

08-28-2003

Form PTO-1595

(Rev. 10/02)

RE



OMB No. 0651-0027 (exp. 6/30/2005)

102536553

U.S. DEPARTMENT OF COMMERCE  
U.S. Patent and Trademark Office

Tab settings ⇌ ⇌ ⇌

To the Honorable Commissioner of Patents and Trademarks: Please record the attached original documents or copy thereof.

1. Name of conveying party(ies):

8-25-03

Perma-Fix Environmental Services, Inc.

Additional name(s) of conveying party(ies) attached? ☒ Yes ☐ No

3. Nature of conveyance:

- ☐ Assignment ☐ Merger
- ☒ Security Agreement ☐ Change of Name
- ☐ Other \_\_\_\_\_

Execution Date: December 22, 2000

2. Name and address of receiving party(ies)

Name: PNC Bank, National Association

Internal Address: \_\_\_\_\_

Street Address: Two Tower Center Blvd.

East Brunswick NJ 08816  
City: \_\_\_\_\_ State: \_\_\_\_\_ Zip: \_\_\_\_\_Additional name(s) & address(es) attached? ☐ Yes ☒ No

4. Application number(s) or patent number(s):

If this document is being filed together with a new application, the execution date of the application is: \_\_\_\_\_

A. Patent Application No.(s) \_\_\_\_\_

B. Patent No.(s) 4921538, 5078593,  
5086716, 6251283Additional numbers attached? ☐ Yes ☒ No

5. Name and address of party to whom correspondence concerning document should be mailed:

Name: Jill M. Pietrini, Esq.

Internal Address: \_\_\_\_\_

Manatt, Phelps &amp; Phillips, LLP

Street Address: 11355 W. Olympic Blvd.

City: Los Angeles State: CA Zip: 90064

6. Total number of applications and patents involved: 4

7. Total fee (37 CFR 3.41).....\$115.00

☐ Enclosed☒ Authorized to be charged to deposit account  
If Necessary, Fee previously paid

8. Deposit account number:

DA 131 241

DO NOT USE THIS SPACE

9. Signature.

Edward M. Jordan

Name of Person Signing

Signature

8/25/03

Date

Total number of pages including cover sheet, attachments, and documents: 13

Mail documents to be recorded with required cover sheet information to:  
Commissioner of Patents & Trademarks, Box Assignments  
Washington, D.C. 20231PATENT  
REEL: 014420 FRAME: 0524

ATTACHMENT TO RECORDATION COVERSHEET  
Additions to Space 1

ASSIGNORS:

Perma-Fix Environmental Services (a Delaware corporation)  
Schreiber, Yonley and Associates, Inc. (a Missouri corporation)  
Perma-Fix Treatment Services, Inc. (an Oklahoma corporation)  
Perma-Fix, Inc. (an Oklahoma corporation)  
Perma-Fix of New Mexico, Inc. (a New Mexico corporation)  
Perma-Fix of Florida, Inc. (a Florida corporation)  
Perma-Fix of Memphis, Inc. (a Tennessee corporation)  
Perma-Fix of Dayton, Inc. (an Ohio corporation)  
Perma-Fix of Ft. Lauderdale, Inc. (a Florida corporation)  
Perma-Fix of Orlando, Inc.  
(f/k/a Chemical Conservation Corporation, a Florida corporation)  
Perma-Fix of South Georgia, Inc.  
(f/k/a Chemical Conservation of Georgia, Inc., a Georgia corporation)  
Perma-Fix of Michigan, Inc.  
(f/k/a Chem-Met Services, Inc., a Michigan corporation)  
Diversified Scientific Services, Inc. (a Tennessee corporation)  
Industrial Waste Management, Inc. (a Missouri corporation)  
Mintech, Inc. (an Oklahoma corporation)  
Reclamation Systems, Inc. (an Oklahoma corporation)  
1940 NW 67th Place  
Gainesville, Florida 32653

