COMMODORE APPLIED TECHNOLOGIES INC
Form 10-K
April 17, 2006

UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
WASHINGTON, D.C. 20549

FORM 10-K

[X] ANNUAL REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934

For the fiscal year ended December 31, 2005

OR

[ ] TRANSITION REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934

Commission file number 1-11871

Commodore Applied Technologies, Inc.
(Exact Name of Registrant as Specified in Its Charter)

Delaware	11-3312952
(State or Other Jurisdiction of Incorporation or Organization)	(I.R.S. Employer Identification No.)
150 East 58th Street, Suite 3238 New York, New York	10155
(Address of Principal Executive Offices)	(Zip Code)

Registrant's telephone number, including area code: (212) 308-5800

Securities registered pursuant to Section 12(b) of the Act:

Title of Each Class	Name of Each Exchange on Which Registered
Common stock, par value $0.001 per share	NASD Over the Counter Bulletin Board (OTCBB)

Securities registered pursuant to Section 12(g) of the Act: Not Applicable

Indicate by check mark if the registrant is a well-known seasoned issuer, as defined in Rule 405 of the Securities Act.
Yes [ ] No [X]

Indicate by check mark if the registrant is not required to file reports pursuant to Section 13 or Section 15(d) of the Exchange Act.
Yes [ ] No [X]

Indicate by check mark 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 [X] 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 definitive proxy or information statements incorporated by reference in Part III of this Form 10-K or any amendment to this Form 10-K. [ ]

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, or a non-accelerated filer. See definition of "accelerated filer and large accelerated filer" in Rule 12b-2 of the Exchange Act.

Large accelerated filer [ ] Accelerated filer [ ] Non-accelerated filer [

Indicate by check mark whether the registrant is a shell company (as defined in Rule 12b-2 of the Exchange Act).

Yes [ ] No [X]

As of March 31, 2006, the aggregate market value of the registrant's common stock held by non-affiliates of the registrant was $1,864,680.19 based upon the last sale price of the common stock on March 31, 2006 as reported by the NASD Over the Counter Bulletin Board.

Class	Outstanding at April 15, 2006
[Common Stock, $0.001 par value per share]	7,948,216 shares

DOCUMENTS INCORPORATED BY REFERENCE

None

COMMODORE APPLIED TECHNOLOGIES, INC.

ANNUAL REPORT ON FORM 10-K
FOR THE FISCAL YEAR ENDED DECEMBER 31, 2005

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Preliminary Note Regarding Certain Risks and Forward-Looking Statements

This Annual Report on Form 10-K contains "forward-looking statements." These forward-looking statements can generally be identified as such because the context of the statement will include words such as the Company "believes," "anticipates," "expects" or words of similar import. Similarly, statements that describe the Company's projected future results, future plans, objectives or goals or future conditions or events are also forward-looking statements. Actual results are inherently difficult to predict. Any such forward-looking statements are subject to the risks and uncertainties that could cause actual results of operations, financial condition, acquisitions, financing transactions, operations, expenditures, expansion and other events to differ materially from those expressed or implied in such forward-looking statements. Any such forward-looking statements would be subject to a number of assumptions regarding, among other things, future economic, competitive and market conditions generally. Such assumptions would be based on facts and conditions as they exist at the time such statements are made as well as predictions as to future facts and conditions, the accurate prediction of which may be difficult and involve the assessment of events beyond the Company's control.

Further, the Company's business is subject to a number of risks and uncertainties that would affect any such forward-looking statements. These risks and uncertainties include, but are not limited to:

- the Company's critical need for additional cash to sustain existing operations and meet existing obligations and capital requirements (the Company's auditor's opinion on our fiscal 2002, 2003, 2004 and 2005 financial statements contains a "going concern" qualification in which they express doubt about the Company's ability to continue in business);
- the ability to generate profitable operations from a large scale remediation project;
- the ability of the Company to implement its waste processing operations, including obtaining commercial waste processing contracts and processing waste under such contracts in a timely and cost effective manner.
- the timing and award of contracts by the U.S. Department of Energy for the cleanup of waste sites administered by it;
- the acceptance and implementation of the Company's waste treatment technologies in the government and commercial sectors;
- the Company's ability to obtain and perform under other large technical support services projects; developments in environmental legislation and regulation;
- developments in environmental legislation and regulation;
- the ability of the Company to obtain future financing on favorable terms;
- other circumstances affecting anticipated revenues and costs;
- the expiration of the Company's nationwide EPA permit in September 2001 (The Company believes that the permit may be renewed subject to providing additional information. The Company has not

resubmitted information for a new permit); and

- the ability of the Company to replicate on a large scale, economically viable basis, the results of its technology test results.

These risks and uncertainties could cause actual results of the Company to differ materially from those projected or implied by such forward-looking statements.

