%
FREE CYANIDE <u>less than 0.05</u> ppm	<u>—</u>	<u>—</u>	%
SULFIDE AS: <u>less than 0.05</u> ppm	<u>—</u>	<u>—</u>	%
BISULFITE AS: <u>less than 1.0</u> ppm	<u>—</u>	<u>—</u>	%
SULFITE AS: <u>less than 1.0</u> ppm	<u>—</u>	<u>—</u>	%

(ATTACH ADDITIONAL PAGES IF NECESSARY)

D. DOES THIS WASTE STREAM CONTAIN BIOLOGIC MATERIALS, PATHOGENS, OR ETIOLOGICAL AGENTS? No IF SO, ATTACH ADDITIONAL PAGES DESCRIBING SUCH MATERIALS.

E. IS THE WASTE A PESTICIDE OR PRODUCED BY A PESTICIDE MANUFACTURING PROCESS? No IF SO, INDICATE WHETHER IT CONTAINS:

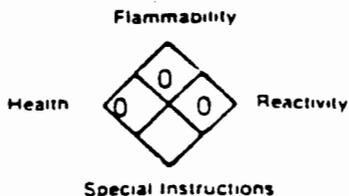
- ORGANOPHOSPHATES — CONTAINING SULFUR YES NO
 CARBAMATES
 CHLORINATED HYDROCARBONS

8. HAZARDOUS COMPONENTS AND CHARACTERISTICS

A. HAZARDOUS PROPERTIES (INSERT NUMBER CODES PER INSTRUCTIONS ON LAST PAGE)

(1) TOXICITY RATING. INHALATION 0 DERMAL 1 ORAL 2

(2) HAZARD IDENTIFICATION SYSTEM



B. LIST ANY OTHER ACUTE OR CHRONIC HAZARDS ASSOCIATED WITH OR ALLEGED TO BE ASSOCIATED WITH HUMAN CONTACT WITH OR EXPOSURE TO THE WASTE:

Heavy metal poisoning might be anticipated with ingestion of substantial amounts.

A. IS THIS WASTE A "HAZARDOUS MATERIAL" AS DEFINED BY REGULATIONS OF THE U.S. DEPARTMENT OF TRANSPORTATION PURSUANT TO THE HAZARDOUS MATERIALS TRANSPORTATION ACT? Yes
(SEE 49 CFR 172.101 AND 173 FOR "HAZARDOUS MATERIALS" LIST AND CHARACTERISTICS.) IF SO, PLEASE ADVISE OF THE FOLLOWING:

- (1) CORRECT SHIPPING DESCRIPTION: Hazardous Waste Liquid N.O.S.
(2) HAZARD CLASS(ES): ORM-E
(3) MATERIAL I.D. NO.(S) NA9189

B. DOES THIS WASTE CONTAIN ANY "HAZARDOUS SUBSTANCE" AS DEFINED BY REGULATIONS OF THE U.S. ENVIRONMENTAL PROTECTION AGENCY PURSUANT TO SECTION 311 OF THE CLEAN WATER ACT? No
(SEE 40 CFR 117 FOR "HAZARDOUS SUBSTANCES" AND CATEGORIES.) IF SO, PLEASE ADVISE OF THE FOLLOWING:

- (1) THE NAMES OF EACH HAZARDOUS SUBSTANCE PRESENT IN THE WASTE, THE HAZARD CATEGORY (X, A, B, C OR D) AND THE APPROXIMATE CONCENTRATION OF THE SUBSTANCE BY WEIGHT IN THE WASTE:
n/a

(ATTACH ADDITIONAL PAGES IF NECESSARY)

C. IS THIS WASTE A "HAZARDOUS WASTE" AS DEFINED BY REGULATIONS OF THE U.S. ENVIRONMENTAL PROTECTION AGENCY PURSUANT TO SECTION 3001 OF THE RESOURCE CONSERVATION AND RECOVERY ACT? Yes (SEE 40 CFR, PART 261 FOR WHAT IS A "HAZARDOUS WASTE.") IF SO, STATE:

- (1) THE USEPA HAZARDOUS WASTE NUMBER(S): F006, F007
(2) DO YOU CLAIM TO BE A SMALL QUANTITY GENERATOR? No (SEE 40 CFR 261.5.)

D. IS THIS WASTE A "HAZARDOUS WASTE" AS DEFINED BY THE ENVIRONMENTAL REGULATORY AGENCY IN YOUR STATE? Yes IF SO, STATE WHY IT IS SO DEFINED AND ANY STATE HAZARDOUS WASTE CODE NUMBERS ASSIGNED: Toxicity

IS THE INFORMATION PROVIDED IN SECTIONS 6-9 BASED UPON LABORATORY ANALYSIS OF THE WASTE MATERIAL? Yes IF SO, PLEASE ADVISE OF THE DATE OF THE MOST RECENT ANALYSIS: _____

11. HAVE YOU OBTAINED TOXICITY STUDIES OF THIS WASTE STREAM? No IF SO, PLEASE ATTACH A COPY OF THE RESULTS.

12. QUANTITY/SHIPPING REQUIREMENTS:

ANTICIPATED VOLUME IS: 5000

GALLONS TONS CUBIC YARDS DRUMS OTHER

PER: DAY WEEK MONTH YEAR ONE TIME

TRANSPORTATION EQUIPMENT REQUIRED: Vacuum tanker

SERVICE/SCHEDULING REQUIREMENTS: Contact Cleoves Martinez for scheduling

GENERATOR'S

AUTHORIZED SIGNATORY

[Signature] TITLE Prod Mgr DATE 12/1/81

CONFIDENTIALITY AGREEMENT _____

as consideration for the Generator's release of the above information, and any other supplemental data provided, agrees to treat such information as confidential property and will not disclose such information to others except as is required by law, and in such circumstances only after first giving notice to the Generator.

By _____
Name _____
Title _____

ATTACHMENT 4
POST-CLOSURE QUARTERLY INSPECTION CHECKLIST

POST-CLOSURE QUARTERLY INSPECTION CHECKLIST

Facility: **Sparton Technology, Inc.**
 9621 Coors Road, N.W.
 Albuquerque, New Mexico 87103

Date of Inspection: _____

Type of Inspection: Maintenance ___ Wells ___ Subsidence ___ Security ___

Name of Inspector: _____ Name of Surveyor: _____

ITEM	DESCRIPTION	PROBLEM Y/N	REMARKS	ACTION TAKEN	DATE
Maintenance:	1. <u>Wearing surface</u>				
	2. <u>Gouges</u>				
	3. <u>Deterioration</u>				
	4. <u>Subsidence</u>				
General:	1. <u>Ponding on cap</u>				
	2. <u>Rainfall run-on</u>				
	3. <u>Condition of swale</u>				
Subsidence:	1. <u>Benchmark survey</u>				
Monitor Well:	1. <u>Surface leakage to wells</u>				
	2. <u>Rusting or broken well covers</u>				
	3. <u>Integrity of locks</u>				
	4. <u>Indication of well plugging</u>				
Security:	1. <u>Integrity of fences and gates</u>				
	2. <u>Integrity of locks</u>				
	3. <u>Integrity and status of signs</u>				
	4. <u>Evidence of vandalism</u>				
	5. <u>Integrity of benchmarks</u>				

INSPECTOR'S SIGNATURE: _____

DATE: _____

OWNER/OPERATOR'S SIGNATURE: _____

DATE: _____

ATTACHMENT 5
CLOSURE PLAN, POND AND DRUM STORAGE AREAS

A Report Prepared For

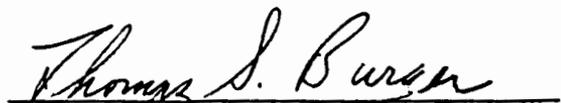
Sparton Corporation
2400 East Ganson Street
Jackson, Michigan 49402

POND AND DRUM STORAGE AREAS
CLOSURE PLAN
SPARTON TECHNOLOGY, INC.
COORS ROAD PLANT
ALBUQUERQUE, NEW MEXICO

HLA Job. No. 6310,012.12

Prepared by


Howard Gustafson
Howard Gustafson, P.E. *U by JFA*
Senior Engineer


Thomas S. Burger
Thomas S. Burger, R.P.S.
Associate Environmental Scientist

Harding Lawson Associates
6220 Westpark, Suite #100
Houston, Texas 77057
Telephone: (713) 789-8050

December 19, 1985

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

I	GENERAL FACILITY INFORMATION	1
II	INTRODUCTION	1
III	BACKGROUND	4
	A. Drum Storage Area	4
	B. Pond and Sump Area	6
	C. Additional Background Information	7
	D. Asphaltic Concrete Cap	10
IV	GENERAL INFORMATION	11
	A. Facility Size and Type	11
	B. Hazardous Wastes	12
	C. Hazardous Waste Management Units	12
V	POND AND SUMP CLOSURE	14
	A. Closure Process	15
	B. Closure Standard	19
	C. Closure Certification	19
VI	CLOSURE OF DRUM STORAGE AREAS	20
	A. Old Drum Area	20
	B. New Drum Area	21
VII	GROUND-WATER MONITORING	21
VIII	SECURITY REQUIREMENTS	22
IX	CLOSURE CERTIFICATION	22
X	NOTICE OF CLOSURE	23
XI	FINAL CLOSURE SCHEDULE	23
XII	CLOSURE COST ESTIMATES	24

LIST OF APPENDICES

A	Pond and Sump Area Closure
B	Material and Construction Specifications
C	Chain of Custody Procedures
D	Analytical Methods
E	Monitoring Well Plugging and Abandonment Procedures
F	Model Safety Plan Outline
G	Old Drum Area Soils Investigation
H	Final Closure Schedule
I	Closure Cost Estimates

LIST OF PLATES

Plate 1	Location Map	2
Plate 2	Plot Plan	3
Plate 3	Chemical Storage Facility	5
Plate A-1	Pond and Sump Area Existing Facilities - Base Map	
Plate A-2	Pond and Sump Area - Existing Cross Sections and Details	
Plate A-3	Pond and Sump Area - Final Plan and Cross Section	
Plate A-4	Fencing Details	

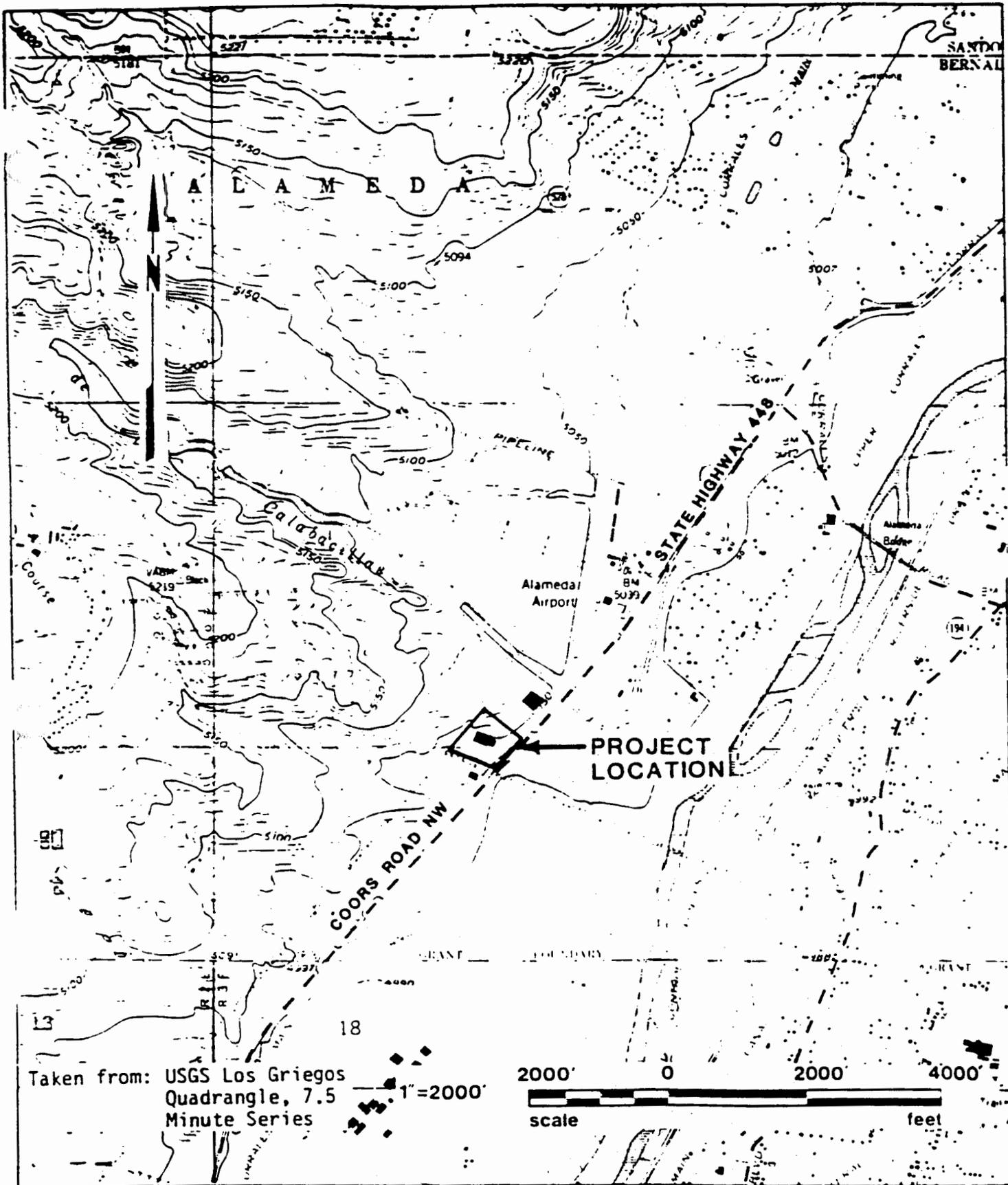
I GENERAL FACILITY INFORMATION

- A. Owner and Operator: Sparton Technology, Inc.
- B. EPA ID No.: NMD083212332
- C. Mailing Address: Post Office Box 1784
Albuquerque, New Mexico 87103
- D. Facility Location: 9621 Coors Road, N.W.
Albuquerque, New Mexico 87114
- E. Telephone: (505) 892-5300
- F. Type of Facility: Hazardous Waste Storage

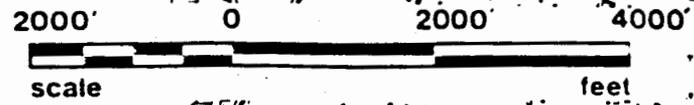
II INTRODUCTION

Sparton Technology, Inc. (Sparton) has operated four hazardous waste storage units, at its Coors Road facility, which have received wastes since November 19, 1980. The facility location is shown in Plate 1. These units include two lined surface impoundments (ponds) and two drum storage areas, as shown in Plate 2. Sparton has submitted a Part A Application for a Hazardous Waste Permit to operate these units. The operation and subsequent closure of the ponds and the drum storage areas is subject to the New Mexico Hazardous Waste Management (HWM) Regulations.

Sparton also operated a waste solvent storage sump, which was closed in October 1980. Since this date is prior to the effective date of 40 CFR 265, Subtitle C, this sump is not regulated under New Mexico's HWM regulations.



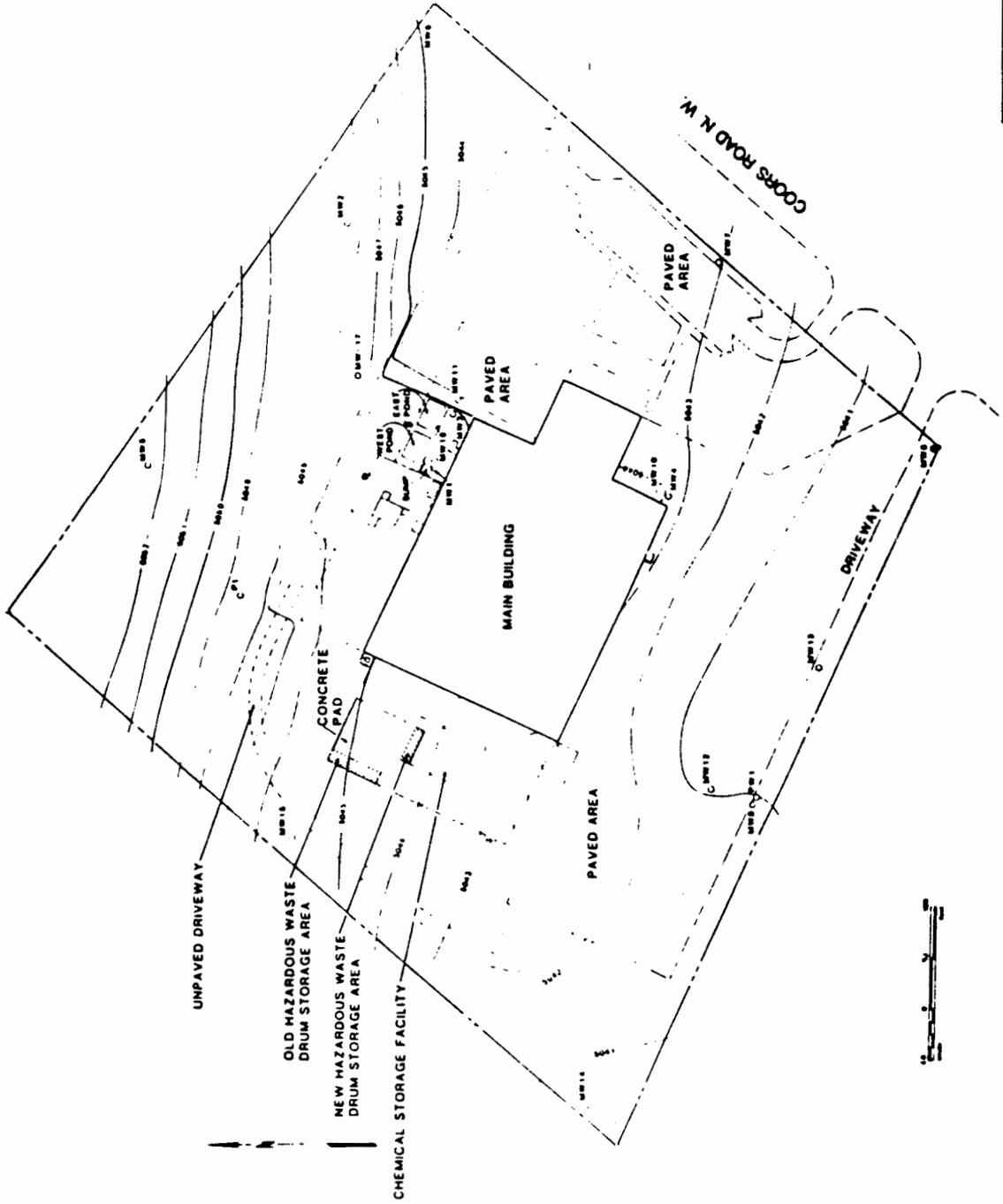
Taken from: USGS Los Griegos
 Quadrangle, 7.5
 Minute Series
 1"=2000'



Harding Lawson Associates
 Engineers Geologists
 & Geophysicists

LOCATION MAP
 Sparton Technology, Inc.
 Albuquerque, New Mexico

1



- LEGEND**
- MONITOR WELL LOCATION
 - WATER METER
 - GAS METER
 - CHAIN LINK FENCE
 - - - LIMITS OF PAVEMENT
 - - - UNPAVED DRIVEWAY
 - ELEVATION CONTOURS (MILL)
 - - - PROPERTY LINE



HFA
 Hazardous Waste Facility Assessment
 Project:
 Date: 08/18/10
 Scale: 1" = 30'
 12.17.10

The planned closure of the ponds, the drum storage areas, and the sump are subject to the New Mexico Water Quality Control Commission Regulations.

This closure plan will describe how Sparton plans to close each unit at this facility in a manner which is environmentally sound and which meets the legal requirements of both sets of regulations.

III BACKGROUND

A. Drum Storage Area

The old hazardous waste drum storage area (old drum area) was used to store hazardous wastes prior to May 1981, when the present hazardous waste drum storage area (new drum area) became operational. The old drum area was located adjacent to the west edge of a concrete pad north of the new drum area.

The new drum area occupies the northern portion of a covered chemical storage facility which is fenced and completely underlain by a curbed concrete pad (see Plate 3). The concrete pad is sloped to drain any spills toward a concrete gutter which, in turn, leads to an open-top concrete sump. Segregation of incompatible materials is maintained by a series of spill containment curbs which control any drainage toward the gutter.

Sparton has notified the New Mexico Environmental Improvement Division (EID) of its intention to cease storage of containerized hazardous waste for periods of longer than 90 days and to withdraw its Part A Application. To convert to short term storage, the drum storage areas must be closed in accordance with the HWM regulations. Therefore, this closure plan presents the steps necessary to close the old and new drum areas in a manner which provides for their subsequent reuse.

B. Pond and Sump Area

The two ponds (East Pond and West Pond) and the closed sump are located on the north side of the manufacturing plant. The ponds were used exclusively for storage of aqueous plating wastes, on a regular basis, until August 1983, when Sparton ceased discharging to either pond and removed the remaining plating wastes. At that time, the liners were visually inspected and appeared to be intact.

The sump was used exclusively for the storage of waste solvents until its closure in October 1980. Sump closure consisted of removing residual wastes from the sump and filling the sump with sand. The removed wastes were containerized and disposed as a hazardous waste at an appropriate off-site disposal facility.

C. Additional Background Information

The site is located about 2,500 feet northwest of the Rio Grande River on the west side of Coors Road, NW. Locally, the area is hilly and slopes in several wide terraces toward the river. The site is approximately 60 feet above the Rio Grande River, and 40 to 60 feet lower than the Paradise Park residential area, which is located approximately 4,000 feet west of the site. Approximately 200 feet southeast of the site, and across Coors Road, is the Coralles Canal. The Calabacilla Arroyo is located about 1,000 feet north of the site.

The site is underlain by the massive sand and gravel aquifer of the Rio Grande River Valley Basin. Surface elevations are approximately 65 feet above the water table. This is a discharge region for the river, and regional ground-water flows in a southward direction consistent with the flow of the river and slightly divergent from the river. Soils in the area are generally sand and gravel with lenses of finer grained materials ranging from silty sands to clay. A locally extensive finer grained unit underneath the subject site separates a thin upper aquifer (0- to 10-feet thick) from a lower aquifer estimated to be 50- to 60-feet-thick. The finer-grained unit consists of silty sands to clay, is 5- to 10-feet thick, and has been characterized as a semi-confining unit.

Ground-water monitoring has detected metallic hazardous waste constituents and a number of volatile organic constituents in ground water of the upper and lower aquifers. Although contamination is believed to be much higher in the upper aquifer, an investigation is underway to determine the vertical and lateral extent of the contamination. A vadose zone investigation is presently underway to evaluate the extent of contamination in the soils of the unsaturated zone. Previous studies and preliminary results from the present investigations indicate that extensive spreading of contaminants has occurred in the vadose zone. Soil moisture values are generally low and are believed to represent evaporation from the water table.

The Albuquerque climate is semi-arid, with annual rainfall measuring approximately 10 inches per year and annual evapotranspiration in excess of 60 inches per year. Record rainfalls are on the order of 1 inch in 24 hours. Rain at the facility generally enters the top layer of soil and is held by capillary action until removed by a wicking action caused by evaporation at the surface. This phenomenon results in practically no local recharge of the aquifer. Preliminary results from the vadose zone investigation indicate that, although metallic and organic constituents are detectable in soils at most depths, no concentrated reservoirs of contamination appear to exist above the water table. Some metals in soil samples are detected in the low parts per million range, and halogenated organic chemicals

have been either not detected or have been in the low parts per billion.

In contrast to the above, HNU meter readings of soil samples at the time of collection indicated organic contaminants in the vapor phase, possibly resulting from vaporization of contaminants in the upper aquifer. This suggests that a useful remedial technology may involve air venting within the vadose zone to drive off volatile constituents. This alternative has not been fully evaluated as yet; however, we feel that any cap design must be compatible with this type of technology. Air venting would only be feasible if the cap were designed to a minimal size, leaving surrounding soils exposed to the atmosphere to provide for the escape of organic vapors.

Sparton has undertaken an extensive site investigation to characterize the site's geology and hydrogeology and to determine the extent of contamination and the dynamics of contaminant migration. Reports of the first three phases of investigation include the following:

- MONITORING WELL INSTALLATION REPORT, SPARTON SOUTHWEST, INC., COORS ROAD FACILITY, Harding Lawson Associates, June 29, 1983
- INVESTIGATION OF SOIL AND GROUND-WATER CONTAMINATION, SPARTON TECHNOLOGY, COORS ROAD FACILITY, ALBUQUERQUE, NEW MEXICO, Harding Lawson Associates, March 19, 1984

- HYDROGEOLOGIC CHARACTERIZATION AND REMEDIAL INVESTIGATION, SPARTON TECHNOLOGY, INC., 9261 COORS ROAD, NORTHWEST, ALBUQUERQUE, NEW MEXICO, Harding Lawson Associates, March 13, 1985

A final phase of investigation is underway which includes studies of vadose zone contamination, ground-water mass transport modeling, and soil gas studies. These studies will be discussed in future reports.

D. Proposed Asphaltic Concrete Cap

As shown in this closure plan, the pond and sump area will be closed and subsequently covered with an asphaltic concrete cap to prevent surface water infiltration and subsequent leaching of contaminants from the vadose zone into the ground water. Asphaltic concrete has, according to EPA-600/Z-76-255, proven to be relatively impervious with coefficients of permeability of 1×10^{-3} cm/sec or less.

IV GENERAL INFORMATION

A. Facility Size and Type

The Coors Road facility is located on an approximately 12-acre parcel and consists of an approximately 64,000-square-foot building constructed in 1961. The company manufactures commercial, industrial, and military electronics which include circuit board

assemblies, transducers, sensors, and pressure systems. Facility operations include machine and model shops, printed circuit board manufacturing facilities, assembly areas, testing laboratory, engineering, and drafting.

B. Hazardous Wastes

The printed circuit manufacturing process at the Coors Road plant employs the use of metal plating which generates an aqueous plating waste which is classified as hazardous due to heavy metals and low pH. Waste solvents (chlorinated and nonchlorinated) are generated primarily from cold solvent cleaning of electronic components. The waste solvents, which are listed hazardous wastes, have always been managed separately from the plating wastes.

C. Hazardous Waste Management Units

1. Surface Impoundments

The two ponds are located in a fenced area on the north side of the main building. They are each approximately 20 by 30 feet in plan dimension by 5 feet deep. The ponds and the area between the ponds are lined with a 30-mil, two-ply hypalon liner with a polyester scrim. The East pond has concrete block walls, and the West Pond has cast concrete walls. In each, the walls contain a sloped sand back-fill to support the liner. The pond area is enclosed by a security fence.

The surface impoundments were used for temporary storage of aqueous plating wastes. The ponds were alternately filled and emptied, providing regular opportunities to visually inspect for evidence of liner failure.

Any hazardous wastes or hazardous waste constituents which may have emanated from the ponds would have originated from aqueous plating wastes only. Waste solvents have never been stored in the ponds.

2. Old Solvent Sump

The sump is located in the same general area as the surface impoundments, constructed of concrete blocks, and measures approximately 5 feet by 5 feet in plan dimension by 2 feet deep. At one time, the sump was used for the storage of waste chlorinated and non-chlorinated solvents, which were emptied into the sump manually. Sparton closed the sump in October 1980 by removing the remaining waste and then filling the sump with sand. Since that time, no wastes have been managed in the sump. The sump is believed to be the source of organic contamination in the soils and ground water under the site.

a. Old Drum Area

The old drum area is an area where drums of hazardous waste were stored upon the ground surface prior to May 1981,

when containerized hazardous waste storage was transferred to the new chemical storage facility. The old drum area is immediately west of a concrete pad. The old drum area was not lined or paved with an impervious surface and did not have spill containment structures.

b. New Drum Area

The present hazardous waste drum storage area is the northern portion of a chemical storage facility which was specifically designed for this purpose (see Plate 3). The chemical storage facility is constructed over a curbed concrete pad which slopes to a concrete gutter which, in turn, drains to a concrete spill collection sump. Storage areas are segregated by 6-inch high curbs which serve to direct any spills towards the gutter. The entire facility is covered and enclosed by a fence which is equipped with a windbreak. The chemical storage facility fully meets regulatory requirements and contemporary standards for a hazardous waste and hazardous chemical drum storage area.

V POND AND SUMP CLOSURE

Pond and sump closure will consist of some excavation of potentially contaminated surface soils prior to placement of a relatively impervious asphaltic concrete cap. The soils thus removed will be disposed as fill in the ponds. The cap will divert surface

water and rainfall from the pond and sump area, thus minimizing infiltration of surface water into the ground.

A. Basis of Cap Design

An asphaltic concrete cap is proposed in lieu of the standard 2-1-2 cap described in EPA's Draft RCRA Guidance Document, LANDFILL DESIGN LINER SYSTEMS AND FINAL COVER, July 1982. The basis of this choice is related to site-specific characteristics.

Additional borings may become necessary in the future to further evaluate contamination or to install additional monitoring wells. The cap design should provide for easy repair in the event of additional borings or excavations. It is also possible that the final site remedial design would call for an extension of the capped area. Therefore, any cap installed over the pond and sump area should be designed to provide for a technically feasible enlargement. An asphaltic concrete cap can be easily repaired or extended as needed. A 2-1-2 cap (which includes a membrane component) will be difficult or impossible to repair, should additional borings be required. In addition, a clay/membrane cap is not amenable to areal enlargement.

A 2-1-2 cap (which includes a recompacted clay layer) will be subject to dehydration damage (shrinkage) in the semi-arid climate of Albuquerque, New Mexico.

We believe the most notable functions of a cap in this area will be to prevent surface water infiltration and to efficiently shed rainfall away from the closure area. HLA feels a properly engineered and constructed pavement-quality asphalt concrete cap will meet this requirement and, at the same time, avoid the disadvantages of a compacted clay membrane cap. Asphaltic concrete has, according to EPA-600/Z-76-255, proven to be relatively impervious with coefficients of permeability of 1×10^{-8} cm/sec or less.

The asphaltic concrete cap proposed in this plan has been designed using the AASHTO design method with a California Bearing Ratio of 10 for sandy soil, and a load bearing capacity of 100,000 pounds. The cap will consist of a six inch asphaltic base course overlain by a tack coat and a three inch asphaltic concrete surface course.

