GEOSCOPIE

La plateforme d'intelligence économique pour les géosciences

BULLETIN DE VEILLE GEOSCOPIE n°49 – Juin 2017

Edito

Chers lecteurs, adhérents, membres et partenaires,

Vous trouverez dans ce nouveau bulletin de veille Géoscopie une sélection d'actualités, brevets et publications des deux derniers mois sur les thématiques du POLE AVENIA.

La base de données **IP-Metrix/Géoscopie** contient aujourd'hui plus de **27000 articles** (dont près de 8000 publications scientifiques et plus de 17000 brevets) sur les thématiques technologiques et marchés du POLE AVENIA. Les articles visibles dans chaque bulletin Géoscopie ne correspondent donc qu'à la partie émergée de l'iceberg, dont la sélection reflète des problématiques apportées par nos membres au gré des contacts directs ou des discussions au sein des clubs d'innovations et autres manifestations du pôle.

La base de données IP-Metrix/Géoscopie est accessible à la consultation via un service d'abonnement. Elle peut être également interrogée et exploitée à tout moment en fonction de vos besoins spécifiques. N'hésitez pas à nous faire remonter vos problématiques pour une recherche rapide de la production scientifique, des principaux acteurs et de leurs réseaux de collaboration en nous envoyant un jeu de mots-clés, c'est gratuit pour les membres du POLE AVENIA ! Pour toute question sur nos services d'abonnement et de veille personnalisée, une adresse e-mail : geoscopie@pole-avenia.com et un n° tel : 05 64 17 15 35.

Bonne lecture à tous !

L'équipe du POLE AVENIA

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ACTUALITES

Les Géosciences en France

24/03/2017 – LaSalle-Beauvais lance un financement participatif pour un musée virtuel de géologie [source] - 15.140 roches, 16.042 minéraux et 15.782 fossiles. Au total, près de 50.000 pièces sommeillent au sein du département de géosciences d'UniLaSalle à Beauvais. Un trésor historique et scientifique que l'école d'ingénieurs souhaite rendre accessible gratuitement au public.

10/05/2016 – L'Unesco désigne huit nouveaux géoparcs mondiaux, dont les Causses du Quercy [source] - Huit sites d'Asie, d'Europe et d'Amérique Latine se voient classés "géoparcs mondiaux Unesco" par l'organisation des Nations unies, dont un français : les Causses du Quercy.

23/05/2016 – Le «grisou» reprend du service dans le bassin minier du Nord-Pas-de-Calais [source] - La Française de l'énergie a relancé l'exploitation du gaz qui s'échappe des galeries abandonnées des mines de charbon.

29/05/2016 – EGU2017 : une rencontre au sommet entre professionnels des géosciences [source] - Des scientifiques du monde entier, dont les experts d'Irstea, se sont réunis à Vienne (Autriche) fin avril, pour présenter leurs récentes découvertes lors de l'assemblée annuelle de l'Union européenne des géosciences (EGU).

09/06/2016 – L'Université Côte d'Azur accueillera la 11e édition des Olympiades Internationales de Géosciences [source] - L'Université Côte d'Azur (UCA) en partenariat avec l'académie de Nice, a reçu l'investiture pour organiser du 22 au 29 août prochains, la 11e édition des Olympiades Internationales de Géosciences (#IESO2017). Une première en France.

15/06/2016 – Variscan suspend ses projets miniers en Bretagne [source] - Le groupe minier australien avait obtenu des permis de recherche en Bretagne, notamment dans le secteur de Merléac (Côtes-d'Armor). Face à la contestation et à la demande de la Région, Variscan suspend ses projets de prospection.

Nouvelles des membres du pôle

20/04/2017 – BRGM : bientôt une météo pour les nappes souterraines? [source] - Avec 1700 points de mesure en France, le BRGM publie 11 fois par an des bulletins de situation hydrologique des nappes. L'organisme souhaiterait améliorer son dispositif pour proposer un outil de prévision de l'état des nappes à l'image de la météo.