ATTACHMENT TO RECORDATION FORM COVERSHEET  
Additions to Space 4

Pending	Perma-Fix Environmental Services, Inc. (SY&A)	System for Continuous Sampling of Dioxin/Furan
Pending	Perma-Fix Environmental Services, Inc.	PCT: Method and Apparatus for Removing Contaminates from Soil (File #16715-0101)
Pending	Perma-Fix Environmental Services, Inc.	PCT: Method and Apparatus for Removing Contaminates from Soil (File #16715-0101WP)
Pending	Perma-Fix Environmental Services, Inc.	PCT: Method and Apparatus for Removing Contaminates from Soil (File #16715-0100P)
Pending	Perma-Fix Environmental Services, Inc.	Method for Preventing Radon Release for Contaminated Materials (File #16715-0120)
Pending	Perma-Fix Environmental Services, Inc.	Method for Preventing Radon Release for Contaminated Materials (File #16715-0120P)
Pending	Perma-Fix Environmental Services, Inc.	Methods for Removing Selenium from a Waste Stream (File #16715-0130)
Pending	Perma-Fix Environmental Services, Inc.	Oil/Water Separation Process (File #16715-0140)
Pending	Perma-Fix Environmental Services, Inc.	PROV: Continuous Emissions Monitor for Measuring Organic Constituents (File #16715-0150P)
Pending	Perma-Fix Environmental Services, Inc.	Nuclear Magnetic Resonance System and Method of Using Same (File #16715-0160P)

PATENT SECURITY AGREEMENT

(LETTERS PATENT, PATENT REGISTRATIONS,  
PATENT APPLICATIONS AND PATENT LICENSES)

WHEREAS, PERMA-FIX ENVIRONMENTAL SERVICES, INC., a Delaware corporation, SCHREIBER, YONLEY AND ASSOCIATES, INC., a Missouri corporation, PERMA-FIX TREATMENT SERVICES, INC., an Oklahoma corporation, PERMA-FIX, INC., an Oklahoma corporation, PERMA-FIX OF NEW MEXICO, INC., a New Mexico corporation, PERMA-FIX OF FLORIDA, INC., a Florida corporation, PERMA-FIX OF MEMPHIS, INC., a Tennessee corporation, PERMA-FIX OF DAYTON, INC., an Ohio corporation, PERMA-FIX OF FT. LAUDERDALE, INC. a Florida corporation, PERMA-FIX OF ORLANDO, INC. fka Chemical Conservation Corporation, a Florida corporation, PERMA-FIX OF SOUTH GEORGIA, INC. fka Chemical Conservation Of Georgia, Inc., a Georgia corporation, PERMA-FIX OF MICHIGAN, INC. fka Chem-Met Services, Inc., a Michigan corporation, DIVERSIFIED SCIENTIFIC SERVICES, INC., a Tennessee corporation, INDUSTRIAL WASTE MANAGEMENT, INC., a Missouri corporation, MINTECH, INC., an Oklahoma corporation, and RECLAMATION SYSTEMS, INC., an Oklahoma corporation (collectively, "Pledgors" and each, individually, a "Pledgor"), now owns or holds and may hereafter acquire or hold Patents (defined as all of the following: all letters patent, all registrations and recordings thereof or similar property rights, all trade secret information contained in such applications and all applications in connection therewith, including, without limitation, registrations, reissues, continuation in part applications, re-examination applications and patents, provisional patent applications, divisional applications, continuation applications, recordings and applications of any kind in the United States Patent and Trademark Office or in any similar office or agency of the United States, or in any other country or any political subdivision thereof, and all reissues, continuation in part patents) including, without limitation, the U.S. issued and applied for Patents listed on Schedule A, as such Schedule may be amended from time to time by the addition of Patents subsequently issued or applied for, otherwise adopted or acquired;

WHEREAS, Pledgor has entered into that certain Revolving Credit, Term Loan and Security Agreement dated as of even date herewith (as the same may be amended, supplemented or otherwise modified, renewed or replaced from time to time, the "Agreement") with each of the financial institutions that is now or that thereafter becomes a party thereto as lender (collectively, "Lenders" and each, individually, a "Lender"); and PNC BANK, NATIONAL ASSOCIATION, as agent for Lenders (in such capacity, "Agent"), and as Issuing Bank (any capitalized term used herein without definition herein shall have the meaning ascribed to it in the Agreement).

