

PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1
 Stylesheet Version v1.2

EPAS ID: PAT5112016

SUBMISSION TYPE:	NEW ASSIGNMENT
NATURE OF CONVEYANCE:	SECURITY INTEREST

CONVEYING PARTY DATA

Name	Execution Date
COVIA HOLDINGS CORPORATION	06/01/2018
FAIMOUNT SANTROL INC.	06/01/2018
TECHNISAND, INC.	06/01/2018
SELF-SUSPENDING PROPPANT LLC	06/01/2018

RECEIVING PARTY DATA

Name:	BARCLAYS BANK PLC, AS COLLATERAL AGENT
Street Address:	745 SEVENTH AVENUE
City:	NEW YORK
State/Country:	NEW YORK
Postal Code:	10019

PROPERTY NUMBERS Total: 70

Property Type	Number
Patent Number:	6114410
Patent Number:	6328105
Patent Number:	7490667
Patent Number:	7244492
Patent Number:	7049272
Patent Number:	7135231
Patent Number:	8852682
Patent Number:	7647964
Patent Number:	7763316
Patent Number:	8754147
Patent Number:	8697185
Patent Number:	7275643
Patent Number:	9845427
Patent Number:	9845428
Patent Number:	9315721
Patent Number:	9796916
Patent Number:	9297244

PATENT

Property Type	Number
Patent Number:	9644139
Patent Number:	9868896
Patent Number:	9932521
Patent Number:	9845429
Patent Number:	7757976
Patent Number:	7942351
Patent Number:	8070080
Patent Number:	8304360
Patent Number:	7785555
Patent Number:	9034096
Patent Number:	7915188
Patent Number:	8864900
Patent Number:	8097078
Patent Number:	8182601
Patent Number:	8795427
Patent Number:	9266115
Patent Number:	7498377
Patent Number:	7837783
Patent Number:	7618488
Patent Number:	7618487
Patent Number:	8022019
Patent Number:	8235313
Patent Number:	8464969
Patent Number:	8858699
Patent Number:	7582157
Patent Number:	7104403
Patent Number:	9085671
Application Number:	15228189
Application Number:	15834214
Application Number:	15721983
Application Number:	15834255
Application Number:	15091987
Application Number:	15774644
Application Number:	15774669
Application Number:	15595722
Application Number:	15782066
Application Number:	15782922
Application Number:	15708957

Property Type	Number
Application Number:	15919399
Application Number:	62526614
Application Number:	15952459
Application Number:	62587996
Application Number:	15136371
Application Number:	15943645
Application Number:	15090987
Application Number:	15091034
Application Number:	15232912
Application Number:	62206524
Application Number:	15671355
Application Number:	15833478
Application Number:	62512401
Application Number:	15907335
Application Number:	62595285

CORRESPONDENCE DATA

Fax Number: (650)251-5002

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: (650) 251-5106

Email: jnull@stblaw.com

Correspondent Name: AMBER HAREZLAK

Address Line 1: 2475 HANOVER STREET

Address Line 4: PALO ALTO, CALIFORNIA 94304

ATTORNEY DOCKET NUMBER:	008275/0078
NAME OF SUBMITTER:	J. JASON MULL
SIGNATURE:	/J. Jason Mull/
DATE SIGNED:	08/27/2018

Total Attachments: 12

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PATENT SECURITY AGREEMENT

This **PATENT SECURITY AGREEMENT**, dated as of June 1, 2018 (as it may be amended, restated, supplemented or otherwise modified from time to time, this “Agreement”), is made by the entities identified as grantors on the signature pages hereto (collectively, the “Grantors”) in favor of Barclays Bank PLC as collateral agent (in such capacity, together with its successors and permitted assigns, the “Collateral Agent”) for the Secured Parties.

WHEREAS, the Grantors are party to the Pledge and Security Agreement dated as of June 1, 2018 (the “Pledge and Security Agreement”) between the Grantors and the other grantors party thereto and the Collateral Agent pursuant to which the Grantors granted a security interest to the Collateral Agent in the Patent Collateral (as defined below) and are required to execute and deliver this Agreement.

