

PROSPECTUS
Common Stock
2,392,334 Shares

CECO ENVIRONMENTAL CORP.

This Prospectus relates to the sale of up to 2,392,334 shares of our common stock that may be offered for sale or otherwise transferred from time to time by one or more of the selling shareholders identified in this Prospectus. We are registering 1,000,000 shares of common stock and 1,392,334 shares of common stock that were or are issuable upon exercise of warrants or options of CECO Environmental Corp. ("CECO" or the "Company"). The prices at which the stockholders may sell the shares will be determined by the prevailing market price for the shares or in negotiated transactions. This is a secondary offering and we will not receive any of the proceeds from the sale of shares by the selling stockholders. Our common stock is traded on the Nasdaq SmallCap Market under the symbol "CECE". The closing sale price of the common stock on March 28, 2006 on the Nasdaq was \$9.05 per share.

THIS INVESTMENT INVOLVES A HIGH DEGREE OF RISK. THE SHARES SHOULD ONLY BE PURCHASED BY PERSONS WHO CAN AFFORD A COMPLETE LOSS. SEE "[RISK FACTORS](#)," BEGINNING ON PAGE 3.

NEITHER THE SECURITIES AND EXCHANGE COMMISSION NOR ANY STATE SECURITIES COMMISSION HAS APPROVED OR DISAPPROVED OF THESE SECURITIES OR DETERMINED IF THIS PROSPECTUS IS TRUTHFUL OR COMPLETE. ANY REPRESENTATION TO THE CONTRARY IS A CRIMINAL OFFENSE.

The date of this Prospectus is March 31, 2006.

OVERVIEW

CECO was incorporated in New York State in 1966 and reincorporated in Delaware in January 2002. We operate as a provider of air pollution control products and services. We market our products and services under the following trade names: “Kirk & Blum”, “kbd/Technic”, “CECO Filters”, “Busch International”, “CECO Abatement Systems”, and “K&B Duct”.

The Offering

This is a secondary offering on behalf of the listed selling shareholders and we will not receive any of the proceeds from the shares offered by the selling shareholders. We issued 1,000,000 of the shares of common stock described in this Prospectus to certain of the selling stockholders upon the exercise of warrants. These warrants had been acquired from us on December 7, 1999 in a private transaction and are considered “restricted securities” under the Securities Act of 1933 (the “Securities Act”). In December 2001, we received gross proceeds of \$2,250,000 from the exercise of these warrants.

On November 7, 1996, we issued warrants (the “750,000 Warrants”) to purchase 750,000 shares of common stock to our CEO, Phillip DeZwirek. These 750,000 Warrants have an exercise price of \$1.75 per share. We also issued to Mr. Phillip DeZwirek on September 14, 1998, warrants to purchase 250,000 shares of our common stock, at a purchase price of \$1.625 per share (the “250,000 Warrants”, and together with the 750,000 Warrants, the “DeZwirek Warrants”). All of the shares underlying the DeZwirek Warrants are included in this Prospectus. On January 6, 2006, Mr. Phillip DeZwirek exercised the DeZwirek Warrants for an aggregate amount of \$1,718,750.

On December 31, 2001, we completed the sale of 706,668 shares of our common stock, at a price of \$3.00 per share, and the issuance of warrants (“Investor Warrants”) to purchase 353,334 shares of our common stock at an initial exercise price of \$3.60 per share, to a group of accredited investors led by Crestview Capital Fund L.P., a Chicago-based private investment fund (the “Investors”). As a finder’s fee pursuant to an agreement with The Shemano Group, we also issued warrants on December 31, 2001 to purchase 14,000 shares of our common stock at an initial exercise price of \$3.60 (such warrants collectively with the Investor Warrants, the “Warrants”) to five of the selling shareholders. All of the shares underlying the Warrants are included in this Prospectus. More information on the selling stockholders is provided in the section entitled “Selling Stockholders.”

We issued options (the “Options”) to purchase 25,000 shares of our common stock to Jason DeZwirek, at a price of \$2.01 per share, on April 5, 2002. All of the shares underlying the Options are included in this Prospectus. The Options were issued to Mr. Jason DeZwirek as compensation for his services to the Company. On January 6, 2006, Mr. Jason DeZwirek exercised his options for \$50,250.

The offering price of the shares will be determined at the time of sale by the selling shareholders. As of January 12, 2006, there were 11,018,260 shares outstanding, excluding the 367,334 shares that may be purchased by exercise of the Warrants. We intend to use the proceeds from the exercise of the Warrants, if exercised, held by certain selling shareholders for working capital purposes. The \$1,769,000 we received from the exercise of the DeZwirek Warrants and the Options was used to pay accrued interest, of which \$1,531,792 was capitalized, on two loans from Green Diamond Oil Corp., an affiliate of Phillip DeZwirek and Jason DeZwirek, each of whom is an officer and director of CECO.

