

## PATENT ASSIGNMENT COVER SHEET

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<b>SUBMISSION TYPE:</b>	RESUBMISSION
<b>NATURE OF CONVEYANCE:</b>	ASSIGNMENT
<b>RESUBMIT DOCUMENT ID:</b>	506403249

**CONVEYING PARTY DATA**

Name	Execution Date
RICARDO FREIRE GRANDI	11/14/2020
RENAN DA SILVA COSTA	12/08/2020
OTAVIO CAMPOS DE ARAUJO	11/17/2020
ALEXANDRE CAMPOS MANHAES	11/16/2020
LEONARDO MARAZZO GARCIA	11/05/2020
ANTONIO CARLOS RAMOS JUNIOR	11/10/2020
KRIS PERNASETTI DUNLOP	12/03/2020
JOSE RICARDO BRIGIDO DE MOURA FILHO	11/09/2020
JOAO PAULO SANSEVERINO ABDU	11/16/2020
JOAO MARCELO MUSSI BAPTISTA	11/05/2020
GUSTAVO SALGUEIRO DE OLIVEIRA	11/18/2020
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GEORGE SOUZA COSTA	11/10/2020
FREDERICO FERREIRA CHAVES VAZ	11/14/2020
EDNALDO GONCALVES DE MOURA	11/09/2020
ALIEL FARIA RIENTE	11/16/2020
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CAROLINA BERTHOLDO DA CUNHA	11/16/2020

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<b>State/Country:</b>	BRAZIL
<b>Postal Code:</b>	20031-912

**PROPERTY NUMBERS Total: 1**

Property Type	Number
<b>Application Number:</b>	17044893

**CORRESPONDENCE DATA****Fax Number:** (703)776-9701*Correspondence will be sent to the e-mail address first; if that is unsuccessful, it will be sent using a fax number, if provided; if that is unsuccessful, it will be sent via US Mail.***Phone:** 703-776-9700**Email:** mail@jalindeman.com**Correspondent Name:** J.A. LINDEMAN & CO. PLLC**Address Line 1:** 3190 FAIRVIEW PARK DRIVE**Address Line 2:** SUITE 1070**Address Line 4:** FALLS CHURCH, VIRGINIA 22042

<b>ATTORNEY DOCKET NUMBER:</b>	220.0005-US00
<b>NAME OF SUBMITTER:</b>	ALBERT J. DU
<b>SIGNATURE:</b>	/Albert J. Du, Reg. No. 68,758/
<b>DATE SIGNED:</b>	01/22/2021

**Total Attachments: 20**

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## INVENTORS' WORLDWIDE ASSIGNMENT

This patent assignment (the "ASSIGNMENT") is made as of November 14, 2020 (the "EFFECTIVE DATE").

### Parties and Interests

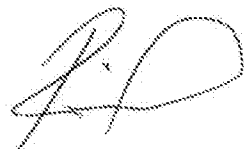
Inventors Ricardo FREIRE GRANDI, Renan DA SILVA COSTA, Otavio CAMPOS DE ARAUJO, Leonardo MARAZZO GARCIA, Kris PERNASETTI DUNLOP, Jose Ricardo BRIGIDO DE MOURA FILHO, Joao Paulo SANSEVERINO ABDU, Joao Marcelo MUSSI BAPTISTA, Gustavo SALGUEIRO DE OLIVEIRA, Giovanni FERREIRA MACHADO, George SOUZA COSTA, Frederico FERREIRA CHAVES VAZ, Ednaldo GONCALVES DE MOURA, Cristiane KOSLINSKI, Carolina BERTHOLDO DA CUNHA, Aliei FARIA RIENTE, Antonio Carlos RAMOS JUNIOR, Alexandre CAMPOS MANHAES, ("INVENTORS") possess the right, title, and interest for and in the invention entitled METHODS FOR WELL CONSTRUCTION AND COMPLETION, as described in U.S. Patent Application No. 17/044,893, filed October 2, 2020; and PCT International Application No. PCT/BR2019/050123, filed April 4, 2019.