NOW, THEREFORE, in consideration of the foregoing and for other good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, the Grantors hereby agree with the Collateral Agent as follows:

SECTION. 1. Defined Terms

Unless otherwise defined herein, terms defined in the Pledge and Security Agreement and used herein have the meaning given to them in the Pledge and Security Agreement.

SECTION 2. Grant of Security Interest

Each Grantor hereby grants to the Collateral Agent, for the benefit of the Secured Parties, a security interest in and continuing lien on all of such Grantor’s right, title and interest in, to and under the following, in each case whether now owned or existing or hereafter acquired, developed, created or arising and wherever located (collectively, the “Patent Collateral”): (i) each patent and patent application listed in Schedule A attached hereto, (ii) all reissues, divisions, continuations, continuations-in-part, extensions, renewals, and reexaminations thereof, (iii) all improvements thereto, (iv) the right to sue or otherwise recover for any past, present and future infringement or other violation thereof, (v) all Proceeds of the foregoing, including, without limitation, license fees, royalties, income, payments, claims, damages, and proceeds of suit now or hereafter due and/or payable with respect thereto, and (vi) all other rights of any kind accruing thereunder or pertaining thereto throughout the world.

SECTION 3. Security Agreement

The security interest granted pursuant to this Agreement is granted in conjunction with the security interest granted to the Collateral Agent for the Secured Parties pursuant to the Pledge and Security Agreement, and the Grantors hereby acknowledge and affirm that the rights and remedies of the Collateral Agent with respect to the security interest in the Patent Collateral made and granted hereby are more fully set forth in the Pledge and Security Agreement, the terms and provisions of which are incorporated by reference herein as if fully set forth herein. In the event that any provision of this Agreement is deemed to conflict with the Pledge and Security Agreement, the provisions of the Pledge and Security Agreement shall control.

SECTION 4. Governing Law

THIS AGREEMENT AND THE RIGHTS AND OBLIGATIONS OF THE PARTIES HEREUNDER AND ALL CLAIMS AND CONTROVERSIES ARISING OUT OF THE SUBJECT MATTER HEREOF WHETHER SOUNDING IN CONTRACT LAW, TORT LAW OR OTHERWISE SHALL BE GOVERNED BY, AND SHALL BE CONSTRUED AND ENFORCED IN ACCORDANCE WITH, THE LAWS OF THE STATE OF NEW YORK, WITHOUT REGARD TO CONFLICTS OF LAW PROVISIONS THAT WOULD RESULT IN THE APPLICATION OF ANY OTHER LAW (OTHER THAN ANY MANDATORY PROVISIONS OF LAW RELATING TO THE LAW GOVERNING PERFECTION AND THE EFFECT OF PERFECTION OF THE SECURITY INTEREST GRANTED HEREBY).

SECTION 5. Counterparts

This Agreement may be executed in one or more counterparts and by different parties hereto in separate counterparts, each of which when so executed and delivered shall be deemed an original, but all such counterparts together shall constitute but one and the same instrument.

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

COVIA HOLDINGS CORPORATION

By:



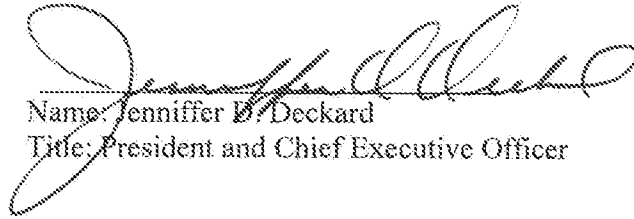
Name: Jennifer D. Deckard

Title: President and Chief Executive Officer

[Signature Page to Patent Security Agreement]

FAIRMOUNT SANTROL INC.

By:

A handwritten signature in cursive script, appearing to read "Jennifer B. Deckard", written over a horizontal line.

