

PERMA FIX ENVIRONMENTAL SERVICES INC
Form 10-K
March 24, 2017

UNITED STATES

SECURITIES AND EXCHANGE COMMISSION

WASHINGTON, D.C. 20549

FORM 10-K

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

For the fiscal year ended December 31, 2016

or

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

For the transition period from _____ to _____

Commission File No. 1-11596

PERMA-FIX ENVIRONMENTAL SERVICES, INC.

(Exact name of registrant as specified in its charter)

Delaware

State or other jurisdiction

of incorporation or organization

8302 Dunwoody Place, #250, Atlanta, GA

(Address of principal executive offices)

58-1954497

(IRS Employer Identification Number)

30350

(Zip Code)

(770) 587-9898

(Registrant's telephone number)

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

Title of each class

Name of each exchange on which
registered

Common Stock, \$.001 Par Value

NASDAQ Capital Markets

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 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 whether the registrant has submitted electronically and posted on its corporate Web site, if any, every Interactive Data File required to be submitted and posted pursuant to Rule 405 of Regulation S-T (§232.405 of this chapter) during the preceding 12 months (or for such shorter period that the Registrant was required to submit and post such files).

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 the 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. [X]

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, or a smaller reporting company. See definition of "large accelerated filer," "accelerated filer" and "smaller reporting company" in Rule 12b-2 of the Exchange Act. (Check one):

Large accelerated filer Accelerated Filer Non-accelerated Filer Smaller reporting company

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

Yes ___ No X

The aggregate market value of the Registrant's voting and non-voting common equity held by nonaffiliates of the Registrant computed by reference to the closing sale price of such stock as reported by NASDAQ as of the last business day of the most recently completed second fiscal quarter (June 30, 2016), was approximately \$54,307,000. For the purposes of this calculation, all directors of the Registrant (as indicated in Item 12) are deemed to be affiliates. Such determination should not be deemed an admission that such directors, are, in fact, affiliates of the Registrant. The Company's Common Stock is listed on the NASDAQ Capital Markets.

As of March 17, 2017, there were 11,681,349 shares of the registrant's Common Stock, \$.001 par value, outstanding.

Documents incorporated by reference: None

PERMA-FIX ENVIRONMENTAL SERVICES, INC.

INDEX

Page No.

PART I

| | | |
|----------|---------------------------|----|
| Item 1. | Business | 1 |
| Item 1A. | Risk Factors | 7 |
| Item 1B. | Unresolved Staff Comments | 17 |
| Item 2. | Properties | 17 |
| Item 3. | Legal Proceedings | 18 |
| Item 4. | Mine Safety Disclosure | 18 |

PART II

| | | |
|----------|---|----|
| Item 5. | Market for Registrant's Common Equity and Related Stockholder Matters | 18 |
| Item 6. | Selected Financial Data | 19 |
| Item 7. | Management's Discussion and Analysis of Financial Condition And Results of Operations | 19 |
| Item 7A. | Quantitative and Qualitative Disclosures About Market Risk | 35 |
| | Special Note Regarding Forward-Looking Statements | 35 |
| Item 8. | Financial Statements and Supplementary Data | 38 |
| Item 9. | Changes in and Disagreements with Accountants on Accounting and Financial Disclosure | 75 |
| Item 9A. | Controls and Procedures | 75 |
| Item 9B. | Other Information | 76 |

PART III

| | | |
|----------|--|----|
| Item 10. | Directors, Executive Officers and Corporate Governance | 76 |
|----------|--|----|

| | |
|---|-----|
| Item 11. Executive Compensation | 85 |
| Item 12. Security Ownership of Certain Beneficial Owners and Management and Related Stockholder Matters | 104 |
| Item 13. Certain Relationships and Related Transactions, and Director Independence | 106 |
| Item 14. Principal Accountant Fees and Services | 109 |

PART IV

| | |
|---|-----|
| Item 15. Exhibits and Financial Statement Schedules | 109 |
|---|-----|

PART I

ITEM 1. BUSINESS

Company Overview and Principal Products and Services

Perma-Fix Environmental Services, Inc. (the Company, which may be referred to as we, us, or our), a Delaware corporation incorporated in December of 1990, is an environmental and environmental technology know-how company.

We have grown through acquisitions and internal growth. Our goal is to continue to focus on the efficient operation of our facilities and on-site activities, to continue to evaluate strategic acquisitions, to continue the research and development (“R&D”) of innovative technologies to expand company service offering and to treat nuclear waste, mixed waste, and industrial waste. The Company continues to focus on expansion into both commercial and international markets to help offset the uncertainties of government spending in the USA, from which a significant portion of the Company’s revenue is derived. This includes new services, new customers and increased market share in our current markets.

Additionally, our goal is for our majority-owned subsidiary, Perma-Fix Medical S.A. and its wholly-owned subsidiary, Perma-Fix Medical Corporation (“PFM Corporation” – a Delaware corporation) (together known as “PF Medical” or our “Medical Segment), to raise the necessary substantial capital to continue its R&D activities in order to pursue commercialization of its medical isotope production technology (see “Medical Segment” below for further information in connection with this segment).

Segment Information and Foreign and Domestic Operations and Sales

The Company has three reportable segments. In accordance with Financial Accounting Standards Board (“FASB”) ASC 280, “Segment Reporting”, we define an operating segment as:

a business activity from which we may earn revenue and incur expenses;
whose operating results are regularly reviewed by the chief operating decision maker “(CODM”) to make decisions about resources to be allocated and assess its performance; and
for which discrete financial information is available

TREATMENT SEGMENT reporting includes:

nuclear, low-level radioactive, mixed (waste containing both hazardous and low-level radioactive waste), hazardous and non-hazardous waste treatment, processing and disposal services primarily through four uniquely licensed (Nuclear Regulatory Commission or state equivalent) and permitted (U.S. Environmental Protection Agency (“EPA”) or state equivalent) treatment and storage facilities held by the following subsidiaries: Perma-Fix of Florida, Inc. (“PFF”), Diversified Scientific Services, Inc., (“DSSI”), Perma-Fix Northwest Richland, Inc. (“PFNWR”), and East Tennessee Materials & Energy Corporation (“M&EC”) (see below for information regarding the pending shut down of the M&EC facility). The presence of nuclear and low-level radioactive constituents within the waste streams processed by this segment creates different and unique operational, processing and permitting/licensing requirements; and R&D activities to identify, develop and implement innovative waste processing techniques for problematic waste streams.

During the second quarter of 2016, the Company’s M&EC subsidiary was notified by the lessor that the lease agreement under which M&EC currently operates its Oak Ridge, Tennessee facility would not be renewed at the end of the current lease term ending January 21, 2018. In light of this event and our strategic review of operations within our Treatment Segment, the Company is proceeding with a plan to shut down the M&EC facility at the end of the lease term. Operations at the M&EC facility are continuing during the remaining term of the lease and the facility has begun the process of transitioning waste shipments and operational capabilities to our other Treatment Segment facilities, subject to customer requirements and regulatory approvals. Simultaneously, the Company has begun required clean-up/maintenance procedures at M&EC’s Oak Ridge, Tennessee facility in accordance with M&EC’s Resource Conservation and Recovery Act (“RCRA”) permit requirements.

For 2016, the Treatment Segment accounted for \$32,253,000 or 63.0% of total revenue, as compared to \$41,318,000 or 66.2% of total revenue for 2015. See “– Dependence Upon a Single or Few Customers” for further details and a discussion as to our Segments’ contracts with the federal government or with others as a subcontractor to the federal government.

SERVICES SEGMENT reporting includes:

- on-site waste management services to commercial and government customers;
- Technical services, which include:
 - o professional radiological measurement and site survey of large government and commercial installations using advanced methods, technology and engineering;
 - o integrated Occupational Safety and Health services including industrial hygiene (“IH”) assessments; hazardous materials surveys, e.g., exposure monitoring; lead and asbestos management/abatement oversight; indoor air quality evaluations; health risk and exposure assessments; health & safety plan/program development, compliance auditing and training services; and Occupational Safety and Health Administration (“OSHA”) citation assistance; and
 - o global technical services providing consulting, engineering, project management, waste management, environmental, decontamination and decommissioning (“D&D”) field, technical, and management personnel and services to commercial and government customers;
- Nuclear services, which include:
 - o technology-based services including engineering, D&D, specialty services and construction, logistics, transportation, processing and disposal;
 - o remediation of nuclear licensed and federal facilities and the remediation cleanup of nuclear legacy sites. Such services capability includes: project investigation; radiological engineering; partial and total plant D&D; facility decontamination, dismantling, demolition, and planning; site restoration; site construction; logistics; transportation; and emergency response; and
 - o a company owned equipment calibration and maintenance laboratory that services, maintains, calibrates, and sources (i.e., rental) of health physics, IH and customized nuclear, environmental, and occupational safety and health (“NEOSH”) instrumentation;

For 2016, the Services Segment accounted for \$18,966,000 or 37.0% of total revenue, as compared to \$21,065,000 or 33.8% of total revenue for 2015. See “– Dependence Upon a Single or Few Customers” for further details and a discussion as to our Segments’ contracts with the federal government or with others as a subcontractor to the federal government

MEDICAL SEGMENT reporting includes: R&D costs for the new medical isotope production technology from our majority-owned Polish subsidiary (of which we own approximately 60.5% at December 31, 2016), PF Medical. The Medical Segment has not generated any revenue as it has been primarily in the R&D stage. R&D costs consist primarily of employee salaries and benefits, laboratory costs, third party fees, and other related costs associated with the development of new technology. During 2016, our Medical Segment continued to commit significant resources to the R&D of its medical isotope production technology in attempt to pursue obtaining required governmental approvals from the U.S. Food and Drug Administration (“FDA”) and other regulatory agencies to commercialize this technology.

During the latter part of 2016, our Medical Segment ceased a substantial portion of its R&D activities due to the need for substantial capital to fund such activities. We anticipate that our Medical Segment will not restart its full scale R&D activities until it obtains the necessary funding. The Medical Segment has entered into a letter of intent (“LOI”) to raise such funding which is subject to completion and execution of a definitive agreement. Although the LOI has expired, the parties to the LOI are continuing to negotiate definitive agreements as of the date of this report. (see “Part II – Item 7 - Management’s Discussion and Analysis of Financial Condition – Liquidity and Capital Resources – Financing Activities” for a further discussion of this proposed transaction).

Our Treatment and Services Segments provide services to research institutions, commercial companies, public utilities, and governmental agencies nationwide, including the U.S. Department of Energy (“DOE”) and U.S. Department of Defense (“DOD”). The distribution channels for our services are through direct sales to customers or via intermediaries.

Our corporate office is located at 8302 Dunwoody Place, Suite 250, Atlanta, Georgia 30350.

Foreign Revenue

Our consolidated revenue for 2016 and 2015 included approximately \$139,000 or 0.3% and \$199,000 or 0.3%, respectively, from our United Kingdom operation, Perma-Fix UK Limited (“PF UK Limited”).

Our consolidated revenue for 2016 and 2015 included approximately \$262,000 or 0.5% and \$279,000 or 0.4%, respectively, from customers located in Canada.

Importance of Patents, Trademarks and Proprietary Technology

We do not believe we are dependent on any particular trademark in order to operate our business or any significant segment thereof. We have received registration to May 2022 and December 2020, for the service marks “Perma-Fix Environmental Services” and “Perma-Fix”, respectively. In addition, we have received registration for two service marks for our Safety & Ecology Holdings Corporation and its subsidiaries (collectively known as “Safety and Ecology Corporation” or “SEC”) to periods ranging from 2017 to 2018.

We are active in the R&D of technologies that allow us to address certain of our customers' environmental needs. To date, we have sixteen active patents and the filing of several applications for which patents are pending. These sixteen active patents have remaining lives ranging from approximately three to seventeen years. These active patents granted to the Company include an U.S and an international patent for new technology for the production of radiological isotopes for certain types of medical applications; and which have been licensed to PFM Corporation. These patents are effective through March 2032.

Permits and Licenses

Waste management service companies are subject to extensive, evolving and increasingly stringent federal, state, and local environmental laws and regulations. Such federal, state and local environmental laws and regulations govern our activities regarding the treatment, storage, processing, disposal and transportation of hazardous, non-hazardous and radioactive wastes, and require us to obtain and maintain permits, licenses and/or approvals in order to conduct certain

of our waste activities. We are dependent on our permits and licenses discussed below in order to operate our businesses. Failure to obtain and maintain our permits or approvals would have a material adverse effect on us, our operations, and financial condition. The permits and licenses have terms ranging from one to ten years, and provided that we maintain a reasonable level of compliance, renew with minimal effort, and cost. We believe that these permit and license requirements represent a potential barrier to entry for possible competitors.

PFF, located in Gainesville, Florida, operates its hazardous, mixed and low-level radioactive waste activities under a RCRA Part B permit, Toxic Substances Control Act (“TSCA”) authorization, Restricted RX Drug Distributor-Destruction license, and a radioactive materials license issued by the State of Florida.

DSSI, located in Kingston, Tennessee, conducts mixed and low-level radioactive waste storage and treatment activities under RCRA Part B permits and a radioactive materials license issued by the State of Tennessee Department of Environment and Conservation. Co-regulated TSCA Polychlorinated Biphenyl (“PCB”) wastes are also managed for PCB destruction under the EPA Approval effective June 2008.

M&EC, located in Oak Ridge, Tennessee, performs hazardous, low-level radioactive and mixed waste storage and treatment operations under a RCRA Part B permit and a radioactive materials license issued by the State of Tennessee Department of Environment and Conservation. Co-regulated TSCA PCB wastes are also managed under EPA Approvals applicable to site-specific treatment units. The Company is proceeding with a plan to shut down the M&EC facility by January 2018 with closure activities underway. During the second quarter of 2016, the Company fully impaired the permit value of approximately \$8,288,000 for our M&EC subsidiary. The permits at M&EC will be terminated upon completion of requirements pursuant to M&EC's closure plan.

PFNWR, located in Richland, Washington, operates a low-level radioactive waste processing facility as well as a mixed waste processing facility. Radioactive material processing is authorized under radioactive materials licenses issued by the State of Washington and mixed waste processing is additionally authorized under a RCRA Part B permit with TSCA authorization issued jointly by the State of Washington and the EPA.

The combination of a RCRA Part B hazardous waste permit, TSCA authorization, and a radioactive materials license, as held by our Treatment Segment are very difficult to obtain for a single facility and make these facilities unique.

Backlog

The Treatment Segment of our Company maintains a backlog of stored waste, which represents waste that has not been processed. The backlog is principally a result of the timing and complexity of the waste being brought into the facilities and the selling price per container. As of December 31, 2016, our Treatment Segment had a backlog of approximately \$5,250,000, as compared to approximately \$4,698,000 as of December 31, 2015. Additionally, the time it takes to process waste from the time it arrives may increase due to the types and complexities of the waste we are currently receiving. We typically process our backlog during periods of low waste receipts, which historically has been in the first or fourth quarters.

Dependence Upon a Single or Few Customers

Our Treatment and Services Segments have significant relationships with the federal government, and continue to enter into contracts, directly as the prime contractor or indirectly for others as a subcontractor, with the federal government. The contracts that we are a party to with the federal government or with others as a subcontractor to the federal government generally provide that the government may terminate or renegotiate the contracts on 30 days notice, at the government's election. Our inability to continue under existing contracts that we have with the federal government (directly or indirectly as a subcontractor) could have a material adverse effect on our operations and financial condition.

We performed services relating to waste generated by the federal government representing approximately \$27,354,000 or 53.4% of our total revenue during 2016, as compared to \$36,105,000 or 57.9% of our total revenue during 2015.

Revenue generated by one of the customers (PSC Metal, Inc.) (non-government related and excluded from above) in the Services Segment accounted for approximately \$9,763,000 or 19.1% of the total revenues generated for the twelve months ended December 31, 2016. Project work for this customer commenced in March 2016 and was completed in December 2016. Revenue generated by another customer (Prologis Teterboro, LLC) (non-government related and excluded from above) in the Services Segment accounted for \$10,686,000 or 17.1% of the total revenues generated for the twelve months ended December 31, 2015. Project work for this customer was completed in December 2015.

As our revenues are project/event based where the completion of one contract with a specific customer may be replaced by another contract with a different customer from year to year, we do not believe the loss of one specific customer from one year to the next will generally have a material adverse effect on our operations and financial condition.

Competitive Conditions

The Treatment Segment's largest competitor is EnergySolutions ("ES") which operates treatment and disposal facilities in Oak Ridge, TN and Clive, UT. Waste Control Specialists ("WCS"), which has licensed disposal capabilities in Andrews, TX, has also emerged as a competitor in the treatment market with increasing market share. Perma-Fix now has two options for disposal of treated nuclear waste and thus mitigates prior risk of ES providing the only outlet for disposal. ES has signed a definitive agreement to acquire WCS; however, this potential acquisition of WCS by ES is currently in litigation with the federal government with the federal government alleging the acquisition violates the anti-trust laws. In the event that this acquisition of WCS by ES is later consummated, ES will again become the owner of the only privately owned disposal sites for treated commercially generated nuclear waste. In such event, if ES should refuse to accept our nuclear and mixed waste or make demands on us that are unreasonable or cease operations at its sites, such may have a material adverse effect on us for commercial wastes. The Treatment Segment treats and disposes of DOE generated wastes largely at DOE owned sites and thus this potential acquisition should not have any significant adverse impact on our Treatment Segment. Smaller competitors are also present in the market place; however, we believe they do not present a significant challenge at this time. Our Treatment Segment currently solicits business primarily on a North American basis with both government and commercial clients; however, we continue to focus on emerging international markets for additional work.

We believe that the permitting and licensing requirements, and the cost to obtain such permits, are barriers to the entry of hazardous waste and radioactive and mixed waste activities as presently operated by our waste treatment subsidiaries. If the permit requirements for hazardous waste treatment, storage, and disposal ("TSD") activities and/or the licensing requirements for the handling of low level radioactive matters are eliminated or if such licenses or permits were made less rigorous to obtain, we believe such would allow companies to enter into these markets and provide greater competition.

Our Services Segment is engaged in highly competitive businesses in which a number of our government contracts and some of our commercial contracts are awarded through competitive bidding processes. The extent of such competition varies according to the industries and markets in which our customers operate as well as the geographic areas in which we operate. The degree and type of competition we face is also often influenced by the project specification being bid on and the different specialty skill sets of each bidder for which our Services Segment competes, especially projects subject to the governmental bid process. We also have the ability to prime federal government small business procurements (small business set asides). Based on past experience, we believe that large businesses are more willing to team with small businesses in order to be part of these often substantial procurements. There are a number of qualified small businesses in our market that will provide intense competition that may provide a challenge to our ability to maintain strong growth rates and acceptable profit margins. For international business there are additional competitors, many from within the country the work is to be performed, making winning work in foreign countries more challenging. If our Services Segment is unable to meet these competitive challenges, it could lose market share and experience an overall reduction in its profits.

Certain Environmental Expenditures and Potential Environmental Liabilities

Environmental Liabilities

We have three remediation projects, which are currently in progress at our Perma-Fix of Dayton, Inc. (“PFD”), Perma-Fix of Memphis, Inc. (“PFM”), and Perma-Fix South Georgia, Inc. (“PFSG”) subsidiaries, which are all included within our discontinued operations. These remediation projects principally entail the removal/remediation of contaminated soil and, in most cases, the remediation of surrounding ground water. These remediation activities are closely reviewed and monitored by the applicable state regulators.

At December 31, 2016, we had total accrued environmental remediation liabilities of \$925,000, of which \$677,000 are recorded as a current liability, which reflects an increase of \$25,000 from the December 31, 2015 balance of \$900,000. The net increase of \$25,000 represents payments on remediation projects at PFSG and an increase to the reserve of approximately \$66,000 at PFD due to reassessment of the remediation reserve.

No insurance or third party recovery was taken into account in determining our cost estimates or reserves.

The nature of our business exposes us to significant cost to comply with governmental environmental laws, rules and regulations and risk of liability for damages. Such potential liability could involve, for example, claims for cleanup costs, personal injury or damage to the environment in cases where we are held responsible for the release of hazardous materials; claims of employees, customers or third parties for personal injury or property damage occurring in the course of our operations; and claims alleging negligence or professional errors or omissions in the planning or performance of our services. In addition, we could be deemed a responsible party for the costs of required cleanup of any property, which may be contaminated by hazardous substances generated or transported by us to a site we selected, including properties owned or leased by us. We could also be subject to fines and civil penalties in connection with violations of regulatory requirements.

Research and Development (“R&D”)

Innovation and technical know-how by our operations is very important to the success of our business. Our goal is to discover, develop and bring to market innovative ways to process waste that address unmet environmental needs. We conduct research internally, and also through collaborations with other third parties. The majority of our research activities are performed as we receive new and unique waste to treat. Our competitors also devote resources to R&D and many such competitors have greater resources at their disposal than we do. During 2016, PF Medical continued to commit significant resources to the R&D of its medical isotope production technology in pursuing the necessary steps required for eventual submission of this technology for FDA and other regulatory approvals and commercialization of this technology. During the latter part of 2016, our Medical Segment ceased a substantial portion of its R&D activities due to the need for substantial capital to fund such activities. We anticipate that our Medical Segment will not restart its full scale R&D activities until it obtains the necessary funding. The Medical Segment has entered into a LOI to raise such funding, which is subject to completion and execution of a definitive agreement. Although this LOI has expired, the parties to the LOI are continuing to negotiate definitive agreements as of the date of this report. We have estimated that during 2016 and 2015, we spent approximately \$2,046,000 and \$2,302,000, respectively, in R&D activities, of which approximately \$1,489,000 and \$2,114,000, respectively, were spent by our Medical Segment for the R&D of its medical isotope production technology.

Number of Employees

In our service-driven business, our employees are vital to our success. We believe we have good relationships with our employees. As of December 31, 2016, we employed approximately 253 employees, of whom 249 are full-time employees and four are part-time/temporary employees.

Governmental Regulation

Environmental companies, such as us, and their customers are subject to extensive and evolving environmental laws and regulations by a number of national, state and local environmental, safety and health agencies, the principal of which being the EPA. These laws and regulations largely contribute to the demand for our services. Although our customers remain responsible by law for their environmental problems, we must also comply with the requirements of those laws applicable to our services. We cannot predict the extent to which our operations may be affected by future enforcement policies as applied to existing laws or by the enactment of new environmental laws and regulations.

Moreover, any predictions regarding possible liability are further complicated by the fact that under current environmental laws we could be jointly and severally liable for certain activities of third parties over whom we have little or no control. Although we believe that we are currently in substantial compliance with applicable laws and regulations, we could be subject to fines, penalties or other liabilities or could be adversely affected by existing or subsequently enacted laws or regulations. The principal environmental laws affecting our customers and us are briefly discussed below.

The Resource Conservation and Recovery Act of 1976, as amended (“RCRA”)

RCRA and its associated regulations establish a strict and comprehensive permitting and regulatory program applicable to companies, such as us, that treat, store or dispose of hazardous waste. The EPA has promulgated regulations under RCRA for new and existing treatment, storage and disposal facilities including incinerators, storage and treatment tanks, storage containers, storage and treatment surface impoundments, waste piles and landfills. Every facility that treats, stores or disposes of hazardous waste must obtain a RCRA permit or must obtain interim status from the EPA, or a state agency, which has been authorized by the EPA to administer its program, and must comply with certain operating, financial responsibility and closure requirements.

The Comprehensive Environmental Response, Compensation and Liability Act of 1980 (“CERCLA,” also referred to as the “Superfund Act”)

CERCLA governs the cleanup of sites at which hazardous substances are located or at which hazardous substances have been released or are threatened to be released into the environment. CERCLA authorizes the EPA to compel responsible parties to clean up sites and provides for punitive damages for noncompliance. CERCLA imposes joint and several liabilities for the costs of clean up and damages to natural resources.

Health and Safety Regulations

The operation of our environmental activities is subject to the requirements of the OSHA and comparable state laws. Regulations promulgated under OSHA by the Department of Labor require employers of persons in the transportation and environmental industries, including independent contractors, to implement hazard communications, work practices and personnel protection programs in order to protect employees from equipment safety hazards and exposure to hazardous chemicals.

Atomic Energy Act

The Atomic Energy Act of 1954 governs the safe handling and use of Source, Special Nuclear and Byproduct materials in the U.S. and its territories. This act authorized the Atomic Energy Commission (now the Nuclear Regulatory Commission “USNRC”) to enter into “Agreements with States to carry out those regulatory functions in those respective states except for Nuclear Power Plants and federal facilities like the VA hospitals and the DOE operations.” The State of Florida (with the USNRC oversight), Office of Radiation Control, regulates the permitting and radiological program of the PFF facility, and the State of Tennessee (with the USNRC oversight), Tennessee Department of Radiological Health, regulates permitting and the radiological program of the DSSI and M&EC facilities. The State of Washington (with the USNRC oversight) Department of Health, regulates permitting and the radiological operations of the PFNWR facility.

Other Laws

Our activities are subject to other federal environmental protection and similar laws, including, without limitation, the Clean Water Act, the Clean Air Act, the Hazardous Materials Transportation Act and the TSCA. Many states have also adopted laws for the protection of the environment which may affect us, including laws governing the generation, handling, transportation and disposition of hazardous substances and laws governing the investigation and cleanup of, and liability for, contaminated sites. Some of these state provisions are broader and more stringent than existing federal law and regulations. Our failure to conform our services to the requirements of any of these other applicable federal or state laws could subject us to substantial liabilities which could have a material adverse effect on us, our operations and financial condition. In addition to various federal, state and local environmental regulations, our hazardous waste transportation activities are regulated by the U.S. Department of Transportation, the Interstate Commerce Commission and transportation regulatory bodies in the states in which we operate. We cannot predict the extent to which we may be affected by any law or rule that may be enacted or enforced in the future, or any new or different interpretations of existing laws or rules.

ITEM 1A. RISK FACTORS

The following are certain risk factors that could affect our business, financial performance, and results of operations. These risk factors should be considered in connection with evaluating the forward-looking statements contained in this Form 10-K, as the forward-looking statements are based on current expectations, and actual results and conditions could differ materially from the current expectations. Investing in our securities involves a high degree of risk, and before making an investment decision, you should carefully consider these risk factors as well as other information we include or incorporate by reference in the other reports we file with the Securities and Exchange Commission (the “Commission”).

Risks Relating to our Operations

Failure to maintain our financial assurance coverage that we are required to have in order to operate our permitted treatment, storage and disposal facilities could have a material adverse effect on us.

We maintain finite risk insurance policies which provide financial assurance to the applicable states for our permitted facilities in the event of unforeseen closure of those facilities. We are required to provide and to maintain financial assurance that guarantees to the state that in the event of closure, our permitted facilities will be closed in accordance with the regulations. In the event that we are unable to obtain or maintain our financial assurance coverage for any reason, this could materially impact our operations and our permits which we are required to have in order to operate our treatment, storage, and disposal facilities.

If we cannot maintain adequate insurance coverage, we will be unable to continue certain operations.

Our business exposes us to various risks, including claims for causing damage to property and injuries to persons that may involve allegations of negligence or professional errors or omissions in the performance of our services. Such claims could be substantial. We believe that our insurance coverage is presently adequate and similar to, or greater than, the coverage maintained by other companies in the industry of our size. If we are unable to obtain adequate or required insurance coverage in the future, or if our insurance is not available at affordable rates, we would violate our permit conditions and other requirements of the environmental laws, rules, and regulations under which we operate. Such violations would render us unable to continue certain of our operations. These events would have a material adverse effect on our financial condition.

The inability to maintain existing government contracts or win new government contracts over an extended period could have a material adverse effect on our operations and adversely affect our future revenues.

A material amount of our Treatment and Services Segments' revenues are generated through various U.S. government contracts or subcontracts involving the U.S. government. Our revenues from governmental contracts and subcontracts relating to governmental facilities within our segments were approximately \$27,354,000 or 53.4% and \$36,105,000 or 57.9%, of our consolidated operating revenues for 2016 and 2015, respectively. Most of our government contracts or our subcontracts granted under government contracts are awarded through a regulated competitive bidding process. Some government contracts are awarded to multiple competitors, which increase overall competition and pricing pressure and may require us to make sustained post-award efforts to realize revenues under these government contracts. All contracts with, or subcontracts involving, the federal government are terminable, or subject to renegotiation, by the applicable governmental agency on 30 days notice, at the option of the governmental agency. If we fail to maintain or replace these relationships, or if a material contract is terminated or renegotiated in a manner that is materially adverse to us, our revenues and future operations could be materially adversely affected.

Our existing and future customers may reduce or halt their spending on hazardous waste and nuclear services with outside vendors, including us.

A variety of factors may cause our existing or future customers (including the federal government) to reduce or halt their spending on hazardous waste and nuclear services from outside vendors, including us. These factors include, but are not limited to:

- accidents, terrorism, natural disasters or other incidents occurring at nuclear facilities or involving shipments of nuclear materials;
- failure of the federal government to approve necessary budgets, or to reduce the amount of the budget necessary, to fund remediation of DOE and DOD sites;
- civic opposition to or changes in government policies regarding nuclear operations;
- a reduction in demand for nuclear generating capacity; or
- failure to perform under existing contracts, directly or indirectly, with the federal government.

These events could result in or cause the federal government to terminate or cancel its existing contracts involving us to treat, store or dispose of contaminated waste and/or to perform remediation projects, at one or more of the federal sites since all contracts with, or subcontracts involving, the federal government are terminable upon or subject to renegotiation at the option of the government on 30 days notice. These events also could adversely affect us to the extent that they result in the reduction or elimination of contractual requirements, lower demand for nuclear services, burdensome regulation, disruptions of shipments or production, increased operational costs or difficulties or increased liability for actual or threatened property damage or personal injury.

Economic downturns and/or reductions in government funding could have a material negative impact on our businesses.

Demand for our services has been, and we expect that demand will continue to be, subject to significant fluctuations due to a variety of factors beyond our control, including economic conditions, reductions in the budget for spending to remediate federal sites due to numerous reasons, including, without limitation, the substantial deficits that the federal government has and is continuing to incur. During economic downturns and large budget deficits that the federal government and many states are experiencing, the ability of private and government entities to spend on waste services, including nuclear services, may decline significantly. Our operations depend, in large part, upon governmental funding, particularly funding levels at the DOE. Significant reductions in the level of governmental funding (for example, the annual budget of the DOE) or specifically mandated levels for different programs that are important to our business could have a material adverse impact on our business, financial position, results of operations and cash flows.

The loss of one or a few customers could have an adverse effect on us.

One or a few governmental customers or governmental related customers have in the past, and may in the future, account for a significant portion of our revenue in any one year or over a period of several consecutive years. Because customers generally contract with us for specific projects, we may lose these significant customers from year to year as their projects with us are completed. Our inability to replace the business with other similar significant projects could have an adverse effect on our business and results of operations.

As a government contractor, we are subject to extensive government regulation, and our failure to comply with applicable regulations could subject us to penalties that may restrict our ability to conduct our business.

Our governmental contracts, which are primarily with the DOE or subcontracts relating to DOE sites, are a significant part of our business. Allowable costs under U.S. government contracts are subject to audit by the U.S. government. If these audits result in determinations that costs claimed as reimbursable are not allowed costs or were not allocated in accordance with applicable regulations, we could be required to reimburse the U.S. government for amounts previously received.

Governmental contracts or subcontracts involving governmental facilities are often subject to specific procurement regulations, contract provisions and a variety of other requirements relating to the formation, administration, performance and accounting of these contracts. Many of these contracts include express or implied certifications of compliance with applicable regulations and contractual provisions. If we fail to comply with any regulations, requirements or statutes, our existing governmental contracts or subcontracts involving governmental facilities could be terminated or we could be suspended from government contracting or subcontracting. If one or more of our governmental contracts or subcontracts are terminated for any reason, or if we are suspended or debarred from government work, we could suffer a significant reduction in expected revenues and profits. Furthermore, as a result of our governmental contracts or subcontracts involving governmental facilities, claims for civil or criminal fraud may be brought by the government or violations of these regulations, requirements or statutes.

We are a holding company and depend, in large part, on receiving funds from our subsidiaries to fund our indebtedness.

Because we are a holding company and operations are conducted through our subsidiaries, our ability to meet our obligations depends, in large part, on the operating performance and cash flows of our subsidiaries.

Loss of certain key personnel could have a material adverse effect on us.

Our success depends on the contributions of our key management, environmental and engineering personnel, especially Dr. Louis F. Centofanti, President and Chief Executive Officer. The loss of Dr. Centofanti could have a material adverse effect on our operations, revenues, prospects, and our ability to raise additional funds. Our future success depends on our ability to retain and expand our staff of qualified personnel, including environmental specialists and technicians, sales personnel, and engineers. Without qualified personnel, we may incur delays in rendering our services or be unable to render certain services. We cannot be certain that we will be successful in our efforts to attract and retain qualified personnel as their availability is limited due to the demand for hazardous waste management services and the highly competitive nature of the hazardous waste management industry. We do not maintain key person insurance on any of our employees, officers, or directors.

Changes in environmental regulations and enforcement policies could subject us to additional liability and adversely affect our ability to continue certain operations.

We cannot predict the extent to which our operations may be affected by future governmental enforcement policies as applied to existing laws, by changes to current environmental laws and regulations, or by the enactment of new environmental laws and regulations. Any predictions regarding possible liability under such laws are complicated further by current environmental laws which provide that we could be liable, jointly and severally, for certain activities of third parties over whom we have limited or no control.

Our Treatment Segment has limited end disposal sites to utilize to dispose of its waste which could significantly impact our results of operations.

Our Treatment Segment has limited options available for disposal of its nuclear waste. Currently, there are only two disposal sites, each site having different owners, for our low level radioactive waste we receive from non-governmental sites, allowing us to take advantage of the pricing competition between the two sites. There is currently an agreement whereby the owner of one site has agreed to buy the other site; however, the federal government has brought suit to prohibit this transaction alleging that such transaction violates the federal anti-trust laws. In the event that this transaction is later consummated, we could become subject to the unreasonable demands as to pricing and other terms of the acquiring party that owns both disposal sites, which could significantly increase our cost of disposal and negatively impact our results of operations. Further, if such acquisition is completed, and the owner refuses to accept our waste or demands terms that we deem to be unreasonable, such could have a material adverse effect on us.

Our businesses subject us to substantial potential environmental liability.

Our business of rendering services in connection with management of waste, including certain types of hazardous waste, low-level radioactive waste, and mixed waste (waste containing both hazardous and low-level radioactive waste), subjects us to risks of liability for damages. Such liability could involve, without limitation:

claims for clean-up costs, personal injury or damage to the environment in cases in which we are held responsible for the release of hazardous or radioactive materials;
claims of employees, customers, or third parties for personal injury or property damage occurring in the course of our operations; and
claims alleging negligence or professional errors or omissions in the planning or performance of our services.

Our operations are subject to numerous environmental laws and regulations. We have in the past, and could in the future, be subject to substantial fines, penalties, and sanctions for violations of environmental laws and substantial expenditures as a responsible party for the cost of remediating any property which may be contaminated by hazardous substances generated by us and disposed at such property, or transported by us to a site selected by us, including properties we own or lease.

As our operations expand, we may be subject to increased litigation, which could have a negative impact on our future financial results.

Our operations are highly regulated and we are subject to numerous laws and regulations regarding procedures for waste treatment, storage, recycling, transportation, and disposal activities, all of which may provide the basis for litigation against us. In recent years, the waste treatment industry has experienced a significant increase in so-called “toxic-tort” litigation as those injured by contamination seek to recover for personal injuries or property damage. We believe that, as our operations and activities expand, there will be a similar increase in the potential for litigation alleging that we have violated environmental laws or regulations or are responsible for contamination or pollution caused by our normal operations, negligence or other misconduct, or for accidents, which occur in the course of our business activities. Such litigation, if significant and not adequately insured against, could adversely affect our financial condition and our ability to fund our operations. Protracted litigation would likely cause us to spend significant amounts of our time, effort, and money. This could prevent our management from focusing on our operations and expansion.

Our operations are subject to seasonal factors, which cause our revenues to fluctuate.

We have historically experienced reduced revenues and losses during the first and fourth quarters of our fiscal years due to a seasonal slowdown in operations from poor weather conditions, overall reduced activities during these periods resulting from holiday periods, and finalization of government budgets during the fourth quarter of each year. During our second and third fiscal quarters there has historically been an increase in revenues and operating profits. If we do not continue to have increased revenues and profitability during the second and third fiscal quarters, this could have a material adverse effect on our results of operations and liquidity.

If environmental regulation or enforcement is relaxed, the demand for our services will decrease.

The demand for our services is substantially dependent upon the public's concern with, and the continuation and proliferation of, the laws and regulations governing the treatment, storage, recycling, and disposal of hazardous, non-hazardous, and low-level radioactive waste. A decrease in the level of public concern, the repeal or modification of these laws, or any significant relaxation of regulations relating to the treatment, storage, recycling, and disposal of hazardous waste and low-level radioactive waste would significantly reduce the demand for our services and could have a material adverse effect on our operations and financial condition. We are not aware of any current federal or state government or agency efforts in which a moratorium or limitation has been, or will be, placed upon the creation of new hazardous or radioactive waste regulations that would have a material adverse effect on us; however, no assurance can be made that such a moratorium or limitation will not be implemented in the future.

We and our customers operate in a politically sensitive environment, and the public perception of nuclear power and radioactive materials can affect our customers and us.

We and our customers operate in a politically sensitive environment. Opposition by third parties to particular projects can limit the handling and disposal of radioactive materials. Adverse public reaction to developments in the disposal of radioactive materials, including any high profile incident involving the discharge of radioactive materials, could

directly affect our customers and indirectly affect our business. Adverse public reaction also could lead to increased regulation or outright prohibition, limitations on the activities of our customers, more onerous operating requirements or other conditions that could have a material adverse impact on our customers' and our business.

We may be exposed to certain regulatory and financial risks related to climate change.

Climate change is receiving ever increasing attention from scientists and legislators alike. The debate is ongoing as to the extent to which our climate is changing, the potential causes of this change and its potential impacts. Some attribute global warming to increased levels of greenhouse gases, including carbon dioxide, which has led to significant legislative and regulatory efforts to limit greenhouse gas emissions.

Presently there are no federally mandated greenhouse gas reduction requirements in the United States. However, there are a number of legislative and regulatory proposals to address greenhouse gas emissions, which are in various phases of discussion or implementation. The outcome of federal and state actions to address global climate change could result in a variety of regulatory programs including potential new regulations. Any adoption by federal or state governments mandating a substantial reduction in greenhouse gas emissions could increase costs associated with our operations. Until the timing, scope and extent of any future regulation becomes known, we cannot predict the effect on our financial position, operating results and cash flows.

We may not be successful in winning new business mandates from our government and commercial customers or international customers.

We must be successful in winning mandates from our government, commercial customers and international customers to replace revenues from projects that we have completed or that are nearing completion and to increase our revenues. Our business and operating results can be adversely affected by the size and timing of a single material contract.

The elimination or any modification of the Price-Anderson Acts indemnification authority could have adverse consequences for our business.

The Atomic Energy Act of 1954, as amended, or the AEA, comprehensively regulates the manufacture, use, and storage of radioactive materials. The Price-Anderson Act (“PAA”) supports the nuclear services industry by offering broad indemnification to DOE contractors for liabilities arising out of nuclear incidents at DOE nuclear facilities. That indemnification protects DOE prime contractor, but also similar companies that work under contract or subcontract for a DOE prime contract or transporting radioactive material to or from a site. The indemnification authority of the DOE under the PAA was extended through 2025 by the Energy Policy Act of 2005.

Under certain conditions, the PAA’s indemnification provisions may not apply to our processing of radioactive waste at governmental facilities, and do not apply to liabilities that we might incur while performing services as a contractor for the DOE and the nuclear energy industry. If an incident or evacuation is not covered under PAA indemnification, we could be held liable for damages, regardless of fault, which could have an adverse effect on our results of operations and financial condition. If such indemnification authority is not applicable in the future, our business could be adversely affected if the owners and operators of new facilities fail to retain our services in the absence of commercial adequate insurance and indemnification.

We are engaged in highly competitive businesses and typically must bid against other competitors to obtain major contracts.

We are engaged in highly competitive business in which most of our government contracts and some of our commercial contracts are awarded through competitive bidding processes. We compete with national and regional firms with nuclear and/or hazardous waste services practices, as well as small or local contractors. Some of our competitors have greater financial and other resources than we do, which can give them a competitive advantage. In addition, even if we are qualified to work on a new government contract, we might not be awarded the contract because of existing government policies designed to protect certain types of businesses and under-represented minority contractors. Although the Company has the ability to certify and bid government contract as a small business, there are a number of qualified small businesses in our market that will provide intense competition. For international business, which we continue to focus on, there are additional competitors, many from within the country the work is to be performed, making winning work in foreign countries more challenging. Competition places downward pressure on our contract prices and profit margins. If we are unable to meet these competitive challenges, we could lose market share and experience on overall reduction in our profits.

Our failure to maintain our safety record could have an adverse effect on our business.

Our safety record is critical to our reputation. In addition, many of our government and commercial customers require that we maintain certain specified safety record guidelines to be eligible to bid for contracts with these customers. Furthermore, contract terms may provide for automatic termination in the event that our safety record fails to adhere to agreed-upon guidelines during performance of the contract. As a result, our failure to maintain our safety record could have a material adverse effect on our business, financial condition and results of operations.

We may be unable to utilize loss carryforwards in the future.

We have approximately \$10,372,000 and \$65,658,000 in net operating loss carryforwards for federal and state income tax purposes, respectively, which will expire in various amounts starting in 2021 if not used against future federal and state income tax liabilities, respectively. Our net loss carryforwards are subject to various limitations. Our ability to use the net loss carryforwards depends on whether we are able to generate sufficient income in the future years. Further, our net loss carryforwards have not been audited or approved by the Internal Revenue Service.

If any of our permits, other intangible assets, and tangible assets become impaired, we may be required to record significant charges to earnings.

Under accounting principles generally accepted in the United States (“U.S. GAAP”), we review our intangible and tangible assets for impairment when events or changes in circumstances indicate the carrying value may not be recoverable. Our permits are tested for impairment at least annually (the Company has no goodwill at December 31, 2016). Factors that may be considered a change in circumstances, indicating that the carrying value of our permit, other intangible assets, and tangible assets may not be recoverable, include a decline in stock price and market capitalization, reduced future cash flow estimates, and slower growth rates in our industry. During 2016, we recorded approximately \$8,288,000 and \$1,816,000 in impairment charges for intangible and tangible assets, respectively, in connection with Company’s decision to shut down our M&EC subsidiary by January 2018. We may be required, in the future, to record additional impairment charges in our financial statements, in which any impairment of our permit, other intangible assets, and tangible assets is determined. Such impairment charges could negatively impact our results of operations.

We bear the risk of cost overruns in fixed-price contracts. We may experience reduced profits or, in some cases, losses under these contracts if costs increase above our estimates.

Our revenues may be earned under contracts that are fixed-price in nature. Fixed-price contracts expose us to a number of risks not inherent in cost-reimbursable contracts. Under fixed price and guaranteed maximum-price contracts, contract prices are established in part on cost and scheduling estimates which are based on a number of assumptions, including assumptions about future economic conditions, prices and availability of labor, equipment and materials, and other exigencies. If these estimates prove inaccurate, or if circumstances change such as unanticipated technical problems, difficulties in obtaining permits or approvals, changes in laws or labor conditions, weather delays, cost of raw materials or our suppliers’ or subcontractors’ inability to perform, cost overruns may occur and we could experience reduced profits or, in some cases, a loss for that project. Errors or ambiguities as to contract specifications can also lead to cost-overruns.

Adequate bonding is necessary for us to win certain types of new work and support facility closure requirements.

We are often required to provide performance bonds to customers under fixed-price contracts, primarily within our Services Segment. These surety instruments indemnify the customer if we fail to perform our obligations under the contract. If a bond is required for a particular project and we are unable to obtain it due to insufficient liquidity or other reasons, we may not be able to pursue that project. In addition, we provide bonds to support financial assurance in the event of facility closure pursuant to state requirements. We currently have a bonding facility but, the issuance of bonds under that facility is at the surety’s sole discretion. Moreover, due to events that affect the insurance and bonding markets generally, bonding may be more difficult to obtain in the future or may only be available at significant additional cost. There can be no assurance that bonds will continue to be available to us on reasonable terms. Our inability to obtain adequate bonding and, as a result, to bid on new work could have a material adverse effect on our business, financial condition and results of operations.

Shut down of our East Tennessee Materials and Energy Corporation (“M&EC) facility located in Oak Ridge, Tennessee could negatively impact our financial results.