The selling stockholders may sell the shares in public or private transactions, on or off the Nasdaq market, at prevailing market prices, or at privately negotiated prices. The selling stockholders may sell shares directly to purchasers or through brokers or dealers. Brokers or dealers may receive compensation in the form of discounts, concessions or commissions from the selling stockholders. The selling stockholders may be deemed to be “underwriters” within the meaning of the Securities Act. Any commissions received by a broker or dealer in connection with resales of the shares may be deemed to be underwriting commissions or discounts under the Securities Act. More information is provided in the section entitled “Plan of Distribution.”

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This Prospectus registers the shares of common stock under the Securities Act and allows for future sales by the selling stockholders to the public without restriction. We have agreed to pay for the preparation and filing of the registration statement and this Prospectus.

The principal office of CECO is 3120 Forrer Street, Cincinnati, Ohio 45209, telephone number (513) 458-2600.

RISK FACTORS

An investment in the shares being offered hereby involves a high degree of risk. In deciding whether to purchase shares of our common stock, you should carefully consider the following risk factors. INVESTING IN THESE SHARES IS SPECULATIVE AND INVOLVES A HIGH DEGREE OF RISK. THE SHARES SHOULD NOT BE PURCHASED BY ANYONE WHO CANNOT AFFORD THE LOSS OF THEIR ENTIRE INVESTMENT.

In addition to the other information on this Prospectus, the factors listed below should be considered in evaluating our business and prospects. This Prospectus contains a number of forward-looking statements that reflect our current views with respect to future events and financial performance. These forward-looking statements are subject to certain risks and uncertainties, including those discussed below and elsewhere herein, that could cause actual results to differ materially from historical results or those anticipated. In this report, the words “anticipates,” “believes,” “expects,” “intends,” “future” and similar expressions identify forward-looking statements. Readers are cautioned to consider the specific factors described below and not to place undue reliance on the forward-looking statements contained herein, which speak only as of the date of this Prospectus. We assume no obligation to publicly update any forward-looking statements.

Operating at a Loss

We have incurred net losses for our past 3 fiscal years. There are no assurances that we will achieve or sustain profitability.

Competition

The industries in which we compete are all highly competitive. We compete against a number of local, regional and national contractors and manufacturers in each of our product lines, many of which have been in existence longer than us and some of which have substantially greater financial resources than we do. We believe that any competition from new entrants that are large corporations may be able to compete with the Company on the basis of price and as a result may have a material adverse affect on the results of our operations. In addition, there can be no assurance that other companies will not develop new or enhanced products that are either more effective than ours or would render our products non-competitive or obsolete.

Dependence On Key Personnel

We are highly dependent on the experience of our management in the continuing development of our operations. The loss of the services of certain of these individuals, particularly Richard J. Blum, President of CECO, would have a material adverse effect on our business. Our future success will depend in part on our ability to attract and retain qualified personnel to manage our development and future growth. There can be no assurance that it will be successful in attracting and retaining such personnel. The failure to recruit additional key personnel could have a material adverse effect on our business, financial condition and results of operations.

Continued Control By Management

As of the date of this Prospectus, management of CECO beneficially owns approximately 56% of the Company’s outstanding common stock, assuming the exercise of currently exercisable warrants and options held

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by management. CECO's stockholders do not have the right to cumulative voting in the election of directors. Accordingly, present stockholders will be in a position to exert control over our business and operations, including the election of directors of CECO.

Dependence Upon Third-Party Suppliers

Although we are not dependent on any one supplier, we are dependent on the ability of our third-party suppliers to supply our raw materials, as well as certain specific component parts. We purchase all of our chemical grade fiberglass from one domestic supplier, which we believe is the only domestic supplier of such fiberglass, and certain specialty items from only two domestic suppliers. These items also can be purchased from foreign suppliers. Failure by our third-party suppliers to meet our requirements could have a material adverse effect on us. There can be no assurance that our third-party suppliers will dedicate sufficient resources to meet our scheduled delivery requirements or that our suppliers will have sufficient resources to satisfy our requirements during any period of sustained demand. Failure of manufacturers or suppliers to supply, or delays in supplying, our raw materials or certain components, or allocations in the supply of certain high demand raw components could materially adversely affect our operations and ability to meet our own delivery schedules on a timely and competitive basis.