Name: Jennifer B. Deckard

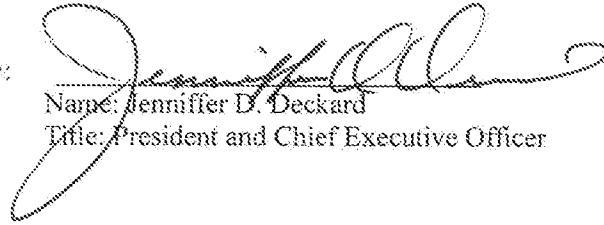
Title: President and Chief Executive Officer

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TECHNISAND, INC.

By:

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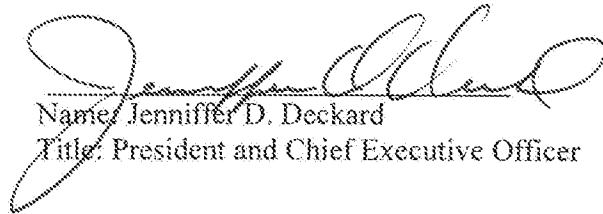
Name: Jennifer D. Deckard

Title: President and Chief Executive Officer

{Signature Page to Patent Security Agreement}

SELF-SUSPENDING PROPPANT LLC

By:



Name: Jenniffer D. Deckard
Title: President and Chief Executive Officer

{Signature Page to Patent Security Agreement}

Accepted and Agreed:

BARCLAYS BANK PLC,
as Collateral Agent

By: 

Name: Craig Molson

Title: Managing Director

[Signature Page to Patent Security Agreement]

PATENT
REEL: 047320 FRAME: 0493

SCHEDULE A
to

PATENT SECURITY AGREEMENT
PATENTS AND PATENT APPLICATIONS

Grantor	Country	Application Title	Status	App. No.	Pat. No.	Issue Date	Expires
TSI	United States of America	PROPPANT CONTAINING BONDABLE PARTICLES AND REMOVABLE PARTICLES	Granted	09/129,063	6,114,410	05-Sep-2000	17-Jul-2018
TSI	United States of America	PROPPANT CONTAINING BONDABLE PARTICLES AND REMOVABLE PARTICLES	Granted	09/616,648	6,328,105	11-Dec-2001	17-Jul-2018
FSI	United States of America	PROPPANTS WITH SOLUBLE COMPOSITE COATINGS	Granted	11/541,874	7,490,667	17-Feb-2009	08-Jan-2027
FSI	United States of America	SOLUBLE FIBERS FOR USE IN RESIN COATED PROPPANT	Granted	10/793,429	7,244,492	17-Jul-2007	20-Oct-2024
TSI	United States of America	DOWNHOLE CHEMICAL DELIVERY SYSTEM FOR OIL AND GAS WELLS	Granted	10/195,989	7,049,272	23-May-2006	23-May-2023
FSI	United States of America	PROCESS FOR INCREMENTAL COATING OF PROPPANTS FOR HYDRAULIC FRACTURING AND PROPPANTS PRODUCED THEREFROM	Granted	10/611,200	7,135,231	14-Nov-2006	17-Dec-2023
FSI	United States of America	PROCESS FOR INCREMENTAL COATING OF PROPPANTS FOR HYDRAULIC FRACTURING AND PROPPANTS PRODUCED THEREFROM	Granted	11/582,644	8,852,682	07-Oct-2014	25-Feb-2029
FSI	United States of America	DEGRADABLE BALL SEALERS AND METHODS FOR USE IN WELL TREATMENT	Granted	11/640,813	7,647,964	19-Jan-2010	19-Jan-2027
FSI	United States of America	COMPOSITION OF MATTER AND METHOD OF APPLICATION FOR ELIMINATION OF HEXAMETHYLENETERAMINE IN SHELL SAND ENCAPSULATION	Granted	11/645,991	7,763,316	27-Jul-2010	27-Dec-2026

