PermaFix®

environmental services

Experience You Can Trust

A Global Leader in Nuclear and Mixed Waste Management Services

Investor Presentation: April 2024

NASDAQ: PESI

Safe Harbor

nuclear

waste

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Certain statements contained within this presentation 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 presentation 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: the Company's ability to develop or adopt new and existing technologies; anticipated financial performance; growth through acquisition; leader in the mixed waste industry; positioned to benefit from mixed waste market opportunities; geographic strongholds; and all other statements which are not statements of historical fact.

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; increased competitive pressures; the ability to maintain and obtain required permits and approvals to conduct operations; the ability to develop new and existing technologies in the conduct of operations; changes in federal, state and local laws and regulations, especially environmental regulations, or in interpretation of such; and the commercial viability of our on-site treatment process.

The Company believes the presentation of EBITDA and Adjusted EBITDA is relevant and useful by enhancing the readers' ability to understand the Company's operating performance. The Company's management utilizes EBITDA and Adjusted EBITDA as means to measure performance. The Company's measurements of EBITDA and Adjusted EBITDA may not be comparable to similar titled measures reported by other companies.

The Company makes no commitment to disclose any revisions to forward looking statements, or any facts, events or circumstances after the date hereof that bear upon forward looking statements.

Company Overview

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Perma-Fix is focused on two primary markets with unique capabilities in each of these segments:

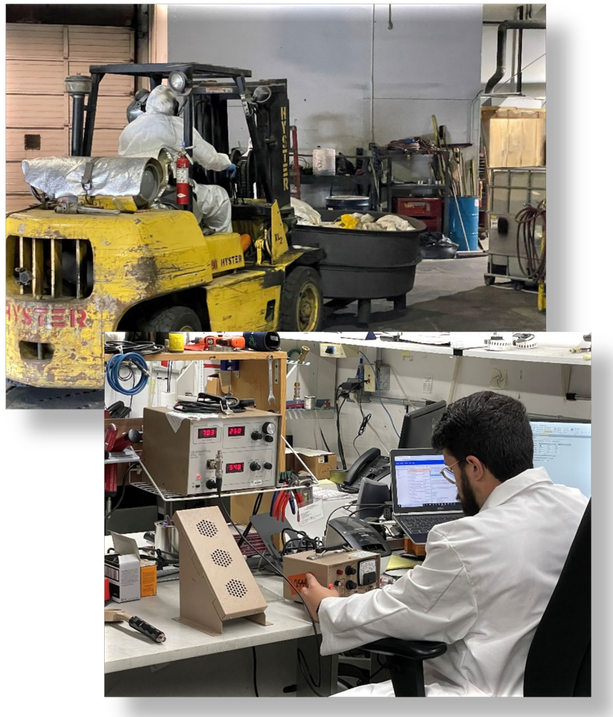
Culture of 'Safety First' is key to Perma-Fix's Mission & Success

Treatment

Permitted, licensed, and operating facilities treating a magnitude of contaminated wastes for economic and compliant disposal.

Services

Teams of professionals with innovative technologies and trained workforce to provide radiological protection and environmental remediation services.



Background

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Perma-Fix is a leading provider of nuclear waste treatment services

- Founded in 1991, and recognized as a national leader in the treatment of waste that is both radioactive and/or chemically hazardous
- Established laboratories and R&D capabilities
- Addressing problematic waste streams with no existing pathway for disposition
- Long-standing relationships with government agencies including DOE, NRC, DOD, EPA and NNSA

Nuclear services group provides onsite personnel and technologies for environmental protection and cleanup programs

- Industry leader in radiological protection services to government and commercial clients
- Demolition, environmental restoration, and waste management services for complex cleanup projects including radiological and hazardous components

Sr. Management Team

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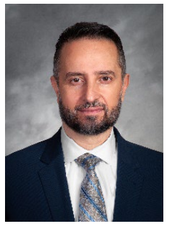
Mark Duff, President & Chief Executive Officer

39 years of experience in the DOE & DOD environmental and construction markets. Prior to joining Perma-Fix in 2016, Mr. Duff had been responsible for the successful completion of over 70 performance-based projects at the Paducah Gaseous Diffusion Plant (PGDP), KY overseeing a five-year project with a total value of $458 million. Prior to the PGDP project, Mark was a senior manager supporting Babcock and Wilcox (B&W).

