

UNITED STATES  
SECURITIES AND EXCHANGE COMMISSION  
Washington, D.C. 20549

SCHEDULE 13G

Under the Securities Exchange Act of 1934  
(Amendment No. )\*

NAME OF ISSUER: Green Plains Inc.

TITLE OF CLASS OF SECURITIES: Common Stock

CUSIP NUMBER: 393222104

DATE OF EVENT WHICH REQUIRES FILING OF THIS STATEMENT: December 31, 2018

Check the appropriate box to designate the rule pursuant to which this  
Schedule is filed:

- Rule 13d-1(b)  
 Rule 13d-1(c)  
 Rule 13d-1(d)

\*The remainder of this cover page shall be filled out for a reporting  
person's initial filing on this form with respect to the subject class  
of securities, and for any subsequent amendment containing information  
which would alter the disclosures provided in a prior cover page.

The information required in the remainder of this cover page shall not  
be deemed to be 'filed' for the purpose of Section 18 of the Securities  
Exchange Act of 1934 ('Act') or otherwise subject to the liabilities of  
that section of the Act but shall be subject to all other provisions of  
the Act (however, see the Notes).

CUSIP NUMBER: 393222104

(1) Names of Reporting Persons The Bank of New York Mellon Corporation  
IRS Identification Nos. of Above Persons IRS No.13-2614959

(2) Check the Appropriate Box if a Member of a Group (See Instructions)  
(a) ( ) (b) ( )

(3) SEC use only

(4) Citizenship or Place of Organization New York

Number of Shares (5) Sole Voting Power 2,823,546  
Beneficially

Owned by Each (6) Shared Voting Power 0  
Reporting Person

With (7) Sole Dispositive Power 2,711,123

(8) Shared Dispositive Power 160,027

(9) Aggregate Amount Beneficially Owned  
by Each Reporting Person 2,871,150

(10) Check if the Aggregated Amount in Row (9) Excludes Certain  
Shares (see Instructions) ( )

(11) Percent of Class Represented by Amount in Row (9) 6.93%

(12) Type of Reporting Person (See Instructions) HC

CUSIP NUMBER: 393222104

(1) Names of Reporting Persons BNY Mellon IHC, LLC  
IRS Identification Nos. of Above Persons IRS No.82-2121983

(2) Check the Appropriate Box if a Member of a Group (See Instructions)  
(a) ( ) (b) ( )

(3) SEC use only

(4) Citizenship or Place of Organization New York

Number of Shares (5) Sole Voting Power 2,542,252  
Beneficially  
Owned by Each (6) Shared Voting Power 0  
Reporting Person  
With (7) Sole Dispositive Power 2,429,813

(8) Shared Dispositive Power 160,027

(9) Aggregate Amount Beneficially Owned  
by Each Reporting Person 2,589,840

(10) Check if the Aggregated Amount in Row (9) Excludes Certain  
Shares (see Instructions) ( )

(11) Percent of Class Represented by Amount in Row (9) 6.25%

(12) Type of Reporting Person (See Instructions) HC

CUSIP NUMBER: 393222104

(1) Names of Reporting Persons MBC Investments Corporation  
IRS Identification Nos. of Above Persons IRS No.51-0301132

(2) Check the Appropriate Box if a Member of a Group (See Instructions)  
(a) ( ) (b) ( )

(3) SEC use only

(4) Citizenship or Place of Organization Delaware

Number of Shares (5) Sole Voting Power 2,542,252  
Beneficially  
Owned by Each (6) Shared Voting Power 0  
Reporting Person  
With (7) Sole Dispositive Power 2,429,813

(8) Shared Dispositive Power 160,027

(9) Aggregate Amount Beneficially Owned  
by Each Reporting Person 2,589,840

(10) Check if the Aggregated Amount in Row (9) Excludes Certain  
Shares (see Instructions) ( )

(11) Percent of Class Represented by Amount in Row (9) 6.25%

(12) Type of Reporting Person (See Instructions) HC

SCHEDULE 13G

Item 1(a) Name of Issuer: Green Plains Inc.

Item 1(b) Address of Issuer's Principal Executive Office:

1811 Aksarben Drive  
Omaha, Nebraska 68106  
United States

Item 2(a) Name of Person Filing: The Bank of New York Mellon Corporation  
and any other reporting person(s)  
identified on the second part of the  
cover page(s) and Exhibit I

Item 2(b) Address of Principal Business Office, or if None, Residence:  
C/O The Bank of New York Mellon Corporation  
240 Greenwich Street  
New York, New York 10286  
(for all reporting persons)

Item 2(c) Citizenship: See cover page and Exhibit I

Item 2(d) Title of Class of Securities: Common Stock

CUSIP Number 393222104

Item 3 See Item 12 of cover page(s) ("Type of Reporting Person ") for each reporting person.

Symbol Category

BD = Broker or Dealer registered under Section 15 of the Securities Exchange Act of 1934

BK = Bank as defined in Section 3(a)(6) of the Securities Exchange Act of 1934

IV = Investment Company registered under Section 8 of the Investment Company Act of 1940

IA = Investment Advisor registered under Section 203 of the Investment Advisors Act of 1940

EP = Employee Benefit Plan, Pension Fund which is subject to the provisions of the Employee Retirement Income Security Act of 1974 or Endowment Fund; see Section 240.13 - d(1)(b)(1)(ii)(F)

HC = Parent Holding Company, in accordance with Section 240.13-d(1)(b)(1)(ii)(G)

Item 4 Ownership: See Item 5 through 9 and 11 of cover page(s) as to each reporting person.