PETROLEO BRASILEIRO S.A. - PETROBRAS, whose post office address is Avenida Republica do Chile, 55, Centro, RJ, 20031-912 Rio de Janeiro, Brazil ("the COMPANY"), desires to acquire INVENTORS entire right, title, and interest (the "RIGHTS") in and to:

- the inventions described in the listed patent applications and/or the listed patents in all countries throughout the world,
- the listed patent applications in all countries throughout the world,
- any patents listed or to be issued or granted from the listed patent applications or which claim priority to the listed patent applications,
- all continuation applications, divisional applications, reissues, re-examinations, extensions and renewals of the listed patent applications and/or the listed patents and all patents throughout the world which may be issued or granted from the listed patent applications and/or the listed patents,
- all rights to claim priority to the listed patent applications and/or the listed patents, and
- all patent applications for which a patent application may be filed for the inventions described in the listed patent applications and/or the listed patents in all countries throughout the world (including any PCT International applications),
- all patents which may be granted on the inventions described in the listed patent applications and/or the listed patents in all countries throughout the world,
- all income, royalties, damages, and payments now or after that are due or payable with respect to any assigned invention, patent application or patent, and
- all causes of action (either in law or in equity), and the right to sue, counterclaim, and recover for past, present, and future infringement of any assigned patent application or patent.

### Consideration is received by the INVENTOR

For and in consideration of the sum of One Dollar (\$1.00) and other good and valuable consideration, the receipt and sufficiency of which is acknowledged by the INVENTOR, the INVENTOR confirms that they have sold, assigned, transferred, and conveyed, absolutely, and by way of further assurances does sell, assign, transfer, and convey absolutely to the COMPANY, its lawful successors and assigns, their RIGHTS in existence as of the EFFECTIVE DATE.



NOVEMBER 14, 2020

**The INVENTOR has the right to convey the RIGHTS assigned by this ASSIGNMENT**

The INVENTOR promises, pledges, represents, and covenants that they have has the full right to convey the RIGHTS assigned by this ASSIGNMENT, and that they have not executed and will not execute any agreement in conflict with this ASSIGNMENT;

**The INVENTOR authorizes issuance of Patents to the COMPANY.**

The INVENTOR authorizes and requests the Commissioner of Patents and Trademarks of the United States and any appropriate official of any foreign country whose duty it is to issue or grant patents, to issue all Patents under the assigned RIGHTS to the COMPANY, its successors and assigns.

**The INVENTOR promises to assist the COMPANY with the completion of lawful papers.**

The INVENTOR further promises, covenants, and agrees that, upon request of the COMPANY, the INVENTOR will, when called upon to do so and without further consideration,

- communicate with the COMPANY, its successors and assigns, any facts known to the INVENTOR respecting the assigned inventions, patent applications and/or patents, and
- sign and deliver all lawful papers, including Declarations, Oaths, Powers of Attorney, Assignments, and Affidavits for or related to the assigned inventions, patent applications and/or patents to the COMPANY, its successors and assigns, to obtain and enforce proper patent protection for the assigned inventions, patent applications and/or patents in any country.

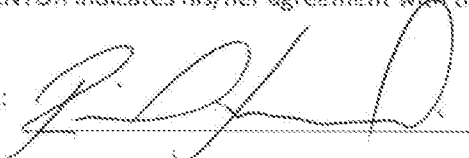
Any expense related to the signing and delivery of such papers shall be borne by the COMPANY, its successors and assigns.

**The INVENTOR authorizes J.A. Lindeman & Co., PLLC to correct errors in this ASSIGNMENT.**

The INVENTOR authorizes the firm of J.A. Lindeman & Co., PLLC to correct errors in this ASSIGNMENT and/or to insert any further identification or other information relating to the assigned inventions, patent applications and/or patents and necessary or desirable to make this ASSIGNMENT suitable for recordation in any country.