Dr. Louis Centofanti, Executive Vice President of Strategic Initiatives

Founded Perma-Fix in 1991. Founded PPM, Inc., a hazardous waste management company. PPM's revenues grew to $15 million at which time it was sold to USPCI. Under Dr. Centofanti's leadership (Senior Vice President), USPCI was sold for $600 million (2 years after the purchase of PPM). Served as a senior official to the U.S. Department of Energy under the Carter Administration.



Ben Naccarato, Executive Vice President and Chief Financial Officer

Joined Perma-Fix in 2004. Mr. Naccarato brings over 35 years' experience in the waste management and used oil industries. Previous positions include Chief Financial Officer for a privately held fuel distribution and used waste oil company, and various senior financial positions at USPCI, Laidlaw Environmental Services, and Safety-Kleen Corp.

Richard Grondin, Executive Vice President of Waste Treatment Operations

Joined the Company in 2002. Mr. Grondin is recognized in the United States and Canada as an authority in hazardous and mixed waste treatment. Mr. Grondin has over 35 years of management and technical experience in the highly regulated and specialized radioactive/hazardous waste management industry with significant experience in managing start-up waste management processing and disposal facilities for four different organizations in the commercial and government sectors.

Market Overview

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Department of Energy

✓ **Environmental Management (EM)**
- Sixteen large and active sites in the US with area equal to Rhode Island and Delaware combined
- Roughly 88 million gallons of liquid waste stored in underground tanks

✓ **National Nuclear Security Administration (NNSA)**
- Maintains facilities requiring cleanup of legacy wastes and continuous generation of newly generated wastes for disposition

Department of Defense

✓ **Navy**
- Nuclear propulsion and NAVFAC/NAVSEA (nearly $2B 2017-2019) missions

✓ **United States Army Corps of Engineers (USACE)**
- Over $1B in remediation contracts

Commercial

✓ **Power**
- Nearly 100 reactors currently operating in the US; over 400 worldwide

✓ **Mining**
- High levels of naturally occurring radioactive materials (NORM)

✓ **Oil and Gas**
- Drilling practices result in high levels of NORM

International

✓ **Canada / Europe / Mexico**
- Beginning to fund and remove legacy wastes and contamination for nuclear operations.

The Y-12 National Nuclear Security Administration facility in Oak Ridge, TN

Market Overview - DOE

- ✓ Department of Energy funds the majority of the nuclear cleanup programs through their Environmental Management organization; budget passed for 2024 is $8.3 billion (+0.2% from 2023 enacted)[(i)]
- ✓ DOE's estimated environmental liability has been reported at over **$520 billion**, of which, the Office of Environmental Management's (EM) cleanup activities accounted for over **$406 billion**[(ii)]; The growth of EM's environmental liability has outpaced its cleanup spending.
- ✓ Hanford is the world's largest environmental cleanup project including 57 million gallons of tank waste; expected to continue until 2078; **cost estimated between $300 and $640 billion**[(iii)]

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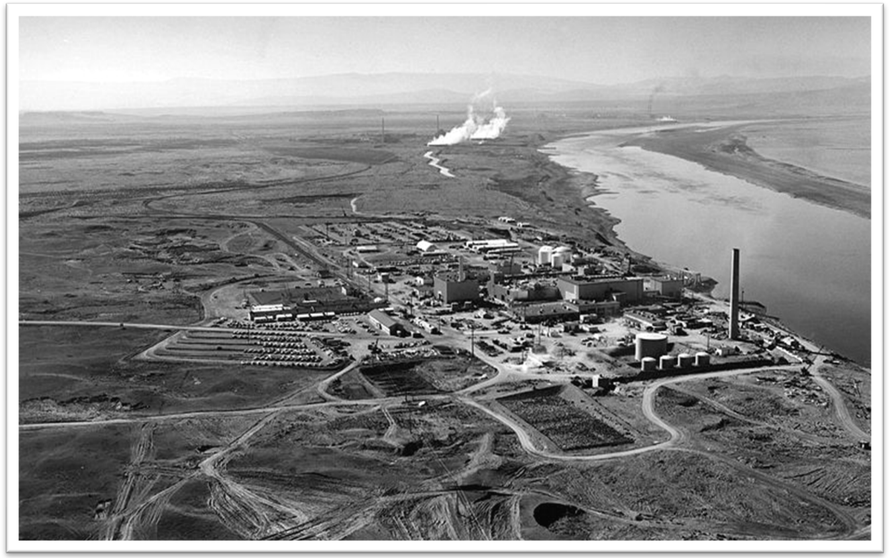