WHEREAS, in connection with the Agreement, Pledgor has granted to Agent a security interest in certain personal property of Pledgor including, without limitation, all right, title and interest of Pledgor in, to and under all of Pledgor's Patents and Patent licenses (including, without limitation, those Patent licenses listed on Schedule B), whether presently existing or hereafter arising, adopted or acquired, all products, services, and proceeds thereof and all income therefrom, including, without limitation, any and all causes of action which exist now or may exist in the future by reason of infringement or dilution royalties earned from the manufacture, sale or distribution, or license of such products or services thereof, to secure the payment and performance of the Obligations (such term being used herein as defined in the Agreement).

NOW, THEREFORE, for good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, Pledgor does, as security for the Obligations, hereby grant to Agent a continuing security interest in all of Pledgor's right, title and interest in, to and under the following (all of

the following items or types of property being collectively referred to herein as the "Patent Collateral"), whether presently existing or hereafter arising or acquired:

- (a) each Patent and patent applications, including, without limitation, those Patents and patent applications identifies on Schedule A;
- (b) each Patent license, including, without limitation, each Patent license referred to in Schedule B, to the extent such Patent license does not prohibit the licensee from assigning or granting a security interest in its rights thereunder; and
- (c) all products, services, and proceeds of, and income in any form from, any of the foregoing, including, without limitation, all royalties earned from the manufacture, sale, distributions, or license of such products or services any claim by Pledgor against third parties for the past, present or future infringement or violation of any Patent or any Patent licensed under any Patent license.

Pledgor agrees to deliver updated copies of Schedule A and Schedule B to Agent at the end of any quarter in which Pledgor registers or otherwise adopts or acquires any Patent not listed on Schedule A hereto or enters into any Patent license not listed on Schedule B, and to duly and promptly execute and deliver, or have duly and promptly executed and delivered, at the cost and expense of Pledgor and Borrower, such further instruments or documents (in form and substance satisfactory to Agent), and promptly perform, or cause to be promptly performed, any and all acts, in all cases, as may be necessary, proper or advisable from time to time, in the reasonable judgment of Agent, to carry out the provisions and purposes of the Agreement and this Patent Security Agreement, and to provide, perfect and preserve the Liens of Agent under the Agreement, this Patent Security Agreement and the other Loan Documents, in the Patent Collateral or any portion thereof.

Pledgor agrees that if any Person shall do or perform any acts which Agent believes constitute an infringement of any Patent, or violate or infringe any right of Pledgor or Agent therein or if any Person shall do or perform any acts which Agent believes constitute an unauthorized or unlawful use thereof, then and in any such event, Agent may and shall have the right, while an Event of Default is continuing, to take such steps and institute such suits or proceedings as Agent may deem advisable or necessary to prevent such acts and conduct and to secure damages and other relief by reason thereof, and to generally take such steps as may be advisable or necessary or proper for the full protection of the rights of the parties. Agent may take such steps or institute such suits or proceedings in its own name or in the name of Pledgor or in the names of the parties jointly. Agent hereby agrees to give Pledgor notice of any steps taken, or any suits or proceedings instituted, by Agent pursuant to this paragraph.

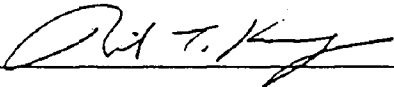
So long as no Event of Default shall have occurred and be continuing, and subject to the various provisions of the Agreement and the other Loan Documents to which it is a party, Pledgor may use, license and exploit the Patent Collateral in any lawful manner.

[remainder of page intentionally left blank; signatures follow]

THIS PATENT SECURITY AGREEMENT SHALL BE CONSTRUED IN ACCORDANCE WITH AND GOVERNED BY, THE LAWS OF THE STATE OF CALIFORNIA APPLICABLE TO CONTRACTS MADE AND TO BE PERFORMED WHOLLY WITHIN THE STATE OF NEW YORK.