B. Closure Process

1. Site Preparation

Monitoring Wells MW1, MW3, and MW11, located in the vicinity of construction activity, will be abandoned and plugged prior to closure of the pond and sump area. The methods for plugging monitoring wells are included in Appendix E of this plan. The underground piping from the plant to the ponds has already been disconnected and plugged at the building. The abandoned piping will

be left in place except where encountered during excavation. Piping which is excavated will be placed in the ponds. ? Put in drain

Existing fencing and gates, as shown on Plate A-1 (see Appendix A), will be removed from the construction area, and temporary construction barricades will be set up around the perimeter.

2. Pond Alteration

The walls of the ponds presently extend above the proposed elevation of the asphaltic concrete cap. Therefore, removal of the upper portions of the walls will be required before installation of the asphaltic concrete cap.

A 30-mil-thick hypalon liner that extends over the walls of the ponds is anchored near the ground surface on all sides of the ponds (see Plate A-2). The soils around the upper portion of the walls will be excavated so that the liner may be temporarily folded inward, thus exposing the pond walls. Soils excavated during this process will be placed inside the ponds. ? (The West Pond is presently about 10 to 25 percent filled with drill cuttings from area borings.)

The upper portions of the pond walls will be removed to an elevation of approximately 5043.5 feet MSL or about one to one and one half feet below existing ground surface. The top edge of the

W. H. Wilson
walls will be capped with a sand mortar to provide a smooth surface, and the liner will be replaced over the walls and reanchored by burying the edges approximately one and one half feet below grade. Details on Plate A-2 in Appendix A illustrate this procedure.

Demolition wastes, including broken concrete, concrete blocks, and excess liner will be placed inside the lined ponds. Care will be taken to prevent demolition wastes from damaging the liner. Demolition materials will be placed on a bedding of drill cuttings or excavated soil.

3. Sump Removal

The old solvent sump, including concrete block walls and bottom slab and sand backfill, will be excavated and placed in the ponds. Again, care will be taken to prevent possible damage to the liner.

4. Subgrade Preparation

The surface soils in the cap area will be excavated to the bottom elevation of the asphaltic base course. These soils, consisting of sand and gravel, will be used for backfill in the ponds and sump. Backfill above the pond walls will consist of cement stabilized sand for a distance of approximately four feet on either

How much cement?

6. Construction Specifications

Specifications for construction materials and procedures involved in the closure of the pond and sump area are included in Appendix C of this report.

7. Safety Plan

The proposed construction activities present some potential safety and health risks for construction workers and plant employees. Any construction activity creates potential safety hazards due to the movement and operation of machinery and from unnatural or unstable conditions due to excavation and other work. In addition, this construction site involves exposure of some potentially contaminated materials. Therefore, the construction area must be clearly posted and barricaded to prevent entry by unauthorized personnel.

The contractor will be responsible for the safety and health of his personnel. He will be required to develop and follow a written safety plan setting forth procedures and safeguards for all construction activities. A model safety plan is provided in Appendix F.

B. Closure Standard

The method of closure will minimize the need for future maintenance. The asphalt surface should require very little repair since only light weight vehicles will be allowed to use it. Effects of freezing and thawing should be minimal since the sub-grade consists of a well-graded, granular soil.

The asphaltic concrete surface will prevent infiltration of surface water or rainfall so that leaching of any contaminated material existing in the vadose zone should be minimized, thus keeping it out of the upper ground water.

C. Closure Certification

Following the above procedures, Sparton will obtain certification of closure from a registered professional engineer and submit this to EID.

VI CLOSURE OF DRUM STORAGE AREAS

A. Old Drum Area

The old drum area is an earthen plot located to the west of a concrete pad at the west end of the building. This area is shown in Plate 2. Since the old drum area contained no barriers to prevent migration of any spilled hazardous waste, an assessment will be made to determine if any hazardous wastes or hazardous waste constituents

have entered the soil. Sample collection methods for the assessment are discussed in Appendix G. Chain-of-custody procedures and analytical methods are described in Appendices C and D, respectively. If results of the assessment indicate that the soils are uncontaminated, no further closure activity will be required.

If it is determined that hazardous wastes or hazardous waste constituents have entered the soil, a more extensive investigation will be undertaken to determine the areal and vertical extent of vadose zone contamination. In this case, an amendment to this closure plan will be submitted to the EID.

A certificate of closure, indicating the results of the soil investigation, will be obtained from a registered professional engineer and submitted to the EID.

B. New Drum Area

Prior to closure of the New Drum Area, all hazardous waste currently in storage will be removed and disposed at an appropriate disposal facility. The concrete pad, curbs, drainage gutter, and collection sump will be visually inspected to determine that they are still intact, and that there is no evidence of past spills or leaks which may have escaped the storage facility. If any contamination is discovered within the storage facility, the facility will be

thoroughly cleaned with a portable steam cleaner. Contaminated wash water will drain to the integral sump and then be removed for disposal as a hazardous waste.

Following the above procedures, Sparton will obtain certification of closure from a registered professional engineer and submit this to EID. Following closure of the drum storage facility, Sparton will utilize the area for temporary storage of hazardous waste for periods not to exceed 90 days.

VII GROUND-WATER MONITORING

A. Alternative Ground-Water Monitoring Program

Long-term site ground-water monitoring is provided in Sparton's Alternative Ground-Water Monitoring Program (AGMP). The AGMP also provides an assessment of the extent of contamination and rate and direction of contaminant migration. The AGMP is discussed more fully in Appendix C of the Post-Closure Care Plan.

VIII SECURITY REQUIREMENTS

The drum storage area and the pond and sump area are currently surrounded by barriers comprised of the plant building and chain-link fences. Warning signs have been posted at both HWM units. These measures will provide adequate security for all remedial site activities which do not require removal of any fence.

During the planned pond and sump area closure, sections of the chain-link fence will be removed to provide access to work crews and equipment. If surface removal is required in the drum storage area, some of the adjacent fence may likewise have to be removed. During periods when the subject areas are not completely surrounded by the fence or building barriers, barricades will be erected which will clearly establish the work area. Warning signs will be posted indicating that the work site poses a danger due to the presence of hazardous substances, and that unauthorized entry is not allowed.

During periods when the work crews are not actively engaged in closure of the site, normal building security inspections will be modified to include the barricaded areas.

IX CLOSURE CERTIFICATION

Following each major element of the closure activities described herein, a statement will be provided by both Sparton and an independent registered professional engineer verifying that the closure activity has conformed to the closure plan. These individual closure elements include the following:

- A. Closure of the old hazardous waste drum storage area;
- B. Closure of the new hazardous waste drum storage area; and
- C. Construction of impervious cap over the ponds and sump area.

X NOTICE OF CLOSURE

Following the completion of closure of the drum storage area and the pond and sump area, Sparton will submit to the local land authority and to the EID Director a survey plat indicating the location of the closed hazardous waste management units.

Sparton will also record a notation on the deed to the Coors Road facility property that portions of the property have been used to manage hazardous waste.

XI FINAL CLOSURE SCHEDULE

A schedule of major closure activities is presented in Appendix H. This schedule may have to be amended periodically based upon new information. EID will be promptly notified upon any amendment to the schedule.

XII CLOSURE COST ESTIMATES

The closure cost estimates are presented in Appendix I. These cost estimates may have to be revised periodically. EID will be promptly notified of any revisions to the cost estimates.

DISTRIBUTION

1 copy to: Sparton Corporation
2400 East Ganson Street
Jackson, Michigan 49202

Attention: Mr. Blair Thompson

2 copies to: Sparton Technology, Inc.
4901 Rockaway Boulevard, S.E.
Rio Rancho, New Mexico 87124

Attention: Mr. Richard Mico

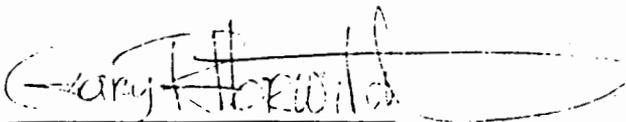
2 copies to: Varnum, Riddering, Schmidt &
Howlett
171 Monroe Avenue, N.W.
Grand Rapids, Michigan 49503

Attention: Mr. Jon F. DeWitt

5 copies to: Environmental Improvement
Division
Ground Water and Hazardous
Waste Bureau
Harold Reynolds Building
1190 St. Francis Drive
Santa Fe, New Mexico
87504-0968

Attention: Mr. Peter H. Pache

QUALITY CONTROL REVIEW:



Gary R. Horwitsch, P.E.
Associate Engineer

**APPENDIX A
to
ATTACHMENT 3**

Pond and Sump Area Closure

**APPENDIX B
to
ATTACHMENT 3**

Material and Construction Specifications

**Technical Specifications
For
Pond and Sump Closure**

**Sparton Technology, Inc.
Albuquerque, New Mexico**

SECTION 00010
TABLE OF CONTENTS

<u>SECTION</u>	<u>TITLE</u>	<u>PAGE</u>
00010	Table of Contents	i
01010	Summary of Work	1
01400	Standards	4
01450	Definitions	6
01460	Drawings	8
02200	Excavation of Soils	9
02300	Demolition	12
02400	Backfill and Compaction	14
02450	Proofrolling	19
02500	Asphaltic Pavement System	21
02600	Chain Link Fence Gates	25
03000	Decontamination	34
03010	Disposal of Potentially Contaminated Waste	37
04000	Inspection and Testing	39

SECTION 01010
SUMMARY OF WORK

PART I - GENERAL

1.01 Scope

This specification provides general direction and technical requirements for closure of the two ponds and one sump at the Sparton Technology, Inc., Albuquerque, New Mexico facility.

The Contractor shall provide all labor, materials, products, accessories, tools, equipment, transportation, supervision, and other items which are necessary for completion of the work.

The work covered under this specification includes:

- Removal and replacement of fences.
- Demolition of portion of reinforced concrete walls in West pond.
- Demolition of portion of concrete block walls in East pond.
- ✓ ● Removal of sump.
- Construction of asphaltic concrete pavement system (cap).

1.02 Additional Contractor Responsibilities

Contractor's additional responsibilities are, in general, those which are contained in these Contract Documents including, but not limited to, the following:

- Provide a Health and Safety Plan covering all aspects of health and safety for personnel as approved by the Owner.
- Furnish all required insurance for projects.
- Receive, unload, convey, store, and protect all materials, tools, and equipment at the job site.
- Clean and remove all surplus material and debris generated from the work.
- Furnish potable water, ice, and coolers necessary during the project.
- Furnish Owner-approved hard hats, safety glasses, safety shoes, and any other safety equipment. Comply with Owner's safety rules.

- Provide the Owner at least 24 hour prior notice for construction inspection, field testing, engineering, or surveying, as required under this contract.

- Set up temporary barricades with warning signs restricting access to the site.

- Comply with all applicable OSHA regulations.

- Furnish sanitary facilities.

PART II - PRODUCTS

Not Applicable.

PART III - EXECUTION

Not Applicable.

END OF SECTION

SECTION 01400

STANDARDS

PART I - GENERAL

The following standards are applicable to construction of the pond and sump area closure for Sparton Technology, Inc., Albuquerque, New Mexico. In cases where a referenced standard specification has been revised or replaced, the new version shall apply.

ASTM A-48	Grey Iron Castings
ASTM A-120	Pipe, Steel, Black and Hot-Dipped Zinc Coated, Welded and Seamless, for Ordinary Uses
ASTM A-123	Zinc Coatings or Products Fabricated from Rolled, Pressed, and Forged Steel Shapes, Plates, Bars, and Strip
ASTM A-153	Zinc Coating on Iron and Steel Hardware
ASTM A-392	Zinc Coated Steel Chain-Link Fence Fabric
ASTM A-491	Aluminum Coated Steel Chain-Link Fence Fabric
ASTM C-270	Mortar for Unit Masonry
ASTM D-422	Particle Size Analysis of Soils
ASTM D-698	Moisture-Density Relations of Soils and Soil Aggregate Mixtures, Using 5.5 lb. (2.5 kg) Rammer and 12-Inch (304.8 mm) Drop
ASTM D-1556	Density of Soil in Place by the Sand-Cone Method
ASTM D-1560	Resistance to Deformation and Cohesion of Bituminous Mixtures by Means of Hveem Apparatus

ASTM D-977	Emulsified Asphalt
ASTM D-995	Requirements for Mixing Plants for Hot-Mixed, Hot-Laid Bituminous Paving Mixtures
ASTM D-3381	Viscosity-Graded Asphalt Cement for Use in Pavement Construction
ASTM D-3515	Hot-Mixed, Hot-Laid Bituminous Paving Mixtures
ASTM D-2922	Density of Soil and Soil Aggregate in Place by Nuclear Methods

AMERICAN ASSOCIATION OF STATE HIGHWAY TESTING OFFICIALS

AASHTO M-240	Type IS Portland Blast Furnace Cement
--------------	---------------------------------------

PART II - PRODUCTS

Not Applicable

PART III - EXECUTION

Specific items of the plans and specifications not referenced to applicable specifications shall be governed by applicable ASTM specifications.

END OF SECTION

SECTION 01450

DEFINITIONS

PART I - GENERAL

The following definitions are applicable to the construction specifications:

Work: Performance of tasks necessary to complete each item described by the drawings in accordance with requirements of the specifications.

Engineer: The Registered Professional Engineer (Engineer), or designated firm employed by Owner, to undertake testing and inspection of the work.

Contractor: The person, partnership, or corporation which has entered into agreement with the Owner to perform all work included in these specifications.

Owner: Sparton Technology, Inc.

Fill Material: Soils, aggregates, or other fill materials as approved by the Engineer for use as fill.

Approved or

Permitted: Approved or Permitted by the Owner or Engineer.

Required: Required by Contract Documents.

Submitted: Submitted to the Owner or Engineer for review.

PART II - PRODUCTS

Not Applicable.

PART III - EXECUTION

Non Applicable.

END OF SECTION

SECTION 01460

DRAWINGS

PART I - GENERAL1.01 Description of Drawings

The following drawings are applicable to the closure of the pond and sump area for Sparton Technology, Inc., Albuquerque, New Mexico:

<u>Plate Number</u>	<u>Title</u>
A-1	Pond and Sump Area Existing Facilities - Base Map
A-2	Pond and Sump Area Existing Cross-Sections and Details
A-3	Pond and Sump Area Final Plan and Cross-Sections
A-4	Fencing Details

PART II - PRODUCTS

Not Applicable.

PART III - EXECUTION

Not Applicable.

END OF SECTION

SECTION 02200
EXCAVATION OF SOILS

PART I - GENERAL

1.01 Description of Work

The Contractor shall furnish all labor, materials, tools, and equipment to perform all work for excavating soil and extraneous material as shown on the drawings and as specified.

All work shall be observed by the Owner or Engineer for conformance with the plans and specifications.

PART II - PRODUCTS

2.01 Potentially Contaminated Soils

Soils excavated during removal of the upper section of pond walls and soils excavated from the old solvent sump (including contents of the sump and soil adjacent to the sump as defined on the plans) shall be considered potentially contaminated. All other excavated soil shall be considered uncontaminated.

2.02 Uncontaminated Soils

Uncontaminated soils are soils within the area to be capped which are not potentially contaminated as defined above.

PART III - EXECUTION

3.01 Protection of Utilities

The Contractor shall identify and locate utility lines prior to construction work. Underground utilities shall be protected from damage during excavation. Any damage to known utility lines as a result of the work performed by the Contractor shall be repaired by the Contractor at no additional cost.

3.02 Protection of Liner

The Contractor shall exercise caution to prevent damage to the existing 30-mil Hypalon liners in the ponds. Any damage to the liner, as a result of the construction activities, will be repaired at the Contractor's expense.

notes for Review

3.03 Excavation of Potentially Contaminated Soil

Soils defined as potentially contaminated shall be excavated to the lines and grades shown on the plans. Excavated material shall be placed in the ponds in accordance with provisions of Section 02400 of this specification.

The contractor shall provide protective clothing and equipment as specified in the Health and Safety Plan required by Section 01010 of this specification.

Equipment used for this excavation shall be decontaminated by the Contractor, in accordance with provisions of Section 03000 of this specification, before it is used for excavation of uncontaminated soil.

3.04 Other Excavation

The Contractor shall excavate all materials to the lines, grades, and elevations shown on the drawings or as specified. Excavated soils shall be used to backfill the sump excavation and the excavated area around and above the ponds. Backfill shall be in accordance with Section 02400 of this specification.

3.05 Drainage During Construction

All rainfall runoff, shallow ground water, water from rinsing or decontamination procedures, or any other water which is potentially contaminated on the site shall be retained and disposed of in accordance with Section 03010, "Disposal of Potentially Contaminated Waste."

3.06 Environmental Compliance

The Contractor is responsible for compliance with all environmental laws and regulations.

END OF SECTION

SECTION 02300

DEMOLITION

PART I - GENERAL

1.01 Description of Work

The Contractor shall furnish all labor, materials, tools, and equipment necessary to perform all work and services for demolition of the upper portion of pond walls and the sump, as shown on the drawings and as specified.

PART II - PRODUCTS

2.01 Mortar

Sand mortar shall be in accordance with ASTM C-270.

*Blocks at
Wall 2.*

PART III - EXECUTION

3.01 Procedure

The Contractor shall excavate soil around the outside of the walls as necessary to uncover the edges of the 30-mil Hypalon liner and to access the outside of the walls for demolition. Excavation shall be in accordance with Section 02200 of this specification.

The exposed edge of the liner shall be laid back over the interior of the pond to expose the pond wall as shown in the drawings. The upper portion of the walls shall be removed to

the elevation shown on the plans. Use of a pneumatic hammer will be permitted. Use of explosives is NOT permitted.

The top of the remaining walls shall be capped using a sand mortar with smooth finish. The liner will then be returned to its original position and buried as shown. Excess liner may be trimmed to make it more manageable.

3.02 Disposal of Debris

Debris from the demolition of the walls, including concrete pieces, concrete block, and excess liner shall be placed into the ponds in accordance with Section 02400 of this specification. Pieces of concrete shall be reduced to a maximum of 3 feet in any dimension and shall not be placed within 3 feet of the asphaltic base course.

Ponds vs
Sump

END OF SECTION

SECTION 02400
BACKFILL AND COMPACTION

PART I - GENERAL

1.01 Description of Work

The Contractor shall furnish all labor, materials, tools, and equipment to perform all work and services for backfilling and compacting as shown on the drawings and as specified. All work shall be observed by the Engineer for conformance with the plans and specifications.

PART II - PRODUCTS

2.01 Soils

Soils used for backfilling shall be those excavated from the site.

2.02 Cement Stabilized Sand

a. Cement

Cement for stabilization of soil above pond walls shall meet the requirements of AASHTO Designation M-240, "Type IS Portland Blast Furnace Cement."

b. Sand

Sand shall be sandy soil from the site area.

Wilson Area
2.

PART III - EXECUTION

3.01 Job Conditions

Earthwork shall not be performed during unfavorable weather conditions. When work is interrupted by rain, fill operations shall not be resumed until the field density tests performed by the Engineer indicate that the moisture-content and density of the fill are as specified. Proper drainage shall be maintained at all times.

3.02 Backfilling and Compacting in Ponds

Existing material in the ponds shall be compacted in place using manually operated tamping and compacting equipment. Potentially contaminated soil, as defined in Section 02200, shall be placed in 8-inch-loose lifts and compacted with hand operated equipment.

Demolition material shall be placed in the ponds with a minimum of 12 inches of soil material separating it from the pond liner, and at least 3 feet below the asphaltic base.

All materials shall be placed in the ponds and compacted in a manner which will not damage the pond liner. Material shall be allowed to free fall no more than 24 inches during placement.

*mils
2.*

If damage of the liner occurs, the Contractor shall repair the liner in a manner satisfactory to the Owner and Engineer at the Contractor's sole expense.

30 minutes

Soils within the ponds shall be compacted using hand operated equipment. Soils 3 feet below the asphaltic base shall be compacted to at least 90 percent of the standard Proctor test method (ASTM D-698). Soils within 3 feet of the asphaltic base shall be compacted to at least 95 percent of ASTM D-698.

14 meter

The Contractor shall provide protective equipment and clothing as specified in the Health and Safety Plan required by Section 01010 of this specification.

Equipment used for backfill and compaction in ponds shall be decontaminated by the Contractor in accordance with provisions of Section 03000 after pond backfilling is complete.

3.03 Backfilling and Compacting

The soils used for backfill within the upper 3 feet of the asphaltic base course shall be moisture-conditioned to within 3 percent of optimum moisture content (OMC) of the fill soils to facilitate compaction. If the moisture-content of the fill soil is

less than 3 percent below OMC, water shall be added until the moisture content is raised as required. If the moisture content of the fill soils is greater than 3 percent above OMC, the fill soil shall be aerated by blading, discing or other satisfactory methods until the moisture content is lowered as required. The wet soils may be mixed with approved drier materials to achieve an acceptable moisture content.

All fill soils within the upper 3 feet at the ponds shall be spread and leveled in layers not to exceed 8 inches in thickness before compaction. Compaction shall be accomplished with appropriate equipment to at least 95 percent of the standard Proctor test method (ASTM D-698). All fill soils shall be compacted at a moisture content within 3 percent of the optimum moisture content as determined by ASTM D-698.

Soil required for fill or embankment in excess of that obtained by excavation within the grading limits shall be excavated from borrow areas as directed by the Engineer.

3.03 Cement Stabilization

Sandy soils shall be cement stabilized where shown on the plans. A mixture of 5 percent cement by dry weight of the soil shall

be mixed in such a manner that all materials are thoroughly blended to a uniform gradation and color. Mixing water shall be added in a manner that will provide uniform blending with the materials being mixed. Cement stabilized sands shall be compacted to at least 95 percent of the standard Proctor test method (ASTM D-698).

END OF SECTION

SECTION 02450

PROOFROLLING

PART I - GENERAL

1.01 Description of Work

Contractor shall furnish all labor, material, and equipment to perform all work and services in conjunction with proofrolling of areas outside the pond walls at the site. All work under this section shall be observed by the Engineer for conformance with the plans and specifications.

PART II - PRODUCTS

2.01 Proofrolling Equipment

Proofrolling shall be performed utilizing a 10-ton rubber-tired compactor, or similar construction vehicle, approved by the Owner or Engineer.

2.02 Soft, Organic, or Excessively Wet Soil (Unsuitable Material)

Soft, organic, or excessively wet soil (unsuitable material) encountered during the proofrolling operation shall be excavated and replaced with select fill, as specified in Sections 02200 and 02400 of this specification.

PART III - EXECUTION

3.01 Proofrolling

- a. The proofrolling equipment shall make at least four passes over each area, with the last two passes perpendicular to the first two passes.
- b. Soft or unstable soils that fail to compact shall be cement stabilized or placed inside the ponds.
- c. Proofrolling shall be performed just prior to placement of asphaltic base course.

3.02 Stabilization

Soft or unstable areas that fail to proofroll may be stabilized, as specified in Section 02400, to facilitate compaction. Use of cement stabilization to facilitate compaction must be approved by the Engineer prior to accomplishing the work. Stabilization to facilitate compaction shall be performed at the sole expense of the Contractor.

END OF SECTION

SECTION 02500
ASPHALTIC PAVEMENT SYSTEM

PART I - GENERAL

1.01 Description of Work

The Contractor shall furnish all labor, materials, tools, and equipment necessary to install the asphaltic pavement system over the pond and sump area as shown on the drawings and as specified.

All work shall be observed by the Owner or Engineer for conformance to plans and specifications.

1.02 Primary Objectives

The primary objective of the asphalt pavement is to minimize passage of water to the subgrade. The Contractor shall construct the pavement in a manner that will provide a tightly sealed surface with no open joints or cracks.

PART II - PRODUCTS

2.01 Asphalt Base Course

The asphaltic base course shall be Composition 1A or 2A as specified in ASTM D-3515 using at least 3-1/2 percent asphaltic cement Grade AC-10 as specified in ASTM D-3331.

2.02 Tack Coat

The tack coat shall be Emulsified Asphalt Grade SS-1 or SS-1h as specified in ASTM D-977.

2.03 Wearing Surface

The asphaltic concrete wearing surface shall be Composition 6A as specified in ASTM D-3515 using 8 percent asphaltic cement Grade AC-10 as specified in ASTM D-3381.

PART III - EXECUTION

3.01 Sub-Grade Preparation

Sub-grade shall be graded to proper lines and grades and compacted in accordance with Section 02400. Subgrade shall be proofrolled in accordance with Section 02450.

3.02 Asphalt Base Course Construction

Asphalt base course shall be placed and compacted to the lines and grades shown on the plans. The Contractor shall provide suitable equipment of sufficient size to allow continuous, uninterrupted movement of the spreader.

The mixing plant shall conform to ASTM Specification D-995.

As soon as the mixture has been spread and has set sufficiently to prevent cracking, compaction shall begin. A delay in the initial rolling will not be allowed. Asphaltic base course shall be compacted to 95 percent ~~liveem stability~~ *of the specimen displaced in Marshall test* as specified in ASTM D-1550.

A - V D - 1550

3.03 Tack Coat Application

Tack coat material shall be applied as directed by the Engineer up to a maximum of 0.1 gallon per square yard. It shall be spread in advance to permit construction to progress continuously after the curing period. As soon as the tack cast has become "tacky" or sticky, covering may proceed. If the tack coat has lost its viscous quality, it shall be reapplied before the surface course is placed.

3.04 Asphaltic Surface Course Application

The asphaltic concrete wearing surface shall be installed in accordance with Paragraph 3.02 of this section.

Placing of paving layers shall be continuous. All joints shall be made in a manner which will provide a smooth, well bonded and sealed joint. All joints between alternatively paved areas shall be feathered at a slope of 6 horizontal to 1 vertical. The intersection of alternatively paved areas shall be covered with a tack coat, as

specified in Section 3.03 of this section, before additional asphaltic surface course is applied. Asphaltic concrete surface course shall be compacted to 95 percent Hveem stability as specified in ASTM D-1560.

3.05 Testing

Asphaltic concrete mixtures shall be sampled and tested in accordance with ASTM D-3515. The Contractor shall furnish certified test results to the Owner for each mixture used.

END OF SECTION

SECTION 02600
CHAIN-LINK FENCE AND GATES

PART I - GENERAL

1.01 Description of Work

The Contractor shall furnish all labor, materials, tools, and equipment to remove the existing fence and to install and complete all chain-link fences and gates as shown on drawings and as specified. The Contractor shall furnish and install all fenceposts, supplementary or miscellaneous items, appurtenances and devices incidental to, or necessary for, a sound, secure, and complete installation. The Contractor shall salvage and re-install fence fabric and gates as shown on the drawings. New posts and materials shall be compatible with the existing fence.

All work shall be observed by the Engineer for conformance to plans and specifications.

1.02 Product, Storage, and Handling

Store fence fabric, posts, and other items off ground and protected from damage.

PART II - PRODUCTS

2.01 Fencing Materials

a. General

Use only new materials. Pipe sizes indicated are commercial pipe sizes. Tube sizes are nominal flange dimensions. Rolled form section sizes are nominal outside dimensions.

Iron or steel components shall be hot-dip galvanized after fabrication. Use galvanized and aluminized finish complying with the following minimum requirements:

Pipe:	2.0 oz. zinc/square foot (s.f.)
Square Tubing:	ASTM A-123, 2.0 oz. zinc/s.f.
Roll Form:	ASTM A-120
Hardware and Accessories:	ASTM A-153
Fabric:	ASTM A-392, Class II, 1.4 oz. zinc/ s.f. or ASTM A-491, Class II, .4 oz. aluminum/s.f.
Miscellaneous items:	ASTM-A-120, 1.0 oz. zinc/s.f.

b. Chain-Link Fabric

Chain-link fabric shall be woven 2-inch mesh of No. 9 galvanized copper-bearing steel wire, galvanized after fabrication in accordance with ASTM A-392 for zinc coating.

c. Steel Line Posts

Line posts shall be 2-1/2 inch O.D. steel pipe weighing at least 3.65 pounds per lineal foot.

d. Steel Top and Bottom Rails

Rails shall be 1-5/8 inch O.D. steel pipe weighing at least 2.27 pounds per lineal foot or 1-5/8 inch rolled form section. Fit rails with expansion couplings of outside sleeve type. Rails shall be continuous for outside sleeve type for full length of fence.

e. Steel Terminal, End, Corner, and Pull Posts (Terminal Posts)

Terminal posts shall be 3-inch O.D. steel pipe weighing at least 5.79 pounds per lineal foot. Provide posts of sufficient length to permit 36 inches to be set in concrete footing.

f. Bracing for Use Between Terminal, End, Corner, Gate, Pull Posts, and First Adjacent Line Posts

Bracing shall be 1-5/8 inch O.D. steel pipe weighing at least 2.27 pounds per lineal foot. Space no lower than 1/2 of fabric width from top of posts and trussed

back to base of terminal, end, corner, or pull post with 3/8-inch truss rod with turn-buckles.

g. Gate Posts

Gate posts shall be round steel pipe not less than size and weight given below:

- Double gate, total width 24 feet; 4-inch O.D. weighing not less than 9.11 pounds per lineal foot.
- Provide posts of sufficient length to permit bottom 26 inches to be set in concrete.

h. Tension Bars

Tension bars shall be 3/16 inch x 3/4 inch minimum steel, one piece for full height of fabric.

i. Stretcher Bars and Bands

Stretcher bars shall be 1/8 inch x 1 inch, threaded through fabric and secured to posts with metal bands spaced not greater than 14 inches O.D.

j. Wire Ties

Ties shall be No. 6 gauge steel wire for securing fabric to posts and rails. Space bands not greater than 14 inches O.C.

k. Gate Frames

Gate frames shall be not less than 2 inch O.D. steel pipe weighing at least 2.72 pounds per lineal foot.

l. Gate Hardware

1. Hinges: Pressed or forged steel or malleable iron to suit gate size, of non-lift-off heavy duty type, offset to permit 180 degree gate opening. Provide 1-1/2 pair for each leaf over 6 feet nominal height.
2. Latches for Single and Double Gates: Heavy duty, automatically engaging, lockable latch. Furnish drop rod complete with suitable casting set in concrete to hold gate leaf in place when drop rod is engaged.
3. Keepers: Provide keepers for all gates to automatically engage gate leaf and hold it in open position until manually released.

m. Post Tops

Post tops shall be steel, wrought iron or malleable iron, designed as a weather-tight closure cap, one cap per post.

n. Barbed Wire

Barbed wire shall consist of two strands of No. 9 steel wire twisted with four point barbs of No. 9 wire at 15 inch O.C. maximum. Wire shall be galvanized after fabrication in accordance with ASTM A-392 for zinc coating.

o. Miscellaneous Items and Materials

Provide as required to complete fence installation. Items and materials shall be consistent in quality with materials listed above.

2.02 Concrete

Concrete for embedment of terminal posts shall obtain a compressive strength of 2500 psi.