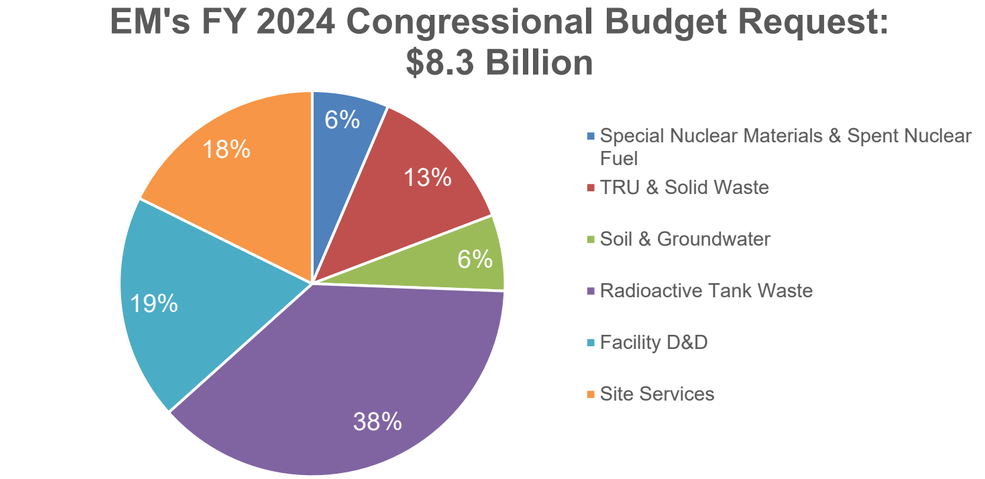

Sources:
(i) FY 2024 Budget Justification | Department of Energy
(ii) DOE Nuclear Cleanup GAO Report: August 2023
(iii) GAO Hanford Cleanup Report: Sept. 2023

Waste Treatment Facilities

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Four fixed-based facilities with active permits and licenses to treat most waste streams in the industry

- Broad existing permits allow treatment and management of waste for final disposition
- Trained and experienced workforce with long tenure at Perma-Fix and a strong safety record
- Perma-Fix owns three of the four facilities, with substantial capital invested through the life of the plants

Perma-Fix Northwest - Richland, WA

Radiological, transuranic, and large components

DSSI - Kingston, TN

Radiological, liquids, and PCBs

Perma-Fix Florida - Gainesville, FL

Industrial, radiological, and R&D

EWOC – Oak Ridge, TN

LLRW processing and disposition; equipment & component processing

Massive Barriers to Entry

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Highly regulated at State and Federal levels

- Nuclear Regulatory Commission through state regulators
- Environmental Protection Agency through state regulators
- State regulators for other air and water permits

Technology

- Patented (40+) and proprietary chemical treatment processes
- Treatment of nuclear waste is complex and requires multiple technologies and multiple steps

Experience

- Unparalleled experience and track record of facilities successfully treating nuclear waste for 40+ years
- Completed over $2 billion in demolition and remediation projects involving radiological materials

Growth Initiatives

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Nuclear Services

- West Valley closure contract
- USS Enterprise decommissioning
- Various DOE task orders and projects
- Operations and Site Management Support Contract (OSMS)

West Valley's main plant teardown, with huge volumes of TRU in soils and landfills to be removed

Waste Treatment Plant Upgrade and Expansion

- Classified waste capability upgrade
- Vacuum Thermal Desorption (VTD) system at Perma-Fix Florida: expanding markets into oil and gas, commercial industry, and utilities
- DUF6 Cylinder program: supporting pilot program and capabilities to disposition

VTD system at PFF offers low-cost treatment of high organic radioactive sludges

Growth Initiatives (continued)