Grantor	Country	Application Title	Status	App. No.	Pat. No.	Issue Date	Expires
FSI	United States of America	NO HEXA SHELL SAND	Granted	12/832,171	8,754,147	17-Jun-2014	05-Oct-2029
FSI	United States of America	RAPID ACTION COATER	Granted	12/914,560	8,697,185	15-Apr-2014	29-Dec-2025
FSI	United States of America	ENVIRONMENTALLY SAFE PROMOTER FOR USE IN FLOTATION SEPARATION OF CARBONATES FROM MINERALS	Granted	11//203,919	7,275,643	02-Oct-2007	15-Aug-2025
	United States of America	META CROSSLINKED BENZYL POLYMERS	Published	15/228,189			
SSP	United States of America	PROPANTS FOR HYDRAULIC FRACTURING TECHNOLOGIES	Granted	12/908,411	9845427	19-Dec-2017	01-Apr-2032
SSP	United States of America	PROPANTS FOR HYDRAULIC FRACTURING TECHNOLOGIES	Granted	15/339,986	9845428	19-Dec-2017	20-10-2030
SSP	United States of America	PROPANTS FOR HYDRAULIC FRACTURING TECHNOLOGIES	Pending	15/834,214			
SSP	United States of America	SELF-SUSPENDING PROPANTS FOR HYDRAULIC FRACTURING	Granted	13/599,828	9315721	19-Apr-2016	18-Apr-2034
SSP	United States of America	SELF-SUSPENDING PROPANTS FOR HYDRAULIC FRACTURING	Granted	15/081,037	9796916	24-Oct-2017	30-Aug-2032
SSP	United States of America	SELF-SUSPENDING PROPANTS FOR HYDRAULIC FRACTURING	Published	15/721,983			
SSP	United States of America	SELF-SUSPENDING PROPANTS FOR HYDRAULIC FRACTURING	Pending	15/834,255			
SSP	United States of America	SELF-SUSPENDING PROPANTS FOR HYDRAULIC FRACTURING	Granted	13/838,806	9297244	29-Mar-2016	25-Oct-2032
SSP	United States of America	SELF-SUSPENDING PROPANTS FOR HYDRAULIC FRACTURING	Pending	15/721,983			
SSP	United States of America	SELF-SUSPENDING PROPANTS FOR HYDRAULIC FRACTURING	Granted	14/958,112	9,644,139	09-May-2017	30-Aug-2032
SSP	United States of America	SELF-SUSPENDING PROPANTS FOR HYDRAULIC FRACTURING	Granted	14/197,596	9,868,896	16-Jan-2018	30-Aug-2032
SSP	United States of America	CALCIUM ION TOLERANT SELF-SUSPENDING PROPANTS	Granted	14/631,946	9,932,521	04-Apr-2018	25-Jul-2035
SSP	United States of America	HARD WATER RESISTANT SELF SUSPENDING PROPANTS	Published	15/091,987			
FSI	United States of America	PRESSURE ACTIVATED CURABLE RESIN COATED PROPANTS	Pending	15/774,644			

Grantor	Country	Application Title	Status	App. No.	Pat. No.	Issue Date	Expires
FSI	United States of America	PRESSURE ACTIVATED CURABLE RESIN COATED PROPPANTS WITH HIGH OIL PERMEABILITY	Pending	15/774,669			
SSP	United States of America	SALT-TOLERANT SELF-SUSPENDING PROPPANTS	Published	15/595,722			
SSP	United States of America	SELF-SUSPENDING PROPPANTS	Pending	15/782,066			
SSP	United States of America	SELF-SUSPENDING PROPPANTS FOR HYDRAULIC FRACTURING	Granted	15/340,000	9,845,429	19-Dec-2017	30-Aug-2032
SSP	United States of America	SELF-SUSPENDING PROPPANTS FOR HYDRAULIC FRACTURING	Published	15/834,255			
SSP	United States of America	SELF-SUSPENDING PROPPANT WITH SANDWICHED HYDROGEL COATING	Published	15/782,922			
SSP	United States of America	SELF-SUSPENDING PROPPANTS	Pending	15/782,922			
FSI	United States of America	DEGRADABLE BALL SEALERS WITH IMPROVED SOLUBILITY CHARACTERISTICS	Published	15/708,957			
FSI	United States of America	FLOWBACK RESISTANT PROPPANTS	Pending	15/919,399			
FSI	United States of America	FLOWBACK RESISTANT PROPPANTS	Pending	15/919,399			
SSP	United States of America	IMPROVED SELF-SUSPENDING PROPPANTS MADE FROM POWDERED HYDROGEL-FORMING POLYMERS	Pending	62/526,614			29-Jun-18
SSP	United State of America	IMPROVED SELF-SUSPENDING PROPPANTS MADE FROM POWDERED HYDROGEL-FORMING POLYMERS	Pending	15/952,459			
FSI	United States of America	CRUSH BRESISTANT BUOYANT BALL SEALERS	Pending	62/587,996			17-Nov-18