PART III - EXECUTION

3.01 General

The Contractor shall remove existing fence and gates, store materials to be reused, and dispose of other material off site.

The Contractor shall furnish and erect fence and gates, along the lines and grades and at locations specified on plans or established by the Engineer. Provide a rigid, taut fence. Install fence in true and correct alignment with vertical posts.

3.02 Installation

Drill holes in firm, undisturbed or compacted soil extending not less than six inches below bottom of posts (36 inches deep).

Set all posts in concrete footings as shown on the drawings. Fence post footings shall have the following minimum dimensions, be

crowned one inch minimum and steel troweled, except as otherwise detailed:

Line Posts = 10 inch diameter and 3 feet deep.

Other Posts = 16 inch diameter and 3 feet deep.

Wait at least seven days after posts are set in concrete before placing fabric in tension. Install fence tight, free of sags and bulges. Construct fence such that bottom edge of fabric is about one inch above grade. Correct minor irregularities in ground surface so that maximum clearance beneath fabric does not exceed 2 inches.

Space line posts at equal intervals not exceeding 10 feet. Install terminal posts at gates, corners, and any other points of strain. Fit terminal posts with bracing assembled between terminal posts and brace posts (first line post adjacent to terminal posts).

Provide top rails with expansion couplings at not more than 20 foot intervals. Use couplings which provide rigid connection and allow for expansion and contraction. Anchor top rails to line posts with appropriate wrought or malleable fittings.

Install bracing assemblies at all line posts and at both sides of corner and pull posts. Locate compression members at mid-height of

fabric. Extend diagonal tension members from compression members to bases of line posts. Use tension members not less than 3/8 inch diameter and fitted with tension take-up device. Install braces so that posts are plumb when diagonal rod is under correct tension.

Pull fabric taut and secure to posts and rails. Install fabric on security side of fence and secure to framework so that fabric remains in tension after pulling force is released. Secure fabric to line posts at not over 12 inches O.C. Use U-shaped wire conforming to diameter of pipe to which attached, clasping pipe and fabric firmly with ends twisted at least two full turns. Bend ends of wire to minimize hazards to persons or clothing.

Thread stretcher bars through fabric and secure to terminal posts with metal bands spaced not greater than 14 inches O.D. Pull each strand of barbed wire taut individually and secure to posts with wire ties. Space strands of barbed wire 4 inches apart with the bottom strand 4 inches above top rail.

Construct gate frames with malleable fittings at joints. Bracing and details of construction provide a rigid, non-sagging, non-twisting gate. Use fabric same as fence fabric and similarly attached. Do not weld fabric to frame. Furnish gate frames with three rows of barbed wire at top.

3.03 Acceptance

Remove and replace all damaged or improperly installed fencing components to satisfaction of Engineer at no additional expense to Owner.

END OF SECTION

SECTION 03000
DECONTAMINATION

PART I - GENERAL

1.01 Description of Work

The Contractor shall provide all labor, materials, tools, and equipment necessary for decontamination of equipment and personnel which have been directly involved in relocation and handling of potentially contaminated material.

PART II - PRODUCTS

2.01 Decontamination Facilities

Equipment capable of supplying high pressure spray of water and steam shall be provided by the Contractor for cleaning of excavation equipment. The Contractor shall provide all sheeting (polyethelene), tubs, buckets, brushes, hoses, and cleaning compounds necessary for decontamination of personnel and equipment. Throw-away garbage containers shall be provided for disposable protective clothing.

PART III - EXECUTION

3.01 Procedure

The decontamination area shall be adjacent to the area to be capped. Polyethylene or equivalent sheeting and sandbags or formwork

shall be used to form a sump to contain any materials generated from the decontamination process.

All equipment used for relocation of potentially contaminated materials shall be thoroughly cleaned with the high pressure steam cleaner. Decontamination shall be accomplished after the contaminated material has been placed in the ponds and compacted, but before backfilling with uncontaminated soil.

Personnel who have worked within the potentially contaminated area shall decontaminate before leaving the site. Specific procedures are as follows:

Personnel

At the end of each work period (before eating, drinking, smoking, or leaving the site), each person will pass through the designated decontamination area. Each of the following stations will be used as appropriate:

- Equipment/tool drop station.
- Boot Wash - Soiled boots will be washed in a tub containing a low-sudsing detergent solution.
- Boot Rinse - Personnel will step into a tub containing rinse water after washing boots.

- Glove Wash - Intact gloves will be wiped clean over a glove wash bucket containing low-sudsing detergent and water.
- Glove Rinse - Washed gloves will be rinsed with water or wiped with a water wetted towel.
- Contaminated Clothing - Used tyvek suits will be dropped into a bag lined garbage can for approved disposal.
- Showers - Personnel will shower as soon as possible at the end of the work day.

Equipment

1. Prior to equipment demobilization, loose mud will be removed using brushes and scrapers, as necessary, and equipment will be steam cleaned over polyethylene sheets. The perimeter of the sheeting will be bermed to prevent movement of liquids or solids away from the decontamination area.

END OF SECTION

SECTION 03010

DISPOSAL OF POTENTIALLY CONTAMINATED WASTE

PART I - GENERAL

1.01 Description of Work

10/15/01
The Contractor shall furnish all labor, materials, tools, and equipment necessary to dispose of contaminated and potentially contaminated solid and liquid waste generated during the work.

PART II - PRODUCTS

2.01 Potentially Contaminated Waste

Potentially contaminated waste includes all disposable items which have been used within the area to be capped and those used in the decontamination process.

2.02 Potentially Contaminated Water

Potentially contaminated water is any rainfall runoff, washwater, or other water which may have had direct contact with potentially contaminated soil as defined in Section 02400 of this specification. This generally includes all rainfall runoff from the area to be capped and all water used for decontamination.

PART III - EXECUTION

3.01 Disposal Method

Potentially contaminated waste shall be placed in polyethylene bags which shall be placed in approved lined steel drums for removal to an approved hazardous waste disposal site.

Potentially contaminated water shall be placed in approved lined steel drums (or polyethylene drums) for removal to an approved hazardous waste disposal site.

Drums shall be properly marked and labelled for hazardous waste disposal and shall conform to DOT 17-H for open top steel drums, or to DOT 34 for polyethylene drums (Exemption DOT-E6637).

Removal of drums for disposal shall be under the direction of the Owner or Engineer.

END OF SECTION

SECTION 04000
INSPECTION AND TESTING

PART I - GENERAL

1.01 Description of Work

Furnish all labor, materials, tools, and equipment to perform all work and services in conjunction with the earthwork construction operations specified in other sections. Replace or rework items which are not approved by the Engineer based upon testing described in this section, at the sole expense of the Contractor. The sampling and testing described in this section will be performed by the Engineer in checking the Contractor's work, at no cost to the Contractor.

PART II - PRODUCTS

Not Applicable.

PART III - EXECUTION

3.01 General Backfilling and Compaction

All compacted fill must be tested and approved by the Engineer.

The Contractor shall notify the Engineer at least 48 hours before requiring testing services and shall cooperate with the Engineer to facilitate all sampling and testing.

3.02 Replacement of Unapproved Work

Any earthwork which does not conform to the requirements of this section, as determined by the Engineer, shall be removed and replaced, or re-worked until approved by the Engineer. The Contractor shall replace or re-work unacceptable sections at no cost to the Owner.

3.03 Soil Compaction Testing

All fill shall be compacted according to the moisture and density requirements described in Section 02400.

In-place density tests shall be in accordance with ASTM D-1556 or ASTM D-2922, at the discretion of the Engineer.

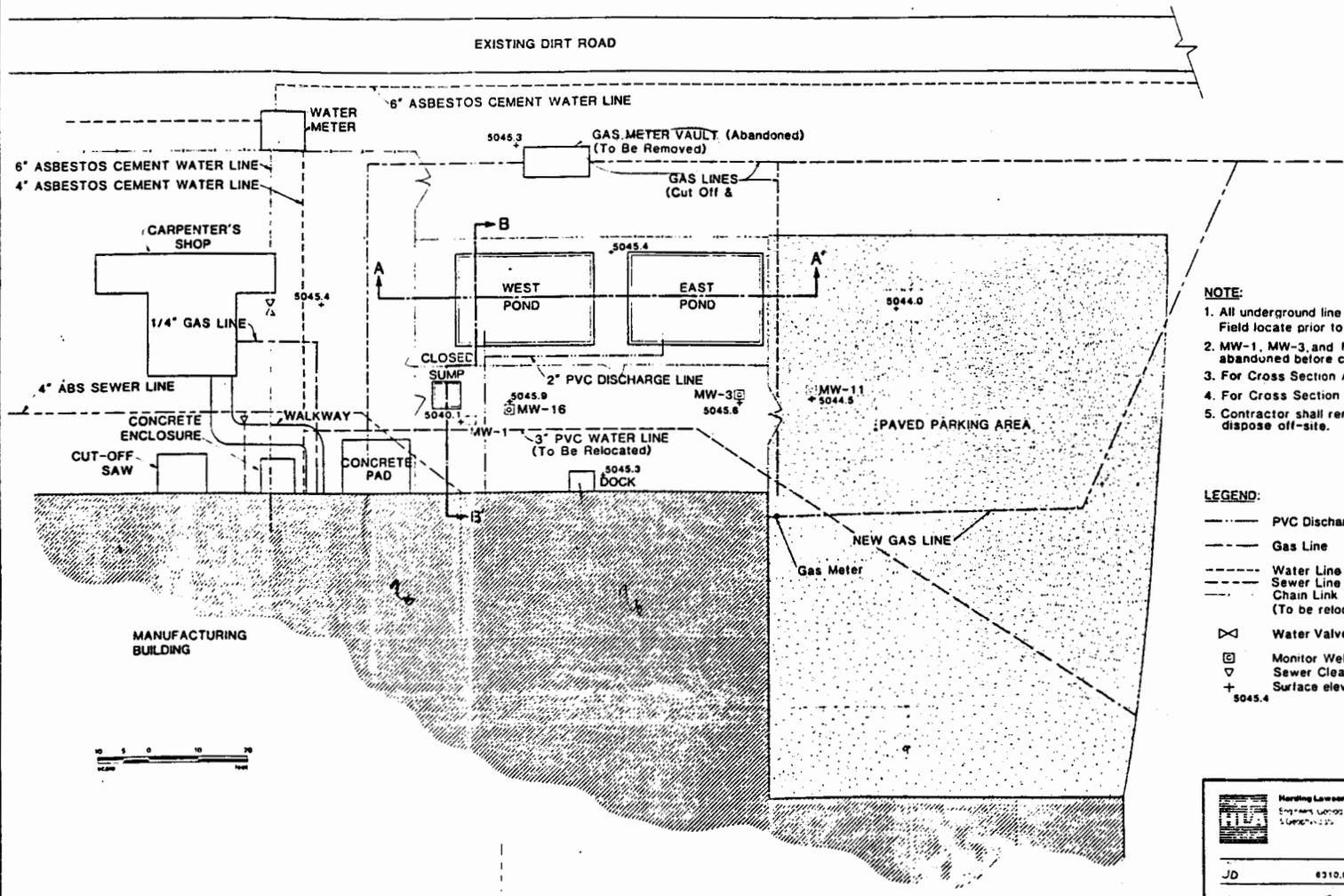
At least one in-place field density test shall be performed for each lift placed.

There shall be a minimum of one in-place density test on any day of compaction activity. Additional in-place field density tests may be performed at the discretion of the Engineer.

Initially, one standard Proctor test shall be performed for each new fill material and for each 10 in-place field density tests performed. The frequency of standard Proctor tests may be increased or decreased at the discretion of the Engineer as the job progresses.

END OF SECTION

MW-17
5047.5



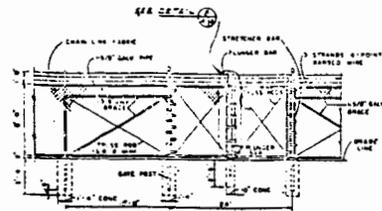
- NOTE:**
1. All underground line locations are approximate. Field locate prior to excavation.
 2. MW-1, MW-3, and MW-11 to be plugged and abandoned before closure.
 3. For Cross Section A-A' See Plates A-2 and A-3.
 4. For Cross Section B-B' See Plates A-2 and A-3.
 5. Contractor shall remove existing gas meter vault, dispose off-site.

- LEGEND:**
- PVC Discharge Line
 - - - Gas Line
 - - - Water Line
 - - - Sewer Line
 - - - Chain Link Fencing (To be relocated in the area of the Ponds)
 - ⊗ Water Valve
 - ⊠ Monitor Well with 2-foot sq. concrete pad
 - ▽ Sewer Clean-out
 - + Surface elevation, feet MSL

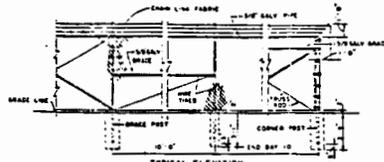


A-1

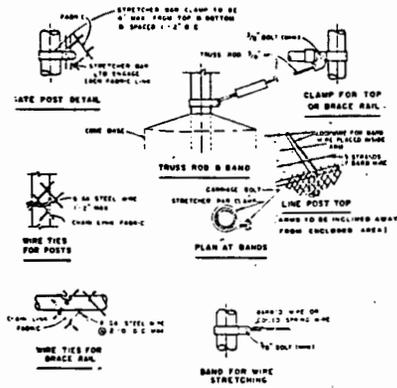
	Harting Lawson Associates Engineers, Architects Surveyors	POND AND SUMP AREA EXISTING FACILITIES BASE MAP
	SPARTON TECHNOLOGY, INC. ALBUQUERQUE, NEW MEXICO	
JD	8310.012.12	5
DATE	8-55	



ELEVATION AT GATE



TYPICAL ELEVATION
CHAIN LINK FENCE



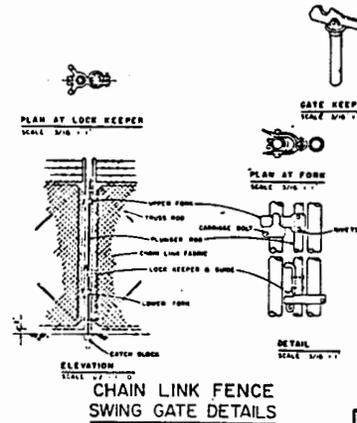
CHAIN LINK FENCE
FASTENING DETAILS

CAUTION

**CLOSED HAZARDOUS WASTE
MANAGEMENT AREA**

NOTE: PAINTED BLACK LETTERS ON
YELLOW BACKGROUND 18 GA.
SHEET STEEL TO BE ATTACHED
TO GATES (3 REQUIRED).

TYPICAL WARNING SIGN
SCALE 3/8" = 1"



CHAIN LINK FENCE
SWING GATE DETAILS

NOTES

1. WARNING SIGNS TO BE POSTED ON EACH OF THE 3 GATES.
2. FILL HOLES FROM REMOVAL OF EXISTING FENCE POSTS USING CLEAN SOIL.

A-4

 <p>Harding Lawson Associates</p>	<p>FENCING DETAILS</p> <p>SPARTON TECHNOLOGY, INC. ALBUQUERQUE, NEW MEXICO</p>
<p>6310.012.12</p>	

APPENDIX C
to
ATTACHMENT 3

Chain-of-Custody Procedures

APPENDIX C

CHAIN-OF-CUSTODY PROCEDURES

I Custodianship

A custodian will maintain custody and control of each sample under his care until it is relinquished, analyzed, or disposed. Normal security measures such as locked containers; evidence tape; or personal, physical possession will be utilized by the custodian.

The person actually collecting the sample becomes the first custodian. His duties include sealing the sample container with evidence tape, or locking the sample containers, if he does not maintain continuous personal, physical possession.

If the sample is to be split into subsamples, or if anyone else will have possession of the samples prior to laboratory delivery, the first custodian will also initiate Chain-of-Custody documentation. If the sample collector personally delivers the samples to the laboratory, he may obtain an itemized and dated receipt from an authorized laboratory representative in lieu of the Chain-of-Custody documents.

As the sample moves from the initial custodian through the Chain-of-Custody, subsequent custodians will sign when receiving the sample, and upon relinquishing same. (NOTE: Custodians will handle each sample in their possession in such a manner so as to be able to testify that it was continuously under their control and not subject to any tampering.)

II Documentation

A. Chain of Custody Document Contents

1. Facility name and location:

Sparton Technology, Inc.
9521 Coors Road, NW
Albuquerque, New Mexico 87103

2. For each sample:

- a. Sample location and depth;
- b. Date and time of collection; and
- c. Number of sample containers.

3. Name of sample collector

4. Special security features used, such as locked containers or evidence tape.

B. Multiple Samples

A single Chain-of-Custody document may be used for more than one sample, provided that all requirements specified in Item B.1 are met. If multiple samples are identified in one document, they nor-

mally will be packaged together and the package sealed with evidence tape.

C. Acceptance/Release Format

Each transfer of possession of a sample will be recorded on the document with the following items:

1. Signature of person relinquishing sample control;
2. Signature of person receiving sample control;
3. Date and time of transfer; and
4. Stipulation that the sample has/has not been visibly tampered with.

Remarks should include any exceptions or deviations from normal routine involved with the sample.

If the samples are to be mailed, the Chain-of-Custody document is to be enclosed within the shipping container. In this case, the date and time will be recorded separately to indicate when the package was sealed and when it was opened at the receiving end.

APPENDIX D
to
ATTACHMENT 3

Analytical Methods

**LABORATORY SUPPORT FOR
ALTERNATIVE GROUND WATER MONITORING PROGRAM
AT SPARTON TECHNOLOGY, INC.**

Prepared For:

Harding Lawson Associates

Prepared By:

**Rocky Mountain Analytical Laboratory
5530 Marshall Street
Arvada, Colorado 80002**

May 6, 1985

INTRODUCTION

Rocky Mountain Analytical Laboratory will continue to provide support for the Alternative Ground Water Monitoring Program at Sparton Technology, Inc. The analytical methodologies, sample containers, and preservation techniques used for this program are attached. They represent the current guidelines contained in Federal Register, 40 CFR Part 136, October 26, 1984.

ROCKY MOUNTAIN ANALYTICAL LABORATORY

Inorganic Analytical Methodology

<u>Parameter</u>	<u>Units</u>	<u>Nominal Detection Limit^a</u>	<u>Methodology</u>	<u>Reference</u>	<u>Preservation Bottle No.</u>	<u>Maximum Holding Time</u>
MAJOR IONS						
Sodium	mg/l	0.5	ICP Emission Spectroscopy	3	4	6 months
Potassium	mg/l	0.3	ICP Emission Spectroscopy	3	4	6 months
Calcium	mg/l	0.1	ICP Emission Spectroscopy	3	4	6 months
Magnesium	mg/l	0.1	ICP Emission Spectroscopy	3	4	6 months
Chloride	mg/l	3	Manual Titrimetric, Hg (NO ₃) ₂ Automated Colorimetric	1-325.3/2-407B	1	28 days
			Ferricyanide	1-325.2	1	28 days
Fluoride	mg/l	0.1	Electrode	1-340.2/2-413B	1	28 days
Sulfate	mg/l	5	Manual Turbidimetric Automated Colorimetric MTB	1-375.4/2-426C 1-375.2	1 1	28 days 28 days
Total Alkalinity as CaCO ₃ at pH 4.5	mg/l	5	Titrimetric	1-310.1/2-403	1	14 days
Carbonate Alkalinity as CaCO ₃ at pH 8.3	mg/l	5	Titrimetric	1-310.1/2-403	1	14 days
Bicarbonate Alkalinity as CaCO ₃ at pH 4.5	mg/l	5	Titrimetric	1-310.1/2-403	1	14 days
Hydroxide Alkalinity as CaCO ₃	mg/l	5	Calculation	2-403	-	-
Nitrate+Nitrite as N	mg/l	0.1	Manual Cd Reduction - Colorimetric	1-353.3/2-418C	2	28 days
		0.1	Automated Cd Reduction - Colorimetric	1-353.2	2	28 days
Total Cations	meq/l	0.1	Calculation	2-104C	-	-
Total Anions	meq/l	0.1	Calculation	2-104C	-	-
Difference	%	0.1	Calculation	2-104C	-	-
RADIOCHEMISTRY						
Gross Alpha	pCi/l	0.1	Proportional Counter	2-703	5	6 months
Gross Beta	pCi/l	0.1	Proportional Counter	2-703	5	6 months
Radium 226	pCi/l	0.1	Separation - Counter	2-705	5	6 months
Radium 228	pCi/l	0.1	Separation - Counter	2-707	5	6 months
Uranium	mg/l	0.005	Fluorimetric	4-D2907-75	5	6 months

ROCKY MOUNTAIN ANALYTICAL LABORATORY

Inorganic Analytical Methodology (Continued)

Parameter	Units	Nominal Detection Limit ^a	Methodology	Reference	Preservation Bottle No.	Maximum Holding Time ^b
TRACE METALS^c						
Aluminum	mg/l	0.05	ICP Emission Spectroscopy	3	4	6 months
Antimony	mg/l	0.002	Furnace Atomic Absorption	1-204.2	4	6 months
Arsenic	mg/l	0.002	Furnace Atomic Absorption	1-206.2	4	6 months
Barium	mg/l	0.005	ICP Emission Spectroscopy	3	4	6 months
Beryllium	mg/l	0.001	ICP Emission Spectroscopy	3	4	6 months
Boron	mg/l	0.004	ICP Emission Spectroscopy	3	4	6 months
Cadmium	mg/l	0.002	ICP Emission Spectroscopy	3	4	6 months
Chromium	mg/l	0.005	ICP Emission Spectroscopy	3	4	6 months
Cobalt	mg/l	0.003	ICP Emission Spectroscopy	3	4	6 months
Copper	mg/l	0.002	ICP Emission Spectroscopy	3	4	6 months
Iron	mg/l	0.05	ICP Emission Spectroscopy	3	4	6 months
Lead	mg/l	0.025	ICP Emission Spectroscopy	3	4	6 months
		0.001	Furnace Atomic Absorption	1-239.2	4	6 months
Manganese	mg/l	0.005	ICP Emission Spectroscopy	3	4	6 months
Mercury	mg/l	0.0002	Cold Vapor Atomic Absorption	1-245.1	4	6 months
Molybdenum	mg/l	0.005	ICP Emission Spectroscopy	3	4	6 months
Nickel	mg/l	0.01	ICP Emission Spectroscopy	3	4	6 months
Selenium	mg/l	0.002	Furnace Atomic Absorption	1-270.2	4	6 months
Silver	mg/l	0.003	ICP Emission Spectroscopy	3	4	6 months
Strontium	mg/l	0.005	ICP Emission Spectroscopy	3	4	6 months
Thallium	mg/l	0.002	Furnace Atomic Absorption	1-279.2	4	6 months
Tin	mg/l	0.03	ICP Emission Spectroscopy	3	4	6 months
Titanium	mg/l	0.002	ICP Emission Spectroscopy	3	4	6 months
Vanadium	mg/l	0.002	ICP Emission Spectroscopy	3	4	6 months
Zinc	mg/l	0.004	ICP Emission Spectroscopy	3	4	6 months
INORGANIC PARAMETERS						
pH	units	0.01	Meter	1-150.1; 2-423	1	ASAP
Specific Conductance at 25°C	umhos/cm	1	Bridge	1-120.1; 2-205	1	28 days
Total Dissolved Solids	mg/l	10	Gravimetric, 180°C	1-160.1; 2-209B	1	7 days
Total Suspended Solids	mg/l	2	Gravimetric, 105°C	1-160.2	1	7 days
Total Solids	mg/l	10	Gravimetric, 105°C	1-160.3	1	7 days
Total Volatile Solids	mg/l	10	Gravimetric, 550°C	1-160.4	1	7 days
Ortho-Phosphate as P	mg/l	0.01	Single Reagent Colorimetric	1-365.2; 2-424F	1	48 hours

ROCKY MOUNTAIN ANALYTICAL LABORATORY

Inorganic Analytical Methodology (Continued)

<u>Parameter</u>	<u>Units</u>	<u>Nominal Detection Limit^a</u>	<u>Methodology</u>	<u>Reference</u>	<u>Preservation Bottle No.</u>	<u>Maximum Holding Time^b</u>
INORGANIC PARAMETERS						
(Continued)						
Total Phosphorus as P	mg/l	0.06	Digestion; ICP Emission Spectroscopy	1-4.1.4; 3	4	28 days
		0.01	Digestion - Colorimetric	1-365.2; 1-424C,F	2	28 days
Silica as SiO ₂	mg/l	0.1	ICP Emission Spectroscopy	3	4	28 days
	mg/l	1	Colorimetric	1-370.1; 2-425C	1	28 days
Biological Oxygen Demand	mg/l	2	Dilution Bottle - D.O. Probe	1-405.1; 2-507	1	48 hours
Chemical Oxygen Demand	mg/l	5	Micro Colorimetric	1-410.4; 2-508A	2	28 days
Total Organic Carbon	mg/l	0.1	Oxidation-Infrared Absorption	1-415.1; 2-505	2	28 days
Ammonia as N	mg/l	0.1	Electrode	1-350.3; 2-417E	2	28 days
		0.1	Automated Colorimetric	1-350.1	2	28 days
Total Kjeldahl Nitrogen as N	mg/l	0.1	Digestion - Electrode	1-351.4; 2-420B	2	28 days
		0.1	Digestion - Colorimetric	1-351.2	2	28 days
Total Organic Nitrogen as N	mg/l	0.1	Calculation (TKN - NH ₃)	-	-	-
Oil and Grease	mg/l	1	Freon Extraction-Gravimetric	1-413.1; 2-503A	3	28 days
Free Cyanide	mg/l	0.01	Chlorination-Distillation-Colorimetric	1-335.1; 2-412F,D	6	14 days
Total Cyanide	mg/l	0.01	Distillation - Colorimetric	1-335.2; 2-412B,D	6	14 days
Phenolics	mg/l	0.01	Distillation - Colorimetric	1-420.1; 2-510A,B	2	28 days
Fecal Coliform	Colonies/100 ml	1	Membrane Filter	2-909C	8	ASAP
Total Coliform	Colonies/100 ml	1	Membrane Filter	2-909A	8	ASAP
Bromide	mg/l	0.1	Colorimetric	2-405	1	28 days
Residual Chlorine	mg/l	0.05	Amperometric	1-330.2; 2-408C	1	ASAP
Hexavalent Chromium	mg/l	0.01	Colorimetric	1-218.4; 2-312B	1	24 hours
Color	units	5	Pt-Co Colorimetric	1-110.2; 2-204A	1	48 hours
Hardness as CaCO ₃	mg/l	5	Calculation	2-314A	4	6 months
Nitrite as N	mg/l	0.01	Colorimetric	1-354.1; 2-419	1	48 hours
Sulfide	mg/l	0.05	Titrimetric - Electrode	1-376.1; 2-427B,D	7	7 days
Sulfite	mg/l	2	Titrimetric	1-377.1; 2-428	1	ASAP
MBAS (Surfactants)	mg/l	0.1	Colorimetric	1-425.1; 2-512A	1	48 hours
Turbidity	NTU	0.1	Turbidimeter	1-180.1; 2-214A	1	48 hours

ROCKY MOUNTAIN ANALYTICAL LABORATORY

Inorganic Analytical Methodology (Continued)

References

- (1) "Methods for Chemical Analysis of Water and Wastes", EPA-600/4-79-020, EMSL, Cincinnati, 1979.
- (2) "Standard Methods for the Examination of Water and Wastewater", 15th Edition, APHA, 1980.
- (3) Federal Register, 40 CFR 136, December 3, 1979; USEPA EMSL-Cincinnati, OH 45268.
- (4) "Annual Book of ASTM Standards", Part 31, Water, 1980.

Notes

^a Nominal values are the best achievable with the listed analytical method. Interferences in specific samples may result in a higher detection limit.

^b Applicable to NPDES wastes as updated by Robert C. Booth, Director, EMSL-Cincinnati, September 22, 1981.

^c Digestion procedure 1-4.1.4 used for elements determined by ICP Emission Spectroscopy when determining total metals. Digestion procedures for graphite furnace elements included with reference listed.

11/10/82

GUIDELINES FOR SAMPLE CONTAINERS AND PRESERVATIVES^a

<u>Bottle No.</u>	<u>Parameters</u>	<u>Container</u>	<u>Preservative</u>	<u>Notes</u>
1	Cl ⁻ , F ⁻ , SO ₄ ⁼ , Tot. Alk., CO ₃ ⁼ Alk., HCO ₃ ⁻ Alk., OH ⁻ Alk., pH, spec. cond., TDS, TSS, TS, TVS, <u>o</u> -PO ₄ , SiO ₂ , BOD, Br ⁻ , res. Cl ₂ , Cr ⁺⁶ , color, NO ₂ ⁻ , SO ₃ ⁼ , MBAS, Turbidity.	1 liter poly	4° C	Provide unfiltered sample for solids and turbidity.
2	Tot. P, COD, TOC, NH ₃ , TKN, TON, Phenolics NO ₃ + NO ₂ .	500 ml poly	2 ml 50% H ₂ SO ₄ , 4°C	
3	O & G	1 liter glass	4 ml 50% H ₂ SO ₄ , 4°C	Do not filter, collect directly in bottle.
4	Na, K, Ca, Mg, Al, Sb, As, Ba, Be, B, Cd, Cr, Co, Cu, Fe, Pb, Mn, Hg, Mo, Ni, Se, Ag, Sr, Tl, Sn, Ti, V, Zn, ICP, Hardness.	500 ml poly	5 ml 50% HNO ₃	Provide separate samples for total and dissolved sample (filter before adding to bottle.)
5	Alpha, Beta, Ra ²²⁶ , Ra ²²⁸ , U	1 liter poly (no Ra ²²⁸), ½ gallon poly (with Ra ²²⁸)	10 ml 50% HNO ₃ 20 ml 50% HNO ₃	
6	Free CN, Tot. CN	500 ml poly	2 ml 50% NaOH, 4°C	
7	Sulfide	250 ml poly	1 ml 1 N Zn acetate, 1 ml 50% NaOH, 4°C	
8	Fecal coli., total coli.	8 oz. sterile	4° C	Collect directly in sterile bottle
11	VOA, purgeable organics, THM	2 - 40 ml glass vial	4° C	Completely fill bottle, leave no air bubbles.
12	B/NA	1 liter glass	4° C	
13	Pest./PCB	1 liter glass	4° C	
14	Herbicides	1 liter glass	4° C	
15	TOX	1 liter glass	4° C	

^aFederal Register, 40 CFR 136, December 3, 1979, as updated by EPA, EMSL-Cincinnati, September 22, 1981.