IN WITNESS WHEREOF, Pledgor has caused this Patent Security Agreement to be duly executed as of December 22, 2000, by its officer thereunto duly authorized.

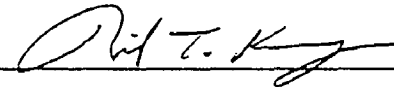
PERMA-FIX ENVIRONMENTAL SERVICES, INC.,  
a Delaware corporation  
("Pledgor")

By: 

Print Name: RICHARD T. KELSEY

Title: V.P.

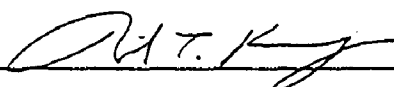
SCHREIBER, YONLEY AND ASSOCIATES, INC.,  
a Missouri corporation  
("Pledgor")

By: 

Print Name: RICHARD T. KELSEY

Title: V.P.

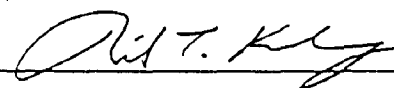
PERMA-FIX TREATMENT SERVICES, INC.,  
an Oklahoma corporation  
("Pledgor")

By: 

Print Name: RICHARD T. KELSEY

Title: V.P.

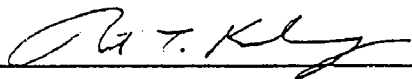
PERMA-FIX, INC.,  
an Oklahoma corporation  
("Pledgor")

By: 

Print Name: RICHARD T. KELSEY

Title: V.P.

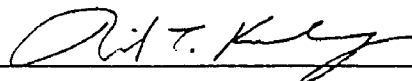
PERMA-FIX OF NEW MEXICO, INC.,  
a New Mexico corporation  
("Pledgor")

By: 

Print Name: RICHARD T KEELY

Title: V.P.

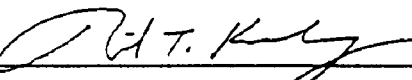
PERMA-FIX OF FLORIDA, INC.,  
a Florida corporation  
("Pledgor")

By: 

Print Name: RICHARD T KEELY

Title: V.P.

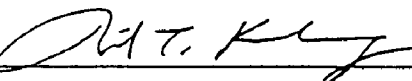
PERMA-FIX OF MEMPHIS, INC.,  
a Tennessee corporation  
("Pledgor")

By: 

Print Name: RICHARD T KEELY

Title: V.P.

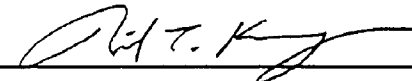
PERMA-FIX OF DAYTON, INC.,  
an Ohio corporation  
("Pledgor")

By: 

Print Name: RICHARD T KEELY

Title: V.P.

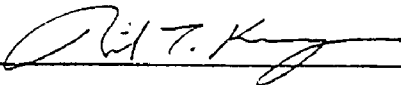
PERMA-FIX OF FT. LAUDERDALE, INC.  
a Florida corporation  
("Pledgor")

By: 

Print Name: RICHARD T KEELY

Title: V.P.

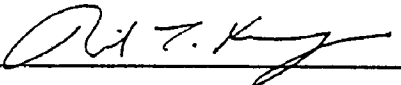
PERMA-FIX OF ORLANDO, INC.  
fka CHEMICAL CONSERVATION CORPORATION,  
a Florida corporation  
("Pledgor")

By: 

Print Name: RICHARD T. KEELY

Title: V.P.

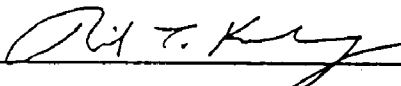
PERMA-FIX OF SOUTH GEORGIA, INC.  
fka CHEMICAL CONSERVATION OF GEORGIA, INC.,  
a Georgia corporation  
("Pledgor")

By: 

Print Name: RICHARD T. KEELY

Title: V.P.