The amount beneficially owned includes, where appropriate, securities not outstanding which are subject to options, warrants, rights or conversion privileges that are exercisable within 60 days. The securities reported herein as beneficially owned may exclude securities of the issuer with respect to which voting and/or dispositive power is exercised by subsidiaries of The Bank of New York Mellon Corporation, or departments or units thereof, independently from the exercise of those powers over the securities reported herein. See SEC Release No. 34-39538 (January 12, 1998). The filing of this Schedule 13G shall not be construed as an admission that The Bank of New York Mellon Corporation, or its direct or indirect subsidiaries, including The Bank of New York Mellon and BNY Mellon, National Association, are for the purposes of Section 13(d) or 13(g) of the Act, the beneficial owners of any securities covered by this Schedule 13G.

The following information applies if checked: ( ) The Bank of New York Mellon and/or ( ) The Bank of New York Mellon Trust Company, National Association is/are the trustee of the issuer's employee benefit plan (the Plan), which is subject to ERISA. The securities reported include all shares held of record by such reporting person(s) as trustee of the Plan which have not been allocated to the individual accounts of employee participants in the Plan. The reporting person, however, disclaims beneficial ownership of all shares that have been allocated to the individual accounts of employee participants in the Plan for which directions have been received and followed.

Item 5 Ownership of Five Percent or Less of a Class:

If this statement is being filed to report the fact that as of the date hereof the reporting person has ceased to be the beneficial owner of more than five percent of the class of securities, check the following ( )

Item 6 Ownership of More than Five Percent on Behalf of Another Person:

All of the securities are beneficially owned by The Bank of New York Mellon Corporation and its direct or indirect subsidiaries in their various fiduciary capacities. As a result, another entity in every instance is entitled to dividends or proceeds of sale. The number of individual accounts holding an interest of 5% or more is ( )

Item 7 Identification and Classification of the Subsidiary Which Acquired the Security Being Reported by the Parent Holding Company:  
See Exhibit I.

Item 8 Identification and Classification of Members of the Group: N/A

Item 9 Notice of Dissolution of Group: N/A

Item 10 Certification:

By signing below I certify that, to the best of my knowledge and belief, the securities referred to above were acquired and are held in the ordinary course of business and were not acquired and are not held for the purpose of and do not have the effect of changing or influencing the control of the issuer of such securities and were not acquired and are not held in connection with or as a participant in any transaction having such purpose or effect.

SIGNATURE

After reasonable inquiry and to the best of my knowledge and belief, I certify that the information set forth in this statement is true, complete and correct. This filing is signed by The Bank of New York Mellon Corporation on behalf of all reporting entities pursuant to Rule 13d-1(k)(1) promulgated under the Securities and Exchange Act of 1934, as amended.

Date: February 4, 2019

THE BANK OF NEW YORK MELLON CORPORATION

By: /s/ IVAN R. ARIAS

-----  
Ivan R. Arias  
Attorney-In-Fact

EXHIBIT I

The shares reported on the attached Schedule 13G are beneficially owned by the following direct or indirect subsidiaries of The Bank of New York Mellon Corporation, as marked (X):

- (A) The Item 3 classification of each of the subsidiaries listed below is "Item 3(b) Bank as defined in Section 3(a)(6) of the Act" (15 U.S.C. 78c) or "Item 3(j)A non-U.S. institution in accordance with Rule 240.13d-1(b)(1)(ii)(J)"
- (X) The Bank of New York Mellon (parent holding company of Mellon Overseas Investment Corporation; BNY International Financing Corporation; The Bank of New York Mellon SA/NV)
  - ( ) The Bank of New York Mellon Trust Company, National Association
  - (X) BNY Mellon, National Association
  - ( ) BNY Mellon Trust of Delaware
  - ( ) The Bank of New York Mellon SA/NV (parent holding company of BNY Mellon Service Kapitalanlage-Gesellschaft mbH)
- (B) The Item 3 classification of each of the subsidiaries listed below is "Item 3(e) An investment adviser in accordance with Section 240.13d-1(b)(1)(ii)(E)" or "Item 3(j) A non-U.S. institution in accordance with Rule 240.13d-1(b)(1)(ii)(J)"
- ( ) ARX Investimentos Ltda (parent holding company of BNY Mellon Alocacao de Patrimonia Ltda.)
  - ( ) BNY Mellon Alocacao de Patrimonia Ltda
  - ( ) BNY Mellon Servicos Financeiros Distribuidora de Titulos e Valores Mobiliarios S.A.(parent holding company of BNY Mellon Administracao de Ativos Ltda.)
  - ( ) BNY Mellon Administracao de Ativos Ltda.
  - (X) The Dreyfus Corporation (parent holding company of MBSC Securities Corporation)
  - ( ) Insight Investment Management (Global) Limited
  - ( ) Insight North America LLC.
  - (X) Lockwood Advisors, Inc.
  - (X) BNY Mellon Asset Management North America Corporation
  - ( ) Newton Investment Management (North America) Limited
  - ( ) Newton Investment Management Limited
  - ( ) Walter Scott & Partners Limited

