503736377 03/15/2016

PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1 Stylesheet Version v1.2 EPAS ID: PAT3783020

SUBMISSION TYPE:	NEW ASSIGNMENT
NATURE OF CONVEYANCE:	EXECUTIVE ORDER 9424, CONFIRMATORY LICENSE

CONVEYING PARTY DATA

Name	Execution Date
LAWRENCE LIVERMORE NATIONAL SECURITY, LLC	02/09/2016

RECEIVING PARTY DATA

Name:	U.S. DEPARTMENT OF ENERGY
Street Address:	1000 INDEPENDENCE AVE., SW
City:	WASHINGTON
State/Country:	D.C.
Postal Code:	20585

PROPERTY NUMBERS Total: 1

Property Type	Number
Application Number:	15001590

CORRESPONDENCE DATA

Fax Number: (202)586-7127

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: 2025862802

Email: brenda.banks@hq.doe.gov

Correspondent Name: BRENDA K. BANKS

Address Line 1: 1000 INDEPENDENCE AVE.
Address Line 4: WASHINGTON, D.C. 20585

NAME OF SUBMITTER:	BRENDA K. BANKS
SIGNATURE:	/Brenda K. Banks/
DATE SIGNED:	03/15/2016

Total Attachments: 1

source=IL-12611B Confirmatory License (pd)#page1.tif

PATENT 503736377 REEL: 037973 FRAME: 0858

CONFIRMATORY LICENSE

Title: Encapsulated Proppants

Inventor(s): Roger D. Aines, William L. Bourcier, Eric B. Duoss, Jeffery J. Roberts, Christopher M. Spadaccini,

Joshuah K. Stolaroff

DOE Docket No.: S-144,680

Docket No./Sub: IL-12611/B Contract Number: DE-AC52-07NA27344

Contractor: Lawrence Livermore National Security, LLC Filing Date: 01/20/16

U.S. Patent Application S.N.: 15/001590

Lawrence Livermore National Laboratory

Waiver No.: W(C) 08-001

Foreign patent applications filed or intended to be filed at contractor's expense in (countries):

WHEREAS, the above-identified invention is a subject invention under the above-identified contract:

WHEREAS, the above-identified Class Waiver of Government rights in certain identified inventions and the aboveidentified contract provides the Contractor with the right to elect to retain title in certain subject inventions and the Contractor has elected to retain title in the above-identified subject invention, EXCEPT FOR a paid-up license under the above-identified contract and the above-identified waiver.

ACCORDINGLY, the Contractor hereby confirms that under the provisions of the above-identified contract governing patent rights, it has granted to the Government a nonexclusive, nontransferable, irrevocable, paid-up license to practice or have practiced for or on behalf of the United States the subject invention throughout the world. This license applies to the above-identified invention, the above-identified patent application(s), and any and all divisions or continuations thereof and any resulting patent or reissue patent which may be granted thereon.

The Government reserves for itself, and is hereby granted by the Contractor, the irrevocable power to inspect and make copies of the file wrapper(s) of the above-identified U.S. patent application and of any related or continuation patent application(s), whether domestic or foreign, for the above-identified invention.

It is understood and agreed that this instrument does not preclude the Government from asserting rights under the provisions of the above-identified contract or any other agreement between the Government and the Contractor, or any other rights of the Government with respect to the above-identified invention.

By:

Signed on behalf of:

LAWRENCE LIVERMORE NATIONAL SECURITY, LLC

(Contractor)

Mark H. Lough, Deputy General Counsel

Lawrence Livermore National Laboratory

P.O. Box 808, L-701

Livermore, CA 94551-0808

PATENT REEL: 037973 FRAME: 0859

RECORDED: 03/15/2016