Patents

We hold various patents and licenses relating to certain of our products. There can be no assurance as to the breadth or degree of protection that existing or future patents, if any, may afford us, that our patents will be upheld, if challenged, or that competitors will not develop similar or superior methods or products outside the protection of any patent issued to us. Although we believe that our products do not and will not infringe patents or violate the proprietary rights of others, it is possible that our existing patent rights may not be valid or that infringement of existing or future patents or proprietary rights may occur. In the event our products infringe patents or proprietary rights of others, we may be required to modify the design of our products or obtain a license for certain technology. There can be no assurance that we will be able to do so in a timely manner, upon acceptable terms and conditions, or at all. Failure to do any of the foregoing could have a material adverse effect upon our business. In addition, there can be no assurance that we will have the financial or other resources necessary to enforce or defend a patent infringement or proprietary rights violations action which may be brought against us. Moreover, if our products infringe patents or proprietary rights of others, we could, under certain circumstances, become liable for damages, which also could have a material adverse effect on our operations and cash flow.

New Product Development

The air pollution control and filtration industry is characterized by ongoing technological developments and changing customer requirements. As a result, our success and continued growth depend, in part, on our ability in a timely manner to develop or acquire rights to, and successfully introduce into the marketplace, enhancements of existing products or new products that incorporate technological advances, meet customer requirements and respond to products developed by our competition. There can be no assurance that we will be successful in developing or acquiring such rights to products on a timely basis or that such products will adequately address the changing needs of the marketplace.

Technological And Regulatory Change

The air pollution control and filtration industry is characterized by changing technology, competitively imposed process standards and regulatory requirements, each of which influences the demand for our products and services. Changes in legislative, regulatory or industrial requirements may render certain of our filtration products and processes obsolete. Acceptance of new products may also be affected by the adoption of new government regulations requiring stricter standards. Our ability to anticipate changes in technology and

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regulatory standards and to develop and introduce new and enhanced products successfully on a timely basis will be a significant factor in our ability to grow and to remain competitive. There can be no assurance that we will be able to achieve the technological advances that may be necessary for us to remain competitive or that certain of our products will not become obsolete.

Leverage

We are highly leveraged. CECO currently has loan facilities, including a term loan and line of credit, with Fifth Third Bank, which loan facilities were refinanced on December 28, 2005.

Our cash interest costs relate primarily to our revolving credit line and term loans; interest payments on the subordinated debt were not permitted under the previous credit agreement. Our loans are secured by substantially all of our assets and our ability to borrow additional amounts on a secured basis would be limited. On December 31, 2004, the principal balance of the notes owed to Green Diamond Oil Corp. ("Green Diamond") was increased for the unpaid accrued interest. The principal balance for the \$4,000,000 subordinated note was increased by the accrued interest of \$1,441,000 to \$5,441,000 and the principal balance for the \$1,200,000 subordinated note was increased by \$90,000 to \$1,290,000. The maturity date has been extended to April 1, 2007. The remaining interest accrued on these subordinated notes was \$372,352 at December 31, 2004 and \$1,218,000 at December 31, 2003. On January 6, 2006, Phillip DeZwirek exercised the DeZwirek Warrants and Jason DeZwirek exercised his Options. The aggregate amount of the proceeds, \$1,769,000, from the exercises was used to pay Green Diamond accrued interest, of which \$1,531,792 was capitalized, under both subordinated notes. Interest is charged on the revolving credit line at the bank's prime rate plus 2 percentage points and on the term loan the prime rate plus 2.25 percentage points. There are no scheduled increases in the fixed or variable rates on the credit facility, however; an increase or decrease in the prime rate would cause the Company's future interest expense and cash flows to increase or decrease proportionately.

Our Financial Performance Is Sensitive To Changes In Overall Economic Conditions

A general slowdown in the United States economy may adversely affect the spending of our customers, which would likely result in lower net sales than expected on a quarterly or annual basis. Future economic conditions, such as business conditions, fuel and energy costs, interest rates, and tax rates, could also adversely affect our business by reducing customer spending.

We May Need To Obtain Additional Financing

Management believes that with cash on hand and proceeds from expected sales that it has sufficient proceeds to meet cash requirements for the next twelve months.

However, we may need to raise additional funds to:

- Finance unanticipated working capital requirements;
- Pay for increased operating expenses or shortfalls in anticipated revenues;
- Fund increases in research and related expenditures;
- Develop new technology, products or services;
- Acquire rights to new products;
- Respond to competitive pressures; and
- Support strategic and industry relationships.

There is no assurance that additional financing will be available on terms acceptable to us, or at all. If adequate funds are not available to us then we may not be able to continue operations or take advantage of opportunities, or we may have to downsize our operations. If CECO raises additional equity funds, the percentage ownership of our stockholders will be reduced.

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Future Sales By Our Stockholders May Adversely Affect Our Stock Price And Our Ability To Raise Funds In New Stock Offerings

The selling stockholders intend to sell in the public market the shares of common stock being registered in this offering. Such sales may cause our stock price to decline. Sales may also make it more difficult for us to sell equity securities or equity-related securities in the future at a time and price that our management deems acceptable or at all. In addition to the DeZwirek Warrants, Phillip DeZwirek has warrants to purchase 1,250,000 shares of CECO common stock, which shares we are obligated to register upon demand. Should Mr. DeZwirek elect to sell such shares, such sales may cause our stock price to decline.