Our M&EC subsidiary was notified by the lessor that the lease agreement under which M&EC currently operates its Oak Ridge, Tennessee facility would not be renewed at the end of the current lease term ending January 21, 2018. In light of this event and our strategic review of operations within our Treatment Segment, we are proceeding with a plan to shut down our M&EC facility located in Oak Ridge, Tennessee at the end of the lease term. Operations at the M&EC facility are continuing during the remaining term of the lease and the facility has begun the process of transitioning waste shipments and operational capabilities to our other Treatment Segment facilities, subject to customer requirements and regulatory approvals. Simultaneously, we have begun required clean-up/maintenance procedures at M&EC’s Oak Ridge, Tennessee facility in accordance with M&EC’s RCRA permit requirements. We believe that our plan to shut down our M&EC facility in Oak Ridge, Tennessee should reduce our fixed costs within our Treatment Segment with minimal loss in revenue, thereby improving our Treatment Segment gross margin. However, as certain waste shipments are dependent on our customers’ requirements and the operational capabilities of our other Treatment facilities to accept and treat these wastes, there are no guarantees that our other Treatment facilities will be able to treat these wastes. In such event, our financial results could be materially impacted.

Failure to maintain effective internal control over financial reporting or failure to remediate a material weakness in internal control over financial reporting could have a material adverse effect on our business, operating results, and stock price.

Maintaining effective internal control over financial reporting is necessary for us to produce reliable financial reports and is important in helping to prevent financial fraud. If we are unable to maintain adequate internal controls, our business and operating results could be harmed. We are required to satisfy the requirements of Section 404 of Sarbanes Oxley and the related rules of the Commission, which require, among other things, management to assess annually the effectiveness of our internal control over financial reporting. If we are unable to maintain adequate internal control over financial reporting or effectively remediate any material weakness identified in internal control over financial reporting, there is a reasonable possibility that a misstatement of our annual or interim financial statements will not be prevented or detected in a timely manner. If we cannot produce reliable financial reports, investors could lose confidence in our reported financial information, the market price of our common stock could decline significantly, and our business, financial condition, and reputation could be harmed.

Systems failures, interruptions or breaches of security and other cyber security risks could have an adverse effect on our financial condition and results of operations.

We are subject to certain operational risks, including, but not limited to, data processing system failures and errors, cyber security breaches, inadequate or failed internal processes, customer or employee fraud and catastrophic failures resulting from terrorist acts or natural disasters. We depend upon data processing, software, communication, and information exchange on a variety of computing platforms and networks and over the internet. We also rely on the services of a variety of vendors to meet our data processing and communication needs. Despite our implemented security measures and established policies, we cannot be certain that all of our systems are entirely free from vulnerability to attack or other technological difficulties or failures or failures on the part of our employees to follow our established security measures and policies. Information security risks have increased significantly due to the use of online banking channels and the increased sophistication and activities of organized crime, hackers, terrorists and other external parties. Our technologies, systems, and networks may become the target of cyber-attacks, computer viruses, malicious code, phishing attacks or information security breaches that could result in the unauthorized release, gathering, monitoring, misuse, loss or destruction of our or our clients' confidential, proprietary and other information and the disruption of our business operations. A security breach could result in violations of applicable privacy and other laws, financial loss to us or to our customers or to our employees, loss of confidence in our security measures, litigation exposure, and harm to our reputation. Although we are aware that on at least one occasion during 2017 that there was a breach of our existing security procedures and policies as to employee information due to an employee's error in not following our existing security procedures and policies, we do not believe this breach would have a material adverse effect on us. While we maintain a system of internal controls and procedures, any breach, attack, or failure discussed above could have a material adverse effect on our business, financial condition, and results of operations or liquidity.

Risks Relating to our Intellectual Property

If we cannot maintain our governmental permits or cannot obtain required permits, we may not be able to continue or expand our operations.

We are a nuclear services and waste management company. Our business is subject to extensive, evolving, and increasingly stringent federal, state, and local environmental laws and regulations. Such federal, state, and local environmental laws and regulations govern our activities regarding the treatment, storage, recycling, disposal, and transportation of hazardous and non-hazardous waste and low-level radioactive waste. We must obtain and maintain permits or licenses to conduct these activities in compliance with such laws and regulations. Failure to obtain and maintain the required permits or licenses would have a material adverse effect on our operations and financial condition. If any of our facilities are unable to maintain currently held permits or licenses or obtain any additional permits or licenses which may be required to conduct its operations, we may not be able to continue those operations at these facilities, which could have a material adverse effect on us.

We believe our proprietary technology is important to us.

We believe that it is important that we maintain our proprietary technologies. There can be no assurance that the steps taken by us to protect our proprietary technologies will be adequate to prevent misappropriation of these technologies by third parties. Misappropriation of our proprietary technology could have an adverse effect on our operations and financial condition. Changes to current environmental laws and regulations also could limit the use of our proprietary technology.

Risks Relating to our Financial Position and Need for Financing

Breach of any of the covenants in our credit facility could result in a default, triggering repayment of outstanding debt under the credit facility.

Our credit facility with our bank contains financial covenants. A breach of any of these covenants could result in a default under our credit facility triggering our lender to immediately require the repayment of all outstanding debt under our credit facility and terminate all commitments to extend further credit. We failed to meet our minimum quarterly fixed charge coverage ratio in each of the first to third quarters of 2016; however, each of these instances of non-compliance was waived by our lender. In addition, during 2016, our lender also amended the methodology in calculating the quarterly fixed charge coverage ratio in certain instances to assist us so we can meet our quarterly fixed charge coverage ratio. We met our minimum quarterly fixed charge coverage ratio requirement in the fourth quarter of 2016. If we fail to meet the minimum quarterly fixed charge coverage ratio requirement or any of our other covenants in our loan agreement in the future and our lender does not waive the non-compliance or revise our covenant requirement so that we are in compliance, our lender could accelerate the payment of our borrowings under our credit facility. In such event, we may not have sufficient liquidity to repay our debt under our credit facility and other indebtedness.

Our amount of debt could adversely affect our operations.

At December 31, 2016, our aggregate consolidated debt was approximately \$8,833,000. Our Amended and Restated Revolving Credit, Term Loan and Security Agreement, dated October 31, 2011, as subsequently amended (“Revised Loan Agreement”) provides for a total credit facility commitment of approximately \$18,100,000, consisting of a \$12,000,000 revolving line of credit and a term loan of \$6,100,000. The maximum we can borrow under the revolving part of the credit facility is based on a percentage of the amount of our eligible receivables outstanding at any one time. As of December 31, 2016, we had borrowings under the revolving part of our credit facility of approximately \$3,803,000 and borrowing availability of up to an additional \$1,748,000 based on our outstanding eligible receivables. A lack of positive operating results could have material adverse consequences on our ability to operate our business. Our ability to make principal and interest payments, or to refinance indebtedness, will depend on both our and our subsidiaries' future operating performance and cash flow. Prevailing economic conditions, interest rate levels, and financial, competitive, business, and other factors affect us. Many of these factors are beyond our control.

Our substantial level of indebtedness could limit our financial and operating activities, and adversely affect our ability to incur additional debt to fund future needs.

We currently have a substantial amount of indebtedness. As a result, this level of indebtedness could, among other things:

- require us to dedicate a substantial portion of our cash flow to the payment of principal and interest, thereby reducing the funds available for operations and future business opportunities;

- make it more difficult for us to satisfy our obligations;

- limit our ability to borrow additional money if needed for other purposes, including working capital, capital expenditures, debt service requirements, acquisitions and general corporate or other purposes, on satisfactory terms or at all;

 - limit our ability to adjust to changing economic, business and competitive conditions;

- place us at a competitive disadvantage with competitors who may have less indebtedness or greater access to financing;

- make us more vulnerable to an increase in interest rates, a downturn in our operating performance or a decline in general economic conditions; and

- make us more susceptible to changes in credit ratings, which could impact our ability to obtain financing in the future and increase the cost of such financing.

Any of the foregoing could adversely impact our operating results, financial condition, and liquidity. Our ability to continue our operations depends on our ability to generate profitable operations or complete equity or debt financings to increase our capital.

Risks Relating to our Common Stock

Issuance of substantial amounts of our Common Stock could depress our stock price.

Any sales of substantial amounts of our Common Stock in the public market could cause an adverse effect on the market price of our Common Stock and could impair our ability to raise capital through the sale of additional equity securities. The issuance of our Common Stock will result in the dilution in the percentage membership interest of our stockholders and the dilution in ownership value. As of December 31, 2016, we had 11,669,383 shares of Common Stock outstanding.

In addition, as of December 31, 2016, we had outstanding options to purchase 247,200 shares of our Common Stock at exercise prices ranging from \$2.79 to \$14.75 per share. Further, our preferred share rights plan, if triggered, could result in the issuance of a substantial amount of our Common Stock. The existence of this quantity of rights to purchase our Common Stock under the preferred share rights plan could result in a significant dilution in the percentage ownership interest of our stockholders and the dilution in ownership value. Future sales of the shares issuable could also depress the market price of our Common Stock.

We do not intend to pay dividends on our Common Stock in the foreseeable future.

Since our inception, we have not paid cash dividends on our Common Stock, and we do not anticipate paying any cash dividends in the foreseeable future. Our credit facility prohibits us from paying cash dividends on our Common Stock without prior approval from our lender.

The price of our Common Stock may fluctuate significantly, which may make it difficult for our stockholders to resell our Common Stock when a stockholder wants or at prices a stockholder finds attractive.

The price of our Common Stock on the Nasdaq Capital Markets constantly changes. We expect that the market price of our Common Stock will continue to fluctuate. This may make it difficult for our stockholders to resell the Common Stock when a stockholder wants or at prices a stockholder finds attractive.

Future issuance of our Common Stock could adversely affect the price of our Common Stock, our ability to raise funds in new stock offerings and could dilute the percentage ownership of our common stockholders.

Future sales of substantial amounts of our Common Stock or equity-related securities in the public market, or the perception that such sales or conversions could occur, could adversely affect prevailing trading prices of our Common Stock and could dilute the value of Common Stock held by our existing stockholders. No prediction can be made as to the effect, if any, that future sales of shares of our Common Stock or the availability of shares of our Common Stock for future sale will have on the trading price of our Common Stock. Such future sales or conversions could also

significantly reduce the percentage ownership of our common stockholders.

Delaware law, certain of our charter provisions, our stock option plans, outstanding warrants and our Preferred Stock may inhibit a change of control under circumstances that could give you an opportunity to realize a premium over prevailing market prices.

We are a Delaware corporation governed, in part, by the provisions of Section 203 of the General Corporation Law of Delaware, an anti-takeover law. In general, Section 203 prohibits a Delaware public corporation from engaging in a “business combination” with an “interested stockholder” for a period of three years after the date of the transaction in which the person became an interested stockholder, unless the business combination is approved in a prescribed manner. As a result of Section 203, potential acquirers may be discouraged from attempting to effect acquisition transactions with us, thereby possibly depriving our security holders of certain opportunities to sell, or otherwise dispose of, such securities at above-market prices pursuant to such transactions. Further, certain of our option plans provide for the immediate acceleration of, and removal of restrictions from, options and other awards under such plans upon a “change of control” (as defined in the respective plans). Such provisions may also have the result of discouraging acquisition of us.

We have authorized and unissued 18,075,775 (which include shares issuable under outstanding options to purchase 247,200 shares of our Common Stock) shares of our Common Stock and 2,000,000 shares of our Preferred Stock as of December 31, 2016 (which includes 600,000 shares of our Preferred Stock reserved for issuance under our preferred share rights plan). These unissued shares could be used by our management to make it more difficult, and thereby discourage an attempt to acquire control of us.

Our Preferred Share Rights Plan (the “Rights Plan”) may adversely affect our stockholders.

In May 2008, we adopted a Rights Plan, designed to ensure that all of our stockholders receive fair and equal treatment in the event of a proposed takeover or abusive tender offer. However, the Rights Plan may also have the effect of deterring, delaying, or preventing a change in control that might otherwise be in the best interests of our stockholders.

In general, under the terms of the Rights Plan, subject to certain limited exceptions, if a person or group acquires 20% or more of our Common Stock or a tender offer or exchange offer for 20% or more of our Common Stock is announced or commenced, our other stockholders may receive upon exercise of the rights (the “Rights”) issued under the Rights Plan the number of shares our Common Stock or of one-one hundredths of a share of our Series A Junior Participating Preferred Stock, par value \$.001 per share, having a value equal to two times the purchase price of the Right. In addition, if we are acquired in a merger or other business combination transaction in which we are not the survivor or more than 50% of our assets or earning power is sold or transferred, then each holder of a Right (other than the acquirer) will thereafter have the right to receive, upon exercise, common stock of the acquiring company having a value equal to two times the purchase price of the Right. The initial purchase price of each Right was \$13, subject to adjustment, including adjustment for reverse stock split.

The Rights will cause substantial dilution to a person or group that attempts to acquire us on terms not approved by our board of directors. The Rights may be redeemed by us at \$0.001 per Right at any time before any person or group acquires 20% or more of our outstanding common stock. The rights should not interfere with any merger or other business combination approved by our board of directors. The Rights expire on May 2, 2018.

ITEM 1B. UNRESOLVED STAFF COMMENTS

Not Applicable.

ITEM 2. PROPERTIES

Our principal executive office is in Atlanta, Georgia. Our Business Center is located in Knoxville, Tennessee. Our Treatment Segment facilities are located in Gainesville, Florida; Kingston, Tennessee; Oak Ridge, Tennessee (which is currently undergoing closure requirements and which we plan to shut down by January 2018), and Richland, Washington. Our Services Segment maintains operations located in Knoxville, Tennessee and Blaydon On Tyne, England, of which we lease all of the properties. PF Medical maintains two leased administrative offices as noted below. We maintain properties in Valdosta, Georgia and Memphis, Tennessee, which are all non-operational and are included within our discontinued operations.

The properties where three of our facilities operate on (Kingston, Tennessee; Gainesville, Florida; and Richland, Washington) are held by our senior lender as collateral for our credit facility. The Company currently leases properties in the following locations:

| Location | Square Footage | Expiration of Lease |
|---|----------------|---------------------|
| Knoxville, TN (Safety and Ecology Corporation or "SEC") | 20,850 | May 31, 2018 |
| Knoxville, TN (SEC) | 5,000 | September 30, 2017 |
| Blaydon On Tyne, England (PF UK Limited) | 1,000 | Monthly |
| Pittsburgh, PA (SEC) | 640 | Monthly |
| Newport, KY (SEC) | 1,566 | Monthly |
| Oak Ridge, TN (M&EC) | 150,000 | January 31, 2018 |
| Atlanta, GA (Corporate) | 6,499 | February 28, 2018 |
| Mobile, AL (PF Medical) | 1,200 | August 31, 2017 |
| Park City, UT (PF Medical) | 640 | May 31, 2017 |

We believe that the above facilities currently provide adequate capacity for our operations and that additional facilities are readily available in the regions in which we operate, which could support and supplement our existing facilities.

ITEM 3. LEGAL PROCEEDINGS

In the normal course of conducting our business, we may become involved in litigation or be subject to local, state and federal agency (government) proceedings. We are not a party to any litigation or governmental proceeding, which our management believes could result in any judgments or fines that would have a material adverse effect on our financial position, liquidity or results of future operations.

ITEM 4. MINE SAFETY DISCLOSURE

Not Applicable.

PART II

ITEM 5. MARKET FOR REGISTRANT'S COMMON EQUITY AND RELATED STOCKHOLDER MATTERS

Our Common Stock is traded on the NASDAQ Capital Markets (“NASDAQ”) under the symbol “PESI.” The following table sets forth the high and low market trade prices quoted for the Common Stock during the periods shown. The source of such quotations and information is the NASDAQ online trading history reports.

| | | 2016 | | 2015 | |
|--------------|-------------------------|--------|--------|--------|--------|
| | | Low | High | Low | High |
| Common Stock | 1 st Quarter | \$3.42 | \$3.95 | \$3.78 | \$4.69 |
| | 2 nd Quarter | 3.62 | 5.64 | 3.32 | 4.01 |
| | 3 rd Quarter | 4.29 | 5.62 | 3.45 | 4.34 |
| | 4 th Quarter | 3.25 | 5.24 | 3.65 | 4.37 |

As of February 22, 2017, there were approximately 189 stockholders of record of our Common Stock, including brokerage firms and/or clearing houses holding shares of our Common Stock for their clientele (with each brokerage house and/or clearing house being considered as one holder). However, the total number of beneficial stockholders as of February 22, 2017 was approximately 2,345.

Since our inception, we have not paid any cash dividends on our Common Stock and have no dividend policy. Our Revised Loan Agreement prohibits us from paying any cash dividends on our Common Stock without prior approval from our lender. We do not anticipate paying cash dividends on our outstanding Common Stock in the foreseeable future.

No sales of unregistered securities occurred during the first, second, and fourth quarter of 2016. On August 2, 2016, the Company issued an aggregate 70,000 shares of its Common Stock resulting from the exercise of two Warrants for the purchase of up to 70,000 shares of the Company's Common Stock at an exercise price of \$2.23 per share, resulting total proceeds received by the Company of approximately \$156,000. See Item 7 – "Management's Discussion and Analysis of Financial Condition and Results of Operations – Liquidity and Capital Resources – Financing Activities" for further information of these two Warrants.

There were no purchases made by us or on behalf of us or any of our affiliated members of shares of our Common Stock during 2016.

We have adopted a preferred share rights plan, which is designed to protect us against certain creeping acquisitions, open market purchases, and certain mergers and other combinations with acquiring companies. See Item 1A. - Risk Factors – "Our Preferred Share Rights Plan (the "Rights Plan") may adversely affect our stockholders" as to further discussion relating to the terms of our Rights Plan.

See "Equity Compensation Plan" in Part III, Item 12, "Security Ownership of Certain Beneficial Owners and Management and Related Stockholders Matter" for securities authorized for issuance under equity compensation plans which is incorporated herein by reference.

ITEM 6. SELECTED FINANCIAL DATA

Not required under Regulation S-K for smaller reporting companies.

ITEM 7. MANAGEMENT'S DISCUSSION AND ANALYSIS OF FINANCIAL CONDITION AND RESULTS OF OPERATIONS

Certain statements contained within this "Management's Discussion and Analysis of Financial Condition and Results of Operations" ("MD&A") may be deemed "forward-looking statements" within the meaning of Section 27A of the Securities Act of 1933, as amended, and Section 21E of the Securities Exchange Act of 1934, as amended (collectively, the "Private Securities Litigation Reform Act of 1995"). See "Special Note regarding Forward-Looking Statements" contained in this report.

Management's discussion and analysis is based, among other things, upon our audited consolidated financial statements and includes our accounts, the accounts of our wholly-owned subsidiaries and the accounts of our

majority-owned Polish subsidiary, after elimination of all significant intercompany balances and transactions.

The following discussion and analysis should be read in conjunction with our consolidated financial statements and the notes thereto included in Item 8 of this report.

Review

Revenue decreased \$11,164,000 or 17.9% to \$51,219,000 for the twelve months ended December 31, 2016 from \$62,383,000 for the corresponding period of 2015. The decrease in revenue was primarily due to the decrease in revenue in our Treatment Segment of approximately \$9,065,000 or 21.9% due, in large part, to lower waste volume. Services Segment revenue decreased \$2,099,000 or 10.0% for the twelve months ended December 31, 2016 as compared to the corresponding period of 2015. Total gross profit decreased \$7,267,000 or 50.6% for the twelve months ended December 31, 2016 as compared to the corresponding period of 2015 primarily due to lower revenue generated from our Treatment Segment. Total selling, general, and administrative (“SG&A”) expenses decreased \$272,000 or 2.5% for the twelve months ended December 31, 2016 as compared to the corresponding period of 2015.

Our 2016 financial results were significantly impacted by certain large waste treatment shipments that we expected to receive but were delayed by certain governmental customers. Although we saw receipt of certain of these delayed shipments in the fourth quarter of 2016, we expect to receive the remaining delayed waste shipment within the first nine months of 2017.

Our financial results for the twelve months ended December 31, 2016 included certain non-cash impairment losses, write-offs and accruals which were recorded during the second quarter of 2016 in connection with the pending shut down of our East Tennessee Materials and Energy Corporation (“M&EC”) subsidiary as discussed below.

During the second quarter of 2016, our M&EC subsidiary was notified by the lessor that the lease agreement under which M&EC currently operates its Oak Ridge, Tennessee facility would not be renewed at the end of the current lease term ending January 21, 2018. In light of this event and our strategic review of operations within our Treatment Segment, we are proceeding with a plan to shut down our M&EC facility located in Oak Ridge, Tennessee at the end of the lease term. Operations at the M&EC facility are continuing during the remaining term of the lease and the facility has begun the process of transitioning waste shipments and operational capabilities to our other Treatment Segment facilities, subject to customer requirements and regulatory approvals. Simultaneously, we have begun required clean-up/maintenance procedures at M&EC’s Oak Ridge, Tennessee facility in accordance with M&EC’s Resource Conservation and Recovery Act (“RCRA”) permit requirements. As a result of this triggering event which occurred during the second quarter of 2016, we recorded non-cash impairment losses on our tangible and intangible (permit) assets of approximately \$1,816,000 and \$8,288,000, respectively, in the second quarter of 2016. We also recorded a write-off of approximately \$587,000 in prepaid expenses in connection with certain tangible asset at our M&EC facility which was impaired. As a result of the intangible impairment losses discussed above, we recorded a tax benefit in the amount of \$3,203,000.

In addition, M&EC is required to complete certain clean-up/maintenance activities at its Oak Ridge, Tennessee facility pursuant to its RCRA permits. The extent and cost of these activities are determined by federal/state mandate requirements. We performed an analysis and related estimate of the cost to complete the RCRA portion of these activities during the second quarter of 2016 and based on this analysis, we recorded an additional \$1,626,000 in closure liabilities during the second quarter of 2016 with a corresponding increase to capitalized asset retirement costs, as reported as a component of “Net Property and equipment” in the Consolidated Balance Sheet.”

During the year ended December 31, 2016 and 2015, M&EC’s revenues were approximately \$4,419,000 and \$6,591,000, respectively.

We had working capital deficit of approximately \$2,131,000 at December 31, 2016, as compared to working capital of \$2,966,000 at December 31, 2015, a decrease of \$5,097,000.

Business Environment, Outlook and Liquidity

Our Treatment and Services Segments’ business continues to be heavily dependent on services that we provide to governmental customers directly as the contractor or indirectly as a subcontractor. We believe demand for our services will continue to be subject to fluctuations due to a variety of factors beyond our control, including the current economic conditions and the manner in which the government will be required to spend funding to remediate federal

sites. In addition, our governmental contracts and subcontracts relating to activities at governmental sites are generally subject to termination or renegotiation on 30 days notice at the government's option. We believe that significant reductions in the level of governmental funding or specifically mandated levels for different programs that are important to our business could have a material adverse impact on our business, financial position, results of operations and cash flows.

Our cash flow requirements during 2016 were primarily financed by our operations and credit facility availability. Our Medical Segment has not generated any revenue to date. During 2016, our Medical Segment continued to commit substantial resources to the research and development ("R&D") of the new medical isotope production technology in pursuing the necessary steps required for eventual submission of this technology for the U.S. Food and Drug Administration ("FDA") and other regulatory approvals and commercialization of this technology. During the latter part of 2016, our Medical Segment ceased a substantial portion its R&D activities due to the need for substantial capital to fund such activities. We anticipate that our Medical Segment will not restart its full scale R&D activities until it obtains the necessary funding through obtaining its own credit facility or additional equity raise. The Medical Segment has entered into a letter of intent ("LOI") to raise capital, which is subject to the completion of a definitive agreement. Although the LOI has expired, the parties to the LOI are continuing to negotiate definitive agreements as of the date of this report (see "Liquidity and Capital Resources - Financing Activities" in this "Management's Discussion and Analysis" for a further discussion of this proposed transaction). If the Medical Segment is unable to raise the necessary capital, the Medical Segment would be required to reduce, further delay or eliminate its R&D program.

We are continually reviewing operating costs and are committed to further reducing operating costs to bring them in line with revenue levels, when needed.

We continue to focus on expansion into both commercial and international markets to increase revenues in our Treatment and Services Segments to offset the uncertainties of government spending in the United States of America. See “Liquidity and Capital Resources” below for further discussion of our liquidity.

Results of Operations

The reporting of financial results and pertinent discussions are tailored to our three reportable segments: The Treatment Segment (“Treatment”), the Services Segment (“Services”), and the Medical Segment (“Medical”). Our Medical Segment has not generated any revenue and all costs incurred are included within R&D:

Below are the results of continuing operations for our years ended December 31, 2016 and 2015 (amounts in thousands):

| (Consolidated) | 2016 | % | 2015 | % |
|---|------------|---------|----------|-------|
| Net revenues | \$51,219 | 100.0 | \$62,383 | 100.0 |
| Cost of goods sold | 44,135 | 86.2 | 48,032 | 77.0 |
| Gross profit | 7,084 | 13.8 | 14,351 | 23.0 |
| Selling, general and administrative | 10,724 | 20.9 | 10,996 | 17.6 |
| Research and development | 2,046 | 4.0 | 2,302 | 3.7 |
| Loss (gain) on disposal of property and equipment | 2 | — | (80) | (.1) |
| Impairment loss on tangible assets | 1,816 | 3.5 | — | — |
| Impairment loss on intangible assets | 8,288 | 16.2 | — | — |
| (Loss) income from operations | (15,792) | (30.8) | 1,133 | 1.8 |
| Interest income | 110 | .2 | 53 | .1 |
| Interest expense | (489) | (.9) | (489) | (.8) |
| Interest expense – financing fees | (108) | (.2) | (228) | (.3) |
| Other | 22 | — | 11 | — |
| (Loss) income from continuing operations before taxes | (16,257) | (31.7) | 480 | .8 |
| Income tax (benefit) expense | (2,994) | (5.8) | 543 | .9 |
| Loss from continuing operations | \$(13,263) | (25.9) | \$(63) | (.1) |

Summary - Years Ended December 31, 2016 and 2015*Net Revenue*

Consolidated revenues from continuing operations decreased \$11,164,000 for the year ended December 31, 2016, compared to the year ended December 31, 2015, as follows:

| (In thousands) | 2016 | % Revenue | 2015 | % Revenue | Change | % Change |
|-------------------------|----------|--------------|----------|--------------|------------|-------------|
| <i>Treatment</i> | | | | | | |
| Government waste | \$21,433 | 41.9 | \$30,130 | 48.2 | \$(8,697) | (28.9) |
| Hazardous/non-hazardous | 4,511 | 8.8 | 4,344 | 7.0 | 167 | 3.8 |
| Other nuclear waste | 6,309 | 12.3 | 6,844 | 11.0 | (535) | (7.8) |
| Total | 32,253 | 63.0 | 41,318 | 66.2 | (9,065) | (21.9) |
| <i>Services</i> | | | | | | |
| Nuclear | 17,035 | 33.2 | 18,743 | 30.0 | (1,708) | (9.1) |
| Technical | 1,931 | 3.8 | 2,322 | 3.8 | (391) | (16.8) |
| Total | 18,966 | 37.0 | 21,065 | 33.8 | (2,099) | (10.0) |
| Total | \$51,219 | 100.0 | \$62,383 | 100.0 | \$(11,164) | (17.9) |

Net Revenue

Treatment Segment revenue decreased \$9,065,000 or 21.9% for the year ended December 31, 2016 over the same period in 2015. The revenue decrease was primarily due to lower revenue generated from government customers of approximately \$8,697,000 or 28.9% due to lower waste volume. Our Services Segment revenue decreased by \$2,099,000 or 10.0%. Our Services Segment revenues are project based; as such, the scope, duration and completion of each project varies. As a result, our Services Segment revenues are subject to differences relating to timing and project value.

Cost of Goods Sold

Cost of goods sold decreased \$3,897,000 for the year ended December 31, 2016, as compared to the year ended December 31, 2015, as follows:

| (In thousands) | 2016 | % Revenue | 2015 | % Revenue | Change |
|----------------|------|--------------|------|--------------|--------|
|----------------|------|--------------|------|--------------|--------|

| | | | | | |
|-----------|----------|------|----------|------|-----------|
| Treatment | \$28,238 | 87.6 | \$30,408 | 73.6 | \$(2,170) |
| Services | 15,897 | 83.8 | 17,624 | 83.7 | (1,727) |
| Total | \$44,135 | 86.2 | \$48,032 | 77.0 | \$(3,897) |

Cost of goods sold for the Treatment Segment decreased by \$2,170,000 or approximately 7.1%. Included in the cost of goods sold is a write-off of approximately \$587,000 in prepaid fees recorded in the second quarter of 2016 resulting from the impairment of certain equipment at our M&EC facility. Such fees were incurred for emission performance testing certification requirements as mandated by the state (see “Overview” under this “Management’s Discussion and Analysis of Financial Condition and Results of Operations” for further details of transactions recorded during the second quarter of 2016 due to pending shut down of our M&EC facility). Excluding this write-off, cost of goods sold for the Treatment Segment decreased by approximately \$2,757,000 or 9.1% primarily due to lower revenue. We incurred lower disposal, transportation, lab, and material and supplies costs totaling approximately \$2,279,000. Our overall fixed costs were lower by approximately \$478,000 resulting from the following: salaries and payroll related expenses were lower by approximately \$399,000 resulting from lower headcount; general expenses were lower by approximately \$307,000 in various categories as we continue to streamline our costs; maintenance costs were lower by approximately \$395,000. In the prior period of 2015, we incurred higher costs in connection with the maintenance of certain buildings and equipment. The lower fixed costs described above were partially offset by higher depreciation expense of approximately \$506,000 primarily due the re-evaluation of the estimated useful lives of M&EC facility’s remaining tangible assets conducted during the second quarter of 2016 due to the pending shut down of the facility and higher regulatory expenses of approximately \$117,000. Services Segment cost of goods sold decreased \$1,727,000 or 9.8% primarily due to lower labor and travel expenses totaling approximately \$1,302,000 and lower material and supplies expenses by approximately \$566,000. The decrease was partially offset by higher disposal/transportation costs of approximately \$134,000. Included within cost of goods sold is depreciation and amortization expense of \$4,002,000 and \$3,548,000 for the twelve months ended December 31, 2016, and 2015, respectively.

Gross Profit

Gross profit for the year ended December 31, 2016, was \$7,267,000 lower than 2015, as follows:

| (In thousands) | 2016 | % | 2015 | % | Change |
|----------------|---------|---------|----------|---------|-----------|
| | | Revenue | | Revenue | |
| Treatment | \$4,015 | 12.4 | \$10,910 | 26.4 | \$(6,895) |
| Services | 3,069 | 16.2 | 3,441 | 16.3 | (372) |
| Total | \$7,084 | 13.8 | \$14,351 | 23.0 | \$(7,267) |

Treatment Segment gross profit decreased \$6,895,000 or 63.2% and gross margin decreased to 12.4% from 26.4%. Excluding the write-off of the \$587,000 in prepaid fees resulting from the impairment of certain equipment at our M&EC subsidiary as discussed above, Treatment Segment gross profit decreased \$6,308,000 or 57.8% and gross margin decreased to 14.3% from 26.4% primarily due to decreased revenue from lower waste volume and the impact of our fixed costs. In the Services Segment, the decrease in gross profit of \$372,000 or 10.8% was primarily due to the decrease in revenue. Gross margin remained constant. As discussed previously, our overall Services Segment gross margin is impacted by our current projects which are competitively bid on and will therefore, have varying margin structures.

SG&A

SG&A expenses decreased \$272,000 for the year ended December 31, 2016, as compared to the corresponding period for 2015, as follows:

| (In thousands) | 2016 | % | 2015 | % | Change |
|----------------|----------|---------|----------|---------|----------|
| | | Revenue | | Revenue | |
| Administrative | \$4,919 | — | \$5,045 | — | \$(126) |
| Treatment | 3,506 | 10.9 | 3,721 | 9.0 | (215) |
| Services | 2,299 | 12.1 | 2,230 | 10.6 | 69 |
| Total | \$10,724 | 20.9 | \$10,996 | 17.6 | \$(272) |

The decrease in administrative SG&A was primarily the result of lower outside services expenses by approximately \$105,000 resulting from fewer consulting/business/legal matters. Bonus/incentive expenses were lower by approximately \$214,000 as our executive officers earned a total of approximately \$214,000 in compensation under the Management Incentive Plans (“MIPs”) in 2015 and no compensation was earned under any of the MIPs in 2016. In addition, general expenses were lower by approximately \$34,000 in various categories. The decrease was partially offset by higher amortization expense of approximately \$40,000 resulting from the write-off of a patent and higher salaries and payroll related expenses of approximately \$187,000 resulting from the hiring of our new executive vice

president in the second quarter of 2016. Treatment SG&A was lower primarily due to lower marketing expenses by approximately \$100,000 due to fewer tradeshows. Total payroll related and travel expenses were lower by approximately \$50,000 and general expenses were lower by approximately \$70,000 in various categories as we continue our efforts towards reducing costs. The increase in SG&A in the Services Segment was primarily due to higher payroll expenses of approximately \$271,000 incurred primarily in the first half of 2016 related to bids and proposal work for potential projects. The increase was partially offset by lower outside services expenses by approximately \$161,000 from fewer consulting/legal/business matters and lower amortization expenses by approximately \$42,000 as a certain amortizable intangible asset became fully amortized in June 2015. Included in SG&A expenses is depreciation and amortization expense of \$163,000 and \$169,000 for the twelve months ended December 31, 2016 and 2015, respectively.

R&D

R&D expenses decreased \$256,000 for the year ended December 31, 2016, as compared to the corresponding period of 2015 as follows:

| (In thousands) | 2016 | 2015 | Change |
|----------------|---------|---------|-----------|
| Administrative | \$15 | \$9 | \$ 6 |
| Treatment | 504 | 179 | 325 |
| Services | 38 | — | 38 |
| PF Medical | 1,489 | 2,114 | (625) |
| Total | \$2,046 | \$2,302 | \$ (256) |

R&D costs consist primarily of employee salaries and benefits, laboratory costs, third party fees, and other related costs associated with the development of new technologies and technological enhancement of new potential waste treatment processes. The decrease in R&D costs for 2016 as compared to 2015 was primarily due to reduced R&D performed by our Medical Segment. The decrease was partially offset primarily by increase in R&D costs incurred by our Treatment Segment for enhancement of treatment processes.

Interest Expense

No changes were noted in interest expense for the twelve months ended December 31, 2016 as compared to the corresponding period of 2015. Interest expense for 2016 included a \$68,000 loss on debt extinguishment incurred in the first quarter of 2016 as a result of the amendment dated March 24, 2016 that we entered into with our lender which extended the due date of our credit facility, among other things, to March 24, 2021. Excluding this \$68,000 loss on debt extinguishment, the decrease in interest expense was primarily due to lower interest from our declining term loan balance and lower interest from the declining \$3,000,000 loan dated August 2, 2013, which was paid in full by us in August 2016. The decrease was partially offset by higher interest from higher average revolver loan balance outstanding in 2016.

Interest Expense- Financing Fees

Interest expense-financing fees decreased approximately \$120,000 for the twelve months ended December 31, 2016 as compared to the corresponding period of 2015. The decrease was primarily due to lower monthly amortized financing fees resulting from our amended credit facility pursuant to the amendment dated March 24, 2016 as discussed above.

Income Taxes

We had income tax benefit of \$2,994,000 and income tax expense of \$543,000 for continuing operations for the years ended December 31, 2016 and 2015, respectively. The Company's effective tax rates were approximately 18.4% and

113.1% for the twelve months ended December 31, 2016 and 2015, respectively. Our income tax benefit for the year ended 2016 was primarily the result of a tax benefit recorded in the amount of approximately \$3,203,000 resulting from the permit impairment loss recorded for the M&EC subsidiary during the second quarter of 2016. Our income tax expense for 2015 was primarily due to deferred tax expense related to our indefinite-lived intangibles not covered by valuation allowance.

Discontinued Operations

Our discontinued operations consist of all our subsidiaries included in our Industrial Segment which were divested in 2011 and prior, previously closed locations, and our Perma-Fix of South Georgia, Inc. (“PFSG”) facility which is currently undergoing closure, subject to regulatory approval.

On May 2, 2016, Perma-Fix of Michigan, Inc. (“PFMI” – a closed location) entered into an Agreement for the sale of the property for a price of \$450,000. The Agreement provides for a down payment of approximately \$75,000. After certain closing and settlement costs, PFMI received approximately \$46,000. The Agreement also provides for, among other things, the balance of the purchase price of \$375,000 to be paid by the buyer in 60 equal monthly installments of approximately \$7,250, with the first payment due June 15, 2016.

Our discontinued operations had no revenue for the twelve months ended December 31, 2016 and 2015. We incurred net losses of \$730,000 and \$1,864,000 for our discontinued operations for the twelve months ended December 31, 2016 and 2015, respectively. Our losses for the twelve months ended December 31, 2015 included a penalty in the amount of approximately \$201,000 recorded for PFSG in connection with a Consent Order from the Georgia Department of Natural Resources Environmental Protection Division and an asset impairment charge of \$150,000 recorded for PFMI in connection with the sale of the property as discussed above. In addition, our net loss for the twelve months ended December 31, 2015 included \$407,000 in expenses (with \$400,000 recorded as interest expenses) recorded in connection with an arbitration award that PFSG was required to pay to a contractor hired to perform emergency response services at our PFSG subsidiary resulting from the fire which occurred at the facility in 2013. Remaining losses for the periods discussed above were primarily due to costs incurred in the administration and continued monitoring of our discontinued operations.

Liquidity and Capital Resources

Our 2016 financial results were negatively impacted by certain waste treatment shipments which we expected to receive during 2016 but were delayed by certain governmental customers. Although we saw receipt of certain of these delayed shipments in the fourth quarter of 2016, we expect to receive the remaining delayed waste shipments within the first nine months of 2017. Our 2016 financial results were also impacted by certain non-cash impairment losses, write-offs and accruals which were recorded during the second quarter of 2016 in connection with our decision to shut down the facility by January 2018. However, with this pending shut down of the M&EC facility, we expect to benefit from reductions in certain operating costs. In addition, we are in the process of transitioning waste shipments and operational capabilities from our M&EC facility to our other Treatment Segment facilities, subject to customer requirements and regulatory approvals.

Our cash flow requirements during 2016 consisted of general working capital needs, scheduled payments on our debt obligations, remediation projects and planned capital expenditures and were financed primarily by our operations and credit facility availability. We continue to explore all sources of increasing revenue. We are continually reviewing operating costs and are committed to further reducing operating costs to bring them in line with revenue levels, when necessary.

Our cash flow requirements for 2017 and into the first quarter of 2018 will consist primarily of general working capital needs, scheduled principal payments on our debt obligations, remediation projects, planned capital expenditures, and closure spending requirements in the amount of approximately \$3,058,000 (of which approximately \$2,177,000 will be required in 2017) in connection with the pending shut down of our M&EC facility. We plan to fund these requirements from our operations, our credit facility availability, and the finite risk sinking funds that we expect to receive in connection with our Perma-Fix Northwest Richland, Inc. ("PFNWR") financial assurance policy (see a discussion of the pending receipt of the finite risk sinking funds related to our PFNWR financial assurance policy in "Investing Activities" below). We continue to explore all sources of increasing revenue. We are continually reviewing operating costs and are committed to further reducing operating costs to bring them in line with revenue levels, when necessary. Although there are no assurances, we believe that our cash flows from operations, our available liquidity from our credit facility, and the finite risk sinking funds that we expect to receive are sufficient to fund our Treatment and Services Segment operations for at least the next twelve months and beyond.

The following table reflects the cash flow activity for the year ended December 31, 2016 and the corresponding period of 2015:

| (In thousands) | 2016 | 2015 |
|--|-----------|-----------|
| Cash provided by operating activities of continuing operations | \$1,063 | \$1,744 |
| Cash used in operating activities of discontinued operations | (959) | (2,862) |
| Cash used in investing activities of continuing operations | (499) | (492) |
| Proceeds from sale of property of discontinued operations | 84 | — |
| Cash used in financing activities of continuing operations | (956) | (530) |
| Effect of exchange rate changes on cash | (5) | (105) |
| Decrease in cash | \$(1,272) | \$(2,245) |

As of December 31, 2016, we were in a net borrowing position (revolving credit) of approximately \$3,803,000. At December 31, 2016, we had cash on hand of approximately \$163,000, which presents primarily account balances for our foreign subsidiaries.

Operating Activities

Accounts receivable (including Accounts receivable – non-current), net of allowances for doubtful accounts, totaled \$8,917,000 at December 31, 2016, a decrease of \$756,000 from the December 31, 2015 balance of \$9,673,000. The decrease was primarily due to lower revenue and the timing of accounts receivable collections due to the variety of payment terms we offer to our customers.

Accounts payable, totaled \$4,244,000 at December 31, 2016, a decrease of \$1,865,000 from the December 31, 2015 balance of \$6,109,000. The decrease was primarily due to reduced payables resulting from lower revenue and the pay down of our accounts payable. Also, we continue to manage payment terms with our vendors to maximize our cash position throughout all segments.

Disposal/transportation accrual as of December 31, 2016, totaled \$1,390,000, an increase of \$283,000 over the December 31, 2015 balance of \$1,107,000. Our disposal accrual can vary based on revenue mix and the timing of waste shipments for final disposal. During the first twelve months of 2016, we shipped less waste for disposal.

We had working capital deficit of \$2,131,000 (which included working capital of our discontinued operations) as of December 31, 2016, as compared to working capital of \$2,966,000 as of December 31, 2015. Our working capital was negatively impacted primarily by reduced revenue and the net loss we incurred during 2016. In addition, our working capital was negatively impacted by the reclass of approximately \$2,177,000 in accrued closure costs from long-term to current resulting from expected spending relating to the pending shut down of our M&EC facility.

Investing Activities

During 2016, our purchases of capital equipment totaled approximately \$436,000. These expenditures were primarily for improvements in our Treatment Segment. These capital expenditures were funded by cash from operations. We have budgeted approximately \$1,000,000 for 2017 capital expenditures for our Treatment and Services Segments to maintain operations and regulatory compliance requirements. Certain of these budgeted projects may either be delayed until later years or deferred altogether. We have traditionally incurred actual capital spending totals for a given year at less than the initial budgeted amount. We plan to fund our capital expenditures from cash from operations and/or financing. The initiation and timing of projects are also determined by financing alternatives or funds available for such capital projects.

We have a closure policy for our PFNWR facility with American International Group, Inc. (“AIG”) (“PFNWR policy”) which provides financial assurance to the state of Washington in the event of closure of the PFNWR facility. As of December 31, 2016, our financial coverage under this policy stood at approximately \$7,973,000 and this PFNWR policy is collateralized by a finite risk sinking fund in the amount of approximately \$5,941,000 which is recorded in other long term assets on our Consolidated Balance Sheets as of December 31, 2016. During the latter part of 2016, we initiated a plan to secure other options in providing financial assurance coverage for our PFNWR facility, including acquiring a separate bonding mechanism, which would enable us to cancel the PFNWR policy, thereby allowing for the release of the sinking fund securing the PFNWR policy as discussed above. We are currently waiting on final approval on the release of the PFNWR policy from Washington state regulators. Once we obtain this release, we will cancel the PFNWR policy with AIG which would result in the release of the \$5,941,000 in sinking fund securing the PFNWR back to the Company. The new bonding mechanism in the amount of approximately \$7,000,000 (“new bond”) which is to provide financial assurance for the PFNWR facility will require approximately \$2,500,000 in collateral and will be provided for by the \$5,941,000 in sinking fund to be released by AIG. We expect this transaction to be completed by the end of the second quarter of 2017. After the release of the \$5,941,000 in finite sinking fund by AIG and payment of the required collateral for the new bond, we expect to receive the approximately remaining \$3,441,000 in finite sinking funds which will be used to pay down our revolving credit.

Financing Activities

We are subject to an Amended and Restated Revolving Credit, Term Loan and Security Agreement (“Loan Agreement”) with PNC National Association (“PNC”), acting as agent and lender. The Loan Agreement, as subsequently amended prior to the March 24, 2016 amendment discussed below (“Amended Loan Agreement”), provided us with the following credit facility: (a) up to \$12,000,000 revolving line of credit (“revolving credit”), subject to the amount of borrowings based on a percentage of eligible receivables (as defined) and (b) a term loan (“term loan”) of \$16,000,000, which required monthly installments of approximately \$190,000 (based on a seven-year amortization).

Under the Amended Loan Agreement, we had the option of paying an annual rate of interest due on the revolving credit at prime plus 2% or London Inter Bank Offer Rate (“LIBOR”) plus 3% and the term loan at prime plus 2.5% or LIBOR plus 3.5%.