Title	Country	Application Number	Filing Date	Patent Number	Grant Date	Status	Owner
METHOD OF PROCESSING NEPHELINE SYENITE POWDER TO PRODUCE AN ULTRA-FINE GRAIN SIZE PRODUCT	United States	12/009693	1/22/2008	775/976	7/20/2010	Issued Taxes Due	Unimin Corporation

Title	Country	Application Number	Filing Date	Patent Number	Grant Date	Status	Owner
METHOD OF PROCESSING NEPHELINE SYENITE POWDER TO PRODUCE AN ULTRA-FINE GRAIN SIZE PRODUCT	United States	12/823313	6/25/2010	7942351	5/17/2011	Issued Taxes Due	Unimin Corporation
METHOD OF PROCESSING NEPHELINE SYENITE POWDER TO PRODUCE AN ULTRA-FINE GRAIN SIZE PRODUCT	United States	12/985071	1/5/2011	8070080	12/6/2011	Issued Taxes Due	Unimin Corporation
HIGH STRENGTH CLAY BLEND FOR SANITARY WARE	United States	12/651605	1/4/2010	8304360	11/6/2012	Issued Taxes Due	Unimin Corporation
SYNTHESIS OF LIZARDITE FROM OLIVINE	United States	12/100072	4/9/2008	7785555	8/31/2010	Closed	Unimin Corporation
NEPHELINE SYENITE POWDER WITH CONTROLLED PARTICLE SIZE AND NOVEL METHOD OF MAKING SAME	United States	12/215643	6/27/2008	9034096	5/19/2015	Issued Taxes Due	Unimin Corporation
ULTRAFINE NEPHELINE SYENITE	United States	12/080655	4/4/2008	7915188	3/29/2011	Issued Taxes Due	Unimin Corporation
ULTRAFINE NEPHELINE SYENITE	United States	12/948386	11/17/2010	8864900	10/21/2014	Issued Taxes Due	Unimin Corporation
ULTRAFINE NEPHELINE SYENITE	United States	15/136371	4/22/2016	*	*	On File	Unimin Corporation
BINDER FOR WHITEWARE CERAMIC MIXTURE AND METHOD OF USING SAME	United States	12/254848	10/21/2008	8097078	1/17/2012	Issued Taxes Due	Unimin Corporation
POWDER FORMED FROM MINERAL OR ROCK MATERIAL WITH CONTROLLED PARTICLE SIZE DISTRIBUTION FOR THERMAL FILMS	United States	12/237628	9/25/2008	8182601	5/22/2012	Issued Taxes Due	Unimin Corporation
POWDER FORMED FROM MINERAL OR ROCK MATERIAL WITH CONTROLLED PARTICLE SIZE DISTRIBUTION FOR THERMAL FILMS	United States	13/420757	3/15/2012	8795427	8/5/2014	Issued Taxes Due	Unimin Corporation
POWDER FORMED FROM MINERAL OR ROCK MATERIAL WITH CONTROLLED PARTICLE SIZE DISTRIBUTION FOR THERMAL FILMS	United States	14/313397	6/24/2014	9266115	2/23/2016	Issued Taxes Due	Unimin Corporation
FLUORIDE BASED COMPOSITE MATERIAL AND METHOD FOR MAKING THE SAME	United States	11/523058	9/15/2006	7498377	3/3/2009	Closed	Unimin Corporation
FLUORSPAR-BASED FILLER AND METHOD FOR MAKING THE SAME	United States	12/561396	9/17/2009	7837783	11/23/2010	Closed	Unimin Corporation
FLUORSPAR-BASED FILLER AND METHOD FOR MAKING THE SAME	United States	12/125956	5/23/2008	7618488	11/17/2009	Closed	Unimin Corporation
FLUORSPAR-BASED FILLER AND METHOD FOR MAKING THE SAME	United States	12/125594	5/22/2008	7618487	11/17/2009	Closed	Unimin Corporation
METHOD OF MAKING PROPANT USED IN GAS OR OIL EXTRACTION	United States	12/622900	11/20/2009	8022019	9/20/2011	Issued Taxes Due	Unimin Corporation
METHOD OF MAKING PROPANTS USED IN GAS OR OIL EXTRACTION	United States	12/556737	9/10/2009	8235313	8/7/2012	Issued Taxes Due	Unimin Corporation