ROCKY MOUNTAIN ANALYTICAL LABORATORY

Organic Analytical Methodology

<u>Parameter</u>	<u>Units</u>	<u>Nominal Detection Limit^(a)</u>	<u>Methodology</u>	<u>Reference⁽¹⁾</u>	<u>Preservation Bottle No.</u>	<u>Maximum Holding Time^(b)</u>
Purgeables	ug/l	1	Purge & Trap GC/MS	624	11	14 days
Base/Neutrals	ug/l	10	Extraction/GC/MS	625	12	7 days/40 days
Acids	ug/l	10	Extraction/GC/MS	625	12	7 days/40 days
Organochlorine Pesticides/PCB's	ug/l	0.01	Extraction/GC/ECD	608	13	7 days/40 days
		10	Extraction/GC/MS	625	12	7 days/40 days
Phenoxy Herbicides	ug/l	0.01	Extraction/GC/ECD	(2)	14	7 days/40 days
Total Organic Halogen (TOX)	ug/l	5	Adsorbition/Coulometric	450.1 (3)	15	-
Trihalomethanes (THM)	ug/l	1	Extraction/GC/ECD	(4)	11	14 days
		1	Purge & Trap GC/MS	(4)	11	14 days
Dioxin	ug/l	0.005	Extraction/GC/MS/ECD	613	16	7 days/40 days
Purgeable Halocarbons	ug/l	0.01	Purge & Trap/GC/Hall	601	11	14 days
Purgeable Aromatics	ug/l	1	Purge & Trap/GC/PID	602	17	14 days
Acrolein & Acrylonitrile	ug/l	100	Purge & Trap/GC/FID	603	18	14 days
Phenols by GC	ug/l	10	Extraction/GC/FID	604	16	7 days/40 days
Benzidines	ug/l	0.1	Extraction/HPLC	605	19	7 days/40 days
Phthalate Esters	ug/l	10	Extraction/GC/FID	606	12	7 days/40 days
Nitrosamines	ug/l	1	Extraction/GC/NPD	607	20	7 days/40 days
Nitroaromatics/isophorone	ug/l	1	Extraction/GC/FID & GC/ECD	609	12	7 days/40 days
Polynuclear Aromatics	ug/l	0.5	Extraction/HPLC	610	20	7 days/40 days
Haloethers	ug/l	1	Extraction/GC/Hall	611	17	7 days/40 days
Chlorinated Hydrocarbons	ug/l	0.02	Extraction/GC/ECD	612	12	7 days/40 days
Organophosphorus Pesticides	ug/l	0.1	Extraction/GC/NPD	622(5)	12	7 days/40 days
Triazine Pesticides	ug/l	0.1	Extraction/GC/NPD	(6)	12	7 days/40 days

References

- (1) Federal Register, Vol. 44, No. 233, Monday, December 3, 1979.
- (2) "Method for Chlorinated Phenoxy Acid Herbicides in Industrial Effluents," Federal Register, Vol. 38, No. 75, Part II.
- (3) "Total Organic Halide," US EPA-EMSL, Cincinnati, November, 1980.
- (4) Federal Register, Vol. 44, No. 231, Thursday, November 29, 1979, Appendix, Part I.
- (5) "Method 622- Organophosphorus Pesticides," Proposed EPA Method, 304 (h) Committee.
- (6) Federal Register, Vol. 38, No. 75, 1973.

Notes

- ^a Nominal values are the best achievable with the listed analytical method for a typical component. Interferences in specific samples may result in a higher detection limit.
- ^b Applicable to NPDES Wastes as updated by Robert C. Booth, Director, EMSL-Cincinnati, September 22, 1981. Where two times are given, the first refers to the time to extraction, the second to the time of instrumental analysis.

ROCKY MOUNTAIN ANALYTICAL LABORATORY

Organic Analytical Methodology (continued)

<u>Preservation Bottle No.</u>	<u>Parameter Group</u>	<u>Bottle</u>	<u>Preservation</u>
11	Purgeables	40 ml glass with teflon lined silicone septum cap	4°C (thiosulfate if Cl ₂ present)
17	Purgeables	40 ml glass with teflon lined silicone septum cap	4°C, HCl to pH less than 2 (thiosulfate if Cl ₂ present)
18	Purgeables	40 ml glass with teflon lined silicone septum cap	4°C, adjust pH to 4 - 5 (thiosulfate if Cl ₂ present)
16	Extractables	1 liter glass with teflon lined cap	4°C (thiosulfate if Cl ₂ present)
19	Extractables	1 liter glass with teflon lined cap	4°C, adjust pH to 2 - 7 (thiosulfate if Cl ₂ present)
12, 13, 14	Extractables	1 liter glass with teflon lined cap	4°C
20	Extractables	1 liter glass with teflon lined cap	4°C, store in dark (thiosulfate is Cl ₂ present)
15	TOX	250 ml glass with teflon lined cap, single 1 liter glass with teflon lined cap, quad.	4°C, store in dark (thiosulfate if Cl ₂ present)

**LABORATORY SUPPORT FOR
VADOSE ZONE STUDIES
AT SPARTON TECHNOLOGY, INC.**

Prepared For:

Harding Lawson Associates

Prepared By:

**Rocky Mountain Analytical Laboratory
5530 Marshall Street
Arvada, Colorado 80002**

May 6, 1985

INTRODUCTION

As part of a closure plan at Sparton Technologies' Albuquerque, New Mexico facility, an extensive analytical program will be conducted to accomplish the following:

- o Task 1, provide detailed characterization of soil samples obtained from a series of soil borings for selected metal and volatile organic compounds, and
- o Task 2, determine the amount of water required to remove the contaminants from the vadose zone by performing a column leaching study.

Characterization of the soil cores in Task 1 will be to analyze the samples for total metals, EP Toxicity metals, volatile organics, and total organic halogen (TOX). The total metals analyses will be for chromium, cadmium, lead, and nickel. The EP toxicity tests will be for metals detected as total metals. Analysis for EP chromium will always include trivalent chromium and hexavalent chromium. Samples with detectable TOX will be analyzed for the following four organic compounds: 1,1-Dichloroethylene, Methylene chloride, 1,1,1-Trichloroethane and Trichloroethylene. One sample per boring will be analyzed for the volatile priority pollutants plus acetone as shown in Table 1. The column leaching studies in Task 2 will be oriented to the same list of parameters in Task 1.

Subsequent sections of this document provide additional information concerning the analytical methods as well as supporting information.

TABLE I - SOIL DETECTION LIMITS FOR VOLATILE ORGANICS GC/MS

<u>Parameter</u>	<u>Detection</u>	
	<u>Units</u>	<u>Limit</u>
1V Acrolein	ug/kg	100
2V Acrylonitrile	ug/kg	100
3V Benzene	ug/kg	5
5V Bromoform	ug/kg	5
6V Carbon tetrachloride	ug/kg	5
7V Chlorobenzene	ug/kg	5
8V Chlorodibromomethane	ug/kg	5
9V Chloroethane	ug/kg	10
10V 2-Chloroethylvinyl ether	ug/kg	5
11V Chloroform	ug/kg	5
12V Dichlorobromomethane	ug/kg	5
14V 1,1-Dichloroethane	ug/kg	5
15V 1,2-Dichloroethane	ug/kg	5
16V 1,1-Dichloroethylene	ug/kg	5
17V 1,2-Dichloropropane	ug/kg	5
18V 1,3-Dichloropropylene(c&t)	ug/kg	5
19V Ethylbenzene	ug/kg	5
20V Methylbromide	ug/kg	10
21V Methylchloride	ug/kg	10
22V Methylene chloride	ug/kg	10
23V 1,1,2,2-Tetrachloroethane	ug/kg	5
24V Tetrachloroethylene	ug/kg	5
25V Toluene	ug/kg	5
26V 1,2-trans-Dichloroethylene	ug/kg	5
27V 1,1,1-Trichloroethane	ug/kg	5
28V 1,1,2-Trichloroethane	ug/kg	5
29V Trichloroethylene	ug/kg	5
31V Vinyl chloride	ug/kg	10
Acetone	ug/kg	10

BDL = Below detection limit.

TECHNICAL APPROACH

This section describes in detail the specific technical approach which will be utilized, especially for Tasks 2 and 3. Information about the analytical methodology will be presented in a subsequent section.

Task 1 - Soil Core Characterization

This task is to analyze soil cores for specific contaminants. All analyses will be in accordance with standard EPA Methodology referenced in SW-846 as shown below:

Total Metals	- EPA Method 6010
EP Toxicity Metals	- EPA Method 1310
Hexavalent Chromium	- EPA Method 7196
Volatile Organics	- EPA Method 8240
Total Organic Halogen	- EPA Method 9020
Volatile Halocarbons	- EPA Method 8010

Task 2 - Column Leaching Study

For this study, two 12" x 3" columns will be packed with contaminated soil. One column will be for inorganic constituents and one for organic constituents. Local source water will be used to leach the contaminants from the soil. Gravity head pressure will be used to elute each column. If required, the columns will be pressurized to generate a minimum column flow of 20 ml/hour. The column pore volume is estimated to be 500 ml. During the initial phase of the study, samples will be collected every 200-250 ml. Once breakthrough has occurred, the sampling frequency will decrease.

For the inorganic column study, 100 ml samples will be collected and analyzed for chromium, lead and hexavalent chromium.

The collection of column leachates for volatile organics represents a significant analytical challenge. RMAL proposes to collect the samples with in-line charcoal filters. Back up samples would be collected in collapsed Tedlar bags and then transferred to standard VOA glass vials for longer storage. The charcoal samples will be analyzed for TOX and/or specific chlorinated species.

The TOX measurement would be according to standard practice with the charcoal analyzed directly. For the detailed organic speciation, a sample preparation step would be required prior to analysis. Specific organic compounds would be determined on a benzene extract of the charcoal using the GC/HECD conditions in EPA Method 601 as described previously.

Approximately 30-50 ml of sample will be required for each analysis. Two charcoal tubes would be collected sequentially, one for the TOX analysis and one reserved for organic compound speciation.

The metals and TOX analyses will be performed on a daily basis to establish breakthrough curves. After breakthrough has been established for the organics, but prior to completion of the test, selected samples will be analyzed for specific organics to verify the TOX results.

ANALYTICAL METHODOLOGY

All samples analyses will be in accordance with standard EPA Methodology as published in SW-846. The discussion below highlights the application of these methods.

Total Metals

The samples (soils and batch/column leachates) will be digested using SW-846 Method 3050. The digestate will then be analyzed by inductively coupled argon plasma spectrometry (ICP) using SW-846 Method 6010. A Jarrell-Ash Model 9000 ICP will be used for the determinations.

EP Toxicity Metals

SW-846 Method 1310 will be used to generate a leachate. The leachate will be analyzed for metals by SW-846 Method 6010 as described above and for hexavalent chromium using SW-846 Method 9030.

Total Organic Halogen

Total organic halogen (TOX) determinations of column leachate samples will be analyzed as specified in SW-846 Method 9020. This method does not address the analysis of soil samples for TOX. RMAL has developed a procedure in which an aliquot of the soil sample is extracted with methanol. The methanol extract is then injected into the TOX instrument. The detection limit for this procedure is 50 mgCl⁻/kg.

An alternative approach involves extracting a 10 g aliquot of soil with 10 ml hexane. One milliliter of this extract is then combusted in an oxygen atmosphere in a combustion bomb. The combustion products are collected in a weak carbonate/bicarbonate trapping solution. This solution is then analyzed using ion chromatography as outlined in EPA Method 300.0.¹ The detection limit for this procedure after optimization will be 1 mgCl⁻/kg.

Note: Since this printing, the methanol extract method has been demonstrated to be most reliable. Detection limit is 2 mgCl⁻/kg.

¹"Methods for Chemical Analysis of Water and Waste", EPA-600/4-79-020, EMSL, Cincinnati, 1979.

Hexavalent Chromium

Hexavalent chromium in leachate samples will be measured by a colorimetric method in SW-846, Method 7196.

Volatile Organics Scan

Soil and selected batch leachate samples will be analyzed for the complete list of volatile priority pollutants and acetone using a purge and trap GC/MS method in SW-846, Method 8240. Aqueous samples can be purged directly as specified in SW-846 Method 5030. Soil samples will require a preliminary extraction with tetraglyme, as specified in Method 8240, prior to analysis.

Volatile Halocarbons

Batch and column leachate samples will be analyzed for selected chlorinated volatile species using SW-846 Method 8010. This method is a purge and trap GC method similar to Method 8240, but uses a chlorine specific detector, the Hall electroconductivity detector (HECD), rather than a mass spectrometer for identification and quantification of the organic species.

SAMPLE COLLECTION AND PRESERVATION

The procedures for the collection, field preparation, containerization, preservation and shipment of samples will be discussed below. The sample collection procedures are as important as the analytical procedures in producing meaningful data.

For soil and sludges with no free water, a 1-quart glass bottle (Teflon-lined cap) is adequate for all organic and inorganic tests except VOA's. One separate VOA vial should be also collected per sample. These samples are best composited in a stainless steel bucket using a stainless trowel for mixing. Compositing should be done expeditiously to minimize loss of volatiles. After compositing samples with no free oil, the bucket is best wiped out between samples with clean paper towels. Samples with free oil may coat the bucket with oil. Hexane followed by methanol can remove oil. The use of solvents should be considered only as a last resort.

Two special samples will be required for the batch and column leaching studies. A one to two gallon sample of contaminated soil will be collected by compositing appropriate core samples in a stainless steel bucket as described previously. This composite will be stored in clean metal cans which will be sealed with a Teflon liner. The containers should be filled completely to minimize headspace and resulting loss of volatiles. In addition to this bulk soil sample, a large quantity (15 to 20 gallons) of uncontaminated groundwater will be needed. This water will be collected in one gallon bottles and stored in RMAL's 4°C storage area.

RMAL will provide all sample bottles packed in coolers with foam wrapping. A packing list and chain-of-custody form will accompany each cooler. The bottles will be shipped out by UPS in advance of the sampling start date. Extra bottles will be sent to cover breakage during shipping or handling in the field.

The coolers will be sealed with nylon filament tape. The coolers should be sealed with tape in the field after sample collection. All samples should be shipped by air express next day delivery to RMAL. The coolers will be opened, the custody verified and the samples logged into the RMAL computer for sample tracking. The RMAL facility is always locked and has a 24 hour-a-day monitored security system. All windows and doors have intrusion detection bugs.

In addition to the sample bottles for the field samples, some column leachate samples will be collected in Tedlar bags. Tedlar is a polyvinylfluoride film with very low permeability for organic species.

APPENDIX E
to
ATTACHMENT 3

Monitoring Well Plugging
and Abandonment Procedures

APPENDIX E

MONITORING WELL PLUGGING AND ABANDONMENT PROCEDURES

I Introduction

Three monitoring wells (MW1, MW3, and MW11) will be plugged and abandoned prior to initiation of closure of the pond and sump area.

II Abandonment Methodology

Two well abandonment methodologies are being considered. The final choice will be based on the equipment and capabilities of the drilling contractor selected.

A. Method A

Prior to excavation of the surface impoundment, the steel protector pipes and concrete collars of the three monitoring wells will be removed and discarded. A drilling rig will be located over the existing monitoring well, and the casing and screen will be filled with a bentonite slurry. A mills knife, or a pneumatic or mechanical device, will be used to cut or fracture the casing so that the bentonite will invade the surrounding formation outside the casing.

The bentonite will be allowed to settle for at least 12 hours, and the remainder of the boring will be filled with a neat grout and bentonite mixture to the land surface.

B. Method B

Method B is similar to Method A except that the casing and well annulus will be drilled out using stringer to guide the drill bit down the well casing.

III Record Filing

A record of each well plugged and abandoned will be filed with the State Engineer.

Harding Lawson Associates
JOB SAFETY PLAN

Part 1 - Site Information

1. Site: Sparton Technology, Inc. 2. Job No.: 6310,023.12
3. Location: 9621 Coors Road N.W., Albuquerque, New Mexico 87103
4. Plan Prepared By: H. A. Wood Date: August 20, 1985
5. Plan Approved By: Thomas S. Burger Date: August 20, 1985
6. Plan Revised: February 18, 1986 7. Approved: February 18, 1986
8. Facility Description: Electronics manufacturing facility with lagoon and drum storage of hazardous wastes.
9. Status (active, inactive, unknown): Active electronics manufacturing
10. Unusual Features (dike integrity, powerlines, etc.): Waste discharge lines, fences, gas lines, outside fences.
11. History (injuries, exposures, complaints): Old drum area used 1981, sump closed 1980, two ponds and two drum storage areas used 1980 to present
12. Surroundings (location with respect to residences, businesses, natural features): Facility is on State Highway 448 about 0.5 mile south of Alameda Airport. 0.5 mile west of Rio Grande River. Commercial/unimproved land use, low density pop
13. Site Sketch (attach sketch showing salient features) Plates 1, 2, 3, & 4
14. Climate: Strong daytime heating, cool nights, wide daily temperature range. Summers fair, dry, sunny, hot. Winters cold to warm, some snow.
- a) average wind speed and direction: Prevailing winds are January N or SE; July mostly SE; Annual average SE and NW.
- | | | | | |
|-----------------------|-----------|---------------|-----------|---------------|
| b) | July | October | January | April |
| mean high temperature | <u>90</u> | <u> </u> | <u>45</u> | <u> </u> |
| mean low temperature | <u>60</u> | <u> </u> | <u>20</u> | <u> </u> |
15. Hazardous Material Type: Liquid Solid Sludge Gas/Vapor Other
16. Hazardous Material Characteristics: Corrosive Ignitable Toxic Volatile Reactive Radioactive Carcinogenic Other

* If in pure form. Hazardous materials expected to be encountered in the field will be unsaturated and saturated soils with trace (ppm) contamination.

APPENDIX F
to
ATTACHMENT 3

Model Safety Plan Outline

17. Chemical Information Summary

The chemicals listed below might be encountered at the site during field exploration. Appendix A presents detailed summary information for each chemical listed.

m-Xylene
o,p-Xylene
Boron
Chromium
Manganese
Nickel
Sodium
Ethyl Benzene
Methyl Chloride
Methylene Chloride
1,1,2,2-Tetrachloroethane
Tetrachloroethylene
Toluene
1,2-Dichloroethylene
1,1,1-Trichloroethane
1,1,2-Trichloroethane
Trichloroethylene
Acetone
Benzene
Chlorobenzene
Chloroform
1,1-Dichloroethane
Trichlorotrifluoroethane
1,1-Dichloroethylene

Task Description: FIELD EXPLORATION (TEST BORINGS)

Task Name:

18. ANALYSIS OF KNOWN OR SUSPECTED UNMITIGATED HAZARDS		19. RISK ANALYSIS		
Hazard Type	How Does Hazard Exist?	Expos	Prob	Conseq
Mechanical	Drill rig and associated equipment	Cont	Unu	Min to Fatal
Electrical	Active Plant Site	Occ	Unu	Chron to Fatal
Chemical	Ingestion Inhalation Skin Contact Eye Contact	Cont	Like	Mod to Fatal
Temperature	If personal protective equipment is worn, special consideration to heat stress	Cont	Like	Min to Fatal
Acoustical	N/A			
Radioactive	N/A			
O2 Deficiency	N/A			
Biohazard	N/A			

20. MITIGATION MEASURES	REQUIRED PERSONAL PROTECTIVE EQUIPMENT	
	LEVEL <u> </u> A <u> </u> B <u>XX</u> C <u> </u> D	
Define work areas Wear hard hat, steel toe and shank shoes		
Have all lines identified and marked	Head: Hard Hat	Eye/Face: Safety Glasses
PPE in use or available	Hand: Neoprene Gloves	Body: Tyvek Impermeable (2)
Air monitoring during work (See Below)	Lung: (2) 1/2 Face Respirator OV cartridge with dust filter	Ear: Equipment operator use plugs if needed
Hard hat, gloves, eye protection and foot protection to be worn as necessary (i.e., equipment operators use all, soil handlers use gloves and glasses, observers use glasses). Tyvek suits and respirators to be worn above action levels presented below.	Foot: Steel toe/Steel shank boots	
	Special Equipment Required:	

Expos: Frequency of exposure to the hazard event
 cont - many times per day
 freq - once or twice per day
 occ - once a week or month
 seld - once a month or year

Prob: Likelihood that an injury will occur upon exposure
 cert - certain
 like - 50/50 chance
 unu - unusual
 imp - improbable

Conseq: Degree of injury if one occurs
 fatal - fatality
 ser - serious, requires hospitalization
 mod - moderate, requires out-patient care
 min - requires on-site first aid
 chron - chronic, no acute affects

Special Procedures Required:

- 1.) Underground natural gas line to be removed by client prior to any drilling or excavation in pond and sump area.
- 2.) Workplace to be monitored by HNU Meter Model 11 101 with 11.7 or 10.2 ev probe.
 - respirator action level = 5 ppm
 - tyvek suit action level = 5 ppm
 - evacuation action level = 50 ppm

21. Required Personal Protective Equipment

Task: Field Exploration *Closure of Ponded Sump Area*
Construction of P

Level: A B X C D

Head

 X Hardhat

Eye/Face

 X Safety Glasses Face Shield
 Goggles

Hand

 X Neoprene
 Viton

 Nitrile
 Underglove

 X PVC
 Other: _____

Body

 Full Encapsulating Suit: _____

 Two Piece Rainsuit, Material = _____

 One Piece Splash Suite, Material = _____

 X Tyvek Suit* Tyvek/Saranax Suit Tyvek/Polyethylene Suit

 Cloth Coveralls X Other: Standard Work Clothes

Lung

 SCBA (open circuit, pressure demand): _____

 Full Face Respirator, cartridge = _____

 X Half Mask Respirator, *cartridge = Organic Vapor (OV) or OV & Acid Gas; each
with dust filter

 Other: _____

Ear

 X Earplug, type = discretionary

 Earmuff, type = _____

Foot

 X Boots, type = Steel toe and Shank

 Disposable Overboots, type = _____

22. Special Equipment, Facilities, or Procedures: _____

 Refer to Items 20, 23, and 28.

 No smoking or eating within work areas.

 All personnel working on site will be briefed on the safety procedures
established by this plan.

* To be used if deemed appropriate by site safety officer in accordance with Item 20 of the Safety Plan.

23. Decontamination Procedures: Seal all drill holes with a cement/bentonite grout.
Decon of personnel and equipment per Attachment 5.

24. Investigation-Derived Material Disposal: Drill cuttings to be stored in drums.
Disposal method to be determined based on analysis of soil.

25. Site Resources

Water Supply: Potable water on building wall
Telephone: Carpenters Shop
Radio: Not Required
Other: _____

Date of Safety Training Date of Physical Exam

Team Member	Responsibility	Date of Safety Training	Date of Physical Exam
<u>Bruce Stearns</u>	<u>Field Engineering Geologist and Safety Officer</u>	<u>May '85</u>	<u>May '85</u>
<u>Kevin Schneider</u>	<u>Geologist</u>	<u>Dec 85</u>	<u>Oct 86</u>
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

27. Emergency Telephone Numbers

Phone/Radio Location: Carpenter Shop Ext. # 174 & 172
Ambulance: 765-1100
Hospital Emergency Room: 841-1111
Poison Control Center: 843-2551
Police: 911
Fire Department: 911
Airport: 898-1313 7 Bar Airport 0.5 mile NE
Explosives Unit: _____
EPA Contact: _____
State Contact: Ray Krehoff, New Mexico EID (505) 827-2275
Client: Cleoves Martinez (505) 898-1150

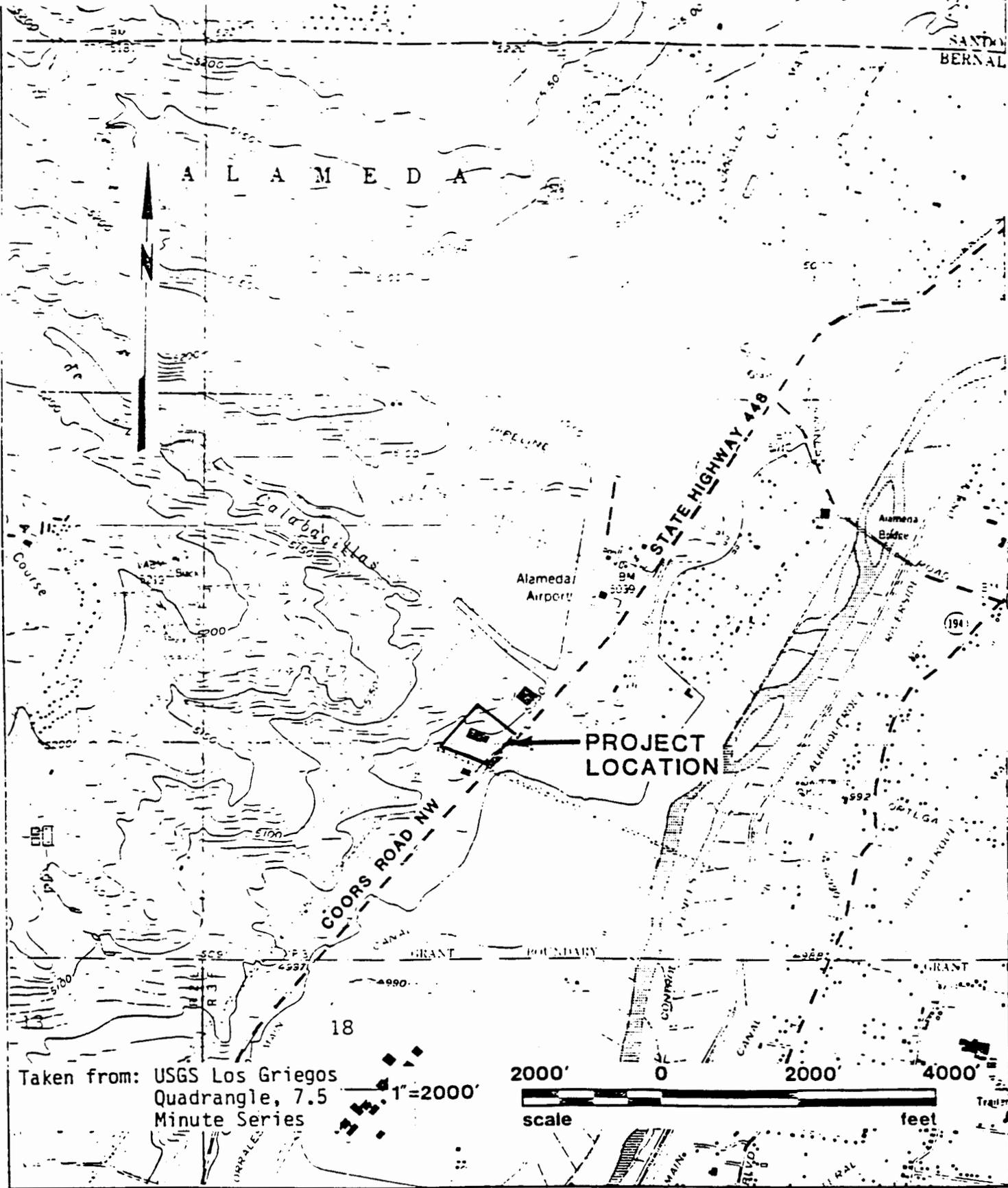
28. Emergency Equipment Location

a. Safety Shower/Eyewash Portable eyewash at Carpenter Shop, shower/eyewash
b. First Aid Kit Carpenter Shop in wetroom (Plate
c. Fire Extinguishers Carpenter Shop and on Drill Rig
d. Other Fire Hydrant at Coors Road East of Ponds

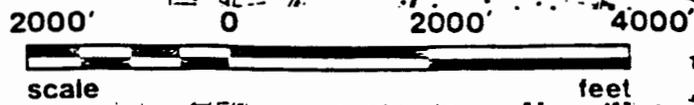
29. Emergency Routes (give road or other directions; attach map)

Hospital Presbyterian Hospital - Go south on Coors Road, east on Interstate 40
and south on Interstate 25. Exit Grand/Central and turn east on Central Avenue.
Immediately look to the south side of Central Avenue to see hospital and emergency
~~entrance~~ entrance.