On March 24, 2016, we entered into an amendment to the Amended Loan Agreement with PNC which provided, among other things, the following (the amendment, together with the Amended Loan Agreement is collectively known as the “Revised Loan Agreement”):

extended the due date of our credit facility from October 31, 2016 to March 24, 2021 (“maturity date”);

amended the term loan to approximately \$6,100,000, which requires monthly payments of \$101,600 (based on a five-year amortization) and which approximated the term loan balance under the existing credit facility at the date of the amendment. The revolving credit remains at up to \$12,000,000 (subject to the amount of borrowings based on a percentage of eligible receivables as previously defined under the Amended Loan Agreement);

released \$1,000,000 of the \$1,500,000 borrowing availability restriction that the lender had previously placed on us in connection with the insurance settlement proceeds received in 2014 by our PFSG facility. Our lender had authorized us to use such proceeds for working capital purposes but had placed an indefinite reduction on our borrowing availability of \$1,500,000;

revised the interest payment options to paying an annual rate of interest due on the revolving credit at prime plus 1.75% or LIBOR plus 2.75% and the term loan at prime plus 2.25% or LIBOR plus 3.25%; and

revised our annual capital spending maximum limit from \$6,000,000 to \$3,000,000.

In connection with the March 24, 2016 amendment, we paid our lender total closing fees of approximately \$72,000. As a result of the amendment dated March 24, 2016, we recorded approximately \$68,000 in loss on extinguishment of debt in accordance with ASC 470-50, “Debt – Modifications and Extinguishments,” which was included in interest

expense in the accompanying Consolidated Statements of Operations.

Pursuant to the Revised Loan Agreement, we may terminate the Revised Loan Agreement upon 90 days' prior written notice upon payment in full of our obligations under the Revised Loan Agreement. We have agreed to pay PNC 1.0% of the total financing in the event we pay off our obligations on or before March 23, 2017, .50% of the total financing if we pay off our obligations after March 23, 2017 but prior to or on March 23, 2018, and .25% of the total financing if we pay off our obligations after March 23, 2018 but prior to or on March 23, 2019. No early termination fee shall apply if we pay off our obligations after March 23, 2019.

Our credit facility with our lender contains certain financial covenants, along with customary representations and warranties. A breach of any of these financial covenants, unless waived by our lender, could result in a default under our credit facility allowing our lender to immediately require the repayment of all outstanding debt under our credit facility and terminate all commitments to extend further credit. The following table illustrates the quarterly financial covenant requirements under our credit facility as of December 31, 2016.

| (Dollars in thousands) | Quarterly Requirement | 1st | 2nd | 3rd | 4th |
|-------------------------------------|-----------------------|----------------|----------------|----------------|----------------|
| | | Quarter Actual | Quarter Actual | Quarter Actual | Quarter Actual |
| Senior Credit Facility | | | | | |
| Fixed charge coverage ratio | 1.15:1 | 0.91:1 | 0.64:1 | 0.06:1 | 4.03:1 |
| Minimum tangible adjusted net worth | \$30,000 | (1) \$40,539 | \$32,150 | \$30,706 | \$30,871 |

(1) Effective with the third quarter of 2016, minimum tangible adjusted net worth was reduced to \$26,000

(see below for further details)

We failed to meet our minimum quarterly fixed charge coverage ratio (“FCCR”) requirement of 1.15:1 in the first quarter of 2016. On May 23, 2016, our lender waived this non-compliance. In connection with this waiver, we paid PNC a fee of \$5,000. We met our financial covenant requirements in the second quarter of 2016 except for our quarterly FCCR requirement. On August 22, 2016, we entered into an amendment to the Revised Loan Agreement with our lender which waived our non-compliance with the minimum quarterly FCCR for the second quarter of 2016. In addition, the amendment revised the methodology to be used in calculating the FCCR in the third quarter of 2016, the fourth quarter of 2016 and the first quarter of 2017. This amendment also revised our minimum Tangible Adjusted Net Worth requirement (as defined in the Revised Loan Agreement) from \$30,000,000 to \$26,000,000. In connection with this amendment, we paid PNC a fee of \$25,000. We failed to meet our quarterly FCCR requirement for the third quarter of 2016 due in large part, to the decrease in revenues sustained by our Treatment Segment as a result of delays in certain waste shipments that we expected to receive during the third quarter of 2016. On November 17, 2016, we entered into another amendment to our Revised Loan Agreement with our lender. This amendment included the following:

waived our non-compliance with the minimum quarterly FCCR for the third quarter of 2016;
 further revised the methodology to be used in calculating the FCCR as follows (with continued requirement to maintain a minimum 1:15:1 ratio in each of the quarters): FCCR for the fourth quarter of 2016 is to be calculated using the financial results for the three month period ending December 31, 2016; FCCR for first quarter of 2017 is to be calculated using financial results for the six month period ending March 31, 2017; FCCR for second quarter of 2017 is to be calculated using the financial results for the nine month period ending June 30, 2017; and FCCR for the third quarter of 2017 and each fiscal quarter thereafter is to be calculated using the financial results for a trailing twelve month period basis;
 placed an immediate additional restriction on our borrowing availability of \$750,000, in addition to the restriction on our borrowing availability of \$500,000 which had been previously placed by our lender; and

revised the interest payment options to paying an annual rate of interest due on the revolving credit at prime plus 2% or LIBOR plus 3% and the term loan at Prime plus 2.5% or LIBOR plus 3.5%. Such interest payment option will automatically revert back to interest payment options as revised on the March 24, 2016 amendment (see the March 24, 2016 amendment that we entered into with our lender above) if we are able to attain minimally a FCCR of 1:15:1, as calculated using a trailing twelve month period, subsequent to any quarters after the third quarter of 2016.

As of December 31, 2016, the availability under our revolving credit was \$1,748,000, based on our eligible receivables and includes the remaining indefinite reduction of borrowing availability of \$1,250,000 as discussed above.

Pursuant to the November 17, 2016 amendment discussed above, our lender also established a “Condition Subsequent” which requires us to receive restricted cash released from a finite risk sinking fund in connection with our PFNWR subsidiary’s closure policy (see “Investing Activities” above for further discussion of the finite risk sinking funds in connection with our PFNWR facility). Immediately upon the receipt of the funds, our lender will immediately place another \$750,000 restriction on our borrowing availability resulting in a total of \$2,000,000 restriction on our borrowing availability.

All other terms of the Revised Loan Agreement remain principally unchanged. In connection with this amendment, we paid our lender a fee of \$25,000. We met our quarterly financial covenant requirements for the fourth quarter of 2016 and we expect to meet our quarterly financial covenant requirements in 2017; however, in the event that we fail to meet any of our quarterly financial covenant requirements in 2017 and our lender does not waive the non-compliance or further revise our covenant so that we are in compliance, our lender could accelerate the repayment of borrowings under our credit facility. In the event that our lender accelerates the payment of our borrowings, we may not have sufficient liquidity to repay our debt under our credit facility and other indebtedness.

Upon the receipt of the finite risk sinking funds (net of the required collateral for the new bond) relating to our PFNWR facility, which is expected to occur by the end of the second quarter of 2017 as discussed above (see “Investing Activities” above), our borrowing availability will increase by approximately \$2,691,000 which will include the additional \$750,000 restriction that our lender will place on our borrowing availability pursuant to the “Condition Subsequent” clause as noted in the November 17, 2016 amendment as discussed above.

We entered into a \$3,000,000 loan dated August 2, 2013 with Messrs. Robert Ferguson and William Lampson (each known as the “Lender”) which was repaid in full by us in August 2016. Mr. Ferguson serves as an advisor to our Board of Directors (“Board”) and is also a member of the Supervisory Board of PF Medical, our majority-owned Polish subsidiary (see “Related Party Transactions – Mr. Robert Ferguson”). The loan was unsecured with a term of three years with interest payable at a fixed interest rate of 2.99% per annum. The loan required monthly payments of accrued interest only during the first year of the loan and monthly payments of \$125,000 in principal plus accrued interest for the second and third year of the loan. As consideration for us receiving the loan, we issued to each Lender a Warrant to purchase up to 35,000 shares of the Company’s Common at an exercise price of \$2.23 per share. On August 2, 2016, each Lender exercised his Warrant for the purchase of 35,000 shares of our Common Stock, resulting in total proceeds paid to us of approximately \$156,000. As further consideration for the loan, we had also issued to each Lender 45,000 shares of our Common Stock. The fair value of the Warrants and Common Stock and the related closing fees incurred from this transaction were recorded as a debt discount, which has been fully amortized using the effective interest method over the term of the loan as interest expense – financing fees.

On October 11, 2016, the Company, the Company’s majority-owned Polish subsidiary, Perma-Fix Medical S.A (“PFMSA”) and PFMSA’s wholly-owned subsidiary, Perma-Fix Medical Corporation (“PFM Corporation”), a Delaware corporation (“PFMSA” and “PFM Corporation” are together known as “PF Medical”), entered into a letter of intent (“LOI”) with a private investor, subject to certain closing and other conditions, including, but not limited to, the execution of a definitive agreement, for the purchase of \$10,000,000 of Preferred Shares in PFM Corporation at a price of \$8.00 per share. The termination date of this LOI has since expired but the parties continue to negotiate definitive agreements with the following proposed terms, among other things, \$5,000,000 to be invested by the investor at the initial closing and \$5,000,000 to be invested at the second closing which is to occur within 120 days after the initial closing. Upon the initial closing, one half of the Preferred Shares will be issued to the investor and the remaining half of the Preferred Shares will be issued to the investor at the second closing. The Preferred Shares of PFM Corporation to be issued to the investor would be voting securities and, after completion of both closings, the investor will own approximately 48.6% of PFM Corporation’s issued and outstanding voting securities and PFMSA will own the balance of PFM Corporation’s voting securities. At each closing, subject to certain terms and conditions, the investor would also receive a 48-month warrant to purchase up to 468,750 shares of PFM Corporation’s common stock at an exercise

price of \$9.00 for each share. In addition, at the initial closing, we would receive a 48 month warrant, subject to certain terms and conditions, to purchase up to 183,606 shares of PFM Corporation's common stock at an exercise price of \$14.00 per share. Further, we would be repaid \$500,000 of the amounts owed to it by the Medical Segment within 30 days after the initial closing and the remaining balance (which stands at approximately \$1,962,000 at December 31, 2016) within 120 days after the initial closing.

If the above-described funding transaction is consummated, the LOI provides that the Board of Directors of PFM Corporation shall consist of seven directors. Two of the directors shall be nominees of the investor, two of the directors shall be nominees of the Company, one director shall be a nominee of another stockholder of PFMSA, and two independent directors shall be nominees of the PFM Corporation board.

Off Balance Sheet Arrangements

We have a number of routine operating leases, primarily related to office space rental, office equipment rental and equipment rental for contract projects as of December 31, 2016, which total approximately \$878,000, payable as follows: \$700,000 in 2017 with the remaining \$178,000 in 2018.

From time to time, we are required to post standby letters of credit and various bonds to support contractual obligations to customers and other obligations, including facility closures. As of December 31, 2016, the total amount of these bonds and letters of credit outstanding was approximately \$1,514,000, of which the majority of the amount relates to various bonds. Our Treatment Segment facilities operate under licenses and permits that require financial assurance for closure and post-closure costs. We provide for these requirements through financial assurance policies. As of December 31, 2016, the closure and post-closure requirements for these facilities were approximately \$37,136,000 which included a reduction in financial assurance requirement of approximately \$9,711,000 for our DSSI subsidiary made in the fourth quarter of 2016. We have recorded approximately \$21,487,000 in a sinking funds related to these policies in other long term assets on the accompanying Consolidated Balance (See “Liquidity and Capital Resources - Investing Activities” above for our plan to replace the financial assurance closure policy for our PFNWR facility with a new bonding mechanism and the related sinking funds for the PFNWR financial assurance closure policy).

Critical Accounting Policies

In preparing the consolidated financial statements in conformity with accounting principles generally accepted in the United States of America (“US GAAP”), management makes estimates and assumptions that affect the reported amounts of assets and liabilities and disclosures of contingent assets and liabilities at the date of the financial statements, as well as, the reported amounts of revenues and expenses during the reporting period. We believe the following critical accounting policies affect the more significant estimates used in preparation of the consolidated financial statements:

Revenue Recognition Estimates. We utilize a performance based methodology for purposes of revenue recognition in our Treatment Segment. As we accept more complex waste streams in this segment, the treatment of those waste streams becomes more complicated and time consuming. We have continued to enhance our waste tracking capabilities and systems, which has enabled us to better match the revenue earned to the processing phases achieved using a proportional performance method. The major processing phases are receipt, treatment/processing and shipment/final disposition. Upon receiving various wastes we recognize a certain percentage (generally ranging from 9.0% to 33%) of revenue as we incur costs for transportation, analyses and labor associated with the receipt of mixed waste. As the waste is processed, shipped and disposed of, we recognize the remaining revenue and the associated costs of transportation and burial where applicable. We review and evaluate our revenue recognition estimates and policies on an annual basis.

For our Services Segment, revenues on services are performed under time and material, fixed price, and cost-reimbursement contracts. Revenues and costs associated with fixed price contracts are recognized using the percentage of completion (efforts expended) method. We estimate our percentage of completion based on attainment of project milestones. Revenues and costs associated with time and material contracts are recognized as revenue when earned and costs are incurred.

Under cost-reimbursement contracts, we are reimbursed for costs incurred plus a certain percentage markup for indirect costs, in accordance with contract provisions. Costs incurred in excess of contract funding may be renegotiated for reimbursement. We also earn a fee based on the approved costs to complete the contract. We recognize this fee using the proportion of costs incurred to total estimated contract costs.

Contract costs include all direct labor, material and other non-labor costs and those indirect costs related to contract support, such as depreciation, fringe benefits, overhead labor, supplies, tools, repairs and equipment rental. Provisions for estimated losses on uncompleted contracts are made in the period in which such losses are determined. Changes in job performance, job conditions and estimated profitability, including those arising from contract penalty provisions and final contract settlements, may result in revisions to costs and income and are recognized in the period in which the revisions are determined.

Allowance for Doubtful Accounts. The carrying amount of accounts receivable is reduced by an allowance for doubtful accounts, which is a valuation allowance that reflects management's best estimate of the amounts that are uncollectible. We regularly review all accounts receivable balances that exceed 60 days from the invoice date and, based on an assessment of current credit worthiness, estimate the portion, if any, of the balances that are uncollectible. Specific accounts that are deemed to be uncollectible are reserved at 100% of their outstanding balance. The remaining balances aged over 60 days have a percentage applied by aging category (5% for balances 61-90 days, 20% for balances 91-120 days and 40% for balances over 120 days aged), based on a historical collections patterns, that allows us to calculate the total allowance required. This allowance was approximately 0.5% of revenue for 2016 and 3.0% of accounts receivable as of December 31, 2016. Additionally, this allowance was approximately 2.4% of revenue for 2015 and 13.2% of accounts receivable as of December 31, 2015.

Intangible Assets. Intangible assets consist primarily of the recognized value of the permits required to operate our business. We continually monitor the propriety of the carrying amount of our permits to determine whether current events and circumstances warrant adjustments to the carrying value.

Indefinite-lived intangible assets are not amortized but are reviewed for impairment annually as of October 1, or when events or changes in the business environment indicate that the carrying value may be impaired. If the fair value of the asset is less than the carrying amount, we perform a quantitative test to determine the fair value. The impairment loss, if any, is measured as the excess of the carrying value of the asset over its fair value. Significant judgments are inherent in these analyses and include assumptions for, among other factors, forecasted revenue, gross margin, growth rate, operating income, timing of expected future cash flows, and the determination of appropriate long term discount rates.

During the second quarter of 2016, based on our analysis, we fully impaired the permit value of approximately \$8,288,000 for our M&EC subsidiary as a result of our decision to shut down the M&EC facility by January 2018. We performed impairment testing of our remaining permits related to our Treatment reporting unit as of October 1, 2016 and determined there was no impairment. Impairment testing of our permits related to our Treatment reporting unit as of October 1, 2015 also resulted in no impairment charges.

Intangible assets that have definite useful lives are amortized using the straight-line method over the estimated useful lives (with the exception of customer relationships which are amortized using an accelerated method) and are excluded from our annual intangible asset valuation review as of October 1. We have one definite-lived permit which was excluded from our annual impairment review as noted above. The net carrying value of this one definite-lived permit as of December 31, 2016 and 2015 was approximately \$117,000 and \$172,000, respectively. Intangible assets with definite useful lives are also tested for impairment whenever events or changes in circumstances indicate that the asset's carrying value may not be recoverable.

Accrued Closure Costs and Asset Retirement Obligations (“ARO”). Accrued closure costs represent our estimated environmental liability to clean up our facilities as required by our permits, in the event of closure. Accounting Standards Codification (“ASC”) 410, “Asset Retirement and Environmental Obligations” requires that the discounted fair value of a liability for an ARO be recognized in the period in which it is incurred with the associated ARO capitalized as part of the carrying cost of the asset. The recognition of an ARO requires that management make numerous estimates, assumptions and judgments regarding such factors as estimated probabilities, timing of settlements, material and service costs, current technology, laws and regulations, and credit adjusted risk-free rate to be used. This estimate is inflated, using an inflation rate, to the expected time at which the closure will occur, and then discounted back, using a credit adjusted risk free rate, to the present value. ARO’s are included within buildings as part of property and equipment and are depreciated over the estimated useful life of the property. In periods subsequent to initial measurement of the ARO, the Company must recognize period-to-period changes in the liability resulting from the passage of time and revisions to either the timing or the amount of the original estimate of undiscounted cash flow. Increases in the ARO liability due to passage of time impact net income as accretion expense and are included in cost of goods sold in the Consolidated Statements of Operations. Changes in the estimated future cash flows costs underlying the obligations (resulting from changes or expansion at the facilities) require adjustment to the ARO liability calculated and are capitalized and charged as depreciation expense, in accordance with our depreciation policy. As a result of our decision to shut down our M&EC facility by January 2018, during the second quarter of 2016, we recorded an additional \$1,626,000 in closure liabilities with the offset to ARO.

Accrued Environmental Liabilities. We have three remediation projects in progress (all within discontinued operations). The current and long-term accrual amounts for the projects are our best estimates based on proposed or approved processes for clean-up. The circumstances that could affect the outcome range from new technologies that are being developed every day to reduce our overall costs, to increased contamination levels that could arise as we complete remediation which could increase our costs, neither of which we anticipate at this time. In addition, significant changes in regulations could adversely or favorably affect our costs to remediate existing sites or potential future sites, which cannot be reasonably quantified (See “Environmental Contingencies” below for further information of these liabilities).

Disposal/Transportation Costs. We accrue for waste disposal based upon a physical count of the waste at each facility at the end of each accounting period. Current market prices for transportation and disposal costs are applied to the end of period waste inventories to calculate the disposal accrual. Costs are calculated using current costs for disposal, but economic trends could materially affect our actual costs for disposal. As there are limited disposal sites available to us, a change in the number of available sites or an increase or decrease in demand for the existing disposal areas could significantly affect the actual disposal costs either positively or negatively.

Stock-Based Compensation. We account for stock-based compensation in accordance with ASC 718, “Compensation – Stock Compensation.” ASC 718 requires all stock-based payments to employees, including grants of employee stock options, to be recognized in the income statement based on their fair values. We use the Black-Scholes option-pricing model to determine the fair-value of stock-based awards which requires subjective assumptions. Assumptions used to estimate the fair value of stock options granted include the exercise price of the award, the expected term, the expected volatility of our stock over the option’s expected term, the risk-free interest rate over the option’s expected term, and the expected annual dividend yield. In addition, judgment is also required in estimating the amount of stock-based awards that are expected to be forfeited.

Income Taxes. The provision for income tax is determined in accordance with ASC 740, “Income Taxes.” As part of the process of preparing our consolidated financial statements, we are required to estimate our income taxes in each of the jurisdictions in which we operate. We record this amount as a provision or benefit for taxes. This process involves estimating our actual current tax exposure, including assessing the risks associated with tax audits, and assessing temporary differences resulting from different treatment of items for tax and accounting purposes. These differences result in deferred tax assets and liabilities. We assess the likelihood that our deferred tax assets will be recovered from future taxable income and, to the extent that we believe recovery is not likely, we establish a valuation allowance. As of December 31, 2016 and 2015, we had net deferred tax assets of approximately \$12,528,000 and \$8,592,000, respectively (which excludes a deferred tax liability relating to goodwill and indefinite lived intangible assets), which were primarily related to federal and state net operating loss (“NOL”) carryforwards, impairment charges, and closure costs. As of December 31, 2016 and 2015, we concluded that it was more likely than not that \$12,528,000 and \$8,592,000 of our deferred income tax assets would not be realized, and as such, a full valuation allowance was applied against those deferred income tax assets. Our net operating losses are subject to audit by the Internal Revenue Services, and, as a result, the amounts could be reduced.

Known Trends and Uncertainties

Economic Conditions. Our business continues to be heavily dependent on services that we provide to governmental clients (including the U.S. Department of Energy (“DOE”) and U.S. Department of Defense (“DOD”)) directly as the prime contractor or indirectly for others as a subcontractor. We believe demand for our services will continue to be subject to fluctuations due to a variety of factors beyond our control, including the current economic conditions, the large budget deficit that the government is facing, and the manner in which the government will be required to spend funding to remediate federal sites. In addition, our governmental contracts and subcontracts relating to activities at governmental sites are generally subject to termination or renegotiation on 30 days notice at the government’s option. Significant reductions in the level of governmental funding or specifically mandated levels for different programs that are important to our business could have a material adverse impact on our business, financial position, results of operations and cash flows.

Significant Customers. Our Treatment and Services Segments have significant relationships with the federal government, and continue to enter into contracts, directly as the prime contractor or indirectly for others as a subcontractor, with the federal government. The contracts that we are a party to with the federal government or with others as a subcontractor to the federal government generally provide that the government may terminate or renegotiate the contracts on 30 days notice, at the government's election. Our inability to continue under existing contracts that we have with the federal government (directly or indirectly as a subcontractor) could have a material adverse effect on our operations and financial condition.

We performed services relating to waste generated by the federal government representing approximately \$27,354,000 or 53.4% of our total revenue during 2016, as compared to \$36,105,000 or 57.9% of our total revenue during 2015.

Revenue generated by one of the customers (PSC Metal, Inc.) (non-government related and excluded from above) in the Services Segment accounted for approximately \$9,763,000 or 19.1% of the total revenues generated for the twelve months ended December 31, 2016. Project work for this customer commenced in March 2016 and was completed in December 2016. Revenue generated by another customer (Prologis Teterboro, LLC) (non-government related and excluded from above) in the Services Segment accounted for \$10,686,000 or 17.1% of the total revenues generated for the twelve months ended December 31, 2015. Project work for this customer was completed in December 2015.

As our revenues are event/project based where the completion of one contract with a specific customer may be replaced by another contract with a different customer from year to year, we do not believe the loss of one specific customer from one year to the next will generally have a material adverse effect on our operations and financial condition.

Environmental Contingencies

We are engaged in the waste management services segment of the pollution control industry. As a participant in the on-site treatment, storage and disposal market and the off-site treatment and services market, we are subject to rigorous federal, state and local regulations. These regulations mandate strict compliance and therefore are a cost and concern to us. Because of their integral role in providing quality environmental services, we make every reasonable attempt to maintain complete compliance with these regulations; however, even with a diligent commitment, we, along with many of our competitors, may be required to pay fines for violations or investigate and potentially remediate our waste management facilities.

We routinely use third party disposal companies, who ultimately destroy or secure landfill residual materials generated at our facilities or at a client's site. In the past, numerous third party disposal sites have improperly managed waste and consequently require remedial action; consequently, any party utilizing these sites may be liable for some or all of the remedial costs. Despite our aggressive compliance and auditing procedures for disposal of wastes, we could further be notified, in the future, that we are a potentially responsible party ("PRP") at a remedial action site, which could have a material adverse effect.

We have three remediation projects, which are currently in progress at our Perma-Fix of Dayton, Inc. ("PFD"), Perma-Fix of Memphis, Inc. ("PFM" – closed location), and PFSG (in closure status) subsidiaries. The Company divested PFD in 2008; however, the environmental liability of PFD was retained by the Company upon the divestiture of PFD. These remediation projects principally entail the removal/remediation of contaminated soil and, in most cases, the remediation of surrounding ground water. The remediation activities are closely reviewed and monitored by the applicable state regulators. While no assurances can be made that we will be able to do so, we expect to fund the expenses to remediate these sites from funds generated internally.

At December 31, 2016, we had total accrued environmental remediation liabilities of \$925,000, of which \$677,000 are recorded as a current liability, which reflects an increase of \$25,000 from the December 31, 2015 balance of \$900,000. The net increase of \$25,000 represents payments on remediation projects at PFSG and an increase to the reserve of approximately \$66,000 at PFD due to reassessment of the remediation reserve.

Related Party Transactions

Mr. David Centofanti

Mr. David Centofanti serves as our Vice President of Information Systems. For such position, he received annual compensation of \$168,000 for each of the years 2016 and 2015. Mr. David Centofanti is the son of our Chief Executive Officer (“CEO”), President and a Board member, Dr. Louis F. Centofanti. We believe the compensation received by Mr. Centofanti for his technical expertise which he provides to us is competitive and comparable to compensation we would have to pay to an unaffiliated third party with the same technical expertise.

Mr. Robert L. Ferguson

Mr. Robert L. Ferguson serves as an advisor to our Board and is also a member of the Supervisory Board of PF Medical, our majority-owned Polish subsidiary. Mr. Ferguson previously served as a member of our Board from June 2007 to February 2010 and again from August 2011 to September 2012. As an advisor to our Board, Mr. Ferguson is paid \$4,000 monthly plus reasonable expenses. For such services, Mr. Ferguson received compensation of approximately \$59,000 and \$58,000 for the years ended December 31, 2016 and 2015, respectively. On August 2, 2013, we completed a lending transaction with Messrs. Robert Ferguson and William Lampson (“collectively, the “Lenders”), whereby we borrowed from the Lenders the sum of \$3,000,000 (which was paid off by us in August 2016) pursuant to the terms of a Loan and Security Purchase Agreement and promissory note (the “Loan”) (see further details and terms of this Loan in this “MD&A – Liquidity and Capital Resources - Financing Activities”).

Mr. John Climaco

On June 2, 2015, Mr. Climaco, a current member of our Board, was elected as the Executive Vice President (“EVP”) of PF Medical. As EVP of PF Medical, Mr. Climaco receives an annual salary of \$150,000 and is not eligible to receive compensation for serving on our Board.

Mr. Climaco previously had a consulting agreement with us effective September 2014 (approved by the Board with Mr. Climaco abstaining) to perform certain consulting functions for us as determined by the Board, including review of operating and accounting functions, strategic opportunity and other initiatives, and the development of our medical isotope production technology. The consulting agreement was terminated effective June 2, 2015 upon Mr. Climaco’s election as EVP of PF Medical. Mr. Climaco was paid \$22,000 per month under the consulting agreement and received approximately \$117,000 in 2015 for his services under the consulting agreement.

Mr. Climaco is also a Director of Digirad Corporation, a publicly held company the common stock of which is listed on the Nasdaq (“Digirad”). On July 24, 2015, PF Medical and Digirad entered into a multi-year Tc-99m Supplier Agreement (the “Supplier Agreement”) and a Series F Stock Subscription Agreement (the “Subscription Agreement” and, together with the “Supplier Agreement”, the “Digirad Agreements”). The Supplier Agreement became effective upon the completion of the Subscription Agreement. Pursuant to the terms of the Digirad Agreements, Digirad purchased, in a private placement, 71,429 shares of PF Medical’s restricted Series F Stock for an aggregate purchase price of \$1,000,000. The 71,429 share investment made by Digirad constituted approximately 5.4% of the outstanding common shares of PF Medical. The Supplier Agreement provides, among other things, that upon PF Medical’s commercialization of certain Tc99m generators, Digirad will purchase agreed upon quantities of Tc-99m for its nuclear imaging operations either directly or in conjunction with its preferred nuclear pharmacy supplier and PF Medical will supply Digirad, or its preferred nuclear pharmacy supplier, with Tc-99m at a preferred pricing, subject to certain conditions.

Employment Agreements

We have employment agreements (each dated July 10, 2014 and effective for three years) with each of Dr. Centofanti (our President and CEO) and Ben Naccarato (our Chief Financial Officer (“CFO”). Each employment agreement provides for annual base salaries, bonuses (including Management Incentive Plan (“MIP”) as approved by our Board), and other benefits commonly found in such agreements. In addition, each employment agreement provides that in the event of termination of such officer without cause or termination by the officer for good reason (as such terms are defined in the employment agreement), the terminated officer shall receive payments of an amount equal to benefits that have accrued as of the termination but had not yet been paid, plus an amount equal to one year’s base salary at the time of termination. In addition, each of the employment agreements provide that in the event of a change in control (as defined in the employment agreements), all outstanding stock options to purchase our Common Stock granted to, and held by, the officer covered by the employment agreement to be immediately vested and exercisable. Mr. John Lash, our previous Chief Operating Officer (“COO”) who retired from the position effective September 30, 2016 and who remained a part-time employee through December 31, 2016, also had an employment agreement dated July 10, 2014 with substantially the same provisions as described above. Upon Mr. Lash’s resignation as COO effective September 30, 2016, his employment agreement also terminated. No amount was payable under Mr. Lash’s employment agreement upon his resignation as COO.

On January 19, 2017, our Compensation and Stock Option Committee (“Compensation Committee”) and the Board approved, and we entered into, an employment agreement (the “EVP/COO Employment Agreement”) with Mr. Mark Duff, EVP/COO. Upon Mr. Lash’s retirement as COO effective September 30, 2016 as discussed above, Mr. Duff assumed the additional position of COO and continues his position as our EVP. The EVP/COO Employment Agreement is effective June 11, 2016 (Mr. Duff’s effective date of employment as EVP) and has a term of three years. The EVP/COO Employment Agreement provides substantially the same provisions as the employment agreements described above for the CEO and CFO.

MIPs

On January 19, 2017, our Board and Compensation Committee approved individual MIPs for our CEO, EVP/COO, and CFO. The MIPs are effective January 1, 2017. Each MIP provides guidelines for the calculation of annual cash incentive based compensation, subject to Compensation Committee oversight and modification. Each MIP awards cash compensation based on achievement of performance thresholds, with the amount of such compensation established as a percentage of base salary. The potential target performance compensation ranges from 5% to 100% of the 2017 base salary for the CEO (\$13,962 to \$279,248), 5% to 100% of the 2017 base salary for the EVP/COO (\$13,350 to \$267,000), and 5% to 100% of the 2017 base salary for the CFO (\$11,033 to \$220,667).

ITEM 7A. QUANTITATIVE AND QUALITATIVE DISCLOSURES ABOUT MARKET RISK

Not required under Regulation S-K for smaller reporting companies.

SPECIAL NOTE REGARDING FORWARD-LOOKING STATEMENTS

Forward-looking Statements

Certain statements contained within this report may be deemed "forward-looking statements" within the meaning of Section 27A of the Securities Act of 1933, as amended, and Section 21E of the Securities Exchange Act of 1934, as amended (collectively, the "Private Securities Litigation Reform Act of 1995"). All statements in this report other than a statement of historical fact are forward-looking statements that are subject to known and unknown risks, uncertainties and other factors, which could cause actual results and performance of the Company to differ materially from such statements. The words "believe," "expect," "anticipate," "intend," "will," and similar expressions identify forward-looking statements. Forward-looking statements contained herein relate to, among other things,

demand for our services;
ability to achieve profitability;

continue to focus on expansion into both commercial and international markets to increase revenues;
reductions in the level of government funding in future years;
ability of our Medical Segment to fund its R&D program;
reducing operating costs;
expect to meet our quarterly financial covenant requirements in 2017;
cash flow requirements;
government funding for our services;
may not have liquidity to repay debt if our lender accelerates payment of our borrowings;
our cash flows from operations and our available liquidity from our credit facility are sufficient to service our Treatment and Services Segments' obligations;
manner in which the government will be required to spend funding to remediate federal sites;
audit by the Internal Revenue Services of our net operating losses;
fund capital expenditures from cash from operations and/or financing;
fund remediation expenditures for sites from funds generated internally;
expect to receive certain delayed waste treatment shipments within the first nine months of 2017;
compliance with environmental regulations;
potential effect of being a PRP;
benefits from the shut down of M&EC;
definitive agreement for PF Medical;
large business are more willing to team with small businesses in order to be part of these often substantial procurements;
permit and license requirements represent a potential barrier to entry for possible competitors;
process backlog during periods of low waste receipts, which historically has been in the first and fourth quarters;
potential sites for violations of environmental laws and remediation of our facilities;
receipt of finite sinking funds by the end of the second quarter of 2017 and the approval we expect to receive;
release of PFNWR policy by Washington state regulators;
reduction in certain operating costs resulting from pending shut down of M&EC facility; and
disposal of our waste.

While the Company believes the expectations reflected in such forward-looking statements are reasonable, it can give no assurance such expectations will prove to have been correct. There are a variety of factors, which could cause future outcomes to differ materially from those described in this report, including, but not limited to:

general economic conditions;
material reduction in revenues;
ability to meet PNC covenant requirements;
inability to collect in a timely manner a material amount of receivables;
increased competitive pressures;
inability to maintain and obtain required permits and approvals to conduct operations;
public not accepting our new technology;
inability to develop new and existing technologies in the conduct of operations;
inability to maintain and obtain closure and operating insurance requirements;
inability to retain or renew certain required permits;
discovery of additional contamination or expanded contamination at any of the sites or facilities leased or owned by us or our subsidiaries which would result in a material increase in remediation expenditures;

delays at our third party disposal site can extend collection of our receivables greater than twelve months;
refusal of third party disposal sites to accept our waste;

changes in federal, state and local laws and regulations, especially environmental laws and regulations, or in interpretation of such;
requirements to obtain permits for TSD activities or licensing requirements to handle low level radioactive materials are limited or lessened;
potential increases in equipment, maintenance, operating or labor costs;
management retention and development;
financial valuation of intangible assets is substantially more/less than expected;
the requirement to use internally generated funds for purposes not presently anticipated;
inability to continue to be profitable on an annualized basis;
inability of the Company to maintain the listing of its Common Stock on the NASDAQ;
terminations of contracts with federal agencies or subcontracts involving federal agencies, or reduction in amount of waste delivered to the Company under the contracts or subcontracts;
renegotiation of contracts involving the federal government;
federal government's inability or failure to provide necessary funding to remediate contaminated federal sites;
disposal expense accrual could prove to be inadequate in the event the waste requires re-treatment;
inability to raise capital on commercially reasonable terms;
inability to increase profitable revenue;
lender refuses to waive non-compliance or revises our covenant so that we are in compliance;
required governmental approvals to release the finite sinking funds are not obtained, or, if obtained, are not obtained in a timely manner to receive such funds by the end of the second quarter of 2017; and
Risk factors contained in Item 1A of this report.

ITEM 8. FINANCIAL STATEMENTS AND SUPPLEMENTARY DATA

Index
to
Consolidated
Financial
Statements

| Consolidated Financial Statements | Page No. |
|--|-----------------|
| Report of Independent Registered Public Accounting Firm | 39 |

| | |
|--|----|
| Consolidated Balance Sheets as of December 31, 2016 and 2015 | 40 |
|--|----|

| | |
|--|----|
| Consolidated Statements of Operations for the years ended December 31, 2016 and 2015 | 42 |
|--|----|

| | |
|--|----|
| Consolidated Statements of Comprehensive Loss for the years ended December 31, 2016 and 2015 | 43 |
|--|----|

| | |
|---|----|
| Consolidated Statements of Stockholders' Equity for the years | 44 |
|---|----|

ended December
31, 2016 and
2015

Consolidated
Statements of
Cash Flows for
the years ended 45
December 31,
2016 and 2015

Notes to
Consolidated 46
Financial
Statements

Financial Statement Schedules

In accordance with the rules of Regulation S-X, schedules are not submitted because they are not applicable to or required by the Company.

**REPORT OF INDEPENDENT REGISTERED PUBLIC
ACCOUNTING FIRM**

Board of Directors and Stockholders of

Perma-Fix Environmental Services, Inc.

We have audited the accompanying consolidated balance sheets of Perma-Fix Environmental Services, Inc. (a Delaware corporation) and subsidiaries (the “Company”) as of December 31, 2016 and 2015, and the related consolidated statements of operations, comprehensive loss, stockholders’ equity, and cash flows for each of the two years then ended. These financial statements are the responsibility of the Company’s management. Our responsibility is to express an opinion on these financial statements based on our audits.

We conducted our audits in accordance with the standards of the Public Company Accounting Oversight Board (United States). Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement. We were not engaged to perform an audit of the Company’s internal control over financial reporting. Our audits included consideration of internal control over financial reporting as a basis for designing audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the Company’s internal control over financial reporting. Accordingly, we express no such opinion. An audit also includes examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements, assessing the accounting principles used and significant estimates made by management, as well as evaluating the overall financial statement presentation. We believe that our audits provide a reasonable basis for our opinion.

In our opinion, the consolidated financial statements referred to above present fairly, in all material respects, the financial position of Perma-Fix Environmental Services, Inc. and subsidiaries as of December 31, 2016 and 2015, and the results of their operations and their cash flows for the years then ended in conformity with accounting principles generally accepted in the United States of America.

/s/ GRANT THORNTON LLP

Atlanta, Georgia

March 24, 2017

PERMA-FIX ENVIRONMENTAL SERVICES, INC.**CONSOLIDATED BALANCE SHEETS***As of December 31,*

| (Amounts in Thousands, Except for Share and per Share Amounts) | 2016 | 2015 |
|--|----------|----------|
| ASSETS | | |
| Current assets: | | |
| Cash | \$163 | \$1,435 |
| Restricted cash | — | 99 |
| Accounts receivable, net of allowance for doubtful accounts of \$272 and \$1,474, respectively | 8,705 | 9,673 |
| Unbilled receivables - current | 2,926 | 4,569 |
| Inventories | 370 | 377 |
| Prepaid and other assets | 2,358 | 3,929 |
| Current assets related to discontinued operations | 85 | 34 |
| Total current assets | 14,607 | 20,116 |
| Property and equipment: | | |
| Buildings and land | 22,544 | 20,209 |
| Equipment | 33,454 | 35,191 |
| Vehicles | 409 | 422 |
| Leasehold improvements | 11,626 | 11,626 |
| Office furniture and equipment | 1,738 | 1,755 |
| Construction-in-progress | 667 | 497 |
| | 70,438 | 69,700 |
| Less accumulated depreciation | (53,323) | (49,707) |
| Net property and equipment | 17,115 | 19,993 |
| Property and equipment related to discontinued operations | 81 | 531 |
| Intangibles and other long term assets: | | |
| Permits | 8,474 | 16,761 |
| Other intangible assets - net | 1,721 | 2,066 |
| Accounts receivable - non-current | 212 | — |
| Unbilled receivables – non-current | 216 | 707 |
| Finite risk sinking fund | 21,487 | 21,380 |
| Other assets | 1,154 | 1,359 |
| Other assets related to discontinued operations | 268 | — |
| Total assets | \$65,335 | \$82,913 |

The accompanying notes are an integral part of these consolidated financial statements.

PERMA-FIX ENVIRONMENTAL SERVICES, INC.**CONSOLIDATED BALANCE SHEETS, CONTINUED***As of December 31,*

| (Amounts in Thousands, Except for Share and per Share Amounts) | 2016 | 2015 |
|--|-----------|-----------|
| LIABILITIES AND STOCKHOLDERS' EQUITY | | |
| Current liabilities: | | |
| Accounts payable | \$4,244 | \$6,109 |
| Accrued expenses | 4,094 | 4,341 |
| Disposal/transportation accrual | 1,390 | 1,107 |
| Deferred revenue | 2,691 | 2,631 |
| Accrued closure costs - current | 2,177 | — |
| Current portion of long-term debt | 1,184 | 1,481 |
| Current portion of long-term debt - related party | — | 950 |
| Current liabilities related to discontinued operations | 958 | 531 |
| Total current liabilities | 16,738 | 17,150 |
| Accrued closure costs | 5,138 | 5,301 |
| Other long-term liabilities | 931 | 867 |
| Deferred tax liabilities | 2,362 | 5,424 |
| Long-term debt, less current portion | 7,649 | 7,405 |
| Long-term liabilities related to discontinued operations | 361 | 1,064 |
| Total long-term liabilities | 16,441 | 20,061 |
| Total liabilities | 33,179 | 37,211 |
| Commitments and Contingencies (Note 14) | | |
| Series B Preferred Stock of subsidiary, \$1.00 par value; 1,467,396 shares authorized, 1,284,730 shares issued and outstanding, liquidation value \$1.00 per share plus accrued and unpaid dividends of \$931 and \$867, respectively (Note 8) | 1,285 | 1,285 |
| Stockholders' Equity: | | |
| Preferred Stock, \$.001 par value; 2,000,000 shares authorized, no shares issued and outstanding | — | — |
| Common Stock, \$.001 par value; 30,000,000 shares authorized; 11,677,025 and 11,551,232 shares issued, respectively; 11,669,383 and 11,543,590 shares outstanding, respectively | 11 | 11 |
| Additional paid-in capital | 106,048 | 105,556 |
| Accumulated deficit | (74,213) | (60,808) |
| Accumulated other comprehensive loss | (162) | (117) |
| Less Common Stock in treasury, at cost; 7,642 shares | (88) | (88) |
| Total Perma-Fix Environmental Services, Inc. stockholders' equity | 31,596 | 44,554 |
| Non-controlling interest | (725) | (137) |

| | | |
|--|----------|----------|
| Total stockholders' equity | 30,871 | 44,417 |
| Total liabilities and stockholders' equity | \$65,335 | \$82,913 |

The accompanying notes are an integral part of these consolidated financial statements.

PERMA-FIX ENVIRONMENTAL SERVICES, INC.**CONSOLIDATED STATEMENTS OF OPERATIONS***For the years ended December 31,*

| (Amounts in Thousands, Except for Per Share Amounts) | 2016 | 2015 |
|---|------------|-----------|
| Net revenues | \$51,219 | \$62,383 |
| Cost of goods sold | 44,135 | 48,032 |
| Gross profit | 7,084 | 14,351 |
| Selling, general and administrative expenses | 10,724 | 10,996 |
| Research and development | 2,046 | 2,302 |
| Loss (gain) on disposal of property and equipment | 2 | (80) |
| Impairment loss on tangible assets | 1,816 | — |
| Impairment loss on intangible assets | 8,288 | — |
| (Loss) income from operations | (15,792) | 1,133 |
| Other income (expense): | | |
| Interest income | 110 | 53 |
| Interest expense | (489) | (489) |
| Interest expense-financing fees | (108) | (228) |
| Other | 22 | 11 |
| (Loss) income from continuing operations before taxes | (16,257) | 480 |
| Income tax (benefit) expense | (2,994) | 543 |
| Loss from continuing operations, net of taxes | (13,263) | (63) |
| Loss from discontinued operations, net of taxes (Note 9) | (730) | (1,864) |
| Net loss | (13,993) | (1,927) |
| Net loss attributable to non-controlling interest | (588) | (877) |
| Net loss attributable to Perma-Fix Environmental Services, Inc. common stockholders | \$(13,405) | \$(1,050) |
| Net (loss) income per common share attributable to Perma-Fix Environmental Services, Inc. stockholders - basic and diluted: | | |
| Continuing operations | \$(1.09) | \$.07 |
| Discontinued operations | (.06) | (.16) |
| Net loss per common share | \$(1.15) | \$(.09) |
| Number of common shares used in computing net income (loss) per share: | | |
| Basic | 11,608 | 11,516 |

| | | |
|---------|--------|--------|
| Diluted | 11,608 | 11,552 |
|---------|--------|--------|

The accompanying notes are an integral part of these consolidated financial statements.

PERMA-FIX ENVIRONMENTAL SERVICES, INC.

CONSOLIDATED STATEMENTS OF COMPREHENSIVE LOSS

For the years ended December 31,

| (Amounts in Thousands) | 2016 | 2015 |
|---|------------|-----------|
| Net loss | \$(13,993) | \$(1,927) |
| Other comprehensive loss: | | |
| Foreign currency translation adjustments | (45) | (128) |
| Total other comprehensive loss | (45) | (128) |
| Comprehensive loss | (14,038) | (2,055) |
| Comprehensive loss attributable to non-controlling interest | (588) | (877) |
| Comprehensive loss attributable to Perma-Fix Environmental Services, Inc. common stockholders | \$(13,450) | \$(1,178) |

The accompanying notes are an integral part of these consolidated financial statements.