PART I

ITEM 1. BUSINESS

GENERAL

Commodore Applied Technologies, Inc. (the "Company") is an environmental solutions company offering a range of engineering and technical services to the public and private sectors related to (i) providing services related to, environmental management for on-site and off-site identification, investigation remediation and management of hazardous, mixed and radioactive waste and (ii) remediating contamination in soils, liquids and other materials and disposing of or reusing certain waste by-products by utilizing our Solvated Electron Technology ("SET(TM)").

The Company's corporate mission is to serve the environmental remediation market from its primary operating center to profitably provide government and industry with engineering and remediation solutions to legacy waste environmental problems. Our strategy focuses the Company on the unique and high profit niches of hazardous materials conversion and waste remediation.

The Company believes that SET is the only patented, non-thermal, portable and scalable process that is currently available for treating and decontaminating soils, liquids and other materials containing PCBs, pesticides, dioxins, chemical weapons and warfare agents and other toxic contaminants.

Demand for our environmental technologies is anticipated to arise principally from the following sources:

- Stricter legislation and regulations mandating new or increased levels of air and water pollution control and solid waste management; and

- the need for alternative environmental treatment and disposal methods for toxic substances (such as the SET technology), which involve limited safety risks with respect to air pollution and transportation of hazardous materials and do not result in large volumes of residual waste that require further treatment prior to disposal.

Our business strategy is to expand our environmental technologies businesses by:

- establishing additional collaborative joint working and marketing arrangements with established engineering and environmental service organizations to pursue commercial opportunities in the public and private sector; and

- implementing the SET technology in selected niche markets within

certain strategic environmental market segments, such as government mixed waste remediation and chemical weapons demilitarization.

The Company currently has identified two operating segments. These two segments are as follows: Commodore Advanced Sciences, Inc., which primarily provides various engineering, sampling, and public relations services to Government agencies on a fixed rate and lump sum basis; and Commodore Solutions, Inc., which is commercializing technologies to treat mixed and hazardous wastes.

The Company currently requires additional cash to sustain existing operations and to meet current obligations and ongoing capital requirements. The Company's current monthly operating expenses exceed cash revenues by approximately $80,000 at December 31, 2005.

The report of our independent registered public accounting firm on our fiscal 2003, 2004 and 2005 consolidated financial statements contains a "going concern" qualification in which they express substantial doubt about our ability to continue in business.

Additional information regarding the business of each segment is set forth below, and the information in Note 16 to the Company's Consolidated Financial Statements included in this Annual Report on Form 10-K is incorporated into this Part I by reference.

The Company was incorporated in Delaware in March 1996. As used in this Annual Report, and except as the context otherwise requires, the "Company" means Commodore Applied Technologies, Inc. and its subsidiaries, including Commodore Solutions, Inc., Commodore Government Environmental Technologies, Inc., and Commodore Advanced Sciences, Inc. The Company's principal executive offices are located at 150 East 58th Street, Suite 3238, New York, New York 10155, and its telephone number at that address is (212) 308-5800.

ENVIRONMENTAL MANAGEMENT--COMMODORE ADVANCED SCIENCES, INC.

The Company, through Commodore Advanced Sciences, Inc. ("Advanced Sciences"), provides specialized technical and project management products and services primarily to government-sector customers, including the Department of Energy ("DOE") and the Department of Defense ("DOD"), and also to private-sector domestic and foreign industrial customers. Advanced Sciences engages in all aspects of environmental regulation and compliance, as well as access to leading technologies and innovative skills related to the identification, investigation, remediation and management of hazardous, mixed and radiological waste sites. Advanced Sciences currently operates a network of three offices located in three states, with its principal executive offices located in Richland, Washington.

The Company's strategy in acquiring Advanced Sciences in 1996 was to incorporate its process technology into the products and services offered to Advanced Sciences' customers, with a view to increasing the quality and scope of services offered and providing the Company with a broader customer base for its technology.

Services

Environmental Services. Advanced Sciences is a nationwide firm specializing in environmental engineering and technical support and waste management. Advanced Sciences was acquired by the Company in 1996 and is headquartered in Richland, Washington. Advanced Sciences operates out of three offices across the country, and qualifies as a small business under seven NAICS

codes. Advanced Sciences employs over 30 professionals who are expert in providing environmental sample collection, transportation, and analyses, meeting rigorous quality assurance requirements for data validation, while performing in accord with equally rigorous personnel health and safety requirements. Advanced Sciences currently has ten commercial analytical laboratories under contract to provide environmental sample analyses in support of regulatory compliance and industrial hygiene.

