

## TRADEMARK ASSIGNMENT COVER SHEET

Electronic Version v1.1  
Stylesheet Version v1.2

ETAS ID: TM341995

<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.		05/12/2015	CORPORATION: DELAWARE
<b>RECEIVING PARTY DATA</b>			
<b>Name:</b>	PNC Bank, National Association, as Agent		
<b>Street Address:</b>	2100 Ross Avenue, Suite 1850		
<b>City:</b>	Dallas		
<b>State/Country:</b>	TEXAS		
<b>Postal Code:</b>	75201		
<b>Entity Type:</b>	National Bank: UNITED STATES		
<b>PROPERTY NUMBERS Total: 13</b>			
<b>Property Type</b>	<b>Number</b>	<b>Word Mark</b>	
<b>Registration Number:</b>	4059227	MICROSEISMIC PASSIVE MONITORING, ACTIVE	
<b>Registration Number:</b>	3992602	WE LISTEN	
<b>Registration Number:</b>	3992593	THE UNCONVENTIONAL SEISMIC RESOURCE	
<b>Registration Number:</b>	4156422	MICROSEISMIC	
<b>Registration Number:</b>	4340117	MICROSEISMIC	
<b>Registration Number:</b>	3251416	FRACSTAR	
<b>Registration Number:</b>	2985317	PSET	
<b>Registration Number:</b>	4692940	FAT FRACTURE	
<b>Registration Number:</b>	4629378	EVENTPICK	
<b>Registration Number:</b>	4629377	PRODUCTIVE-SRV	
<b>Registration Number:</b>	4622664	BURIEDARRAY	
<b>Registration Number:</b>	3930326	GLOBAL MICROSEISMIC SERVICES	
<b>Registration Number:</b>	4645002	FRACSTAR	
<b>CORRESPONDENCE DATA</b>			
<b>Fax Number:</b>	2149649501		
<i>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.</i>			
<b>Phone:</b>	214.964.9427		
<b>Email:</b>	tatyana.rozenberg@hklaw.com		

OP \$340.00 4059227

**Correspondent Name:** Tatyana Rozenberg  
**Address Line 1:** Holland & Knight LLP  
**Address Line 2:** 200 Crescent Court, Suite 1600  
**Address Line 4:** Dallas, TEXAS 75201

**ATTORNEY DOCKET NUMBER:** 57833-18 (PNC)

**NAME OF SUBMITTER:** Tatyana Rozenberg

**SIGNATURE:** /Tatyana Rozenberg/

**DATE SIGNED:** 05/20/2015

**Total Attachments: 10**

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**SECOND AMENDED AND RESTATED  
INTELLECTUAL PROPERTY SECURITY AGREEMENT**

This SECOND AMENDED AND RESTATED INTELLECTUAL PROPERTY SECURITY AGREEMENT (as amended, restated, amended and restated, modified, supplemented, extended, joined and/or restated from time to time, the “IP Security Agreement”) dated as of May 12, 2015, is made by the Persons listed on the signature page hereof (individually, each a “Grantor” and collectively, jointly and severally, the “Grantors”) in favor of PNC Bank, National Association, as a lender and as Agent for the Lenders party from time to time to the Credit Agreement referred to below (together with its successors and assigns in such capacity, “Agent”).

WHEREAS, Microseismic, Inc., a Delaware corporation (“Microseismic”) and Microseismic (Canada) ULC, a Canadian corporation (“Microseismic Canada”; and together with Microseismic, individually, each a “Borrower” and collectively, jointly and severally, the “Borrowers”), have entered into a Revolving Credit, Term Loan, Capital Expenditures Loan and Security Agreement, dated as of February 26, 2013, with Agent and the Lenders party thereto (as amended, restated, amended and restated, modified, supplemented, extended, joined and/or restated from time to time, the “Credit Agreement”). Capitalized terms used but not defined herein shall have the meanings specified in the Credit Agreement.

WHEREAS, under the terms of the Credit Agreement and the Other Documents, each Grantor has granted to Agent, for the benefit of the Lenders, a security interest in, among other property, all Intellectual Property of such Grantor, and has agreed as a condition thereof to execute this IP Security Agreement for recording with the United States Patent and Trademark Office, the United States Copyright Office and other Governmental Bodies.