- ( ) BNY Mellon Wealth Management, Advisory Services, Inc.
  - ( ) BNY Mellon Trust Company(Cayman) Limited
  - ( ) BNY Mellon Investment Management Cayman Limited
  - ( ) Insight Investment International Limited
  - ( ) BNY Mellon Asset Management Japan Limited
- (C) The Item 3 classification of each of the subsidiaries listed below is "Item 3(a) Broker or dealer registered under Section 15 of the Act" (15 U.S.C. 78c) or "Item 3(j) A non-U.S. institution in accordance with Rule 240.13d-1(b) (1) (ii) (J) "
- ( ) BNY Mellon Capital Markets, LLC
  - ( ) MBSC Securities Corporation
  - ( ) Pershing LLC
- (D) The Item 3 classification of each of the subsidiaries listed below is "Item 3(g) a parent holding company or control person in accordance with Rule 13d-1(b) (1) (ii) (G) "
- (X) The Bank of New York Mellon Corporation
  - ( ) B.N.Y. Holdings (Delaware) Corporation (parent holding company of BNY Mellon Trust of Delaware)
  - (X) BNY Mellon IHC, LLC (as parent holding company of MBC Investments Corporation)
  - (X) MBC Investments Corporation (parent holding company of BNY Mellon Asset Management North America Corporation; BNY Mellon Investment Management(Jersey) Ltd.; BNY Mellon Investment Management APAC LP; The Dreyfus Corporation; ARX Investimentos Ltda. ; Mellon Global Investing Corporation)
  - ( ) BNY Mellon Investment Management (Jersey) Ltd. (parent holding company of BNY Mellon Investment Management (Europe) Ltd.)
  - ( ) BNY Mellon Investment Management (Europe) Ltd. (parent holding company of BNY Mellon Investment Management Europe Holdings Ltd.; BNY Mellon Investment Management Cayman Ltd.)
  - ( ) BNY Mellon Investment Management Europe Holdings Ltd. (parent holding company of BNY Mellon International Asset Management Group Limited)
  - ( ) BNY Mellon International Asset Management Group Limited (parent holding company of Newton Management Limited; BNY Mellon International Asset Management (Holdings) Limited; Insight Investment Management Limited)
  - ( ) Newton Management Limited (parent holding company of Newton Investment Management (North America) Limited; Newton Investment Management Limited)
  - ( ) BNY Mellon International Asset Management (Holdings) Limited (parent holding company of BNY Mellon International Asset Management (Holdings) No. 1 Limited)
  - ( ) BNY Mellon International Asset Management (Holdings) No. 1 Limited (parent holding company of Walter Scott & Partners Limited)
  - ( ) Insight Investment Management Limited (parent holding company of Insight Investment Management (Global) Limited; Insight Investment International Limited )
  - ( ) BNY Mellon Investment Management APAC LP (Parent holding company of BNY Mellon Investment Management (APAC) Holdings Limited
  - ( ) BNY Mellon Investment Management (APAC) Holdings Limited (parent holding company of BNY Mellon Asset Management Japan Limited)
  - (X) Pershing Group LLC (parent holding company of Lockwood Advisors, Inc; Pershing LLC)
  - ( ) Mellon Overseas Investment Corporation (parent holding company of Mellon Canada Holding Company; BNY Mellon Participacoes Ltda.)
  - ( ) Mellon Canada Holding Company (parent holding company of BNY Mellon Wealth Management, Advisory Services, Inc)
  - ( ) BNY Mellon Participacoes Ltda.(parent holding company of BNY Mellon Servicos Financeiros Distribuidora de Titulos e Valores Mobiliarios S.A.)
  - ( ) BNY International Financing Corporation (parent holding company of BNY Mellon Trust Company (Cayman) Limited)
  - ( ) BNY Capital Markets Holdings, Inc. (parent holding company of BNY Mellon Capital Markets, LLC)
  - ( ) Mellon Global Investing Corporation (parent holding company of Insight North America LLC)

NOTE: ALL OF THE LEGAL ENTITIES LISTED UNDER (A), (B), (C) AND (D) ABOVE ARE DIRECT OR INDIRECT SUBSIDIARIES OF THE BANK OF NEW YORK MELLON CORPORATION. BENEFICIAL OWNERSHIP OF MORE THAN FIVE PERCENT OF THE CLASS BY ANY ONE OF THE

SUBSIDIARIES OR INTERMEDIATE PARENT HOLDING COMPANIES LISTED ABOVE IS REPORTED ON A JOINT REPORTING PERSON PAGE FOR THAT SUBSIDIARY ON THE ATTACHED SCHEDULE 13G AND IS INCORPORATED IN THE TOTAL PERCENT OF CLASS REPORTED ON THE BANK OF NEW YORK MELLON CORPORATION'S REPORTING PERSON PAGE. (DO NOT ADD THE SHARES OR PERCENT OF CLASS REPORTED ON EACH JOINT REPORTING PERSON PAGE ON THE ATTACHED SCHEDULE 13G TO DETERMINE THE TOTAL PERCENT OF CLASS FOR THE BANK OF NEW YORK MELLON CORPORATION).

POWER OF ATTORNEY

KNOW ALL PERSONS BY THESE PRESENTS that each of the undersigned (each a "Company") does hereby make, constitute and appoint each of Nicholas R. Darrow, Ivan Arias and Andrew Weiser (and any other employee of The Bank of New York Mellon Corporation, or one of its affiliates, associated with the Global Holdings Reporting Group and designated in writing by one of the attorneys-in-fact), acting individually, its true and lawful attorney to execute and deliver in its name and on its behalf, whether the Company is acting individually or as representative of others, any and all filings, be they written or oral, required to be made by the Company with respect to securities which may be deemed to be beneficially owned by the Company or under the Company's investment discretion under:

\*the Securities Exchange Act of 1934, as amended (the "Exchange Act"), including those filings required to be submitted on Form 13F, Schedule 13G, Schedule 13D and Forms 3, 4 and 5, and

\*the laws of any jurisdiction other than the United States of America, including those filings made to disclose securities holdings as required to be submitted to regulatory agencies, exchanges and/or issuers,

giving and granting unto each said attorney-in-fact power and authority to correspond with issuers, regulatory authorities, and other entities as is required in support of the filings referenced above, and to act in the premises as fully and to all intents and purposes as the Company might or could do to comply with the applicable regulations if personally present by one of its authorized signatories (including, but not limited to, instructing local counsel on a Company's behalf), hereby ratifying and confirming all that said attorney-in-fact shall lawfully do or cause

THIS POWER OF ATTORNEY shall remain in full force and effect until either revoked in writing by the Company or until such time as the person or to whom power of attorney has been hereby granted cease(s) to be an persons employee of The Bank of New York Mellon Corporation or one of its affiliates.