Advanced Sciences' record of program management and technical services include:

- Environmental Site Restoration Planning
- D & D Planning & Implementation Support
- Preliminary Assessments/Site Investigations
- Waste Minimization
- Environmental Audits & Assessments
- Health & Safety Oversight & Planning
- Underground-Storage-Tank Site Investigation
- Biological Sampling and Characterization
- Environmental Impact Assessments & Statements & Remediation
- Structural Engineering Analysis
- Remedial Investigations/Feasibility Studie
- Deconstruction Planning
- Environmental Pollution Control
- Regulatory Compliance
- Hazardous, Radioactive, Toxic & Mixed-Wast
- Federal & State Agency Coordination Management Including Treatment
- Public Involvement Support
- Hazardous Waste Site Remediation

The two most significant clients Advanced Sciences has had over the past 10 years have been the Department of Defense (DOD) and the Department of Energy (DOE), while also providing services to private industry. Advanced Sciences' largest office provides environmental characterization and management, building decontamination and decommissioning (D&D), environmental protection, remediation, restoration, safety & health, and environmental regulatory compliance for the Department of Energy's Oak Ridge Complex.

Advanced Sciences has 31 technical staff, all extensively trained in proper procedures for handling multifarious waste materials and environmental media. Advanced Sciences' technical staff have more than 500 years of combined experience performing environmental and waste sampling tasks. Ten of our personnel hold DOE security clearances.

All Advanced Sciences' sampling personnel maintain currency in the following minimum training requirements:

- OSHA 40-hour Hazardous Waste Operations and Emergency Response (HAZWOPER)
- OSHA 8-hr Annual HAZWOPER Refresher
- OSHA HAZWOPER Supervisor
- Hazard Communication (HAZCOM)/Hazardous Materials Information System (HMIS) training

- Radiation Worker II

- First Aid/CPR
- Annual Medical Monitoring
- Respirator Fit Testing
- General Safety
- Hazardous Energy Control (Lockout/Tagout)
- Work Control Process
- Excavation/Penetration Permit
- Construction Equipment Inspection & Maintenance Program
- Hotwork (welding safety)
- Confined Space Program
- Asbestos and Other Fibrous Materials
- Chronic Berylium Disease Prevention
- IATA Dangerous Good Awareness Certificate
- Workplace Substance Abuse Prevention Program participation

From 1996-2002, Advanced Sciences performed waste characterization sampling and decontamination and decommissioning (D&D) support sampling in compliance with RCRA and CERCLA requirements. The Advanced Sciences' Sample Team operated in the most hazardous locations at Rocky Flats--highly contaminated radioactive and hazardous areas, including glove boxes, confined-space conditions, and poisonous atmospheres--with zero lost-time accidents or injuries. The Advanced Sciences' Sample Team was in compliance with all Occupational Safety and Health Act of 1970 (OSHA), U. S. Environmental Protection Agency (EPA), and DOE requirements, including conduct of operations, nuclear/criticality safety, waste generator/certification, and material handling/safety requirements.

From 1996-2002, Advanced Sciences performed the Rocky Flats Environmental Technology Site (RFETS) site-wide surface water sampling program, which included collection of year-round daily samples from streams, ponds, and the site Sewage Treatment Plant (STP) in compliance with the National Pollutant Discharge Elimination System (NPDES) Permit. Advanced Sciences' personnel also collected drinking water, sediment, and soil samples for Safe Drinking Water Act of 1974 (SDWA) and Rocky Flats Cleanup Agreement (RFCA) compliance.

From 1996 to present, Advanced Sciences' water resources personnel have managed and performed the Chatfield Basin Water Quality Monitoring Program involving all major and minor tributaries of the South Platte River in the Chatfield Basin Watershed, as well as water quality monitoring of Chatfield Reservoir, located southwest of Denver, CO. Data are reported monthly to the Chatfield Watershed Authority and annually to the U. S. Army Corps of Engineers (USACE) and the state of Colorado Water Quality Control Commission (WQCC). Advanced Sciences has procured and managed all analytical services for this project, involving five different laboratories per year. Advanced Sciences personnel perform laboratory audits, resolution of data quality objective (DQO) and QA issues, data management and reporting, and accruals and invoicing involving the labs.

Remediation Services. Having already established a market position in the consulting and front-end analysis phase, Advanced Sciences is poised to follow market demand into remediation services. After an environmental problem is identified, Advanced Sciences offers alternative remediation approaches that may involve providing on-site waste containment or management of

on-site/off-site remediation and waste removal. Advanced Sciences can also redesign its customers' ongoing production processes and develop engineering plans and technical specifications to minimize or eliminate the generation of hazardous waste. The Company believes that Advanced Sciences' integration of engineering and environmental skills, plus its access to innovative technologies, provide Advanced Sciences with a competitive advantage in redesigning production processes.