A L A M E D A



Taken from: USGS Los Griegos
 Quadrangle, 7.5
 Minute Series



Harding Lawson Associates
 Engineers Geologists
 & Geophysicists

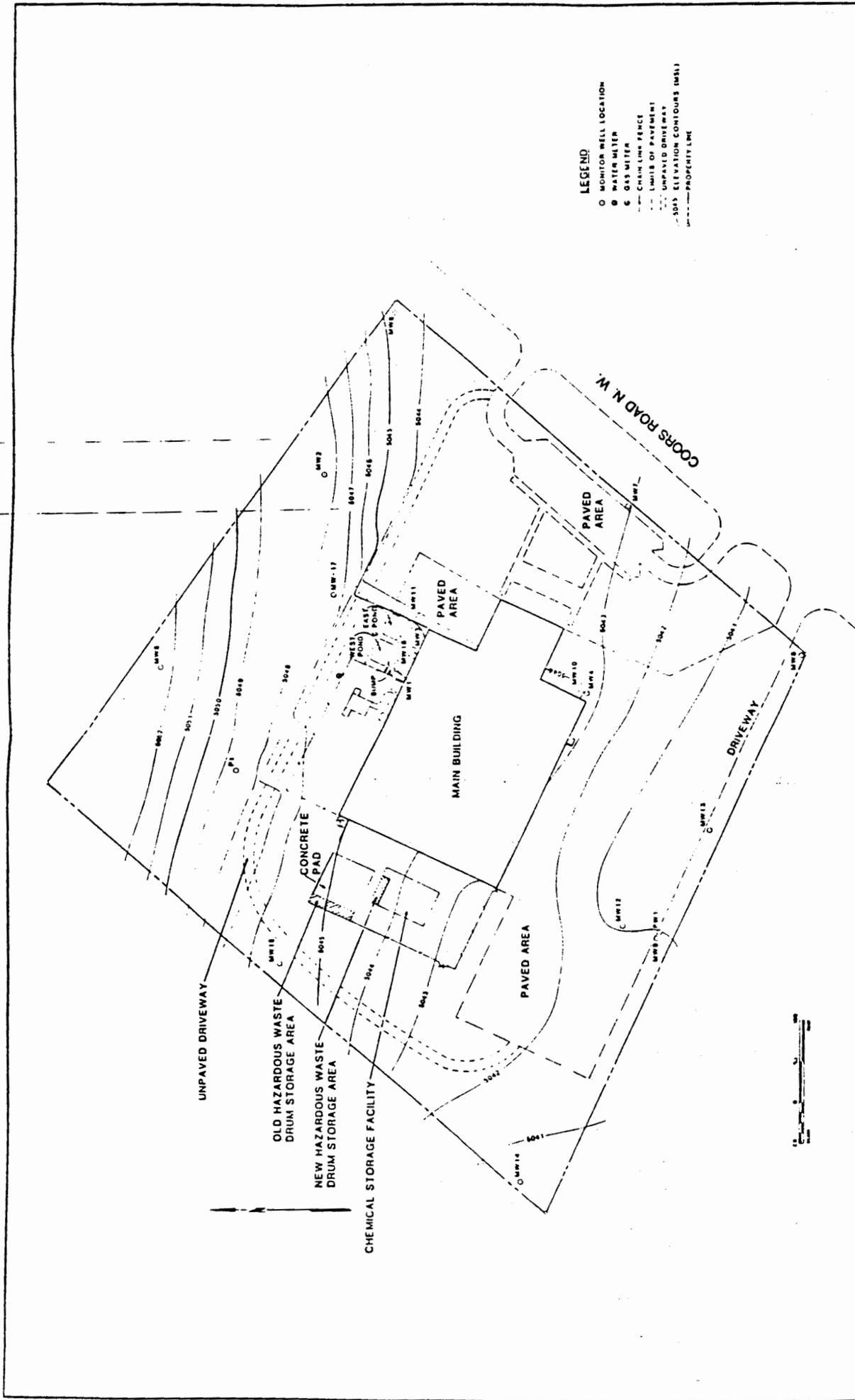
LOCATION MAP
 Sparton Technology, Inc.
 Albuquerque, New Mexico

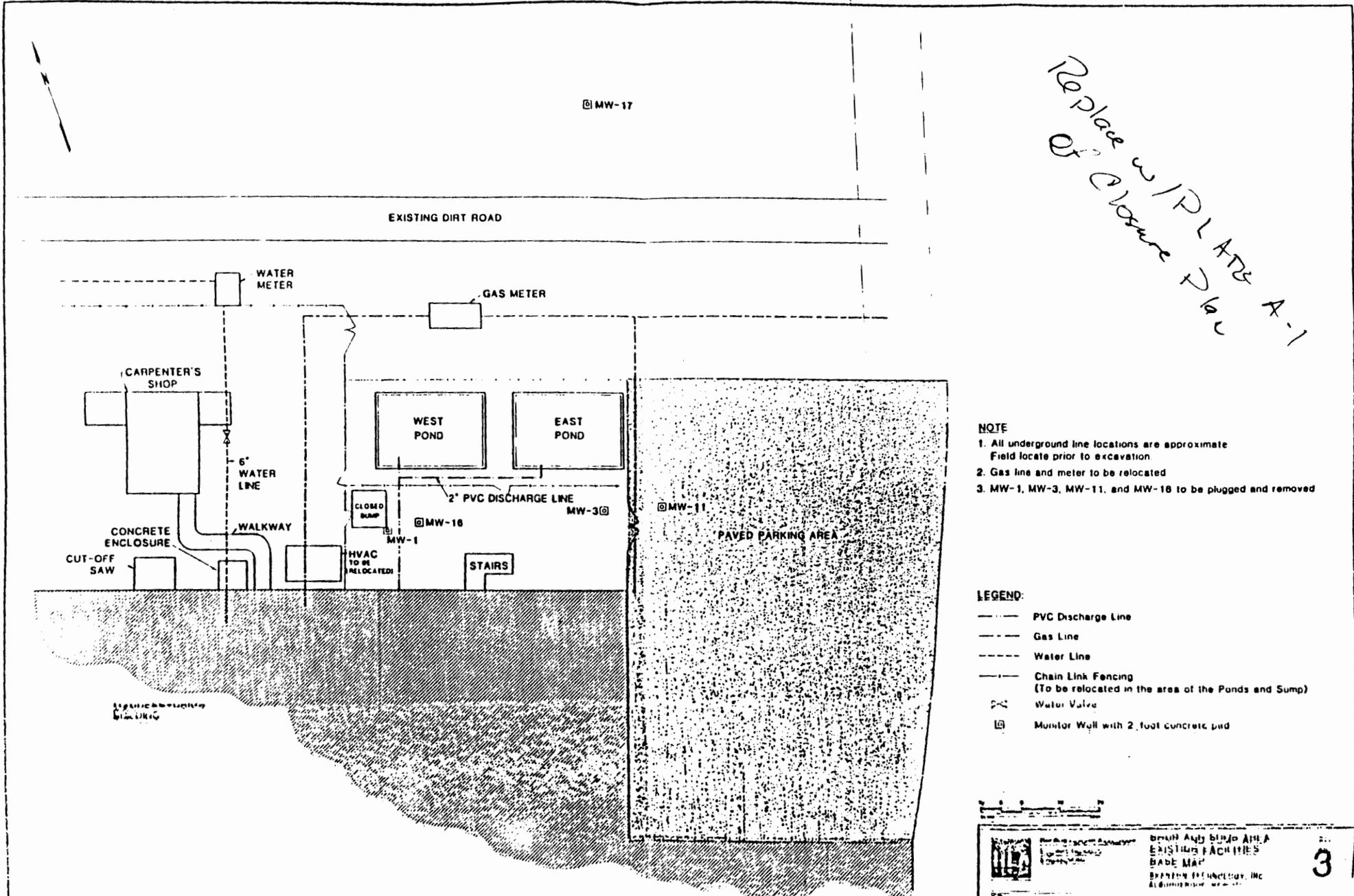
1

DRAWN SP	DWG NUMBER 6310.012.12	APPROVED [Signature]	DATE	REVISED	DATE
-------------	---------------------------	-------------------------	------	---------	------

LEGEND

- MONITOR WELL LOCATION
- ⊙ WATER METER
- ⊙ GAS METER
- CHAIN LINK FENCE
- - - - - LIMITS OF PAVEMENT
- - - - - UNPAVED DRIVEWAY
- - - - - 50% ELEVATION CONTOURS (MSL)
- - - - - PROPERTY LINE





*Replace w/ PLATE A-1
Of Closure Plan*

NOTE

1. All underground line locations are approximate. Field locate prior to excavation.
2. Gas line and meter to be relocated.
3. MW-1, MW-3, MW-11, and MW-18 to be plugged and removed.

LEGEND:

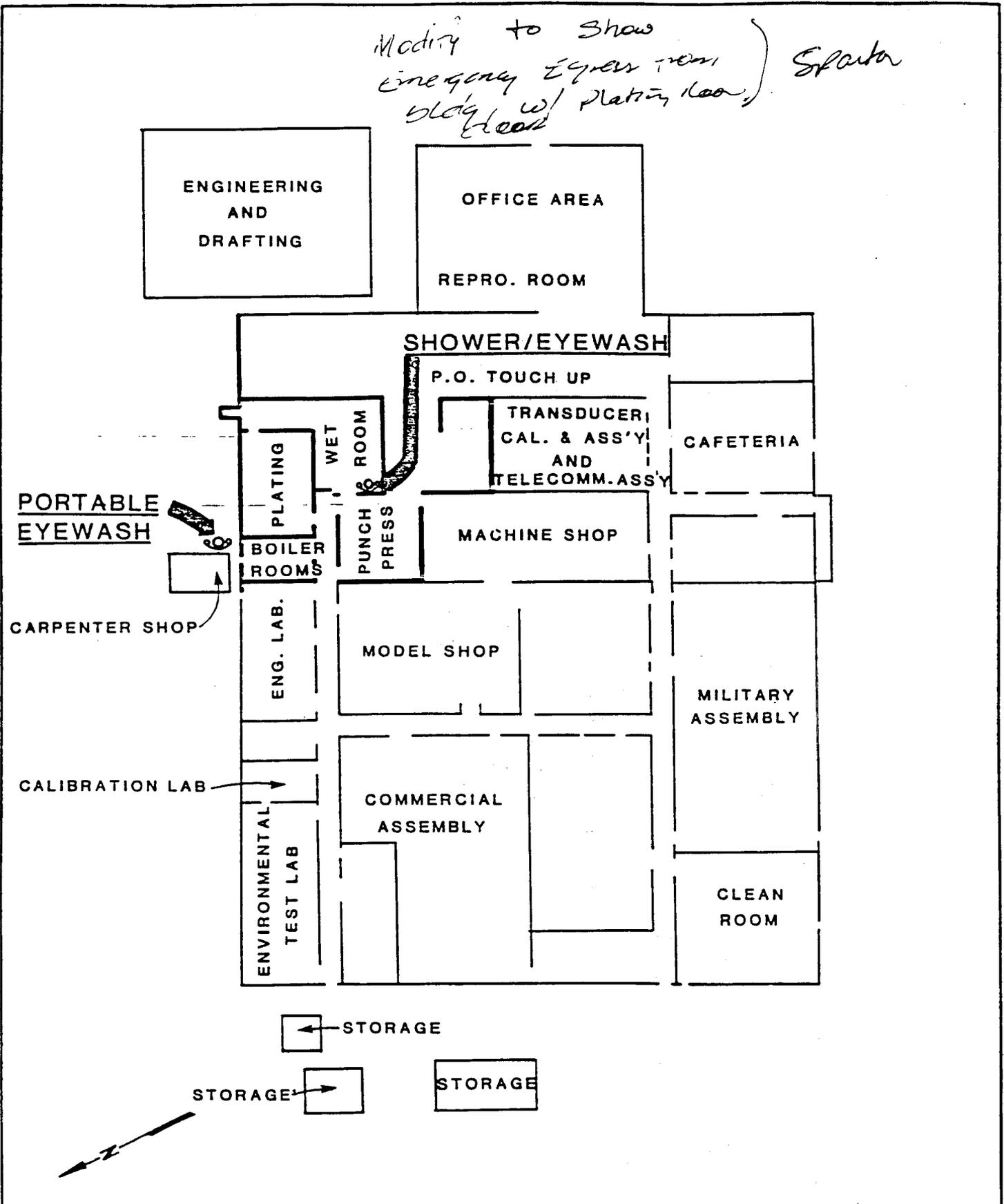
- PVC Discharge Line
- - - Gas Line
- - - Water Line
- - - Chain Link Fencing (To be relocated in the area of the Ponds and Sump)
- ⊗ Water Valve
- ⊠ Monitor Well with 2 foot concrete pad

BRANTON ENGINEERING, INC.
 2000 10th Street, Suite 100
 Grand Rapids, MI 49503
 Phone: (616) 941-1111
 Fax: (616) 941-1112
 Email: branton@brantoneng.com
 Website: www.brantoneng.com

BRANTON AND BURDICK ARE A
 EXISTING FACILITIES
 BASE MAP
 BRANTON ENGINEERING, INC.
 GRAND RAPIDS, MI 49503

3

*Modify to show
Emergency Eyewash from
Bldg. w/ Plating Room
Spartan*



Harding Lawson Associates
Engineers, Geologists
& Geophysicists

EMERGENCY SHOWER/EYEWASH
Spartan Technology, Inc.
Albuquerque, New Mexico

PLATE
4

DECONTAMINATION PROCEDURES

Personnel

At the end of each work period (before eating, drinking, smoking, or leaving the site) each person will decontaminate by passing through the designated decontamination area. Each of the following stations will be used as appropriate.

- Equipment/Tool drop station
- Boot Wash - soiled boots will be washed in a tub containing a detergent solution
- Boot Rinse - personnel will step into a tub containing rinse water after washing boots
- Glove Wash - intact gloves will be wiped clean over a glove wash bucket containing detergent and water
- Glove Rinse - washed gloves will be rinsed with water or wiped with a water wet towel
- Used tyvek suits will be dropped into a bag lined garbage can for approved disposal
- Spent respirator cartridges will be dropped into a bag lined garbage can for approved disposal
- Personnel will shower as soon as possible at the end of the work day

Equipment

1. Prior to drilling equipment demobilization, loose mud will be removed using brushes and scrapers, as necessary, and equipment will be steam cleaned over polyethylene sheets. The perimeter of the sheeting will be elevated using formwork.
2. Polyethelene sheeting, mud, and wash water will be placed in drums for subsequent disposal.

APPENDIX G
to
ATTACHMENT 3

Old Drum Area Soils Investigation

APPENDIX G

OLD DRUM AREA SOILS INVESTIGATION

Three soil samples will be collected from the ground surface in the old hazardous waste drum storage area. These samples will be collected from points near the north and south ends of the area, and midway between these areas. Each sample will consist of a composite of four samples collected at points equidistant on the circumference of an imaginary 3-foot-diameter circle. The composite soil samples will be sealed in storage containers provided by the analytical laboratory and submitted for analysis for the following parameters:

pH
lead
nickel

chromium
silver
Total Organic Halides

Copper

APPENDIX H
to
ATTACHMENT 3

Final Closure Schedule

APPENDIX H
FINAL CLOSURE SCHEDULE

I Introduction

This section has been prepared to demonstrate the time required for completion of major activities in the closure of the hazardous waste storage units at the Coors Road facility. All times are expressed in days after approval of the closure plan. Activities expected to be completed prior to final closure plan approval will be assigned a time of 0. Closure of both drum storage areas and the ponds is expected to commence in 1986.

II Hazardous Waste Areas

A. Old Drum Area

<u>Activity</u>	<u>Time (days)</u>
1. Collect soil samples	30
2. Submit closure certification	60

B. New Drum Area

<u>Activity</u>	<u>Time (days)</u>
1. Remove existing drums	30
2. Inspect facility	45
3. Decontaminate facility (if necessary)	60
4. Submit closure certification	90

C. Pond and Sump Area

<u>Activity</u>	<u>Time (days)</u>
1. Plug monitoring wells	0
2. Complete modifications to pond walls and remove sump	60
3. Complete final grading and fencing alterations	90
4. Complete asphaltic concrete cap	120
5. Submit certification of closure	180

III Extension of Closure Time

It is not anticipated that any extension of the closure time will be necessary.

APPENDIX I
to
ATTACHMENT 3

Closure Cost Estimates

APPENDIX I
CLOSURE COST ESTIMATES

I Introduction

This section contains cost estimates for closure of the two ponds and the drum storage areas at the Sparton Technology, Inc., Coors Road facility in Albuquerque, New Mexico. As described in the closure plan, closure certification will be provided for four discrete closure elements. Cost estimates for each of these four elements is provided in Tables N-1 through N-3.

II Maximum Waste Inventories

The maximum inventory of hazardous waste drums in the drum storage area is 480 drums. The West pond contains drill cuttings from area borings. The total volume of material in the ponds is estimated to be 30 cubic yards.

III Basis for Estimates

Costs related to engineering have been estimated by Sparton's consultant, Harding Lawson Associates (HLA). Laboratory costs are based on current prices charged by Rocky Mountain Analytical Laboratory. Costs related to earthwork and construction to support the pond and sump area modifications were obtained from Means' Site Work Cost Data, 1986 edition.

IV Cost Estimate Revisions

The date of this cost estimate is December 5, 1985. Annually, the closure cost estimate will be adjusted using an inflation factor derived from the annual Implicit Price Deflator for Gross National Product, as published by the U.S. Department of Commerce Survey of Current Business. The inflation factor is the result of dividing the latest published annual Deflator by the Deflator for the previous year. The adjustment will be made by multiplying the most recent closure cost estimate or adjusted closure cost estimate by the inflation factor.

The closure cost estimate will be revised whenever a change in the closure plan would cause a change in the anticipated cost of closure.

V Closure Costs

The cost to close the drum storage areas and the two ponds is estimated as follows:

● Old Drum Area Closure	\$ 1,810.00
● New Drum Area Closure	61,875.00
● Pond and Sump Area Closure	<u>40,750.00</u>
Total Closure Costs	\$104,435.00

TABLE I-1
 OLD DRUM AREA CLOSURE COST ESTIMATE
 (1986 Basis)

ITEM	UNITS	COST(\$)/UNIT	COST
Sample Collection	3 samples	70.00/ea	\$ 210.00
Laboratory Analysis	1 ea	600.00/ea	600.00
Closure Certification	1 ea	1,000.00/ea	1,000.00
			TOTAL
			\$ 1,910.00

TABLE I-2
 NEW DRUM AREA CLOSURE COST ESTIMATE
 (1986 Basis)

ITEM	UNITS	COST(\$)/UNIT	COST
Remove Maximum Inventory for Disposal	430 drums	125.00/ea	\$ 60,000.00
Equipment Rental	1 day	175.00/day	175.00
Materials	4 drums	25.00/ea	100.00
Remove Wash Water for Disposal	4 drums	125.00/ea	500.00
Labor	12 hours	50.00/hr	600.00
Closure Certification	1 ea	500.00/ea	500.00
TOTAL			\$ 61,875.00

TABLE I-3
 POND AND SUMP AREA SURFACE REMOVAL COST ESTIMATE
 (1985 Basis)

ITEM	UNITS	COST(\$)/UNIT	COST
Excavate soil to grade	150 c.y.	\$9.90	\$1,480.00
Demolition			
concrete	250 s.f.	20.00	5,000.00
masonry	200 s.f.	10.00	2,000.00
Backfill & compaction	150 c.y.	21.30	3,200.00
Soil stabilization	50 c.y.	20.00	1,000.00
Remove fence & gates	270 L.F.	1.84	500.00
Reinstall fence & gates	200 L.F.	9.00	1,800.00
Install asphalt base	525 s.y.	14.00	7,350.00
Install tack coat	525 s.y.	.38	200.00
Install asphaltic concrete	525 s.y.	6.70	3,520.00
Prepare bid documents	1 ea.	5,000	5,000.00
Closure certification	1 ea.	9,700	<u>9,700.00</u>
	TOTAL		\$40,750.00

ATTACHMENT 6
POST-CLOSURE CARE PLAN, COORS ROAD PLANT

SPARTON POST CLOSURE PLAN

A. Post Closure Period Contact

Richard D. Mico Vice President and General Manager
Sparton Technology, Inc.
Post Office Box 1784
Albuquerque, New Mexico 97103
(505) 892-5300

B. Security

The closed surface impoundment area is bounded by the operating facility on one side and an 8 foot high chain link fence on the other three sides. Access to the area is by a locking personnel gate in the fence on the southwest side and vehicular gate on the south east side. Signs are posted at all gates reading "Closed, Hazardous Waste Management Area, Unauthorized Personnel Keep Out" in English and Spanish. The signs have black letters on a yellow background, and are visible from at least 25 feet in all approaching directions. Security inspections of the fences, gates, locks and signs will take place on a quarterly basis to assure equipment integrity and to look for evidence of vandalism and/or tampering. Should any security problem be found during inspection, or by notification to the facility security office, appropriate personnel will be immediately informed and repairs and/or replacement will commence as soon as possible and be completed prior to the next quarterly inspection. A security checklist component is included in the overall post-closure care inspection checklist provided in Attachment 4.

C. Inspection Plan

In addition to the security inspection, a general inspection of the condition of the closed surface area impoundment area will be made on a semi-annual basis. To facilitate this inspection, vehicular access to the area will be restricted for a length of time sufficient to complete a thorough inspection. This inspection will include the drainage swale on the north and west sides of the area to assure it is clear of debris and that the sides are physically intact. A visual inspection of the entire 3 inch thick asphalt wearing surface will also be performed. The location of any gouges, cracks,

surface movement, and/or pavement deterioration (chemical or natural) will be noted. Any such breaches of the wearing surface will be repaired immediately. Undisturbed wearing surface material, for a distance of 6 inches in all directions around the breach will be removed and this area resurfaced as specified for the initial closing in the Closure Plan. If, at any time between inspections, any sort of breach of the wearing surface as reported, there will be an immediate inspection to determine if repair is necessary.

D. Facility Monitoring Plan

Facility monitoring will concentrate on the possibility for subsidence of the cap area. Six survey benchmarks are placed in the wearing surface. These benchmarks are tied in horizontally and vertically to the plant grid. At least semi-annually, or after notice of suspected subsidence has been given, a registered surveyor will verify the elevations of these benchmarks. Access to the cap by vehicles will be totally restricted while the survey is taking place.

Prior to the survey, water will be introduced, preferably from a fire hose, on the up-slope sides of the cap and allowed to run down-slope. This will confirm that the grade is sufficient to allow drainage and may indicate areas of pavement subsidence, by the ponding of water, on what is supposed to be a slope. Any suspected areas of subsidence will be surveyed to determine the extent of the problem. If subsidence is indicated on the cap, the ED will be notified immediately, and a determination will be made as to the cause of the subsidence and subsequent plan of action.

E. Maintenance Plan

The maintenance plan will take effect if and when inspection of the area covered by post-closure indicates the need. Maintenance may include the drainage swale southwest of the cap, the chain link fence, gates, locks, signs, the asphalt wearing surface of the cap and the ground water monitoring wells. The drainage swale will be kept clear of debris and its structural integrity assured. All security devices will be maintained to a level which assures their integrity, visibility and proper working order.

The asphalt wearing surface will be maintained to a thickness of 3 inches, and any repair or repaving will be in accordance to the specifications in the Closure Plan.

All maintenance activities will be carried out by personnel familiar with the tasks at hand. Any repair and/or replacement of the wearing surface pavement will be contracted to professionals in that field.

ATTACHMENT 7
NOTICE OF RESTRICTION IN PROPERTY DEED

**SPARTON
CORPORATION**

10/20/94

2400 E. Ganson St.
Jackson, MI 49202
Telephone (517) 787-8600 FAX (517) 787-8046

THIS FAX CONSISTS OF THIS TRANSMITTAL FORM AND 3 PAGES

TO: Mr. Peter Metzner
Metric Corporation
Albuquerque, NM

We found the attached letter and Notice. Dick Langley is going to get a certificate of insurance and one re the bond from our broker.

FROM: Judy Camp

SPARTON
TECHNOLOGY, INC.

4901 Rockaway Blvd., SE
Rio Rancho, New Mexico 87124
P.O. Box 1784
Albuquerque, New Mexico 87103
Phone (505) 882-5300
TWX 910-989-1657

April 27, 1987

46
*c.c. original transmitted letter
only to EPA file*
*original w. attachment filed
in STI perm. file.*

Mr. Ronald G. Olguin, County Manager
Bernalillo County
1 Civic Plaza, NW, 10th Floor
Albuquerque, NM 87102

- 4.7

Dear Sir:

We are filing the attached survey plat in accordance with the New Mexico Hazardous Waste Regulations, 206.C.2.(1). This regulation also requires that we submit the following record of the type, location, and quantity of hazardous wastes disposed within such area. The following information is submitted in fulfillment of this requirement.

Hazardous wastes have never been disposed within either of the subject closed hazardous waste storage units. For that matter, no hazardous wastes are known to have been disposed anywhere on the facility property. However, it is believed that some hazardous wastes have leaked from the two closed storage ponds, and the adjacent sumps, into the soil and groundwater beneath the site. These wastes fall into two general categories: aqueous plating wastes and spent solvent wastes. The quantity of material which escaped into the soils and groundwater is not known. However, extensive investigations of the soil and groundwater have been performed in order to evaluate the extent of contamination and to enable us to develop appropriate remedial measures. These investigations and the resulting remedial action programs have been and are continuing to be closely coordinated with the New Mexico Environmental Improvement Division.

Thank you for your attention to this matter.

Respectfully,

SPARTON TECHNOLOGY, INC.

RDM

Richard D. Mico
Vice President and General Manager

cc: Mr. Blair Thompson ✓
Mr. Jon DeWitt
Mr. Gary Richardson
Mr. Thomas Burger
Mr. Cleoves Martinez
Mr. Richard Mitzelfelt

Attach.

subsidiary of **SPARTON CORPORATION**

NOTICE OF RESTRICTION

This Notice relates to a portion of the property described in that certain plat recorded of even date herewith, with the Clerk of Bernalillo County, in Book 479-A; PAGE 445-454.

This property contains two areas which have been used to manage hazardous wastes, and the use of which is restricted under the New Mexico Hazardous Waste Regulations, 206.C.2.g(3). These units are known as the Old Drum Storage Area and the Hazardous Waste Surface Impoundment Area. These areas have been covered with a concrete cap and an asphaltic concrete cap, respectively. According to the above-cited regulatory restriction: Post-closure use of these areas must never be allowed to disturb the integrity of the final cover, or the function of the facility's monitoring systems, unless the owner or operator can demonstrate to the Director, as appropriate, that the disturbance: (a) is necessary to the proposed use of the property and will not increase the potential hazard to human health or the environment; or (b) is necessary to reduce a threat to human health or the environment.

SPARTON TECHNOLOGY, INC.

Richard D. Mico

Richard D. Mico
Vice President and General Manager

STATE OF NEW MEXICO)
) SS: -
COUNTY OF BERNALILLO)

The foregoing instrument was acknowledged before me this 27th day of April, 1987, by Richard D. Mico, Vice President and General Manager of Sparton Technology, Inc., a New Mexico corporation, on behalf of said corporation.

Anne C. Sastofsky
Notary Public

My Commission Expires:

8/20/89

518

WARRANTY DEED

6482/

HORIZON-ALBUQUERQUE PROPERTIES CORP., a Delaware corporation,

SPARTON CORPORATION, an Ohio corporation,

for consideration paid, grant the following described real estate in Bernalillo County, New Mexico:

Parcel 1

Beginning, for a tie, at the U.S.L.O. marker on the south boundary of the Town of Alameda Grant which is a point common to Section 13, Range 2 East, Township 11 North and Section 18, Range 3 East, Township 11 North, N.M.P.M., thence East 1522.50' along the south boundary of the Town of Alameda Grant to a point on the western right of way of State Road 448, thence N 40° 40' E 3930.15' along the right of way of State Road 448 to the point of beginning, thence N 40° 40' E 660.00' along the right of way of State Road 448 to the northeast corner, thence N 55° 23' W 723.23' to the northwest corner, thence S 40° 40' W 793.63' to the southwest corner, thence S 65° 36' E 749.19' to the southeast corner and point of beginning. Said tract containing 12.0 acres, more or less.

SUBJECT TO:

- 1. Taxes for 1961
2. Reservations in patent from the United States to Alameda Grant
3. Reservations of one-half of all oil, gas, uranium and other minerals as reserved in warranty deed filed in Book D-513, page 189, records of Bernalillo County, New Mexico.
4. Covenants, conditions and restrictions appearing of record in Book D-513, Page 189, records of Bernalillo County, New Mexico
5. Easements of Record or on the ground.

with warranty covenants.

WITNESS hand and seal this 30th day of January 1961

(Seal) HORIZON-ALBUQUERQUE PROPERTIES CORP. (Seal)

W.H. MacKinnon (Seal) By: Joseph Timen, President (Seal)
Asst. Secretary

ACKNOWLEDGMENT FOR NATURAL PERSONS

STATE OF NEW MEXICO ARIZONA
COUNTY OF PIMA

The foregoing instrument was acknowledged before me this 30th day of January 1961, by Joseph Timen & W.H. MacKinnon

My commission expires: Notary Public

FOR RECORDER'S USE ONLY

State of New Mexico ss
County of Bernalillo
This instrument was filed for record on
FEB 7 1961
M. O'Clock, Recorder
Indexed 2-7-61

ACKNOWLEDGMENT FOR CORPORATION

STATE OF NEW MEXICO ARIZONA
COUNTY OF PIMA

The foregoing instrument was acknowledged before me this 30th day of January 1961, by Joseph Timen

President of Horizon-Albuquerque Properties Corp.
a corporation, on behalf of said corporation

My commission expires: 10/29/61
Notary Public

**ATTACHMENT 8
TRUST AGREEMENT**

TRUST AGREEMENT

Trust Agreement, the "Agreement," entered into as of November 1, 1982 by and between Sparton Technology, Inc., a New Mexico corporation, the "Grantor," and The First National Bank in Albuquerque, a national bank, the "Trustee."

Whereas, the New Mexico Environmental Improvement Division, "EID," an agency of the State of New Mexico, has established certain regulations applicable to the Grantor, requiring that an owner or operator of a hazardous waste management facility shall provide assurance that funds will be available when needed for closure and/or post-closure care of the facility,

Whereas, the Grantor has elected to establish a trust to provide all or part of such financial assurance for the facilities identified herein,

Whereas, the Grantor, acting through its duly authorized officers, has selected the Trustee to be the trustee under this agreement, and the Trustee is willing to act as trustee,

Now, Therefore, the Grantor and the Trustee agree as follows:

Section 1. Definitions. As used in this Agreement:

(a) The term "Grantor" means the owner or operator who enters into this Agreement and any successors or assigns of the Grantor.

(b) The term "Trustee" means the Trustee who enters into this Agreement and any successor Trustee.

Section 2. Identification of Facilities and Cost Estimates. This Agreement pertains to the facilities and cost estimates identified on attached Schedule A.

Section 3. Establishment of Fund. The Grantor and the Trustee hereby establish a trust fund, the "Fund," for the benefit of EID. The Grantor and the Trustee intend that no third party have access to the Fund except as herein provided. The Fund is established initially as consisting of the property, which is acceptable to the Trustee, described in Schedule B attached hereto. Such property and any other property subsequently transferred to the Trustee is referred to as the Fund, together with all earnings and profits thereon, less any payments or distributions made by the Trustee pursuant to this Agreement. The Fund shall be held by the Trustee, IN TRUST, as hereinafter provided. The Trustee shall not be responsible nor shall it undertake any responsibilities for the amount of adequacy of, nor any duty to collect from the Grantor, any payments necessary to discharge any liabilities of the Grantor established by EID.

Section 4. Payment for Closure and Post-Closure Care. The Trustee shall make payments from the Fund as the EID Director shall direct, in writing, to provide for the payment of the costs of closure and/or post-closure care of the facilities covered by this Agreement. The Trustee shall reimburse the Grantor or other persons as specified by the EID Director from the Fund for closure and post-closure expenditures in such amounts as the EID Director shall direct in writing. In addition, the Trustee shall refund to the Grantor such amounts as the EID Director specified in writing. Upon refund, such funds shall no longer constitute part of the Fund as defined herein.

Section 5. Payments Comprising the Fund. Payments made to the Trustee for the Fund shall consist of cash or securities acceptable to the Trustee.

Section 6. Trustee Management. The Trustee shall invest and reinvest the principal and income of the Fund and keep the Fund invested as a single fund, without distinction between principal and income, in accordance with general investment policies and guidelines which the Grantor may communicate in writing to the Trustee from time to time, subject, however, to the provisions of this Section. In investing, reinvesting, exchanging, selling, and managing the Fund, the Trustee shall discharge his duties with respect to the trust fund solely in the interest of the beneficiary and with the care, skill, prudence, and diligence under the circumstances then prevailing which persons of prudence acting in a like capacity and familiar with such matters, would use in the conduct of an enterprise of a like character and with like aims; except that:

(a) Securities or other obligations of the Grantor, or any other owner or operator of the facilities, or any of their affiliates as defined in the Investment Company Act of 1940, as amended, 15 U.S.C. 80a-2.(a), shall not be acquired or held, unless they are securities or other obligations of the Federal or a State government;

(b) The Trustee is authorized to invest the Fund in time or demand deposits of the Trustee, to the extent insured by an agency of the Federal or State government; and

(c) The Trustee is authorized to hold cash awaiting investment or distribution uninvested for a reasonable time and without liability for the payment of interest thereon.