PERMA-FIX ENVIRONMENTAL SERVICES, INC**CONSOLIDATED STATEMENTS OF STOCKHOLDERS' EQUITY***For the years ended December 31,**(Amounts in Thousands, Except for Share Amounts)*

| | Common Stock Shares | Additional Paid-In Capital Amount | Common Stock Held In Treasury | Accumulated Other Comprehensive Loss | Non-controlling Interest in Subsidiary | Accumulated Deficit | Total Stockholders' Equity | |
|---|------------------------|--|---|---|--|------------------------|----------------------------------|-----------|
| Balance at December 31, 2014 | 11,476,485 | \$ 11 | \$ 104,541 | \$ (88) | \$ 11 | \$ 333 | \$ (59,758) | \$ 45,050 |
| Net loss | — | — | — | — | — | (877) | (1,050) | (1,927) |
| Foreign currency translation | — | — | — | (128) | — | — | — | (128) |
| Issuance of stock - Perma-Fix Medical S.A., net of expenses of \$29 | — | — | 631 | — | — | 407 | — | 1,038 |
| Issuance of Common Stock upon exercise of options | 3,423 | — | 10 | — | — | — | — | 10 |
| Issuance of Common Stock for services | 71,324 | — | 282 | — | — | — | — | 282 |
| Stock-Based Compensation | — | — | 92 | — | — | — | — | 92 |
| Balance at December 31, 2015 | 11,551,232 | \$ 11 | \$ 105,556 | \$ (88) | \$ (117) | \$ (137) | \$ (60,808) | \$ 44,417 |
| Net loss | — | — | — | — | — | (588) | (13,405) | (13,993) |
| Foreign currency translation | — | — | — | (45) | — | — | — | (45) |
| Issuance of Common Stock upon exercise of Warrants | 70,000 | — | 156 | — | — | — | — | 156 |
| Issuance of Common Stock for services | 55,793 | — | 238 | — | — | — | — | 238 |
| Stock-Based Compensation | — | — | 98 | — | — | — | — | 98 |
| | 11,677,025 | \$ 11 | \$ 106,048 | \$ (88) | \$ (162) | \$ (725) | \$ (74,213) | \$ 30,871 |

**Balance at December
31, 2016**

The accompanying notes are an integral part of these consolidated financial statements.

44

PERMA-FIX ENVIRONMENTAL SERVICES, INC.**CONSOLIDATED STATEMENTS OF CASH FLOWS***For the years ended December 31,*

| (Amounts in Thousands) | 2016 | 2015 |
|--|------------|------------|
| Cash flows from operating activities: | | |
| Net loss | \$(13,993) | \$(1,927) |
| Less: loss on discontinued operations, net of taxes (Note 9) | (730) | (1,864) |
| Loss from continuing operations | (13,263) | (63) |
| Adjustments to reconcile net loss from continuing operations to cash provided by (used in) operating activities: | | |
| Depreciation and amortization | 4,165 | 3,717 |
| Amortization of debt issuance costs | 173 | 221 |
| Deferred tax (benefit) expense | (3,062) | 418 |
| Recovery of bad debt reserves | (314) | (433) |
| Loss (gain) on disposal of plant, property and equipment | 2 | (80) |
| Impairment loss on tangible assets | 1,816 | |
| Impairment loss on intangible assets | 8,288 | |
| Issuance of common stock for services | 238 | 282 |
| Stock-based compensation | 98 | 92 |
| Changes in operating assets and liabilities of continuing operations: | | |
| Restricted cash | 35 | |
| Accounts receivable | 1,070 | (968) |
| Unbilled receivables | 2,134 | 2,174 |
| Prepaid expenses, inventories and other assets | 2,870 | 41 |
| Accounts payable, accrued expenses and unearned revenue | (3,187) | (3,657) |
| Cash provided by continuing operations | 1,063 | 1,744 |
| Cash used in discontinued operations | (959) | (2,862) |
| Cash provided by (used in) operating activities | 104 | (1,118) |
| Cash flows from investing activities: | | |
| Purchases of property and equipment | (436) | (623) |
| Proceeds from sale of property and equipment | 44 | 127 |
| Release of proceeds previously held in escrow from sale of SYA subsidiary in 2014 | | 50 |
| Payments to finite risk sinking fund | (107) | (46) |
| Cash used in investing activities of continuing operations | (499) | (492) |
| Proceeds from sale of property of discontinued operations | 84 | |
| Cash used in investing activities | (415) | (492) |
| Cash flows from financing activities: | | |
| Borrowing on revolving credit | 57,976 | 67,614 |

Edgar Filing: PERMA FIX ENVIRONMENTAL SERVICES INC - Form 10-K

| | | |
|--|----------|----------|
| Repayments of revolving credit | (56,522) | (65,265) |
| Principal repayments of long term debt | (1,508) | (2,320) |
| Principal repayments of long term debt - related party | (1,000) | (1,500) |
| Payment of debt issuance costs | (122) | (40) |
| Proceeds from issuance of common stock upon exercise of warrants/options | 156 | 10 |
| Proceeds from stock subscription - Perma-Fix Medical S.A. | 64 | 971 |
| Cash used in financing activities of continuing operations | (956) | (530) |
| Effect of exchange rate changes on cash | (5) | (105) |
| Decrease in cash | (1,272) | (2,245) |
| Cash at beginning of period | 1,435 | 3,680 |
| Cash at end of period | \$163 | \$1,435 |
| Supplemental disclosure: | | |
| Interest paid | \$424 | \$903 |
| Income taxes paid | 41 | 116 |
| Proceeds from stock subscription for Perma-Fix Medical S.A. held in escrow | | 67 |

The accompanying notes are an integral part of these consolidated financial statements.

PERMA-FIX ENVIRONMENTAL SERVICES, INC.

Notes to Consolidated Financial Statements

December 31, 2016 and 2015

NOTE 1

DESCRIPTION OF BUSINESS AND BASIS OF PRESENTATION

Perma-Fix Environmental Services, Inc. (the Company, which may be referred to as we, us, or our), an environmental and technology know-how company, is a Delaware corporation, engaged through its subsidiaries, in three reportable segments:

TREATMENT SEGMENT, which includes:

- nuclear, low-level radioactive, mixed waste (containing both hazardous and low-level radioactive constituents),
- hazardous and non-hazardous waste treatment, processing and disposal services primarily through four uniquely licensed and permitted treatment and storage facilities; and
- research and development (“R&D”) activities to identify, develop and implement innovative waste processing techniques for problematic waste streams.

SERVICES SEGMENT, which includes:

- On-site waste management services to commercial and governmental customers;
- Technical services, which include:
 - o professional radiological measurement and site survey of large government and commercial installations using advanced methods, technology and engineering;
 - o integrated Occupational Safety and Health services including industrial hygiene (“IH”) assessments; hazardous materials surveys, e.g., exposure monitoring; lead and asbestos management/abatement oversight; indoor air quality evaluations; health risk and exposure assessments; health & safety plan/program development, compliance auditing and training services; and Occupational Safety and Health Administration (“OSHA”) citation assistance;
 - o global technical services providing consulting, engineering, project management, waste management, environmental, and decontamination and decommissioning field, technical, and management personnel and services to commercial and government customers;
- Nuclear services, which include:
 - o technology-based services including engineering, decontamination and decommissioning (“D&D”), specialty services and construction, logistics, transportation, processing and disposal;
 - o remediation of nuclear licensed and federal facilities and the remediation cleanup of nuclear legacy sites. Such services capability includes: project investigation; radiological engineering; partial and total plant D&D; facility decontamination, dismantling, demolition, and planning; site restoration; site construction; logistics; transportation; and emergency response; and

A company owned equipment calibration and maintenance laboratory that services, maintains, calibrates, and -sources (i.e., rental) of health physics, IH and customized nuclear, environmental, and occupational safety and health (“NEOSH”) instrumentation.

MEDICAL SEGMENT, which includes: R&D of a new medical isotope production technology by our majority-owned Polish subsidiary, Perma-Fix Medical S.A. and its wholly-owned subsidiary Perma-Fix Medical Corporation (“PFM Corporation”) (together known as “PF Medical”). The Company’s Medical Segment has not generated any revenue as it has been primarily in the R&D stage. All costs incurred by the Medical Segment are reflected within R&D in the accompanying consolidated financial statements (see “Financial Position and Liquidity” below for further discussion of Medical Segment’s significant curtailment of its R&D activities during the latter part of 2016).

The Company’s continuing operations consist of Diversified Scientific Services, Inc. (“DSSI”), East Tennessee Materials & Energy Corporation (“M&EC”) (see “Note 3 – M&EC Facility” regarding the Company’s decision to shut down this facility by January 2018), Perma-Fix of Florida, Inc. (“PFF”), Perma-Fix of Northwest Richland, Inc. (“PFNWR”), Safety & Ecology Corporation (“SEC”), Perma-Fix Environmental Services UK Limited (“PF UK Limited”), Perma-Fix of Canada, Inc. (“PF Canada”), and PF Medical (a majority-owned Polish subsidiary).

The Company's discontinued operations (see Note 9) consist of all our subsidiaries included in our Industrial Segment which were divested in 2011 and prior, previously closed locations, and our Perma-Fix of South Georgia, Inc. ("PFSG") facility which is non-operational and is in closure status.

Financial Position and Liquidity

The Company's 2016 financial results were negatively impacted by certain waste treatment shipments which we expected to receive but were delayed by certain governmental customers. Although the Company saw receipt of certain of these delayed shipments in the fourth quarter of 2016, the Company expects to receive the remaining delayed waste shipments within the first nine months of 2017. The Company's 2016 financial results were also impacted by certain non-cash impairment losses, write-offs and accruals which were recorded during the second quarter of 2016 in connection with our decision to shut down one of our facilities by January 2018 (see "Note 3 – M&EC Facility"). However, with this pending shut down of the M&EC facility, the Company expects to benefit from reductions in certain operating costs. We are in the process of transitioning waste shipments and operational capabilities from our M&EC facility to our other Treatment Segment facilities, subject to customer requirements and regulatory approvals.

The Company's cash flow requirements during 2016 consisted of general working capital needs, scheduled payments on our debt obligations, remediation projects and planned capital expenditures and were financed primarily by our operations and credit facility availability. The Company continues to explore all sources of increasing revenue. The Company is continually reviewing operating costs and is committed to further reducing operating costs to bring them in line with revenue levels, when necessary.

During 2016, our Medical Segment continued to commit resources to the R&D of the new medical isotope production technology in pursuing the necessary steps required for eventual submission of this technology for the U.S. Food and Drug Administration ("FDA") and other regulatory approvals and commercialization of this technology. During the latter part of 2016, our Medical Segment ceased a substantial portion of its R&D activities due to the need for substantial capital to fund such activities. We anticipate that our Medical Segment will not restart its full scale R&D activities until it obtains the necessary funding through obtaining its own credit facility or additional equity raise. The Medical Segment has entered into a letter of intent ("LOI") to raise capital, which is subject to the completion of a definitive agreement. Although the LOI has expired, the parties to the LOI are continuing to negotiate definitive agreements (see "Note 4 – PF Medical" for a further discussion of this proposed transaction). If the Medical Segment is unable to raise the necessary capital, the Medical Segment would be required to reduce, further delay or eliminate its R&D program.

The Company's cash flow requirements for 2017 and into the first quarter of 2018 will consist primarily of general working capital needs, scheduled principal payments on our debt obligations, remediation projects, planned capital expenditures and closure spending requirements in connection with the pending shut down of our M&EC facility which we plan to fund from operations, our credit facility availability, and the finite risk sinking funds related to our PFNWR financial assurance policy which we expect to receive by the end of the second quarter of 2017 (see "Note 14 –

Commitments and Contingencies” – “Insurance” for a discussion of the finite risk sinking funds).

NOTE 2

SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES

Principles of Consolidation

Our consolidated financial statements include our accounts, those of our wholly-owned subsidiaries, and our majority-owned Polish subsidiary, PF Medical, after elimination of all significant intercompany accounts and transactions.

Reclassifications

Certain prior year amounts have been reclassified to conform with the current year presentation.

Use of Estimates

When the Company prepares financial statements in conformity with accounting standards generally accepted in the United States of America ("US GAAP"), the Company makes estimates and assumptions that affect the reported amounts of assets and liabilities and disclosures of contingent assets and liabilities at the date of the financial statements, as well as, the reported amounts of revenues and expenses during the reporting period. Actual results could differ from those estimates. See Notes 9, 12, 13 and 14 for estimates of discontinued operations and environmental liabilities, closure costs, income taxes and contingencies for details on significant estimates.

Restricted Cash

During the first quarter of 2016, all of the restricted cash previously held in escrow at December 31, 2015 was released. Such amount represented \$35,000 held in escrow for our worker's compensation policy with the remaining representing proceeds held in escrow resulting from stock subscription agreements executed in connection with the sale of common stock by PF Medical in 2014.

Accounts Receivable

Accounts receivable are customer obligations due under normal trade terms requiring payment within 30 or 60 days from the invoice date based on the customer type (government, broker, or commercial). The carrying amount of accounts receivable is reduced by an allowance for doubtful accounts, which is a valuation allowance that reflects management's best estimate of the amounts that will not be collected. The Company regularly reviews all accounts receivable balances that exceed 60 days from the invoice date and based on an assessment of current credit worthiness, estimate the portion, if any, of the balance that will not be collected. This analysis excludes government related receivables due to our past successful experience in their collectability. Specific accounts that are deemed to be uncollectible are reserved at 100% of their outstanding balance. The remaining balances aged over 60 days have a percentage applied by aging category, based on historical experience that allows us to calculate the total allowance required. Once the Company has exhausted all options in the collection of a delinquent accounts receivable balance, which includes collection letters, demands for payment, collection agencies and attorneys, the account is deemed uncollectible and subsequently written off. The write off process involves approvals from senior management based on required approval thresholds.

The following table set forth the activity in the allowance for doubtful accounts for the years ended December 31, 2016 and 2015 (in thousands):

| | Year Ended December 31, | |
|---|----------------------------|---------|
| | 2016 | 2015 |
| Allowance for doubtful accounts-beginning of year | \$1,474 | \$2,170 |
| Net recovery of bad debt reserve | (314) | (433) |

| | | |
|---|--------|---------|
| Write-off | (888) | (263) |
| Allowance for doubtful accounts-end of year | \$272 | \$1,474 |

Retainage receivables represent amounts that are billed or billable to our customers, but are retained by the customer until completion of the project or as otherwise specified in the contract. Our retainage receivable balances are all current. Retainage receivables of approximately \$0 and \$229,000 as of December 31, 2016 and 2015, respectively, are included in the accounts receivable balance on the Company's Consolidated Balance Sheets in the respective periods.

Unbilled Receivables

Unbilled receivables are generated by differences between invoicing timing and our proportional performance based methodology used for revenue recognition purposes. As major processing and contract completion phases are completed and the costs are incurred, the Company recognizes the corresponding percentage of revenue. Within our Treatment Segment, the facilities experience delays in processing invoices due to the complexity of the documentation that is required for invoicing, as well as the difference between completion of revenue recognition milestones and agreed upon invoicing terms, which results in unbilled receivables. The timing differences occur for several reasons: partially from delays in the final processing of all wastes associated with certain work orders and partially from delays for analytical testing that is required after the facilities have processed waste but prior to our release of waste for disposal. The tasks relating to these delays usually take several months to complete. As the Company now has historical data to review the timing of these delays, the Company realizes that certain issues, including, but not limited to, delays at our third party disposal site, can extend collection of some of these receivables greater than twelve months. However, our historical experience suggests that a significant portion of unbilled receivables are ultimately collectible with minimal concession on our part. The Company, therefore, segregates the unbilled receivables between current and long term.

Unbilled receivables within our Services Segment can result from: (1) revenue recognized by our Earned Value Management program (a program which integrates project scope, schedule, and cost to provide an objective measure of project progress) but invoice milestones have not yet been met and/or (2) contract claims and pending change orders, including Requests for Equitable Adjustments (“REAs”) when work has been performed and collection of revenue is reasonably assured.

Inventories

Inventories consist of treatment chemicals, saleable used oils, and certain supplies. Additionally, the Company has replacement parts in inventory, which are deemed critical to the operating equipment and may also have extended lead times should the part fail and need to be replaced. Inventories are valued at the lower of cost or market with cost determined by the first-in, first-out method.

Property and Equipment

Property and equipment expenditures are capitalized and depreciated using the straight-line method over the estimated useful lives of the assets for financial statement purposes, while accelerated depreciation methods are principally used for income tax purposes. Generally, asset lives range from ten to forty years for buildings (including improvements and asset retirement costs) and three to seven years for office furniture and equipment, vehicles, and decontamination and processing equipment. Leasehold improvements are capitalized and amortized over the lesser of the term of the lease or the life of the asset. Maintenance and repairs are charged directly to expense as incurred. The cost and accumulated depreciation of assets sold or retired are removed from the respective accounts, and any gain or loss from sale or retirement is recognized in the accompanying consolidated statements of operations. Renewals and improvements, which extend the useful lives of the assets, are capitalized.

In accordance with Accounting Standards Codification (“ASC”) 360, “Property, Plant, and Equipment”, long-lived assets, such as property, plant and equipment, are reviewed for impairment whenever events or changes in circumstances indicate that the carrying amount of an asset may not be recoverable. Recoverability of assets to be held and used is measured by a comparison of the carrying amount of an asset to estimated undiscounted future undiscounted cash flows expected to be generated by the asset. If the carrying amount of an asset exceeds its estimated future cash flows, an impairment charge is recognized in the amount by which the carrying amount of the asset exceeds the fair value of the asset. Assets to be disposed of are separately presented in the balance sheet and reported at the lower of the carrying amount or fair value less costs to sell, and are no longer depreciated. The assets and liabilities of a disposal group classified as held for sale are presented separately in the appropriate asset and liability sections of the balance sheet.

During the second quarter of 2016, the Company recorded approximately \$1,816,000 in tangible asset impairment loss in connection with the Company’s decision to shut down the M&EC facility by January 2018 (see “Note 3 – M&EC Facility” for further information of this impairment).

Our depreciation expense totaled approximately \$3,717,000 and \$3,246,000 in 2016 and 2015, respectively.

Intangible Assets

Intangible assets consist primarily of the recognized value of the permits required to operate our business. We continually monitor the propriety of the carrying amount of our permits to determine whether current events and circumstances warrant adjustments to the carrying value.

Indefinite-lived intangible assets are not amortized but are reviewed for impairment annually as of October 1, or when events or changes in the business environment indicate that the carrying value may be impaired. If the fair value of the asset is less than the carrying amount, we perform a quantitative test to determine the fair value. The impairment loss, if any, is measured as the excess of the carrying value of the asset over its fair value. Significant judgments are inherent in these analyses and include assumptions for, among other factors, forecasted revenue, gross margin, growth rate, operating income, timing of expected future cash flows, and the determination of appropriate long term discount rates.

During the second quarter of 2016, we fully impaired the permit value of our M&EC subsidiary (see “Note 3 – M&EC Facility” for further information of this impairment). We performed impairment testing of our remaining permits related to our Treatment reporting unit as of October 1, 2016 and determined there was no impairment. Impairment testing of our permits related to our Treatment reporting unit as of October 1, 2015 resulted in no impairment charges for the year ended December 31, 2015.

Intangible assets that have definite useful lives are amortized using the straight-line method over the estimated useful lives (with the exception of customer relationships which are amortized using an accelerated method) and are excluded from our annual intangible asset valuation review as of October 1. The Company has one definite-lived permit which was excluded from our annual impairment review as noted above. Definite-lived intangible assets are also tested for impairment whenever events or changes in circumstances suggest impairment might exist.

Research and Development (“R&D”)

Operational innovation and technical know-how is very important to the success of our business. Our goal is to discover, develop, and bring to market innovative ways to process waste that address unmet environmental needs and to develop new company service offerings. The Company conducts research internally and also through collaborations with other third parties. R&D costs consist primarily of employee salaries and benefits, laboratory costs, third party fees, and other related costs associated with the development and enhancement of new potential waste treatment processes and new technology and are charged to expense when incurred in accordance with ASC Topic 730, “Research and Development.” The Company’s R&D expenses included approximately \$1,489,000 and \$2,114,000 for the years ended December 31, 2016 and 2015, respectively, incurred by our Medical Segment in the R&D of its medical isotope production technology.

Accrued Closure Costs and Asset Retirement Obligations (“ARO”)

Accrued closure costs represent our estimated environmental liability to clean up our facilities, as required by our permits, in the event of closure. ASC 410, “Asset Retirement and Environmental Obligations” requires that the discounted fair value of a liability for an ARO be recognized in the period in which it is incurred with the associated ARO capitalized as part of the carrying cost of the asset. The recognition of an ARO requires that management make numerous estimates, assumptions and judgments regarding such factors as estimated probabilities, timing of settlements, material and service costs, current technology, laws and regulations, and credit adjusted risk-free rate to

be used. This estimate is inflated, using an inflation rate, to the expected time at which the closure will occur, and then discounted back, using a credit adjusted risk free rate, to the present value. ARO's are included within buildings as part of property and equipment and are depreciated over the estimated useful life of the property. In periods subsequent to initial measurement of the ARO, the Company must recognize period-to-period changes in the liability resulting from the passage of time and revisions to either the timing or the amount of the original estimate of undiscounted cash flows. Increases in the ARO liability due to passage of time impact net income as accretion expense, which is included in cost of goods sold. Changes in costs resulting from changes or expansion at the facilities require adjustment to the ARO liability and are capitalized and charged as depreciation expense, in accordance with the Company's depreciation policy.

Income Taxes

Income taxes are accounted for in accordance with ASC 740, "Income Taxes." Under ASC 740, the provision for income taxes is comprised of taxes that are currently payable and deferred taxes that relate to the temporary differences between financial reporting carrying values and tax bases of assets and liabilities. Deferred tax assets and liabilities are measured using enacted income tax rates expected to apply to taxable income in the years in which those temporary differences are expected to be recovered or settled. Any effect on deferred tax assets and liabilities of a change in tax rates is recognized in income in the period that includes the enactment date.

ASC 740 requires that deferred income tax assets be reduced by a valuation allowance if it is more likely than not that some portion or all of the deferred income tax assets will not be realized. The Company evaluates the realizability of its deferred income tax assets annually (see “Note 13 – Income Taxes” for further information of this assessment).

ASC 740 sets out a consistent framework for preparers to use to determine the appropriate recognition and measurement of uncertain tax positions. ASC 740 uses a two-step approach wherein a tax benefit is recognized if a position is more-likely-than-not to be sustained. The amount of the benefit is then measured to be the highest tax benefit which is greater than 50% likely to be realized. ASC 740 also sets out disclosure requirements to enhance transparency of an entity’s tax reserves. The Company recognizes accrued interest and income tax penalties related to unrecognized tax benefits as a component of income tax expense.

The Company reassesses the validity of our conclusions regarding uncertain income tax positions on a quarterly basis to determine if facts or circumstances have arisen that might cause us to change our judgment regarding the likelihood of a tax position’s sustainability under audit.

Foreign Currency

The Company’s foreign subsidiaries include PF UK Limited, PF Canada and PF Medical. Assets and liabilities are translated to U.S. dollars at the exchange rate in effect at the balance sheet date and revenue and expenses at the average exchange rate for the period. Foreign currency translation adjustments for these subsidiaries are accumulated as a separate component of accumulated other comprehensive income (loss) in stockholders’ equity. Gains and losses resulting from foreign currency transactions are recognized in the Consolidated Statements of Operations.

Concentration Risk

The Company performed services relating to waste generated by the federal government, either directly as a prime contractor or indirectly for others as a subcontractor to the federal government, representing approximately \$27,354,000 or 53.4% of total revenue during 2016, as compared to \$36,105,000 or 57.9% of total revenue during 2015.

Revenue generated by one of the customers (PSC Metal, Inc.) (non-government related and excluded from above) in the Services Segment accounted for approximately \$9,763,000 or 19.1% of the total revenues generated for the twelve months ended December 31, 2016. Project work for this customer commenced in March 2016 and was completed in December 2016. Revenue generated by another customer (Prologis Teterboro, LLC) (non-government related and excluded from above) in the Services Segment accounted for \$10,686,000 or 17.1% of the total revenues generated for the twelve months ended December 31, 2015. Project work for this customer was completed in December 2015.

As our revenues are project/event based where the completion of one contract with a specific customer may be replaced by another contract with a different customer from year to year, we do not believe the loss of one specific customer from one year to the next will generally have a material adverse effect on our operations and financial condition.

Financial instruments that potentially subject the Company to significant concentrations of credit risk consist principally of cash and accounts receivable. The Company maintains cash with high quality financial institutions, which may exceed Federal Deposit Insurance Corporation ("FDIC") insured amounts from time to time. Concentration of credit risk with respect to accounts receivable is limited due to the Company's large number of customers and their dispersion throughout the United States as well as with the significant amount of work that we perform for the federal government as discussed above.

The Company has two customers whose net outstanding receivable balance represented 10.1% and 20.8% of the Company's total consolidated net accounts receivable at December 31, 2016. The Company had one customer whose net outstanding receivable balance represented 16.2% of the Company's total consolidated net accounts receivable at December 31, 2015.

Gross Receipts Taxes and Other Charges

ASC 605-45, “Revenue Recognition – Principal Agent Consideration” provides guidance regarding the accounting and financial statement presentation for certain taxes assessed by a governmental authority. These taxes and surcharges include, among others, universal service fund charges, sales, use, waste, and some excise taxes. In determining whether to include such taxes in its revenue and expenses, the Company assesses, among other things, whether it is the primary obligor or principal taxpayer for the taxes assessed in each jurisdiction where the Company does business. As the Company is merely a collection agent for the government authority in certain of our facilities, the Company records the taxes on a net bases and excludes them from revenue and cost of services.

Revenue Recognition

Treatment Segment revenues. The processing of mixed waste is complex and may take several months or more to complete; as such, the Treatment Segment recognizes revenues using a proportional performance based methodology with its measure of progress towards completion determined based on output measures consisting of milestones achieved and completed. The Treatment Segment has waste tracking capabilities, which it continues to enhance, to allow for better matching of revenues earned to the processing phases achieved. The revenues are recognized as each of the following three processing phases are completed: receipt, treatment/processing and shipment/final disposal. However, based on the processing of certain waste streams, the treatment/processing and shipment/final disposal phases may be combined as sometimes they are completed concurrently. As major processing phases are completed and the costs are incurred, the Treatment Segment recognizes the corresponding percentage of revenue utilizing a proportional performance model. The Treatment Segment experiences delays in processing invoices due to the complexity of the documentation that is required for invoicing, as well as the difference between completion of revenue recognition milestones and agreed upon invoicing terms, which results in unbilled receivables. The timing differences occur for several reasons, partially from delays in the final processing of all wastes associated with certain work orders and partially from delays for analytical testing that is required after the waste is processed waste but prior to our release of the waste for disposal. As the waste moves through these processing phases and revenues are recognized, the correlating costs are expensed as incurred. Although the Treatment Segment uses its best estimates and all available information to accurately determine these disposal expenses, the risk does exist that these estimates could prove to be inadequate in the event the waste requires retreatment. Furthermore, should the waste be returned to the customer, the related receivables could be uncollectible; however, historical experience has not indicated this to be a material uncertainty.

Services Segment revenues. Revenue includes services performed under time and material, fixed price, and cost-reimbursement contracts. Revenues and costs associated with fixed price contracts are recognized using the percentage of completion (efforts expended) method. The Services Segment estimates its percentage of completion based on attainment of project milestones. Revenues and costs associated with time and material contracts are recognized as revenue when earned and costs are incurred.

Under cost reimbursement contracts, the Services Segment is reimbursed for costs incurred plus a certain percentage markup for indirect costs, in accordance with contract provisions. Costs incurred in excess of contract funding may be renegotiated for reimbursement. The Services Segment also earns a fee based on the approved costs to complete the

contract. The Services Segment recognizes this fee using the proportion of costs incurred to total estimated contract costs.

Contract costs include all direct labor, material and other non-labor costs and those indirect costs related to contract support, such as depreciation, fringe benefits, overhead labor, supplies, tools, repairs and equipment rental. Provisions for estimated losses on uncompleted contracts are made in the period in which such losses are determined. Changes in job performance, job conditions and estimated profitability, including those arising from contract penalty provisions and final contract settlements, may result in revisions to costs and income and are recognized in the period in which the revisions are determined.

Stock-Based Compensation

The Company accounts for stock-based compensation in accordance with ASC 718, “Compensation – Stock Compensation”. ASC 718 requires all stock-based payments to employees, including grants of employee stock options, to be recognized in the income statement based on their fair values. The Company uses the Black-Scholes option-pricing model to determine the fair-value of stock-based awards which requires subjective assumptions. Assumptions used to estimate the fair value of stock options granted include the exercise price of the award, the expected term, the expected volatility of the Company’s stock over the option’s expected term, the risk-free interest rate over the option’s expected term, and the expected annual dividend yield.

The Company recognizes stock-based compensation expense using a straight-line amortization method over the requisite service period, which is the vesting period of the stock option grant. As ASC 718 requires that stock-based compensation expense be based on options that are ultimately expected to vest, our stock-based compensation expense is reduced by an estimated forfeiture rate. Our estimated forfeiture rate is generally based on historical trends of actual forfeitures.

Comprehensive Income (Loss)

The components of comprehensive income (loss) are net income (loss) and the effects of foreign currency translation adjustments.

Income (Loss) Per Share

Basic income (loss) per share is calculated based on the weighted-average number of outstanding common shares during the applicable period. Diluted income (loss) per share is based on the weighted-average number of outstanding common shares plus the weighted-average number of potential outstanding common shares. In periods where they are anti-dilutive, such amounts are excluded from the calculations of dilutive earnings per share. Income (loss) per share is computed separately for each period presented.

Fair Value of Financial Instruments

Certain assets and liabilities are required to be recorded at fair value on a recurring basis, while other assets and liabilities are recorded at fair value on a nonrecurring basis. Fair value is determined based on the exchange price that would be received for an asset or paid to transfer a liability (an exit price) in the principal or most advantageous market for the asset or liability in an orderly transaction between market participants. The three-tier value hierarchy, which prioritizes the inputs used in the valuation methodologies, is:

Level 1—Valuations based on quoted prices for identical assets and liabilities in active markets.

Level 2—Valuations based on observable inputs other than quoted prices included in Level 1, such as quoted prices for similar assets and liabilities in active markets, quoted prices for identical or similar assets and liabilities in markets that are not active, or other inputs that are observable or can be corroborated by observable market data.

Level 3—Valuations based on unobservable inputs reflecting the Company's own assumptions, consistent with reasonably available assumptions made by other market participants.

Financial instruments include cash and restricted cash (Level 1), accounts receivable, accounts payable, and debt obligations (Level 3). Credit is extended to customers based on an evaluation of a customer's financial condition and, generally, collateral is not required. At December 31, 2016 and December 31, 2015, the fair value of the Company's financial instruments approximated their carrying values. The fair value of the Company's revolving credit and term loan approximate its carrying value due to the variable interest rate.

Recently Adopted Accounting Standards

In April 2015, the Financial Accounting Standards Board ("FASB") issued Accounting Standards Update ("ASU") 2015-03, "Simplifying the Presentation of Debt Issuance Costs." ASU 2015-03 amends existing guidance to require the presentation of debt issuance costs in the balance sheet as a deduction from the carrying amount of the related debt liability instead of a deferred charge asset. It is effective for annual reporting periods beginning after December 15, 2015 (including interim reporting periods), but early adoption is permitted. The Company adopted ASU 2015-03 retroactively in the first quarter of 2016. The adoption of ASU 2015-03 did not have a material impact to the Company's results of operations, cash flows or financial position. The adoption of ASU 2015-03 resulted in a decrease in prepaid and other assets of approximately \$152,000, a decrease in current portion of long-term debt of \$27,000, and a decrease in long-term debt, less current portion of \$125,000 for the previously reported balances as of December 31, 2015 in the accompanying Consolidated Balance Sheets.

In August 2014, the FASB issued ASU No. 2014-15, "Disclosure of Uncertainties about an Entity's Ability to Continue as a Going Concern." ASU 2014-15 requires management to assess an entity's ability to continue as a going concern, and to provide related footnote disclosure in certain circumstances. The new standard is effective for all entities for the first annual period ending after December 15, 2016. The adoption of ASU 2014-15 during the fourth quarter of 2016 did not have a material impact on our financial statements (see "Note 1 – Description of Business and Basis of Presentation" for discussion of the Company's liquidity).

In July 2015, the FASB issued ASU 2015-11, "Inventory (Topic 330): Simplifying the Measurement of Inventory." ASU 2015-11 requires that inventory within the scope of this update be measured at the lower of cost and net realizable value. Net realizable value is the estimated selling prices in the ordinary course of business, less reasonably predictable costs of completion, disposal, and transportation. The amendments in this update do not apply to inventory that is measured using last-in, first-out ("LIFO") or the retail inventory method. The amendments apply to all other inventory, which includes inventory that is measured using first-in, first-out ("FIFO") or average cost. For all entities, the guidance is effective for annual periods, and interim periods within those annual periods, beginning after December 15, 2016. Early adoption is permitted. The adoption of ASU 2015-11 by the Company in the fourth quarter of 2016 did not have a material impact on our financial statements.

In March 2016, the FASB issued ASU 2016-09, "Compensation - Stock Compensation (Topic 718): Improvements to Employee Share-Based Payment Accounting." ASU 2016-09 simplifies several aspects related to the accounting for share-based payment transactions, including the accounting for income taxes, statutory tax withholding requirements and classification on the statement of cash flows. ASU 2016-09 is effective for interim and annual periods beginning after December 15, 2016. The adoption of ASU 2015-11 did not have a material impact on our financial statements.

Recently Issued Accounting Standards – Not Yet Adopted

In May 2014, the FASB issued ASU No. 2014-09, "Revenue from Contracts with Customers (Topic 606)," as amended, which will supersede nearly all existing revenue recognition guidance. ASU 2014-09 provides a single, comprehensive revenue recognition model for all contracts with customers. ASU 2014-09 require a company to recognize revenue to depict the transfer of goods or services to a customer at an amount that reflects the consideration it expects to receive in exchange for those goods or services. ASU 2014-09 also requires additional disclosure about the nature, amount, timing and uncertainty of revenue and cash flows arising from customer contracts, including significant judgments and changes in judgments and assets recognized from costs incurred to obtain or fulfill a contract. Early adoption is permitted for ASU 2014-09, as amended, to the original effective date of period beginning after December 15, 2016 (including interim reporting periods within those periods). ASU 2014-09 may be applied retrospectively to each prior period presented or retrospectively with the cumulative effect recognized as of the date of initial application. The Company is currently in the early stages of evaluating these ASUs to determine the impact they will have on our financial statements. Also, the Company is currently still reviewing the transition method it will select upon adoption of this guidance.

In February 2016, the FASB issued ASU No. 2016-02, "Leases (Topic 842)." Under ASU 2016-02, an entity will be required to recognize right-of-use assets and lease liabilities on its balance sheet and disclose key information about leasing arrangements. ASU 2016-02 offers specific accounting guidance for a lessee, a lessor and sale and leaseback transactions. Lessees and lessors are required to disclose qualitative and quantitative information about leasing arrangements to enable a user of the financial statements to assess the amount, timing and uncertainty of cash flows arising from leases. For public companies, ASU 2016-02 is effective for annual reporting periods beginning after December 15, 2018, including interim periods within that reporting period, and requires a modified retrospective adoption, with early adoption permitted. The Company is still evaluating the potential impact of adopting this guidance on our financial statements.

In August 2016, the FASB issued ASU 2016-15, "Statement of Cash Flows (Topic 230): Classification of Certain Cash Receipts and Cash Payments (a consensus of the Emerging Issues Task Force)," which aims to eliminate diversity in practice in how certain cash receipts and cash payments are presented and classified in the statement of cash flows under Topic 230, Statement of Cash Flows, and other Topics. Subsequently, in November 2016, the FASB issued ASU 2016-18, "Statement of Cash Flows (Topic 230), Restricted Cash, a consensus of the FASB Emerging Issues Task Force," which clarifies the guidance on the cash flow classification and presentation of changes in restricted cash or restricted cash equivalents. Therefore, amounts generally described as restricted cash or restricted cash equivalents should be included with cash and cash equivalents when reconciling the beginning-of-period and end-of-period total amounts shown on the statement of cash flow. ASU 2016-15 and ASU 2016-18 are effective for annual reporting periods, and interim periods therein, beginning after December 15, 2017. The Company does not expect the adoption of these ASUs to have a material impact on our financial statements.

In October 2016, the FASB issued ASU 2016-16, "Income Taxes (Topic 740): Intra-Entity Transfers of Assets Other Than Inventory," which eliminates the existing exception in U.S. GAAP prohibiting the recognition of the income tax consequences for intra-entity asset transfers. Under ASU 2016-16, entities will be required to recognize the income tax consequences of intra-entity asset transfers other than inventory when the transfer occurs. ASU 2016-16 is effective on a modified retrospective basis for fiscal years, and for interim periods within those fiscal years, beginning after December 15, 2017, with early adoption permitted. The Company is still evaluating the potential impact of this ASU on its consolidated financial statements.

NOTE 3

M&EC FACILITY

During the second quarter of 2016, the Company's M&EC subsidiary was notified by the lessor that the lease agreement under which M&EC currently operates its Oak Ridge, Tennessee facility would not be renewed at the end of the current lease term ending January 21, 2018. In light of this event and our strategic review of operations within our Treatment Segment, the Company is proceeding with a plan to close its M&EC facility located in Oak Ridge, Tennessee at the end of the lease term. Operations at the M&EC facility are continuing during the remaining term of the lease and the facility has begun the process of transitioning waste shipments and operational capabilities to our other Treatment Segment facilities, subject to customer requirements and regulatory approvals. Simultaneously, the Company has begun required clean-up/maintenance procedures at M&EC's Oak Ridge, Tennessee facility in accordance with M&EC's Resource Conservation and Recovery Act ("RCRA") permit requirements. As a result of the Company's decision to close its M&EC facility, the Company's financial results were impacted by certain non-cash impairment losses, write-offs and accruals recorded during the second quarter of 2016 as described below.

The Company performs its annual intangible test as of October 1 of each year. As permitted by ASC 350, "Intangibles-Goodwill and Other," when an impairment indicator arises during an interim reporting period, the Company may recognize its best estimates of that impairment loss. The Company performed a discounted cash flow analysis prepared as of June 30, 2016 for M&EC's intangible assets (permits), utilizing our best estimates of projected future cash flows. Based on this analysis, the Company concluded that potential impairment existed and subsequently

determined that the permit for our M&EC subsidiary was fully impaired as a result of the non-renewal of the lease, resulting in an intangible impairment loss of approximately \$8,288,000.

M&EC is required to complete certain clean-up/maintenance activities at its Oak Ridge, Tennessee facility pursuant to its RCRA permit. The extent and cost of these activities are determined by federal/state mandate requirements. The Company performed an analysis and related estimate of the cost to complete the RCRA portion of these activities and based on this analysis, the Company recorded an additional \$1,626,000 in closure liabilities with a corresponding increase to capitalized ARO costs, which is to be depreciated over the remaining term of the lease. The capitalized ARO costs is reported as a component of "Net Property and equipment" in the Consolidated Balance Sheets.

In accordance with ASC 360, "Property, Plant, and Equipment," the Company also performed an updated financial valuation of M&EC's long-lived tangible assets, inclusive of the capitalized asset retirement costs, for potential impairment. Based on our analysis using an undiscounted cash flows approach, the Company concluded that the carrying value of certain tangible assets (property and equipment) for M&EC was not recoverable and exceeded its fair value. Consequently, the Company recorded \$1,816,000 in tangible asset impairment loss in the second quarter of 2016. The Company also reevaluated the estimated useful lives of the remaining tangible assets and as a result of this analysis, reduced the current estimated useful lives of these assets ranging from 2 to 28 years at June 30, 2016 to 1.6 years, the remaining term of the lease. Accordingly, the Company is depreciating the carrying value of M&EC's remaining tangible assets of approximately \$4,728,000 at June 30, 2016 over a period of approximately 1.6 years to the lease expiration date.

In the second quarter of 2016, the Company also wrote-off approximately \$587,000 in fees previously incurred relating to emission performance testing certification requirement in order to meet state compliance mandate in connection with certain M&EC equipment which was impaired. Such amount had been previously included in "Prepaid and other assets" on the Consolidated Balance Sheets.

During the year ended December 31, 2016 and 2015, M&EC's revenues were approximately \$4,419,000 and \$6,591,000, respectively.

NOTE4

PF MEDICAL

On July 24, 2015, PF Medical, the Company's majority-owned Polish subsidiary, and Digirad Corporation, a Delaware corporation ("Digirad"), Nasdaq: DRAD, entered into a multi-year Tc-99m Supplier Agreement (the "Supplier Agreement") and a Series F Stock Subscription Agreement (the "Subscription Agreement"), (together, the "Digirad Agreements"). The Supplier Agreement became effective upon the completion of the Subscription Agreement. Pursuant to the terms of the Digirad Agreements, Digirad purchased, in a private placement, 71,429 shares of PF Medical's restricted Series F Stock for an aggregate purchase price of \$1,000,000, which was received on July 24, 2015. Legal expenses incurred for this offering totaled approximately \$29,000. The 71,429 share investment made by Digirad constituted approximately 5.4% of the outstanding common shares of PF Medical. As a result of this transaction, the Company's ownership interest in PF Medical diluted from approximately 64.0% to 60.5%. The Supplier Agreement provides, among other things, that upon PF Medical's commercialization of certain Tc-99m generators, Digirad will purchase agreed upon quantities of Tc-99m for its nuclear imaging operations either directly or in conjunction with its preferred nuclear pharmacy supplier and PF Medical will supply Digirad, or its preferred nuclear pharmacy supplier, with Tc-99m at a preferred pricing, subject to certain conditions.

On October 11, 2016, the Company and its Medical Segment entered into a letter of intent ("LOI") with a private investor, subject to certain closing and other conditions, including, but not limited to, the execution of a definitive

agreement, for the purchase of \$10,000,000 of Preferred Shares in PFM Corporation at a price of \$8.00 per share. The termination date of the LOI has since expired but the parties continue to negotiate definitive agreements with the following proposed terms, among other things, \$5,000,000 to be invested by the investor at the initial closing and \$5,000,000 to be invested at the second closing which is to occur within 120 days after the initial closing. Upon the initial closing, one half of the Preferred Shares will be issued to the investor and the remaining half of the Preferred Shares will be issued to the investor at the second closing. The Preferred Shares of PFM Corporation to be issued to the investor would be voting securities and, after completion of both closings, the investor will own approximately 48.6% of PFM Corporation's issued and outstanding voting securities and Perma-Fix Medical S.A. will own the balance of PFM Corporation's voting securities. At each closing, subject to certain terms and conditions, the investor would also receive a 48-month warrant to purchase up to 468,750 shares of PFM Corporation's common stock at an exercise price of \$9.00 for each share. In addition, at the initial closing, the Company would receive a 48 month warrant, subject to certain terms and conditions, to purchase up to 183,606 shares of PFM Corporation's common stock at an exercise price of \$14.00 per share. Further, the Company would be repaid \$500,000 of the amounts owed to it by the Medical Segment within 30 days after the initial closing and the remaining balance (which stands at approximately \$1,962,000 at December 31, 2016) within 120 days after the initial closing.

NOTE 5**PERMIT AND OTHER INTANGIBLE ASSETS**

The following table summarizes changes in the carrying amount of permits. No permit exists at our Services and Medical Segment.

| Permit (amount in thousands) | Treatment |
|---------------------------------------|-----------|
| Balance as of December 31, 2014 | \$ 16,709 |
| PCB permit amortized ⁽¹⁾ | (55) |
| Permit in progress | 107 |
| Balance as of December 31, 2015 | 16,761 |
| PCB permit amortized ⁽¹⁾ | (55) |
| Permit in progress | 56 |
| Permit impairment for M&EC subsidiary | (8,288) |
| Balance as of December 31, 2016 | \$ 8,474 |

⁽¹⁾ Amortization for the one definite-lived permit capitalized in 2009. This permit is being amortized over a ten year period in accordance with its estimated useful life. Net carrying value of this permit was approximately \$117,000 and \$172,000 as of December 31, 2016 and 2015, respectively.

The following table summarizes information relating to the Company's definite-lived intangible assets:

| Intangibles (amount in thousands) | Useful Lives (Years) | December 31, 2016 | | | December 31, 2015 | | |
|-----------------------------------|----------------------------|--------------------|--------------|--------------------|--------------------|--------------|--------------------|
| | | Gross | Accumulated | Net | Gross | Accumulated | Net |
| | | Carrying Amount | Amortization | Carrying Amount | Carrying Amount | Amortization | Carrying Amount |
| Patent | 3- 17 | \$ 577 | \$ (274) | \$ 303 | \$ 539 | \$ (203) | \$ 336 |
| Software | 3 | 405 | (383) | 22 | 395 | (364) | 31 |
| Customer relationships | 12 | 3,370 | (1,974) | 1,396 | 3,370 | (1,671) | 1,699 |
| Permit | 10 | 545 | (428) | 117 | 545 | (373) | 172 |
| Total | | \$ 4,897 | \$ (3,059) | \$ 1,838 | \$ 4,849 | \$ (2,611) | \$ 2,238 |

The intangible assets are amortized on a straight-line basis over their useful lives with the exception of customer relationships which are being amortized using an accelerated method.