This Power of Attorney may be executed in any number of counterparts all of which taken together shall constitute one and the same instrument.

IN WITNESS WHEREOF, the undersigned hereby execute this Agreement effective as of the date set forth below.

-----  
| Banks/Bank Holding Companies |  
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THE BANK OF NEW YORK MELLON CORPORATION

BNY MELLON, NATIONAL ASSOCIATION

By: /S/ MITCHELL E.HARRIS  
-----  
Mitchell E. Harris  
Chief Executive Officer,  
Investment Management  
Date: March 17, 2017

By: /S/ DONALD HEBERLE  
-----  
Donald Heberle  
Chief Executive Officer  
Date: September 16, 2015

BNY MELLON, NATIONAL ASSOCIATION

THE BANK OF NEW YORK MELLON SA/NV

By: /S/ THOMAS J. DICKER  
-----  
Thomas J. Dicker

By: /S/ LAURA AHTO  
-----  
Laura Ahto

Chief Operating Officer  
Date: October 9, 2015

Chief Executive Officer  
Date: May 17, 2016

THE BANK OF NEW YORK MELLON

THE BANK OF NEW YORK MELLON

By: /S/ MITCHELL E. HARRIS  
-----  
Mitchell E. Harris  
Senior Executive Vice President  
Date: September 18, 2015

By: /S/ CURTIS ARLEDGE  
-----  
Curtis Arledge  
Vice Chairman  
Date: August 26, 2015

THE BANK OF NEW YORK MELLON TRUST  
COMPANY, NATIONAL ASSOCIATION

THE BANK OF NEW YORK MELLON TRUST  
COMPANY, NATIONAL ASSOCIATION

By: /S/ ANTONIO PORTUONDO  
-----  
Antonio Portuondo  
President  
Date: October 20, 2015

By: /S/ KURTIS R. KURIMSKY  
-----  
Kurtis R. Kurimsky  
Executive Vice President  
Date: March 8, 2016

BNY MELLON TRUST OF DELAWARE

BNY MELLON TRUST OF DELAWARE

By: /S/ JAMES P. AMBAGIS  
-----  
James P. Ambagis  
President  
Date: October 21, 2015

By: /S/ LEE JAMES WOOLLEY  
-----  
Lee James Woolley  
Chairman and  
Chief Executive Officer  
Date: October 19, 2015

-----  
| Investment Advisers and/or Broker-Dealers |  
-----

PERSHING LLC

BNY MELLON CAPITAL MARKETS, LLC

By: /S/ CLAIRE SANTANIELLO  
-----  
Claire Santaniello  
Chief Administrative Officer  
and Chief Risk Officer  
Date: May 24, 2016

By: /S/ JEFF GEARHART  
-----  
Jeff Gearhart  
Chief Operating Officer  
Date: October 19, 2016

ARX INVESTIMENTOS LTDA

ARX INVESTIMENTOS LTDA

By: /S/ CAMILA SOUZA  
-----  
Camila Souza  
Director  
Date: January 4, 2016

By: /S/ GUILHERME ABRY  
-----  
Guilherme Abry  
Director  
Date: January 4, 2016

BNY MELLON SERVICOS FINANCEIROS  
DISTRIBUIDORA DE TITULOS E VALORES  
MOBILIARIOS S.A.

BNY MELLON SERVICOS FINANCEIROS  
DISTRIBUIDORA DE TITULOS E VALORES  
MOBILIARIOS S.A.

By: /S/ CARLOS ALBERTO SARAIVA  
-----  
Carlos Alberto Saraiva  
Director  
Date: May 5, 2016

By: /S/ MARCUS VINICIUS MATHIAS PEREIRA  
-----  
Marcus Vinicius Mathias Pereira  
Director  
Date: May 5, 2016

BNY MELLON ADMINISTRACAO DE ATIVOS  
LTDA

BNY MELLON ADMINISTRACAO DE ATIVOS  
LTDA

By: /S/ CARLOS ALBERTO SARAIVA  
-----  
Carlos Alberto Saraiva  
Director  
Date: May 5, 2016

By: /S/ MARCUS VINICIUS MATHIAS PEREIRA  
-----  
Marcus Vinicius Mathias Pereira  
Director  
Date: May 5, 2016

BNY MELLON ALOCACAO DE PATRIMONIO  
LTDA

By: /S/ GUSTAVO CASTELLO BRANCO

-----  
Gustavo Castello Branco  
Director

Date: January 4, 2016

BNY MELLON ALOCACAO DE PATRIMONIO  
LTDA

By: /S/ CAMILA SOUZA

-----  
Camila Souza  
Director

Date: January 4, 2016

THE DREYFUS CORPORATION

By: /S/ JAMES BITETTO

-----  
James Bitetto  
Secretary

Date: July 30, 2015

INSIGHT INVESTMENT MANAGEMENT  
(GLOBAL) LIMITED

By: /s/ CHARLES FARQUHARSON

-----  
Charles Farquharson  
Chief Risk Officer

Date: February 16, 2016

LOCKWOOD ADVISORS, INC.