Our Financial Performance Is Sensitive to Changes in Overall Economic Conditions

A general slowdown in the United States economy may adversely affect the spending of our customers, which would likely result in lower net sales than expected on a quarterly or annual basis. Future economic conditions, such as business conditions, fuel and energy costs, interest rates, and tax rates, could also adversely affect our business by reducing customer spending.

International War and Possibility of Acts of Terrorism Could Adversely Impact Us

The involvement of the United States in the conflict in the Middle East or elsewhere or a significant act of terrorism on U.S. soil or elsewhere could have an adverse impact on us by, among other things, disrupting our information or distribution systems, causing dramatic increases in fuel prices thereby increasing the costs of doing business, or impeding the flow of imports or domestic products to us.

Risks Related to This Offering

A large number of shares of our common stock will become available for sale in the future, which may adversely affect the market price of our common stock.

The market price of our common stock could decline as a result of sales of a large number of shares in the market after this offering or the perception that these sales could occur. These factors also could make it more difficult for us to raise funds through future offerings of our common stock.

As of the date of this Prospectus, there are 11,188,680 shares of common stock outstanding, all of which will be freely transferable without restriction or further registration under the Securities Act.

Phillip DeZwirek, holder of warrants to purchase 1,250,000 shares of common stock, in addition to the 1,000,000 shares being registered hereunder with respect to the DeZwirek Warrants, has registration rights with respect to all of such 1,250,000 shares. If those registration rights are exercised, shares covered by a registration statement can be sold in the public market. Additionally, shares issued upon exercise of stock options issued under our stock option plan will be eligible for resale in the public market without restriction, which could adversely affect our stock price. Shares issued upon the exercise of other options and warrants could also occur, subject to limitations under Rule 144 of the Securities Act.

The market price of our common stock is highly volatile and may decline. Factors that could cause fluctuation in our stock price may include, among other things:

- actual or anticipated variations in quarterly operating results;
- an economic downturn in the manufacturing sector;
- announcements or cancellations of orders;
- changes in financial estimates by securities analysts;

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- conditions or trends in our industry;
- changes in the market valuations of other companies in our industry;
- the effectiveness and commercial viability of products offered by us or our competitors;
- the results of our research and development;
- announcements by us or our competitors of technological innovations, new products, significant acquisitions, strategic partnerships, divestitures, joint ventures or other strategic initiatives;
- additions or departures of key personnel; and
- sales of our common stock.

Many of these factors are beyond our control. These factors may cause the market price of our common stock to decline, regardless of our operating performance. In addition, stock markets have experienced extreme price volatility in recent years. This volatility has had a substantial effect on the market prices of securities issued by many companies for reasons that may be unrelated to the operating performance of the specific companies. These broad market fluctuations may adversely affect the market price of our common stock.

USE OF PROCEEDS

This Prospectus is part of a registration statement that permits selling shareholders to sell their shares. Because this Prospectus is solely for the purpose of selling shareholders, we will not receive any proceeds from the sale of stock being offered. If Warrant holders exercise their right to acquire common shares, we could receive proceeds of \$1,322,402.40, which would be used for working capital purposes. The proceeds of \$1,769,000 we received from the exercise of the DeZwirek Warrants and the Options were used to pay accrued interest owed Green Diamond pursuant to certain promissory notes, \$1,531,792 of which accrued interest was capitalized.

SELLING STOCKHOLDERS

The following table sets forth the selling stockholders, and the number of shares of common stock owned beneficially by them as of March 1, 2006, which may be offered pursuant to this Prospectus. This information is based upon information provided to us by either the named selling stockholder, our transfer agent or our review of Section 16(a) Reports. Because the selling stockholders may offer all, some or none of their respective shares of common stock, no definitive estimate as to the number of shares thereof that will be held by the selling stockholders after such offering can be provided. The term "selling stockholder" includes the stockholders listed below and their transferees, pledges, donees or other successors. Except as set forth in the table below, none of the selling stockholders is currently an affiliate of CECO, and none of them has had a material relationship with us during the past three years.

We issued 1,000,000 of the shares of common stock described in this Prospectus to certain of the selling stockholders, ICS Trustee Services, Ltd., Green Diamond and Harvey Sandler Revocable Trust, upon the exercise of warrants. These warrants had been acquired from us on December 7, 1999 in a private transaction and are considered "restricted securities" under the Securities Act. In December 2001, we received gross proceeds of \$2,250,000 from the exercise of these warrants.