The following table summarizes the expected amortization over the next five years for our definite-lived intangible assets:

| Year | Amount (In thousands) |
|------|-----------------------------|
| 2017 | \$ 372 |
| 2018 | 337 |
| 2019 | 254 |
| 2020 | 218 |
| 2021 | 198 |
| | \$ 1,379 |

Amortization expense recorded for definite-lived intangible assets was approximately \$448,000 and \$471,000, for the years ended December 31, 2016 and 2015, respectively.

NOTE 6

CAPITAL STOCK, STOCK PLANS, WARRANTS, AND STOCK BASED COMPENSATION

Stock Option Plans

The Company adopted the 2003 Outside Directors Stock Plan (the “2003 Plan”), which was approved by our stockholders at the Annual Meeting of Stockholders on July 29, 2003. Options granted under the 2003 Plan generally have a vesting period of six months from the date of grant and a term of 10 years, with an exercise price equal to the closing trade price on the date prior to grant date. The 2003 Plan also provides for the issuance to each outside director a number of shares of Common Stock in lieu of 65% or 100% (based on option elected by each director) of the fee payable to the eligible director for services rendered as a member of the Board of Directors (“Board”). The number of shares issued is determined at 75% of the market value as defined in the plan. The 2003 Plan, as amended, also provides for the grant of an option to purchase up to 6,000 shares of Common Stock for each outside director upon initial election to the Board, and the grant of an option to purchase 2,400 shares of Common Stock upon each re-election. The number of shares of the Company’s Common Stock authorized under the 2003 Plan is 800,000, pursuant to the 2003 Plan, as amended.

On April 28, 2010, the Company adopted the 2010 Stock Option Plan (“2010 Plan”), which was approved by our stockholders at the Company’s Annual Meeting of Stockholders on September 29, 2010. The 2010 Plan authorizes an aggregate grant of 200,000 Non-Qualified Stock Options (“NQSOs”) and Incentive Stock Options (“ISOs”) to officers and employees of the Company for the purchase of up to 200,000 shares of the Company’s Common Stock. The term of each stock option granted shall be fixed by the Compensation and Stock Option Committee (“Compensation Committee”), but no stock options will be exercisable more than ten years after the grant date, or in the case of an incentive stock option granted to a 10% stockholder, five years after the grant date. The exercise price of any ISO granted under the 2010 Plan to an individual who is not a 10% stockholder at the time of the grant shall not be less than the fair market value of the shares at the time of the grant, and the exercise price of any incentive stock option granted to a 10% stockholder shall not be less than 110% of the fair market value at the time of grant. The exercise price of any NQSOs granted under the plan shall not be less than the fair market value of the shares at the time of grant.

No employees exercised options during 2016 and 2015. During 2015, the Company issued a total of 3,423 shares of our Common Stock upon exercise of 3,423 NQSOs by an outside director from the 2003 Plan, at an exercise price of \$2.79 per share which resulted in total proceeds of approximately \$10,000.

The summary of the Company’s total plans as of December 31, 2016 and 2015, and changes during the period then ended are presented as follows:

| | Shares | Weighted Average Exercise Price | Weighted Average Remaining Contractual Term (years) | Aggregate Intrinsic Value ⁽²⁾ |
|---|-----------|--|--|--|
| Options outstanding January 1, 2016 | 218,200 | \$ 7.65 | | |
| Granted | 62,000 | 4.09 | | |
| Exercised | | | | |
| Forfeited/expired | (33,000) | 8.14 | | |
| Options outstanding end of period ⁽¹⁾ | 247,200 | \$ 6.69 | 4.3 | \$ 20,940 |
| Options exercisable at December 31, 2016 ⁽¹⁾ | 181,867 | \$ 7.61 | 3.7 | \$ 20,940 |
| Options vested and expected to be vested at December 31, 2016 | 239,750 | \$ 6.78 | 4.3 | \$ 20,940 |

| | Shares | Weighted Average Exercise Price | Weighted Average Remaining Contractual Term (years) | Aggregate Intrinsic Value ⁽²⁾ |
|---|-----------|--|--|--|
| Options outstanding January 1, 2015 | 239,023 | \$ 7.81 | | |
| Granted | 12,000 | 4.19 | | |
| Exercised | (3,423) | 2.79 | | \$ 4,298 |
| Forfeited/expired | (29,400) | 8.13 | | |
| Options outstanding end of period ⁽¹⁾ | 218,200 | \$ 7.65 | 4.8 | \$ 14,676 |
| Options exercisable at December 31, 2015 ⁽¹⁾ | 169,533 | \$ 8.47 | 4.5 | \$ 14,676 |
| Options vested and expected to be vested at December 31, 2015 | 212,333 | \$ 7.72 | 4.8 | \$ 14,676 |

⁽¹⁾ Options with exercise prices ranging from \$2.79 to \$14.75

⁽²⁾ The intrinsic value of a stock option is the amount by which the market value of the underlying stock exceeds the exercise price of the option.

The summary of the Company's nonvested options as of December 31, 2016 and changes during the period then ended are presented as follows:

| | Shares | Weighted Average Grant-Date Fair Value |
|---|----------|---|
| Non-vested options January 1, 2016 | 48,667 | \$ 2.87 |
| Granted | 62,000 | 2.19 |
| Vested | (30,334) | 2.87 |
| Forfeited | (15,000) | 2.88 |
| Non-vested options at December 31, 2016 | 65,333 | \$ 2.23 |

Capital Stock Issued for Services

The Company issued a total of 55,793 and 71,324 shares of our Common Stock in 2016 and 2015, respectively, under our 2003 Plan to our outside directors as compensation for serving on our Board. As a member of the Board, each director elects to receive either 65% or 100% of the director's fee in shares of our Common Stock. The number of shares received is calculated based on 75% of the fair market value of our Common Stock determined on the business day immediately preceding the date that the quarterly fee is due. The balance of each director's fee, if any, is payable in cash. The Company recorded approximately \$233,000 and \$269,000 in compensation expense for the twelve months ended December 31, 2016 and 2015, respectively, for the portion of director fees earned in the Company's Common Stock.

Preferred Share Rights Plan

In May 2008, the Company adopted a preferred share rights plan (the "Rights Plan"), designed to ensure that all of our stockholders receive fair and equal treatment in the event of a proposed takeover or abusive tender offer.

In general, under the terms of the Rights Plan, subject to certain limited exceptions, if a person or group acquires 20% or more of our Common Stock or a tender offer or exchange offer for 20% or more of our Common Stock is announced or commenced, our other stockholders may receive upon exercise of the rights (the "Rights") issued under the Rights Plan the number of shares our Common Stock or of one-one hundredths of a share of our Series A Junior Participating Preferred Stock, par value \$.001 per share, having a value equal to two times the purchase price of the Right. In addition, if the Company is acquired in a merger or other business combination transaction in which we are not the survivor or more than 50% of our assets or earning power is sold or transferred, then each holder of a Right (other than the acquirer) will thereafter have the right to receive, upon exercise, common stock of the acquiring company having a value equal to two times the purchase price of the Right. The initial purchase price of each Right was \$13.00, subject to adjustment as defined in plan.

The Rights will cause substantial dilution to a person or group that attempts to acquire us on terms not approved by our board of directors. The Rights may be redeemed by us at \$0.001 per Right at any time before any person or group acquires 20% or more of our outstanding Common Stock. The Rights expire on May 2, 2018.

Warrants and Capital Stock Issuance for Debt

As of December 31, 2016, the Company has no Warrant outstanding. On August 2, 2016, the Company issued an aggregate of 70,000 shares of the Company Common Stock resulting from the exercise of two Warrants, at an exercise price of \$2.23, issued to two lenders in connection with a \$3,000,000 loan dated August 2, 2013 received by the Company (See Note 10 – “Long-Term Debt – Promissory Note” for further information on the exercise of the Warrants and the loan).

Shares Reserved

At December 31, 2016, the Company has reserved approximately 247,200 shares of Common Stock for future issuance under all of the option arrangements.

Stock Based Compensation

As discussed above, the Company has certain stock option plans which it awards NQSOs and ISOs to employees, officers, and outside directors. Stock options granted to employees generally have a six year contractual term with one-third yearly vesting over a three year period. Stock options granted to outside directors generally have a ten year contractual term with vesting period of six months.

On May 15, 2016, the Company granted 50,000 ISOs from the Company’s 2010 Stock Option Plan to our newly named Executive Vice President (“EVP”). The ISOs granted were for a contractual term of six years with one-third vesting annually over a three year period. The exercise price of the ISOs was \$3.97 per share, which was equal to the fair market value of the Company’s Common Stock on the date of grant.

On July 28, 2016, the Company granted an aggregate of 12,000 NQSOs from the Company’s 2003 Plan to five of the seven re-elected directors at our Annual Meeting of Stockholders held on July 28, 2016. Two of the directors are not eligible to receive options under the 2003 Plan as they are employees of the Company or its subsidiaries. The NQSOs granted were for a contractual term of ten years with a vesting period of six months. The exercise price of the NQSOs was \$4.60 per share, which was equal to the Company’s closing stock price the day preceding the grant date, pursuant to the 2003 Plan.

The Company estimates fair value of stock options using the Black-Scholes valuation model. Assumptions used to estimate the fair value of stock options granted include the exercise price of the award, the expected term, the expected volatility of the Company's stock over the option's expected term, the risk-free interest rate over the option's expected term, and the expected annual dividend yield. The fair value of the options granted during 2016 and 2015 and the related assumptions used in the Black-Scholes option model used to value the options granted were as follows (No options were granted to employees during 2015):

| | Employee Stock Option Granted |
|--|--|
| | May 15, 2016 |
| Weighted-average fair value per share | \$2.00 |
| Risk -free interest rate ⁽¹⁾ | 1.27% |
| Expected volatility of stock ⁽²⁾ | 53.12% |
| Dividend yield | None |
| Expected option life ⁽³⁾ (in years) | 6.0 |

| | Outside Director Stock Options Granted | |
|--|--|-----------------------|
| | July 28, 2016 | September 17, 2015 |
| Weighted-average fair value per share | \$3.0 | \$ 2.84 |
| Risk -free interest rate ⁽¹⁾ | 1.52% | 2.21% |
| Expected volatility of stock ⁽²⁾ | 55.99% | 57.98% |
| Dividend yield | None | None |
| Expected option life ⁽³⁾ (in years) | 10.0 | 10.0 |

⁽¹⁾ The risk-free interest rate is based on the U.S. Treasury yield in effect at the grant date over the expected term of the option.

⁽²⁾ The expected volatility is based on historical volatility from our traded Common Stock over the expected term of the option.

⁽³⁾ The expected option life is based on historical exercises and post-vesting data.

The following table summarizes stock-based compensation recognized for fiscal years 2016 and 2015.

| | Year Ended | |
|------------------------|------------|----------|
| | 2016 | 2015 |
| Employee Stock Options | \$53,000 | \$53,000 |
| Director Stock Options | 45,000 | 39,000 |
| Total | \$98,000 | \$92,000 |

As of December 31, 2016, the Company has approximately \$74,000 of total unrecognized compensation cost related to unvested options, of which \$43,000 is expected to be recognized in 2017, \$30,000 in 2018, with the remaining \$1,000 in 2019.

NOTE 7**INCOME (LOSS) PER SHARE**

The following table reconciles the income (loss) and average share amounts used to compute both basic and diluted income (loss) per share:

| | Twelve Months Ended | |
|---|------------------------|------------|
| | December 31, 2016 | 2015 |
| (Amounts in Thousands, Except for Per Share Amounts) | | |
| Net income (loss) attributable to Perma-Fix Environmental Services, Inc., common stockholders: | | |
| (Loss) income from continuing operations attributable to Perma-Fix Environmental Services, Inc. common stockholders | \$(12,675) | \$814 |
| Loss from discontinuing operations attributable to Perma-Fix Environmental Services, Inc. common stockholders | (730) | (1,864) |
| Net loss attributable to Perma-Fix Environmental Services, Inc. common stockholders | \$(13,405) | \$(1,050) |
| Basic loss per share attributable to Perma-Fix Environmental Services, Inc. common stockholders | \$(1.15) | \$(.09) |
| Diluted loss per share attributable to Perma-Fix Environmental Services, Inc. common stockholders | \$(1.15) | \$(.09) |
| Weighted average shares outstanding: | | |
| Basic weighted average shares outstanding | 11,608 | 11,516 |
| Add: dilutive effect of stock options | | 6 |
| Add: dilutive effect of warrants | | 30 |
| Diluted weighted average shares outstanding | 11,608 | 11,552 |
| Potential shares excluded from above weighted average share calculations due to their anti-dilutive effect include: | | |
| Stock options | 150 | 183 |

NOTE 8**PREFERRED STOCK ISSUANCE AND CONVERSION**

Series B Preferred Stock

The Series B Preferred Stock of the Company's subsidiary, M&EC, is non-voting and non-convertible, has a \$1.00 liquidation preference per share and may be redeemed at the option of the former stockholders of M&EC at any time for the per share price of \$1.00. The holders of the Series B Preferred Stock will be entitled to receive when, as, and if declared by the Board of M&EC out of legally available funds, dividends at the rate of 5% per year per share applied to the amount of \$1.00 per share, which dividends are fully cumulative. M&EC has not paid any of the cumulative dividends since the Series B Preferred Stock was issued. M&EC has been accruing dividends for the Series B Preferred Stock issued July 2002, and have accrued a total of approximately \$931,000 of unpaid cumulative dividends since July 2002, of which \$64,000 was accrued in each of the years ended December 31, 2003 to 2016 and is included in other long term liabilities in the accompanying Consolidated Balance Sheets.

NOTE 9

DISCONTINUED OPERATIONS

The Company's discontinued operations consist of all our subsidiaries included in our Industrial Segment: (1) subsidiaries divested in 2011 and prior, (2) two previously closed locations, and (3) our PFSG facility which is currently undergoing closure, subject to regulatory approval.

The following table presents the major class of assets of discontinued operations as of December 31, 2016 and 2015. On May 2, 2016, Perma-Fix of Michigan, Inc. (“PFMI” – a closed location) entered into an Agreement for the sale of the property (which was held for sale as of December 31, 2015) for a price of \$450,000. The Agreement provides for a down payment of approximately \$75,000. After certain closing and settlement costs, PFMI received approximately \$46,000. The Agreement also provides for, among other things, the balance of the purchase price of \$375,000 to be paid by the buyer in 60 equal monthly installments of approximately \$7,250, with the first payment due June 15, 2016. As of December 31, 2016, receivables related to this transaction totaled approximately \$337,000, of which approximately \$69,000 is included in “Current assets related to discontinued operations” and approximately \$268,000 is included in “Other assets related to discontinued operations” in the accompanying Consolidated Balance Sheets. No assets and liabilities are held for sale as of December 31, 2016.

| (Amounts in Thousands) | December 31, 2016 | December 31, 2015 |
|---|-------------------------|-------------------------|
| Current assets | | |
| Other assets | \$ 85 | \$ 34 |
| Total current assets | 85 | 34 |
| Long-term assets | | |
| Property, plant and equipment, net ⁽¹⁾ | 81 | 531 |
| Other assets | 268 | — |
| Total long-term assets | 349 | 531 |
| Total assets | \$ 434 | \$ 565 |
| Current liabilities | | |
| Accounts payable | \$ 13 | \$ 85 |
| Accrued expenses and other liabilities | 268 | 437 |
| Environmental liabilities | 677 | 9 |
| Total current liabilities | 958 | 531 |
| Long-term liabilities | | |
| Closure liabilities | 113 | 173 |
| Environmental liabilities | 248 | 891 |
| Total long-term liabilities | 361 | 1,064 |
| Total liabilities | \$ 1,319 | \$ 1,595 |

⁽¹⁾ net of accumulated depreciation of \$10,000 for each period presented.

The following table summarizes the results of discontinued operations for the years ended December 31, 2016 and 2015.

| Amount in Thousands | For The Year Ended December 31, | |
|---|---------------------------------------|----------|
| | 2016 | 2015 |
| Interest expense | \$— | \$(401) |
| Operating loss from discontinued operations | (730) | (1,915) |
| Income tax benefit | — | (51) |
| Loss from discontinued operations | (730) | (1,864) |

Our loss for the twelve months ended December 31, 2015 included a penalty in the amount of approximately \$201,000 recorded for PFSG in connection with a Consent Order from the Georgia Department of Natural Resources Environmental Protection Division and an asset impairment charge of \$150,000 recorded for PFMI in connection with the sale of property as discussed above. In addition, our net loss for the twelve months ended December 31, 2015 included \$407,000 in expenses (with \$400,000 recorded as interest expenses) recorded in the fourth quarter of 2015 in connection with an arbitration award that PFSG was required to pay to a contractor hired to perform emergency response services at our PFSG subsidiary resulting from the fire which occurred at the facility in 2013. Remaining losses for the periods discussed above were primarily due to costs incurred in the administration and continued monitoring of our discontinued operations.

Environmental Liabilities

The Company has three remediation projects, which are currently in progress at our Perma-Fix of Dayton, Inc. (“PFD”), Perma-Fix of Memphis, Inc. (“PFM” – closed location), and PFSG (in closure status) subsidiaries. The Company divested PFD in 2008; however, the environmental liability of PFD was retained by the Company upon the divestiture of PFD. These remediation projects principally entail the removal/remediation of contaminated soil and, in most cases, the remediation of surrounding ground water. The remediation activities are closely reviewed and monitored by the applicable state regulators.

At December 31, 2016, we had total accrued environmental remediation liabilities of \$925,000, of which \$677,000 are recorded as a current liability, an increase of \$25,000 from the December 31, 2015 balance of \$900,000. The net increase of \$25,000 represents payments on remediation projects at PFSG and an increase to the reserve of approximately \$66,000 at PFD due to reassessment of the remediation reserve.

The current and long-term accrued environmental liability at December 31, 2016 is summarized as follows (in thousands).

| | Current | Long-term | Total |
|-----------------|---------|-----------|--------|
| | Accrual | Accrual | |
| PFD | \$ 75 | \$ 60 | \$ 135 |
| PFM | — | 15 | 15 |
| PFSG | 602 | 173 | 775 |
| Total liability | \$ 677 | \$ 248 | \$ 925 |

NOTE 10

LONG-TERM DEBT

Long-term debt consists of the following at December 31, 2016 and December 31, 2015:

| (Amounts in Thousands) | December 31, 2016 | December 31, 2015 |
|--|-------------------|-------------------|
| Revolving Credit facility dated October 31, 2011, as amended, borrowings based upon eligible accounts receivable, subject to monthly borrowing base calculation, balance due March 24, 2021. Effective interest rate for 2016 and 2015 was 3.9% and 4.0%, respectively. (1) (2) | \$ 3,803 | \$ 2,349 |
| Term Loan dated October 31, 2011, as amended, payable in equal monthly installments of principal of \$102, balance due on March 24, 2021. Effective interest rate for 2016 and 2015 was 3.8% and 3.7%, respectively. (1) (2) | 5,030 (5) | 6,514 (5) |
| Promissory Note dated August 2, 2013, payable in twelve monthly installments of interest only, starting September 1, 2013 followed with twenty-four monthly installments of \$125 in principal plus accrued interest (at annual rate of 2.99%). Note paid in full in August 2016. (3) (4) | | 950 (4) |
| Capital lease (interest at rate of 6.0%) | | 23 |

| | | |
|--|----------|----------|
| Total debt | 8,833 | 9,836 |
| Less current portion of long-term debt | 1,184 | 2,431 |
| Long-term debt | \$ 7,649 | \$ 7,405 |

(1) Our revolving credit facility is collateralized by our accounts receivable and our term loan is collateralized by our property, plant, and equipment.

(2) See below “Revolving Credit and Term Loan Agreement” for monthly payment interest options. Prior to April 1, 2016, the monthly installment payment under the term loan was approximately \$190,000.

(3) Uncollateralized note.

(4) Net of debt discount of (\$50,000) at December 31, 2015. See “Promissory Notes” below for additional information.

(5) Net of debt issuance costs of (\$151,000) and (\$152,000) at December 31, 2016 and December 31, 2015, respectively.

Revolving Credit and Term Loan Agreement

The Company is subject to an Amended and Restated Revolving Credit, Term Loan and Security Agreement (“Loan Agreement”) with PNC National Association (“PNC”), acting as agent and lender. The Loan Agreement, as subsequently amended prior to the March 24, 2016 amendment discussed below (“Amended Loan Agreement”), provided the Company with the following credit facility: (a) up to \$12,000,000 revolving line of credit (“revolving credit”), subject to the amount of borrowings based on a percentage of eligible receivables (as defined) and (b) a term loan (“term loan”) of \$16,000,000, which required monthly installments of approximately \$190,000 (based on a seven-year amortization).

Under the Amended Loan Agreement, the Company had the option of paying an annual rate of interest due on the revolving credit at prime plus 2% or London Inter Bank Offer Rate (“LIBOR”) plus 3% and the term loan at prime plus 2.5% or LIBOR plus 3.5%.

On March 24, 2016, the Company entered into an amendment to the Amended Loan Agreement with PNC which provided, among other things, the following (the amendment, together with the Amended Loan Agreement is collectively the “Revised Loan Agreement”):

extended the due date of our credit facility from October 31, 2016 to March 24, 2021 (“maturity date”);

amended the term loan to approximately \$6,100,000, which requires monthly payments of \$101,600 (based on a five-year amortization) and which approximated the term loan balance under the existing credit facility at the date of the amendment. The revolving credit remains at up to \$12,000,000 (subject to the amount of borrowings based on a percentage of eligible receivables as previously defined under the Amended Loan Agreement);

released \$1,000,000 of the \$1,500,000 borrowing availability restriction that the lender had previously placed on the Company in connection with the insurance settlement proceeds received in 2014 by our PFSG facility. The Company’s lender had authorized the Company to use such proceeds for working capital purposes but had placed an indefinite reduction on our borrowing availability of \$1,500,000;

revised the interest payment options to paying an annual rate of interest due on the revolving credit at prime plus 1.75% or LIBOR plus 2.75% and the term loan at prime (3.75% at December 31, 2016) plus 2.25% or LIBOR plus 3.25%; and

revised our annual capital spending maximum limit from \$6,000,000 to \$3,000,000.

In connection with the March 24, 2016 amendment, the Company paid PNC total closing fees of approximately \$72,000. As a result of the March 24, 2016 amendment, the Company recorded approximately \$68,000 in loss on

extinguishment of debt in accordance with ASC 470-50, "Debt – Modifications and Extinguishments," which was included in interest expense in the accompanying Consolidated Statements of Operations.

Pursuant to the Revised Loan Agreement, the Company may terminate the Revised Loan Agreement upon 90 days' prior written notice upon payment in full of its obligations under the Revised Loan Agreement. The Company has agreed to pay PNC 1.0% of the total financing in the event the Company pays off its obligations on or before March 23, 2017, .50% of the total financing if the Company pays off its obligations after March 23, 2017 but prior to or on March 23, 2018, and .25% of the total financing if the Company pays off its obligations after March 23, 2018 but prior to or on March 23, 2019. No early termination fee shall apply if the Company pays off its obligations after March 23, 2019.

The Company's credit facility with PNC contains certain financial covenants, along with customary representations and warranties. A breach of any of these financial covenants, unless waived by PNC, could result in a default under our credit facility allowing our lender to immediately require the repayment of all outstanding debt under our credit facility and terminate all commitments to extend further credit. The Company failed to meet its minimum quarterly fixed charge coverage ratio ("FCCR") requirement of 1.15:1 in the first quarter of 2016. On May 23, 2016, the Company's lender waived this non-compliance. In connection with this waiver, the Company paid PNC a fee of \$5,000 which was included in selling, general and administrative expenses. The Company met its financial covenant requirements in the second quarter of 2016 except for its quarterly FCCR requirement. On August 22, 2016, the Company entered into an amendment to its Revised Loan Agreement with its lender which waived the Company's non-compliance with its minimum quarterly FCCR for the second quarter of 2016. In addition, the amendment revised the methodology to be used in calculating the FCCR in the third quarter of 2016, the fourth quarter of 2016 and the first quarter of 2017. This amendment also revised the Company's minimum Tangible Adjusted Net Worth requirement (as defined in the Revised Loan Agreement) from \$30,000,000 to \$26,000,000. In connection with the amendment, the Company paid PNC a fee of \$25,000, which is being amortized over the remaining term of the loan as interest expense – financing fees. The Company failed to meet its FCCR in the third quarter of 2016. On November 17, 2016, the Company entered into another amendment to its Revised Loan Agreement with its lender. This amendment included the following:

waived the Company's non-compliance with its minimum quarterly FCCR for the third quarter of 2016; further revised the methodology to be used in calculating the FCCR as follows (with continued requirement to maintain a minimum 1:15:1 ratio in each of the quarters): FCCR for the fourth quarter of 2016 is to be calculated using the financial results for the three month period ending December 31, 2016; FCCR for first quarter of 2017 is to be calculated using financial results for the six month period ending March 31, 2017; FCCR for second quarter of 2017 is to be calculated using the financial results for the nine month period ending June 30, 2017; and FCCR for the third quarter of 2017 and each fiscal quarter thereafter is to be calculated using the financial results for a trailing twelve month period basis;

placed an immediate additional restriction on the Company's borrowing availability of \$750,000, in addition to the restriction on our borrowing availability of \$500,000 which had been previously placed by our lender; and

revised the interest payment options to paying an annual rate of interest due on the revolving credit at prime plus 2% or LIBOR plus 3% and the term loan at Prime plus 2.5% or LIBOR plus 3.5%. Such interest payment option will automatically revert back to interest payment options as revised on the March 24, 2016 amendment (see the March 24, 2016 amendment the Company entered into with PNC above) if the Company is able to attain minimally a FCCR of 1:15:1, as calculated using a trailing twelve month period, subsequent to any quarters after the third quarter of 2016.

As of December 31, 2016, the availability under our revolving credit was \$1,748,000, based on our eligible receivables and includes the remaining indefinite reduction of borrowing availability of \$1,250,000 as discussed above.

Pursuant to the amendment dated November 17, 2016 as discussed above, the Company's lender also established a "Condition Subsequent" which requires the Company to receive restricted cash from a finite risk sinking fund in connection with our PFNWR closure policy. Immediately upon the receipt of funds, the Company's lender is to immediately place another \$750,000 restriction on the Company's borrowing availability resulting in a total of \$2,000,000 restriction on the Company's borrowing availability (see "Note 14 – Commitments and Contingencies" – "Insurance" for further information of the PFNWR closure policy and the pending receipt of the related sinking fund).

All other terms of the Revised Loan Agreement remain principally unchanged. In connection with this amendment, the Company paid its lender a fee of \$25,000, which is being amortized over the remaining term of the loan as interest expense-financing fees.

Promissory Note

The Company entered into a \$3,000,000 loan dated August 2, 2013 with Messrs. Robert Ferguson and William Lampson (each known as the “Lender”). As consideration for the Company receiving the loan, the Company issued to each Lender a Warrant to purchase up to 35,000 shares of the Company’s Common Stock at an exercise price of \$2.23 per share. On August 2, 2016, each Lender exercised his Warrant for the purchase of 35,000 shares of our Common Stock, resulting in total proceeds paid to the Company of approximately \$156,000. As further consideration for the loan, the Company had also issued to each Lender 45,000 shares of the Company’s Common Stock. The fair value of the Warrants and Common Stock and the related closing fees incurred from this transaction were recorded as a debt discount, which has been fully amortized using the effective interest method over the term of the loan as interest expense – financing fees. The loan was repaid in full by the Company in August 2016.

The following table details the amount of the maturities of long-term debt maturing in future years as of December 31, 2016 of our continuing operations (excludes debt issuance costs).

| | |
|--------------------------|---------|
| Year ending December 31: | |
| (In thousands) | |
| 2017 | \$1,219 |
| 2018 | 1,219 |
| 2019 | 1,219 |
| 2020 | 1,219 |
| 2021 | 4,108 |
| Total | \$8,984 |

NOTE 11

ACCRUED EXPENSES

Accrued expenses at December 31, include the following (in thousands):

| | 2016 | 2015 |
|---------------------------------------|---------|---------|
| Salaries and employee benefits | \$2,695 | \$2,822 |
| Accrued sales, property and other tax | 265 | 202 |
| Interest payable | 6 | 9 |
| Insurance payable | 675 | 833 |
| Other | 453 | 475 |
| Total accrued expenses | \$4,094 | \$4,341 |

The Company had an individual Management Incentive Plan (“MIP”) for each of our Chief Executive Officer (“CEO”), Chief Financial Officer (“CFO”) and Chief Operating Officer (“COO”) (who retired from the position of COO effective September 30, 2016 and remained a part-time employee through December 31, 2016, at which time the COO retired from the Company), which awarded cash compensation based on achievement of certain performance targets for fiscal year 2015. A total of approximately \$214,000 (included in “salaries and employee benefits”) was accrued under the three MIPs for 2015 and was paid by the end of the third quarter of 2016. No performance incentive payments were earned and accrued under any of the MIPs for 2016.

NOTE 12

ACCRUED CLOSURE COSTS AND ARO

Accrued closure costs represent our estimated environmental liability to clean up our fixed-based regulated facilities as required by our permits, in the event of closure. Changes to reported closure liabilities for the years ended December 31, 2016 and 2015, were as follows:

Amounts in thousands

| | |
|---------------------------------|---------|
| Balance as of December 31, 2014 | \$5,508 |
| Accretion expense | 299 |
| Payments | (331) |
| Adjustment to closure liability | (175) |
| Balance as of December 31, 2015 | 5,301 |
| Accretion expense | 374 |
| Payments | (693) |
| Adjustment to closure liability | 2,333 |
| Balance as of December 31, 2016 | \$7,315 |

As a result of the Company's decision to close the M&EC subsidiary by January 2018, the Company recorded an additional \$1,626,000 in closure liabilities during the second quarter of 2016 due to a change in estimated closure costs (see "Note 3 – M&EC Facility" for further information of this additional closure liability). The Company also increased the closure liabilities for its PFNWR facility in the amount of approximately \$707,000 resulting from a change in estimated closure costs. In 2016, the Company had spendings of approximately \$283,000 and \$410,000 in closure related activities for the M&EC and PFNWR subsidiaries, respectively. The spendings at PFNWR facility were made in connection with the closure of certain processing unit/equipment.

As of December 31, 2016, total accrued closure liabilities for our M&EC subsidiary totaled approximately \$3,058,000 of which \$2,177,000 are recorded as current liabilities.

The decreases in closure liabilities in 2015 included approximately \$331,000 of costs incurred in connection with the closure of processing unit/equipment at our PFNWR facility and a reduction of approximately \$175,000 in closure liabilities at our PFNWR facility resulting from a change in estimated closure costs.

The reported closure asset or ARO, is reported as a component of "Net Property and equipment" in the Consolidated Balance Sheet for the years ended December 31, 2016 and 2015 as follows:

| Amounts in thousands | |
|--|---------|
| Balance as of December 31, 2014 | \$2,870 |
| Amortization of closure and post-closure asset | (152) |
| Adjustment to closure and post-closure asset | (143) |
| Balance as of December 31, 2015 | 2,575 |
| Amortization of closure and post-closure asset | (760) |
| Adjustment to closure and post-closure asset | 2,333 |
| Balance as of December 31, 2016 | \$4,148 |

The adjustment to the ARO for 2016 was due to the adjustment made to our closure liability as discussed above.

NOTE 13

INCOME TAXES

The components of current and deferred federal and state income tax (benefit) expense for continuing operations for the years ended December 31, consisted of the following (in thousands):

| | 2016 | 2015 |
|---|-----------|-------|
| Federal income tax expense - current | \$9 | \$116 |
| Federal income tax (benefit) expense - deferred | (2,657) | 142 |
| State income tax expense - current | 59 | 9 |
| State income tax (benefit) expense - deferred | (405) | 276 |
| Total income tax (benefit) expense | \$(2,994) | \$543 |

We had temporary differences and net operating loss carry forwards from both our continuing and discontinued operations, which gave rise to deferred tax assets and liabilities at December 31, 2016 and 2015 as follows (in thousands):

| | 2016 | 2015 |
|---|----------|---------|
| Deferred tax assets: | | |
| Net operating losses | \$7,288 | \$4,566 |
| Environmental and closure reserves | 3,189 | 2,497 |
| Other | 2,285 | 2,800 |
| Deferred tax liabilities: | | |
| Depreciation and amortization | (162) | (1,130) |
| Goodwill and indefinite lived intangible assets | (2,362) | (5,443) |
| Prepaid expenses | (72) | (122) |
| | 10,166 | 3,168 |
| Valuation allowance | (12,528) | (8,592) |
| Net deferred income tax liabilities | (2,362) | (5,424) |

An overall reconciliation between the expected tax (benefit) expense using the federal statutory rate of 34% and the (benefit) expense for income taxes from continuing operations as reported in the accompanying Consolidated Statement of Operations is provided below (in thousands).

| | 2016 | 2015 |
|---|-----------|-------|
| Tax (benefit) expense at statutory rate | \$(5,527) | \$166 |
| State tax benefit, net of federal benefit | (785) | (93) |
| Change in deferred tax rates | (82) | 208 |
| Permanent items | 119 | 84 |
| Difference in foreign rate | 98 | 40 |
| Change in deferred tax liabilities | (260) | 206 |
| Other | (241) | (124) |
| Increase in valuation allowance | 3,684 | 56 |
| Income tax (benefit) expense | \$(2,994) | \$543 |

The provision for income taxes is determined in accordance with ASC 740, "Income Taxes." Deferred income tax assets and liabilities are recognized for future tax consequences attributed to differences between the financial statement carrying amounts of existing assets and liabilities and their respective tax basis. Deferred income tax assets and liabilities are measured using enacted income tax rates expected to apply to taxable income in the years in which those temporary differences are expected to be recovered or settled. Any effect on deferred income tax assets and liabilities of a change in tax rates is recognized in income in the period that includes the enactment date.

The Company regularly assesses the likelihood that the deferred tax asset will be recovered from future taxable income. The Company considers projected future taxable income and ongoing tax planning strategies, then records a valuation allowance to reduce the carrying value of the net deferred income taxes to an amount that is more likely than not to be realized. In 2016 and 2015, we determined that it was more likely than not that approximately \$12,528,000 and \$8,592,000, respectively, of deferred income tax assets would not be realized, and as such, a full valuation allowance was applied against those deferred income tax assets. Our valuation allowance increased by \$3,684,000 and \$56,000 for the years ended December 31, 2016 and 2015, respectively.

We have estimated net operating loss carryforwards (“NOLs”) for federal and state income tax purposes of approximately \$10,372,000 and \$65,658,000, respectively, as of December 31, 2016. The estimated consolidated federal and state NOLs include approximately \$3,259,000 and \$4,179,000, respectively, of our majority-owned subsidiary, PF Medical, which is not part of our consolidated group for tax purposes. These net operating losses can be carried forward and applied against future taxable income, if any, and expire in various amounts starting in 2021. However, as a result of various stock offerings and certain acquisitions, which in the aggregate constitute a change in control, the use of these NOLs will be limited under the provisions of Section 382 of the Internal Revenue Code of 1986, as amended. Additionally, NOLs may be further limited under the provisions of Treasury Regulation 1.1502-21 regarding Separate Return Limitation Years.

The tax years 2013 through 2015 remain open to examination by taxing authorities in the jurisdictions in which the Company operates.

No uncertain tax positions were identified by the Company for the years currently open under statute of limitations, including 2015 and 2016.

As of December 31, 2016 and 2015, the Company had approximately \$0 and \$32,000 of federal income tax payable, respectively.

NOTE 14

COMMITMENTS AND CONTINGENCIES

Hazardous Waste

In connection with our waste management services, we process both hazardous and non-hazardous waste, which we transport to our own, or other, facilities for destruction or disposal. As a result of disposing of hazardous substances, in the event any cleanup is required, we could be a potentially responsible party for the costs of the cleanup notwithstanding any absence of fault on our part.

Legal Matters

In the normal course of conducting our business, we are involved in various litigation. We are not a party to any litigation or governmental proceeding which our management believes could result in any judgments or fines against us that would have a material adverse effect on our financial position, liquidity or results of future operations.

Insurance

The Company has a 25-year finite risk insurance policy entered into in June 2003 with American International Group, Inc. ("AIG"), which provides financial assurance to the applicable states for our permitted facilities in the event of unforeseen closure. The policy, as amended, provides for a maximum allowable coverage of \$39,000,000 and has available capacity to allow for annual inflation and other performance and surety bond requirements. All of the required payments for this finite risk insurance policy, as amended, were made by 2012. During the fourth quarter of 2016, the Company's DSSI subsidiary recalculated the state mandated closure obligation requirement resulting in a reduction in the financial requirement of approximately \$9,711,000. As of December 31, 2016, our financial assurance coverage amount under this policy totaled approximately \$29,163,000. The Company has recorded \$15,546,000 and \$15,460,000 in sinking fund related to this policy in other long term assets on the accompanying Consolidated

Balance Sheets as of December 31, 2016 and 2015, respectively, which includes interest earned of \$1,075,000 and \$989,000 on the sinking fund as of December 31, 2016 and 2015, respectively. Interest income for the twelve months ended December 31, 2016 and 2015 was approximately \$86,000 and \$31,000, respectively. If the Company so elects, AIG is obligated to pay the Company an amount equal to 100% of the sinking fund account balance in return for complete release of liability from both us and any applicable regulatory agency using this policy as an instrument to comply with financial assurance requirements.

In August 2007, the Company entered into a second finite risk insurance policy for our PFNWR (“PFNWR policy”) facility with AIG. The policy provided an initial \$7,800,000 of financial assurance coverage with an annual growth rate of 1.5%, which at the end of the four year term policy, provides maximum coverage of \$8,200,000. The Company has made all of the required payments on this policy. As of December 31, 2016, our financial assurance coverage amount under this policy totaled approximately \$7,973,000. The Company has recorded \$5,941,000 and \$5,920,000 in our sinking fund related to this policy in other long term assets on the accompanying Consolidated Balance Sheets as of December 31, 2016 and 2015, respectively, which includes interest earned of \$241,000 and \$220,000 on the sinking fund as of December 31, 2016 and 2015, respectively. Interest income for the twelve months ended December 31, 2016 and 2015 was approximately \$21,000 and \$15,000, respectively. This policy is renewed annually at the end of the four year term with a nominal fee for the variance between the coverage requirement and the sinking fund balance. The Company has renewed this policy annually from 2011 to 2016 (with fees ranging from \$41,000 to \$46,000 annually). All other terms of the policy remain substantially unchanged.

During the latter part of 2016, the Company initiated a plan to secure other options in providing financial assurance coverage for our PFNWR facility, including acquiring a separate bonding mechanism, which would enable the Company to cancel the PFNWR policy, thereby allowing for the release of the sinking fund securing the PFNWR policy as discussed above. The Company is currently waiting for final approval on the release of the PFNWR policy from Washington state regulators. Once the Company obtains this release, the Company will cancel the PFNWR policy with AIG which would result in the release of the \$5,941,000 in sinking fund securing the PFNWR back to the Company. The new bonding mechanism in the amount of approximately \$7,000,000 (“new bond”) which is to provide financial assurance for the PFNWR facility will require approximately \$2,500,000 in collateral and will be provided for by the \$5,941,000 in sinking fund to be released by AIG. The Company expects this transaction to be completed by the end of the second quarter of 2017. After the release of the \$5,941,000 in finite sinking fund by AIG and payment of the required collateral for the new bond, the Company expects to receive the approximately remaining \$3,441,000 in finite sinking funds which will be used to pay down our revolving credit.

Letter of Credits and Bonding Requirements

From time to time, we are required to post standby letters of credit and various bonds to support contractual obligations to customers and other obligations, including facility closures. As of December 31, 2016, the total amount of these bonds and letters of credit outstanding was approximately \$1,514,000, of which the majority of the amount relates to various bonding requirements.

Operating Leases

The Company leases certain facilities and equipment under operating leases. The following table lists future minimum rental payments as of December 31, 2016 under these leases for our continuing operations (in thousands):

| | |
|--------------------------|-------|
| Year ending December 31: | |
| 2017 | 700 |
| 2018 | 178 |
| beyond 2018 | |
| Total | \$878 |

Total rent expense was \$1,027,000 and \$976,000 for the years ended 2016 and 2015, respectively, for our continuing operations. These amounts included payments on non-cancelable operating leases of approximately \$735,000 and \$659,000 for the years ended 2016 and 2015, respectively. The remaining rent expense was for non-contractual monthly and daily rentals of specific use vehicles, machinery and equipment.

NOTE 15

PROFIT SHARING PLAN

The Company adopted a 401(k) Plan in 1992, which is intended to comply with Section 401 of the Internal Revenue Code and the provisions of the Employee Retirement Income Security Act of 1974. All full-time employees who have attained the age of 18 are eligible to participate in the 401(k) Plan. Eligibility is immediate upon employment but enrollment is only allowed during four quarterly open periods of January 1, April 1, July 1, and October 1. Participating employees may make annual pretax contributions to their accounts up to 100% of their compensation, up to a maximum amount as limited by law. The Company, at its discretion, may make matching contributions of 25% based on the employee's elective contributions. Company contributions vest over a period of five years. In 2016 and 2015, the Company contributed approximately \$307,000 and \$303,000 in 401(k) matching funds, respectively.

NOTE 16

RELATED PARTY TRANSACTIONS

Related Party Transactions

Mr. David Centofanti

Mr. David Centofanti serves as our Vice President of Information Systems. For such position, he received annual compensation of \$168,000 for each of the years 2016 and 2015. Mr. David Centofanti is the son of our CEO, President and a Board member, Dr. Louis F. Centofanti.

Mr. Robert L. Ferguson

Mr. Robert L. Ferguson serves as an advisor to the Company's Board and is also a member of the Supervisory Board of PF Medical, a majority-owned Polish subsidiary of the Company. Mr. Ferguson previously served as a Board member of the Company from June 2007 to February 2010 and again from August 2011 to September 2012. As an advisor to the Company's Board, Mr. Ferguson is paid \$4,000 monthly plus reasonable expenses. For such services, Mr. Ferguson received compensation of approximately \$59,000 and \$58,000 for the years ended December 31, 2016 and 2015, respectively. On August 2, 2013, the Company completed a lending transaction with Messrs. Robert Ferguson and William Lampson ("collectively, the "Lenders"), whereby the Company borrowed from the Lenders the sum of \$3,000,000 (which was paid off by the Company in August 2016) pursuant to the terms of a Loan and Security Purchase Agreement and promissory note (the "Loan") (see further details and terms of this Loan in "Note 10 – Long Term Debt – Promissory Note").

Mr. John Climaco

On June 2, 2015, Mr. Climaco, a current member of the Company's Board, was elected as the EVP of PF Medical. As EVP of PF Medical, Mr. Climaco receives an annual salary of \$150,000 and is not eligible to receive compensation for serving on the Company's Board.

Mr. Climaco previously had a consulting agreement with the Company effective September 2014 (approved by the Board with Mr. Climaco abstaining) to perform certain consulting functions for the Company as determined by the Board, including review of operating and accounting functions, strategic opportunity and other initiatives, and the development of the Company's medical isotope production technology. The consulting agreement was terminated effective June 2, 2015 upon Mr. Climaco's election as EVP of PF Medical. Mr. Climaco was paid \$22,000 per month under the consulting agreement and received approximately \$117,000 in 2015 for his services under the consulting agreement.

Mr. Climaco is also a Director of Digirad Corporation. On July 24, 2015, PF Medical and Digirad entered into a multi-year Tc-99m Supplier Agreement and a Subscription Agreement (see further details of these agreements in “Note 4 – PF Medical”).

Employment Agreements

The Company has employment agreements (each dated July 10, 2014 and effective for three years) with each of Dr. Centofanti (our President and CEO) and Ben Naccarato (our CFO). Each employment agreement provides for annual base salaries, bonuses (including MIPs as approved by our Board and Compensation Committee), and other benefits commonly found in such agreements. In addition, each employment agreement provides that in the event of termination of such officer without cause or termination by the officer for good reason (as such terms are defined in the employment agreement), the terminated officer shall receive payments of an amount equal to benefits that have accrued as of the termination but had not yet been paid, plus an amount equal to one year’s base salary at the time of termination. In addition, each of the employment agreements provide that in the event of a change in control (as defined in the employment agreements), all outstanding stock options to purchase the Company’s Common Stock granted to, and held by, the officer covered by the employment agreement to be immediately vested and exercisable. Mr. John Lash, our previous COO who retired from the position effective September 30, 2016 and who remained as a part-time employee of the Company through December 31, 2016, also had an employment agreement dated July 10, 2014 with substantially the same provisions as described above. Upon Mr. Lash’s resignation as COO effective September 30, 2016, his employment agreement also terminated. No amount was payable under Mr. Lash’s employment agreement upon his resignation as COO. (See “Note 18 – Subsequent Events – Employment Agreement and MIPs” for a discussion of the Employment Agreement with the Company’s EVP/COO and the Company’s MIPs with its CEO, EVP/COO, and CFO).