Section 7. Commingling and Investment. The Trustee is expressly authorized in its discretion:

(a) To transfer from time to time any or all of the assets of the Fund to any common, commingled, or collective trust fund created by the Trustee in which the Fund is eligible to participate, subject to all of the provisions thereof, to be commingled with the assets of other trusts participating therein; and

(b) To purchase shares in any investment company registered under the Investment Company Act of 1940, 15 U.S.C. 80a-1 et seq., including one which may be created, managed, underwritten, or to which investment advice is rendered or the shares of which are sold by the Trustee. The Trustee may vote such shares in its discretion.

Section 8. Express Powers of Trustee. Without in any way limiting the powers and discretions conferred upon the Trustee by the other provisions of this Agreement or by law, the Trustee is expressly authorized and empowered:

(a) To sell, exchange, convey, transfer, or otherwise dispose of any property held by it, by public or private sale. No person dealing with the Trustee shall be bound to see to the application of the purchase money or to inquire into the validity or expediency of any such sale or other disposition;

(b) To make, execute, acknowledge, and deliver any and all documents of transfer and conveyance and any and all other instruments that may be necessary or appropriate to carry out the powers herein granted;

(c) To register any securities held in the Fund in its own name or in the name of a nominee and to hold any security in bearer form or in book entry, or to combine certificates representing such securities with certificates of the same issue held by the Trustee in other fiduciary capacities, or to deposit or arrange for the deposit of such securities in a qualified central depository even though, when so deposited, such securities may be merged and held in bulk in the name of the nominee of such depository with other securities deposited therein by another person, or to deposit or arrange for the deposit of any securities issued by the United States Government, or any agency or instrumentality thereof, with a Federal Reserve bank, but the books and records of the Trustee shall at all times show that all such securities are part of the Fund;

(d) To deposit any cash in the Fund in interest-bearing accounts maintained or savings certificates issued by the Trustee, in its separate corporate capacity, or in any other banking institution affiliated with the Trustee, to the extent insured by an agency of the Federal or State government; and

(e) To compromise or otherwise adjust all claims in favor of or against the Fund.

Section 9. Taxes and Expenses. All taxes of any kind that may be assessed or levied against or in respect of the Fund and all brokerage commissions incurred by the Fund shall be paid from the Fund. All other expenses incurred by the Trustee in connection with the administration of this Trust, including fees for legal services rendered to the Trustee, the compensation of the Trustee to the extent not paid directly by the Grantor, and all other proper charges and disbursements of the Trustee shall be paid from the Fund.

Section 10. Annual Valuation. The Trustee shall annually, at least 30 days prior to the anniversary date of establishment of the Fund, furnish to the Grantor and to the EID Director a statement confirming the value of the Trust. Any securities in the Fund shall be valued at market value as of no more than 60 days prior to the anniversary date of establishment of the Fund. The failure of the Grantor to object in writing to the Trustee within 90 days after the statement has been furnished to the Grantor and the EID Director shall constitute a conclusively binding assent by the Grantor, barring the Grantor from asserting any claim or liability against the Trustee with respect to matters disclosed in the statement.

Section 11. Advice of Counsel. The Trustee may from time to time consult with counsel, who may be counsel to the Grantor, with respect to any question arising as to the construction of this Agreement or any action to be taken hereunder. The Trustee shall be fully protected, to the extent permitted by law, in acting upon the advice of counsel.

Section 12. Trustee Compensation. The Trustee shall be entitled to reasonable compensation for its services as agreed upon in writing from time to time with the Grantor.

Section 13. Successor Trustee. The Trustee may resign or the Grantor may replace the Trustee, but such resignation or replacement shall not be effective until the Grantor has appointed a successor trustee and this successor accepts the appointment. The successor trustee shall have the same powers and duties as those conferred upon the Trustee hereunder.

Upon the successor trustee's acceptance of the appointment, the Trustee shall assign, transfer, and pay over to the successor trustee the funds and properties then constituting the Fund. If for any reason the Grantor cannot or does not act in the event of the resignation of the Trustee, the Trustee may apply to a court of competent jurisdiction for the appointment of a successor trustee or for instructions. The successor trustee shall specify the date on which it assumes administration of the trust in a writing sent to the Grantor, the EID Director, and the present Trustee by certified mail 10 days before such change becomes effective. Any expenses incurred by the Trustee as a result of any of the acts contemplated by the Section shall be paid as provided in Section 9.

Section 14. Instructions to the Trustee. All orders, requests, and instruments by the Grantor to the Trustee shall be in writing, signed by such persons as are designated in the attached Exhibit A or such other designees as the Grantor may designate by amendment to Exhibit A. The Trustee shall be fully protected in acting without inquiry in accordance with the Grantor's orders, requests, and instructions. All orders, requests, and instructions by the EID Director to the Trustee shall be in writing, signed by the EID Director, or his designee, and the Trustee shall act and shall be fully protected in acting in accordance with such orders, requests, and instructions. The Trustee shall have the right to assume, in the absence of written notice to the contrary, that no event constituting a change or a termination of the authority of any person to act on behalf of the Grantor or EID hereunder has occurred. The Trustee shall have no duty to act in the absence of such orders, requests, and instructions from the Grantor and/or EID, except as provided for herein.

Section 15. Notice of Nonpayment. The Trustee shall notify the Grantor and the EID Director, by certified mail within 10 days following the expiration of the 30-day period after the anniversary of the establishment of the Trust, if no payment is received from the Grantor during that period. After the pay-in period is completed, the Trustee shall not be required to send a notice of nonpayment.

Section 16. Amendment of Agreement. This Agreement may be amended by an instrument in writing executed by the Grantor, the Trustee, and the EID Director, or by the Trustee and the EID Director if the Grantor ceases to exist.

Section 17. Irrevocability and Termination. Subject to the right of the parties to amend this Agreement as provided in Section 16, this Trust shall be irrevocable and shall continue until terminated at the written agreement of the Grantor, the Trustee, and the EID Director, or by the Trustee and the EID Director, if the Grantor ceases to exist. Upon termination of the Trust, all remaining trust property, less final trust administration expenses, shall be delivered to the Grantor.

Section 18. Immunity and Indemnification. The Trustee shall not incur personal liability of any nature in connection with any act or omission, made in good faith, in the administration of this Trust, or in carrying out any directions by the Grantor or the EID Director issued in accordance with this Agreement. The Trustee shall be indemnified and saved harmless by the Grantor or from the Trust Fund, or both, from and against any personal liability to which the Trustee may be subjected by reason of any act or conduct in its official capacity, including all expenses reasonably incurred in its defense in the event the Grantor fails to provide such defense.

Section 19. Choice of Law. This Agreement shall be administered, construed, and enforced according to the laws of the State of New Mexico.

Section 20. Interpretation. As used in this Agreement, words in the singular include the plural and words in the plural include the singular. The descriptive headings for each Section of this Agreement shall not affect the interpretation or the legal efficacy of this Agreement.

In Witness Whereof the parties have caused this Agreement to be executed by their respective officers duly authorized and their corporate seals to be hereunto affixed and attested as of the date first above written: The parties below certify that the wording of this Agreement is identical to the wording specified in the New Mexico Hazardous Waste Management Regulations, Part II, 206.3.2.1(1)(a), as such regulations were constituted on the date first above written.

SPARTON TECHNOLOGY, INC.

R. D. Mico
Richard D. Mico
Vice-President and
General Manager

The First National Bank in
Albuquerque

Mark S. Decker
(Signature)

Executive Vice President & Cashier
(Title)

Attest:

Blair H. Thompson
Blair H. Thompson
Secretary-Treasurer

Attest:

Stephen Hill
(Signature)

Assistant Vice President
(Title)

State of New Mexico
County of Bernalillo

On this *20th* day of *June*, 1984, before me personally came Richard D. Mico to me known, who, being by me duly sworn, did depose and say that he resides at 9979 Radcliffe Road, N.W., Albuquerque, New Mexico 87114, that he is Vice-President and General Manager of Sparton Technology, Inc., the corporation described in and which executed the above instrument; that he knows the seal of said corporation; that the seal affixed to such instrument is such corporate seal, that it was so affixed by order of the Board of Directors of said corporation, and that he signed his name thereto by like order.

Anne L. Saslofsky
Notary Public

My Commission Expires 8-20-85

TRUST AGREEMENT

Schedule A

E.P.A. Number: NMD083212332

Name: Sparton Technology, Inc.
9621 Coors Road, N.W.
Albuquerque, New Mexico 87114

Closure Cost Estimate: \$93,000.00

**Designated Person
Authorized to Sign
Instructions For
Grantor:** Richard D. Mico

TRUST AGREEMENT

Schedule B

E.P.A. Number:

NMD083212332

Name:

**Sparton Technology, Inc.
9621 Coors Road, N.W.
Albuquerque, New Mexico 87114**

Property:

**Such funds as may from time to time
be deposited by Grantor or its
Surety in compliance with applicable
regulations on orders issued by the
New Mexico Environmental Improvement
Division.**

ATTACHMENT 9
CURRENT LETTER OF CREDIT

Facsimile

From

SPARTON
TECHNOLOGY, INC.

4901 Rockaway Blvd. SE
Rio Rancho, NM 87124

Phone: (505) 892-5300
FAX: (505) 892-5515

Sender: David Bagby

Date: 10-20-94

Number of pages including this page: 2

To: Pete Metzner

Of: Metric

Location: Asa

FAX: 828-2803

Message:

Dick Langley asked me to send this to you. If you need anything else, please let me know.



August 4, 1994

Sparton Technology, Inc.
Attn: David Bagby
4901 Rockaway Blvd. S. E.
Rio Rancho, NM 87124

Dear Mr. Bagby:

In connection with our examination as of 7/27/94, a number of Letters of Credit have been selected for confirmation. Please compare the information shown below with your records.

Please confirm this particular Letter of Credit only, even though you may have other Letters of Credit outstanding.

<u>NUMBER</u> 11113	<u>COLLATERAL</u> Unsecured	<u>ISSUE DATE</u> 5-6-90	<u>EXPIRATION DATE</u> 5-6-95
<u>UNUSED AMOUNT</u> \$556,354.00	<u>CREDIT EXTENDED</u> -0-	<u>BENEFICIARY</u> Director, New Mexico Environmental Improvement Division	

Please confirm the correctness of the above by signing below and returning in the enclosed self-addressed envelope.

Sincerely,

Gregory P. Dahl
Audit Manager

GPD/aaa
Enclosure

The above information agrees with our records. Exceptions, if any, are noted on the reverse side.

David S. Bagby
(Authorized Signature)

ATTACHMENT 10
CERTIFICATE OF INSURANCE

ACORD. CERTIFICATE OF INSURANCE

12320

AMB

ISSUE DATE (MM/DD/YY)

10/21/94

PRODUCER

Marsh & McLennan, Incorporated
 One Woodward Avenue
 Suite 1200
 Detroit, MI 48226-3493

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW.

COMPANIES AFFORDING COVERAGE

- COMPANY LETTER **A** **TRANSPORTATION INSURANCE CO**
- COMPANY LETTER **B**
- COMPANY LETTER **C**
- COMPANY LETTER **D**
- COMPANY LETTER **E**

INSURED

SPARTON CORPORATION AND
SPARTON TECHNOLOGY
 2400 E. Ganson
 Jackson, MI 49202

COVERAGES

THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED, NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN. THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

CO LTR	TYPE OF INSURANCE	POLICY NUMBER	POLICY EFFECTIVE DATE (MM/DD/YY)	POLICY EXPIRATION DATE (MM/DD/YY)	LIMITS
A	GENERAL LIABILITY	GL802516462	10/01/94	10/01/95	GENERAL AGGREGATE \$ 200000
	<input checked="" type="checkbox"/> COMMERCIAL GENERAL LIABILITY				PRODUCTS-COMP/OP AGG. \$ 100000
	<input type="checkbox"/> CLAIMS MADE <input checked="" type="checkbox"/> OCCUR.				PERSONAL & ADV. INJURY \$ 100000
	<input type="checkbox"/> OWNER'S & CONTRACTOR'S PROT.				EACH OCCURRENCE \$ 100000
					FIRE DAMAGE (Any one fire) \$ 500000
					MED. EXPENSE (Any one person) \$ 10000
	AUTOMOBILE LIABILITY				COMBINED SINGLE LIMIT \$
	<input type="checkbox"/> ANY AUTO				BODILY INJURY (Per person) \$
	<input type="checkbox"/> ALL OWNED AUTOS				BODILY INJURY (Per accident) \$
	<input type="checkbox"/> SCHEDULED AUTOS				PROPERTY DAMAGE \$
	<input type="checkbox"/> HIRED AUTOS				
	EXCESS LIABILITY				EACH OCCURRENCE \$
	<input type="checkbox"/> UMBRELLA FORM				AGGREGATE \$
	<input type="checkbox"/> OTHER THAN UMBRELLA FORM				
	WORKER'S COMPENSATION AND EMPLOYERS' LIABILITY				STATUTORY LIMITS
					EACH ACCIDENT \$
					DISEASE-POLICY LIMIT \$
					DISEASE-EACH EMPLOYEE \$
	OTHER				

DESCRIPTION OF OPERATIONS/LOCATIONS/VEHICLES/SPECIAL ITEMS

CERTIFICATE HOLDER

Metric Corporation
 Attn: Peter Metzner
 8429 Washington Place NE
 Suite A
 Albuquerque, NM 87113

CANCELLATION

SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, THE ISSUING COMPANY WILL ENDEAVOR TO MAIL 30 DAYS WRITTEN NOTICE TO THE CERTIFICATE HOLDER NAMED TO THE LEFT, BUT FAILURE TO MAIL SUCH NOTICE SHALL IMPOSE NO OBLIGATION OR LIABILITY OF ANY KIND UPON THE COMPANY, ITS AGENTS OR REPRESENTATIVES.

AUTHORIZED REPRESENTATIVE

John C. Dunley

Marsh & McLennan, Incorporated
One Woodward Avenue, Suite 1200
Detroit, Michigan 48226-3493
Telephone: 313 965-5400
Facsimile: 313 965-0527

MARSH & McLENNAN

FAX TRANSMITTAL FORM

(If you do not receive all pages, please call as soon as possible)

TO: Peter Metzner Metric Corporation FAX: 505-828-2803 PHONE: DATE: 10/21/94 8:42 AM	FROM: Amy M. Bonner Risk Management Division FAX: (313) 965-0527 PHONE: (313) 965-4735 PAGES: 4
--	---

SUBJECT: Sparton Technology - Certificates of Insurance

Peter:

Attached please find two certificates of insurance evidencing General Liability coverage and Owners & Contractors Protective coverage. A copy of the OCP policy also follows.

Please call if you have any questions regarding this.

ACORD. CERTIFICATE OF INSURANCE

12320
AND

ISSUE DATE (MM/DD/YY)
10/21/94

PRODUCER

Marsh & McLennan, Incorporated
One Woodward Avenue
Suite 1200
Detroit, MI 48226-3493

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW.

COMPANIES AFFORDING COVERAGE

- COMPANY LETTER **A** TRANSPORTATION INSURANCE CO
- COMPANY LETTER **B**
- COMPANY LETTER **C**
- COMPANY LETTER **D**
- COMPANY LETTER **E**

INSURED

SPARTON CORPORATION AND
SPARTON TECHNOLOGY
2400 E. Ganson
Jackson, MI 49202

COVERAGES

THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED, NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN. THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

CO LTR	TYPE OF INSURANCE	POLICY NUMBER	POLICY EFFECTIVE DATE (MM/DD/YY)	POLICY EXPIRATION DATE (MM/DD/YY)	LIMITS
A	GENERAL LIABILITY	GL802516462	10/01/94	10/01/95	GENERAL AGGREGATE \$ 200000
	<input checked="" type="checkbox"/> COMMERCIAL GENERAL LIABILITY				PRODUCTS-COMP/OP ASS. \$ 100000
	<input type="checkbox"/> CLAIMS MADE <input checked="" type="checkbox"/> OCCUR.				PERSONAL & ADV. INJURY \$ 100000
	OWNERS & CONTRACTOR'S PROT.				EACH OCCURRENCE \$ 100000
					FIRE DAMAGE (Any one fire) \$ 50000
					MED. EXPENSE (Any one person) \$ 10000
					COMBINED SINGLE LIMIT \$
	AUTOMOBILE LIABILITY				BODILY INJURY (Per person) \$
	<input type="checkbox"/> ANY AUTO				BODILY INJURY (Per accident) \$
	<input type="checkbox"/> ALL OWNED AUTOS				PROPERTY DAMAGE \$
	<input type="checkbox"/> SCHEDULED AUTOS				
	<input type="checkbox"/> HIRED AUTOS				
	<input type="checkbox"/> NON-OWNED AUTOS				
	<input type="checkbox"/> GARAGE LIABILITY				
	EXCESS LIABILITY				EACH OCCURRENCE \$
	<input type="checkbox"/> UMBRELLA FORM				AGGREGATE \$
	<input type="checkbox"/> OTHER THAN UMBRELLA FORM				
	WORKER'S COMPENSATION AND EMPLOYERS' LIABILITY				STATUTORY LIMITS
					EACH ACCIDENT \$
					DISEASE-POLICY LIMIT \$
					DISEASE-EACH EMPLOYEE \$
	OTHER				

DESCRIPTION OF OPERATIONS/LOCATIONS/VEHICLES/SPECIAL ITEMS

CERTIFICATE HOLDER

Metric Corporation
Attn: Peter Metzner
8429 Washington Place NE
Suite A
Albuquerque, NM 87113

CANCELLATION

SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, THE ISSUING COMPANY WILL ENDEAVOR TO MAIL 30 DAYS WRITTEN NOTICE TO THE CERTIFICATE HOLDER NAMED TO THE LEFT, BUT FAILURE TO MAIL SUCH NOTICE SHALL IMPOSE NO OBLIGATION OR LIABILITY OF ANY KIND UPON THE COMPANY, ITS AGENTS OR REPRESENTATIVES.

AUTHORIZED REPRESENTATIVE

John C. Hurley

ACORD. CERTIFICATE OF INSURANCE

12581
AMB

ISSUE DATE (MM/DD/YY)
10/21/94

PRODUCER

Marsh & McLennan, Incorporated
One Woodward Avenue
Suite 1200
Detroit, MI 48226-3493

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW.

COMPANIES AFFORDING COVERAGE

- COMPANY LETTER **A** TRANSPORTATION INSURANCE CO
- COMPANY LETTER **B**
- COMPANY LETTER **C**
- COMPANY LETTER **D**
- COMPANY LETTER **E**

INSURED

City of Albuquerque
PO Box 1293
Albuquerque, NM 87103

COVERAGES

THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

CO LTR	TYPE OF INSURANCE	POLICY NUMBER	POLICY EFFECTIVE DATE (MM/DD/YY)	POLICY EXPIRATION DATE (MM/DD/YY)	LIMITS	
A	GENERAL LIABILITY	GL202516465	10/01/94	10/01/95	GENERAL AGGREGATE	\$1,000,000
	<input checked="" type="checkbox"/> COMMERCIAL GENERAL LIABILITY				PRODUCTS-COMP/OP AGGL	\$
	<input type="checkbox"/> CLAIMS MADE <input checked="" type="checkbox"/> OCCUR.				PERSONAL & ADV. INJURY	\$
	<input type="checkbox"/> OWNERS & CONTRACTOR'S PROT.				EACH OCCURRENCE	\$1,000,000
					FIRE DAMAGE (Any one fire)	\$
					MED. EXPENSE (Any one person)	\$
	AUTOMOBILE LIABILITY				COMBINED SINGLE LIMIT	\$
	<input type="checkbox"/> ANY AUTO				BODILY INJURY (Per person)	\$
	<input type="checkbox"/> ALL OWNED AUTOS				BODILY INJURY (Per accident)	\$
	<input type="checkbox"/> SCHEDULED AUTOS				PROPERTY DAMAGE	\$
	<input type="checkbox"/> HIRED AUTOS					
	EXCESS LIABILITY				EACH OCCURRENCE	\$
	<input type="checkbox"/> UMBRELLA FORM				AGGREGATE	\$
	WORKER'S COMPENSATION AND EMPLOYERS' LIABILITY				STATUTORY LIMITS	
					EACH ACCIDENT	\$
					DISEASE-POLICY LIMIT	\$
					DISEASE-EACH EMPLOYEE	\$
	OTHER					

DESCRIPTION OF OPERATIONS/LOCATIONS/VEHICLES/SPECIAL ITEMS

See attached copy of Owners and Contractors Protective

CERTIFICATE HOLDER

Metric Corporation
Attn: Peter Metzner
8429 Washington Place NE
Suite A
Albuquerque, NM 87113

CANCELLATION

SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, THE ISSUING COMPANY WILL ENDEAVOR TO MAIL 30 DAYS WRITTEN NOTICE TO THE CERTIFICATE HOLDER NAMED TO THE LEFT, BUT FAILURE TO MAIL SUCH NOTICE SHALL IMPOSE NO OBLIGATION OR LIABILITY OF ANY KIND UPON THE COMPANY, ITS AGENTS OR REPRESENTATIVES.

AUTHORIZED REPRESENTATIVE

John C. Hurley

M&M & KLEIN, INC.

(S) 58 NS)12.58

11-5-93

RENEWAL OF

GL 7 02513473

OWNERS AND CONTRACTORS PROTECTIVE LIABILITY COVERAGE PART



CNA Insurance Companies
CNA Plaza
Chicago, Illinois 60685

Item

DECLARATIONS

1 PRODUCER NO **089392** BRANCH **260** PREFIX **GL** POLICY NUMBER **2 02516465**

NAMED INSURED & ADDRESS
(Number & Street, Town, County, State & Zip Code)

**CITY OF ALBUQUERQUE
P.O. BOX 1293
ALBUQUERQUE, NEW MEXICO 87103**

NAMED INSURED IS:

INDIVIDUAL PARTNERSHIP CORPORATION
 JOINT VENTURE OTHER

2 Policy Period: From **10-1-93** To **10-1-96**
This Policy becomes effective and expires at 12:01 a.m. Standard Time at Your Mailing Address Shown Above.

INSURANCE IS PROVIDED BY THE COMPANY DESIGNATED BELOW (A stock insurance company, herein called the company)

- Continental Casualty Company
- National Fire Insurance Company of Hartford
- American Casualty Company of Reading, Pa.
- Transportation Insurance Company
- Transcontinental Insurance Company
- Valley Forge Insurance Company

IN RETURN FOR THE PAYMENT OF THE PREMIUM, AND SUBJECT TO ALL THE TERMS CONTAINED HEREIN WE AGREE WITH YOU TO PROVIDE THE INSURANCE AS STATED.

3. **AUDIT PERIOD IS ANNUAL UNLESS OTHERWISE STATED.**

4. DESIGNATION OF CONTRACTOR **SPARTON CORPORATION**
MAILING ADDRESS **2400 E. GANSON STREET JACKSON, MICHIGAN 49202**
LOCATION OF COVERED OPERATIONS **CITY OF ALBUQUERQUE**

LIMITS OF INSURANCE

5. AGGREGATE LIMIT \$ **1,000,000.**
EACH OCCURRENCE LIMIT \$ **1,000,000.**

Classification	Code No.	Premium Base	Rate per \$1,000 of cost	Advance Premium
OPERATIONS	93163	FLAT CHARGE		\$250.

7. **PREMIUM FOR THIS COVERAGE PART** Premium payable at inception: \$ **250.**

8. **ENDORSEMENTS AND FORMS APPLICABLE AT TIME OF ISSUANCE:** PREMIUM:

IL 00 21 11 85—Broad Form Nuclear Energy Exclusion _____

CG 0009 (11-88), CG 2828 _____

9. **THESE DECLARATIONS AND THE GENERAL DECLARATIONS, IF APPLICABLE, TOGETHER WITH THE COMMON POLICY CONDITIONS, COVERAGE FORM(S) AND FORMS AND ENDORSEMENTS, IF ANY, ISSUED TO FORM A PART THEREOF, COMPLETE THE ABOVE NUMBERED POLICY.**

Countersigned: _____ Date

By: _____ Authorized Agent

ACORD. CERTIFICATE OF INSURANCE

12581
AMB

ISSUE DATE (MM/DD/YY)
10/21/94

PRODUCER
Marsh & McLennan, Incorporated
One Woodward Avenue
Suite 1200
Detroit, MI 48226-3493

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW.

COMPANIES AFFORDING COVERAGE

COMPANY LETTER	A	TRANSPORTATION INSURANCE CO
COMPANY LETTER	B	
COMPANY LETTER	C	
COMPANY LETTER	D	
COMPANY LETTER	E	

INSURED
City of Albuquerque
PO Box 1293
Albuquerque, NM 87103

COVERAGES

THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED, NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

CO LTR	TYPE OF INSURANCE	POLICY NUMBER	POLICY EFFECTIVE DATE (MM/DD/YY)	POLICY EXPIRATION DATE (MM/DD/YY)	LIMITS	
A	GENERAL LIABILITY	GL202516465	10/01/94	10/01/95	GENERAL AGGREGATE	\$1000000
	<input checked="" type="checkbox"/> COMMERCIAL GENERAL LIABILITY				PRODUCTS-COMP/OP AGG.	\$
	<input type="checkbox"/> CLAIMS MADE <input checked="" type="checkbox"/> OCCUR.				PERSONAL & ADV. INJURY	\$
	<input type="checkbox"/> OWNER'S & CONTRACTOR'S PROT.				EACH OCCURRENCE	\$1000000
					FIRE DAMAGE (Any one fire)	\$
					MED. EXPENSE (Any one person)	\$
	AUTOMOBILE LIABILITY				COMBINED SINGLE LIMIT	\$
	<input type="checkbox"/> ANY AUTO				BODILY INJURY (Per person)	\$
	<input type="checkbox"/> ALL OWNED AUTOS				BODILY INJURY (Per accident)	\$
	<input type="checkbox"/> SCHEDULED AUTOS				PROPERTY DAMAGE	\$
	<input type="checkbox"/> HIRED AUTOS					
	<input type="checkbox"/> NON-OWNED AUTOS					
	<input type="checkbox"/> GARAGE LIABILITY					
	EXCESS LIABILITY				EACH OCCURRENCE	\$
	<input type="checkbox"/> UMBRELLA FORM				AGGREGATE	\$
	<input type="checkbox"/> OTHER THAN UMBRELLA FORM					
	WORKER'S COMPENSATION AND EMPLOYERS' LIABILITY				STATUTORY LIMITS	
					EACH ACCIDENT	\$
					DISEASE-POLICY LIMIT	\$
					DISEASE-EACH EMPLOYEE	\$
	OTHER					

DESCRIPTION OF OPERATIONS/LOCATIONS/VEHICLES/SPECIAL ITEMS

See attached copy of Owners and Contractors Protective

CERTIFICATE HOLDER

Metric Corporation
Attn: Peter Metzner
8429 Washington Place NE
Suite A
Albuquerque, NM 87113

CANCELLATION

SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, THE ISSUING COMPANY WILL ENDEAVOR TO MAIL 30 DAYS WRITTEN NOTICE TO THE CERTIFICATE HOLDER NAMED TO THE LEFT, BUT FAILURE TO MAIL SUCH NOTICE SHALL IMPOSE NO OBLIGATION OR LIABILITY OF ANY KIND UPON THE COMPANY, ITS AGENTS OR REPRESENTATIVES.

AUTHORIZED REPRESENTATIVE

John C. Hurley

OWNERS AND CONTRACTORS PROTECTIVE LIABILITY COVERAGE PART

DECLARATIONS



For All the Commitments You Make

CNA Insurance Companies
CNA Plaza
Chicago, Illinois 60685

PRODUCER NO.	BRANCH	PREFIX	POLICY NUMBER
089392	260	GL	2 02516465

NAMED INSURED & ADDRESS:
(Number & Street, Town, County, State & Zip Code)

**CITY OF ALBUQUERQUE
P.O. BOX 1293
ALBUQUERQUE, NEW MEXICO 87103**

NAMED INSURED IS:

- INDIVIDUAL
- PARTNERSHIP
- CORPORATION
- JOINT VENTURE
- OTHER

Policy Period: From: 10-1-93 To: 10-1-96
This Policy becomes effective and expires at 12:01 a.m. Standard Time at Your Mailing Address Shown Above.

INSURANCE IS PROVIDED BY THE COMPANY DESIGNATED BELOW (A stock insurance company, herein called the company)

- Continental Casualty Company
- National Fire Insurance Company of Hartford
- American Casualty Company of Reading, Pa.
- Transportation Insurance Company
- Transcontinental Insurance Company
- Valley Forge Insurance Replacement Company

IN RETURN FOR THE PAYMENT OF THE PREMIUM, AND SUBJECT TO ALL THE TERMS CONTAINED HEREIN WE AGREE WITH YOU TO PROVIDE THE INSURANCE AS STATED.

AUDIT PERIOD IS ANNUAL UNLESS OTHERWISE STATED.

DESIGNATION OF CONTRACTOR SPARTON CORPORATION
MAILING ADDRESS 2400 E. GANSON STREET JACKSON, MICHIGAN 49202
LOCATION OF COVERED OPERATIONS CITY OF ALBUQUERQUE

LIMITS OF INSURANCE

AGGREGATE LIMIT \$ 1,000,000.
EACH OCCURRENCE LIMIT \$ 1,000,000.

Classification	Code No.	Premium Base	Rate per \$1,000 of cost	Advance Premium
<u>OPERATIONS</u>	<u>93163</u>	<u>FLAT CHARGE</u>		<u>\$250.</u>

PREMIUM FOR THIS COVERAGE PART Premium payable at inception: \$ 250.

ENDORSEMENTS AND FORMS APPLICABLE AT TIME OF ISSUANCE: IL 00 21 11 85—Broad Form Nuclear Energy Exclusion
CG 0009 (11-88), CG 2628

PREMIUM: _____

THESE DECLARATIONS AND THE GENERAL DECLARATIONS, IF APPLICABLE, TOGETHER WITH THE COMMON POLICY CONDITIONS, COVERAGE FORM(S) AND FORMS AND ENDORSEMENTS, IF ANY, ISSUED TO FORM A PART THEREOF, COMPLETE THE ABOVE NUMBERED POLICY.

