

## TRADEMARK ASSIGNMENT COVER SHEET

Electronic Version v1.1  
Stylesheet Version v1.2

ETAS ID: TM423165

<b>SUBMISSION TYPE:</b>	NEW ASSIGNMENT		
<b>NATURE OF CONVEYANCE:</b>	SECURITY INTEREST		
<b>CONVEYING PARTY DATA</b>			
<b>Name</b>	<b>Formerly</b>	<b>Execution Date</b>	<b>Entity Type</b>
MICROSEISMIC, INC.		04/07/2017	Corporation: DELAWARE
<b>RECEIVING PARTY DATA</b>			
<b>Name:</b>	SILICON VALLEY BANK		
<b>Street Address:</b>	380 Interlocken Crescent, Ste 600		
<b>City:</b>	Broomfield		
<b>State/Country:</b>	COLORADO		
<b>Postal Code:</b>	80021		
<b>Entity Type:</b>	Corporation: CALIFORNIA		
<b>PROPERTY NUMBERS Total: 16</b>			
<b>Property Type</b>	<b>Number</b>	<b>Word Mark</b>	
<b>Registration Number:</b>	2985317	PSET	
<b>Registration Number:</b>	3251416	FRACSTAR	
<b>Registration Number:</b>	3992602	WE LISTEN	
<b>Registration Number:</b>	3992593	THE UNCONVENTIONAL SEISMIC RESOURCE	
<b>Registration Number:</b>	4059227	MICROSEISMIC PASSIVE MONITORING, ACTIVE	
<b>Registration Number:</b>	4156422	MICROSEISMIC	
<b>Registration Number:</b>	4340117	MICROSEISMIC	
<b>Registration Number:</b>	4622664	BURIEDARRAY	
<b>Registration Number:</b>	4629378	EVENTPICK	
<b>Registration Number:</b>	4629377	PRODUCTIVE-SRV	
<b>Registration Number:</b>	4645002	FRACSTAR	
<b>Registration Number:</b>	4692940	FAT FRACTURE	
<b>Registration Number:</b>	4933226	FRACRX	
<b>Registration Number:</b>	4933227	PERMINDEX	
<b>Serial Number:</b>	86904870	DINDEX	
<b>Serial Number:</b>	86904883	PINDEX	
<b>CORRESPONDENCE DATA</b>			
<b>Fax Number:</b>	8004947512		
<i>Correspondence will be sent to the e-mail address first; if that is unsuccessful, it will be sent</i>			
<b>TRADEMARK</b>			

OP \$415.00 2985317

*using a fax number, if provided; if that is unsuccessful, it will be sent via US Mail.*

**Phone:** 202-370-4750  
**Email:** ipteam@nationalcorp.com  
**Correspondent Name:** Darlena Bari Stark  
**Address Line 1:** 1025 Vermont Ave NW, Suite 1130  
**Address Line 2:** National Corporate Research, Ltd.  
**Address Line 4:** Washington, D.C. 20005

<b>ATTORNEY DOCKET NUMBER:</b>	F169512
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<b>NAME OF SUBMITTER:</b>	Janet S. Wamsley
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<b>SIGNATURE:</b>	/Janet S. Wamsley/
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<b>DATE SIGNED:</b>	04/10/2017
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**Total Attachments: 11**

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## INTELLECTUAL PROPERTY SECURITY AGREEMENT

This Intellectual Property Security Agreement (this "Agreement") is entered into as of April 7, 2017 by and between **SILICON VALLEY BANK**, a California corporation, with a loan production office located at 380 Interlocken Crescent, Suite 600, Broomfield, Colorado 80021 ("Bank") and **MICROSEISMIC, INC.**, a Delaware corporation, with its principal place of business located at 10777 Westheimer Road, Suite 500, Houston, Texas 77402 ("Grantor").

### RECITALS

A. Bank has agreed to make certain advances of money and to extend certain financial accommodations to Grantor (the "Loans") in the amounts and manner set forth in that certain Loan and Security Agreement by and between Bank and Grantor dated as of the date hereof (as the same may be amended, modified or supplemented from time to time, the "Loan Agreement"; capitalized terms used herein are used as defined in the Loan Agreement). Bank is willing to make the Loans to Grantor, but only upon the condition, among others, that Grantor shall grant to Bank a security interest in its Copyrights, Trademarks, Patents, and Mask Works (as each term is described below) to secure the obligations of Grantor to Bank.