By: /S/ JOHN J. BRETT

-----  
John J. Brett  
Chairman

Date: July 30, 2015

BNY MELLON ASSET MANAGEMENT JAPAN  
LIMITED

By: /S/ SHIZU KISHIMOTO

-----  
Shizu Kishimoto  
Representative Director  
and President

Date: August 5, 2015

BNY MELLON ASSET MANAGEMENT  
NORTH AMERICA CORPORATION

By: /S/ JENNIFER CASSEDY

-----  
Jennifer Cassedy  
Chief Compliance Officer

Date: February 14, 2018

MBSC SECURITIES CORPORATION

By: /S/ KENNETH J. BRADLE

-----  
Kenneth J. Bradle  
President

Date: April 29, 2016

NEWTON INVESTMENT MANAGEMENT LIMITED

By: /S/ JAMES HELBY

-----  
James Helby  
Director

Date: July 17, 2015

NEWTON INVESTMENT MANAGEMENT  
(NORTH AMERICA) LIMITED

By: /S/ JAMES HELBY

-----  
James Helby  
Chief Risk Officer

Date: June 30, 2016

WALTER SCOTT & PARTNERS LIMITED

By: /S/ RODGER NISBET

-----  
Rodger Nisbet  
Executive Chairman

Date: July 15, 2015

INSIGHT INVESTMENT INTERNATIONAL  
LIMITED

By: /S/ LEE PALMER

-----  
Lee Palmer  
Chief Compliance Officer

Date: February 14, 2018

BNY MELLON WEALTH MANAGEMENT,  
ADVISORY SERVICES, INC.

By: /S/ MARIE-CLAUDE LEPAGE

-----  
Marie-Claude Lepage  
Chief Compliance Officer

Date: May 9, 2016

BNY MELLON INVESTMENT MANAGEMENT  
CAYMAN LTD

By: /S/ BRENDON J. DONNELLAN

-----  
Brendon J. Donnellan  
Director

Date: August 22, 2016

BNY MELLON TRUST COMPANY  
(CAYMAN) LIMITED

By: CANELLA SECRETARIES

BNY MELLON TRUST COMPANY  
(CAYMAN) LIMITED

By: CANELLA SECRETARIES



(CAYMAN) LTD, SECRETARY  
By: /S/ GILLIAN NELSON  
-----  
Gillian Nelson  
Authorized Person  
Date: May 17, 2016

(CAYMAN) LTD, SECRETARY  
By: /S/ PATRICIA BRUZIO  
-----  
Patricia Bruzio  
Authorized Person  
Date: May 17, 2016

INSIGHT NORTH AMERICA LLC

By: /S/ JOHN ARIOLA  
-----  
John Ariola  
Head of Financial Analysis  
Date: December 7, 2016

-----  
| Parent Holding Companies/Control Persons |  
-----

B.N.Y. HOLDINGS (DELAWARE) CORPORATION

By: /S/ JAMES P. AMBAGIS  
-----  
James P. Ambagis  
President  
Date: October 21, 2015

PERSHING GROUP LLC

By: /S/ CLAIRE SANTANIELLO  
-----  
Claire Santaniello  
Chief Administrative Officer  
and Chief Risk Officer  
Date: May 11, 2016

BNY MELLON INVESTMENT MANAGEMENT  
(APAC) HOLDINGS LIMITED

By: /S/ EMILY CHAN  
-----  
Emily Chan  
Director  
Date: April 19, 2016

BNY MELLON INVESTMENT MANAGEMENT  
(APAC) HOLDINGS LIMITED

By: /S/ DONI SHAMSUDDIN  
-----  
Doni Shamsuddin  
Director  
Date: April 19, 2016

BNY MELLON INTERNATIONAL ASSET  
MANAGEMENT GROUP LIMITED

By: /S/ GREG BRISK  
-----  
Greg Brisk  
Director  
Date: October 21, 2015

NEWTON MANAGEMENT LIMITED

By: /S/ HELENA MORRISSEY  
-----  
Helena Morrissey  
Director  
Date: July 17, 2015

BNY MELLON IHC, LLC

By: /S/ KURTIS R. KURIMSKY  
-----  
Kurtis R. Kurimsky  
Vice President and  
Controllor  
Date: March 29, 2017

MBC INVESTMENTS CORPORATION

By: /S/ PAUL A. GRIFFITHS  
-----  
Paul A. Griffiths  
Chairman, President and  
Chief Executive Officer  
Date: April 29, 2016

MELLON OVERSEAS INVESTMENT  
CORPORATION

By: /S/ KURTIS R. KURIMSKY  
-----  
Kurtis R. Kurimsky  
Vice President and Controllor  
Date: October 7, 2015

INSIGHT INVESTMENT MANAGEMENT  
LIMITED

By: /S/ CHARLES FARQUHARSON  
-----  
Charles Farquharson  
Chief Risk Officer  
Date: February 16, 2016

BNY INTERNATIONAL FINANCING  
CORPORATION

By: /S/ KURTIS R. KURIMSKY

BNY INTERNATIONAL FINANCING  
CORPORATION

By: /S/ JOHN M. ROY

-----  
Kurtis R. Kurimsky  
President and Comptroller  
Date: May 12, 2016

-----  
John M. Roy  
Vice President  
Date: August 15, 2016

BNY MELLON INVESTMENT MANAGEMENT  
EUROPE HOLDINGS LIMITED

By: /S/ GREG BRISK  
-----  
Greg Brisk  
Director  
Date: October 21, 2015

BNY MELLON INVESTMENT MANAGEMENT  
(EUROPE)LIMITED

By: /S/ GREG BRISK  
-----  
Greg Brisk  
Director  
Date: October 21, 2015

BNY MELLON INVESTMENT MANAGEMENT  
(JERSEY)LIMITED

By: /S/ GREG BRISK  
-----  
Greg Brisk  
Director  
Date: October 21, 2015

BNY CAPITAL MARKETS HOLDINGS, INC.