By signing below, the INVENTOR indicates his/her agreement with the provisions of this ASSIGNMENT.

Signature of INVENTOR:



Date:

NOVEMBER 14, 2020

Printed Name:

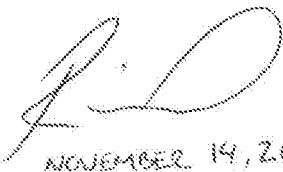
Ricardo FREIRE GRANDI

Citizen of:

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Address:

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NOVEMBER 14, 2020

*Renan DA SILVA COSTA*

Signature of INVENTOR:

*Renan DA SILVA COSTA*

Date:

*01/01/2022*

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Signature of INVENTOR:

Date:

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Signature of INVENTOR:

Date:

Printed Name: Leonardo MARAZZO GARCIA

Citizen of: BRAZIL

Address: Rua Paissandu 25/502 -Flamengo, 22210-085 Rio de Janeiro, Brazil

Signature of INVENTOR:

Date:

Printed Name: Kris PERNASETTI DUNLOP

Citizen of: BRAZIL

Address: Rua Homem de Melo 315/502 -Tijuca, 29510-189, Rio de Janeiro, Brazil

Signature of INVENTOR: Otavio Campos Date: November 17<sup>th</sup>, 2020

Printed Name: Otavio CAMPOS DE ARAUJO Citizen of: BRAZIL

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Signature of INVENTOR: \_\_\_\_\_ Date: \_\_\_\_\_

Printed Name: Leonardo MARAZZO GARCIA Citizen of: BRAZIL

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Signature of INVENTOR: \_\_\_\_\_ Date: \_\_\_\_\_

Printed Name: Kris PERNASETTI DUNLOP Citizen of: BRAZIL

Address: Rua Homem de Melo 315/502 -Tijuca, 29510-189, Rio de Janeiro, Brazil

Signature of INVENTOR: \_\_\_\_\_ Date: \_\_\_\_\_


Printed Name: Jose Ricardo BRIGIDO DE MOURA FILHO Citizen of: BRAZIL

Address: Av. Henrique Dodsworth 85/408 -Copacabana, 22061-030 Rio de Janeiro, Brazil

Signature of INVENTOR: \_\_\_\_\_ Date: \_\_\_\_\_

Printed Name: Joao Paulo SANSEVERINO ABDU Citizen of: BRAZIL

Address: Rua Joao Zanetti, 68 / apt 201 - Barra da Tijuca, 22621-030, Rio de Janeiro, Brazil

Signature of INVENTOR: 

Date: NOVEMBER 16th, 2020.

Printed Name: Alexandre CAMPOS MANHAES

Citizen of: BRAZIL

Address: Rua Arnaldo Quintela, 75/402 - Botafogo, 22280-070 Rio de Janeiro, Brazil

---

Signature of INVENTOR: \_\_\_\_\_

Date: \_\_\_\_\_

Printed Name: Renan DA SILVA COSTA

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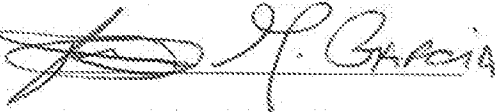
Signature of INVENTOR: \_\_\_\_\_

Date: \_\_\_\_\_

Printed Name: Otavio CAMPOS DE ARAUJO

Citizen of: BRAZIL

Address: Rua General Canabarro, 500 - 11 º Andar -Ala D -Maracana, 20271-900 Rio  
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Signature of INVENTOR: 

Date: November 5, 2020

Printed Name: Leonardo MARAZZO GARCIA

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Signature of INVENTOR: \_\_\_\_\_