11/05/2017 - Engie se désengage de l'exploration-production d'hydrocarbures [source] - Etape majeure de sa transformation pour devenir le chef de file mondial de la transition énergétique: l'énergéticien français est entré en négociations exclusives pour céder au britannique Neptune Energy son activité d'exploration-production d'hydrocarbures

23/05/2017 - Engie et Reykjavik Geothermal obtiennent trois licences d'exploration géothermique au Mexique [source] - Le ministère de l'Énergie mexicain vient tout juste d'octroyer trois permis d'exploration à l'industriel français Engie et son partenaire islandais Reykjavik Geothermal.

25/05/2017 - INT First to Market with Launch of New Data Visualization and Analysis Platform [source] - INT is pleased to announce the launch of IVAAP™-, the first and only digital framework designed to accelerate the development of web-based data visualization and analysis solutions for upstream E&P.

14/06/2017- Avec JumpStart, CGG veut donner plus de poids à ses données [source] - CGG annonce lance "JumpStart", des programmes multi-clients qui prennent en compte toutes les données géologiques, sismiques et de puits d'une même zone géographique, pour une aide à la décision synthétique.

14/06/2017 - Total à la pêche aux start-up [source] - Total Energy Ventures, le fonds d'investissement de Total, scrute 500 start-up chaque année et a déjà pris une trentaine de participations dans des secteurs innovants.

14/06/2017 - A Strasbourg : premier chantier urbain de géothermie haute énergie en France [source] - L'outil de forage entre en action le 14 juin 2017 sur le site de l'ancienne raffinerie de Reichstett. Si les premiers tests de géothermie profonde sont concluants, la centrale de cogénération devrait à terme alimenter le nord de Strasbourg en électricité, eau chaude et chaleur.

19/06/2017 - French TLS Geothermics and Storengy sign geothermal cooperation agreement [source] - French firms TLS Geothermics and Storengy/ ENGIE have signed a cooperation agreement in the field of high-temperature geothermal energy on two exclusive research permits in France.

Marché de la géothermie

25/04/2017 - Update on geothermal energy development in Mexico – a government perspective [source] - At the recent Geothermal Conference for Latin America and the Caribbean (GEOLAC) conference, representatives from various government institutions provided details on the regulatory scheme in Mexico and current challenges in the market,

discussing permitting, energy auctions and risk mitigation.

29/04/2017 - Armenia expects tender for 30 MW geothermal plant to be held 2018 [source] - The Ministry of Energy in Armenia expects to issue a tender for the construction of a 30 MW geothermal power plant at Karkar in southern Armenia in late 2018. Exploratory drilling confirmed a geothermal potential at depths from 1,495 to 1,682 meters.

03/05/2017 - City utility of Munich to start drilling large-scale geothermal heating project this year [source] - The 4 planned wells will go into a depth of more than 4,000 meters, with drilling to start later this year. This is part of the city's vision to make Munich Germany's first major city whose district heating will be generated entirely through renewable energies by 2040.

09/05/2017 - World Bank's Global Geothermal Development Plan – an update [source] - The World Bank has recently provided an update on the status of its Global Geothermal Development Plan (GGDP) that has helped to raise up to $235 million for geothermal development activities.

11/05/2017 - EU releases Horizon 2020 call for funding of EUR 10m for EGS research project [source] - The last call for proposals aiming to demonstrate innovative renewable energy technologies under the Horizon 2020 Program opened May 11, 2017. Nine topics are now open, including one, *LCE-18-2017, Enhanced Geothermal Systems in different geological conditions*, dedicated to deep geothermal, with a 10 M€ budget.

13/05/2017 - Geothermal Heat to Warm Greenhouses Near The Hague [source] - A four kilometer deep shaft is being bored in the Westland region. The 50 M€ pilot project is called Trias Westland and is anticipated to be online in September. The heat will come from water that is expected to be 140 degrees at the source.