By: /S/ THOMAS P. GIBBONS  
-----  
Thomas P. Gibbons  
Vice Chairman and Chief  
Financial Officer  
Date: October 24, 2015

BNY MELLON INTERNATIONAL ASSET  
MANAGEMENT (HOLDINGS) LIMITED

By: /S/ GREG BRISK  
-----  
Greg Brisk  
Director  
Date: October 21, 2015

BNY MELLON INTERNATIONAL ASSET  
MANAGEMENT (HOLDINGS) No. 1 LIMITED

By: /S/ GREG BRISK  
-----  
Greg Brisk  
Director  
Date: October 21, 2015

MELLON CANADA HOLDING COMPANY

By: /S/ KELLY SCHWARTZ  
-----  
Kelly Schwartz  
President and Director  
Date: May 3, 2016

BNY MELLON PARTICIPACOES LTDA

By: /S/ CARLOS ALBERTO SARAIVA  
-----  
Carlos Alberto Saraiva  
Director  
Date: May 5, 2016

BNY MELLON PARTICIPACOES LTDA

By: /S/ MARCUS VINICIUS MATHIAS PEREIRA  
-----  
Marcus Vinicius Mathias Pereira  
Director  
Date: May 5, 2016

BNY MELLON INVESTMENT MANAGEMENT  
APAC LP

By: BNY MELLON INVESTMENT MANAGEMENT  
HOLDINGS, LLC, GENERAL PARTNER  
By: /S/ PAUL A. GRIFFITHS  
-----  
Paul A. Griffiths  
President  
Date: April 29, 2016

MELLON GLOBAL INVESTING CORPORATION

By: /S/ LEO P. GROHOWSKI  
-----  
Leo P. Grohowski  
President  
Date: June 29, 2018

-----  
| Fund Administrators |  
-----

BNY MELLON SERVICE KAPITALANLAGE-  
GESELLSCHAFT mbH

By: /S/ KATARINA MELVAN  
-----

BNY MELLON SERVICE KAPITALANLAGE-  
GESELLSCHAFT mbH

By: /S/ CAROLINE SPECHT  
-----

Katarina Melvan  
Managing Director (Chairman)  
Date: August 19, 2016

Caroline Specht  
Managing Director  
Date: August 19, 2016

JOINT FILING AGREEMENT

In accordance with Rule 13d-1(k)(1) under the Securities Exchange Act of 1934, as amended (the "Exchange Act"), the undersigned hereby agree to any and all joint filings required to be made on their behalf on Schedule 13G (including amendments thereto) under the Exchange Act, with respect to securities which may be deemed to be beneficially owned by them under the Exchange Act, and that this Agreement be included as an Exhibit to any such joint filing. This Agreement may be executed in any number of counterparts all of which taken together shall constitute one and the same instrument.

IN WITNESS WHEREOF, the undersigned hereby execute this Agreement effective as of the date set forth below.

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| Banks/Bank Holding Companies |  
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THE BANK OF NEW YORK MELLON CORPORATION

BNY MELLON, NATIONAL ASSOCIATION

By: /S/ MITCHELL E. HARRIS  
-----  
Mitchell E. Harris  
Chief Executive Officer,  
Investment Management  
Date: March 17, 2017

By: /S/ DONALD HEBERLE  
-----  
Donald Heberle  
Chief Executive Officer  
Date: September 16, 2015

BNY MELLON, NATIONAL ASSOCIATION

THE BANK OF NEW YORK MELLON SA/NV

By: /S/ THOMAS J. DICKER  
-----  
Thomas J. Dicker  
Chief Operating Officer  
Date: October 9, 2015

By: /S/ LAURA AHTO  
-----  
Laura Ahto  
Chief Executive Officer  
Date: May 17, 2016

THE BANK OF NEW YORK MELLON

THE BANK OF NEW YORK MELLON

By: /S/ MITCHELL E. HARRIS  
-----  
Mitchell E. Harris  
Senior Executive Vice President  
Date: August 27, 2015

By: /S/ CURTIS ARLEDGE  
-----  
Curtis Arledge  
Vice Chairman  
Date: August 26, 2015

THE BANK OF NEW YORK MELLON TRUST COMPANY, NATIONAL ASSOCIATION

THE BANK OF NEW YORK MELLON TRUST COMPANY, NATIONAL ASSOCIATION

By: /S/ ANTONIO PORTUONDO  
-----  
Antonio Portuondo  
President  
Date: October 20, 2015

By: /S/ KURTIS R. KURIMSKY  
-----  
Kurtis R. Kurimsky  
Executive Vice President  
Date: March 8, 2016

BNY MELLON TRUST OF DELAWARE

BNY MELLON TRUST OF DELAWARE

By: /S/ JAMES P. AMBAGIS  
-----  
James P. Ambagis  
President  
Date: October 21, 2015