B. Pursuant to the terms of the Loan Agreement, Grantor has granted to Bank a security interest in all of Grantor's right, title and interest, whether presently existing or hereafter acquired, in, to and under all of the Collateral.

NOW, THEREFORE, for good and valuable consideration, receipt of which is hereby acknowledged, and intending to be legally bound, as collateral security for the prompt and complete payment when due of Grantor's obligations to Bank, Grantor hereby represents, warrants, covenants and agrees as follows:

### AGREEMENT

1. Grant of Security Interest. To secure Grantor's obligations to Bank, Grantor grants and pledges to Bank a security interest in all of Grantor's right, title and interest in, to and under its intellectual property (all of which shall collectively be called the "Intellectual Property Collateral"), including, without limitation, the following:

(a) Any and all copyright rights, copyright applications, copyright registrations and like protections in each work of authorship and derivative work thereof, whether published or unpublished and whether or not the same also constitutes a trade secret, now or hereafter existing, created, acquired or held, including without limitation those set forth on Exhibit A attached hereto (collectively, the "Copyrights");

(b) Any and all trade secrets, and any and all intellectual property rights in computer software and computer software products now or hereafter existing, created, acquired or held;

(c) Any and all design rights that may be available to Grantor now or hereafter existing, created, acquired or held;

(d) All patents, patent applications and like protections including, without limitation, improvements, divisions, continuations, renewals, reissues, extensions and continuations-in-part of the

same, including without limitation the patents and patent applications set forth on Exhibit B attached hereto (collectively, the "Patents");

(e) Any trademark and servicemark rights, whether registered or not, applications to register and registrations of the same and like protections, and the entire goodwill of the business of Grantor connected with and symbolized by such trademarks, including without limitation those set forth on Exhibit C attached hereto, but excluding any "intent to use" trademarks at all times prior to the first use thereof, whether by the actual use thereof in commerce, the recording of a statement of use with the United States Patent and Trademark Office or otherwise, but only to the extent the granting of a security interest in such "intent-to-use" trademarks would be contrary to applicable law (collectively, the "Trademarks");

(f) All mask works or similar rights available for the protection of semiconductor chips, now owned or hereafter acquired, including, without limitation those set forth on Exhibit D attached hereto (collectively, the "Mask Works");

(g) Any and all claims for damages by way of past, present and future infringements of any of the rights included above, with the right, but not the obligation, to sue for and collect such damages for said use or infringement of the intellectual property rights identified above;

(h) All licenses or other rights to use any of the Copyrights, Patents, Trademarks, or Mask Works and all license fees and royalties arising from such use to the extent permitted by such license or rights;

(i) All amendments, extensions, renewals and extensions of any of the Copyrights, Trademarks, Patents, or Mask Works; and

(j) All proceeds and products of the foregoing, including without limitation all payments under insurance or any indemnity or warranty payable in respect of any of the foregoing.

2. Recordation. Grantor authorizes the Commissioner for Patents, the Commissioner for Trademarks and the Register of Copyrights and any other government officials to record and register this Agreement upon request by Bank.

3. Authorization. Grantor hereby authorizes Bank to (a) modify this Agreement unilaterally by amending the exhibits to this Agreement to include any Intellectual Property Collateral which Grantor obtains subsequent to the date of this Agreement, and (b) file a duplicate original of this Agreement containing amended exhibits reflecting such new Intellectual Property Collateral.

4. Loan Documents. This Agreement has been entered into pursuant to and in conjunction with the Loan Agreement, which is hereby incorporated by reference. The provisions of the Loan Agreement shall supersede and control over any conflicting or inconsistent provision herein. The rights and remedies of Bank with respect to the Intellectual Property Collateral are as provided by the Loan Agreement and related documents, and nothing in this Agreement shall be deemed to limit such rights and remedies.

5. Execution in Counterparts. This Agreement may be executed in counterparts (and by different parties hereto in different counterparts), each of which shall constitute an original, but all of which when taken together shall constitute a single contract. Delivery of an executed counterpart of a signature page to this Agreement by facsimile or in electronic (i.e., "pdf" or "tif" format) shall be effective as delivery of a manually executed counterpart of this Agreement.