Technical Services. New technologies play a critical role in both the remediation of existing waste sites and in the reduction of waste generated by ongoing production processes. Advanced Sciences has access to the SET technology and all its derivatives. Additionally, Advanced Sciences has access to the Supported Liquid Membrane ("SLiM(TM)") technology held by Commodore Separation Technologies, Inc. ("Separation"). This technology has the ability to selectively extract heavy metals and radioactive nuclides from liquids and gasses. The SLiM technology is held in an 85% owned subsidiary of Commodore Environmental Services, which owns 4.95 % of the Company. Advanced Sciences has at its disposal, on a per project basis, what it believes are among the most qualified professionals in the environmental consulting business. Advanced Sciences' scientists have participated on national boards for risk assessment and quality assurance, were instrumental in the development of environmental regulations for the DOE and the DOD, and have served as expert witnesses before the U.S. Congress and the Nuclear Regulatory Commission. To maintain its competitive position, Advanced Sciences intends to continue to develop viable remediation technologies and attract and retain qualified personnel.

Contracts

EDAM - Advanced Science was awarded an Environmental Data Acquisition and Management contract ("EDAM") by Bechtel Jacobs Company LLC of Oak Ridge, TN ("BJC") in September 2004. Advanced Sciences is the lead small business member of the Commodore Advanced Sciences Team ("CAST"), which also includes team members Science Applications International, Inc. (SAIC), and RCS Corporation (RCS).

CAST is currently performing and managing the EDAM contract. This is a 4-year, $21 million contract that includes sampling, sample management, and data management of environmental surveillance and regulatory compliance data. EDAM is a program that supports nearly all of DOE-OR environmental monitoring and accelerated site closure activities. This program is continuously monitored and audited for safety, quality, productivity, efficiency, and value to BJC and DOE-OR.

As part of the routine performance of this contract, CAST coordinates work with multiple organizations, including other BJC Subcontractors such as:

- Safety and Ecology Corporation for radiological control support,
- Duratek Federal Services for Y-12 Surveillance and Maintenance Program maintenance and Environmental Management Waste Management Facility (EMWMF) monitoring,
- other samplers (e.g., Biological Monitoring and Abatement (BMAP) samplers at Oak Ridge National Laboratory (ORNL), BWXT samplers),
- Y-12 National Security Complex Waste Operations, and
- WesKem, LLC, and other Decontamination & Decommission contractors on Site Closure projects.

Sampling activities under the EDAM contract include collection of multiple sample types from hundreds of monitoring locations and packaging and shipping of samples to appropriate analytical laboratories for analysis.

Locations and environments include abandoned burial grounds and hazardous waste sites, fields and forests, streams, lakes, and ponds. Sampling tasks support a variety of ongoing monitoring programs, including the Water Resource Restoration Program (WRRP) to determine the effectiveness of remedial actions conducted under CERCLA and the ETTP Environmental Monitoring Program. Regulatory compliance data acquisition and management projects include Resource Conservation and Recovery Act (RCRA) and National Pollution Discharge Elimination System (NPDES) permit compliance, the Biological Monitoring and Abatement Program, and Stormwater Pollution Prevention Program (SWPPP) activities. All of these compliance sampling programs are closely monitored by regulators, stakeholders, BJC, and DOE-OR.

Advanced Sciences maintains a daily log of all sampling and inspection activities, and formal records of all monitoring and inspection activities. CAST has subcontracted laboratories participating in the DOE Consolidated Audit Program (DOECAP) to provide acceptable data from both chemical and radiological analyses within the client's requested timeframe. Subcontracts have also been established with laboratories capable of performing biological species identification and enumeration.

The Company believes the EDAM contract may attract more DOE client groups than are contemplated in the base scope of the contract. The Company is seeking to extend its environmental monitoring service capabilities to other DOE sites, such as Portsmouth, OH and Paducah, KY. The current contract backlog for work is $9.7 million in 2006.

Duratek- Advanced Sciences was awarded a one-year contract from Duratek Federal Services, Inc. beginning in January 2005, which was renewed in January 2006 for an additional one-year period, to perform environmental monitoring services at two engineered landfills on the Oak Ridge Reservation. Environmental monitoring services will include sample collection, packaging and shipping to offsite analytical laboratories. Samples will be collected from surface water, groundwater, and landfill leachate collection locations on storm event, weekly, monthly, and quarterly bases.

UT Battelle: Advanced Sciences provides one engineering person on a time and material basis to UT Battelle, supporting the site closure at Oak Ridge National Laboratories (ORNL). The Advanced Sciences personnel provide structural engineering assessment services under this contract. The time and material contract remains on-going through 2006.

Denver Regional Water Council of Governments: Advanced Sciences is contracted annually to sample surface waters, streams, groundwater wells and watersheds to Chatfield Watershed Authority located southwest of Denver. The contract is ongoing through 2006. A similar and ongoing contract for Cherry Creek Basin Water Authority is also ongoing.