15/05/2017 – Projet DEEPEGS: un forage géothermique à grande profondeur en Islande [source] - Le projet DEEPEGS, financé par l'UE, a réussi à forer à 4 659 mètres dans un volcan islandais, une 'étape importante pour l'industrie de la géothermie.

23/05/2017 – Geothermal development kicking off in Djibouti with new drilling contract [source] - Electricité de Djibouti (EdD) has completed an agreement with Iceland Drilling Company (IDC) in the Fiale Caldera area within the Lake Asal region of Djibouti. The agreement involves the drilling in 2018 of at least two geothermal wells to a depth of 2,500 meters.

Marché du stockage géologique

31/05/2017 - Gaz : les stocks sont faibles pour l'hiver prochain [source] - GRTgaz et TIGF alertent sur les risques de tension dans l'approvisionnement en gaz l'hiver prochain si les niveaux de stockage n'augmentent pas significativement.

25/05/2017 - Coal Mines Are Reimagined as a New Power Source [source] - Les deux gestionnaires du réseau de transport de gaz français, GRTgaz et TIGF, alertent ce mercredi sur les risques de tension dans l'approvisionnement en gaz l'hiver prochain si les niveaux de stockage n'augmentent pas significativement.

Techniques & technologies du sous-sol

13/04/2017 - Pétrole : la revanche des schistes [source] - Le « réveil des schistes » a été rendu possible par l'extraordinaire capacité des producteurs US à baisser leurs coûts de production. L'une des clés a été la meilleure compréhension du sous-sol.

24/04/2017 - Win-win situation for wind powered oil recovery [source] - In a project known as WIN WIN, or Wind-powered Water Injection, researchers led by the classification society DNV-GL have been investigating the idea of using a floating wind turbine to generate the power needed for the water injection system.

26/04/2017 - Gaz de schiste: les fuites de méthane sous-évaluées, selon une étude [source] - L'exploitation des gisements de gaz de schiste de la Colombie-Britannique [Canada] émet 2,5 fois plus de méthane que prévu, selon une nouvelle étude universitaire. Mais bonne nouvelle pour les producteurs canadiens : les fuites de méthane seraient quatre fois plus importantes aux États-Unis.

02/05/2017 – Offshore Technology Conference: Integration and collaboration in the forefront of drilling success [source] – For years, the industry has applied discrete drilling technologies and relied on enhancements of these to improve performance. While this has produced notable technical advancements, the logical next step is to fully integrate the well construction process by adopting a holistic, consistent, and collaborative approach to managing the entire drilling system.

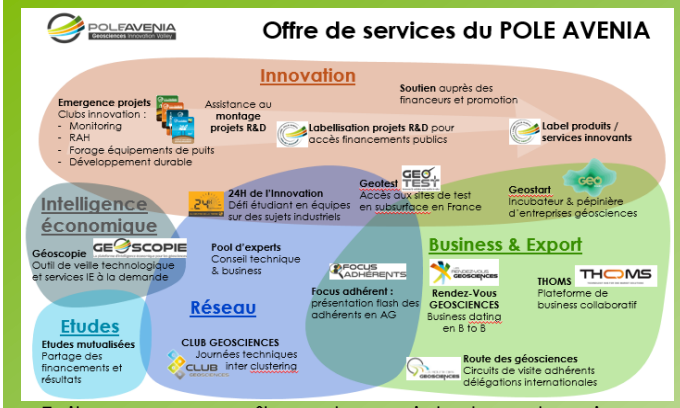
12/05/2017 - Oil companies to buy treated wastewater [source] - Oil and gas companies typically use water provided from ponds, rivers, aquifers and municipal water supplies for hydraulic fracturing operations. Two new projects are the first of their kind in Oklahoma to use treated wastewater to power drilling operations.

23/05/2017 - These Are the Forks in the Road to Drilling Automation [source] – Drilling contractors including Nabors and Precision Drilling have recently rolled out their first batch of "closed-loop" automated rigs that take key pieces of the well construction process out of human hands.