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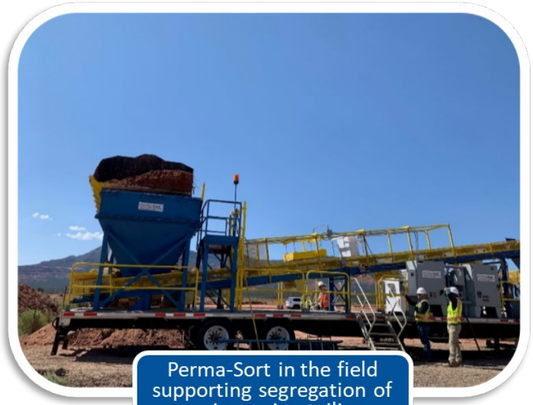
Hanford Program Implementation

- DFLAW Effluent Waste
  - Record of Decision commits DOE to send effluent to PFNW
  - DFLAW facility expected to start in 2025
- Grouting of West Tank Farms beginning in 2026 for “off-site” treatment

Hanford Site DFLAW facility to vitrify 40% of the tank waste

Technology Deployment

- Deployment of advanced soil sorting technology to reduce remediation costs for broader range of constituents
- Development of technology to address growing PFAS markets as EPA defines regulatory framework
- Establishing mercury characterization and treatment program to support large DOE/DOD projects in forefront



Perma-Sort in the field supporting segregation of uranium mine tailings

Growth Initiatives - International

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JRC Contract Signed and Underway in Italy

- JV contract valued at up to EUR 50 million from the Joint Research Center (JRC) in Ispra, Italy

Other International Projects

- Mexico nuclear Utility
- German partnership to support large storage inventory reduction over next 4 years
- Developing agreements to support Central European decommissioning program and waste disposition program
- Several ongoing procurements in Italy, Norway, Croatia, Slovenia and the United Kingdom

PFAS: “Forever Chemicals

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What are PFAS Chemicals

- Per- and Polyfluorinated Substances (PFAS), commonly known as “forever chemicals,” do not degrade over time through any natural process or environmental conditions
- Bioaccumulate and are harmful to humans and the environment

Perma-Fix’s PFAS Process

- Patent-pending process (3 patents pending, fourth in process) virtually eliminates PFAS compounds (minimum of 99.9999% destruction) and reduces the associated environmental liabilities
- Designed to operate in a closed system under mild conditions at a highly competitive price compared to traditional disposal options
- Bench-scale testing demonstrated the process is highly effective and can be applied to a variety of potential markets, including liquids, solids, soils, biosolids, and sludges

Successful Pilot Plant Demonstration

- Successfully demonstrated destruction of commercial quantities, reaffirming prior bench scale testing
- Exceeded expectations both in terms of cost and level of destruction
- Achieved PFAS destruction levels exceeding anticipated regulatory requirements

PFAS: Multibillion Dolar Market Opportunity

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Environment Risks & Limited Current Options

- Stored in abundance worldwide with limited current treatment options
  - Estimated cleanup cost could exceed $200 billion (Barrons)
  - PFAS present in about 45% of U.S. tap water (U.S. Geological Survey)
  - An estimated 200 million acres of contaminated farmland in the U.S. alone
  - Last year, 3M agreed to a $10.3B settlement over water pollution claims
- Scientific studies have linked PFAS exposure to reproductive effects; increased risk of cancers; weakened immune system; interference with hormones; and increased cholesterol & obesity
- Present disposal options include deep wells, incineration and landfills, all of which have serious environmental liability issues