Tetra Tech Contract: Advanced Sciences provides engineering support under Tetra Tech's general engineering support contract with Bechtel Jacobs Co, LLC. Bechtel Jacobs is responsible for environmental oversight of the U.S. DOE's Oak Ridge, TN site. Advanced Sciences provides 1 to 3 engineering personnel on a time and material basis to Tetra Tech on a contract basis which is expected to continue through June 30, 2006.

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WESKEM - Advanced Sciences was awarded a one-year contract in March 2005 from WESKEM LLC., of Oak Ridge to support their sampling efforts with the Waste Disposition Services Project. The Sample Management Office (SMO) services required to meet the needs of this project are: (i) Assistance with the preparation of analytical statement of works (SOW), (ii) Maintenance of

laboratory performance metrics, (iii) Procurement of best value laboratories, (iv) Performance of contract verification of data, and (v) Tracking of samples and sample residue. This contract is ongoing and has been extended through September 2006.

Joint Ventures

Nuvotec, Inc., Joint Venture. In April 2002, Commodore Government Environmental Technologies, Inc. ("Government Technologies"), a wholly-owned subsidiary of the Company, entered into a LLC agreement with Technical Resources International, Inc., ("TRI"), a wholly owned subsidiary of Nuvotec, Inc., as a non-exclusive means by which each party (and their affiliates) could pursue mixed waste treatment contracts on a limited, domestic basis. TRI is a provider of contract services to the DOE and to the public utilities market. The purpose of the joint venture, known as Nuvoset, LLC (the "Nuvoset LLC"), a Delaware limited liability company, encompassed all aspects of mixed waste characterization, treatment, storage, transportation and disposal through the use, application and commercialization of the technologies of the Nuvotec LLC partners. The Nuvoset, LLC was dissolved in 2003 by agreement between the parties.

SOIL DECONTAMINATION--COMMODORE SOLUTION TECHNOLOGIES, INC.

The Company, through Commodore Solutions, Inc. ("Solutions"), has developed and has commercialized its patented process known as SET. Based on the results of its extensive testing and commercial processing activities, the Company believes that SET is capable of effectively treating and decontaminating soils and other materials, including sludges, sediments, oils and other hydrocarbon liquids, metals, clothing and porous and non-porous structures and surfaces, by destroying PCBs, pesticides, dioxins, chlorinated substances and other toxic contaminants to an extent sufficient to satisfy current federal environmental guidelines. The Company also believes that, based on the results of additional tests, SET is capable of neutralizing substantially all known chemical weapons materials and warfare agents, explosives and concentrating certain radioactive wastes for more effective disposal.

The Company's smallest SET systems are bench scale, capable of treating materials in up to one kilogram quantities utilized in laboratory tests and feasibility studies. This equipment has been shipped to third party facilities with permits to receive and test radioactive materials, such as Mountain States Analytical Laboratories. In 1995 the Company constructed two mobile, trailer mounted treatment systems. These systems are capable of being mobilized to waste sites and operated to test SET's applicability at actual waste sites, such as New Bedford Harbor, MA and Port Hueneme, CA. The Company's first pilot scale system, the S/4, was constructed in 1995. It was used to test larger masses of heterogeneous contaminated materials, up to 500 pounds per batch.

In December 1995, the Company received its first commercial contract for application of the SET technology. The Company teamed with Ionics RCC in Bellevue, WA to apply their combined processes to the potential remediation of 18,000 cubic yards of PCB contaminated sediments dredged from the Acushnet River and stored at the New Bedford Harbor Superfund Site. Ionics RCC's B.E.S.T.

process solvent-extracted contaminants from the sediments, leaving a highly contaminated heavy residue which was successfully treated by SET. The residue contaminants included PCBs with levels as high as 70,000 ppm, as well as dibenzodioxins and dibenzofurans with toxic equivalents as high as 35,000 ppt. The tests were performed as part of a treatability study to determine which of three alternatives were more economically feasible - thermal desorption,

vitrification, and the Company's SET process. Foster Wheeler Environmental Corporation, who conducted the tests at the site for EPA, concluded in its formal report that SET was effective and more economical than the other processes.

In early 1996, the Company began construction of its first commercial scale SET system, the L1200, at a previously rented facility in Marengo, Ohio. This machine is capable of treating 1200 gallons of contaminated liquids per day. In July, 1997, this machine was demonstrated to EPA as a chemical destruction system for PCBs. In the tests conducted, waste oils contaminated with PCBs at levels exceeding 20,000 ppm were consistently rendered non-detectable for PCBs. The nationwide EPA operating permit was issued for this machine as a result of the test program. Two of these units have been constructed.

In September 1996, the Company's SET technology was selected as one of ten innovative technologies to participate in the Department of Commerce's Rapid Commercialization Initiative. The Department of Defense provided a test site at the Navy Construction Battalion base at Port Hueneme, CA. Various test matrices from several facilities around the world were provided for SET processing. Included were materials contaminated with pesticides and PCBs, as well as activated charcoal - the by-product of a soil washing process. The Company mobilized its mobile 15 liter reactor system (CMDU2) to the site, and was successful in treating six solid matrix waste streams.