AGENDA DU POLE AVENIA ET DE SES PARTENAIRES

Date	Événement	Lieu
26 juin 2017	**Assemblée Générale du POLE AVENIA – FOCUS ADHERENTS** Infos et inscriptions ICI	PAU
27 Juin 2017	**RENDEZ VOUS GEOSCIENCES** : « international B to B event » Pays invité d'honneur : **IRAN -** Introduction sur le marché iranien, opportunités et modalités de collaboration en Iran par BUSINESS France + **RDV** Infos et inscriptions ICI	PAU
6 juillet 2017	Le POLE AVENIA participe à l'**Industry & Innovation Conference** organisée par **GEOSCIENCE IRELAND.** Info & programme ICI	DUBLIN, Irelan
9-13 Juillet 2017	**22nd World Petroleum Congress** Technical program & registration HERE	ISTANBUL, Turkey
3-7 Septembre 2017	**4th EAGE Sustainable Earth Sciences (SES) Conference** Bringing together geoscientists working in CO2 storage, geothermal applications, deep earth storage solutions and related topics. More information HERE	MALMÖ, Sweden
12-13 Octobre 2017	**5th European Geothermal Workshop** with a focus on **Characterization of Deep Geothermal Systems.** Organized by the Karlsruhe Institute of Technology (KIT) - More info HERE	KARLSRUHE, Germany

Communication du POLE AVENIA



Faites-nous connaître votre projet et vos besoins en nous retournant une fiche d'intention de projet

LE POLE AVENIA ACCOMPAGNE VOS PROJETS RDI & D'ENTREPRISES – Que vous soyez un laboratoire académique ou une entreprise, l'accompagnement de vos projets de recherche, développement et innovation ou de vos projets de création ou croissance d'entreprise est au cœur de la mission du POLE AVENIA. Notre équipe, assistée d'un comité d'experts, vous aide à structurer et maturer vos projets, à identifier d'éventuelles compétences manquantes ; nous vous mettons en relation avec des partenaires potentiels, nous vous orientons vers les guichets de financement les plus adaptés à vos besoins, nous labellisons vos projet et les soutenons auprès des financeurs, nous les faisons connaître à vos futurs clients, nous accueillons votre start-up au sein de notre incubateur GEOSTART, etc.

GEOTHERMICA

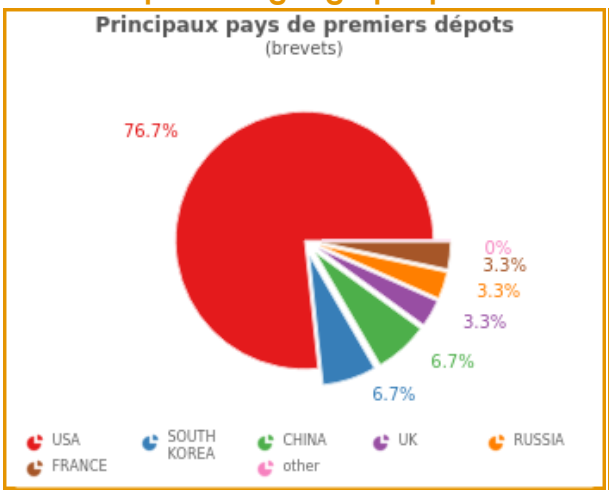
Appel à projets GEOTHERMICA. Le mécanisme ERA-NET (European Research Area Network) met en réseau les programmes nationaux et régionaux de R&D, permettant aux différents systèmes de financement (EU, nationaux, régionaux) de prendre collectivement en charge des actions. Un appel à projets dédié à la géothermie profonde est ouvert depuis le 10 avril. Pré-projets à remettre pour le 10 juillet et clôture finale le 25 novembre. Toutes les infos ICI (ENG) ou LA (FR)