NOTE 17

SEGMENT REPORTING

In accordance with ASC 280, “Segment Reporting”, we define an operating segment as a business activity:

from which we may earn revenue and incur expenses;

whose operating results are regularly reviewed by the chief operating decision maker (“CODM”) to make decisions about resources to be allocated to the segment and assess its performance; and

for which discrete financial information is available.

We currently have three reporting segments, which include Treatment and Services Segments, which are based on a service offering approach; and Medical, whose primary purpose at this time is the R&D of a new medical isotope production technology. The Medical Segment has not generated any revenues and all costs incurred are reflected within R&D in the accompanying Consolidated Statements of Operations. Our reporting segments exclude our corporate headquarter and our discontinued operations (see “Note 9 – Discontinued Operations”) which do not generate revenues.

The table below shows certain financial information of our reporting segments for 2016 and 2015 (in thousands).

Segment Reporting as of and for the year ended December 31, 2016

| | Treatment | Services | Medical | Segments Total | Corporate ⁽²⁾ | Consolidated Total |
|---|--------------------------|-----------|----------|--------------------------|--------------------------|-----------------------|
| Revenue from external customers | \$ 32,253 | \$ 18,966 | — | \$ 51,219 ⁽³⁾ | \$ — | \$ 51,219 |
| Intercompany revenues | 40 | 28 | — | 68 | — | — |
| Gross profit | 4,015 | 3,069 | — | 7,084 | — | 7,084 |
| Research and development | 504 | 38 | 1,489 | 2,031 | 15 | 2,046 |
| Interest income | 3 | — | — | 3 | 107 | 110 |
| Interest expense | (29) | (2) | — | (31) | (458) | (489) |
| Interest expense-financing fees | — | — | — | — | (108) | (108) |
| Depreciation and amortization | 3,451 | 632 | — | 4,083 | 82 | 4,165 |
| Segment (loss) income before income taxes | (10,119) ⁽⁶⁾ | 744 | (1,489) | (10,864) | (5,393) | (16,257) |
| Income tax (benefit) expense | (3,013) ⁽⁶⁾ | — | — | (3,013) | 19 | (2,994) |
| Segment (loss) income | (7,106) | 744 | (1,489) | (7,851) | (5,412) | (13,263) |
| Segment assets ⁽¹⁾ | 32,482 | 8,105 | 382 | 40,969 | 24,366 ⁽⁴⁾ | 65,335 |
| Expenditures for segment assets | 418 | 17 | 1 | 436 | — | 436 |
| Total debt | — | — | — | — | 8,833 ⁽⁵⁾ | 8,833 |

Segment Reporting as of and for the year ended December 31, 2015

| | Treatment | Services | Medical | Segments Total | Corporate ⁽²⁾ | Consolidated Total |
|---------------------------------|-----------|-----------|---------|--------------------------|--------------------------|-----------------------|
| Revenue from external customers | \$ 41,318 | \$ 21,065 | — | \$ 62,383 ⁽³⁾ | \$ — | \$ 62,383 |
| Intercompany revenues | 113 | 25 | — | 138 | — | — |
| Gross profit | 10,910 | 3,441 | — | 14,351 | — | 14,351 |
| Research and development | 179 | — | 2,114 | 2,293 | 9 | 2,302 |
| Interest income | 6 | — | — | 6 | 47 | 53 |
| Interest expense | (38) | — | — | (38) | (451) | (489) |
| Interest expense-financing fees | (2) | — | — | (2) | (226) | (228) |

Edgar Filing: PERMA FIX ENVIRONMENTAL SERVICES INC - Form 10-K

| | | | | | | |
|---|--------|-------|----------|--------|-----------------------|--------|
| Depreciation and amortization | 2,949 | 725 | — | 3,674 | 43 | 3,717 |
| Segment income (loss) before income taxes | 7,101 | 1,178 | (2,114) | 6,165 | (5,685) | 480 |
| Income tax expense | 538 | — | — | 538 | 5 | 543 |
| Segment income (loss) | 6,563 | 1,178 | (2,114) | 5,627 | (5,690) | (63) |
| Segment assets ⁽¹⁾ | 46,307 | 9,481 | 1,793 | 57,581 | 25,332 ⁽⁴⁾ | 82,913 |
| Expenditures for segment assets | 579 | 33 | — | 612 | 11 | 623 |
| Total debt | 23 | — | — | 23 | 9,813 ⁽⁵⁾ | 9,836 |

(1) Segment assets have been adjusted for intercompany accounts to reflect actual assets for each segment.

(2) Amounts reflect the activity for corporate headquarters not included in the segment information.

(3) The Company performed services relating to waste generated by the federal government, either directly as a prime contractor or indirectly for others as a subcontractor to the federal government, representing approximately \$27,354,000 or 53.4% of total revenue from continuing operations during 2016 and \$36,105,000 or 57.9% of total revenue from continuing operations during 2015. The following reflects such revenue generated by our two segments:

| | 2016 | 2015 |
|-----------|--------------|--------------|
| Treatment | \$21,434,000 | \$30,130,000 |
| Services | 5,920,000 | 5,975,000 |
| Total | \$27,354,000 | \$36,105,000 |

(4) Amount includes assets from our discontinued operations of \$434,000 and \$565,000, as of December 31, 2016 and 2015, respectively.

(5) Net of debt discount of (\$0) and (\$50,000) for 2016 and 2015, respectively, and net of debt issuance costs of (\$151,000) and (\$152,000) for 2016 and 2015, respectively (see “Note 10 – “Long-Term Debt” for additional information).

(6) Amounts include tangible and intangible asset impairment losses of \$1,816,000 and \$8,288,000, respectively for the Company’s M&EC subsidiary recorded in the second quarter of 2016 (see “Note 3 – M&EC Facility”). Also includes a tax benefit of approximately \$3,203,000 recorded resulting from the intangible impairment loss recorded for our M&EC subsidiary.

NOTE 18

SUBSEQUENT EVENTS

Employment Agreement and MIPs

On January 19, 2017, the Company entered into an employment agreement (the “EVP/COO Employment Agreement”) with Mr. Mark Duff, EVP/COO. Upon Mr. Lash’s retirement as COO effective September 30, 2016, Mr. Duff assumed the additional position of COO and continues his position as EVP of the Company. The EVP/COO Employment Agreement is effective June 11, 2016 (Mr. Duff’s effective date of employment as EVP) and has a term of three years. Pursuant to the EVP/COO Employment Agreement, Mr. Duff will continue to serve as the Company’s EVP/COO, with an annual base salary of \$267,000. The EVP/COO Employment Agreement also provides substantially the same provisions as the employment agreements described for the CEO and CFO (see “Note 16 – Related Party Transactions – Employment Agreements” for these provisions).

On January 19, 2017, the Board and Compensation Committee approved individual MIPs for the CEO, EVP/COO, and CFO. The MIPs are effective January 1, 2017. Each MIP provides guidelines for the calculation of annual cash incentive based compensation, subject to Compensation Committee oversight and modification. Each MIP awards cash compensation based on achievement of performance thresholds, with the amount of such compensation established as a percentage of base salary. The potential target performance compensation ranges from 5% to 100% of the 2017 base salary for the CEO (\$13,962 to \$279,248), 5% to 100% of the 2017 base salary for the EVP/COO (\$13,350 to \$267,000), and 5% to 100% of the 2017 base salary for the CFO (\$11,033 to \$220,667).

**CHANGES IN AND
DISAGREEMENTS
WITH
ITEM 9. ACCOUNTANTS
ON ACCOUNTING
AND FINANCIAL
DISCLOSURE**

None.

**CONTROLS
ITEM 9A. AND
PROCEDURES**

Evaluation of disclosure controls and procedures.

We maintain disclosure controls and procedures that are designed to ensure that information required to be disclosed in our periodic reports filed with the Securities and Exchange Commission (the “Commission”) is recorded, processed,

summarized and reported within the time periods specified in the rules and forms of the Commission and that such information is accumulated and communicated to our management, including the Chief Executive Officer (“CEO”) (Principal Executive Officer), and Chief Financial Officer (“CFO”) (Principal Financial Officer), as appropriate to allow timely decisions regarding the required disclosure. In designing and assessing our disclosure controls and procedures, our management recognizes that any controls and procedures, no matter how well designed and operated, can provide only reasonable assurance of achieving their stated control objectives and are subject to certain limitations, including the exercise of judgment by individuals, the difficulty in identifying unlikely future events, and the difficulty in eliminating misconduct completely. Our management, with the participation of our CEO and CFO, evaluated the effectiveness of our disclosure controls and procedures pursuant to Rule 13a-15(e) and 15d-15(e) of the Securities Exchange Act of 1934, as amended. Based upon this assessment, our CEO and CFO have concluded that our disclosure controls and procedures were effective as of December 31, 2016.

Management's Report on Internal Control over Financial Reporting

Our management is responsible for establishing and maintaining adequate internal control over financial reporting, as such term is defined in Rules 13a-15(f) and 15d-15(f) of the Securities Exchange Act of 1934. Internal control over financial reporting is designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with accounting principles generally accepted in the United States of America. Because of its inherent limitations, internal control over financial reporting may not prevent or detect misstatements or fraudulent acts. Also, projections of any evaluation of effectiveness to future periods are subject to the risk that controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate. A control system, no matter how well designed, can provide only reasonable assurance with respect to financial statement preparation and presentation.

Internal control over financial reporting includes those policies and procedures that (i) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the assets of the Company; (ii) provide reasonable assurance that transactions are recorded as necessary to permit the preparation of the consolidated financial statements in accordance with generally accepted accounting principles in the United States of America, and that receipts and expenditures of the Company are being made only in accordance with appropriate authorizations of management and directors of the Company; and (iii) provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use or disposition of the Company's assets that could have a material effect on the consolidated financial statements.

Management, with the participation of our CEO and CFO, conducted an assessment of the effectiveness of internal control over financial reporting as of December 31, 2016 based on the framework in *Internal Control – Integrated Framework (2013)* issued by the Committee of Sponsoring Organizations of the Treadway Commission (“COSO”). Based on this assessment, management, with the participation of our CEO and CFO, concluded that the Company’s internal control over financial reporting was effective as of December 31, 2016.

This Form 10-K does not include an attestation report of the Company’s independent registered public accounting firm regarding internal control over financial reporting. Since the Company is not a large accelerated filer or an accelerated filer, management’s report was not subject to attestation by the Company’s independent registered public accounting firm pursuant to the rules of the Commission that permit the Company to provide only management’s report in this Form 10-K.

Changes in Internal Control over Financial Reporting

There have been no changes in our internal controls over financial reporting during the fiscal quarter ended December 31, 2016 that have materially affected, or are reasonably likely to materially affect, our internal controls over financial reporting.

ITEM9B. OTHER INFORMATION

None.

PART III

**ITEM 10. DIRECTORS,
EXECUTIVE
OFFICERS AND
CORPORATE
GOVERNANCE**

DIRECTORS

The following table sets forth, as of the date of this Report, information concerning our Board of Directors (“Board”):

| <u>NAME</u> ⁽¹⁾ | <u>AGE</u> | <u>POSITION</u> |
|-----------------------------------|------------|--|
| Dr. Louis F. Centofanti | 73 | Director; President and Chief Executive Officer (“CEO”); Supervisory Board Member, Perma-Fix Medical S.A. |
| Mr. John M. Climaco | 48 | Director; Executive Vice President, Perma-Fix Medical S.A. |
| Mr. Robert Cochran ⁽¹⁾ | 63 | Director |
| Dr. Gary Kugler | 76 | Director |
| Honorable Joe R. Reeder | 69 | Director |
| Mr. Larry M. Shelton | 63 | Chairman of the Board |
| Mr. Mark A. Zwecker | 66 | Director |

Each director is elected to serve until the next annual meeting of stockholders.

⁽¹⁾ Mr. Robert Cochran was appointed by the Board as a director effective January 13, 2017 to fill the vacancy left by Mr. Jack Lahav, who retired from the Board effective October 27, 2016. Mr. Lahav’s decision to retire was based on personal reasons and was not as a result of any disagreement with the Company or due to any matter relating to the Company’s operations, policies or practices.

Director Information

Our directors and executive officers, their ages, the positions with us held by each of them, the periods during which they have served in such positions and a summary of their recent business experience is set forth below. Each of the biographies of the current directors listed below also contains information regarding such person's service as a director, business experience, director positions with other public companies held currently or at any time during the past five years, and the experience, qualifications, attributes and skills that our Board of Directors considered in selecting each of them to serve as one of our directors.

Dr. Louis F. Centofanti

Dr. Centofanti is currently the Company's President and CEO, positions he has held since March 1996 and also from February 1991 to September 1995. Dr. Centofanti served as Chairman of our Board from the Company's inception in February 1991 until December 16, 2014, at which time Mr. Larry M. Shelton, an independent member of our Board, was appointed Chairman. Dr. Centofanti continues to serve as a member of our Board. In January 2015, Dr. Centofanti was appointed by the U.S Secretary of Commerce Penny Prizker to serve on the U.S. Department of Commerce's Civil Nuclear Trade Advisory Committee ("CINTAC"). The CINTAC is composed of industry representatives from the civil nuclear industry and meets periodically throughout the year to discuss the critical trade issues facing the U.S. civil nuclear sector. Effective June 2, 2015, Dr. Centofanti was elected to the Supervisory Board of PF Medical, a majority-owned Polish subsidiary of the Company involved in the research and development ("R&D") of a new medical isotope production technology. From 1985 until joining the Company, Dr. Centofanti served as Senior Vice President ("SVP") of USPCI, Inc., a large, publicly-held hazardous waste management company, where he was responsible for managing the treatment, reclamation and technical groups within USPCI. In 1981, he founded PPM, Inc. (later sold to USPCI), a hazardous waste management company specializing in treating PCB contaminated oil. From 1978 to 1981, Dr. Centofanti served as Regional Administrator of the U.S. Department of Energy for the southeastern region of the United States. Dr. Centofanti has a Ph.D. and a M.S. in Chemistry from the University of Michigan, and a B.S. in Chemistry from Youngstown State University.

As founder of Perma-Fix and PPM, Inc., and as a senior executive at USPCI, Dr. Centofanti combines extensive business experience in the waste management industry with a drive for innovative technology which is critical for a waste management company. In addition, his service in the government sector provides a solid foundation for the continuing growth of the Company, particularly within the Company's Nuclear business. Dr. Centofanti's comprehensive understanding of the Company's operations and his extensive knowledge of its history, coupled with his drive for innovation and excellence, positions Dr. Centofanti to optimize our role in this competitive, evolving market, and led the Board to conclude that he should serve as a director.

John M. Climaco

Mr. Climaco has been a director of the Company since October 2013. Effective June 2, 2015, Mr. Climaco was named the Executive Vice President (“EVP”) of PF Medical. From 2012 through 2015, Mr. Climaco served as an independent consultant to a variety of healthcare and medical technology companies. Since June 2015, Mr. Climaco has served as a board member for Essex Rental Corporation, a Nasdaq-listed heavy-lifting-equipment rental and leasing company that provides various types of cranes, other lifting equipment, and product support used in a wide array of construction projects and whose securities are traded over-the-counter. Mr. Climaco has also served as a board member since 2012 for Digirad Corporation, a NASDAQ-listed company that manufactures cameras for nuclear imaging applications and provides for in-office nuclear cardiology imaging (see “Certain Relationships and Related Transactions, and Director Independence” for a discussion of Mr. Climaco’s employment with PF Medical and a transaction between PF Medical and Digirad Corporation). Mr. Climaco has previously served as a board member for PDI, Inc., a Nasdaq-listed provider of outsourced commercial services to pharmaceutical, biotechnology, and healthcare companies. He has also served as a board member for InfuSystem Holdings, Inc., a NASDAQ-listed company that is a leading supplier of infusion services to oncologists and other out-patient treatment settings. From 2003 to 2012, Mr. Climaco served as president and chief executive officer, as well as a director, of Axial Biotech, Inc., a privately-held, venture-backed molecular diagnostics company specializing in spine disorders, which he cofounded in 2003. From 2001 to 2007, he practiced law for the firm of Fabian and Clendenin, specializing in corporate and tax legal strategies for diverse clients across the U.S. and Europe, as well as joint venture, corporate and securities transactions. Mr. Climaco earned his B.A. in Philosophy from Middlebury College and holds a J.D. from the University of California Hasting College of the Law.

Mr. Climaco’s extensive legal and operational experience, including strategic planning and business development, provides valuable insight to the Company’s immediate and future growth in our industry, and led the Board to conclude that he should serve as a director.

Robert Cochran

Since November 2015, Mr. Cochran has been President and CEO of CTG, LLC, a company that provides strategic business development support, as well as acquisitions and business/management restructuring activity support. Since April 2012, Mr. Cochran has been a director of Longenecker & Associates, Inc., a privately held consulting firm that provides highly specialized, fast-response technical-management support to nuclear and environmental industries. From March 2012 to November 2015, Mr. Cochran served as President and Officer Director of CB&I Federal Services, LLC (a subsidiary of Chicago Bridge & Iron Company, NYSE: CBI), which provides mission-critical services primarily to the U.S. federal government. From 2006 to 2011, Mr. Cochran served as President of B&W Technical Service Group, Inc., an operating group of The Babcock & Wilcox Company (NYSE: BW), which provides support to government and commercial clients, including management and operation of complex high-consequence nuclear facilities, nuclear material processing and manufacturing, classified component manufacturing, engineering, procurement and construction of major capital projects, nuclear safeguards and security, environmental cleanup and remediation, and nuclear-facility deactivation. From 2007 to 2011, Mr. Cochran served as Chairman of the Board of Pantex LLC and B&W Y-12, where he had direct responsibility for the performance and operations associated with nuclear weapons production enterprise. Before joining The Babcock & Wilcox Company, Mr. Cochran worked for more than 20 years in operations and development within the engineering, construction, facilities management and operations, environmental technology, and remediation industries. This experience includes serving as President and

CEO of MAGma LLC, a privately-held company that provided management and operational restructuring, strategic development, and acquisition/divestiture services to the public utility, engineering and construction, and Department of Energy business sectors. Additionally, as its SVP, Mr. Cochran led Tyco Infrastructure's development and delivery of services, opening new markets and service areas valued at more than \$1 billion. Mr. Cochran received an executive M.B.A. from the University of Richmond's Robins School of Business and a B.S. from James Madison University.

Mr. Cochran has extensive career in solving and overseeing solutions to complex issues involving both domestic and international concerns. In addition, his government related services provide solid experience for the continuing growth of the Company's Treatment and Services Segments. His extensive knowledge and problem-solving experience enhances the Board's ability to address significant challenges in the nuclear market, and led the Board to conclude that he should serve as a director.

Dr. Gary G. Kugler

Dr. Gary Kugler, a director since September 2013, served as the Chairman of the Board of the Nuclear Waste Management Organization (“NWMO”) from 2006 to June 2014, where he led its oversight through the work of four committees, including an Audit-Finance-Risk Committee. NWMO was established under the Canadian Nuclear Fuel Waste Act (2002) to investigate and implement approaches for managing Canada’s used nuclear fuel. Dr. Kugler also served on the Board of Ontario Power Generation, Inc. (“OPG”) from 2004 to March 2014 where he served as a member on four different committees, including the Audit, Finance, and Risk Committee from 2004 to 2008. OPG is one of Canada’s largest electricity generation companies, owning 18 nuclear, 65 hydro, and two biomass power plants. Dr. Kugler served as a member of the Supervisory Board of PF Medical from June 2015 to December 2016. Dr. Kugler has had an extensive career in the nuclear industry, both nationally and internationally. He retired from Atomic Energy of Canada Limited (“AECL”) as SVP, Nuclear Products & Services, in 2004, where he was responsible for all of AECL’s commercial operations, including nuclear power plant sales and services world-wide. During his 34 years with AECL, he held various technical, project management, business development, and executive positions. Prior to joining AECL, Dr. Kugler served as a pilot in the Canadian air force. He holds a Ph.D. in nuclear physics from McMaster University and is a graduate of the Directors Education Program of the Institute of Corporate Directors.

Dr. Kugler’s extensive career in the nuclear industry, both nationally and internationally, brings valuable insight and knowledge to the Company as it expands its business internationally, and led the Board to conclude that he should serve as a director.

Honorable Joe R. Reeder

Mr. Reeder, a director since April 2003, served as the Shareholder-in-Charge of the Mid-Atlantic Region (1999-2008) for Greenberg Traurig LLP, one of the nation's largest law firms, with 38 offices and approximately 2,000 attorneys worldwide. Currently, a principal shareholder in the law firm, Mr. Reeder’s clientele includes sovereign nations, international corporations, and law firms throughout the U.S. As the 14th Undersecretary of the U.S. Army (1993-97), Mr. Reeder also served for three years as Chairman of the Panama Canal Commission’s Board where he oversaw a multibillion-dollar infrastructure program, and, for the past fourteen years he has served on the International Advisory Board of the Panama Canal. He has served on the boards of the National Defense Industry Association (NDIA) (and chaired NDIA’s Ethics Committee), the Armed Services YMCA, and many other private companies and charitable organizations. Following successive appointments by Virginia governors Mark Warner and Tim Kaine, Mr. Reeder served seven years as Chairman of two Commonwealth of Virginia military boards and served ten years on the National USO Board. Mr. Reeder was appointed by Governor Terry McCaulliffe to the Virginia Military Institute’s Board of Visitors (2014). Mr. Reeder is also a television commentator on legal and national security issues. Among other corporate positions, he has been a director since September 2005 for ELBIT Systems of America, LLC, a wholly-owned subsidiary of Elbit Systems Ltd. (NASDAQ: ESLT), that provides product and system solutions focusing on defense, homeland security, and commercial aviation. Mr. Reeder also serves as a Board member for Washington First Bank (since April 2004), and of its parent bank holding company, Washington First Bankshares, Inc. (since 2009). A graduate of West Point who served in the 82nd Airborne Division following Ranger School, Mr. Reeder earned his J.D. from the University of Texas and his L.L.M. from Georgetown University.

Mr. Reeder has a distinguished career in solving and overseeing solutions to complex issues involving both domestic and international concerns. His extensive knowledge and problem-solving experience has enhanced the Board's ability to address significant challenges in the nuclear market, and led the Board to conclude that he should serve as a director.

Mr. Larry M. Shelton

Mr. Shelton, a director since July 2006, was appointed to the position of Chairman of the Board of the Company on December 16, 2014, replacing Dr. Louis Centofanti, who had held that position since February 1991. Mr. Shelton currently is the Chief Financial Officer ("CFO") (since 1999) of S K Hart Management, LLC, a private investment management company. In January 2013, Mr. Shelton was elected President of Pony Express Land Development, Inc. (an affiliate of SK Hart Management, LLC), a privately-held land development company, for which he has served on the Board since December 2005. In March 2012, he was appointed Director and CFO of S K Hart Ranches (PTY) Ltd, a private South African Company involved in agriculture. Mr. Shelton served as a member of the Supervisory Board of PF Medical from April 2014 to December 2016. Mr. Shelton has over 18 years of experience as an executive financial officer for several waste management companies, including as CFO of Envirocare of Utah, Inc. (now Energy Solutions (1995–1999)), and CFO of USPCI, Inc. (1982–1987), a NYSE- listed company. Since July 1989, Mr. Shelton has served on the Board of Subsurface Technologies, Inc., a privately-held company specializing in providing environmentally sound innovative solutions for water well rehabilitation and development. Mr. Shelton has a B.A. in accounting from the University of Oklahoma.

With his years of accounting experience as CFO for various companies, including a number of waste management companies, Mr. Shelton combines extensive knowledge and understanding of accounting principles, financial reporting requirements, evaluating and overseeing financial reporting processes and business matters. These factors led the Board to conclude that he should serve as a director.

Mr. Mark A. Zwecker

Mark Zwecker, a director since the Company's inception in January 1991, currently serves as the CFO and a Board member for JCI US Inc., a telecommunications company and wholly-owned subsidiary of Japan Communications, Inc. (Tokyo Stock Exchange (Securities Code: 9424)), which provides cellular service for M2M (machine to machine) applications. From 2006 to 2013, Mr. Zwecker served as Director of Finance for Communications Security and Compliance Technologies, Inc., a wholly-owned subsidiary of JCI US Inc. that develops security software products for the mobile workforce. From 1997 to 2006, Mr. Zwecker served as President of ACI Technology, LLC, an IT services provider, and from 1986 to 1998, he served as Vice President of Finance and Administration for American Combustion, Inc., a combustion technology solutions provider. In 1983, with Dr. Centofanti, Mr. Zwecker co-founded a start-up, PPM, Inc., a hazardous waste management company. He remained with PPM, Inc. until its acquisition in 1985 by USPCI. Mr. Zwecker has a B.S. in Industrial and Systems Engineering from the Georgia Institute of Technology and an M.B.A. from Harvard University.

As a director since our inception, Mr. Zwecker's understanding of our business provides valuable insight to the Board. With years of experience in operations and finance for various companies, including a number of waste management companies, Mr. Zwecker combines extensive knowledge of accounting principles, financial reporting rules and regulations, the ability to evaluate financial results, and understanding of financial reporting processes. He has an extensive background in operating complex organizations. Mr. Zwecker's experience and background position him well to serve as a member of our Board. These factors led the Board to conclude that he should serve as a director.

BOARD LEADERSHIP STRUCTURE

We currently separate the roles of Chairman of the Board and CEO. The Board believes that its current leadership structure, with Dr. Centofanti serving as President and CEO and Mr. Shelton serving as our independent non-executive Chairman of the Board, is appropriate for the Company at this time, as this structure promotes balance between the Board's independent authority to oversee our business, and the CEO and his management team, who manage the business on a day-to-day basis.

The Company does not have a written policy with respect to the separation of the positions of Chairman of the Board and CEO. The Company believes it is important to retain its flexibility to allocate the responsibilities of the offices of the Chairman and CEO in any way that is in the best interests of the Company at a given point in time; therefore, the Company's leadership structure may change in the future as circumstances may dictate.

Mr. Mark Zwecker, a current member of our Board, continues to serve as the Independent Lead Director, a position he has held since February 2010. The Lead Director's role includes:

convening and chairing meetings of the non-employee directors as necessary from time to time and Board meetings in the absence of the Chairman of the Board;
acting as liaison between directors, committee chairs and management;
serving as information sources for directors and management; and
carrying out responsibilities as the Board may delegate from time to time.

AUDIT COMMITTEE

We have a separately designated standing Audit Committee of our Board established in accordance with Section 3(a)(58)(A) of the Exchange Act. The members of the Audit Committee are Mark A. Zwecker (Chairperson), Larry M. Shelton, and Dr. Gary G. Kugler, who replaced Mr. Jack Lahav upon Mr. Lahav's retirement from the Board effective October 27, 2016.

Our Board has determined that each of our Audit Committee members is and was independent within the meaning of the rules of NASDAQ and is an "audit committee financial expert" as defined by Item 407(d)(5)(ii) of Regulation S-K of the Securities Exchange Act of 1934, as amended (the "Exchange Act").

The Audit Committee has also discussed with Grant Thornton, LLP, the Company's independent registered accounting firm, the matters required to be discussed by Public Company Accounting Oversight Board ("PCAOB") Auditing Standard No. 16 (Communications with Audit Committee).

BOARD INDEPENDENCE

The Board has determined that each director, other than Dr. Centofanti and Mr. John Climaco, is "independent" within the meaning of the applicable NASDAQ rules. Dr. Centofanti is not deemed to be an "independent director" because of his employment as a senior executive of the Company. The Board determined that Mr. Climaco does not currently qualify as an "independent director" because of his employment as EVP of PF Medical, a majority-owned Polish subsidiary of the Company and because he is also a director of Digirad Corporation, with which PF Medical entered into a supplier agreement and a subscription agreement (together, the "Digirad Agreement") on July 24, 2015 (see "John Climaco" under "Certain Relationships and Related Transactions, and Director Independence" for further discussion of his position with PF Medical and a description of the Digirad Agreement).

COMPENSATION AND STOCK OPTION COMMITTEE

The Compensation and Stock Option Committee ("Compensation Committee") reviews and recommends to the Board the compensation and benefits of all of the Company's officers and reviews general policy matters relating to compensation and benefits of the Company's employees. The Compensation Committee also administers the Company's stock option plans. The Compensation Committee has the sole authority to retain and terminate a compensation consultant, as well as to approve the consultant's fees and other terms of engagement. It also has the authority to obtain advice and assistance from internal or external legal, accounting or other advisors. No compensation consultant was employed during 2016. Members of the Compensation Committee are Dr. Gary G. Kugler (Chairperson), Larry M. Shelton, and Joe R. Reeder. Mark A. Zwecker was a member of the Compensation Committee until October 27, 2016. None of the members of the Compensation Committee has been an officer or employee of the Company or has had any relationship with the Company requiring disclosure under applicable Securities and Exchange Commission regulations.

CORPORATE GOVERNANCE AND NOMINATING COMMITTEE

We have a separately-designated standing Corporate Governance and Nominating Committee (the “Nominating Committee”). Members of the Nominating Committee are Joe R. Reeder (Chairperson), Dr. Gary G. Kugler and Mark A. Zwecker, who replaced Mr. Jack Lahav upon Mr. Lahav’s retirement from the Board effective October 27, 2016. All members of the Nominating Committee are and were “independent” as that term is defined by current NASDAQ listing standards.

The Nominating Committee recommends to the Board candidates to fill vacancies on the Board and the nominees for election as the directors at each annual meeting of stockholders. In making such recommendation, the Nominating Committee takes into account information provided to them from the candidate, as well as the Nominating Committee’s own knowledge and information obtained through inquiries to third parties to the extent the Nominating Committee deems appropriate. The Company’s Amended and Restated Bylaws, as amended (the “Bylaws”), sets forth certain minimum director qualifications to qualify for nomination for elections as a Director. To qualify for nomination or election as a director, an individual must:

be an individual at least 21 years of age who is not under legal disability;

have the ability to be present, in person, at all regular and special meetings of the Board;
not serve on the boards of more than three other publicly held companies;
satisfy the director qualification requirements of all environmental and nuclear commissions, boards or similar regulatory or law enforcement authorities to which the Corporation is subject so as not to cause the Corporation to fail to satisfy any of the licensing requirements imposed by any such authority;
not be affiliated with, employed by or a representative of, or have or acquire a material personal involvement with, or material financial interest in, any “Business Competitor” (as defined);
not have been convicted of a felony or of any misdemeanor involving moral turpitude; and
have been nominated for election to the Board in accordance with the terms of the Bylaws.

In addition to the minimum director qualifications as mentioned above, each candidate’s qualifications are also reviewed to include:

standards of integrity, personal ethics and value, commitment, and independence of thought and judgment;
ability to represent the interests of the Company’s stockholders;
ability to dedicate sufficient time, energy and attention to fulfill the requirements of the position; and
diversity of skills and experience with respect to accounting and finance, management and leadership, business acumen, vision and strategy, charitable causes, business operations, and industry knowledge.

The Nominating Committee does not assign specific weight to any particular criteria and no particular criterion is necessarily applicable to all prospective nominees. The Nominating Committee does not have a formal policy for the consideration of diversity in identifying nominees for directors; however, the Company believes that the backgrounds and qualifications of the directors, considered as a group, should provide a significant composite mix of experience, knowledge, and abilities that will allow the Board to fulfill its responsibilities.

Stockholder Nominees

There have been no changes to the stockholder nomination process since the Company’s last proxy statement. The procedure for stockholder nominees to the Board is set out below.

The Nominating Committee will consider properly submitted stockholder nominations for candidates for membership on the Board from stockholders who meet each of the requirements set forth in the Bylaws, including, but not limited to, the requirements that any such stockholder own at least 1% of the Company’s shares of the Common Stock entitled to vote at the meeting on such election, has held such shares continuously for at least one full year, and continuously holds such shares through and including the time of the annual or special meeting. Nominations of persons for election to the Board may be made at any Annual Meeting of Stockholders, or at any Special Meeting of Stockholders called for the purpose of electing directors. Any stockholder nomination (“Proposed Nominee”) must comply with the requirements of the Bylaws and the Proposed Nominee must meet the minimum qualification requirements as discussed above. For a nomination to be made by a stockholder, such stockholder must provide advance written notice to the Nominating Committee, delivered to the Company’s principal executive office address (i) in the case of an

Annual Meeting of Stockholders, no later than the 90th day nor earlier than the 120th day prior to the anniversary date of the immediately preceding Annual Meeting of Stockholders; and (ii) in the case of a Special Meeting of Stockholders called for the purpose of electing directors, not later than the 10th day following the day on which public disclosure of the date of the Special Meeting of Stockholders was made.

The Nominating Committee will evaluate the qualification of the Proposed Nominee and the Proposed Nominee's disclosure and compliance requirements in accordance with the Company's Bylaws. If the Board, upon the recommendation of the Nominating Committee, determines that a nomination was not made in accordance with the Bylaws, the Chairman of the Meeting shall declare the nomination defective and it will be disregarded.

RESEARCH AND DEVELOPMENT COMMITTEE

We have a separately-designated standing Research and Development Committee (the “R&D Committee”). Members of the R&D Committee include Dr. Gary G. Kugler and Dr. Louis Centofanti.

The R&D Committee outlines the structures and functions of the Company’s research and development strategies, the acquisition and protection of the Company’s intellectual property rights and assets, and provides its perspective on such matter to the Board. The R&D Committee does not have a charter.

STRATEGIC ADVISORY COMMITTEE

We have a separately-designated Strategic Advisory Committee (the “Strategic Committee”). The primary functions of the Strategic Committee are to investigate and evaluate strategic alternatives available to the Company and to work with management on long-range strategic planning and identifying potential new business opportunities. The members of the Strategic Advisory Committee are John M. Climaco (Chairperson), Joe R. Reeder, Mark A. Zwecker, and Larry M. Shelton. The Strategic Advisory Committee does not have a charter.

EXECUTIVE OFFICERS OF THE REGISTRANT

The following table sets forth, as of the date hereof, information concerning our executive officers:

| <u>NAME</u> | <u>AGE</u> | <u>POSITION</u> |
|----------------------|------------|---|
| Dr. Louis Centofanti | 73 | President and CEO |
| Mr. Ben Naccarato | 54 | CFO, Vice President, and Secretary |
| Mr. Mark Duff | 54 | EVP and Chief Operating Officer (“COO”) |

Dr. Louis Centofanti

See “Director – Dr. Louis F. Centofanti” in this section for information on Dr. Centofanti.

Mr. Ben Naccarato

Mr. Naccarato has served as the CFO since February 26, 2009. Mr. Naccarato joined the Company in September 2004 and served as Vice President, Finance of the Company’s Industrial Segment until May 2006, when he was named Vice President, Corporate Controller/Treasurer. From December 2002 to September 2004, Mr. Naccarato was the CFO of Culp Petroleum Company, Inc., a privately held company in the fuel distribution and used waste oil industry. In July 2015, Mr. Naccarato was named the CFO of PF Medical, the Company’s majority-owned Polish subsidiary involved in

the research and development of a new medical isotope technology. Effective December 22, 2015, Mr. Naccarato was appointed to the Management Board of PF Medical. Mr. Naccarato is a graduate of University of Toronto having received a Bachelor of Commerce and Finance Degree and is a Chartered Professional Accountant, Certified Management Accountant.

Mr. Mark Duff

On May 15, 2016, the Board appointed Mr. Mark Duff to the position of EVP, effective June 11, 2016. Mr. Duff brings additional experience and leadership to the Company to support and help accelerate anticipated revenue growth and profitability. Upon Mr. John Lash's retirement as COO of the Company effective September 30, 2016, Mr. Duff assumed the additional position of the Company's COO, and continues his position as EVP of the Company. Mr. Duff has 30 years of management and technical experience in the U.S Department of Energy ("DOE") and U.S. Department of Defense ("DOD") environmental and construction markets as a corporate officer, senior project manager, co-founder of a consulting firm, and federal employee. For the past five years, Mr. Duff has been responsible for the successful completion of over 70 performance-based projects at the Paducah Gaseous Diffusion Plant ("PGDP") in Paducah, KY. At the PGDP, he served as the Project Manager for the Paducah Remediation Contract, which was a five-year project with a total value of \$458 million. Prior to the PGDP project, Mr. Duff was a senior manager supporting Babcock and Wilcox ("B&W"), leading several programs that included building teams to solve complex technical problems. These programs included implementation of the American Recovery and Reinvestment Act ("ARRA") at the DOE Y-12 facility with a \$245 million budget for new cleanup projects completed over a two year period. During this period, Mr. Duff served as project manager leading a team of senior experts in support of Toshiba Corporation in Tokyo, Japan to integrate United States technology in the recovery of the Fukushima Daiichi Nuclear Reactor disaster. This project included arriving in Japan within three weeks after the earthquake to coordinate technologies associated with water treatment, radiation protection and shielding. Prior to joining B&W, Mr. Duff served as the president of Safety and Ecology Corporation ("SEC"). As President of SEC, he helped grow the company from \$50 million to \$80 million in annual revenues with significant growth in infrastructure, marketing, and client diversification. Mr. Duff has an MBA from the University of Phoenix and received his B.S. from the University of Alabama.

Resignation of Executive Officer

On September 12, 2016, the Company accepted the retirement of Mr. John Lash as Vice President and COO of the Company, which became effective September 30, 2016. Mr. Lash remained a part-time employee of the Company assisting with Company business matters from October 1, 2016, through December 31, 2016, at which time Mr. Lash retired from the Company. Mr. Lash's retirement as COO of the Company was not due to a disagreement with the Company.

Certain Relationships

There are no family relationships between any of the directors or executive officers.

Section 16(a) Beneficial Ownership Reporting Compliance

Section 16(a) of the Exchange Act, and the regulations promulgated thereunder require our executive officers and directors and beneficial owners of more than 10% of our Common Stock to file reports of ownership and changes of ownership of our Common Stock with the Securities and Exchange Commission, and to furnish us with copies of all such reports. Based solely on a review of the copies of such reports furnished to us and written information provided to us, we believe that during 2016 none of our executive officers, directors, or beneficial owners of more than 10% of our Common Stock failed to timely file reports under Section 16(a).

Capital Bank–Grawe Gruppe AG (“Capital Bank”) has advised us that it is a banking institution regulated by the banking regulations of Austria, which holds shares of our Common Stock as agent on behalf of numerous investors. Capital Bank has represented that all of its investors are accredited investors under Rule 501 of Regulation D promulgated under the Act. In addition, Capital Bank has advised us that none of its investors, individually or as a group, beneficially own more than 4.9% of our Common Stock. Capital Bank has further informed us that its clients (and not Capital Bank) maintain full voting and dispositive power over such shares. Consequently, Capital Bank has advised us that it believes it is not the beneficial owner, as such term is defined in Rule 13d-3 of the Exchange Act, of the shares of our Common Stock registered in the name of Capital Bank because it has neither voting nor investment power, as such terms are defined in Rule 13d-3, over such shares. Capital Bank has informed us that it does not believe that it is required (a) to file, and has not filed, reports under Section 16(a) of the Exchange Act or (b) to file either Schedule 13D or Schedule 13G in connection with the shares of our Common Stock registered in the name of Capital Bank.

If the representations of, or information provided by Capital Bank are incorrect or Capital Bank was historically acting on behalf of its investors as a group, rather than on behalf of each investor independent of other investors, then Capital Bank and/or the investor group would have become a beneficial owner of more than 10% of our Common Stock on February 9, 1996, as a result of the acquisition of 1,100 shares of our Preferred Stock that were convertible into a maximum of 256,560 shares of our Common Stock. If either Capital Bank or a group of Capital Bank's investors became a beneficial owner of more than 10% of our Common Stock on February 9, 1996, or at any time thereafter, and thereby required to file reports under Section 16(a) of the Exchange Act, then Capital Bank has failed to file a

Form 3 or any Forms 4 or 5 since February 9, 1996. (See “Item 12 - Security Ownership of Certain Beneficial Owners and Management and Related Stockholder Matter – Security Ownership of Certain Beneficial Owners” for a discussion of Capital Bank’s current record ownership of our securities).

Code of Ethics

Our Code of Ethics applies to all our executive officers, including our CEO, CFO, COO/EVP, and is available on our website at www.perma-fix.com. If any amendments are made to the Code of Ethics or any grants of waivers are made to any provision of the Code of Ethics to any of our executive officers, we will promptly disclose the amendment or waiver and nature of such amendment or waiver on our website at the same web address.

ITEM 11. EXECUTIVE COMPENSATION**Summary Compensation**

The following table summarizes the total compensation paid or earned by each of the named executive officers (“NEOs”) for the fiscal years ended December 31, 2016 and 2015.

| Name and Principal Position | Year | Salary (\$) | Bonus (\$) | Option Awards (\$) ⁽²⁾ | Non-Equity | All other Compensation (\$) ⁽⁴⁾ | Total Compensation (\$) |
|--|------|----------------|---------------|---|---|--|-------------------------------|
| | | | | | Incentive Plan Compensation (\$) ⁽³⁾ | | |
| Dr. Louis Centofanti President and CEO | 2016 | 279,248 | — | — | — | 31,763 | 311,011 |
| | 2015 | 271,115 | — | — | 82,691 | 31,446 | 385,252 |
| Ben Naccarato Vice President and CFO | 2016 | 220,667 | — | — | — | 37,537 | 258,204 |
| | 2015 | 214,240 | — | — | 65,343 | 37,710 | 317,293 |
| Mark Duff ⁽¹⁾ EVP/COO | 2016 | 136,581 | — | 100,094 | — | 40,800 | 277,475 |
| | 2015 | — | — | — | — | — | — |
| John Lash ⁽¹⁾ Vice President and COO | 2016 | 215,000 | — | — | — | 26,925 | 241,925 |
| | 2015 | 215,000 | — | — | 65,575 | 26,863 | 307,438 |

Mr. Duff was appointed as EVP by the Company on May 15, 2016 (effective June 11, 2016). Upon Mr. Lash’s retirement from the position of COO, effective September 30, 2016, Mr. Duff also assumed the additional position of COO. Mr. Lash remained a part time employee of the Company from October 1, 2016 to December 31, 2016, at which time Mr. Lash retired from the Company. As EVP/COO, Mr. Duff was provided the following compensation:

Annual base salary of \$267,000;

Incentive stock options for purchase up to 50,000 shares of the Company’s Common Stock (see footnote 2 below); Eligibility to participate in the Company’s performance incentive compensation bonus program (see footnote 3 below);

Up to \$40,000 relocation expenses, of which Mr. Duff incurred \$26,695 in relocation expenses (see footnote 4 below); and

Car allowance of \$750 per month.

Amount noted in chart above for 2016 reflect amount earned by Mr. Duff from his date of employment in June 2016.

Reflects the aggregate grant date fair value of awards computed in accordance with ASC 718, “Compensation – Stock Compensation.” Assumptions used in the calculation of this amount are included in Note 6 – “Capital Stock, Stock Plans, Warrants and Stock Based Compensation” to “Notes to Consolidated Financial Statement.” No options were granted to any other NEOs in 2016 other than Mr. Duff. No options were granted to NEOs in 2015.

Represents performance compensation earned under the Company’s Management Incentive Plan (“MIP”) with respect to each NEO. The MIP for each NEO is described under the heading “2016 Management Incentive Plans (“MIP”).” No compensation was earned by any named executive officer under his respective MIP for 2016. Mr. Duff did not have a MIP for 2016.

The amount shown includes a monthly automobile allowance (\$500 or \$750), insurance premiums (health, disability and life) paid by the Company on behalf of the executive, and 401(k) matching contribution. For Mr. Duff, amount included relocation expense paid by the Company.

| Name | Insurance Premium | Auto Allowance | 401(k) match | Relocation | Total |
|----------------------|----------------------|-------------------|-----------------|------------|----------|
| Dr. Louis Centofanti | \$ 17,028 | \$ 9,000 | \$5,735 | — | \$31,763 |
| Ben Naccarato | \$ 24,039 | \$ 9,000 | \$4,498 | — | \$37,537 |
| Mark Duff | \$ 8,720 | \$ 4,846 | \$539 | 26,695 | \$40,800 |
| John Lash | \$ 17,028 | \$ 6,000 | \$3,897 | — | \$26,925 |

Outstanding Equity Awards at Fiscal Year

The following table sets forth unexercised options held by the NEOs as of the fiscal year-end.