In September 1997, the Department of Energy ("DOE") contacted the Company regarding a application of the SET process at its Weldon Spring Superfund Site near St. Louis, MO. Through its Project Management Contractor, MK-Ferguson, the Company was contracted to treat 40 drums of materials contaminated with PCBs, pesticides, uranium/thorium, and various RCRA materials including MEK, benzene, TCE, and TCA. The Company mobilized its S/4 unit to the Weldon Spring site and successfully treated this material to CERCLA requirements for on site land disposal. During the project, in late March of 1998, Commodore once again successfully demonstrated the process to EPA.

In 1999 the Company constructed a mobile system capable of treating many matrices in up to 100 pound batches; the SL-2. It was specifically designed and built as a stand alone skid mounted system, requiring only electrical hookup for operation enabling the SL-2 to may be shipped in sea land containers or on a single truck. This system has operated at three rad/RCRA/TSCA permitted facilities, successfully treating low-level mixed wastes.

In 1999 the Company introduced its largest current commercial SET system, the S-10, capable of treating various matrices in batch sizes of up to 3,500 pounds with throughputs up to 1 ton per hour. The S-10 was first used to treat PCB contaminated soils for a Department of Defense ("DOD") site in Harrisburg, Pennsylvania (project completed in July, 2001).

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In October 1999 the Company's SL-2 treatment system was shipped to the Rad/RCRA/TSCA permitted Waste Control Specialists LLC site near Andrews, TX, where it successfully treated Freon still bottoms and other miscellaneous matrices, including NaK, that were also contaminated with LLRW. This was a commercial application, resulting in the removal of RCRA components such that over 4,000 pounds of treated materials could be subsequently buried at the Envirocare Utah facility.

In February 2000 the Company's SL-2 treatment system was utilized in a treatability study at the Envirocare Utah facility. The solid waste provided for the treatability study contained low-level radioactive sludge contaminated with

RCRA listed halocarbons. The SET process was very effective in removing the RCRA materials to sub-ppm quantities, well below regulatory levels for land disposal.

The SET process was commercialized during the calendar year 2000. In May 2000, the Company mobilized its S-10 system to Harrisburg, Pennsylvania to begin processing PCB contaminated soils at the Pennsylvania Air National Guard's base located at the Harrisburg International Airport (the "Initial Harrisburg Contract"). The Company completed the contract in July 2001, remediating approximately 340 tons of excavated soils to levels deemed unregulated for disposal by the U.S. Environmental Protection Agency (the "EPA"). The Company believes this is the first time a non-thermal process has treated PCB-contaminated soils to levels allowing them to be replaced in the original excavation.

Additionally, the Company performed several treatability studies for third party customers during 2000, as well as continued internal testing and process development. At Envirocare of Utah ("Envirocare"), the SET process successfully treated water treatment sludge from a waste stream provided by the Brookhaven National Laboratory (the "Envirocare Study"). Under current, non-Commodore technology treatment processes at Envirocare, this waste could not be treated to meet land disposal regulation requirements. The waste stream was a laboratory mixed waste (radioactive) sludge, contaminated with lead and high levels of RCRA organic compounds. The Envirocare Study waste contained the hazardous waste codes F001, F003, F005, and D008. The Envirocare Study waste stream also contained high water content, approximately 75%. The Company successfully treated the material such that it was suitable for land disposal. The results of the Envirocare Study were presented to the participants of the Waste Management Conference in Tucson, Arizona in February 2001. In the case of third party treatability studies, customer location processing and new patent data set construction, all tests and processing results were verified by independent laboratories agreed upon by the Company and/or the respective client. In the case of internal Company process development testing, results were verified with Company owned analytical equipment in addition to periodic independent off-site testing.

In January 2001 the Company entered into a contract with Waste Control Specialists, LLC ("WCS") for the treatment of various mixed waste streams stored at the WCS facility near Andrews, Texas. This work employed the Company's SL-2 SET system and was completed in August 2001. No large scale waste treatment was performed at this site. The contract was terminated by the Company because of the failure of WCS to obtain a waste treatment permit in a timely manner in 2003 and all of the Company's SET equipment was removed from the WCS site.

In November 2001 the Company entered into a contract with American Ecology Recycle Center ("AERC", Oak Ridge, Tennessee) for the treatment of 32 drums of Freon still bottom mixed wastes, as well as consultation regarding the regulatory requirements for the treatment. Work commenced in November, employing the Company's SL-2 SET system, and was essentially completed in 2002. As an

adjunct to that work, the Company entered into a contract with the University of California (prime contractor for the Department of Energy's Los Alamos National Laboratory) in March 2002 to dispose approximately 12,000 pounds of activated sodium remaining from tests involving the Clinch River Breeder Reactor performed by Rensselaer Polytechnic Institute twenty five years ago. The Company believes this is the first time activated sodium (Na22) has been employed as a reactant to treat other regulated waste materials (the AERC still bottoms).