NOW, THEREFORE, for good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, each Grantor hereby agrees as follows:

SECTION 1. **Definitions.** The following terms have the meanings set forth below:

(a) “Copyrights” means all of the following now owned or hereafter adopted or acquired by any Grantor: (i) all copyrights (whether statutory or common law, whether established or registered in the United States or any other country or political subdivision thereof, whether registered or unregistered and whether published or unpublished), rights and interests in copyrights, works protectable by copyright, and general intangibles of like nature, all registrations and recordings thereof, and all applications in connection therewith, including all registrations, recordings, and applications in the United States Copyright Office or in any similar office or agency of the United States, any state or territory thereof, or any other country or any political subdivision thereof and all research and development relating to the foregoing, (ii) all reissues, extensions, continuations, and renewals thereof and amendments thereto, (iii) income, fees, royalties, damages, claims, and payments now or hereafter due and/or payable with respect thereto, including damages and payments for past, present and future infringements thereof, (iv) rights corresponding thereto throughout the world and (v) rights to sue for past, present, and future infringements thereof.

(b) “Copyright License” means any and all rights now owned or hereafter acquired by any Grantor under any written or oral agreement granting any right to use any Copyright or Copyright registration, in each case to the extent assignable by such Grantor; provided, that, Grantor has identified on Schedule C attached hereto whether or not any of Grantor’s Copyrights or Copyright registrations are not assignable.

(c) “Patents” shall mean one or all of the following now or hereafter owned by any Grantor or in which any Grantor now has or hereafter acquires any rights: (i) all letters patent of the United States or any other country, all registrations, and recordings thereof, and all applications for letters patent of the United States or any other country, (ii) all reissues, continuations, continuations-in-part, divisions, reexaminations, or extensions of any of the foregoing and (iii) all inventions disclosed in and claimed in the Patents and any and all trade secrets and know-how related thereto.

(d) “Patent License” shall mean all of the following now owned or hereafter acquired by any Grantor or in which any Grantor now has or hereafter acquires any rights: to the extent assignable by a Grantor, any written agreement granting any right to make, use, sell, and/or practice any invention or discovery that is the subject matter of a Patent, in each case to the extent assignable by such Grantor; provided, that, Grantor has identified on Schedule A attached hereto whether or not any of Grantor’s Patents or Patent registrations are not assignable.

(e) “Trademarks” shall mean one or all of the following now owned or hereafter acquired by any Grantor or in which any Grantor now has or hereafter acquires any rights: (i) all trademarks (whether registered or unregistered), trade names, corporate names, business names, trade styles, service marks, logos, other source or business identifiers, prints, and labels on which any of the foregoing have appeared or appear, designs and general intangibles of like nature, now existing or hereafter adopted or acquired, all registrations and recordings thereof, and all applications in connection therewith, including, without limitation, registrations, recordings, and applications in the United States Patent and Trademark Office or in any similar office or agency of any State of the United States or any other country or any political subdivision thereof, (ii) all reissues, extensions, or renewals thereof and (iii) the goodwill associated with or symbolized by any of the foregoing.

(f) “Trademark License” shall mean all of the following now owned or hereafter acquired by any Grantor or in which any Grantor now has or hereafter acquires any rights: any written agreement granting any right to use any Trademark or Trademark registration, in each case to the extent assignable by such Grantor; provided, that, Grantor has identified on Schedule B attached hereto whether or not any of Grantor’s Trademarks or Trademark registrations are not assignable.