On November 7, 1996, we issued warrants to purchase 750,000 shares of common stock to our CEO, Mr. Phillip DeZwirek. We also issued to Mr. Phillip DeZwirek on September 14, 1998, warrants to purchase 250,000 shares of our common stock. Mr. Phillip DeZwirek exercised all of these warrants for 1,000,000 shares on January 6, 2006. All of the 1,000,000 shares which were underlying such warrants are included in this Prospectus.

On December 31, 2001, we completed the sale of 706,668 shares of our common stock, at a price of \$3.00 per share, and the issuance of warrants ("Investor Warrants") to purchase 353,334 shares of our common stock at an initial exercise price of \$3.60 per share, to a group of accredited investors led by Crestview Capital Fund L.P., a Chicago-based private investment fund. These selling shareholders are Crestview Capital Fund L.P., Robert Geras, Steven Erlbaum, Erlbaum Family L.P., and the Friedman Investment Group.

On December 31, 2001, as a finder's fee pursuant to an agreement with The Shemano Group, we also issued warrants to purchase 14,000 shares of our common stock at an initial exercise price of \$3.60 to five of the selling shareholders, Gary J. Shemano, Michael Jacks, Bill and Mary Corbett, Brian Mikes and Jim Keener.

We issued options to purchase 25,000 shares of our common stock to Jason DeZwirek, at a price of \$2.01 per share, on April 5, 2002. The Options were issued to Mr. Jason DeZwirek as compensation for his services to the Company. Mr. Jason DeZwirek exercised the options on January 6, 2006.

In the event that a successor(s) to any of the named selling stockholders wish to sell shares under this Prospectus, we will file a Prospectus Supplement to identify such successor(s) as selling stockholders.

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Percentage beneficial ownership is based on 11,188,680 shares of common stock outstanding as of March 10, 2006. Beneficial ownership is calculated based on SEC requirements. All shares of the common stock subject to options and warrants, including the Warrants, DeZwirek Warrants and Options, are deemed to be outstanding for the purpose of computing the percentage of ownership of the person holding such options or warrants, but are not deemed to be outstanding for computing the percentage of ownership of any other person.

Selling Stockholders ¹	Shares Beneficially Owned Before Offering		Number of Shares Being Offered	Shares Beneficially Owned After Offering	
	Number	Percent		Number ²	Percent
Phillip DeZwirek ³ 505 University Avenue, Suite 1400 Toronto, Ontario M56 1X3	4,868,390	39.1%	1,800,000 ³	3,068,390	24.7%
Jason DeZwirek ⁴ 505 University Avenue, Suite 1400 Toronto, Ontario M56 1X3	3,931,359	35.1%	25,000	3,906,359	34.9%
Harvey Sandler ⁵ Revocable Trust 21170 N.E. 22 nd Court North Miami Beach, FL. 33180	1,433,043	12.8%	100,000	1,333,043	11.9%
Can-Med Technology, Inc. ⁶ d/b/a Green Diamond Oil Corp. 505 University Avenue, Suite 1400 Toronto, Ontario M5G 1X3	973,333	8.7%	800,000	173,333	1.5%
Crestview Capital Fund, L.P. ^{7,8} 95 Revere Drive, Suite F Northbrook, IL 60062	216,667	1.9%	216,667	0	*
ICS Trustee Services, Ltd. ⁹ Nine Queens Road, Suite 605-6 Central, Hong Kong	100,000	0.9%	100,000	0	*
Robert Geras ⁷ 2125 Valley Road Northbrook, IL 60062	70,000	0.6%	70,000	0	*
Steven Erlbaum ⁷ 42 W. Lancaster, 2 nd Floor Ardmore, PA 19003	25,000	0.2%	25,000	0	*
Erlbaum Family L.P. ^{7,10} 42 W. Lancaster, 2 nd Floor Ardmore, PA 19003	25,000	0.2%	25,000	0	*
Friedman Investment Group, LLC ^{7,11} 4250 W. Chase Avenue Lincolnwood, IL 60712	16,667	0.1%	16,667	0	*
Gary J. Shemano ⁷ c/o The Shemano Group, Inc. 601 California Street, Suite 1150 San Francisco, CA 94108	5,180	*	5,180	0	*
Michael Jacks ⁷ c/o The Shemano Group, Inc. 601 California Street, Suite 1150 San Francisco, CA 94108	4,200	*	4,200	0	*

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Selling Stockholders ¹	Shares Beneficially Owned Before Offering		Number of Shares Being Offered	Shares Beneficially Owned After Offering	
	Number	Percent		Number ²	Percent
Bill and Mary Corbett ⁷ c/o The Shemano Group, Inc. 601 California Street, Suite 1150 San Francisco, CA 94108	2,100	*	2,100	0	*
Brian Mikes ⁷ 255 Pleasant View Dr. Pleasant Hill, CA 94523	2,100	*	2,100	0	*
Jim Keener ⁷ 2427 4th Street, #105 Santa Monica, CA 90405	420	*	420	0	*
* Less than 1%					

¹ To our knowledge and except as otherwise set forth herein, the selling stockholders have sole voting and investment power with respect to all common stock shown as beneficially owned by them, subject to community property laws where applicable. Except as otherwise set forth herein, the table includes shares of common stock that the selling stockholders have the right to acquire pursuant to the exercise of warrants and options exercisable within 60 days.