Perma-Fix' Competitive Advantages

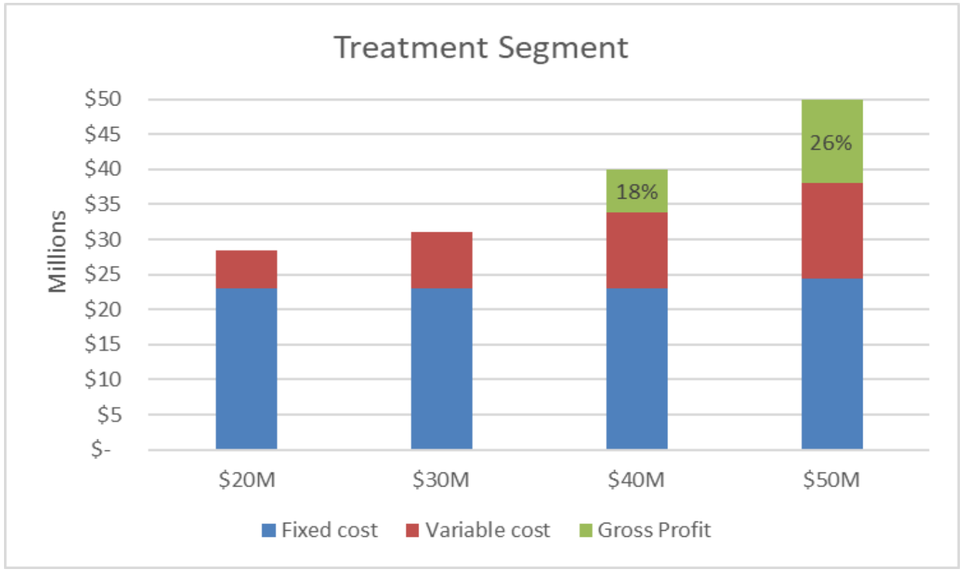
- Completely destroys fluorocarbon chain, mineralizes fluoride, and creates non-hazardous calcium fluoride as the primary byproduct
- Should be able to meet any disposal requirements set by the EPA
- Highly scalable with minimal capex or labor costs due to non-incineration, chemical-based process.

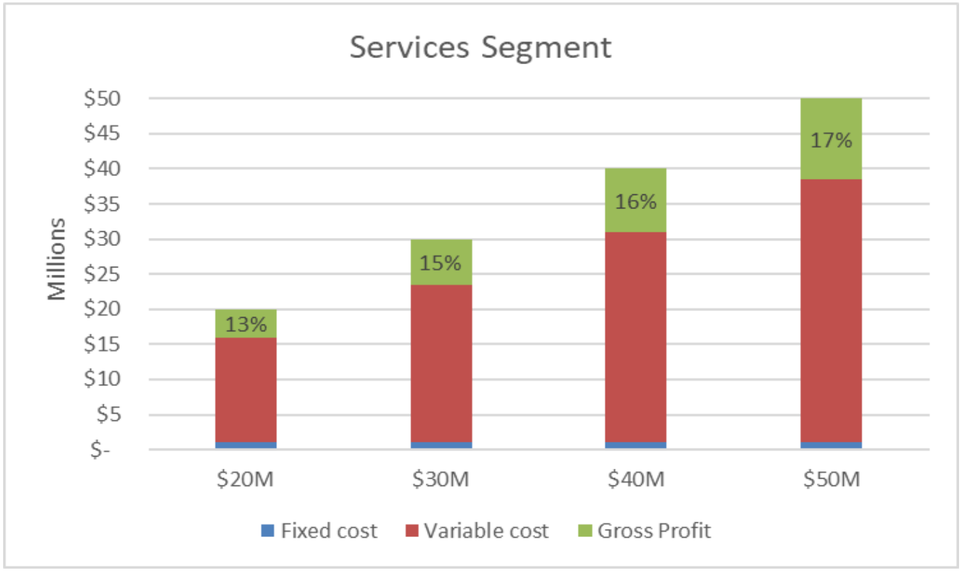
Next Steps

- Positive initial feedback from potential customers given increasing pressure to treat and dispose of these waste
- Plan to be operational, accepting commercial waste by the end of 2024
- Additional 3 units to be installed at existing treatment plants in 2025

Profitability Model

Segment Gross Profit: Fixed vs Variable Costs*





Treatment Segment: High incremental margins (revenue minus variable costs**) results in significant gross profit growth when fixed facility-based costs are surpassed.

Services Segment: Lower incremental margins (revenue minus variable costs) but substantially lower fixed costs that are scalable to revenue.

* For illustration purposes only; based on past trends and subject to change based on revenue mix.