By: /S/ LEE JAMES WOOLLEY  
-----  
Lee James Woolley  
Chairman and  
Chief Executive Officer  
Date: October 19, 2015

-----  
| Investment Advisers and/or Broker-Dealers |  
-----

PERSHING LLC

By: /S/ CLAIRE SANTANIELLO  
-----

Claire Santaniello  
Chief Administrative Officer  
and Chief Risk Officer

Date: May 24, 2016

BNY MELLON CAPITAL MARKETS, LLC

By: /S/ JEFF GEARHART  
-----

Jeff Gearhart  
Chief Operating Officer

Date: October 19, 2016

ARX INVESTIMENTOS LTDA

By: /S/ CAMILA SOUZA  
-----

Camila Souza  
Director

Date: January 4, 2016

ARX INVESTIMENTOS LTDA

By: /S/ GUILHERME ABRY  
-----

Guilherme Abry  
Director

Date: January 4, 2016

BNY MELLON SERVICOS FINANCEIROS  
DISTRIBUIDORA DE TITULOS E VALORES  
MOBILIARIOS S.A.

By: /S/ CARLOS ALBERTO SARAIVA  
-----

Carlos Alberto Saraiva  
Director

Date: May 5, 2016

BNY MELLON SERVICOS FINANCEIROS  
DISTRIBUIDORA DE TITULOS E VALORES  
MOBILIARIOS S.A.

By: /S/ MARCUS VINICIUS MATHIAS PEREIRA  
-----

Marcus Vinicius Mathias Pereira  
Director

Date: May 5, 2016

BNY MELLON ADMINISTRACAO DE ATIVOS  
LTDA

By: /S/ CARLOS ALBERTO SARAIVA  
-----

Carlos Alberto Saraiva  
Director

Date: May 5, 2016

BNY MELLON ADMINISTRACAO DE ATIVOS  
LTDA

By: /S/ MARCUS VINICIUS MATHIAS PEREIRA  
-----

Marcus Vinicius Mathias Pereira  
Director

Date: May 5, 2016

BNY MELLON ALOCACAO DE PATRIMONIO  
LTDA

By: /S/ GUSTAVO CASTELLO BRANCO  
-----

Gustavo Castello Branco  
Director

Date: January 4, 2016

BNY MELLON ALOCACAO DE PATRIMONIO  
LTDA

By: /S/ CAMILA SOUZA  
-----

Camila Souza  
Director

Date: January 4, 2016

THE DREYFUS CORPORATION

By: /S/ JAMES BITETTO  
-----

James Bitetto  
Secretary

Date: July 30, 2015

INSIGHT INVESTMENT MANAGEMENT  
(GLOBAL) LIMITED

By: /s/ CHARLES FARQUHARSON  
-----

Charles Farquharson  
Chief Risk Officer

Date: February 16, 2016

LOCKWOOD ADVISORS, INC.

By: /S/ JOHN J. BRETT  
-----

John J. Brett  
Chairman

Date: July 30, 2015

BNY MELLON ASSET MANAGEMENT JAPAN  
LIMITED

By: /S/ SHIZU KISHIMOTO  
-----

Shizu Kishimoto  
Representative Director  
and President

Date: August 5, 2015

BNY MELLON ASSET MANAGEMENT  
NORTH AMERICA CORPORATION

By: /S/ JENNIFER CASSEDY  
-----  
Jennifer Cassedy  
Chief Compliance Officer  
Date: February 14, 2018

MBSC SECURITIES CORPORATION

By: /S/ KENNETH J. BRADLE  
-----  
Kenneth J. Bradle  
President  
Date: April 29, 2016

NEWTON INVESTMENT MANAGEMENT LIMITED

By: /S/ JAMES HELBY  
-----  
James Helby  
Director  
Date: July 17, 2015

NEWTON INVESTMENT MANAGEMENT  
(NORTH AMERICA) LIMITED

By: /S/ JAMES HELBY  
-----  
James Helby  
Chief Risk Officer  
Date: June 30, 2016

WALTER SCOTT & PARTNERS LIMITED

By: /S/ RODGER NISBET  
-----  
Rodger Nisbet  
Executive Chairman  
Date: July 15, 2015

INSIGHT INVESTMENT INTERNATIONAL  
LIMITED

By: /S/ LEE PALMER  
-----  
Lee Palmer  
Chief Compliance Officer  
Date: February 14, 2018

BNY MELLON WEALTH MANAGEMENT,  
ADVISORY SERVICES, INC.

By: /S/ MARIE-CLAUDE LEPAGE  
-----  
Marie-Claude Lepage  
Chief Compliance Officer  
Date: May 9, 2016

BNY MELLON INVESTMENT MANAGEMENT  
CAYMAN LTD

By: /S/ BRENDON J. DONNELLAN  
-----  
Brendon J. Donnellan  
Director  
Date: August 22, 2016

BNY MELLON TRUST COMPANY  
(CAYMAN) LIMITED

By: CANELLA SECRETARIES  
(CAYMAN) LTD, SECRETARY  
By: /S/ GILLIAN NELSON  
-----  
Gillian Nelson  
Authorized Person  
Date: May 17, 2016

BNY MELLON TRUST COMPANY  
(CAYMAN) LIMITED

By: CANELLA SECRETARIES  
(CAYMAN) LTD, SECRETARY  
By: /S/ PATRICIA BRUZIO  
-----  
Patricia Bruzio  
Authorized Person  
Date: May 17, 2016