**SECTION 2. Grant of Security.** Each Grantor hereby grants to Agent, for the benefit of the Lenders, a security interest in all of such Grantor’s right, title, and interest in and to the following (the “Collateral”):

(i) all of its Patents and all Patent Licenses to which it is a party, including, but not limited to, those set forth on Schedule A hereto;

(ii) all of its Trademarks and all Trademark Licenses to which it is a party, including, but not limited to, those set forth on Schedule B hereto, together with all goodwill of the business connected with the use of, and symbolized by, each Trademark and each Trademark License;

(iii) all of its Copyrights and all Copyright Licenses to which it is a party, including, but not limited to, those set forth on Schedule C hereto;

(iv) all reissues, divisions, continuations, continuations-in-part, extensions, renewals, and reexaminations of any of the foregoing, all rights in the foregoing provided by international treaties or conventions, all rights corresponding thereto throughout the world and all other rights of any kind whatsoever of such Grantor accruing thereunder or pertaining thereto;

(v) any and all claims for damages and injunctive relief for past, present, and future infringement, dilution, misappropriation, violation, misuse, breach, or injury with respect to any of the foregoing, with the right, but not the obligation, to sue for and collect, or otherwise recover, such damages; and

(vi) any and all products and proceeds of, collateral for, income, royalties, and other payments now or hereafter due and payable with respect to, and supporting obligations relating to, any and all of the Collateral of or arising from any of the foregoing.

**SECTION 3. Security for Obligations.** The grant of a security interest in the Collateral by each Grantor under this IP Security Agreement secures the prompt and complete payment and performance when due of all of the Obligations, whether direct or indirect, now existing or hereafter arising, absolute or contingent, and whether for principal, reimbursement obligations, interest, premiums, penalties, fees, guarantee obligations, indemnifications, contract causes of action, costs, expenses, or otherwise.

**SECTION 4. Recordation.** Each Grantor authorizes and requests that the Register of Copyrights, the Commissioner for Patents, the Commissioner for Trademarks and any other applicable Governmental Body record this IP Security Agreement.

**SECTION 5. Execution in Counterparts.** This IP Security Agreement may be executed in any number of counterparts, each of which when so executed shall be deemed to be an original and all of which taken together shall constitute one and the same agreement.

**SECTION 6. Grants, Rights and Remedies.** This IP Security Agreement has been entered into in conjunction with the provisions of the Credit Agreement. Each Grantor does hereby acknowledge and confirm that the grant of the security interest hereunder to, and the rights and remedies of, Agent with respect to the Collateral are more fully set forth in the Credit Agreement, the terms and provisions of which are incorporated herein by reference as if fully set forth herein.

**SECTION 7. Governing Law.** This IP Security Agreement shall be governed by, and construed and interpreted in accordance with the internal laws of the State of New York without

giving effect to the conflict of laws principles (other than section 5-1401 and 5-1402 of the New York general obligations law).

SECTION 8. **Amendment and Restatement.** This IP Security Agreement amends and restates (but does not constitute an extinguishment or novation of) that certain Intellectual Property Security Agreement dated February 26, 2013 by the Grantors listed thereon in favor of Agent for the Lenders.

*[Remainder of page intentionally left blank]*

IN WITNESS WHEREOF, each Grantor has caused this IP Security Agreement to be duly executed and delivered by its officer thereunto duly authorized as of the date first above written.

**GRANTORS**

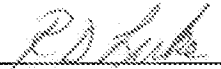
**MICROSEISMIC, INC.**, a Delaware corporation

By: 

Name: Rick Luke

Title: Chief Financial Officer

**MICROSEISMIC (CANADA) ULC.**, a Canadian corporation

By: 

Name: Rick Luke

Title: Chief Financial Officer

ACKNOWLEDGMENT

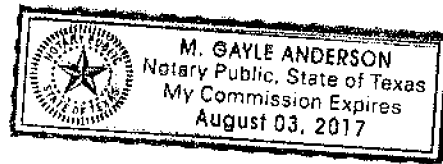
STATE OF TEXAS :  
 : SS  
COUNTY OF HARRIS :

Before me, the undersigned, a Notary Public, on this 12 day of May 2015, personally appeared Rick Luke, to me known personally, who, being by me duly sworn, did say that he is the Chief Financial Officer of each of Microseismic, Inc. and Microseismic (Canada) ULC, each as a Grantor, and that said Intellectual Property Security Agreement was signed on behalf of each such Grantor, by authority of its board of directors or analogous body, and the said Rick Luke acknowledged said instrument to be he free act and deed.