In July 2002 the Company acquired all the SET equipment formerly associated with Teledyne-Commodore LLC. The Company plans to utilize this

equipment for treating Department of Energy ("DOE") legacy mixed waste materials for disposal at major DOE sites in the United States. The Company has not utilized this equipment to date.

In October 2003 the Company entered into a contract with ToxCo Metals, ("ToxCo"), Oak Ridge. Advanced Sciences, teamed with ToxCo, was performing sodium disposition for the Department of Energy at ToxCo's facility in Oak Ridge, Tennessee. This contract commenced late in 2003, and was expected to be completed late in 2004. The DOE canceled the contract in late 2004 because they determined that the sodium was subject to the Secretary of Energy's moratorium on releasing scrap metals for recycling.

In December 2003 the Company entered into a contract with Envirocare of Utah ("Envirocare"), Clive, Utah for the treatment of mixed wastes, as well as consultation regarding the regulatory requirements for the treatment. Preliminary feasibility testing commenced in March 2004, employing the Company's SL-2 SET system. The Company is hopeful this may result in the first multi-year installation and contract for the SET technology but no commercial work has resulted to date.

The Company has generated aggregate revenues of less than $1,600,000 from the implementation of the SET technology since 1999.

The SET Technology

Beginning in the early 1980's, a small research and development company, A. L. Sandpiper Corporation, began experimenting with solvated electron solutions using a different approach from that applied in laboratories for decades.

In addition to the usual surrogates and spiked laboratory materials, Sandpiper also obtained and experimented with actual contaminated soil samples using bench scale metal pressure vessels. Sandpiper improved the process, discovered that it could be applied to many recalcitrant remediation problems, and obtained several U.S. patents for the application of solvated electron solutions (the "SET" technology) to environmental cleanup. Sandpiper was acquired by Commodore Environmental Services, Inc., in 1993. Since then Commodore Environmental Services and Commodore Applied Technologies have invested additional resources in the technology, developing it into commercial application.

The process is based upon a chemical phenomenon discovered by Sir Humphrey Davy in 1865, shown below for the liquid phase of a sodium and potassium solution:

$$Na(0) + K(0) \quad \xrightarrow{NH(3)} \quad Na^+ + K^+ + 2e^- \text{ (the solvated solution)}$$

The solution has been called solvated electrons since the dissolved metal releases electrons to the solution in huge numbers. These electrons, also know as free radicals, are the most powerful reducing agents known, quickly reacting with many compounds. Most of the alkali metals readily dissolve in anhydrous ammonia releasing their valance electrons into the ammonia in a relatively rare but stable state unassociated with any atom. In this state, both the electrons and the metal atoms are available to react with other elements and compounds.

The SET technology, which is based upon solvated electron chemistry, mixes anhydrous liquid ammonia and/or other similar solvents with reactive metals and contaminated elements to effect the selective destruction or

neutralization of organic compounds (such as PCBs, pesticides and dioxins). The Company has demonstrated that SET can achieve consistently high levels of contaminant destruction when working with PCBs, dioxins and pesticides. SET has treated soils containing up to 10,000 ppm of contaminants, and oils containing up to 250,000 ppm, leaving residual soils and oils with contamination levels of less than one ppm. In addition, SET has been successfully applied to other PCB-contaminated surfaces such as concrete. The SET process can be used in conjunction with selected post-treatment processes such that no hazardous or toxic residues will result from the use of SET, nor will there be any toxic emissions into the air, water, soils or other surfaces. For example, most contaminated soils treated with SET can (subject, in some instances, to re-blending the soil with organic matter) be used subsequently for planting or for any other use for which non-contaminated soils are appropriate.

Equipment utilized in the SET process consists of tanks, pumps and piping to handle anhydrous ammonia and other solvents in liquid and vapor forms, and treatment vessels for holding contaminated materials and for the introduction of solvating solutions. The system can be transported to field sites and configured in numerous sizes.

The SET process requires placing the contaminated materials into a treatment vessel where they are mixed with a solvent and charged with a base metal (e.g. sodium). The chemical reaction produces metal salts such as calcium chloride, calcium hydroxide and non-halogenated inert organics. The ammonia within the treatment vessel is then removed to a discharge tank for later reuse. The materials are removed, sampled for residual traces of PCB or other halogenated organic compounds, and placed in storage for disposal. In many cases, the decontaminated soil and metals can be replaced in their original location, recycled or reused. The solvents do not enter the chemical reaction, but merely serve as dissolving liquids for the solvated electron solution.