Date: \_\_\_\_\_

Printed Name: Kris PERNASETTI DUNLOP

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Signature of INVENTOR: \_\_\_\_\_ Date: \_\_\_\_\_  
Printed Name: Cristiane KOSLINSKI Citizen of: BRAZIL  
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Signature of INVENTOR: \_\_\_\_\_ Date: \_\_\_\_\_  
Printed Name: Carolina BERTHOLDO DA CUNHA Citizen of: BRAZIL  
Address: Rua Terezina, 23 -Santa Teresa, 20240-310 Rio de Janeiro, Brazil

Signature of INVENTOR: \_\_\_\_\_ Date: \_\_\_\_\_  
Printed Name: Aliel FARIA RIENTE Citizen of: BRAZIL  
Address: Rua Cinco de Julho, 413 -Apto 1002 -Jardim Icarai, 24220-110 Niteroi, Brazil

Signature of INVENTOR: Antonio Carlos Ramos Junior Date: November 10, 2020  
Printed Name: Antonio Carlos RAMOS JUNIOR Citizen of: BRAZIL  
Address: Rua Mario da Costa e Souza, 135, bloco 1, Apt 1605, Barra da Tijuca, 22790-735, Rio de Janeiro, Brazil

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November 10, 2020

Signature of INVENTOR:

Date:

Printed Name:

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Signature of INVENTOR:

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Signature of INVENTOR:

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Printed Name:

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Address:

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Signature of INVENTOR:



Date:

12.03.2020

Printed Name:

Kris PERNASETTI DUNLOP

Citizen of: BRAZIL

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PATENT

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Printed Name: Renan DA SILVA COSTA Citizen of: BRAZIL  
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Signature of INVENTOR: \_\_\_\_\_ Date: \_\_\_\_\_

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Printed Name: Leonardo MARAZZO GARCIA Citizen of: BRAZIL  
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Signature of INVENTOR: \_\_\_\_\_ Date: \_\_\_\_\_

Printed Name: Kris PERNASETTI DUNLOP Citizen of: BRAZIL  
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Signature of INVENTOR: \_\_\_\_\_



Date: November 09, 2020

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Signature of INVENTOR: \_\_\_\_\_ Date: \_\_\_\_\_

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Signature of INVENTOR: \_\_\_\_\_ Date: \_\_\_\_\_

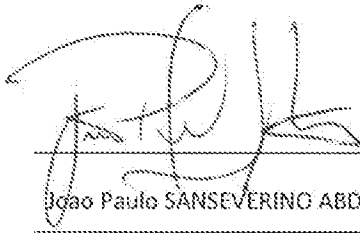
Printed Name: Joao Marcelo MUSSI BAPTISTA      Citizen of: BRAZIL  
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Signature of INVENTOR: \_\_\_\_\_ Date: \_\_\_\_\_

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Signature of INVENTOR: \_\_\_\_\_ Date: \_\_\_\_\_

Signature of INVENTOR: \_\_\_\_\_ Date: \_\_\_\_\_  
Printed Name: Jose Ricardo BRIGIDO DE MOURA Citizen of: BRAZIL  
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Address: Av. Henrique Dodsworth 85/408 -Copacabana, 22061-030 Rio de Janeiro,  
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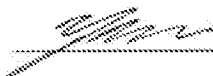
Signature of INVENTOR:  \_\_\_\_\_ Date: NOVEMBER 16, 2020  
Printed Name: Joao Paulo SANSEVERINO ABDU Citizen of: BRAZIL  
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Signature of INVENTOR: \_\_\_\_\_ Date: \_\_\_\_\_  
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Signature of INVENTOR: \_\_\_\_\_ Date: \_\_\_\_\_  
Printed Name: Jose Ricardo BRIGIDO DE MOURA Citizen of: BRAZIL  
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Signature of INVENTOR: \_\_\_\_\_ Date: \_\_\_\_\_  
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NOVEMBER 18, 2020

Signature of INVENTOR: *Giovani Ferreira Machado* Date: December, 04, 2020  
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*Giovani F. Machado*  
December, 04, 2020