6. Successors and Assigns. This Agreement will be binding on and shall inure to the benefit of the parties hereto and their respective successors and assigns.

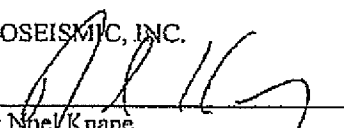
7. Governing Law. This Agreement and any claim, controversy, dispute or cause of action (whether in contract or tort or otherwise) based upon, arising out of or relating to this Agreement and the transactions contemplated hereby and thereby shall be governed by, and construed in accordance with, the laws of the United States and the State of California, without giving effect to any choice or conflict of law provision or rule (whether of the State of California or any other jurisdiction).

[Signature page follows.]

IN WITNESS WHEREOF, the parties have caused this Intellectual Property Security Agreement to be duly executed by its officers thereunto duly authorized as of the first date written above.

GRANTOR:

MICROSEISMIC, INC.

By: 

Name: Noel Klape

Title: Vice President and Corporate Controller

BANK:

SILICON VALLEY BANK

By: \_\_\_\_\_

Name: \_\_\_\_\_

Title: \_\_\_\_\_

[Signature Page to Intellectual Property Security Agreement]

IN WITNESS WHEREOF, the parties have caused this Intellectual Property Security Agreement to be duly executed by its officers thereunto duly authorized as of the first date written above.

GRANTOR:

MICROSEISMIC, INC.

By: \_\_\_\_\_

Title: \_\_\_\_\_

BANK:

SILICON VALLEY BANK

By: KT D

Title: Vice President

EXHIBIT A

Copyrights

None.



EXHIBIT B

Patents

<u>Description</u>	<u>Registration/ Application Number</u>	<u>Registration/ Application Date</u>	<u>Jurisdiction</u>
Method for passive seismic emission tomography	7663970	2/16/2010	United States
Method for passive seismic emission tomography including polarization correction for source mechanism	7978563	7/12/2011	United States
Method for imaging the earth's subsurface using passive seismic sensing	7986587	7/26/2011	United States
Method for passive seismic emission tomography using adaptive velocity filter	8064288	11/22/2011	United States
Method for imaging the earth's subsurface using passive seismic interferometry and adaptive velocity filtering	8218394	7/10/2012	United States
Method for calculating spatial and temporal distribution of the Gutenberg-Richter parameter for induced subsurface seismic events and its application to evaluation of subsurface formations	8681583	3/25/2014	United States
Passive seismic data acquisition and processing using multi-level sensor arrays	8705316	4/22/2014	United States
Method for determining discrete fracture networks from passive seismic signals and its application to subsurface reservoir simulation	8902710	12/2/2014	United States
Method for determining fracture plane orientation using passive seismic signals	8960280	2/24/2015	United States
Method for determining fracture network volume using passive seismic signals	9158021	10/13/2015	United States
Method for detection of subsurface seismic events in vertically transversely isotropic media	9513395	12/6/2016	United States
METHOD FOR COMPUTING UNCERTAINTIES IN PARAMETERS ESTIMATED FROM BEAMFORMED MICROSEISMIC SURVEY DATA	14/219388	3/19/2014	United States
METHOD FOR MICROSEISMIC EVENT MOMENT MAGNITUDE ESTIMATION	14/176165	2/10/2014	United States

METHOD FOR DETERMINING AGGREGATE FRACTURE PROPERTIES FOR EVALUATION OF FRACTURE PROCEDURES	14/246290	4/7/2014	United States
DETERMINING STIMULATED RESERVOIR VOLUME FROM PASSIVE SEISMIC MONITORING	14/784035	4/28/2014	United States
Method for imaging the earth's subsurface using passive seismic sensing	2009225748	8/11/2011	Australia
Method for passive seismic emission tomography	2007296591	8/30/2012	Australia
Method for imaging the earth's subsurface using passive seismic sensing	2009342617	3/14/2013	Australia
Method for synchronizing seismic data recorded by two or more separate recording systems	2010303399	4/4/2013	Australia
Method for passive seismic emission tomography including polarization correction for source mechanism	2010284553	7/25/2013	Australia
Passive seismic data acquisition and processing using multi-level sensor arrays	2011238747	3/27/2014	Australia
Method for determining discrete fracture networks from passive seismic signals and its application to subsurface reservoir simulation	2010363963	12/4/2014	Australia
Method for detection of subsurface seismic events in vertically transversely isotropic media	2011296498	12/11/2014	Australia
Method for determining fracture plane orientation using passive seismic signals	2014209708	12/3/2015	Australia
Method for determining fracture network volume using passive seismic signals	2014212886	12/3/2015	Australia
Method for passive seismic emission tomography including polarization correction for source mechanism	2770983	4/16/2013	Canada
Method for passive seismic emission tomography	2663497	4/8/2014	Canada
Method for imaging the earth's subsurface using passive seismic sensing	2718917	4/29/2014	Canada
Passive seismic data acquisition and processing using multi-level sensor arrays	2794434	2/24/2015	Canada
Determining stimulated reservoir volume from passive seismic monitoring	2911378	3/1/2016	Canada
Method for detection of subsurface seismic events in vertically transversely isotropic	2808173	7/19/2016	Canada