Outstanding Equity Awards at December 31, 2016

| Name | Option Awards | | | | |
|--------------------------|--|---|---|-------------------------------------|------------------------------|
| | Number of Securities Underlying Unexercised Options (#) | Number of Securities Underlying Unexercised Options (#) ⁽¹⁾ | Equity Incentive Plan Awards: Number of Securities Underlying Unexercised Unearned Options (#) | Option Exercise Price (\$) | Option Expiration Date |
| Dr. Louis Centofanti | — | — | — | — | — |
| Ben Naccarato | — | — | — | — | — |
| Mark Duff | — | 50,000 | (2)— | 3.97 | 5/15/2022 |
| John Lash ⁽³⁾ | 30,000 | — | — | 5.00 | 3/31/2017 |

In the event of a change in control (as defined in the 2010 Stock Option Plan) of the Company, each outstanding
(1) option and award shall immediately become exercisable in full notwithstanding the vesting or exercise provisions contained in the stock option agreement.

(2) Incentive stock option granted on May 15, 2016 under the Company's 2010 Stock Option Plan. The option is for a six year term and vests over a three year period, at one third increments per year.

(3) Mr. Lash retired from the position of COO effective September 30, 2016 and remained a part-time employee of the Company from October 1, 2016 to December 31, 2016 at which time he retired from the Company. Pursuant to the provisions of the 2010 Stock Option Plan, upon retirement, Mr. Lash has till March 31, 2017 to exercise his vested options.

None of the Company's NEOs exercised options during 2016.

Employment Agreements

Each of our CEO and CFO has an employment agreements dated July 10, 2014 with the Company. The employment agreements dated July 10, 2014 with our CEO and CFO are collectively referred to as the "Employment Agreements" and each as an "Employment Agreement." These Employment Agreements provided that Dr. Centofanti, CEO, was entitled to receive an annual base salary of \$271,115 and Mr. Naccarato, CFO, was entitled to receive an annual base salary of \$214,240. The base salary is subject to adjustment as determined by the Compensation Committee. In addition to base salary, each of these executive officers is entitled to participate in the Company's benefits plans and to any performance compensation payable under an individual MIP for the CEO and CFO. No compensation was earned under each of the MIP for the CEO and CFO in 2016 (see further detail of each MIP below under the heading "2016 Management Incentive Plans ("MIPs)").

Each of the Employment Agreements is effective for three years. Each Employment Agreement may be terminated prior to its expiration by the Company with or without "cause" (as defined in the agreement) or by the executive officer for "good reason" (as defined in the agreement) or any other reason. If the NEO's employment is terminated due to death, disability or for cause, we will pay to the NEO or to his estate a lump sum equal to the sum of any unpaid base salary through the date of termination and any benefits otherwise due at that time under any employee benefit plan, excluding any severance program or policy (the "Accrued Amounts").

If the NEO terminates his employment for “good reason” or is terminated without cause, we will pay the NEO a sum equal to the total Accrued Amounts, plus one year of full base salary. If the NEO terminates his employment for a reason other than for good reason, we will pay to him the amount equal to the Accrued Amounts. If there is a Change in Control (as defined in the agreement), all outstanding stock options to purchase common stock held by the NEO will immediately become vested and exercisable in full. Severance benefits payable with respect to a termination (other than Accrued Amounts) shall not be payable until the termination constitutes a “separation from service” (as defined under Treasury Regulation Section 1.409A-1(h)).

Mr. John Lash, who retired from the position of COO, effective September 30, 2016, also had an employment agreement (“COO Employment Agreement”) dated July 10, 2014 with substantially the same provisions as in the Employment Agreements discussed above, in addition to an individual MIP for 2016. Upon Mr. Lash’s retirement from the position of COO, the COO Employment Agreement terminated. No compensation was earned by the COO under his 2016 MIP (see further detail of the COO’s 2016 MIP below under the heading “2016 Management Incentive Plans (“MIPs”)”).

On January 19, 2017, the Compensation Committee and the Board approved, and the Company entered into, an employment agreement (the “EVP/COO Employment Agreement”) with Mr. Mark Duff, EVP/COO. Upon Mr. Lash’s retirement as COO effective September 30, 2016 as discussed above, Mr. Duff assumed the additional position of COO and continued his position of EVP of the Company. The EVP/COO Employment Agreement is effective June 11, 2016, Mr. Duff’s date of employment as EVP, and has a term of three years. Pursuant to the EVP/COO Employment Agreement, Mr. Duff will serve as the Company’s EVP/COO, with an annual base salary of \$267,000. In addition, Mr. Duff is entitled to participate in the Company’s broad-based benefits plans and to certain performance compensation payable under a separate MIP as approved by the Company’s Compensation Committee and Board. See MIPs approved by the Compensation Committee for each of the EVP/COO, CEO, and CFO for 2017 below. The terms of each 2017 MIP, which are each effective as of January 1, 2017, are described below under the heading “2017 MIPs.”

The EVP/COO Employment Agreements is effective for three years, unless earlier terminated by the Company with or without “cause” (as defined in the agreement) or by the EVP/COO for “good reason” (as defined in the agreement) or any other reason. If the EVP/COO’s employment is terminated due to death, disability or for cause, the Company will pay to the EVP/COO or to his estate a lump sum equal to the sum of any unpaid base salary through the date of termination and any benefits due to the EVP/COO under any employee benefit plan, excluding any severance program or policy (the “Accrued Amounts”).

If the EVP/COO terminates his employment for good reason or is terminated without cause, the Company will pay the EVP/COO a sum equal to the total Accrued Amounts, plus one year of full base salary. If the EVP/COO terminates his employment for a reason other than for good reason, the Company will pay to the EVP/COO the amount equal to the Accrued Amounts. If there is a Change in Control (as defined in the agreement), all outstanding stock options to purchase common stock held by the EVP/COO will immediately become exercisable in full. Severance benefits payable with respect to a termination (other than Accrued Amounts) shall not be payable until the termination

Edgar Filing: PERMA FIX ENVIRONMENTAL SERVICES INC - Form 10-K
constitutes a “separation from service” (as defined under Treasury Regulation Section 1.409A-1(h)).

87

Potential Payments

The following table sets forth the potential (estimated) payments and benefits to which our NEOs, Dr. Centofanti, Mark Duff, and Mr. Naccarato would be entitled upon termination of employment or following a Change in Control of the Company, as specified under each Employment Agreement with the Company, assuming each circumstance described below occurred on December 31, 2016, the last day of our fiscal year. Mr. John Lash's Employment Agreement terminated effective September 30, 2016, upon his retirement from the position of COO.

| Name and Principal Position | Death, Disability, or For Cause | By Employee for Good Reason or by Company Without Cause | Change in Control of the Company |
|---|---------------------------------------|---|-------------------------------------|
| Dr. Louis Centofanti President, CEO and Director | | | |
| Severance | | \$279,248 | |
| Stock Options | (1) | (1) | (1) |
| Mr. Mark Duff EVP/COO | | | |
| Severance | | \$267,000 | |
| Stock Options | (2) | (2) | (3) |
| Ben Naccarato CFO | | | |
| Severance | | \$220,667 | |
| Stock Options | (1) | (1) | (1) |

(1) No stock option outstanding as of December 31, 2016.

(2) Benefit is zero since no options were vested as of December 31, 2016.

(3) Benefit is zero since the number of stock options outstanding that were in-the-money as of December 31, 2016 (as reported on NASDAQ) was zero.

No performance compensation under the NEO's MIP would have been payable at December 31, 2016 under any of the circumstances described in the table above. Pursuant to each MIP, if the participant's employment with the Company is

voluntarily or involuntarily terminated prior to the annual payment of the MIP compensation payment period, no MIP payment is payable. The payment is otherwise payable under each MIP on or about 90 days after year-end, or sooner, based on finalization of our financial statements for year-end. See “2016 Management Incentive Plans (“MIPs”)” below.

The amounts payable with respect to a termination (other than base salary and amounts otherwise payable under any Company employee benefit plan) are payable only if the termination constitutes a “separation from service” (as defined under Treasury Regulation Section 1.409A-1(h)).

2016 Executive Compensation Components

For the fiscal year ended December 31, 2016, the principal components of compensation for executive officers were:

- base salary;
- performance-based incentive compensation;
- long term incentive compensation;
- retirement and other benefits; and
- perquisites.

Based on the amounts set forth in the Summary Compensation table, during 2016, salary accounted for approximately 78.2% of the total compensation of our NEOs, while equity option awards, bonus, MIP compensation, and other compensation accounted for approximately 21.8% of the total compensation of the NEOs.

Base Salary

The NEOs, other officers, and other employees of the Company receive a base salary during the fiscal year. Base salary ranges for executive officers are determined for each executive based on his or her position and responsibility by using market data and comparisons to the Peer Group.

During its review of base salaries for executives, the Compensation Committee primarily considers:

market data and Peer Group comparisons;

internal review of the executive's compensation, both individually and relative to other officers; and

individual performance of the executive.

Salary levels are typically considered annually as part of the performance review process as well as upon a promotion or other change in job responsibility. Merit based salary increases for executives are based on the Compensation Committee's assessment of the individual's performance. The base salary and potential annual base salary adjustments for the CEO, CFO, and EVP/COO are set forth in their respective Employment Agreements.

Performance-Based Incentive Compensation

The Compensation Committee has the latitude to design cash and equity-based incentive compensation programs to promote high performance and achievement of our corporate objectives by directors and the NEOs, encourage the growth of stockholder value and enable employees to participate in our long-term growth and profitability. The Compensation Committee may grant stock options and/or performance bonuses. In granting these awards, the Compensation Committee may establish any conditions or restrictions it deems appropriate. In addition, the CEO has discretionary authority to grant stock options to certain high-performing executives or officers, subject to the approval of the Compensation Committee. The exercise price for each stock options granted is at or above the market price of our Common Stock on the date of grant. Stock options may be awarded to newly hired or promoted executives at the discretion of the Compensation Committee. Grants of stock options to eligible newly hired executive officers are generally made at the next regularly scheduled Compensation Committee meeting following the hire date.

2016 Management Incentive Plans ("MIPs")

On February 4, 2016, the Board and the Compensation Committee approved individual MIPs for our CEO, previous COO (who retired from the position of COO effective September 30, 2016), and CFO. The MIPs were effective as of January 1, 2016. Each MIP provided guidelines for the calculation of annual cash incentive based compensation, subject to Compensation Committee oversight and modification. Each MIP awarded cash compensation based on achievement of performance thresholds (as discussed below), with the amount of such compensation established as a percentage of base salary. The potential target performance compensation ranged from 5% to 100% of the 2016 base salary for the CEO (\$13,962 to \$279,248), 5% to 100% of the 2016 base salary for our previous COO (\$10,750 to \$215,000) , and 5% to 100% of the 2016 base salary for the CFO (\$11,033 to \$220,667) .

Performance compensation under the Company's MIPs is to be paid on or about 90 days after year-end, or sooner, based on finalization of our audited financial statements for 2016. If the MIP participant's employment with the Company is voluntarily or involuntarily terminated prior to a regularly scheduled MIP compensation payment date, no MIP payment will be payable for and after such period.

The Compensation Committee retains the right to modify, change or terminate each MIP and may adjust the various target amounts described below, at any time and for any reason.

The total performance compensation paid to the CEO, our previous COO, and CFO as a group was not to exceed 50% of the Company's pre-tax net income (exclusive of PF Medical, the Company's majority-owned Polish subsidiary) prior to the calculation of performance compensation.

No performance incentive compensation was earned under each of the MIPs for the CEO, previous COO, and CFO for 2016 as described below.

The following describes the principal terms of each MIP:

CEO MIP:

2016 CEO performance compensation was based upon meeting corporate revenue, earnings before interest, taxes, depreciation and amortization (“EBITDA”), health and safety, and environmental compliance (permit and license violations) objectives during fiscal year 2016 from our continuing operations (excluding PF Medical). The Compensation Committee believes performance compensation payable under each of the 2016 MIPs as discussed herein and below should be based on achievement of an EBITDA target as this target, which excludes certain non-cash items, provides a better indicator of operating performance. However, EBITDA has certain limitations as it does not reflect all items of income or cash flows that affect the Company’s financial performance under GAAP. At achievement of 70% to 119% of the revenue and EBITDA targets, the potential performance compensation was payable at 5% to 50% of the CEO’s 2016 base salary. For this compensation, 60% was based on EBITDA goal, 10% on revenue goal, 15% on the number of health and safety claim incidents that occurred during fiscal year 2016, and the remaining 15% on the number of notices alleging environmental, health or safety violations under our permits or licenses that occurred during the fiscal year 2016. At achievement of 120% to 160%+ of the revenue and EBITDA targets, the potential performance compensation was payable at 65% to 100% of the CEO’s 2016 base salary. For this compensation, the amount payable was based on the four objectives noted above, with the payment of such performance compensation being weighted more heavily toward the EBITDA objective. Each of the revenue and EBITDA components was based on our Board-approved revenue target and EBITDA target. The 2016 target performance incentive compensation for our CEO was as follows:

| | |
|---|-----------|
| Annualized Base Pay: | \$279,248 |
| Performance Incentive Compensation Target (at 100% of MIP): | \$139,624 |
| Total Annual Target Compensation (at 100% of MIP): | \$418,872 |

TARGET

| | | | | | | | | |
|----------------|---------------|--------------|--------------|---------------------|--------------|---------------|---------------|---|
| Revenue Target | <\$56,000,000 | \$56,000,000 | \$68,000,000 | \$80,000,000 | \$96,000,000 | \$112,000,000 | \$128,000,000 | |
| EBITDA Target | <\$6,370,000 | \$6,370,000 | \$7,735,000 | \$9,100,000 | \$10,920,000 | \$12,740,000 | \$14,560,000 | |
| | 0% | 10 | % 50 | % 100 | % 130 | % 170 | % 200 | % |

| % of Performance Incentive Target % of Target Achieved | <70% | | 70%-84 % | | 85%-99 % | | 100%-119 % | | 120%-139 % | | 140%-159 % | | 160% + | |
|---|---------|----------|----------|------------------|-----------------|-----------|------------|----------|------------|--|------------|--|--------|--|
| | Revenue | \$- | \$1,397 | \$6,981 | \$13,962 | \$19,945 | \$27,924 | \$33,908 | | | | | | |
| EBITDA | - | 8,377 | 41,887 | 83,774 | 119,678 | 167,549 | 203,452 | | | | | | | |
| Health and Safety Permit & License Violations | - | 2,094 | 10,472 | 20,944 | 20,944 | 20,944 | 20,944 | | | | | | | |
| | \$- | \$13,962 | \$69,812 | \$139,624 | \$181,511 | \$237,361 | \$279,248 | | | | | | | |

Revenue was defined as the total consolidated third party top line revenue from continuing operations (excluding PF Medical) as publicly reported in the Company's financial statements. The percentage achieved was determined by comparing the actual consolidated revenue from continuing operations to the Board-approved revenue target from continuing operations, which was \$80,000,000. The Board reserved the right to modify or change the revenue targets as defined herein in the event of the sale or disposition of any of the assets of the Company or in the event of an acquisition.

EBITDA was defined as earnings before interest, taxes, depreciation, and amortization from continuing operations (excluding PF Medical). The percentage achieved was determined by comparing the actual EBITDA to the Board approved EBITDA target, which was \$9,100,000. The Board reserved the right to modify or change the EBITDA targets as defined herein in the event of the sale or disposition of any of the assets of the Company or in the event of an acquisition.

The health and safety incentive target was based upon the actual number of Worker’s Compensation Lost Time Accidents, as provided by the Company’s Worker’s Compensation carrier. The Corporate Controller submitted a report on a quarterly basis documenting and confirming the number of Worker’s Compensation Lost Time

3) Accidents, supported by the Worker’s Compensation Loss Report provided by the Company’s carrier or broker. Such claims were identified on the loss report as “indemnity claims.” The following number of Worker’s Compensation Lost Time Accidents and corresponding Performance Target Thresholds were established for the annual incentive compensation plan calculation for 2016.

| Claim Number | Target |
|--------------|-----------|
| 6 | 70%-84% |
| 5 | 85%-99% |
| 4 | 100%-119% |
| 3 | 120%-139% |
| 2 | 140%-159% |
| 1 | 160% + |

Permits or license violations incentive was earned/determined according to the scale set forth below: An “official

4) notice of non-compliance” was defined as an official communication from a local, state, or federal regulatory authority alleging one or more violations of an otherwise applicable Environmental, Health or Safety requirement or permit provision, which resulted in a facility’s implementation of corrective action(s).

| Permit and License Violations | Performance Target |
|-------------------------------|--------------------|
| 6 | 70%-84% |
| 5 | 85%-99% |
| 4 | 100%-119% |
| 3 | 120%-139% |
| 2 | 140%-159% |
| 1 | 160% + |

5) No performance incentive compensation was payable for achieving the health and safety, permit and license violation, and revenue targets unless a minimum of 70% of the EBITDA target was achieved.

COO MIP:

2016 COO performance compensation was based upon meeting corporate revenue, EBITDA, health and safety, and environmental compliance (permit and license violations) objectives during fiscal year 2016 from our continuing operations (excluding PF Medical). At achievement of 70% to 119% of the revenue and EBITDA targets, the potential performance compensation was payable at 5% to 50% of the COO’s 2016 base salary. For this compensation, 60% was based on EBITDA goal, 10% on revenue goal, 15% on the number of health and safety claim incidents that occurred during fiscal year 2016, and the remaining 15% on the number of notices alleging environmental, health or safety

violations under our permits or licenses that occurred during the fiscal year 2016. At achievement of 120% to 160%+ of the revenue and EBITDA targets, the potential performance compensation was payable at 65% to 100% of the COO's 2016 base salary. For this compensation, the amount payable was based on the four objectives noted above, with the payment of such performance compensation being weighted more heavily toward the EBITDA objective. Each of the revenue and EBITDA components was based on our Board approved revenue target and EBITDA target. The 2016 target performance incentive compensation for our COO was as follows:

| | |
|---|-----------|
| Annualized Base Pay: | \$215,000 |
| Performance Incentive Compensation Target (at 100% of MIP): | \$107,500 |
| Total Annual Target Compensation (at 100% of MIP): | \$322,500 |

| | TARGET | | | | | | | |
|---|---------------|---------------|-----------------|---------------------|-------------------|-------------------|---------------|---|
| Revenue Target | <\$56,000,000 | \$56,000,000 | \$68,000,000 | \$80,000,000 | \$96,000,000 | \$112,000,000 | \$128,000,000 | |
| EBITDA Target | <\$6,375,000 | \$6,375,000 | \$7,735,000 | \$9,100,000 | \$10,920,000 | \$12,740,000 | \$14,560,000 | |
| % of Performance Incentive Target | 0% | 10 | % 50 | % 100 | % 130 | % 170 | % 200 | % |
| % of Target Achieved | <70% | 70%-84 | % 85%-99 | % 100%-119 | % 120%-139 | % 140%-159 | % 160% | + |
| Revenue | \$- | \$1,074 | \$5,374 | \$10,750 | \$15,357 | \$21,500 | \$26,107 | |
| EBITDA | - | 6,450 | 32,250 | 64,500 | 92,143 | 129,000 | 156,643 | |
| Health and Safety Permit & License Violations | - | 1,613 | 8,063 | 16,125 | 16,125 | 16,125 | 16,125 | |
| | \$- | \$10,750 | \$53,750 | \$107,500 | \$139,750 | \$182,750 | \$215,000 | |

Revenue was defined as the total consolidated third party top line revenue from continuing operations (excluding PF Medical) as publicly reported in the Company's financial statements. The percentage achieved was determined by comparing the actual consolidated revenue from continuing operations to the Board-approved revenue target from continuing operations, which was \$80,000,000. The Board reserved the right to modify or change the revenue targets as defined herein in the event of the sale or disposition of any of the assets of the Company or in the event of an acquisition.

EBITDA was defined as earnings before interest, taxes, depreciation, and amortization from continuing operations (excluding PF Medical). The percentage achieved was determined by comparing the actual EBITDA to the Board approved EBITDA target, which was \$9,100,000. The Board reserved the right to modify or change the EBITDA targets as defined herein in the event of the sale or disposition of any of the assets of the Company or in the event of an acquisition.

3) The health and safety incentive target was based upon the actual number of Worker's Compensation Lost Time Accidents, as provided by the Company's Worker's Compensation carrier. The Corporate Controller submitted a report on a quarterly basis documenting and confirming the number of Worker's Compensation Lost Time Accidents, supported by the Worker's Compensation Loss Report provided by the Company's carrier or broker. Such claims were identified on the loss report as "indemnity claims." The following number of Worker's Compensation Lost Time Accidents and corresponding Performance Target Thresholds were established for the

annual incentive compensation plan calculation for 2016.

| Claim Number | Target |
|--------------|-----------|
| 6 | 70%-84% |
| 5 | 85%-99% |
| 4 | 100%-119% |
| 3 | 120%-139% |
| 2 | 140%-159% |
| 1 | 160% + |

Permits or license violations incentive was earned/determined according to the scale set forth below: An “official notice of non-compliance” was defined as an official communication from a local, state, or federal regulatory authority alleging one or more violations of an otherwise applicable Environmental, Health or Safety requirement or permit provision, which resulted in a facility’s implementation of corrective action(s).

| License Violations | Performance Target |
|--------------------|--------------------|
| 6 | 70%-84% |
| 5 | 85%-99% |
| 4 | 100%-119% |
| 3 | 120%-139% |
| 2 | 140%-159% |
| 1 | 160% + |

No performance incentive compensation was payable for achieving the health and safety, permit and license violation, and revenue targets unless a minimum of 70% of the EBITDA target was achieved.

CFO MIP:

2016 CFO performance compensation was based upon meeting corporate revenue, EBITDA, health and safety, and environmental compliance (permit and license violations) objectives during fiscal year 2016 from our continuing operations (excluding PF Medical). At achievement of 70% to 119% of the revenue and EBITDA targets, the potential performance compensation was payable at 5% to 50% of the CFO's 2016 base salary. For this compensation, 60% was based on EBITDA goal, 10% on revenue goal, 15% on the number of health and safety claim incidents that occurred during fiscal year 2016, and the remaining 15% on the number of notices alleging environmental, health or safety violations under our permits or licenses that occurred during the fiscal year 2016. At achievement of 120% to 160%+ of the revenue and EBITDA targets, the potential performance compensation was payable at 65% to 100% of the CFO's 2016 base salary. For this compensation, the amount payable was based on the four objectives noted above, with the payment of such performance compensation being weighted more heavily toward the EBITDA objective. Each of the revenue and EBITDA components was based on our Board approved revenue target and EBITDA target. The 2016 target performance incentive compensation for our CFO was as follows:

| | |
|--|-----------|
| Annualized Base Pay: | \$220,667 |
| Performance Incentive Compensation Target (at 100% of Plan): | \$110,334 |
| Total Annual Target Compensation (at 100% of Plan): | \$331,001 |

| | TARGET | | | | | | | |
|-----------------------------------|---------------|---------------|-----------------|---------------------|-------------------|-------------------|---------------|----------|
| Revenue Target | <\$56,000,000 | \$56,000,000 | \$68,000,000 | \$80,000,000 | \$96,000,000 | \$112,000,000 | \$128,000,000 | |
| EBITDA Target | <\$6,375,000 | \$6,375,000 | \$7,735,000 | \$9,100,000 | \$10,920,000 | \$12,740,000 | \$14,560,000 | |
| % of Performance Incentive Target | 0% | 10 | % 50 | % 100 | % 130 | % 170 | % 200 | % |
| % of Target Achieved | <70% | 70%-84 | % 85%-99 | % 100%-119 | % 120%-139 | % 140%-159 | % 160% | + |
| Revenue | \$- | \$1,103 | \$5,517 | \$11,034 | \$15,762 | \$22,067 | \$26,795 | |
| EBITDA | - | 6,620 | 33,100 | 66,200 | 94,572 | 132,400 | 160,772 | |
| Health and Safety | - | 1,655 | 8,275 | 16,550 | 16,550 | 16,550 | 16,550 | |
| Permit & License Violations | - | 1,655 | 8,275 | 16,550 | 16,550 | 16,550 | 16,550 | |
| | \$- | \$11,033 | \$55,167 | \$110,334 | \$143,434 | \$187,567 | \$220,667 | |

Revenue was defined as the total consolidated third party top line revenue from continuing operations (excluding PF Medical) as publicly reported in the Company's financial statements. The percentage achieved was determined by comparing the actual consolidated revenue from continuing operations to the Board-approved revenue target from continuing operations, which was \$80,000,000. The Board reserved the right to modify or change the revenue targets as defined herein in the event of the sale or disposition of any of the assets of the Company or in the event of an acquisition.

EBITDA was defined as earnings before interest, taxes, depreciation, and amortization from continuing operation (excluding PF Medical). The percentage achieved was determined by comparing the actual EBITDA to the Board approved EBITDA target, which was \$9,100,000. The Board reserved the right to modify or change the EBITDA targets as defined herein in the event of the sale or disposition of any of the assets of the Company or in the event of an acquisition.

The health and safety incentive target was based upon the actual number of Worker’s Compensation Lost Time Accidents, as provided by the Company’s Worker’s Compensation carrier. The Corporate Controller submitted a report on a quarterly basis documenting and confirming the number of Worker’s Compensation Lost Time

- 3) Accidents, supported by the Worker’s Compensation Loss Report provided by the Company’s carrier or broker. Such claims were identified on the loss report as “indemnity claims.” The following number of Worker’s Compensation Lost Time Accidents and corresponding Performance Target Thresholds were established for the annual incentive compensation plan calculation for 2016.

| Claim Number | Target |
|--------------|-----------|
| 6 | 70%-84% |
| 5 | 85%-99% |
| 4 | 100%-119% |
| 3 | 120%-139% |
| 2 | 140%-159% |
| 1 | 160% + |

Permits or license violations incentive was earned/determined according to the scale set forth below: An “official

- 4) notice of non-compliance” was defined as an official communication from a local, state, or federal regulatory authority alleging one or more violations of an otherwise applicable Environmental, Health or Safety requirement or permit provision, which resulted in a facility’s implementation of corrective action(s).

| Permit and License Violations | Performance Target |
|-------------------------------|--------------------|
| 6 | 70%-84% |
| 5 | 85%-99% |
| 4 | 100%-119% |
| 3 | 120%-139% |
| 2 | 140%-159% |
| 1 | 160% + |

- 5) No performance incentive compensation was payable for achieving the health and safety, permit and license violation, and revenue targets unless a minimum of 70% of the EBITDA target was achieved.

2016 MIP Targets

As discussed above, 2016 MIPs approved for the CEO, COO, and CFO by the Board and the Compensation Committee provided for the award of cash compensation based on achievement of performance targets which included revenue and EBITDA targets as approved by our Board. The 2016 MIP revenue target of \$80,000,000 and EBITDA target of \$9,100,000 were set by the Compensation Committee taking into account the Board-approved budget for 2016 as well as the committee’s expectations for performance that in its estimation would warrant payment of incentive cash compensation. In formulating the revenue target of \$80,000,000, the Board considered 2015 results,

current economic conditions, and forecasts for 2016 government (DOE) spending. The Compensation Committee believed the performance targets were likely to be achieved, but not assured. No cash incentive based compensation under the 2016 MIPs was paid to the CEO, COO or CFO.

2017 MIPs

On January 19, 2017, the Board and the Compensation Committee approved individual MIPs for our CEO, EVP/COO, and CFO. The MIPs are effective January 1, 2017. Each MIP provides guidelines for the calculation of annual cash incentive based compensation, subject to Compensation Committee oversight and modification. Each MIP awards cash compensation based on achievement of performance thresholds, with the amount of such compensation established as a percentage of base salary. The potential target performance compensation ranges from 5% to 100% of the 2017 base salary for the CEO (\$13,962 to \$279,248), 5% to 100% of the 2017 base salary for the EVP/COO (\$13,350 to \$267,000), and 5% to 100% of the 2017 base salary for the CFO (\$11,033 to \$220,667).

Performance compensation is paid on or about 90 days after year-end, or sooner, based on finalization of our audited financial statements for 2017. If the MIP participant's employment with the Company is voluntarily or involuntarily terminated prior to a regularly scheduled MIP compensation payment date, no MIP payment will be payable for and after such period.

The Compensation Committee retains the right to modify, change or terminate each MIP and may adjust the various target amounts described below, at any time and for any reason.

The total performance compensation paid to the CEO, EVP/COO, and CFO as a group is not to exceed 50% of the Company's pre-tax net income (exclusive of PF Medical) prior to the calculation of performance compensation.

The following describes the principal terms of each MIP:

CEO MIP:

2017 CEO performance compensation is based upon meeting corporate revenue, EBITDA, health and safety, and environmental compliance (permit and license violations) objectives during fiscal year 2017 from our continuing operations (excluding PF Medical). The Compensation Committee believes performance compensation payable under each of the 2017 MIPs as discussed herein and below should be based on achievement of an EBITDA target, which excludes certain non-cash items, as this target provides a better indicator of operating performance. However, EBITDA has certain limitations as it does not reflect all items of income or cash flows that affect the Company's financial performance under GAAP. At achievement of 70% to 119% of the revenue and EBITDA targets, the potential performance compensation is payable at 5% to 50% of the CEO's 2017 base salary. For this compensation, 60% is based on the EBITDA goal, 10% on the revenue goal, 15% on the number of health and safety claim incidents that occur during fiscal year 2017, and the remaining 15% on the number of notices alleging environmental, health, or safety violations under our permits or licenses that occur during the fiscal year 2017. At achievement of 120% to 160%+ of the revenue and EBITDA targets, the potential performance compensation is payable at 65% to 100% of the CEO's 2017 base salary. For this compensation, the amount payable is based on the four objectives noted above, with the payment of such performance compensation being weighted more heavily toward the EBITDA objective. Each of the revenue and EBITDA components is based on our Board approved revenue target and EBITDA target. The 2017 target performance incentive compensation for our CEO is as follows:

| | |
|---|-----------|
| Annualized Base Pay: | \$279,248 |
| Performance Incentive Compensation Target (at 100% of MIP): | \$139,624 |
| Total Annual Target Compensation (at 100% of MIP): | \$418,872 |

**CEO MIP Matrix
2017**

| Performance Target Column | (a) | (b) | (c) | (d) | (e) | (f) | |
|---------------------------|-----------------|--------------|--------------|--------------|--------------|---------------|---------------|
| | TARGET | | | | | | |
| Revenue Target | < \$ 56,000,000 | \$56,000,000 | \$68,000,000 | \$80,000,000 | \$96,000,000 | \$112,000,000 | \$128,000,000 |
| | < \$ 6,510,000 | \$6,510,000 | \$7,905,000 | \$9,300,000 | \$11,160,000 | \$13,020,000 | \$14,880,000 |

EBITDA
Target

| | 0 | % 10 | % 50 | % 100 | % 130 | % 170 | % 200 |
|---|------|----------|----------|------------------|------------|------------|-----------|
| % of Performance Incentive Target | | | | | | | |
| % of Target Achieved | <70% | 70%-84 | % 85%-99 | % 100%-119 | % 120%-139 | % 140%-159 | % 160 |
| Revenue | \$ - | \$1,397 | \$6,981 | \$13,962 | \$19,945 | \$27,924 | \$33,908 |
| EBITDA | - | 8,377 | 41,887 | 83,774 | 119,678 | 167,549 | 203,452 |
| Health and Safety Permit & License Violations | - | 2,094 | 10,472 | 20,944 | 20,944 | 20,944 | 20,944 |
| | \$ - | \$13,962 | \$69,812 | \$139,624 | \$181,511 | \$237,361 | \$279,248 |

Revenue is defined as the total consolidated third party top line revenue from continuing operations (excluding PF Medical) as publicly reported in the Company's 2017 financial statements. The percentage achieved is determined by comparing the actual consolidated revenue from continuing operations to the Board-approved revenue target from continuing operations, which is \$80,000,000. The Board reserves the right to modify or change the revenue targets as defined herein in the event of the sale or disposition of any of the assets of the Company or in the event of an acquisition.

EBITDA is defined as earnings before interest, taxes, depreciation, and amortization from continuing operations (excluding PF Medical). The percentage achieved is determined by comparing the actual EBITDA to the Board approved EBITDA target for 2017, which is \$9,300,000. The Board reserves the right to modify or change the EBITDA targets as defined herein in the event of the sale or disposition of any of the assets of the Company or in the event of an acquisition.

The health and safety incentive target is based upon the actual number of Worker's Compensation Lost Time Accidents, as provided by the Company's Worker's Compensation carrier. The Corporate Controller will submit a report on a quarterly basis documenting and confirming the number of Worker's Compensation Lost Time Accidents, supported by the Worker's Compensation Loss Report provided by the company's carrier or broker. Such claims will be identified on the loss report as "indemnity claims." The following number of Worker's Compensation Lost Time Accidents and corresponding Performance Target Thresholds has been established for the annual incentive compensation plan calculation for 2017.

Work Comp. Performance

| Claim Number | Target Payable Under Column |
|--------------|-----------------------------|
| 6 | (a) |
| 5 | (b) |
| 4 | (c) |
| 3 | (d) |
| 2 | (e) |
| 1 | (f) |

Permits or license violations incentive is earned/determined according to the scale set forth below: An "official notice of non-compliance" is defined as an official communication during 2017 from a local, state, or federal regulatory authority alleging one or more violations of an otherwise applicable Environmental, Health or Safety requirement or permit provision, which results in a facility's implementation of corrective action(s).

Permit and Performance

| License Violations | Target Payable Under Column |
|--------------------|-----------------------------|
| 6 | (a) |
| 5 | (b) |
| 4 | (c) |
| 3 | (d) |
| 2 | (e) |
| 1 | (f) |

No performance incentive compensation will be payable for achieving the health and safety, permit and license violation, and revenue targets unless a minimum of 70% of the EBITDA target is achieved.

EVP/COO MIP:

2017 EVP/COO performance compensation is based upon meeting corporate revenue, EBITDA, health and safety, and environmental compliance (permit and license violations) objectives during fiscal year 2017 from our continuing operations (excluding PF Medical). At achievement of 70% to 119% of the revenue target and 60% to 119% of the EBITDA target, the potential performance compensation is payable at 5% to 50% of the 2017 base salary. For this compensation, 60% is based on EBITDA goal, 10% on revenue goal, 15% on the number of health and safety claim incidents that occur during fiscal year 2017, and the remaining 15% on the number of notices alleging environmental, health or safety violations under our permits or licenses that occur during the fiscal year 2017. Upon achievement of 120% to 160%+ of the revenue and EBITDA targets, the potential performance compensation is payable at 65% to 100% of the EVP/COO's 2017 base salary. For this compensation, the amount payable is based on the four objectives noted above, with the payment of such performance compensation being weighted more heavily toward the EBITDA objective. Each of the revenue and EBITDA components is based on our Board approved revenue target and EBITDA target. The 2017 target performance incentive compensation for our EVP/COO is as follows:

| | |
|--|-----------|
| Annualized Base Pay: | \$267,000 |
| Performance Incentive Compensation Target (at 100% of Plan): | \$133,500 |
| Total Annual Target Compensation (at 100% of Plan): | \$400,500 |

EVP/COO MIP MATRIX
2017

Performance
Target
Column:

(a) (b) (c) (d) (e) (f)

TARGET

| | | | | | | | |
|----------------|----------------|--------------|--------------|---------------------|--------------|---------------|---------------|
| Revenue Target | < \$56,000,000 | \$56,000,000 | \$63,586,000 | \$80,000,000 | \$96,000,000 | \$112,000,000 | \$128,000,000 |
| EBITDA Target | < \$5,600,000 | \$5,600,000 | \$6,358,600 | \$9,300,000 | \$11,160,000 | \$13,020,000 | \$14,880,000 |

| | | | | | | | |
|-----------------------------------|-----|-----------------|-----------------|-------------------|-------------------|-------------------|---------------|
| % of Performance Incentive Target | 0 | % 10 | % 50 | % 100 | % 130 | % 170 | % 200 |
| % of Revenue Target Achieved | <70 | % 70%-78 | % 79%-99 | % 100%-119 | % 120%-139 | % 140%-159 | % 160% |
| % of EBITDA Target | <60 | % 60%-67 | % 68%-99 | % 100%-119 | % 120%-139 | % 140%-159 | % 160% |

Achieved

| | | | | | | | |
|-----------------------------|-----|----------|----------|------------------|-----------|-----------|-----------|
| Revenue | \$- | \$1,334 | \$6,674 | \$13,350 | \$19,071 | \$26,700 | \$32,421 |
| EBITDA | - | 8,010 | 40,050 | 80,100 | 114,429 | 160,200 | 194,529 |
| Health and Safety | - | 2,003 | 10,013 | 20,025 | 20,025 | 20,025 | 20,025 |
| Permit & License Violations | - | 2,003 | 10,013 | 20,025 | 20,025 | 20,025 | 20,025 |
| | \$- | \$13,350 | \$66,750 | \$133,500 | \$173,550 | \$226,950 | \$267,000 |

- Revenue is defined as the total consolidated third party top line revenue from continuing operations (excluding Medical) as publicly reported in the Company's 2017 financial statements. The percentage achieved is determined by comparing the actual consolidated revenue from continuing operations to the Board-approved revenue target from continuing operations, which is \$80,000,000. The Board reserves the right to modify or change the revenue targets as defined herein in the event of the sale or disposition of any of the assets of the Company or in the event of an acquisition.
- 1)

- EBITDA is defined as earnings before interest, taxes, depreciation, and amortization from continuing operations, excluding PF Medical. The percentage achieved is determined by comparing the actual EBITDA to the Board approved EBITDA target for 2017, which is \$9,300,000. The Board reserves the right to modify or change the EBITDA targets as defined herein in the event of the sale or disposition of any of the assets of the Company or in the event of an acquisition.
- 2)

- The health and safety incentive target is based upon the actual number of Worker's Compensation Lost Time Accidents, as provided by the Company's Worker's Compensation carrier. The Corporate Controller will submit a report on a quarterly basis documenting and confirming the number of Worker's Compensation Lost Time Accidents, supported by the Worker's Compensation Loss Report provided by the company's carrier or broker. Such claims will be identified on the loss report as "indemnity claims." The following number of Worker's Compensation Lost Time Accidents and corresponding Performance Target Thresholds has been established for the annual incentive compensation plan calculation for 2017.
- 3)

Work Comp. Performance

| Claim Number | Target Payable Under Column |
|--------------|-----------------------------|
| 6 | (a) |
| 5 | (b) |
| 4 | (c) |
| 3 | (d) |
| 2 | (e) |
| 1 | (f) |

Permits or license violations incentive is earned/determined according to the scale set forth below: An “official notice of non-compliance” is defined as an official communication during 2017 from a local, state, or federal regulatory authority alleging one or more violations of an otherwise applicable Environmental, Health or Safety requirement or permit provision, which results in a facility’s implementation of corrective action(s).

Permit and Performance

| License Violations | Target Payable Under Column |
|--------------------|-----------------------------|
| 6 | (a) |
| 5 | (b) |
| 4 | (c) |
| 3 | (d) |
| 2 | (e) |
| 1 | (f) |

No performance incentive compensation will be payable for achieving the health and safety, permit and license violation, and revenue targets unless a minimum of 60% of the EBITDA target is achieved.

CFO MIP:

2017 CFO performance compensation is based upon meeting corporate revenue, EBITDA, health and safety, and environmental compliance (permit and license violations) objectives during fiscal year 2017 from our continuing operations (excluding PF Medical). At achievement of 70% to 119% of the revenue and EBITDA targets, the potential performance compensation is payable at 5% to 50% of the 2017 base salary. For this compensation, 60% is based on EBITDA goal, 10% on revenue goal, 15% on the number of health and safety claim incidents that occur during fiscal year 2017, and the remaining 15% on the number of notices alleging environmental, health or safety violations under our permits or licenses that occur during the fiscal year 2017. Upon achievement of 120% to 160%+ of the revenue and EBITDA targets, the CFO’s potential performance compensation is payable at 65% to 100% of the CFO’s 2017 base salary. For this compensation, the amount payable is based on the four objectives noted above, with the payment of such performance compensation being weighted more heavily toward the EBITDA objective. Each of the revenue and EBITDA components is based on our board approved revenue target and EBITDA target. The 2017 target performance incentive compensation for our CFO is as follows:

| | |
|--|-----------|
| Annualized Base Pay: | \$220,667 |
| Performance Incentive Compensation Target (at 100% of Plan): | \$110,334 |
| Total Annual Target Compensation (at 100% of Plan): | \$331,001 |

**CFO MIP Matrix
2017**

 Performance
Target
Column

(a) (b) (c) (d) (e) (f)

TARGET

| | | | | | | | |
|----------------|-----------------|--------------|--------------|--------------|--------------|---------------|---------------|
| Revenue Target | < \$ 56,000,000 | \$56,000,000 | \$68,000,000 | \$80,000,000 | \$96,000,000 | \$112,000,000 | \$128,000,000 |
| EBITDA Target | < \$ 6,510,000 | \$6,510,000 | \$7,905,000 | \$9,300,000 | \$11,160,000 | \$13,020,000 | \$14,880,000 |

 % of
Performance
Incentive
Target

 0 % 10 % 50 % **100** % 130 % 170 % 200

 % of
**Target
Achieved**
<70% **70%-84** % **85%-99** % **100%-119** % **120%-139** % **140%-159** % **160**

| | | | | | | | |
|-----------------------------|------|----------|----------|------------------|-----------|-----------|-----------|
| Revenue | \$ - | \$1,103 | \$5,517 | \$11,034 | \$15,762 | \$22,067 | \$26,795 |
| EBITDA | - | 6,620 | 33,100 | 66,200 | 94,572 | 132,400 | 160,772 |
| Health and Safety | - | 1,655 | 8,275 | 16,550 | 16,550 | 16,550 | 16,550 |
| Permit & License Violations | - | 1,655 | 8,275 | 16,550 | 16,550 | 16,550 | 16,550 |
| | \$ - | \$11,033 | \$55,167 | \$110,334 | \$143,434 | \$187,567 | \$220,667 |

Revenue is defined as the total consolidated third party top line revenue from continuing operations (excluding PF Medical) as publicly reported in the Company's 2017 financial statements. The percentage achieved is determined by comparing the actual consolidated revenue from continuing operations to the Board-approved revenue target from continuing operations, which is \$80,000,000. The Board reserves the right to modify or change the revenue targets as defined herein in the event of the sale or disposition of any of the assets of the Company or in the event of an acquisition.

2) EBITDA is defined as earnings before interest, taxes, depreciation, and amortization from continuing operations (excluding PF Medical). The percentage achieved is determined by comparing the actual EBITDA to the Board approved EBITDA target for 2017, which is \$9,300,000. The Board reserves the right to modify or change the EBITDA targets as defined herein in the event of the sale or disposition of any of the assets of the Company or in

the event of an acquisition.

The health and safety incentive target is based upon the actual number of Worker's Compensation Lost Time Accidents, as provided by the Company's Worker's Compensation carrier. The Corporate Controller will submit a report on a quarterly basis documenting and confirming the number of Worker's Compensation Lost Time Accidents, supported by the Worker's Compensation Loss Report provided by the company's carrier or broker. Such claims will be identified on the loss report as "indemnity claims." The following number of Worker's Compensation Lost Time Accidents and corresponding Performance Target Thresholds has been established for the annual incentive compensation plan calculation for 2017.

Work Comp. Performance

| Claim Number | Target Payable Under Column |
|--------------|-----------------------------|
| 6 | (a) |
| 5 | (b) |
| 4 | (c) |
| 3 | (d) |
| 2 | (e) |
| 1 | (f) |

- Permits or license violations incentive is earned/determined according to the scale set forth below: An “official notice of non-compliance” is defined as an official communication during 2017 from a local, state, or federal regulatory authority alleging one or more violations of an otherwise applicable Environmental, Health or Safety requirement or permit provision, which results in a facility’s implementation of corrective action(s).

| Permit and License Violations | Performance Target Payable Under Column |
|-------------------------------|---|
| 6 | (a) |
| 5 | (b) |
| 4 | (c) |
| 3 | (d) |
| 2 | (e) |
| 1 | (f) |

- 5) No performance incentive compensation will be payable for achieving the health and safety, permit and license violation, and revenue targets unless a minimum of 70% of the EBITDA target is achieved.

2017 MIP Targets

As discussed above, 2017 MIPs approved for the CEO, EVP/COO, and CFO by Board and the Compensation Committee provide for the award of cash compensation based on achievement of performance targets which included Revenue and EBITDA targets as approved by our Board. The 2017 MIP revenue target of \$80,000,000 and EBITDA target of \$9,300,000 were set by the Compensation Committee taking into account the Board-approved budget for 2017 as well as the committee’s expectations for performance that in its estimation would warrant payment of incentive cash compensation. In formulating the revenue target of \$80,000,000, the Board considered 2016 results, current economic conditions, and forecasts for 2017 government (U.S DOE) spending. The Compensation Committee believes the performance targets are likely to be achieved, but not assured.