Countersigned: _____ Date _____

By: _____ Authorized Agent

ATTACHMENT 11
LETTERS OF TRANSMITTAL AND APPROVAL FOR RFI AND
LETTERS OF TRANSMITTAL FOR CORRECTIVE MEASURES STUDY REPORT

SPARTON

SPARTON TECHNOLOGY

May 14, 1992

Mr. Keith N. Phillips, Chief
Technical Section (6H-CX)
RCRA Enforcement Branch
U.S. EPA, Region 6
1445 Ross Avenue, Suite 1200
Dallas, Texas 75202-2733

Re: Final RFI Report —
Sparton Technology, Inc.
Coors Road Facility
Albuquerque, New Mexico

Dear Mr. Phillips:

In accordance with the provisions of the Consent Order, as amended, enclosed are six copies of the revised text and six copies of revised figures for the Final RFI report. Revisions and/or additions to the draft Final RFI report, dated December 1, 1991, are indicated by the revised date, May 1, 1992, at the bottom of each page. These revisions are in general conformance to EPA comments dated April 17, 1992. Our consultants have prepared an accompanying set of instructions for revising the RFI report into final form.

We trust that the Final RFI report submitted here will meet the approval of EPA. If you have any questions, please call.

Sincerely,

SPARTON TECHNOLOGY, INC.

Richard D. Mico

Richard D. Mico
Vice President and General Manager

cc: Mr. Jan Appel
Mr. Jon DeWitt
Mr. Pierce Chandler
Mr. Gary Richardson
Mr. Benito Garcia _

Enc.

SPARTON

SPARTON TECHNOLOGY

November 5, 1992

Environmental Protection Agency
Region VI
1445 Ross Ave.
Dallas, TX 75202

Attention: Mr. Keith Phillips

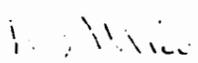
Dear Mr. Phillips:

Sparton Technology, Inc. is pleased to submit our "Draft Corrective Measures Study Report" for our Coors Road facility in Albuquerque, New Mexico.

We are available to review it with you at your convenience. Please call Mr. Jan Appel at (517) 787-8600 or myself at (505) 892-5300. Mr. Pierce Chandler at (214) 960-4000 is available to answer technical questions.

Sincerely,

SPARTON TECHNOLOGY, INC.


Richard D. Mico
Vice President and General Manager

Enc.

cc: Mr. J. Appel
Mr. P. Chandler

ATTACHMENT 12
SECURITIES AND EXCHANGE COMMISSION FORM 10K FOR
FISCAL YEAR ENDING JUNE 30, 2000

**UNITED STATES SECURITIES AND EXCHANGE COMMISSION
Washington D.C. 20549
FORM 10-K**

ANNUAL REPORT PURSUANT TO SECTION 13 OR 15 (d) OF THE SECURITIES EXCHANGE ACT OF 1934
(Fee Required)

For the fiscal year ended June 30, 1999

OR

TRANSITION REPORT PURSUANT TO SECTION 13 OR 15 (d) OF THE SECURITIES EXCHANGE ACT OF 1934 (No Fee Required)

For the transition period from _____ to _____

Commission File Number 1-1000

SPARTON CORPORATION
(Exact name of registrant as specified in its charter)

OHIO
(State of Incorporation)

35-1054690
(IRS Employer Identification No.)

2400 East Ganson Street, Jackson, Michigan
(Address of principal executive offices)

49202
(Zip Code)

Registrant's telephone number, including area code: (517) 787-8600

(Title of each class)
COMMON STOCK, \$1.25 PAR VALUE

(Name of each exchange on which registered)
NEW YORK STOCK EXCHANGE

Securities registered pursuant to Section 12(g) of the Act: NONE

Indicate by checkmark whether the registrant (1) has filed all reports required to be filed by Section 13 or 15(d) of the Securities Exchange Act of 1934 during the preceding 12 months (or for such shorter period that the registrant was required to file such reports), and (2) has been subject to such filing requirements for the past 90 days. Yes No

Indicate by check mark if disclosure of delinquent filers pursuant to Item 405 of Regulation S-K is not contained herein, and will not be contained, to the best of registrant's knowledge, in Part III of this Form 10-K or any amendment to this Form 10-K.

The aggregate market value of voting stock held by non-affiliates of the registrant as of August 31, 1999 was \$29,396,000.

The number of shares of common stock outstanding as of August 31, 1999 were 7,828,090.

Documents incorporated in part by reference:

Parts II and IV - Portions of the 1999 Annual Report to Shareowners' of Sparton Corporation ("Annual Report") are filed as Exhibit 13 herewith.
Part III - Proxy Statement for October 27, 1999 Meeting

PART I**Item I. Business**

Except as otherwise indicated, the term "Company" refers to Sparton Corporation, and the term "Sparton" refers to Sparton Corporation and its consolidated subsidiaries.

The Company has been in continuous existence since 1900. It was last reorganized in 1919 as an Ohio corporation. Sparton operates in one line of business, electronics manufacturing services (EMS). A description of the major products and various information on sales of the Company's continuing operations, electronics, are included in the Annual Report in Note 1, Statement of Significant Accounting Policies, and in Note 12, Business Segment and Concentration of Sales, of the Notes to Consolidated Financial Statements on Pages 23 and 31, respectively, and are filed as part of Exhibit 13.

In August 1996, the Company formalized its plan to offer for sale its automotive and industrial products operations. Accordingly, these operating results have been reported as discontinued operations. Further discussion of these transactions are included in the Annual Report in Note 9, Discontinued Operations, of the Notes to the Consolidated Financial Statements on page 27 and are filed as part of Exhibit 13.

Electronic Manufacturing Services

Historically, the Company's principal electronics product has been sonobuoys, which are anti-submarine warfare (ASW) devices used by the U.S. Navy and other free world military organizations. It competes with a very limited number of qualified manufacturers for sonobuoy procurements by the U.S. and selected foreign governments. Contracts are obtained through competitive bid or directed procurement. Sales of sonobuoys have declined substantially from the levels of the 1980's and early 1990's, but have stabilized in recent years at these levels.

The Company has focused its resources in recent years on substantially expanding revenues in the commercial EMS area. This is the area where the Company expects substantially all future revenue growth to occur. Many of the physical and technical attributes used in the production of sonobuoys are also required in the production of commercial electronics products. The Company's commercial EMS business includes design and/or manufacture of a variety of electronic and electromechanical products and assemblies. Sales are generally obtained on a competitive basis. Competitive factors include technical ability, customer service, product quality, timely delivery and price. A majority of the proprietary products, principally transducers and condition monitoring systems, are sold to the telecommunications industry worldwide. Commercial electronics products are sold through a direct sales force and through a small group of manufacturers' representatives. The primary industries of the Company's commercial EMS market include telecommunication, avionics, medical and industrial controls and scientific instrumentation. In the commercial EMS business, Sparton must compete with a number of domestic and foreign manufacturers, some of which are much larger in terms of size and in financial resources. The Company generally contracts with its customers to manufacture products based on the customer's design, specifications and shipping schedules. Normally, EMS programs do not require the Company's direct involvement in product marketing.

Material cost and availability and product quality, delivery and reliability are very important factors in the commercial EMS business. In general, margins within the EMS markets are lower than those obtained in the Company's governmental EMS markets of ASW or proprietary electronics. The lower margins are primarily due to intense competition and the higher number of purchased parts contained in the products shipped.

At June 30, 1999 and June 30, 1998, the government backlog was approximately \$70 million and \$66 million, respectively. A majority of the 1999 backlog is expected to be realized in 2000. Commercial EMS sales are not included in the backlog. The Company does not believe the amount of backlog of commercial sales covered by firm purchase orders is a meaningful measure of future sales, as such orders may be rescheduled or cancelled without significant penalty.

Automotive and Industrial Products

As previously discussed, the Company formalized its plan in August 1996 to dispose of the automotive and industrial products segment and accordingly, these operations have been reported as discontinued operations.

Other Information

Sparton's largest customer is the U.S. Navy. While the loss of government sales would have a material adverse financial effect, the loss of any one of several other customers could also have a significant but less dramatic financial impact. The Company continues to grow its commercial EMS sales with the intent to expand the customer base, thus reducing this concentration. Materials for the electronics operations are obtained from a variety of worldwide sources, except for selected components. Access to competitively priced materials is critical to success in the EMS business. In certain markets, the volume purchasing power of the larger competitors creates a substantial cost advantage for them. The Company has not encountered and does not expect to encounter significant long-term problems in obtaining sufficient raw materials although the commercial electronics industry has experienced occasional spot shortages or delivery delays of key components. The risk of material obsolescence in the EMS business is less than it is in many other markets because raw materials and component parts are generally only purchased upon receipt of a customer's order. While Sparton holds a number of patents relating to its products and processes, none are considered of material importance. While overall sales fluctuate during the year, such fluctuations do not reflect a definitive seasonal pattern or tendency.

Research and development expenditures amounted to approximately \$8,779,000 in 1999, \$10,512,000 in 1998 and \$17,225,000 in 1997 (approximately \$6,700,000, \$9,462,000 and \$16,238,000 of these expenditures, respectively, were customer funded). There are approximately 82 employees involved in research and development activities. Few, if any, devote all of their time to such efforts.

Sparton employed approximately 1,200 people at June 30, 1999. The Company has one operating division and four wholly owned active subsidiaries classified as continuing operations and one wholly owned inactive subsidiary within the remaining portion of discontinued operations.

Item 2. Properties

The table that follows lists the principal properties of Sparton within continuing operations. All are owned. There are manufacturing and/or office facilities at each location. Sparton believes these facilities are suitable for its operations. Several of the facilities have available physical space for additional production equipment as the demand arises. In addition, at least two of the plants are currently underutilized, operating at or below one eight hour shift level. Such underutilization would decline as sales volume increases.

Jackson, Michigan
DeLeon Springs, Florida (2 plants)
Brooksville, Florida
London, Ontario
Rio Rancho, New Mexico
Deming, New Mexico

The Company's Coors Road, Albuquerque, New Mexico facility is idle and is available for sale or lease. Currently, a portion of the facility is leased to another organization.

In November 1996, the Company closed its Lake Odessa, Michigan automotive production facility as part of the plan to exit the automotive business. This property was sold in April 1997 for \$475,000 under an installment contract expiring in 2002.

As a condition of the December 1996 sale of approximately 80% of the discontinued automotive operations, the Company purchased, for \$675,600, the Grand Haven and White Cloud, Michigan production facilities that were owned by Mr. and Mrs. John J. Smith (Mr. Smith is the Company's CEO and a director) and his brother, Lawson K. Smith (former officer and director of the Company). These facilities were leased to the purchaser of the discontinued automotive operations (the Purchaser) under a five- (5) year term with an aggregate annual rental of \$135,000. These leases grant the Purchaser the option of purchasing both (but not less than both) facilities for \$50,000 at the end of the original term of the Leases. These leases also offer options to acquire the facilities during the lease term. As part of the December 1996 sale, the Board approved the purchase of this real estate from the Smiths.

Item 3. Legal Proceedings

Various litigation is pending against the Company, in many cases involving ordinary and routine claims incidental to the business of the Company and in others presenting allegations that are nonroutine. The Company and its subsidiaries are also involved in certain compliance issues with the United States Environmental Protection Agency (EPA) and various state agencies, including being named as a potentially responsible party at several sites. Potentially responsible parties (PRPs) can be held jointly and severally liable for the cleanup costs at any specific site. The Company's past experience,

however, has indicated that when it has contributed only relatively small amounts of materials or waste to a specific site relative to other PRPs, its ultimate share of any cleanup costs has been minor. Based upon available information, the Company believes it has contributed only small amounts to those sites in which it is currently viewed a potentially responsible party. Environmental compliance issues involving the discontinued automotive operations are not material.

One of Sparton's facilities, located in New Mexico, has been the subject of ongoing investigations conducted with the Environmental Protection Agency (EPA) under the Resource Conservation and Recovery Act (RCRA). This EPA compliance issue is related to continuing operations, but involves a largely idled facility. The investigation began in the early 1980's and involved a review of on-site and off-site environmental impacts. In 1988, an administrative order on consent (AOC) was executed with the EPA related to further investigation and proposing a means of dealing with quantified impacts.

The remedial investigation called for in the AOC has been completed and approved. In May 1996, Sparton submitted to the EPA a final corrective measure study, based on the results of its investigations, as required in the AOC. In June 1996, the EPA issued its final decision selecting a corrective action at the site, different from what Sparton had proposed. The EPA estimated that the present value cost of its remedies would range from between \$15,000,000 and \$26,400,000 based on a thirty- (30) year time frame. In Sparton's judgment, the remedies proposed by the EPA are either unnecessary or technically impracticable. Sparton vigorously challenged the EPA's remedy selection and filed suit in Federal District Court in Dallas asserting that the EPA's decision on remedy selection violated the AOC.

In September 1996, the EPA issued an initial administrative order under RCRA ordering Sparton to undertake additional testing to justify the implementation of the remedy selected by the agency in June 1996, and then to implement that remedy. Sparton vigorously contested that order administratively, but on February 10, 1998, the EPA issued a Final Administrative Order that in all material respects followed the initial administrative order issued in September 1996. Sparton has refused to implement those portions of that order that it believes are unjustified.

In February 1997, three lawsuits were filed against Sparton in Federal District Court in Albuquerque, one by the United States on behalf of the EPA, the second by the State of New Mexico and the third by the City of Albuquerque and the County of Bernalillo. All three actions allege that the impacts to soil and groundwater associated with Sparton's Coors Road facility present an imminent and substantial threat to human health or the environment. Through these lawsuits, the plaintiffs seek to compel Sparton to undertake additional testing and to implement the same remedy selected by the EPA in June of 1996, now incorporated in the Final Administrative Order, and referred to in the preceding paragraph. In March 1997, the plaintiffs in these three lawsuits filed a motion for preliminary injunction and in July of 1997, the action in Dallas was transferred to Federal District Court in Albuquerque and consolidated with the three lawsuits filed in February 1997.

A pretrial schedule has been established for the consolidated actions, but no trial date set. Limited discovery, involving interrogatories and requests for production, has been undertaken by the plaintiffs. The plaintiffs have sought to amend their lawsuit to compel Sparton to implement the Final Administrative Order, and seeking civil penalties for alleged noncompli-

ance. Sparton has opposed this request and no decision has been made by the court on the plaintiffs' request to amend.

In March 1998, a hearing was held on the plaintiffs' request for a preliminary injunction. After two days of testimony, the federal district judge indicated he had tentatively concluded he might issue a preliminary injunction. The parties subsequently entered into settlement discussions that culminated in an agreed workplan for the installation of certain off-site monitoring, observation and containment wells, in exchange for plaintiffs withdrawing their request for a preliminary injunction. An order withdrawing that request and approving this off-site workplan was signed on July 7, 1998.

At the current time, all litigation has been stayed to allow the parties to continue settlement discussions. The most recent stay expired on August 9, 1999, but the parties have agreed to extend it to at least September 9, 1999. It is anticipated that implementation of the three workplans discussed below will relieve the Company of its obligations under the February 10, 1998 Final Administrative Order. As a result of these developments, the Company has updated its cost estimates. It is believed the initial cost of the corrective measures called for in these plans will not be materially different from the cost estimates the Company has previously accrued. There is no assurance that additional corrective measures, involving increased expenditures, may not be required.

The proposed workplans provide for the installation of an off-site containment well (already completed and operating), an on-site containment well and an enhancement to an on-site soil vapor extraction system. The purpose of the containment wells is to restrict further migration of impacted groundwater. The soil vapor extraction system removes solvents in the on-site soil above the groundwater. The installation and operation of the two containment wells and the enhanced soil vapor extraction system are dependent upon various permits, licenses and approvals from regulatory agencies and third parties. It is anticipated that these remediation activities will operate for a period of time during which the Company and the regulatory agencies will analyze their effectiveness. The Company believes that it will take at least three to five years before the effectiveness of the groundwater extraction wells can be established. Until then, in the Company's judgment, no definitive conclusion can be reached on whether additional remediation activities may be required.

At June 30, 1999, Sparton has accrued \$1,426,000 as its estimate of the future undiscounted minimum obligation with respect to this matter. This reflects the minimum range of the amount Sparton expects to incur over the next four years. The period of accrual was reduced from five to four years to reflect what is now believed will be the initial period for testing the effectiveness of the remediation plan as discussed and described above. Details of the activity beyond this period will be dependent upon the effectiveness of the workplans being currently negotiated and not yet implemented. This amount includes equipment and operating and maintenance costs. In many cases, new technologies become available over time, which result in modified costs for environmental remediation. The Company's estimate of cost is based on the existing methodology and excludes legal and related consulting costs. The estimate includes the minimum range of activity expected to occur in the next four years including on-site and off-site pump and treat containment systems, a soil vapor extraction program and continued on-site/off-site monitoring. Beyond four years, while additional expenditures are probable, Sparton does not believe such expenditures are reasonably estimable based on available information. Factors causing the uncertainty include, but are not limited to, effectiveness of the currently proposed programs to achieve targeted

results and decisions made by regulating agencies regarding future proposals and reports of Sparton. Sparton routinely refines and revises the estimate of its environmental efforts as additional information becomes available.

Uncertainties associated with environmental remediation contingencies are pervasive and often result in wide ranges of reasonably possible estimates. Estimates developed in the early stages of remediation can vary significantly. Normally, a finite estimate of cost does not become fixed and determinable at a specific point in time. Rather, the costs associated with environmental remediation become estimable over a continuum of events and activities that help to frame and define a liability. Amounts charged to operations, principally legal and consulting, for fiscal years 1999 and 1998 were \$1,756,000 and \$1,821,000, respectively. It is reasonably possible that Sparton's recorded estimate of this liability may change. If a remedy is imposed on Sparton, other than as described in the proposed workplans, the ultimate cleanup costs could increase significantly. There is no assurance that additional costs greater than the amount accrued will not be incurred or that changes in environmental laws or their interpretation will not require that additional amounts be spent.

On June 17, 1998, Sparton Corporation and Sparton Technology, Inc. filed a complaint in the Circuit Court of Cook County, Illinois, against Lumbermens Mutual Casualty Company and American Manufacturers Mutual Insurance Company demanding reimbursement of expenses incurred in connection with its remediation efforts at the Coors Road facility based on various primary and excess comprehensive general liability policies in effect between 1959 and 1975.

On February 11, 1998, Sparton Technology, Inc. commenced litigation in the United States Court of Federal Claims alleging that the Department of Energy (DOE), acting through its contractors, Sandia Corporation and Allied Signal, Inc., is liable for reimbursement of Sparton's costs incurred in defending against and complying with federal and state regulatory requirements. The DOE prescribed certain mandatory performance requirements that were then imposed upon Sparton through its agreements with Sandia Corporation and Allied Signal, Inc. On February 9, 1999, the Court of Federal Claims dismissed Sparton's complaint based on its determination that an agency relationship did not exist between Sandia Corporation and Allied Signal, Inc. and the United States for purposes of reimbursing costs incurred during litigation. Sparton believes that the court erred in its decision and filed its notice of appeal on April 9, 1999. Briefing has begun but is not yet complete.

Sparton Technology, Inc. filed a complaint on September 21, 1998, against Allied Signal, Inc. in U.S. District Court in Kansas City seeking to recover costs incurred to investigate and remediate impacts to the environment at its Coors Road facility. In July 1999, the court allowed the Company to amend its complaint to add Sandia Corporation and the DOE as defendants. Limited discovery has been completed. This case is currently scheduled for trial in the Spring of 2000.

At this time, the Company is unable to predict the amount of recovery, if any, that may result from the pursuit of these before-mentioned three claims.

Item 4. Submission of Matters to a Vote of Security Holders

No matters were submitted to a vote of the security holders during the last quarter of the period covered by this report.

OFFICERS OF THE REGISTRANT

Information with respect to executive officers of the Registrant is set forth below. The positions noted have been held for at least five years, except where noted.

	<u>Age</u>
<u>John J. Smith</u> , Chairman of the Board, Chief Executive Officer and Director	87
<u>David W. Hockenbrocht</u> , President, Chief Operating Officer and Director	64
<u>Richard L. Langley</u> , Vice President-Treasurer	54
<u>R. Jan Appel</u> , Vice President, Secretary and General Counsel	53
<u>Richard D. Mico</u> , Vice President and General Manager of Sparton Technology, Inc.	69
<u>Douglas E. Johnson</u> , Vice President and General Manager of Sparton Electronics since July 1995. Prior to that date, Mr. Johnson was the Assistant General Manager of Sparton Electronics.	51
<u>Michael G. Woods</u> , Vice President since August 1999 and General Manager of Sparton of Canada, Ltd. since November 1998. Prior to that date, Mr. Woods held varying positions including Controller and Director of Electronics Manufacturing Services for Sparton of Canada.	40

There are no family relationships between the persons named above. All officers are elected annually and serve at the discretion of the Board of Directors.

PART II**Item 5. Market for the Registrant's Common Equity and Related Stockholder Matters**

Information with respect to the market for the Company's stock, including stock prices, stock exchange and number of shareowners, and quarterly dividends for the two-year period ended June 30, 1999, is included under "Financial Highlights" on page 1 of the Annual Report and is included in Exhibit 13 filed herewith.

Item 6. Selected Financial Data

The "Selected Financial Data" on page 32 of Exhibit 13 filed hereunder is incorporated herein by reference.

Item 7. Management's Discussion and Analysis of Financial Condition and Results of Operations

"Management's Discussion and Analysis of Financial Condition and Results of Operations" on pages 33 of Exhibit 13 filed hereunder is incorporated herein by reference.

Item 7.(a) Qualitative and Quantitative Disclosures About Market Risk

"Management's Discussion and Analysis of Financial Condition and Results of Operations – Market Risk Exposure" on page 35 of Exhibit 13 filed hereunder is incorporated herein by reference.

Item 8. Financial Statements and Supplementary Data

The consolidated financial statements of Sparton Corporation and Subsidiaries and "Report of Independent Auditors" are included on pages 18 - 31 and 22 , respectfully, in Exhibit 13 filed hereunder and are incorporated herein by reference.

Item 9. Changes in and Disagreements with Accountants on Accounting and Financial Disclosure

None.

PART III**Item 10. Directors and Executive Officers of the Registrant**

Information with respect to directors is included in the Proxy Statement under "Election of Directors" and is incorporated herein by reference. Information concerning the executive officers is included in Part I on page 4.

Item 11. Executive Compensation

Information concerning executive compensation is included under "Compensation of Executive Officers" in the Proxy Statement and is incorporated herein by reference.

Item 12. Security Ownership of Certain Beneficial Owners and Management

Information on management and certain other beneficial ownership of the Company's common stock is included under "Outstanding Stock and Voting Rights" in the Proxy Statement and is incorporated herein by reference.

Item 13. Certain Relationships and Related Transactions

Information as to certain relationships and related transactions is included under "Certain Relationships and Transactions" in the Proxy Statement and is incorporated herein by reference.

PART IV**Item 14. Exhibits, Financial Statement Schedules and Reports on Form 8-K**

(a) The following financial statements are filed as part of this report on Form 10-K:

The following Consolidated Financial Statements of Sparton Corporation and Subsidiaries and Report of Independent Auditors, included on Pages 18 - 31 and 22, respectfully, of Exhibit 13 filed hereunder are incorporated by reference in Item 8.

**Page Reference
Annual Report
to Shareowners**

Data from the 1999 Annual Report to Shareowners of Sparton Corporation:

Consolidated balance sheets at June 30, 1999 and 1998	18
For the years ended June 30, 1999, 1998 and 1997:	
Consolidated statements of operations	20
Consolidated statements of cash flows	21
Consolidated statements of shareowners' equity	22
Notes to consolidated financial statements	23 - 31
Report of Independent Auditors	22

Financial Statement Schedules

All prescribed schedules have been omitted since the required information is not present or is not present in amounts sufficient to require submission of the schedule, or because the information required is included in the consolidated financial statements or the notes thereto.

(b) Reports on Form 8-K

No reports on Form 8-K were required to be filed for the three months ended June 30, 1999.

(c) Exhibits

See Exhibit Index on page 14.

SIGNATURES

Pursuant to the requirements of Section 13 or 15(d) of the Securities Exchange Act of 1934, the Registrant has duly caused this report to be signed on its behalf by the undersigned, thereunto duly authorized.

SPARTON CORPORATION

Date: September 24, 1999

By: /s/ Richard L. Langley _____

**Richard L. Langley, Vice President-Treasurer
(Principal Accounting and Financial Officer)**

Pursuant to the requirements of the Securities Exchange Act of 1934, this report has been signed below by the following persons on behalf of the Registrant and in the capacities and on the dates indicated.

<u>Signature and Title</u>	<u>Date</u>
<u>By /s/ John J. Smith</u> John J. Smith, Chairman of the Board of Directors and Chief Executive Officer	August 27, 1999
<u>By /s/ David W. Hockenbrocht</u> David W. Hockenbrocht, President, Chief Operating Officer and Director	August 27, 1999
<u>By /s/ James N. DeBoer</u> James N. DeBoer, Director	August 27, 1999
<u>By /s/ Robert J. Kirk</u> Robert J. Kirk, Director	August 27, 1999
<u>By /s/ William I. Noecker</u> William I. Noecker, Director	August 27, 1999
<u>By /s/ Rory B. Riggs</u> Rory B. Riggs, Director	August 27, 1999
<u>By /s/ David B. Schoon</u> David B. Schoon, Director	August 27, 1999
<u>By /s/ W. Peter Slusser</u> W. Peter Slusser, Director	August 27, 1999
<u>By /s/ Bradley O. Smith</u> Bradley O. Smith, Director	August 27, 1999

Exhibit Index

- 3 and 4** Articles of Incorporation of the Registrant were filed with Form 10-K for the year ended June 30, 1981 and an amendment thereto was filed with Form 10-Q for the three-month period ended September 30, 1983, and are incorporated herein by reference.
- By-laws of the Registrant were filed with Form 10-K for the year ended June 30, 1981, and are incorporated herein by reference.
- Code of Regulations of the Registrant were filed with Form 10-K for the year ended June 30, 1981 and an amendment thereto was filed with Form 10-Q for the three-month period ended September 30, 1982, and are incorporated herein by reference.
- 10** The employment agreement with John J. Smith was filed with Form 10-Q for the quarter ended September 30, 1994 and an amendment and extension of the employment agreement thereto was filed with Form 10-K for the year ended June 30, 1998, and are incorporated herein by reference.
- 13** Portions of the 1999 Annual Report to Shareowners (filed herewith and attached).
- 22** Subsidiaries (filed herewith and attached).
- 23** Consent of independent auditors (filed herewith and attached).
- 27** Financial data schedule, submitted to the Securities and Exchange Commission for its information.

EXHIBIT 22

SPARTON CORPORATION

The Registrant, Sparton Corporation, an Ohio Corporation, had the following subsidiaries at June 30, 1999:

<u>Name</u>	<u>Incorporated In</u>
Domestic:	
Continuing Operations	
Sparton Electronics Florida, Inc.	Florida
Sparton Technology, Inc.	New Mexico
Discontinued Operations	
Sparton Engineered Products, Inc.-Flora Group	Illinois
Foreign (both continuing operations):	
Sparton of Canada, Limited	Ontario, Canada
Sparton Electronics International Sales, Ltd.	Barbados

EXHIBIT 23

SPARTON CORPORATION

CONSENT OF INDEPENDENT AUDITORS

We consent to the incorporation by reference in this Annual Report (Form 10-K) of Sparton Corporation of our report dated August 27, 1999, included in the 1999 Annual Report to Shareowners of Sparton Corporation and subsidiaries.

We also consent to the incorporation by reference in the Registration Statement (Form S-8 No. 33-43703) pertaining to the Sparton Corporation 1989 Stock Option Plan of our report dated August 27, 1999, with respect to the consolidated financial statements of Sparton Corporation and subsidiaries incorporated by reference in this Annual Report (Form 10-K) for the year ended June 30, 1999.

/s/ ERNST & YOUNG LLP

Toledo, Ohio

September 24, 1999

ATTACHMENT 13
SOIL SAMPLES COLLECTED AT THE OLD DRUM
STORAGE AREA

December 15, 1986

Mr. Thomas S. Burger, R.P.S.
Harding Lawson Associates
6220 Westpark Dr., Suite 100
Houston, Texas 77057

Dear Mr. Burger:

On December 12, 1986, METRIC Corporation completed an on site study to collect samples for the determination of heavy metal concentrations in the soil materials underlying the Old Drum Storage Area at the Sparton Technology Coors Road Plant. The metals of primary interest and for which this study was directed were the following: Cadmium (Cd), Chromium (Cr), Lead (Pb), and Nickel (NI). FIGURE I presents a representative layout of the Old Drum Storage Area including general demensions and the eight rectangular plot sampling configurations.

Preliminary sampling was initially performed on October 11, 1986 in each of the eight sampling plots at a depth interval of 0-3". The purpose of this sampling was to determine metal concentrations of the surface soil materials and to determine sampling intensity for this investigation. All leaves and organic debris including the uppermost 1/4" of soil was removed prior to the sample collection. APPENDIX A presents the results of the October sampling.

Methodology

In each of the eight rectangular sampling areas, the center was located and staked. An 18" x 33" deep hole was excavated in the middle of each area with posthole diggers to reveil an in-situ profile of the undisturbed soil. During the excavation process, soil material was taken out of the hole and segregated at the following depths and placed in designated buckets:

- a) 0-10" depth interval
- b) 10-20" depth interval
- c) 20-33" depth interval

Upon completion of the excavation, the exposed soil column immediately underlying the location stake was scraped to an approximate 2" thickness to remove any potential contamination

Mr. Burger
12/15/86
Page two

to the soil brought about by the digging processes. A field measuring tape was then stretched and placed adjacent to the exposed profile such that depth measurements and locations were identified. Markers (nails) were then pushed into the soil wall at the following depth increments from ground level:

- a) 6-9" depth interval
- b) 12-15" depth interval
- c) 18-21" depth interval
- d) 24-27" depth interval
- e) 30-33" depth interval

A soil sample of approximately 75 ml. volume was aseptically collected from each interval stated above and placed in cleaned and sterilized plastic containers and sealed. The following information was then recorded on each sample jar:

- a) sample number and site
- b) depth increment
- c) date collected
- d) time
- e) metals to be analyzed

All trowels, spoons, and nails were thoroughly washed in soapy water, rinsed in distilled water, and also rinsed in acetone to eliminate contamination of subsequent samples. This washing procedure was performed after each individual soil sample collection. Soil materials which were placed in the buckets during the initial excavation were replaced into the sample hole in a depth sequence which approximated the original conditions. The posthole diggers were rinsed with distilled water prior to each sample hole excavation.

Results

A total of forty samples (5 sampling depths x 8 sampling plots) were collected and hand carried to Assaigai Analytical Laboratories in Albuquerque, New Mexico for the specified element analysis. APPENDIX B presents these results.