² Percentage ownership is based on 11,018,260 shares of common stock outstanding as of January 12, 2006 and, except as otherwise set forth herein, in each case assumes exercise of warrants and options.

³ Phillip DeZwirek is the Chief Executive Officer and Chairman of the Board of CECO. The number of shares listed includes (i) the 1,000,000 shares of common stock that were issued upon exercise of the DeZwirek Warrants, which shares are included in this Prospectus and (ii) 1,250,000 shares of common stock issuable upon the exercise of warrants held by Mr. Phillip DeZwirek, which shares are not included in this Prospectus. The number of shares listed as being offered includes shares held by Can-Med Technologies. Mr. Phillip DeZwirek is the father of Mr. Jason DeZwirek.

⁴ Jason DeZwirek is a director and the Secretary of CECO. The number of shares listed includes the 25,000 shares of common stock that were issued upon exercise of the Options, which shares are included in this Prospectus. Mr. Jason DeZwirek is the son of Mr. Phillip DeZwirek.

⁵ Includes 20,000 shares held in the name of Phyllis Sandler, the spouse of Mr. Harvey Sandler, the trustee of the Harvey Sandler Revocable Trust. The Harvey Sandler Revocable Trust is deemed an affiliate of ours by virtue of owning in excess of 10% of our common stock.

⁶ 50.1% of the shares of Green Diamond are owned by Icarus Investment Corp. ("Icarus") and Icarus has sole voting and investment control over the shares held by Green Diamond. Icarus is owned 50% by Phillip DeZwirek and 50% by Jason Louis DeZwirek and Mr. Phillip DeZwirek and Mr. Jason DeZwirek are deemed to have shared voting and investment control over the shares held by Green Diamond. Phillip DeZwirek is Chief Executive Officer and Chairman of the Board of CECO, and Jason Louis DeZwirek is Secretary of CECO. Jason Louis DeZwirek is the son of Phillip DeZwirek.

⁷ All of the number of shares of common stock listed are shares of common stock issuable upon exercise of Warrants held by such party.

⁸ Crestview Capital Master LLC ("CCM") has sole voting and investment power with respect to the securities owned by Crestview Capital Fund LP. Crestview Capital Partners, LLC ("CCP") is the sole managing member of CCM and may be deemed to have sole voting and investment power with respect to the securities beneficially owned by CCM. CCP disclaims beneficial ownership of these securities. The Managing Members of CCP are Stewart Flink, Robert Hoyt and Daniel Warsh, each of whom may be deemed to have voting and dispositive power over securities beneficially owned by CCM, and each of whom also disclaims beneficial ownership of these securities.

⁹ Kishore Kurdanmal Sakhrani, an individual, has sole voting and investment control over the shares held by ICS Trustee Services, Ltd.

¹⁰ Erlbaum, Inc. ("EI"), the general partner of Erlbaum Family L.P. ("EF"), has sole voting and investment power with respect to the securities owned by EF. Allen T. Newman, as trustee of the three and only shareholders of EI, The Gary E. Erlbaum Trust for Jon L. Erlbaum, The Gary E. Erlbaum Trust for Marc N. Erlbaum and The Gary E. Erlbaum Trust for Daniel A. Erlbaum, may be deemed to have sole voting and investment power with respect to the securities beneficially owned by EI. Allen T. Newman disclaims beneficial ownership of these securities.

¹¹ Irwin Friedman, an individual, has sole voting and investment control over the shares held by Friedman Investment Group, LLC.

PLAN OF DISTRIBUTION

The selling stockholders and any of their pledges, assignees and successors-in-interest may, from time to time, sell any or all of their shares of common stock on any stock exchange, market or trading facility on which the shares are traded or in private transactions. These sales may be at fixed or negotiated prices. Subject to contractual limitations, the selling stockholders may use any one or more of the following methods when selling shares:

- ordinary brokerage transactions in which the broker-dealer solicits purchasers;
- block trades in which the broker-dealer will attempt to sell the shares as agent but may position and resell a portion of the block as principal to facilitate the transaction;
- purchases by a broker-dealer as principal and resale by the broker-dealer for its account;
- an exchange distribution in accordance with the rules of the applicable exchange;
- privately negotiated transactions;
- short sales;
- broker-dealers may agree with the selling stockholders to sell a specified number of such shares at a stipulated price per share;
- a combination of any such methods of sale; and
- any other method permitted pursuant to applicable law.