Printed Name: Giovani FERREIRA MACHADO Citizen of: BRAZIL  
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Signature of INVENTOR: \_\_\_\_\_

Date: NOVEMBER 6, 2010

Printed Name: George SOUZA COSTA Citizen of: BRAZIL  
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Signature of INVENTOR: \_\_\_\_\_

Date: \_\_\_\_\_

Printed Name: Frederico FERREIRA CHAVES VAZ Citizen of: BRAZIL  
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Signature of INVENTOR: \_\_\_\_\_

Date: \_\_\_\_\_

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Address: Rua Altino Serbeto de Barros, 345/701 -Pituba, 41830-492 Salvador, Brazil

Signature of INVENTOR: \_\_\_\_\_

Date: \_\_\_\_\_

Printed Name: Cristiane KOSLINSKI Citizen of: BRAZIL

Signature of INVENTOR: \_\_\_\_\_ Date: \_\_\_\_\_  
Printed Name: Giovani FERREIRA MACHADO Citizen of: BRAZIL  
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Signature of INVENTOR: \_\_\_\_\_ Date: \_\_\_\_\_  
Printed Name: George SOUZA COSTA Citizen of: BRAZIL  
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Signature of INVENTOR: Frederico Ferreira Chaves Vaz Date: NOVEMBER 14, 2020  
Printed Name: Frederico FERREIRA CHAVES VAZ Citizen of: BRAZIL  
Address: Avenida Oswaldo Cruz 67 / 902 -Flamengo, 22250-060 Rio de Janeiro, Brazil

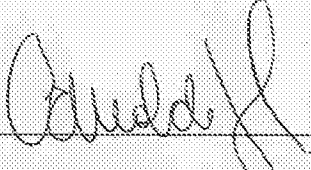
Signature of INVENTOR: \_\_\_\_\_ Date: \_\_\_\_\_  
Printed Name: Ednaldo GONCALVES DE MOURA Citizen of: BRAZIL  
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NOV 14 2020  
PATENT

Signature of INVENTOR: \_\_\_\_\_ Date: \_\_\_\_\_  
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Signature of INVENTOR: \_\_\_\_\_ Date: \_\_\_\_\_  
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Signature of INVENTOR:  \_\_\_\_\_ Date: February 9<sup>th</sup>, 2022  
Printed Name: Ednaldo GONCALVES DE MOURA Citizen of: BRAZIL  
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Printed Name: Carolina BERTHOLDO DA CUNHA Citizen of: BRAZIL

Address: Rua Terezina, 23 -Santa Teresa, 20240-310 Rio de Janeiro, Brazil

Signature of INVENTOR:

Aliel Faria Riente

Date: November 16, 2020

Printed Name: Aliel FARIA RIENTE Citizen of: BRAZIL

Address: Rua Cinco de Julho, 413 -Apto 1002 -Jardim Icarai, 24220-110 Niteroi, Brazil

Signature of INVENTOR:

Date:

Printed Name: Antonio Carlos RAMOS JUNIOR Citizen of: BRAZIL

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Date:

Printed Name: Alexandre CAMPOS MANHAES Citizen of: BRAZIL

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AM  
November 16, 2020

**PATENT**

**REEL: 054995 FRAME: 0656**

Signature of INVENTOR: Cristiane Koslinski Date: November 20, 202

Printed Name: Cristiane KOSLINSKI Citizen of: BRAZIL  
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Signature of INVENTOR: \_\_\_\_\_ Date: \_\_\_\_\_

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Signature of INVENTOR: \_\_\_\_\_ Date: \_\_\_\_\_

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Signature of INVENTOR: \_\_\_\_\_ Date: \_\_\_\_\_

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Signature of INVENTOR:

Date: NOVEMBER 28<sup>th</sup>, 2010

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Signature of INVENTOR:

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NOVEMBER 16<sup>th</sup>, 2010

PATENT