(SEAL)

Notary Public  
My Commission Expires: 8/3/17

M. Gayle Anderson





## SCHEDULE A

### PATENTS AND PATENT LICENSES

SERIAL NO.	FILING DATE	PUBL. NO.	PUBL. DATE	PATENT NO.	ISSUE DATE
11/522,183	09/15/2006	2008/0068928	03/20/2008	7,663,970	02/16/2010
12/485,081	06/16/2009	2010/0315902	12/16/2010	8,218,394	07/10/2012
12/485,084	06/16/2009	2010/0315903	12/16/2010	8,064,288	11/22/2011
12/051,962	03/20/2008	2009/0238040	09/24/2009	7,986,587	07/26/2011
12/542,784	08/18/2009	2011/0044131	02/24/2011	7,978,563	07/12/2011
12/017,010	01/19/2008	2009/0185448	07/23/2009	8,902,710	12/2/2014
12/127,205	05/27/2008	2009/0296525	12/03/2009	ABANDONED	N/A
12/407,894	03/20/2009	2010/0238765	09/23/2010	ABANDONED	N/A
12/576,589	10/09/2009	2011/0085415	04/14/2011	ABANDONED	N/A
12/615,783	11/10/2009	2011/0110191	05/12/2011	N/A	N/A
12/753,919	04/05/2010	2011/0242934	10/06/2011	8,705,316	4/22/2014
12/784,740	05/21/2010	2011/0286306	11/24/2011	N/A	N/A
12/870,906	08/30/2010	2012/0051178	03/01/2012	N/A	N/A
13/211,496	8/17/2011	2013-0044567	2/21/2013	8,681,583	3/25/2014
13/747,682	1/23/2013	2014/0202688	7/24/2014	8,960,280	2/24/2015
14/219,388	3/19/2014	20140288835	9/25/2014	N/A	N/A
13/757,209	2/1/2013	20140216729	8/7/2014	N/A	N/A
13/747,682	1/23/2013	20140202688	7/24/2014	8,960,280	02/04/2015
CA 2794434	03/24/2011	CA 2794434	10/13/2011	N/A	N/A
US2011/029720	03/24/2011	WO2011/126753	10/13/2011	N/A	N/A
AU2011238747	03/24/2011	AU2011238747	10/14/2012	N/A	N/A
US2011/46989	08/09/2011	WO2012/030486	03/08/2012	N/A	N/A
US2011/35282	05/21/2010	WO2011/146246	11/24/2011	N/A	N/A
US2010/55802	01/08/2010	WO2012/078128	06/14/2012	N/A	N/A
EP20100859881	01/08/2010	EP 2499518	09/19/2012	N/A	N/A
CA 2780534	01/08/2010	CA 2780534	06/14/2012	N/A	N/A
AU2010363963	01/08/2010	AU2010363963	08/16/2012	N/A	N/A
US2010/51808	10/07/2010	WO2011/044352	04/14/2011	N/A	N/A
EP20100818082	10/07/2010	EP 2486428	08/15/2012	N/A	N/A
CA 2777296	10/07/2010	CA 2777296	04/14/2011	N/A	N/A
AU2010303399	10/07/2010	AU2010303399	05/24/2012	AU2010303399	12/20/2012
US2010/44183	08/03/2010	WO2011/022198	02/24/2011	N/A	N/A
EP20100757498	08/03/2010	EP2467735	06/27/2012	N/A	N/A
CA 2770983	08/03/2010	CA 2770983	02/24/2011	CA 2770983	4/16/2013
AU2010284553	08/03/2010	AU2010284553	03/15/2012	N/A	N/A
US2009/37220	03/16/2009	WO2009/117336	09/24/2009	N/A	N/A
EP20090722802	03/16/2009	EP 2255222	12/01/2010	N/A	N/A
CA 2718917	03/16/2009	CA 2718917	09/24/2009	CA 2718917	4/29/2014
AU2009225748	03/16/2009	AU2009225748	09/24/2009	AU2009225748	04/28/2011
US2009/37218	03/16/2009	WO2010/107421	09/23/2010	N/A	N/A
EP20090841996	03/16/2009	EP 2409179	01/25/2012	N/A	N/A
CA 2746344	03/16/2009	CA 2746344	09/23/2010	N/A	N/A
AU2009342617	03/16/2009	AU2009342617	09/23/2010	AU2009342617	11/29/2012
US2007/78100	09/11/2007	WO2008/033797	03/20/2008	N/A	N/A
EP20070842204	09/11/2007	EP 2054739	05/06/2009	N/A	N/A
CA 2663497	09/11/2007	CA 2663497	03/20/2008	CA 2663497	4/8/2014
AU2007296591	09/11/2007	AU2007296591	03/20/2008	AU2007296591	05/17/2012
CA 2808173	08/09/2011	CA 2808173	03/08/2012	N/A	N/A