media			
Method for determining fracture plane orientation using passive seismic signals	2897052	1/11/2016	Canada
Method for detection of subsurface seismic events in vertically transversely isotropic media	201180041977.2	11/25/2015	China
Passive seismic data acquisition and processing using multi-level sensor arrays	201180016902.9	5/25/2016	China
Method for passive seismic emission tomography including polarization correction for source mechanism	2467735	7/24/2013	Europe
Passive seismic data acquisition and processing using multi-level sensor arrays	2556391	4/22/2015	Europe
Passive seismic data acquisition and processing using multi-level sensor arrays (same info as the European patent but separate certificate with same number)	2556391	4/22/2015	Norway
Method for microseismic event moment magnitude estimation	2938441	7/29/2016	Canada
Method for determining fracture network volume using passive seismic signals	2898192	9/8/2015	Canada
Method for using semblance of corrected amplitudes due to source mechanisms for microseismic event detection and location	2944594	9/29/2016	Canada
Method for determining aggregate fracture properties for evaluation of fracture procedures	2944341	9/29/2016	Canada
Method for determining fracture proppant spatial distribution using passive seismic signals	2919566	2/2/2016	Canada
Method for computing uncertainties in parameters estimated from beamformed microseismic survey data	2910109	10/22/2015	Canada
Method for determining discrete fracture networks from passive seismic signals and its application to subsurface reservoir simulation	2780534	3/28/2013	Canada
Method for imaging the earth's subsurface using passive seismic sensing	2746344	6/9/2011	Canada

EXHIBIT C

Trademarks

<u>Description</u>	<u>Registration/ Application Number</u>	<u>Registration/ Application Date</u>	<u>Jurisdiction</u>
PSET	2985317	8/16/2005	United States
FRACSTAR	3251416	6/12/2007	United States
WE LISTEN	3992602	7/12/2011	United States
THE UNCONVENTIONAL SEISMIC RESOURCE	3992593	7/12/2011	United States
MICROSEISMIC PASSIVE MONITORING, ACTIVE LISTENING	4059227	11/22/2011	United States
MICROSEISMIC	4156422	6/12/2012	United States
MICROSEISMIC	4340117	5/21/2013	United States
BURIEDARRAY	4622664	10/14/2014	United States
EVENTPICK	4629378	10/28/2014	United States
PRODUCTIVE-SRV	4629377	10/28/2014	United States
FRACSTAR	4645002	11/25/2014	United States
FAT FRACTURE	4692940	2/24/2015	United States
FRACRX	4933226	4/5/2016	United States
PERMINDEX	4933227	4/5/2016	United States
DINDEX	Serial 86904870	7/5/2016	United States
PIINDEX	Serial 86904883	7/5/2016	United States
WE LISTEN	TMA842178	2/4/2013	Canada
MicroSeismic & Design	TMA842177	2/4/2013	Canada
Fat Fracture	TMA887249	10/1/2014	Canada
EventPick	TMA887252	10/1/2014	Canada
BuriedArray	TMA887251	10/1/2014	Canada
Productive-SRV	TMA909052	7/21/2015	Canada
FRACSTAR	TMA913348	9/8/2015	Canada
PermIndex	TMA918074	10/23/2015	Canada
PIINDEX	1795305	8/10/2016	Canada
FracRx	1687580	5/19/2015	Canada

EXHIBIT D

Mask Works

None

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