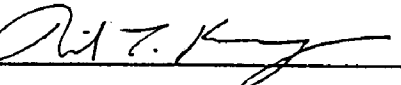
PERMA-FIX OF MICHIGAN, INC.  
fka CHEM-MET SERVICES, INC.,  
a Michigan corporation  
("Pledgor")

By: 

Print Name: RICHARD T. KEELY

Title: V.P.

DIVERSIFIED SCIENTIFIC SERVICES, INC.,  
a Tennessee corporation  
("Pledgor")

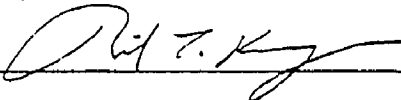
By: 

Print Name: RICHARD T. KEELY

Title: V.P.



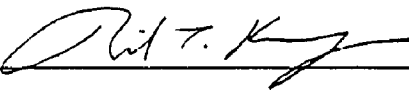
INDUSTRIAL WASTE MANAGEMENT, INC.,  
a Missouri corporation  
("Pledgor")

By: 

Print Name: RICHARD T. KEALEY

Title: V.P.

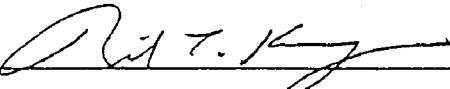
MINTECH, INC.,  
an Oklahoma corporation  
("Pledgor")

By: 

Print Name: RICHARD T. KEALEY

Title: V.P.

RECLAMATION SYSTEMS, INC.,  
an Oklahoma corporation  
("Pledgor")

By: 

Print Name: RICHARD T. KEALEY

Title: V.P.

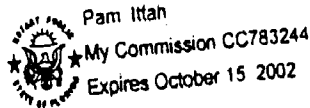
STATE OF Florida )  
COUNTY OF Alachua )

ss.

On the 20 day of December in the year 2000, before me personally came Richard T. Kelley to me known, who, being by me sworn, did say that s/he is an Authorized Signatory of Perma-Fix Environmental Services, Inc., which entity is described in, and which entity executed, the above instrument, and that such person signed the above instrument by order of the Board of Directors of Perma-Fix Environmental Services, Inc.

Witness my hand and official seal.

Pam Ittah  
Notary Public



PATENTS

Perma-Fix Environmental Services, Inc.  
Patent Summary

<u>Patent No.</u>	<u>Holder's Name</u>	<u>Description</u>
1921538	Industrial Waste Management, Inc.	Method for Recycle and Use of Contaminated Soil and Sludge
1078593	Industrial Waste Management, Inc.	Method for Recovery of Energy Values of Oily Refinery Sludges
1086716	Industrial Waste Management, Inc.	System, Apparatus and Method for Disposal of Solid Waste
Pending	Perma-Fix Environmental Services, Inc. (SY&A)	System for Continuous Sampling of Dioxin/Furan
Pending	Perma-Fix Environmental Services, Inc.	PCT: Method and Apparatus for Removing Contaminates from Soil (File #16715-0101)
Pending	Perma-Fix Environmental Services, Inc.	PCT: Method and Apparatus for Removing Contaminates from Soil (File #16715-0101WP)
Pending	Perma-Fix Environmental Services, Inc.	PCT: Method and Apparatus for Removing Contaminates from Soil (File #16715-0100P)
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Pending	Perma-Fix Environmental Services, Inc.	Method for Preventing Radon Release for Contaminated Materials (File #16715-0120P)
Pending	Perma-Fix Environmental Services, Inc.	Methods for Removing Selenium from a Waste Stream (File #16715-1001)
Pending	Perma-Fix Environmental Services, Inc.	Methods for Removing Selenium from a Waste Stream (File #16715-0130)
Pending	Perma-Fix Environmental Services, Inc.	Oil/Water Separation Process (File #16715-0140)
Pending	Perma-Fix Environmental Services, Inc.	PROV: Continuous Emissions Monitor for Measuring Organic Constituents (File #16715-0150P)
Pending	Perma-Fix Environmental Services, Inc.	Nuclear Magnetic Resonance System and Method of Using Same (File #16715-0160P)

Schedule B to Patent  
Security Agreement

PATENT LICENSES

NONE