Long-Term Incentive Compensation

Employee Stock Option Plans

The 2010 Stock Option Plan (the “2010 Option Plan”) encourages participants to focus on long-term performance and provides an opportunity for executive officers and certain designated key employees to increase their stake in the Company. Stock options succeed by delivering value to the executive only when the value of our stock increases. The 2010 Option Plan authorizes the grant of Non-Qualified Stock Options (“NQSOs”) and Incentive Stock Options (“ISOs”) for the purchase of our Common Stock.

The 2010 Option Plan assists the Company to:

enhance the link between the creation of stockholder value and long-term executive incentive compensation;

provide an opportunity for increased equity ownership by executives; and

maintain competitive levels of total compensation.

Stock option award levels are determined based on market data, vary among participants based on their positions with us and are granted generally at the Compensation Committee's regularly scheduled August or September meeting. Newly hired or promoted executive officers who are eligible to receive options are generally awarded such options at the next regularly scheduled Compensation Committee meeting following their hire or promotion date.

Options are awarded with an exercise price equal to or not less than the closing price of the Company's Common Stock on the date of the grant as reported on the NASDAQ. In certain limited circumstances, the Compensation Committee may grant options to an executive at an exercise price in excess of the closing price of the Company's Common Stock on the grant date.

On May 15, 2016, the Company granted 50,000 ISOs from the Company's 2010 Stock Option Plan to our newly named EVP/COO. The ISOs granted were for a contractual term of six years with one-third vesting annually over a three year period. The exercise price of the ISOs was \$3.97 per share, which was equal to the fair market value of the Company's Common Stock on the date of grant.

Pursuant to the 2010 Stock Option plan, vesting of option awards ceases upon termination of employment and exercise right of the vested option amount ceases upon three months from termination of employment except in the case of death or retirement (subject to a six month limitation), or disability (subject to a one year limitation). Prior to the exercise of an option, the holder has no rights as a stockholder with respect to the shares subject to such option.

In the event of a "change of control" (as defined in the 2010 Stock Option Plan) of the Company, each outstanding option and award granted under the plans shall immediately become exercisable in full notwithstanding the vesting or exercise provisions contained in the stock option agreement.

Accounting for Stock-Based Compensation

We account for stock-based compensation in accordance with ASC 718, "Compensation – Stock Compensation." ASC 718 establishes accounting standards for entity exchanges of equity instruments for goods or services. It also addresses transactions in which an entity incurs liabilities in exchange for goods or services that are based on the fair value of the entity's equity instruments or that may be settled by the issuance of those equity instruments. ASC 718 requires all stock-based payments to employees, including grants of employee stock options, to be recognized in the income statement based on their fair values. The Company uses the Black-Scholes option-pricing model to determine the fair-value of stock-based awards which requires subjective assumptions. Assumptions used to estimate the fair value of stock options granted include the exercise price of the award, the expected term, the expected volatility of the Company's stock over the option's expected term, the risk-free interest rate over the option's expected term, and the expected annual dividend yield. We recognize stock-based compensation expense using a straight-line amortization method over the requisite period, which is the vesting period of the stock option grant.

Retirement and Other Benefits

401(k) Plan

We adopted the Perma-Fix Environmental Services, Inc. 401(k) Plan (the "401(k) Plan") in 1992, which is intended to comply with Section 401 of the Internal Revenue Code and the provisions of the Employee Retirement Income Security Act of 1974. All full-time employees who have attained the age of 18 are eligible to participate in the 401(k) Plan. Eligibility is immediate upon employment but enrollment is only allowed during four quarterly open periods of January 1, April 1, July 1, and October 1. Participating employees may make annual pretax contributions to their accounts up to 100% of their compensation, up to a maximum amount as limited by law. We, at our discretion, may

make matching contributions based on the employee's elective contributions. Company contributions vest over a period of five years. In 2016, the Company contributed approximately \$307,000 in 401(k) matching funds, of which approximately \$15,000 was for our NEOs (see the Summary Compensation table in this section for 401(k) matching fund contributions made for the NEOs for 2016). In 2015, the Company contributed approximately \$303,000 in 401(k) matching funds, of which approximately \$14,000 was for our NEOs

Perquisites and Other Personal Benefits

The Company provides executive officers with limited perquisites and other personal benefits (health/disability/life insurance) that the Company and the Compensation Committee believe are reasonable and consistent with its overall compensation program to better enable the Company to attract and retain superior employees for key positions. The Compensation Committee periodically reviews the levels of perquisites and other personal benefits provided to executive officers. The executive officers are provided an auto allowance.

Consideration of Stockholder Say-On-Pay Advisory Vote.

At our Annual Meeting of Stockholders held on July 28, 2016, our stockholders voted, on a non-binding, advisory basis, on the compensation of our NEOs for 2015. A substantial majority (approximately 80%) of the total votes cast on our say-on-pay proposal at that meeting approved the compensation of our NEOs for 2015 on a non-binding, advisory basis. The Compensation Committee and the Board believes that this affirms our stockholders' support of our approach to executive compensation. The Compensation Committee expects to continue to consider the results of future stockholder say-on-pay advisory votes when making future compensation decisions for our NEOs. We will hold an advisory vote on the compensation of our NEOs at our 2017 annual meeting of stockholders.

Compensation of Directors

Directors who are employees receive no additional compensation for serving on the Board or its committees. In 2016, we provided the following annual compensation to directors who are not employees:

- options to purchase 2,400 shares of our Common Stock with each option having a 10 year term and being fully vested after six months from grant date;
- a quarterly director fee of \$8,000;
- an additional quarterly fee of \$5,500 and \$7,500 to the Chairman of our Audit Committee and Chairman of the Board (non-employee), respectively; and
- a fee of \$1,000 for each board meeting attendance and a \$500 fee for meeting attendance via conference call.

Each director may elect to have either 65% or 100% of such fees payable in Common Stock under the 2003 Outside Director Plan, with the balance payable in cash.

Both Mr. John Climaco and Dr. Louis Centofanti, current members of the Board, are not eligible to receive compensation for their services as directors of the Company as they are employees of the Company or one of its subsidiaries. Mr. Climaco is EVP of PF Medical, the Company's majority-owned Polish subsidiary and Dr. Centofanti is the President and CEO of the Company. As EVP of PF Medical, Mr. Climaco is provided an annual salary of \$150,000 from PF Medical. See "Summary Compensation" table in this section for Dr. Centofanti's annual salary as an employee of the Company.

The table below summarizes the director compensation expenses recognized by the Company for the director options and stock awards (resulting from fees earned) for the year ended December 31, 2016. The terms of the 2003 Outside Directors Plan are further described below under "2003 Outside Directors Plan."

Director Compensation

| Name | Fees | | | | Change in Pension Value and All Other Compensation | | | Total |
|---------------------------|------------------------|---------------------|---------------------|--|--|----------|--------|-------|
| | Earned or Paid In Cash | Stock Awards | Option Awards | Non-Equity Incentive Plan Compensation | Nonqualified Deferred Compensation | Earnings | | |
| | (\$) ⁽¹⁾ | (\$) ⁽²⁾ | (\$) ⁽³⁾ | (\$) | (\$) | (\$) | (\$) | |
| Dr. Gary G. Kugler | 13,125 | 32,502 | 7,200 | — | — | — | 52,827 | |
| Jack Lahav ⁽⁴⁾ | — | 41,801 | 7,200 | — | — | — | 49,001 | |
| Joe R. Reeder | — | 48,672 | 7,200 | — | — | — | 55,872 | |
| Larry M. Shelton | 23,625 | 58,502 | 7,200 | — | — | — | 89,327 | |
| Mark A. Zwecker | 20,825 | 51,567 | 7,200 | — | — | — | 79,592 | |

Under the 2003 Outside Directors Plan, each director elects to receive 65% or 100% of the director's fees in shares of our Common Stock. The amounts set forth above represent the portion of the director's fees paid in cash and ⁽¹⁾exclude the value of the directors' fee elected to be paid in Common Stock under the 2003 Outside Director Plan, which values are included under "Stock Awards."

The number of shares of Common Stock comprising stock awards granted under the 2003 Outside Directors Plan is calculated based on 75% of the closing market value of the Common Stock as reported on the NASDAQ on the business day immediately preceding the date that the quarterly fee is due. Such shares are fully vested on the date of grant. The value of the stock award is based on the market value of our Common Stock at each quarter end times the number of shares issuable under the award. The amount shown is the fair value of the Common Stock on the date of the award.

Options granted under the Company's 2003 Outside Directors Plan resulting from re-election to the Board of Directors on July 28, 2016. Options are for a 10 year period with an exercise price of \$4.60 per share and are fully vested in six months from grant date. The value of the option award for each outside director is calculated based on the fair value of the option per share (\$3.00) on the date of grant times the number of options granted, which was 2,400 for each director, pursuant to ASC 718, "Compensation – Stock Compensation." Mr. Climaco was not eligible to receive options under the 2003 Outside Directors Plan upon re-election to the Company's Board as he became an employee of the Company upon being named the EVP of PF Medical, a majority-owned Polish subsidiary of the Company, effective June 2, 2015. The following is the aggregate number of outstanding non-qualified stock options held by the Company's directors at December 31, 2016. Dr. Centofanti, the President, CEO and a Board member of the Company, had no option as of December 31, 2016:

| Name | Options Outstanding as of December 31, 2016 |
|--------------------|--|
| John M. Climaco | 8,400 |
| Dr. Gary G. Kugler | 7,200 |
| Joe R. Reeder | 24,000 |
| Larry M. Shelton | 24,000 |
| Mark A. Zwecker | 24,000 |
| Total | 87,600 |

Mr. Lahav retired from the Board effective October 27, 2016. Mr. Lahav's decision to retire was based on personal reasons and was not as a result of any disagreement with the Company or due to any matter relating to the Company's operations, policies or practices.

See "John Climaco" under "Certain Relationships and Related Transactions, and Director Independence" for further information on Mr. Climaco.

2003 Outside Directors Plan

We believe that it is important for our directors to have a personal interest in our success and growth and for their interests to be aligned with those of our stockholders; therefore, under our 2003 Outside Directors Stock Plan, as amended ("2003 Directors Plan"), each outside director is granted a 10-year option to purchase up to 6,000 shares of Common Stock on the date such director is initially elected to the Board, and receives on each re-election date an option to purchase up to another 2,400 shares of our Common Stock, with the exercise price being the fair market value of the Common Stock preceding the option grant date. No option granted under the 2003 Directors Plan is

exercisable until after the expiration of six months from the date the option is granted and no option shall be exercisable after the expiration of ten years from the date the option is granted. As of December 31, 2016, options to purchase 157,200 shares of Common Stock were outstanding under the 2003 Directors Plan, of which 145,200 were vested as of December 31, 2016.

As a member of the Board, each director may elect to receive either 65% or 100% of the director's fee in shares of our Common Stock. The number of shares received by each director is calculated based on 75% of the fair market value of the Common Stock determined on the business day immediately preceding the date that the quarterly fee is due. The balance of each director's fee, if any, is payable in cash. In 2016, the fees earned by our outside directors totaled approximately \$291,000. Reimbursements of expenses for attending meetings of the Board are paid in cash at the time of the applicable Board meeting. As a management director, Dr. Centofanti is not eligible to participate in the 2003 Directors Plan. As EVP of PF Medical, Mr. Climaco is not eligible to participate in the 2003 Director plan.

As of December 31, 2016, we have issued 486,387 shares of our Common Stock in payment of director fees since the inception of the 2003 Directors Plan.

In the event of a "change of control" (as defined in the 2003 Directors Plan), each outstanding stock option and stock award shall immediately become exercisable in full notwithstanding the vesting or exercise provisions contained in the stock option agreement.

ITEM 12. SECURITY OWNERSHIP OF CERTAIN BENEFICIAL OWNERS AND MANAGEMENT AND RELATED STOCKHOLDER MATTERS

Security Ownership of Certain Beneficial Owners

The table below sets forth information as to the shares of Common Stock beneficially owned as of December 31, 2016, by each person known by us to be the beneficial owners of more than 5% of any class of our voting securities.

| Name of Beneficial Owner | Title Of Class | Amount and Percent | |
|---|-------------------|------------------------|----------------------------|
| | | Nature of Ownership | Of Class ⁽¹⁾ |
| Heartland Advisors, Inc. ⁽²⁾ | Common | 1,691,984 | 14.5% |

⁽¹⁾ The number of shares and the percentage of outstanding Common Stock shown as beneficially owned by a person are based upon 11,681,349 shares of Common Stock outstanding on February 22, 2017, and the number of shares of Common Stock which such person has the right to acquire beneficial ownership of within 60 days. Beneficial ownership by our stockholders has been determined in accordance with the rules promulgated under Section 13(d) of the Exchange Act.

⁽²⁾ This information is based on the Schedule 13F of Heartland Advisors, Inc, an investment advisor, filed with the Securities and Exchange Commission on January 31, 2017, disclosing that as of December 31, 2016, Heartland Advisors, Inc. had dispositive power over all of these shares but shared voting power over 1,530,377 of such shares and no voting power over 161,607 of the shares. The address of Heartland Advisors, Inc. is 789 North Water Street, Milwaukee, WI 53202.

As of February 16, 2017, Capital Bank–Grawe Gruppe AG (“Capital Bank”), a banking institution regulated by the banking regulations of Austria, holds of record as a nominee for, and as an agent of, certain accredited investors, 1,304,606 shares of our Common Stock. None of Capital Bank's investors beneficially own more than 4.9% of our Common Stock and to its best knowledge, as far as stocks held in accounts with Capital Bank, none of Capital Bank's investors act together as a group or otherwise act in concert for the purpose of voting on matters subject to the vote of our stockholders or for purpose of disposition or investment of such stock. Additionally, Capital Bank's investors maintain full voting and dispositive power over the Common Stock beneficially owned by such investors, and Capital Bank has neither voting nor investment power over such shares. Accordingly, Capital Bank believes that (i) it is not the beneficial owner, as such term is defined in Rule 13d-3 of the Exchange Act, of the shares of Common Stock registered in Capital Bank's name because (a) Capital Bank holds the Common Stock as a nominee only, (b) Capital Bank has neither voting nor investment power over such shares, and (c) Capital Bank has not nominated or sought to nominate, and does not intend to nominate in the future, any person to serve as a member of our Board; and (ii) it is not required to file reports under Section 16(a) of the Exchange Act or to file either Schedule 13D or Schedule 13G in

connection with the shares of our Common Stock registered in the name of Capital Bank.

Notwithstanding the previous paragraph, if Capital Bank's representations to us described above are incorrect or if Capital Bank's investors are acting as a group, then Capital Bank or a group of Capital Bank's investors could be a beneficial owner of more than 5% of our voting securities. If Capital Bank was deemed the beneficial owner of such shares, the following table sets forth information as to the shares of voting securities that Capital Bank may be considered to beneficially own on February 16, 2017.

| Name of Record Owner | Title Of Class | Amount and Percent | |
|---------------------------|-------------------|--------------------------|-----------------|
| | | Nature of Ownership | Of Class (*) |
| Capital Bank Grawe Gruppe | Common | 1,304,606 ⁽⁺⁾ | 11.2% |

(*) This calculation is based upon 11,681,349 shares of Common Stock outstanding on February 22, 2017, plus the number of shares of Common Stock which Capital Bank, as agent for certain accredited investors has the right to acquire within 60 days, which is none.

(+) This amount is the number of shares that Capital Bank has represented to us that it holds of record as nominee for, and as an agent of, certain of its accredited investors. As of the date of this report, Capital Bank has no warrants or options to acquire, as agent for certain investors, additional shares of our Common Stocks. Although Capital Bank is the record holder of the shares of Common Stock described in this note, Capital Bank has advised us that it does not believe it is a beneficial owner of the Common Stock or that it is required to file reports under Section 16(a) or Section 13(d) of the Exchange Act. Because Capital Bank (a) has advised us that it holds the Common Stock as a nominee only and that it does not exercise voting or investment power over the Common Stock held in its name and that no one investor of Capital Bank for which it holds our Common Stock holds more than 4.9% of our issued and outstanding Common Stock and (b) has not nominated, and has not sought to nominate, and does not intend to nominate in the future, any person to serve as a member of our Board, we do not believe that Capital Bank is our affiliate. Capital Bank's address is Burgring 16, A-8010 Graz, Austria.

Security Ownership of Management

The following table sets forth information as to the shares of voting securities beneficially owned as of February 22, 2017, by each of our directors and NEOs and by all of our directors and NEOs as a group. Beneficial ownership has been determined in accordance with the rules promulgated under Section 13(d) of the Exchange Act. A person is deemed to be a beneficial owner of any voting securities for which that person has the right to acquire beneficial ownership within 60 days.

| Name of Beneficial Owner ⁽²⁾ | Amount and Nature of Beneficial Owner ⁽¹⁾ | Percent of Class ⁽¹⁾ |
|---|---|---------------------------------|
| Dr. Louis F. Centofanti ⁽³⁾ | 215,525 | (3) 1.85% |
| John M. Climaco ⁽⁴⁾ | 22,763 | (4) * |
| Robert Cochran ⁽⁵⁾ | - | (5) * |
| Dr. Gary Kugler ⁽⁶⁾ | 40,010 | (6) * |
| Joe R. Reeder ⁽⁷⁾ | 146,624 | (7) 1.25% |
| Larry M. Shelton ⁽⁸⁾ | 95,564 | (8) * |
| Mark A. Zwecker ⁽⁹⁾ | 165,419 | (9) 1.41% |
| Ben Naccarato ⁽¹⁰⁾ | 1,000 | (10) * |
| Mark Duff ⁽¹¹⁾ | - | (11) * |
| Directors and Executive Officers as a Group (9 persons) | 686,905 | (12) 5.84% |

*Indicates beneficial ownership of less than one percent (1%).

⁽¹⁾ See footnote (1) of the table under "Security Ownership of Certain Beneficial Owners."

⁽²⁾ The business address of each person, for the purposes hereof, is c/o Perma-Fix Environmental Services, Inc., 8302 Dunwoody Place, Suite 250, Atlanta, Georgia 30350.

(3) These shares include (i) 152,725 shares held of record by Dr. Centofanti, and (iii) 62,800 shares held by Dr. Centofanti's wife. Dr. Centofanti has sole voting and investment power of these shares, except for the shares held by Dr. Centofanti's wife, over which Dr. Centofanti shares voting and investment power. Dr. Centofanti also owns 700 shares of PF Medical's Common Stock.

(4) Mr. Climaco has sole voting and investment power over these shares which include: (i) 14,363 shares of Common Stock held of record by Mr. Climaco, and (ii) options to purchase 8,400 shares, which are immediately exercisable.

(5) Mr. Cochran does not beneficially own any of the Company's shares.

(6) Dr. Kugler has sole voting and investment power over these shares which include: (i) 32,810 shares of Common Stock held of record by Dr. Kugler, and (ii) options to purchase 7,200 shares, which are immediately exercisable.

(7) Mr. Reeder has sole voting and investment power over these shares which include: (i) 122,624 shares of Common Stock held of record by Mr. Reeder, and (ii) options to purchase 24,000 shares, which are immediately exercisable.

(8) Mr. Shelton has sole voting and investment power over these shares which include: (i) 71,564 shares of Common Stock held of record by Mr. Shelton, and (ii) options to purchase 24,000 shares, which are immediately exercisable. Mr. Shelton also owns 750 shares of PF Medical's Common Stock.

(9) Mr. Zwecker has sole voting and investment power over these shares which include: (i) 141,419 shares of Common Stock held of record by Mr. Zwecker, and (ii) options to purchase 24,000 shares, which are immediately exercisable.

(10) Mr. Naccarato has sole voting and investment power over these shares which include: 1,000 shares held of record by Mr. Naccarato. Mr. Naccarato also owns 100 shares of PF Medical's Common Stock.

(11) Mr. Duff does not beneficially own any of the Company's shares.

(12) Amount includes 87,600 options, which are immediately exercisable to purchase 87,600 shares of Common Stock.

Equity Compensation Plans

The following table sets forth information as of December 31, 2016, with respect to our equity compensation plans.

| Plan Category | Equity Compensation Plan | | |
|---------------|-----------------------------------|---------------------------------------|--|
| | Number of securities to be issued | Weighted average price of outstanding | Number of securities remaining available for |

| | upon exercise | options, warrants | future issuance under |
|---|------------------------------|----------------------|---|
| | of outstanding options | and rights | equity compensation |
| | warrants and rights | | plans (excluding securities reflected in |
| | (a) | (b) | column (a) (c) |
| Equity compensation plans Approved by stockholders | 247,200 | \$ 6.69 | 260,413 |
| Equity compensation plans not Approved by stockholders | — | — | — |
| Total | 247,200 | \$ 6.69 | 260,413 |

ITEM 13. CERTAIN RELATIONSHIPS AND RELATED TRANSACTIONS, AND DIRECTOR INDEPENDENCE

We describe below transactions to which we were a party during our last two fiscal years or to which we currently propose to be a party in the future, and in which:

the amounts involved exceeded or will exceed the lesser of \$120,000 or one percent of the average of our total assets at year end for the last two completed fiscal years; and
any of our directors, executive officers or beneficial owners of more than 5% of any class of our voting securities, or any member of the immediate family of the foregoing persons, had or will have a direct or indirect material interest.

Audit Committee Review

Our Audit Committee Charter provides for the review by the Audit Committee of any related party transactions, other than transactions involving an employment relationship with the Company, which are reviewed by the Compensation Committee. Although we do not have written policies for the review of related party transactions, the Audit Committee reviews transactions between the Company and its directors, executive officers, and their respective immediate family members. In reviewing a proposed transaction, the Audit Committee takes into account, among other factors it deems appropriate:

- (1) the extent of the related person's interest in the transaction;
- (2) whether the transaction is on terms generally available to an unaffiliated third-party under the same or similar circumstances;
- (3) the cost and benefit to the Company;
- (4) the impact or potential impact on a director's independence in the event the related party is a director, an immediate family member of a director or an entity in which a director is a partner, stockholder or executive officer;
- (5) the availability of other sources for comparable products or services;
- (6) the terms of the transaction; and
- (7) the risks to the Company.

Related party transactions are reviewed by the Audit Committee prior to the consummation of the transaction. With respect to a related party transaction arising between Audit Committee meetings, the CFO may present it to the Audit Committee Chairperson, who will review and may approve the related party transaction subject to ratification by the Audit Committee at the next scheduled meeting. Our Audit Committee shall approve only those transactions that, in light of known circumstances are not inconsistent with the Company's best interests.

Related Party Transactions

Mr. David Centofanti

Mr. David Centofanti serves as our Vice President of Information Systems. For such position, he received annual compensation of \$168,000 for each of the years 2016 and 2015. Mr. David Centofanti is the son of our CEO, President and a Board member, Dr. Louis F. Centofanti.

Mr. Robert L. Ferguson

Mr. Robert L. Ferguson serves as an advisor to the Company's Board and is also a member of the Supervisory Board of PF Medical, a majority-owned Polish subsidiary of the Company. Mr. Ferguson previously served as a Board member of the Company from June 2007 to February 2010 and again from August 2011 to September 2012. As an advisor to the Company's Board, Mr. Ferguson is paid \$4,000 monthly plus reasonable expenses. For such services, Mr. Ferguson received compensation of approximately \$59,000 and \$58,000 for the years ended December 31, 2016 and 2015, respectively. On August 2, 2013, the Company completed a lending transaction with Messrs. Robert Ferguson and William Lampson ("collectively, the "Lenders"), whereby the Company borrowed from the Lenders the sum of \$3,000,000 (which was paid off by the Company in August 2016) pursuant to the terms of a Loan and Security

Purchase Agreement and promissory note (the “Loan”). As consideration for the Company receiving the Loan, each Lender received 45,000 shares of the Company’s Common Stock. Additionally, each Lender received a Warrant to purchase up to 35,000 shares of the Company’s Common Stock at an exercise price of \$2.23 per share. On August 2, 2016, each Lender exercised his Warrant for the purchase of 35,000 shares of our Common Stock, resulting in total proceeds paid to the Company of approximately \$156,000.

Mr. John Climaco

On June 2, 2015, Mr. Climaco, a current member of the Company’s Board, was elected as EVP of PF Medical. As EVP of PF Medical, Mr. Climaco receives an annual salary of \$150,000 and is not eligible to receive compensation for serving on the Company’s Board.

Mr. Climaco previously had a consulting agreement with the Company effective September 2014 (approved by the Board with Mr. Climaco abstaining) to perform certain consulting functions for the Company as determined by the Board, including review of operating and accounting functions, strategic opportunity and other initiatives, and the development of the Company's medical isotope production technology. The consulting agreement was terminated effective June 2, 2015 upon Mr. Climaco's election as EVP of PF Medical. Mr. Climaco was paid \$22,000 per month under the consulting agreement and received approximately \$117,000 in 2015 for his services under the consulting agreement.

Mr. Climaco is also a Director of Digirad Corporation, a publicly held company the common stock of which is listed on the Nasdaq ("Digirad"). On July 24, 2015, PF Medical and Digirad entered into a multi-year Tc-99m Supplier Agreement (the "Supplier Agreement") and a Series F Stock Subscription Agreement (the "Subscription Agreement" and, together with the Supplier Agreement, the "Digirad Agreements"). The Supplier Agreement became effective upon the completion of the Subscription Agreement. Pursuant to the terms of the Digirad Agreements, Digirad purchased, in a private placement, 71,429 shares of PF Medical's restricted Series F Stock for an aggregate purchase price of \$1,000,000. The 71,429 share investment made by Digirad constituted approximately 5.4% of the outstanding common shares of PF Medical. The Supplier Agreement provides, among other things, that upon PF Medical's commercialization of certain Tc99m generators, Digirad will purchase agreed upon quantities of Tc-99m for its nuclear imaging operations either directly or in conjunction with its preferred nuclear pharmacy supplier and PF Medical will supply Digirad, or its preferred nuclear pharmacy supplier, with Tc-99m at a preferred pricing, subject to certain conditions. To date, PF Medical is still in the R&D stage of its commercialization efforts, and no amounts of Tc99m have been sold to Digirad under the Supplier Agreement.

Board Independence

Our common stock is listed on the Nasdaq Capital Market. Rule 5605 of the Nasdaq Marketplace Rules requires a majority of a listed company's board of directors to be comprised of independent directors. In addition, the Nasdaq Marketplace Rules require that, subject to specified exceptions, each member of a listed company's audit, compensation and nominating and corporate governance committees be independent under the Securities Exchange Act of 1934, as amended, or the Exchange Act. Audit committee members must also satisfy independence criteria set forth in Rule 10A-3 under the Exchange Act, and compensation committee members must also satisfy the independence criteria set forth in Rule 10C-1 under the Exchange Act. Under Rule 5605(a)(2), a director will only qualify as an "independent director" if, in the opinion of our board of directors, that person does not have a relationship that would interfere with the exercise of independent judgment in carrying out the responsibilities of a director. In order to be considered independent for purposes of Rule 10A-3, a member of an audit committee of a listed company may not, other than in his or her capacity as a member of the audit committee, the board of directors, or any other board committee, accept, directly or indirectly, any consulting, advisory, or other compensatory fee from the listed company or any of its subsidiaries or otherwise be an affiliated person of the listed company or any of its subsidiaries. In order to be considered independent for purposes of Rule 10C-1, the board must consider, for each member of a compensation committee of a listed company, all factors specifically relevant to determining whether a director has a relationship to such company which is material to that director's ability to be independent from management in connection with the duties of a compensation committee member, including, but not limited to: the source of compensation of the director, including any consulting advisory or other compensatory fee paid by such

company to the director; and whether the director is affiliated with the company or any of its subsidiaries or affiliates.

Our Board annually undertakes a review of the composition of our board of directors and its committees and the independence of each director. Based upon information requested from and provided by each director concerning his or her background, employment and affiliations, including family relationships, our board of directors has determined that each of Messrs. Robert Cochran, Larry M. Shelton and Mark A. Zwecker, the Honorable Joe R. Reeder and Dr. Gary Kugler is an "independent director" as defined under the Nasdaq Marketplace Rules. Our board of directors has also determined that Mr. Mark A. Zwecker (Chairperson), Mr. Larry M. Shelton, and Dr. Gary G. Kugler (together with Mr. Jack Lahav, who was a member of the Audit Committee until October 27, 2016), who comprise our Audit Committee, and Dr. Gary G. Kugler (Chairperson), Mr. Larry M. Shelton, and the Honorable Joe R. Reeder (together with Mr. Mark A. Zwecker, who was a member of the Compensation Committee until October 27, 2016), satisfy the independence standards for such committees established by the SEC and the Nasdaq Marketplace Rules, as applicable. In making such determination, our board of directors considered the relationships that each such non-employee director has with our company and all other facts and circumstances our board of directors deemed relevant in determining independence, including the beneficial ownership of our capital stock by each non-employee director.

ITEM 14. PRINCIPAL ACCOUNTANT FEES AND SERVICES

The following table reflects the aggregate fees for the audit and other services provided by Grant Thornton LLP, the Company's independent registered public accounting firm, for fiscal years 2016 and 2015:

| Fee Type | 2016 | 2015 |
|-----------------|-------------|-------------|
| Audit Fees(1) | \$350,000 | 366,000 |
| Tax Fees (2) | 173,000 | 136,000 |
| Total | \$523,000 | 502,000 |

(1) Audit fees consist of audit work performed in connection with the annual financial statements, the reviews of unaudited quarterly financial statements, and work generally only the independent registered accounting firm can reasonably provide, such as consents and review of regulatory documents filed with the Securities and Exchange Commissions.

(2) Fees for income tax planning, filing, and consulting.

The Audit Committee of the Company's Board has considered whether Grant Thornton's provision of the services described above for the fiscal years 2016 and 2015 was compatible with maintaining its independence.

Engagement of the Independent Auditor

The Audit Committee approves in advance all engagements with the Company's independent accounting firm to perform audit or non-audit services for us. All services under the headings Audit Fees and Tax Fees were approved by the Audit Committee pursuant to paragraph (c)(7)(i)(C) of Rule 2-01 of Regulation S-X of the Exchange Act. The Audit Committee's pre-approval policy provides as follows:

The Audit Committee will review and pre-approve on an annual basis all audits, audit-related, tax and other services, along with acceptable cost levels, to be performed by the independent accounting firm and any member of the independent accounting firm's alliance network of firms, and may revise the pre-approved services during the period based on later determinations. Pre-approved services typically include: audits, quarterly reviews, regulatory filing requirements, consultation on new accounting and disclosure standards, employee benefit plan audits, reviews and reporting on management's internal controls and specified tax matters.

Any proposed service that is not pre-approved on the annual basis requires a specific pre-approval by the Audit Committee, including cost level approval.

The Audit Committee may delegate pre-approval authority to one or more of the Audit Committee members. The delegated member must report to the Audit Committee, at the next Audit Committee meeting, any pre-approval decisions made.

PART IV

ITEM 15. EXHIBITS AND FINANCIAL STATEMENT SCHEDULE

The following documents are filed as a part of this report:

(a)(1) Consolidated Financial Statements

See Item 8 for the Index to Consolidated Financial Statements.

By/s/ Dr. Gary Kugler Date March 24 , 2017
Dr. Gary Kugler, Director

By/s/ Joe R. Reeder Date March 24 , 2017
Joe R. Reeder, Director

By/s/ Larry M. Shelton Date March 24 , 2017
Larry M. Shelton, Chairman of the Board

By/s/ Mark A. Zwecker Date March 24, 2017
Mark A. Zwecker, Director

EXHIBIT INDEX

Exhibit

| <u>No.</u> | <u>Description</u> |
|------------|---|
| 3(i) | Restated Certificate of Incorporation, as amended, of Perma-Fix Environmental Services, Inc., as incorporated by reference from Exhibit 3(i) to the Company's 2014 Form 10-K filed on March 31, 2015. |
| 3(ii) | Amended and Restated Bylaws, as amended effective July 28, 2016, of Perma-Fix Environmental Services, Inc., as incorporated by reference from Exhibit 3(ii) to the Company's 8-K filed on August 1, 2016. |
| 4.1 | Specimen Common Stock Certificate as incorporated by reference from Exhibit 4.3 to the Company's Registration Statement, No. 33-51874. |
| 4.2 | Rights Agreement dated as of May 2, 2008 between the Company and Continental Stock Transfer & Trust Company, as Rights Agent, as incorporated by reference from Exhibit 4.2 to the Company's 2014 Form 10-K filed on March 31, 2015. |
| 4.3 | Letter Agreement dated September 29, 2008, between the Company and Continental Stock Transfer & Trust Company to correct certain subparagraph numbering on the Rights Agreement dated as of May 2, 2008 between the Company and Continental Stock Transfer & Trust Company, as Rights Agent, as incorporated by reference from Exhibit 4.3 to the Company's 2014 Form 10-K filed on March 31, 2015. |
| 4.4 | Loan and Securities Purchase Agreement, dated August 2, 2013 between William N. Lampson, Robert L. Ferguson, and Perma-Fix Environmental Services, Inc. as incorporated by reference from Exhibit 4.4 to the Company Form 10-Q for quarter ended June 30, 2013, filed on August 8, 2013. |
| 4.5 | Promissory Note dated August 2, 2013, between William N. Lampson, Robert L. Ferguson, and Perma-Fix Environmental Services, Inc. as incorporated by reference from Exhibit 4.5 to the Company Form 10-Q for quarter ended June 30, 2013, filed on August 8, 2013. |
| 4.6 | Common Stock Purchase Warrant, dated August 2, 2013, for William N. Lampson, as incorporated by reference from Exhibit 4.6 to the Company Form 10-Q for quarter ended June 30, 2013, filed on August 8, 2013. |
| 4.7 | Common Stock Purchase Warrant, dated August 2, 2013, for Robert L. Ferguson, as incorporated by reference from Exhibit 4.7 to the Company Form 10-Q for quarter ended June 30, 2013, filed on August 8, 2013. |
| 4.8 | Amended and Restated Revolving Credit, Term Loan and Security Agreement between Perma-Fix Environmental Services, Inc. and PNC Bank, National Association (as Lender and as Agent), dated October 31, |

2011.

First

Amendment to

Amended and

Restated

Revolving

Credit, Term

Loan and

Security

Agreement,

dated

November 7,

2012, between

the Company

and PNC Bank,

4.9 National

Association, as

incorporated

by reference

from exhibit

4.1 to the

Company's

Form 10-Q for

the quarter

ended

September 30,

2012, filed on

November 8,

2012.

4.10 Second

Amendment to

Amended and

Restated

Revolving

Credit, Term

Loan and

Security

Agreement and

Waiver, dated

May 9, 2013,

between the

Company and

PNC Bank,

National

Association, as

incorporated

by reference

from Exhibit

4.1 to the

Company's

Form 10-Q for

the quarter
ended March
31, 2013, filed
on May 10,
2013.

4.11 Third
Amendment to
Amended and
Restated
Revolving
Credit, Term
Loan and
Security
Agreement
between PNC
Bank, National
Association
and Perma-Fix
Environmental
Services, Inc.,
dated August
2, 2013, as
incorporated
by reference
from Exhibit
4.1 to the
Company's
Form 10-Q for
the quarter
ended June 30,
2013, filed on
August 8,
2013.

4.12 Third
Amended,
Restated and
Substituted
Revolving
Credit Note
between PNC
Bank, National
Association
and Perma-Fix
Environmental
Services, Inc.,
dated August
2, 2013, as
incorporated
by reference
from Exhibit
4.2 to the

Company's
Form 10-Q for
the quarter
ended June 30,
2013, filed on
August 8,
2013.

Fourth
Amendment to
Amended and
Restated
Revolving
Credit, Term
Loan and
Security
Agreement and
Waiver
between PNC
Bank, National

4.13 Association
and Perma-Fix
Environmental
Services, Inc.,
dated April 14,
2014, as
incorporated
by reference
from Exhibit
4.17 to the
Company's
2013 Form
10-K.

- Fifth
Amendment to
Amended and
Restated
Revolving
Credit, Term
Loan and
Security
Agreement
between PNC
Bank, National
- 4.14 Association and
Perma-Fix
Environmental
Services, Inc.,
dated July 25,
2014, as
incorporated by
reference from
Exhibit 4.1 to
the Company's
8-K filed on
July 31, 2014.
- Sixth
Amendment to
Amended and
Restated
Revolving
Credit, Term
Loan and
Security
Agreement
between PNC
Bank, National
- 4.15 Association and
Perma-Fix
Environmental
Services, Inc.,
dated July 28,
2014, as
incorporated by
reference from
Exhibit 4.2 to
the Company's
8-K filed on
July 31, 2014.
- 4.16 Subordination
Agreement

- dated August 2, 2013 by and among William Lampson and Robert Ferguson and PNC Bank, National Association, as incorporated by reference from Exhibit 4.3 to the Company's Form 10-Q for the quarter ended June 30, 2013, filed on August 8, 2013. Seventh Amendment to Amended and Restated Revolving Credit, Term Loan and Security Agreement between PNC Bank, National Association and Perma-Fix Environmental Services, Inc., dated March 24, 2016, as incorporated by reference from Exhibit 4.17 to the Company's 2015 Form 10-K filed on March 24, 2016.
- 4.17
- 4.18 Waiver Letter from PNC dated March 23, 2016 for non-compliance of financial covenant, as incorporated by reference from Exhibit 4.8 to

the Company's
Form 10-Q for
the quarter
ended March 31,
2016, filed on
May 23, 2016.
Eighth
Amendment to
Amended and
Restated
Revolving
Credit, Term
Loan and
Security
Agreement
between PNC
Bank, National
Association and
Perma-Fix

4.19 Environmental
Services, Inc.,
dated August
22, 2016, as
incorporated by
reference from
Exhibit 4.9 to
the Company's
Form 10-Q for
the quarter
ended June 30,
2016 filed on
August 22,
2016.

4.20 Ninth
Amendment to
Amended and
Restated
Revolving
Credit, Term
Loan and
Security
Agreement
between PNC
Bank, National
Association and
Perma-Fix
Environmental
Services, Inc.,
dated November
17, 2016, as
incorporated by

- reference from
Exhibit 4.10 to
the Company's
Form 10-Q for
the quarter
ended
September 30,
2016 filed on
November 18,
2016.
401(K) Profit
Sharing Plan
and Trust of the
Company as
incorporated by
- 10.1 reference from
Exhibit 10.5 to
the Company's
Registration
Statement, No.
33-51874.
2003 Outside
Directors' Stock
Plan of the
Company, as
incorporated by
- 10.2 reference from
Exhibit 10.2 to
the Company's
2014 Form 10-K
filed on March
31, 2015.
First
Amendment to
2003 Outside
Directors Stock
Plan, as
- 10.3 incorporated by
reference from
Exhibit 10.3 to
the Company's
2014 Form 10-K
filed on March
31, 2015.
- 10.4 Second
Amendment to
2003 Outside
Directors Stock
Plan, as
incorporated by
reference from

- Appendix "A" to
the Company'
2012 Proxy
Statement dated
August 6, 2012.
Third
Amendment to
2003 Outside
Directors Stock
Plan, as
10.5 incorporated by
reference from
Exhibit "B" to the
Company' 2014
Proxy Statement
dated August
11, 2014.
Consent Decree,
dated December
12, 2007,
between United
States of
America and
Perma-Fix of
10.6 Dayton, Inc., as
incorporated by
reference from
Exhibit 10.7 to
the Company's
2014 Form 10-K
filed on March
31, 2015.
2010 Stock
Option Plan of
the Company, as
incorporated by
10.7 reference from
Exhibit 10.7 to
the Company's
2015 Form 10-K
filed on March
24, 2016.
10.8 Employment
Agreement
dated July 10,
2014 between
Louis
Centofanti,
Chief Executive
Officer, and
Perma-Fix

Environmental Services, Inc., which is incorporated by reference from Exhibit 10.1 to the Company's Form 8-K filed on July 15, 2014.

Employment Agreement dated July 10, 2014 between John Lash, Chief Operating Officer, and Perma-Fix

10.9 Environmental Services, Inc., which is incorporated by reference from Exhibit 10.2 to the Company's Form 8-K filed on July 15, 2014.

Employment Agreement dated July 10, 2014 between Ben Naccarato, Chief Financial Officer, and Perma-Fix

10.10 Environmental Services, Inc., which is incorporated by reference from Exhibit 10.3 to the Company's Form 8-K filed on July 15, 2014.

10.11 Employment Agreement approved January 19, 2017, but

effective June
11, 2016
between Mark
Duff, Executive
Vice
President/Chief
Operating
Officer, and
Perma-Fix
Environmental
Services, Inc.,
which is
incorporated by
reference from
Exhibit 99.1 to
the Company's
Form 8-K filed
on January 25,
2017.

- Incentive Stock
Option
Agreement
between
Perma-Fix
Environmental
Services, Inc.
and Mr. John
10.12 Lash, as
incorporated
by reference
from Exhibit
10.7 to the
Company's 8-K
filed on July
15, 2014.
2015 Incentive
Compensation
Plan for Chief
Executive
Officer,
effective
January 1,
2015, as
10.13 incorporated
by reference
from Exhibit
99.1 to the
Company's
Form 8-K filed
on April 23,
2015.
2015 Incentive
Compensation
Plan for Chief
Operating
Officer,
effective
January 1,
2015, as
10.14 incorporated
by reference
from Exhibit
99.2 to the
Company's
Form 8-K filed
on April 23,
2015.

- 2015 Incentive
Compensation
Plan for Chief
Financial
Officer,
effective
January 1,
2015, as
10.15 incorporated
by reference
from Exhibit
99.3 to the
Company's
Form 8-K filed
on April 23,
2015.
2016 Incentive
Compensation
Plan for Chief
Executive
Officer,
effective
January 1,
2016, as
10.16 incorporated
by reference
from Exhibit
99.1 to the
Company's
Form 8-K filed
on February
10, 2016.
2016 Incentive
Compensation
Plan for Chief
Operating
Officer,
effective
January 1,
2016, as
10.17 incorporated
by reference
from Exhibit
99.2 to the
Company's
Form 8-K filed
on February
10, 2016.
10.18 2016 Incentive
Compensation
Plan for Chief

- Financial
Officer,
effective
January 1,
2016, as
incorporated
by reference
from Exhibit
99.3 to the
Company's
Form 8-K filed
on February
10, 2016.
2017 Incentive
Compensation
Plan for Chief
Executive
Officer,
effective
January 1,
2017, as
10.19 incorporated
by reference
from Exhibit
99.2 to the
Company's
Form 8-K filed
on January 25,
2017.
2017 Incentive
Compensation
Plan for
Executive Vice
President/Chief
Operating
Officer,
effective
10.20 January 1,
2017, as
incorporated by
reference from
Exhibit 99.3 to
the Company's
Form 8-K filed
on January 25,
2017.
10.21 2017 Incentive
Compensation
Plan for Chief
Financial
Officer,

- effective
January 1,
2017, as
incorporated
by reference
from Exhibit
99.4 to the
Company's
Form 8-K filed
on January 25,
2017.
- 21.1 List of
Subsidiaries
- 23.1 Consent of
Grant
Thornton, LLP
Certification
by Dr. Louis
F. Centofanti,
Chief
- 31.1 Executive
Officer of the
Company
pursuant to
Rule 13a-14(a)
or 15d-14(a).
Certification
by Ben
Naccarato,
Chief
Financial
Officer and
- 31.2 Chief
Accounting
Officer of the
Company
pursuant to
Rule 13a-14(a)
or 15d-14(a).
Certification
by Dr. Louis
F. Centofanti,
Chief
- 32.1 Executive
Officer of the
Company
furnished
pursuant to 18
U.S.C. Section
1350.
- 32.2

Certification
by Ben
Naccarato,
Chief
Financial
Officer and
Chief
Accounting
Officer of the
Company
furnished
pursuant to 18
U.S.C. Section
1350.
XBRL

101.INS Instance
Document*
XBRL
Taxonomy

101.SCH Extension
Schema
Document*
XBRL
Taxonomy

101.CAL Extension
Calculation
Linkbase
Document*
XBRL
Taxonomy

101.DEF Extension
Definition
Linkbase
Document*
XBRL
Taxonomy

101.LAB Extension
Labels
Linkbase
Document*
XBRL
Taxonomy

101.PRE Extension
Presentation
Linkbase
Document*

*Pursuant to Rule 406T of Regulation S-T, the Interactive Data File in Exhibit 101 hereto are deemed not filed or part of a registration statement or prospectus for purposes of Section 11 or 12 of the Securities Act of 1933, as amended, are deemed not filed for purpose of Section 18 of the Securities Exchange Act of 1934, as amended, and otherwise are not subject to liability under those sections.