Title	Country	Application Number	Filing Date	Patent Number	Grant Date	Status	Owner
METHOD OF MAKING PROPANTS USED IN GAS OR OIL EXTRACTION	United States	13/197520	8/3/2011	8464969	6/18/2013	Issued Taxes Due	Unimin Corporation
ULTRA FINE NEPHELINE SYENITE POWDER AND PRODUCTS FOR USING SAME	United States	11/803093	5/11/2007	8858699	10/14/2014	Issued Taxes Due	Unimin Corporation
ULTRA FINE NEPHELINE SYENITE POWDER AND PRODUCTS FOR USING SAME	United States	15/943645	4/2/2018	*	*	On File	Unimin Corporation
PIGMENT COMPOSITION FOR PAINT	United States	11/256839	10/24/2005	7582157	9/1/2009	Issued Taxes Due	Unimin Corporation
STATIC TWO STAGE AIR CLASSIFIER	United States	10/230323	8/29/2002	7104403	9/12/2006	Issues No Taxes	Unimin Corporation
MINERAL BASED FILLERS USED AS A SUBSTITUTE FOR WOOD FILLERS IN SIMULATED WOOD PRODUCTS AND SIMULATED WOOD PRODUCTS CONTAINING THE SAME	United States	13/846474	3/18/2013	9085671	7/21/2015	Issued Taxes Due	Unimin Corporation
DUST FREE PROPANT AND METHOD OF MAKING SAME	United States	15/090987	4/5/2016	*	*	On File	Unimin Corporation
DUST FREE PROPANT AND METHOD OF MAKING SAME	United States	15/091034	4/5/2016	*	*	On File	Unimin Corporation
PROPANTS USED FOR GAS/OIL FIELD HYDRAULIC FRACKING WITH LESS DUST CONTENT	United States	*	*	*	*	In Preparation	Unimin Corporation
SYSTEM AND METHOD OF COATING A PROPANT	United States	15/232912	8/10/2016	*	*	On File	Unimin Corporation
SYSTEM AND METHOD OF COATING A PROPANT	United States	62/206524	8/18/2015	*	*	In Preparation	Unimin Corporation
PROPANT MIXTURE	United States	15/671355	8/8/2017	*	*	On File	Unimin Corporation
LOW TEMPERATURE CURABLE PROPANT	United States	15/833478	12/6/2017	*	*	On File	Unimin Corporation
DUST FREE SILICA PARTICLES	United States	62/512401	5/30/2017	*	*	On File	Unimin Corporation
DUST FREE SILICA PARTICLES	United States	15907335	2/28/2018	*	*	On File	Unimin Corporation
LOW TEMPERATURE CURABLE PROPANT	United States	62/595285	12/6/2017	*	*	On File	Unimin Corporation
IMPROVING PROPANT TRANSPORTATION FOR IMPROVING PROPANT CONDUCTIVITY & PERMEABILITY IN HYDRAULIC FRACTURING OPERATION	United States	*	*	*	*	In Preparation	Unimin Corporation

PATENT

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RECORDED: 08/27/2018