Operational Characteristics. Substantially all existing systems in use for the destruction of PCBs and other halogenated compounds involve incineration or other thermal processes, and either the permanent installation of highly complex and expensive incinerators and waste disposal equipment at the affected site, or the removal of contaminated materials to off-site facilities. The Company believes that SET represents an approach to resolving serious environmental remediation issues that does not create or entail the safety risks of air pollution and transportation of hazardous materials. The Company believes that SET is more effective than incineration and other destruction processes for toxic substances in that:

- SET does not emit toxic fumes into the atmosphere, as is sometimes the case with thermal or incineration methods;

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- SET is portable and can be moved directly to the contaminated site, thereby reducing the risk of off-site contamination;

- SET equipment can be customized and configured to address various treatment applications;

- SET's reaction time is substantially less than that of alternative processes, such as thermal destruction and other forms of chemical treatment;

- SET equipment can be installed and operated inside industrial plant facilities to treat hazardous wastes on line as a continuation of the manufacturing process;

- SET, when used to treat soils, yields nitrogen-enriched soils that can be reused on-site, avoiding replacement and the post-treatment costs of off-site disposal; and

- SET has been shown to neutralize or destroy all chemical weapons material and warfare agents in the United States stockpile, and Lewisite (the primary chemical weapons material and warfare agent of the former Soviet Union), in tests conducted by an independent, federally certified surety laboratory.

The Company believes that SET is the only technology currently available that possesses all of these features and is capable of treating a wide variety of contaminants. The above characteristics (non-thermal, no air emissions, mobile) are particularly applicable when dealing with mixed waste. Wastes that contain radioactive material and hazardous waste regulated by RCRA and TSCA are particularly difficult to treat and have extremely limited disposal options. By applying the SET process to remove the RCRA and TSCA components, leaving only radioactive waste material, disposal options expand. SET not only removes the hazardous components but also does so by an efficient, non-thermal process that can control and contain the radioactive material so that it remains in the treated material and does not enter the environment in an uncontrolled fashion.

EPA Nationwide Permit. In order to treat PCBs within the United States on all non-Superfund sites, a treating entity must obtain a permit from the EPA. Most EPA permits granted to date for PCB destruction are solely for single-site incineration treatment centers. In August 1995, SET was demonstrated to the EPA in order to obtain the Nationwide Permit, which was issued to the Company in March 1996. The permit authorized treatment of soils at contamination levels greater than 1,000 ppm PCBs, and also authorized treatment of miscellaneous metallic materials. Commodore's initial EPA Nationwide Permit was the first (and only) to be issued for nationwide use as a totally enclosed, non-thermal, chemical destruction process for PCB contaminated organic material. The test results, confirmed by EPA's contract program laboratory, indicated organics contaminated with weathered PCBs exceeding 5,000 ppm, were treated to non-detect levels of PCBs. In addition to soil treatment, the Nationwide Permit allows the Company to treat PCB contaminated metallic surfaces and waste oils, as well as wastewater (the wastewater is treated by a non-SET process). The Company has also successfully demonstrated SET as a treatment process for organic materials contaminated with PCBs and radionuclides and has received a draft revised EPA permit for these matrices. This permit revision covers the destruction of PCBs in soils, waste oils, organic materials, water, and on metallic surfaces.

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The Nationwide Permit expired in September 2001, and may be renewed subject to providing any requested additional information to the EPA at the time of renewal.

Based on currently published lists of EPA national operating permits, the Company believes that it possesses the only non-thermal PCB treatment technology for multiple applications permitted under the EPA's Alternate Destruction Technology Program. EPA regulations governing permitting have been in effect for more than 15 years, and according to the latest EPA published list of non-thermal destructive processes, only seven companies have met EPA's stringent requirements for commercial operation. Of these, only the Company is permitted for the chemical destruction of such a wide range of PCB contaminated materials. The EPA's Alternative Destruction Technology Program is designed to encourage remediation technologies as an alternative to incineration.

Test Results. The Company has performed treatability studies and actual

commercial applications of the SET process that have resulted in successful treatment of over 120 regulated compounds. In more than 1,500 tests using SET, various high levels of contaminants, including PCBs, were reduced to levels approaching non-detectable with the destruction process occurring in a matter of minutes.

The Company has performed various treatability studies and processed commercial quantities of waste utilizing the SET process. This activity has resulted in the successful treatment of over 120 regulated compounds. Additionally, the Company has conducted several thousand tests of the SET technology on limited quantities of contaminated material, and there can be no assurance that SET will be able to replicate any of these test results on a large-scale commercial basis or on any specific project.

The following test results of the Company's SET technology are provided below from the analytical results from several of the treatability studies and commercial applications mentioned above.

Destruction of Organics by the SET Technology in Various Solid Materials

Source of Material	Analyte	Material Type	Pre Treatment (mg/kg)	Pos
Harrisburg, PA	PCB	Sand, clay	777	