The selling stockholders also may sell shares under Rule 144 of the Securities Act of 1933, as amended (the "Securities Act") if available, rather than under this prospectus.

The selling stockholders may pledge their shares to their brokers under the margin provisions of customer agreements. If a selling stockholder defaults on a margin loan, the broker may, from time to time, offer and sell the pledged shares.

In order to comply with the securities laws of certain states, if applicable, the shares may be sold only through registered or licensed brokers or dealers. In addition, in certain states, the shares may not be sold unless they have been registered or qualified for sale in the state or an exemption from the registration or qualification requirement is available and complied with.

Brokers, dealers, underwriters, or agents participating in the distribution of the shares as agents may receive compensation in the form of commissions, discounts, or concessions from the selling stockholders and/or purchasers of the common stock for whom the broker-dealers may act as agent, or to whom they may sell as principal, or both. The compensation paid to a particular broker-dealer may be less than or in excess of customary commissions, however, the maximum commission or discount to be received by any NASD member or independent broker-dealer will not be greater than eight (8) percent for the sale of any securities being registered hereunder pursuant to Rule 415 of the Securities Act.

Crestview Capital Fund L.P. is an affiliate of, by virtue of being under common control with, Dillon Capital, Inc., a registered broker-dealer. Crestview Capital Fund L.P. purchased its Warrants in the ordinary course of business, and at the time of the purchase of such Warrants had no agreements or understandings, directly or indirectly, with any person to distribute the Warrants. Gary J. Shemano, Michael Jacks, and Bill Corbett are

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affiliates of The Shemano Group, a registered broker-dealer and Brain Mikes is an affiliate of Adams Harkness, Inc., a registered broker-dealer. Each such person purchased its Warrants in the ordinary course of business, and at the time of the purchase of such Warrants had no agreements or understandings, directly or indirectly, with any person to distribute the Warrants.

Green Diamond is an affiliate of ours, as a majority of the shares of Green Diamond (50.1%) are owned by Icarus Investment Corp., which is owned 50% by Phillip DeZwirek and 50% by Jason DeZwirek. Green Diamond is not directly or indirectly affiliated or associated with an NASD member. Phillip DeZwirek is a director and the Chairman of the Board and the Chief Executive Officer of CECO. Mr. Jason DeZwirek is a director and the Secretary of CECO. Neither Mr. Phillip DeZwirek nor Mr. Jason DeZwirek is directly or indirectly affiliated or associated with an NASD member. The Harvey Sandler Revocable Trust ("HSRT") is an affiliate of ours by virtue of owning in excess of 10% of our common stock. HSRT is not directly or indirectly affiliated or associated with an NASD member.

The selling shareholders and any broker, dealer, or agent that assists in the sale of the common stock may be deemed to be underwriters within the meaning of Section 2(a)(11) of the Securities Act. Accordingly, any profit on the sale of common stock by them and any discounts, concessions or commissions received by any of the underwriters, brokers, dealers or agents may be deemed to be underwriting discounts and commissions under the Securities Act.

Neither we nor the selling stockholders can presently estimate the amount of compensation that any agent will receive. We know of no existing arrangements between any selling stockholders, any other stockholders, broker, dealer, underwriter, or agent relating to the sale or distribution of the shares. At the time a particular offer of shares is made, a prospectus supplement, if required, will be distributed that will set forth the names of any agents, underwriters, or dealers and any compensation from the selling stockholders and any other required information.

We will pay all of the expenses incident to the registration, offering, and sale of the shares for the public other than commissions or discounts of underwriters, broker-dealers, or agents. We have also agreed to indemnify the selling shareholders against specified liabilities, including liabilities under the Securities Act.

Insofar as indemnification for liabilities arising under the Securities Act, as amended, may be permitted to our directors, officers, and controlling persons, we have been informed that in the opinion of the SEC this indemnification is against public policy as expressed in the Securities Act and, therefore, is unenforceable.

LEGAL MATTERS

The validity of the common stock offered will be passed upon for CECO by Sugar, Friedberg & Felsenthal, 30 N. LaSalle Street, Suite 3000, Chicago, Illinois 60602.

EXPERTS

The consolidated financial statements as of December 31, 2005 and for the year then ended incorporated in this prospectus by reference from the CECO Environmental Corp. Annual Report on Form 10-K for the year ended December 31, 2005 have been audited by Battelle & Battelle LLP, an independent registered public accounting firm, as stated in their report, which is incorporated herein by reference, and has been so incorporated in reliance upon the report of such firm given upon their authority as experts in accounting and auditing.