Upon completion of the laboratory work and presentation of the results by Assaigai Laboratories, the same soil samples were then sent to Rocky Mountain Analytical Laboratory in Arvada,

Mr. Burger
12/15/86
Page three

Colorado to have duplicate analyses performed.

Refer to APPENDIX C for the results of the specified metal concentrations as determined by Rocky Mountain Analytical.

If there are any questions concerning the information presented above, please feel free to contact us.

Sincerely,

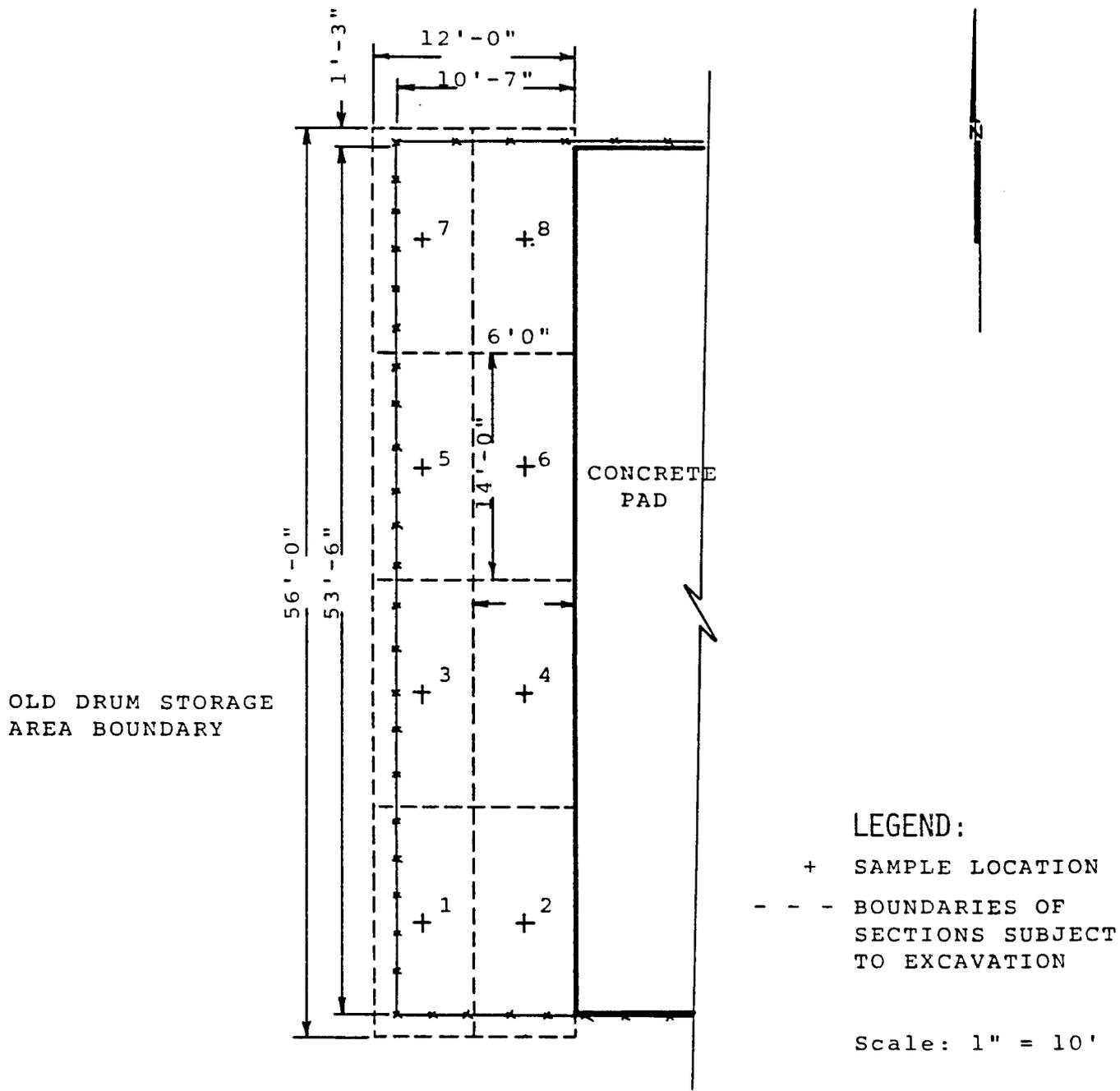


Gary L. Richardson, P.E.
Executive Vice President

GLR:

enclosures

cc: Mr. Jon DeWitt
Mr. Richard Mico
Mr. Blair Thompson
Mr. Cleoves Martinez



NOTE: The area subject to removal is divided into eight equal sections. Sample locations are at the center of corresponding sections.

Figure 1

APPENDIX A

Rocky Mountain Analytical Laboratory

4955 Yarrow Street, Arvada, CO 80002 (303) 421-6611

A DIVISION OF
ENSECO
INCORPORATED

November 17, 1986

Cleoves Martinez
Sparton Technology, Inc.
9621 Coors Rd., N.W.
Albuquerque, NM 87114

Dear Cleoves:

Enclosed are the results for the eight soil samples received on
October 21, 1986.

Please call if you have any questions.

Sincerely,



Corinne L. Bogert
Project Coordinator

Reviewed by:



Jeannie Brooks
Project Coordinator

CLB/JTB/bjb
Enclosures

RMAL # 62261

cc: Tom Burger, Hardin Lawson Associates

SAMPLE DESCRIPTION INFORMATION

for

Sparton Technology, Inc.

<u>RMA Sample No.</u>	<u>Sample Description</u>	<u>Sample Type</u>	<u>Date Sampled</u>	<u>Date Received</u>
62261-01	ODS-1 0-3"	Solid	10/20/86	10/21/86
62261-02	ODS-2 0-3"	Solid	10/20/86	10/21/86
62261-03	ODS-3 0-3"	Solid	10/20/86	10/21/86
62261-04	ODS-4 0-3"	Solid	10/20/86	10/21/86
62261-05	ODS-5 0-3"	Solid	10/20/86	10/21/86
62261-06	ODS-6 0-3"	Solid	10/20/86	10/21/86
62261-07	ODS-7 0-3"	Solid	10/20/86	10/21/86
62261-08	ODS-8 0-3"	Solid	10/20/86	10/21/86

November 17, 1986

ANALYTICAL RESULTS

for

Sparton Technology, Inc.

INORGANIC PARAMETERS

<u>Parameter</u>	<u>Units</u>	<u>62261-01</u>		<u>62261-02</u>		<u>62261-03</u>		<u>62261-04</u>	
pH	units	8.65	(0.01)	9.21	(0.01)	8.80	(0.01)	8.99	(0.01)
Total Organic Halogen	mg/kg	ND	(100)	ND	(100)	ND	(100)	ND	(100)

<u>Parameter</u>	<u>Units</u>	<u>62261-05</u>		<u>62261-06</u>		<u>62261-07</u>		<u>62261-08</u>	
pH	units	7.26	(0.01)	8.10	(0.01)	9.05	(0.01)	9.08	(0.01)
Total Organic Halogen	mg/kg	ND	(100)	ND	(100)	ND	(100)	ND	(100)

ND = Not Detected. Detection limits in parentheses

ANALYTICAL RESULTS

for

Sparton Technology, Inc.

TOTAL METALS

<u>Parameter</u>	<u>Units</u>	<u>62261-01</u>		<u>62261-02</u>		<u>62261-03</u>		<u>62261-04</u>	
Cadmium	mg/kg	0.41	(0.02)	1.4	(0.02)	0.60	(0.02)	0.17	(0.02)
Chromium	mg/kg	8.0	(0.5)	9.8	(0.5)	9.8	(0.5)	2.4	(0.5)
Lead	mg/kg	18	(2.0)	12	(2.0)	41	(2.0)	8.7	(2.0)
Nickel	mg/kg	5.5	(1.0)	4.7	(1.0)	2.8	(1.0)	2.4	(1.0)
Silver	mg/kg	ND	(0.3)	ND	(0.3)	ND	(0.3)	ND	(0.3)

<u>Parameter</u>	<u>Units</u>	<u>62261-05</u>		<u>62261-06</u>		<u>62261-07</u>		<u>62261-08</u>	
Cadmium	mg/kg	2.4	(0.02)	0.43	(0.02)	0.43	(0.02)	0.77	(0.02)
Chromium	mg/kg	3.6	(0.5)	7.2	(0.5)	23	(0.5)	32	(0.5)
Lead	mg/kg	6.4	(2.0)	19	(2.0)	37	(2.0)	170	(2.0)
Nickel	mg/kg	2.2	(1.0)	3.1	(1.0)	6.0	(1.0)	4.5	(1.0)
Silver	mg/kg	ND	(0.3)	ND	(0.3)	ND	(0.3)	ND	(0.3)

ND = Not Detected. Detection limits in parentheses.

APPENDIX B



ASSAIGAI ANALYTICAL LABORATORIES

TO: Sparton
ATTN: Clovis Martinez
PO Box 1784
Albuquerque, NM 87103

DATE: 8 December 1986
2065

SAMPLE ID		ANALYTE/ANALYTICAL RESULTS			
		Ni	Pb	Cd	Cr
6-9"	1	24.0 ug/g	32.0 ug/g	0.50 ug/g	12.20 ug/g
	2	18.2 ug/g	190.0 ug/g	0.50 ug/g	7.79 ug/g
	3	19.0 ug/g	7.5 ug/g	0.10 ug/g	19.60 ug/g
	4	26.2 ug/g	12.0 ug/g	0.20 ug/g	12.70 ug/g
	5	20.0 ug/g	12.0 ug/g	<0.01 ug/g	9.64 ug/g
	6	22.0 ug/g	11.0 ug/g	0.40 ug/g	29.70 ug/g
	7	20.0 ug/g	11.0 ug/g	0.50 ug/g	18.30 ug/g
	8	20.1 ug/g	19.0 ug/g	0.20 ug/g	12.00 ug/g
12-15"	1	25.0 ug/g	11.0 ug/g	0.10 ug/g	7.05 ug/g
	2	29.2 ug/g	47.0 ug/g	2.50 ug/g	15.60 ug/g
	3	24.3 ug/g	13.0 ug/g	0.30 ug/g	27.90 ug/g
	4	33.0 ug/g	10.0 ug/g	0.20 ug/g	19.00 ug/g
	5	36.5 ug/g	14.0 ug/g	0.70 ug/g	32.30 ug/g
	6	42.9 ug/g	33.0 ug/g	2.75 ug/g	23.30 ug/g
	7	22.0 ug/g	4.0 ug/g	0.50 ug/g	20.00 ug/g
	8	65.0 ug/g	34.0 ug/g	1.10 ug/g	38.50 ug/g
18-21"	1	43.6 ug/g	16.0 ug/g	0.40 ug/g	18.50 ug/g
	2	36.5 ug/g	13.0 ug/g	0.50 ug/g	9.50 ug/g
	3	22.7 ug/g	14.0 ug/g	1.00 ug/g	15.10 ug/g
	4	34.4 ug/g	22.0 ug/g	0.20 ug/g	12.70 ug/g
	5	39.0 ug/g	14.0 ug/g	0.20 ug/g	13.90 ug/g
	6	39.4 ug/g	9.0 ug/g	0.50 ug/g	8.40 ug/g
	7	32.9 ug/g	21.0 ug/g	3.00 ug/g	26.80 ug/g
	8	41.0 ug/g	10.0 ug/g	0.40 ug/g	16.00 ug/g
24-27"	1	35.6 ug/g	50.0 ug/g	0.30 ug/g	22.10 ug/g
	2	27.4 ug/g	22.0 ug/g	0.20 ug/g	17.40 ug/g
	3	23.1 ug/g	18.0 ug/g	0.30 ug/g	12.10 ug/g
	4	24.7 ug/g	13.0 ug/g	0.40 ug/g	14.70 ug/g
	5	28.5 ug/g	20.0 ug/g	0.50 ug/g	16.70 ug/g
	6	26.4 ug/g	14.0 ug/g	0.30 ug/g	10.70 ug/g
	7	24.5 ug/g	13.0 ug/g	0.30 ug/g	12.10 ug/g
	18	24.6 ug/g	18.0 ug/g	0.80 ug/g	26.80 ug/g

-2-

		Ni	Pb	Cd	Cr
30-33"	1	21.7 ug/g	14.0 ug/g	0.20 ug/g	15.40 ug/g
	2	23.4 ug/g	18.0 ug/g	0.40 ug/g	29.40 ug/g
	3	15.2 ug/g	12.0 ug/g	0.30 ug/g	18.10 ug/g
	4	21.1 ug/g	12.0 ug/g	0.20 ug/g	14.10 ug/g
	5	23.5 ug/g	16.0 ug/g	0.30 ug/g	16.70 ug/g
	6	26.0 ug/g	12.0 ug/g	0.30 ug/g	10.70 ug/g
	7	28.3 ug/g	13.0 ug/g	0.20 ug/g	12.10 ug/g
	8	27.5 ug/g	13.0 ug/g	0.30 ug/g	12.00 ug/g

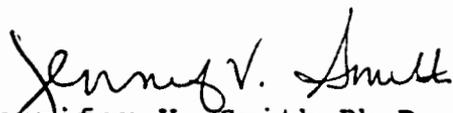
NOMINAL DETECTION LIMITS:

Ni	0.1 ug/g
Pb	0.1 ug/g
Cd	0.01 ug/g
Cr	0.01 ug/g

REFERENCE: "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods," USEPA, SW 846, EMSL-Cincinnati, 1982.

An invoice for services is enclosed. Thank you for contacting Assaigai Laboratories.

Sincerely,



Jennifer V. Smith, Ph.D.
Laboratory Director

APPENDIX C

Rocky Mountain Analytical Laboratory

4955 Yarrow Street, Arvada, CO 80002 (303) 421-6611

A DIVISION OF
ENSECO
INCORPORATED

LOG NUMBER _____

TO: FAX # 505 892 5300
NAME Cleoves Martinez
COMPANY Sparton Tech.
CITY Albuquerque

FROM: NAME Brian Kahn
COMPANY: ENSECO/ROCKY MOUNTAIN ANALYTICAL LAB

NUMBER OF PAGES (INCLUDING THIS COVER PAGE) 10
If you do not receive all pages, please phone (303) 421-6611 extension 145.

SPECIAL INSTRUCTIONS _____

Our Facsimile Information:
8150 Pitney Bowes - 1-303-431-7171

OPERATOR Carla
fax

TIME 2:05 p.m. DATE 12/14/86

December 10, 1986

Cleoves Martinez
Spartan Technology, Inc.
P.O. Box 1784
9621 Coors Rd. N.W.
Albuquerque, NM 87114

Dear Cleoves:

Enclosed are the preliminary results for the analysis of selected soil samples received December 9, 1986.

Please call if you have any questions.

Sincerely,

Jim J. Khan

Rocky Mountain Analytical Laboratory
4955 Yarrow Street, Arvada, CO 80002 (303) 421-6611

A DIVISION OF
ENSECO
INCORPORATED

December 09, 1986

MR. CLEOVES MARTINEZ
SPARTON TECHNOLOGY, INC
PO BOX 1784
9621 COORS RD. N.W.
ALBUQUERQUE, NM 87114

Dear Mr. Martinez:

This is to acknowledge that we received your 40 samples at our laboratory. They have been assigned our lab project number 62498. Enclosed is a sample description form indicating our sample numbers and your corresponding identifications and a copy of the Chain of Custody.

For questions or assistance please contact the following people:

- Project status and technical issues - Brian Rahn
- Additional bottles - Beth Kelly

Sincerely,

Beth Kelly
Supervisor
Client Services

12/09/86

SAMPLE DESCRIPTION INFORMATION

for

SPARTON TECHNOLOGY, INC

<u>RMA</u> <u>Sample No.</u>	<u>Sample Description</u>	<u>Sample Type</u>	<u>Date</u> <u>Sampled</u>	<u>Date</u> <u>Received</u>
*62498-001	#1 6-9	Solid	12/05/86	12/09/86
*62498-002	#1 12-15	Solid	12/05/86	12/09/86
*62498-003	#1 18-21	Solid	12/05/86	12/09/86
*62498-004	#1 24-27	Solid	12/05/86	12/09/86
*62498-005	#1 30-33	Solid	12/05/86	12/09/86
*62498-006	#2 6-9	Solid	12/05/86	12/09/86
*62498-007	#2 12-15	Solid	12/05/86	12/09/86
*62498-008	#2 18-21	Solid	12/05/86	12/09/86
*62498-009	#2 24-27	Solid	12/05/86	12/09/86
*62498-010	#2 30-33	Solid	12/05/86	12/09/86
*62498-011	#3 6-9	Solid	12/05/86	12/09/86
*62498-012	#3 12-15	Solid	12/05/86	12/09/86
*62498-013	#3 18-21	Solid	12/05/86	12/09/86
*62498-014	#3 24-27	Solid	12/05/86	12/09/86
*62498-015	#3 30-33	Solid	12/05/86	12/09/86
*62498-016	#4 6-9	Solid	12/05/86	12/09/86
*62498-017	#4 12-15	Solid	12/05/86	12/09/86
*62498-018	#4 18-21	Solid	12/05/86	12/09/86
*62498-019	#4 24-27	Solid	12/05/86	12/09/86
*62498-020	#4 30-33	Solid	12/05/86	12/09/86
*62498-021	#5 6-9	Solid	12/05/86	12/09/86
*62498-022	#5 12-15	Solid	12/05/86	12/09/86
*62498-023	#5 18-21	Solid	12/05/86	12/09/86
*62498-024	#5 24-27	Solid	12/05/86	12/09/86
*62498-025	#5 30-33	Solid	12/05/86	12/09/86
*62498-026	#6 6-9	Solid	12/05/86	12/09/86
*62498-027	#6 12-15	Solid	12/05/86	12/09/86

* = Receipt of this new sample is acknowledged by this letter

12/09/86

SAMPLE DESCRIPTION INFORMATION

for

SPARTON TECHNOLOGY, INC

RMA Sample No.	Sample Description	Sample Type	Date Sampled	Date Received
*62498-028	#6 18-21	Solid	12/05/86	12/09/86
*62498-029	#6 24-27	Solid	12/05/86	12/09/86
*62498-030	#6 30-33	Solid	12/05/86	12/09/86
*62498-031	#7 6-9	Solid	12/05/86	12/09/86
*62498-032	#7 12-15	Solid	12/05/86	12/09/86
*62498-033	#7 18-21	Solid	12/05/86	12/09/86
*62498-034	#7 24-27	Solid	12/05/86	12/09/86
*62498-035	#7 30-33	Solid	12/05/86	12/09/86
*62498-036	#8 6-9	Solid	12/05/86	12/09/86
*62498-037	#8 12-15	Solid	12/05/86	12/09/86
*62498-038	#8 18-21	Solid	12/05/86	12/09/86
*62498-039	#18 24-27	Solid	12/05/86	12/09/86
*62498-040	#8 30-33	Solid	12/05/86	12/09/86

DEC 10 1986 14:21 ROCKY MTN ANALYTICAL

PAGE.05

* = Receipt of this new sample is acknowledged by this letter

ROCKY MOUNTAIN ANALYTICAL LABORATORY
 DIVISION: INDUSTRIAL INORGANICS - Metals

PRELIMINARY RESULTS REPORT
 DATE: 12/10/86 PAGE NO: 1

PARTICLE	UNITS	22498001	(Co. V)	52498002	(Co. V)	62493003	(Co. V)	62493004	(Co. V)
Cadmium	mg/Kg	ND	(10-5)	ND	(10-5)	ND	(10-5)	ND	(10-5)
Chromium	mg/Kg	5.8	(1.1)	4.0	(1.1)	6.7	(1.1)	8.0	(1.1)
Lead	mg/Kg	25	(2.1)	22	(2.1)	25	(2.1)	25	(2.1)
Nickel	mg/Kg	4.0	(1.1)	2.9	(1.1)	9.3	(1.1)	9.3	(1.1)

PARAMETER

UNITS

62498005 (O.Y.)
 ND
 2.3
 27
 2.4

62498006 (O.Y.)
 ND
 4.1
 15
 3.0

62498007 (O.Y.)
 1.5
 7.2
 22
 6.2

62498008 (O.Y.)
 ND
 6.0
 26
 11

Cadmium
 Chromium
 Lead
 Nickel

mg/kg
 mg/kg
 mg/kg
 mg/kg



ELEMENT	UNITS	62698009	(O.K.)	52698010	(O.K.)	52698011	(O.K.)	62698012	(O.K.)
Cadmium	ug/kg	ND	(O.K.)	ND	(O.K.)	NC	(O.K.)	ND	(O.K.)
Chromium	ug/kg	5.6	(1.0)	6.7	(1.0)	5.7	(1.0)	24	(1.0)
Lead	ug/kg	22	(2.0)	22	(2.0)	19	(2.0)	13	(2.0)
Nickel	ug/kg	8.1	(1.0)	7.4	(1.0)	3.0	(1.0)	3.4	(1.0)

PARAMETER	UNITS	52498013	(0.4)	62498014	(0.4)	XXXXXXXXXX	(0.4)	XXXXXXXXXX	(0.4)
Cadmium	mg/kg	0.6	(0.3)	ND.	(0.3)	ND	(0.3)	ND	(0.3)
Chromium	mg/kg	13	(1.)	3.6	(1.)	3.9	(1.)	4.7	(1.)
Lead	mg/kg	22	(2.)	13	(2.)	14	(2.)	17	(2.)
Nickel	mg/kg	5.0	(1.)	5.8	(1.)	5.3	(1.)	6.2	(1.)

ROCKY MOUNTAIN ANALYTICAL LABORATORY
 DIVISION: INDUSTRIAL INORGANICS - metals

5

6

7

PRELIMINARY RESULTS REPORT
 DATE: 12/10/84 PAGE NO: 5

ELEMENT	UNITS	62473030	62473030	62473030	62473030
Cadmium	PP/KG	ND	ND	ND	ND
Chromium	MG/KG	5.3	4.9	5.2	7.5
Lead	MG/KG	19	18	19	19
Nickel	MG/KG	7.4	5.8	7.0	7.6

~~62473030~~
 (0.4)
 (1.1)
 (2.1)
 (1.1)

~~62473030~~
 (0.4)
 (1.1)
 (2.1)
 (1.1)

~~62473030~~
 (0.4)
 (1.1)
 (2.1)
 (1.1)

~~62473030~~
 (0.4)
 (1.1)
 (3.1)
 (1.1)

Rocky Mountain Analytical Laboratory

4955 Yarrow Street, Arvada, CO 80002 (303) 421-6611

A DIVISION OF
ENSECO
INCORPORATED

LOG NUMBER 25

TO: FAX # (505) 892-5300 ext 133
NAME Cleora Martinez
COMPANY Spartan Tech
CITY _____

FROM: NAME Brian Rahn
COMPANY: ENSECO/ROCKY MOUNTAIN ANALYTICAL LAB

NUMBER OF PAGES (INCLUDING THIS COVER PAGE) 11
If you do not receive all pages, please phone (303) 421-6611 extension 145.

SPECIAL INSTRUCTIONS _____

Our Facsimile Information:
8150 Pitney Bowes - 1-303-431-7171

OPERATOR Carla TIME 3:25 DATE 12/11/86
fax

EP Toxicity Metals

#2
30-33

#5
30-33

PRELIMINARY RESULTS REPORT
DATE: 12/11/86 PAGE NO: 1

ROCKY MOUNTAIN ANALYTICAL LABORATORY
DIVISION: INDUSTRIAL INORGANICS - metals

PARAMETER	UNITS	62498010	62498025	62498001	62498002
Selenium	mg/L	ND (0.002)	ND (0.002)	NR	NR
Mercury	mg/L	ND (0.001)	ND (0.001)	NR	NR
Arsenic	mg/L	ND (0.1)	ND (0.1)	NR	NR
Barium	mg/L	0.5 (0.4)	0.89 (0.4)	NR	NR
Cadmium	mg/L	ND (0.008)	ND (0.008)	NR	NR
Chromium	mg/L	ND (0.01)	ND (0.01)	NR	NR
Lead	mg/L	ND (0.04)	ND (0.04)	NR	NR
Silver	mg/L	ND (0.006)	ND (0.006)	NR	NR
Total Metals	mg/kg	ND (0.5)(c.s)	ND (0.5)(c.s)	ND (0.5)(c.s)	ND (0.5)(c.s)
Cadmium	mg/kg	6.7 (1.)	5.3 (1.)	5.8 (1.)	4.0 (1.)
Chromium	mg/kg	22 (2.)	18 (2.)	25 (2.)	22 (2.)
Lead	mg/kg	7.4 (1.)	7.6 (1.)	4.0 (1.)	2.9 (1.)
Nickel	mg/kg				

Part II
12/11/86

aw
12/11/86

DRAFT

ROCKY MOUNTAIN ANALYTICAL LABORATORY
DIVISION: INDUSTRIAL INORGANICS - metals

PRELIMINARY RESULTS REPORT
DATE: 12/11/86 PAGE NO: 2

PARAMETER	UNITS	62498003	62498004	62498005	62498006
Cadmium	ng/kg	ND	NC	ND	ND
Chromium	mg/kg	6.7	8.0	8.3	4.1
Lead	mg/kg	25	26	27	15
Nickel	mg/kg	9.3	9.3	8.4	3.0

DRAFT

Total Metals

ROCKY MOUNTAIN ANALYTICAL LABORATORY
DIVISION: INDUSTRIAL INORGANICS - metals

PRELIMINARY RESULTS REPORT
DATE: 12/11/86 PAGE NO: 3

PARAMETER	UNITS	62498007	62498008	62498009	62498011
Cadmium	ug/kg	1.6 (0.5)(0.4)	ND (0.5)(0.4)	ND (0.5)(0.4)	ND (0.5)(0.4)
Chromium	ug/kg	7.2 (1.)	8.0 (1.)	6.6 (1.)	5.7 (1.)
Lead	ug/kg	22 (2.)	26 (2.)	22 (2.)	19 (2.)
Nickel	ug/kg	6.2 (1.)	11 (1.)	8.1 (1.)	3.0 (1.)

DRAFT

Total Metals

ROCKY MOUNTAIN ANALYTICAL LABORATORY
 DIVISION: INDUSTRIAL INORGANICS - metals

PRELIMINARY RESULTS REPORT
 DATE: 12/11/86 PAGE NO: 4

PARAMETER	UNITS	62498012	62498013	62498014	62498015
Cadmium	mg/kg	ND	0.6	ND	ND
Chromium	mg/kg	24	13	3.6	3.9
Lead	mg/kg	13	22	13	14
Nickel	mg/kg	3.4	6.0	5.8	5.3

DRAFT

Total Metals

ROCKY MOUNTAIN ANALYTICAL LABORATORY
DIVISION: INDUSTRIAL INORGANICS - Metals

PRELIMINARY RESULTS REPORT
DATE: 12/1/86 PAGE NO: 5

PARAMETER	UNITS	62498016	62498017	62498018	62498019
Cadmium	mg/kg	ND	ND	ND	ND
Chromium	mg/kg	5.0	3.9	8.3	8.5
Lead	mg/kg	13	16	25	21
Nickel	mg/kg	5.8	4.2	9.3	7.7

DRAFT

ROCKY MOUNTAIN ANALYTICAL LABORATORY
DIVISION: INDUSTRIAL INORGANICS - metals

PRELIMINARY RESULTS REPORT
DATE: 12/11/86 PAGE NO: 6

PARAMETER	UNITS	62498020	62498021	62498022	62498023
Cadmium	ug/kg	ND	ND	0.6	0.6
Chromium	ug/kg	4.7	2.3	16	6.0
Lead	ug/kg	17	12	14	17
Nickel	ug/kg	6.6	2.8	6.2	8.6

DRAFT

ROCKY MOUNTAIN ANALYTICAL LABORATORY
DIVISION: INDUSTRIAL INORGANICS - metals

PRELIMINARY RESULTS REPORT
DATE: 12/11/86 PAGE NO: 7

PARAMETER	UNITS	62498024	62498026	62498027	62498028
Cadmium	mg/kg	ND	ND	2.0	ND
Chromium	mg/kg	5.4	17	16	5.0
Lead	mg/kg	19	10	38	15
Nickel	mg/kg	8.5	2.9	10	6.7

DRAFT

ROCKY MOUNTAIN ANALYTICAL LABORATORY
DIVISION: INDUSTRIAL INORGANICS - metals

PRELIMINARY RESULTS REPORT
DATE: 12/11/86 PAGE NO: 8

PARAMETER	UNITS	62498029	62498030	62498031	62498032
Cadmium	mg/kg	ND	ND	ND	ND
Chromium	mg/kg	4.4	4.9	8.1	12
Lead	mg/kg	15	18	10	8.3
Nickel	mg/kg	7.7	6.8	3.2	3.0

(0.5)(c.4)
(0.5)
(2.)
(1.)

(0.5)(c.4)
(1.)
(2.)
(1.)

(0.5)(c.4)
(0.5)
(2.)
(1.)

(0.5)(c.4)
(0.5)
(2.)
(1.)

DRAFT

ROCKY MOUNTAIN ANALYTICAL LABORATORY
DIVISION: INDUSTRIAL INORGANICS - metals

PRELIMINARY RESULTS REPORT
DATE: 12/11/86 PAGE NO: 9

PARAMETER	UNITS	62498033	62498034	62498035	62498036
Cadmium	mg/kg	1.8 (0.5)(0.4)	ND (0.5)(0.4)	ND (0.5)(0.4)	ND (0.5)(0.4)
Chromium	mg/kg	25 (0.5)	4.1 (0.5)	5.2 (1.)	4.9 (0.5)
Lead	mg/kg	18 (2.)	15 (2.)	19 (2.)	13 (2.)
Nickel	mg/kg	9.8 (1.)	6.8 (1.)	7.0 (1.)	3.1 (1.)

DRAFT

ROCKY MOUNTAIN ANALYTICAL LABORATORY
 DIVISION: INDUSTRIAL INORGANICS - metals

PRELIMINARY RESULTS REPORT
 DATE: 12/11/86 PAGE NO: 10

PARAMETER

UNITS

62498037

62498038

62498039

62498040

Cadmium
 Chromium
 Lead
 Nickel

mg/kg
 mg/kg
 mg/kg
 mg/kg

1.2 (0.5)(o.g)
 24 (0.5)
 37 (2.)
 42 (1.)

ND 0.5 (0.5)(o.g)
 11 (0.5)
 18 (2.)
 7.8 (1.)

ND (0.5)(o.g)
 9.1 (0.5)
 23 (2.)
 9.0 (1.)

ND (0.5)(o.g)
 7.5 (1.)
 19 (2.)
 7.6 (1.)

DRAFT