SERIAL NO.	FILING DATE	PUBL. NO.	PUBL. DATE	PATENT NO.	ISSUE DATE
EP11760892	08/09/2011	EP2612171	07/10/2013	N/A	N/A
EP11714170	04/05/2010	EP2556391	02/13/2013	N/A	N/A
201180016902.9	03/24/2011	CN102985850 (A)	03/20/2013	N/A	N/A
US2013/61803813	03/21/2013	N/A	N/A	N/A	N/A
US2013/61820748	05/08/2013	N/A	N/A	N/A	N/A
AU2011296498	8/9/2011	N/A	N/A	AU2011296498	12/11/2014

**SCHEDULE B**

**TRADEMARKS AND TRADEMARK LICENSES**

WORD MARK	COUNTRY	SERIAL NO	FILING DATE	REG. NO.	REG. DATE
MICROSEISMIC PASSIVE MONITORING, ACTIVE LISTENING 	U.S.	85/258,488	03/04/2011	4059227	11/22/2011
MICROSEISMIC PASSIVE MONITORING, ACTIVE LISTENING 	Canada	1532351	06/17/2011	TMA842177	02/04/2013
WE LISTEN	U.S.	85/129,483	09/14/2010	3992602	07/12/2011
WE LISTEN	Canada	1532347	06/17/2011	TMA842178	02/04/2013
THE UNCONVENTIONAL SEISMIC RESOURCE	U.S.	85/127,893	09/13/2010	3992593	07/12/2011
MICROSEISMIC 	U.S.	85/127,887	09/13/2010	4156422	06/12/2012
MICROSEISMIC	U.S.	85/127,884	09/13/2010	4340117	03/15/2013
FRACSTAR	U.S.	78/921,909	07/03/2006	3251416	06/12/2007
PSET	U.S.	78/423,411	05/22/2004	2985317	08/16/2005
FAT FRACTURE	U.S.	85/901,750	04/11/2013	4692940	2/24/2015
FAT FRACTURE	Canada	1633589	07/02/2013	887249	10/01/2014
EVENTPICK	U.S.	85/901,743	04/11/2013	4629378	10/28/2014
EVENTPICK	Canada	1633586	07/02/2013	887252	10/01/2014
PRODUCTIVE-SRV	U.S.	85/901,733	04/11/2013	4629377	10/28/2014
PRODUCTIVE-SRV	Canada	1633587	07/02/2013	N/A	N/A
BURIEDARRAY	U.S.	85/901,753	04/11/2013	4622664	10/14/2014
BURIEDARRAY	Canada	1633584	07/02/2013	887251	10/01/2014
GLOBAL MICROSEISMIC SERVICES	U.S.	85/133,318	09/20/2010	3930326	03/08/2011
PERMINDEX	U.S.	86350444	7/28/2014	N/A	N/A
PERMINDEX	Canada	1687581	7/30/2014	N/A	N/A
FRACRX	U.S.	86350437	7/28/2014	N/A	N/A
FRACRX	Canada	1687580	7/30/2014	N/A	N/A
FRACSTAR	U.S.	86258318	9/9/2014	4645002	11/25/2014
FRACSTAR	Canada	1694377	9/18/2014	N/A	N/A

**SCHEDULE C**

**COPYRIGHTS AND COPYRIGHT LICENSES**

None.