The consolidated financial statements as of December 31, 2004 and for each of the two years ended December 31, 2004 incorporated in this prospectus by reference from the CECO Environmental Corp. Annual Report on Form 10-K for the year ended December 31, 2005 have been audited by Deloitte & Touche LLP, an independent registered public accounting firm, as stated in their report, which is incorporated herein by reference, and has been so incorporated in reliance upon the report of such firm given upon their authority as experts in accounting and auditing.

WHERE YOU CAN FIND MORE INFORMATION

We have filed with the Securities and Exchange Commission a Registration Statement under the Securities Act, with respect to the shares offered hereby. This prospectus is part of the registration statement. This prospectus does not contain all the information set forth in the registration statement and the exhibits and schedules thereto, to which reference is hereby made for further information. This prospectus does not contain all the information included in a registration statement because we have omitted parts of the registration statement as permitted by the SEC's rules and regulations. For further information about us, you should refer to the registration statement. Statements contained in this prospectus as to any contract, agreement or other document referred to are not necessarily complete. Where the contract or other document is an exhibit to the registration statement, each statement is qualified by the provisions of that exhibit.

We are a reporting company and also file annual, quarterly and current reports, proxy statements and other information with the Securities and Exchange Commission. You may inspect and copy all or any portion of the registration statement or any reports, proxy statements, or other information at the Securities and Exchange Commission's Public Reference Room at 100 F Street, N.E., Washington, D.C. 20549. You can request copies of these documents by writing to the Securities and Exchange Commission and paying a fee for the copying cost. Please call the Securities and Exchange Commission at 1-800-SEC-0330 for more information about the operation of the public reference rooms. In addition, such information may be accessed electronically at the Securities and Exchange Commission's web site on the Internet at www.sec.gov and on our website www.cecoenviro.com.

Our common stock is traded on the Nasdaq SmallCap Market under the symbol "CECE".

The Securities and Exchange Commission allows us to "incorporate by reference" information that we file with them, which means that we can disclose important information to you by referring you to those documents. The information incorporated by reference is an important part of this prospectus, and information that we file later with the Securities and Exchange Commission, ("SEC") will automatically update and supersede this information. We incorporate by reference the documents listed below and any future filings we will make with the Securities and Exchange Commission under Sections 13(a), 13(c), 14 or 15(d) of the Securities Exchange Act of 1934 until our offering is completed:

- Annual Report on Form 10-K for the year ended December 31, 2005; and
- Our current report on 8-K filed with the SEC March 2, 2006;
- Our current report on 8-K filed with the SEC February 2, 2006;
- Our current report on 8-K filed with the SEC January 12, 2006;
- Our two current reports on 8-K both filed with the SEC January 4, 2006;
- The description of our common stock contained in the registration statement on Form 10 filed with the Securities and Exchange Commission on December 13, 1992 pursuant to Section 12(g) of the Securities Exchange Act of 1934, together with all amendments or reports filed for the purpose of updating such description.

We will provide to each person to whom a Prospectus is delivered, including any beneficial owner, a copy of these filings at no cost, upon written or oral request at the following address or telephone number:

CECO Environmental Corp.
Attn: Dennis W. Blazer
3120 Forrer Street
Cincinnati, Ohio 45209
(513) 458-2600

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THIS PROSPECTUS IS PART OF A LARGER REGISTRATION STATEMENT WE FILED WITH THE SECURITIES AND EXCHANGE COMMISSION. YOU SHOULD RELY ONLY ON THE INFORMATION INCORPORATED BY REFERENCE OR PROVIDED IN THIS PROSPECTUS. WE HAVE NOT AUTHORIZED ANYONE ELSE TO PROVIDE YOU WITH DIFFERENT INFORMATION. WE ARE NOT MAKING AN OFFER OF THESE SECURITIES IN ANY STATE WHERE THE OFFER IS NOT PERMITTED. YOU SHOULD NOT ASSUME THAT THE INFORMATION IN THIS PROSPECTUS IS ACCURATE AS OF ANY OTHER DATE OTHER THAN THE DATE ON THE FRONT OF THE DOCUMENT.

No dealer, sales representative or any other person has been authorized to give any information or to make any representations in connection with this offering other than those contained in this prospectus, and, if given or made, such information or representations must not be relied upon as having been authorized by the Company or any of the Selling Stockholders. This prospectus does not constitute an offer to sell, or a solicitation of an offer to buy, any securities to which it relates or an offer to, or a solicitation of, any person in any jurisdiction where such offer or solicitation would be unlawful. Neither the delivery of this prospectus nor any sale made hereunder shall, under any circumstances, create any implication that there has been no change in the affairs of the Company since the date hereof or that the information contained herein is correct as of any time subsequent to the date hereof.

2,392,334 Shares

CECO Environmental Corp.

Common Stock

Prospectus

March 31, 2006

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