** Based on 2023 financials

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Financial Highlights

($ in thousands)

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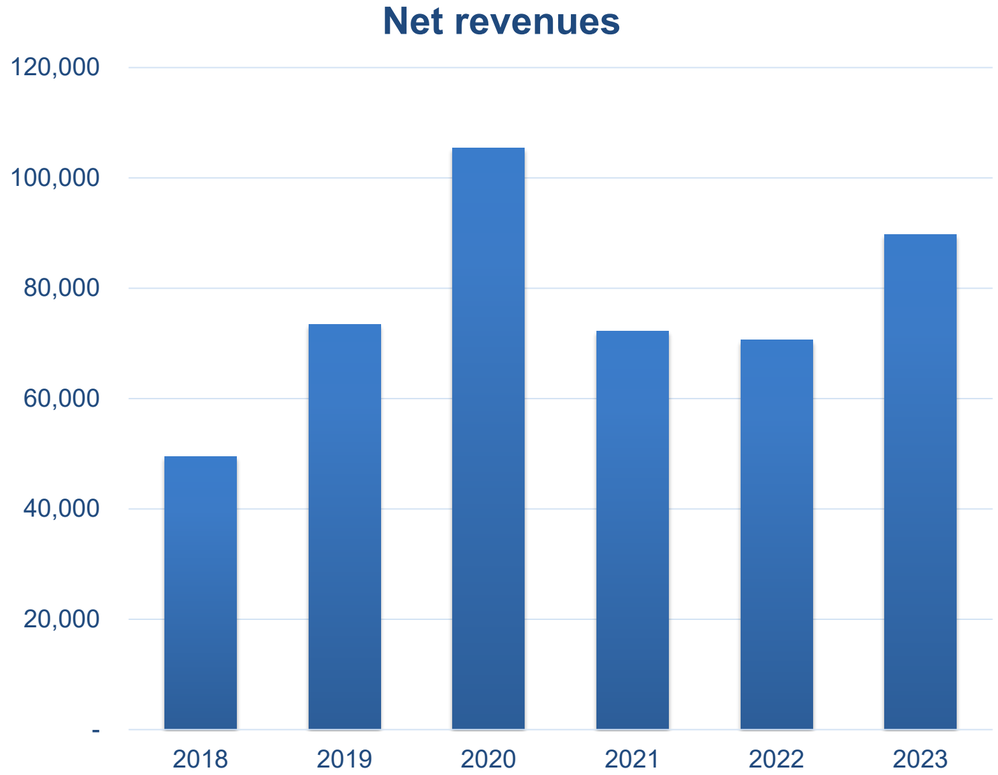