INSIGHT NORTH AMERICA LLC

By: /S/ JOHN ARIOLA  
-----  
John Ariola  
Head of Financial Analysis  
Date: December 7, 2016

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| Parent Holding Companies/Control Persons |  
-----

B.N.Y. HOLDINGS (DELAWARE) CORPORATION

By: /S/ JAMES P. AMBAGIS  
-----  
James P. Ambagis  
President  
Date: October 21, 2015

PERSHING GROUP LLC

By: /S/ CLAIRE SANTANIELLO  
-----  
Claire Santaniello  
Chief Administrative Officer  
and Chief Risk Officer  
Date: May 11, 2016

BNY MELLON INVESTMENT MANAGEMENT

BNY MELLON INVESTMENT MANAGEMENT

(APAC) HOLDINGS LIMITED

By: /S/ EMILY CHAN  
-----  
Emily Chan  
Director  
Date: April 19, 2016

(APAC) HOLDINGS LIMITED

By: /S/ DONI SHAMSUDDIN  
-----  
Doni Shamsuddin  
Director  
Date: April 19, 2016

BNY MELLON INTERNATIONAL ASSET  
MANAGEMENT GROUP LIMITED

By: /S/ GREG BRISK  
-----  
Greg Brisk  
Director  
Date: October 21, 2015

NEWTON MANAGEMENT LIMITED

By: /S/ HELENA MORRISSEY  
-----  
Helena Morrissey  
Director  
Date: July 17, 2015

BNY MELLON IHC, LLC

By: /S/ KURTIS R. KURIMSKY  
-----  
Kurtis R. Kurimsky  
Vice President and  
Controllor  
Date: March 29, 2017

MBC INVESTMENTS CORPORATION

By: /S/ PAUL A. GRIFFITHS  
-----  
Paul A. Griffiths  
Chairman, President and  
Chief Executive Officer  
Date: April 29, 2016

MELLON OVERSEAS INVESTMENT  
CORPORATION

By: /S/ KURTIS R. KURIMSKY  
-----  
Kurtis R. Kurimsky  
Vice President and Controllor  
Date: October 7, 2015

INSIGHT INVESTMENT MANAGEMENT  
LIMITED

By: /S/ CHARLES FARQUHARSON  
-----  
Charles Farquharson  
Chief Risk Officer  
Date: February 16, 2016

BNY INTERNATIONAL FINANCING  
CORPORATION

By: /S/ KURTIS R. KURIMSKY  
-----  
Kurtis R. Kurimsky  
President and Comptroller  
Date: May 12, 2016

BNY INTERNATIONAL FINANCING  
CORPORATION

By: /S/ JOHN M. ROY  
-----  
John M. Roy  
Vice President  
Date: August 15, 2016

BNY MELLON INVESTMENT MANAGEMENT  
EUROPE HOLDINGS LIMITED

By: /S/ GREG BRISK  
-----  
Greg Brisk  
Director  
Date: October 21, 2015

BNY MELLON INVESTMENT MANAGEMENT  
(EUROPE) LIMITED

By: /S/ GREG BRISK  
-----  
Greg Brisk  
Director  
Date: October 21, 2015

BNY MELLON INVESTMENT MANAGEMENT  
(JERSEY) LIMITED

By: /S/ GREG BRISK  
-----  
Greg Brisk  
Director  
Date: October 21, 2015

BNY CAPITAL MARKETS HOLDINGS, INC.

By: /S/ THOMAS P. GIBBONS  
-----  
Thomas P. Gibbons  
Vice Chairman and Chief  
Financial Officer  
Date: October 24, 2015

BNY MELLON INTERNATIONAL ASSET  
MANAGEMENT (HOLDINGS) LIMITED

By: /S/ GREG BRISK  
-----

BNY MELLON INTERNATIONAL ASSET  
MANAGEMENT (HOLDINGS) No. 1 LIMITED

By: /S/ GREG BRISK  
-----

Greg Brisk  
Director  
Date: October 21, 2015

Greg Brisk  
Director  
Date: October 21, 2015

MELLON CANADA HOLDING COMPANY

By: /S/ KELLY SCHWARTZ  
-----  
Kelly Schwartz  
President and Director  
Date: May 3, 2016

BNY MELLON PARTICIPACOES LTDA

By: /S/ CARLOS ALBERTO SARAIVA  
-----  
Carlos Alberto Saraiva  
Director  
Date: May 5, 2016

BNY MELLON PARTICIPACOES LTDA

By: /S/ MARCUS VINICIUS MATHIAS PEREIRA  
-----  
Marcus Vinicius Mathias Pereira  
Director  
Date: May 5, 2016

BNY MELLON INVESTMENT MANAGEMENT  
APAC LP

By: BNY MELLON INVESTMENT MANAGEMENT  
HOLDINGS, LLC, GENERAL PARTNER  
By: /S/ PAUL A. GRIFFITHS  
-----  
Paul A. Griffiths  
President  
Date: April 29, 2016

MELLON GLOBAL INVESTING CORPORATION

By: /S/ LEO P. GROHOWSKI  
-----  
Leo P . Grohowski  
President  
Date: June 29, 2018

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| Fund Administrators |  
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BNY MELLON SERVICE KAPITALANLAGE-  
GESELLSCHAFT mbH

By: /S/ KATARINA MELVAN  
-----  
Katarina Melvan  
Managing Director (Chairman)  
Date: August 19, 2016

BNY MELLON SERVICE KAPITALANLAGE-  
GESELLSCHAFT mbH

By: /S/ CAROLINE SPECHT  
-----  
Caroline Specht  
Managing Director  
Date: August 19, 2016