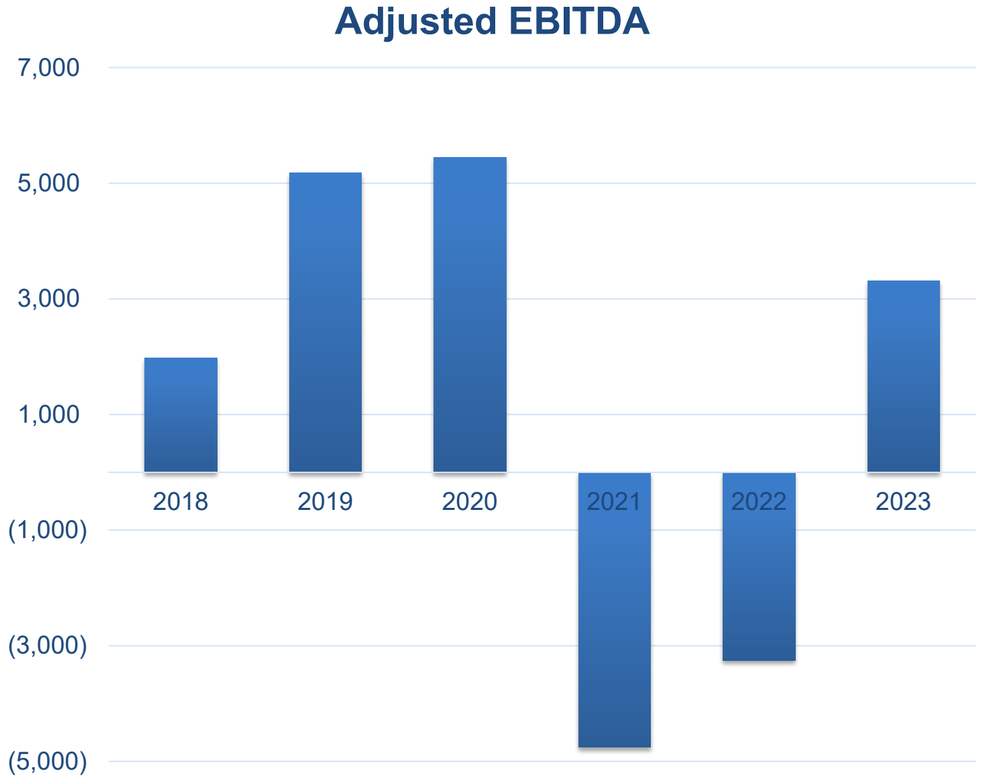

2023 Results & Key Initiatives

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2023 Financial Highlights

- ✓ **27% increase in revenue to $89.7 million**
  - Revenue increased within both the Treatment and Services Segments
- ✓ **70% increase in gross profit to $16.4 million**
- ✓ **Adjusted EBITDA improved to $3.3 million compared to a loss of $3.3 million in 2022**
- ✓ **Achieved EBITDA of $3.3 million and net profit of $ 0.4 million in 2023**

Key Initiatives

- ✓ **Actively bidding on large future contracts within the DOE and U.S. Navy, as well as mid-size procurement initiatives at DOE, the DOD and EPA facilities**
- ✓ **Positioned to provide treatment of effluent from the DFLAW facility once it commences vitrification operations (expected in early 2025)**
- ✓ **Expanding waste treatment offering within the commercial and international markets, including central Europe, Mexico and Canada**
- ✓ **Important advances on a new technology to treat PFAS contamination**

Adjusted EBITDA/EBITDA Reconciliation*

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(In thousands)	(Unaudited) Three Months Ended December 30, 2023	2022	(Unaudited) Twelve Months Ended December 30, 2023	2022
Income (loss) from continuing operations	$ 470	$ (1,529)	$ 918	$ (3,211)
Adjustments:				
Depreciation & amortization	443	676	2,568	2,109
Interest income	(161)	(30)	(606)	(99)
Interest expense	134	52	323	175
Interest expense - financing fees	13	17	93	61
Income tax expense (benefit)	(465)	(231)	17	(378)
EBITDA	434	(1,045)	3,313	(1,343)
Income from ERC refund claim, net [1]	—	—	—	(1,908)
Adjusted EBITDA	$ 434	$ 1,045	$ 3,313	$ (3,251)

[1] net of costs incurred in connection with the ERC program in the amount of approximately $67.

*The Company defines EBITDA as earnings before interest, taxes, depreciation and amortization. Adjusted EBITDA is defined as EBITDA before income from ERC refund claim (net of costs incurred). Neither EBITDA nor Adjusted EBITDA are measures of performance calculated in accordance with Accounting Principles Generally Accepted in the United States of America (GAAP), and should not be considered in isolation of, or as a substitute for, earnings as an indicator of operating performance or cash flows from operating activities as a measure of liquidity. The Company believes the presentation of EBITDA and Adjusted EBITDA is relevant and useful by enhancing the readers' ability to understand the Company's operating performance. The Company's management utilizes EBITDA and Adjusted EBITDA as a means to measure performance. The Company's measurements of EBITDA and Adjusted EBITDA may not be comparable to similar titled measures reported by other companies. The table below reconciles EBITDA and Adjusted EBITDA, both non-GAAP measures, to GAAP numbers for income (loss) from continuing operations for the three and twelve-months ended December 31, 2023, and 2022.

Investment Summary

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- ✓ **Positioned to be the leader in the multibillion-dollar nuclear services & waste treatment market**
  - New clean-up technologies in concert with advanced waste treatment plants provide critical discriminators for large cleanup procurements
  - Aggressive bidding on new service contracts; provides stable and predictable cash flow
  - Expansion into new waste streams that eclipse current markets; incremental revenue generates very high gross and operating margins
- ✓ **Nearly insurmountable barriers to entry**
- ✓ **Turnaround and return to profitability**
  - Expanded opportunity base with growth in Navy, USACE, as well as commercial and international waste projects
- ✓ **Significant and undervalued asset base**
  - Unique and irreplaceable permitted facilities
  - $12 million of cash securing regulatory closure requirement

Key Statistics

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NASDAQ:	PESI
Current Price (3/11/24):	$8.57
Shares Outstanding (2/12/24):	13.7 M
Market Cap (3/11/24):	$117.4 M
Fiscal Year End:	December 31
Inside Beneficial Ownership (2/12/24):	10.5%