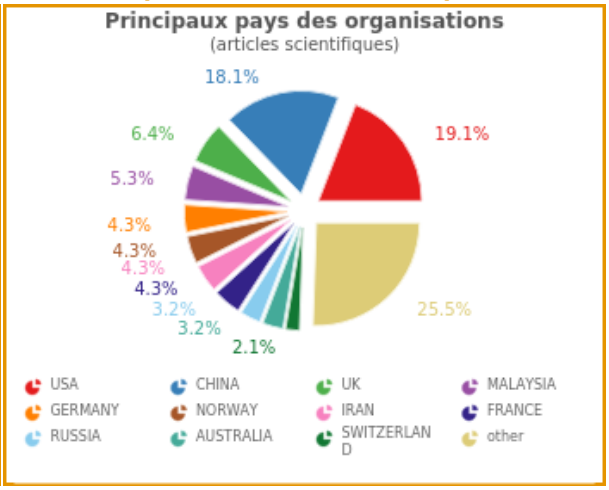
eit RawMaterials Connecting matters

Appel **KIC RawMaterials** - Des partenariats européens ont été créés par l'Institut Européen d'Innovation et de Technologie (EIT) sous forme de « communautés de la connaissance et de l'innovation » (ou KIC pour Knowledge and Innovation Communities). La KIC EIT-Raw Materials a été créé en 2014 dans le but de transformer le défi de la dépendance des matières premières en une force stratégique pour l'Europe. Plusieurs membres du POLE AVENIA (U. Bordeaux, U. Lorraine, BRGM) font partie du consortium fondateur. La KIC lance chaque année un appel à projets portant sur les thématiques de recyclage, substitution de matériaux, écoconception & conception de procédés efficaces sur les marchés des transports, des technologies de l'information & de la communication et de l'énergie. La KIC EIT Raw Materials ouvre son appel à projets à de nouveaux partenaires pour enrichir les consortia et faire évoluer la communauté. Contacts : lise.malassenet@u-bordeaux.fr et julien.frey@eitrawmaterials.eu

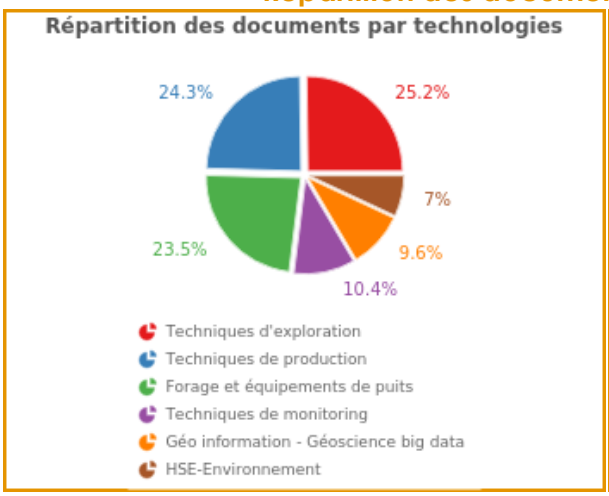
TABLEAUX DE BORD DE L'ACTIVITE SCIENTIFIQUE ET TECHNIQUE

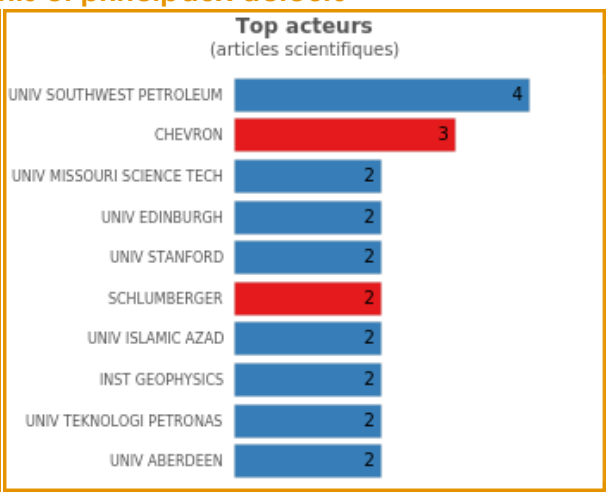
Répartition géographique des brevets et des publications scientifiques



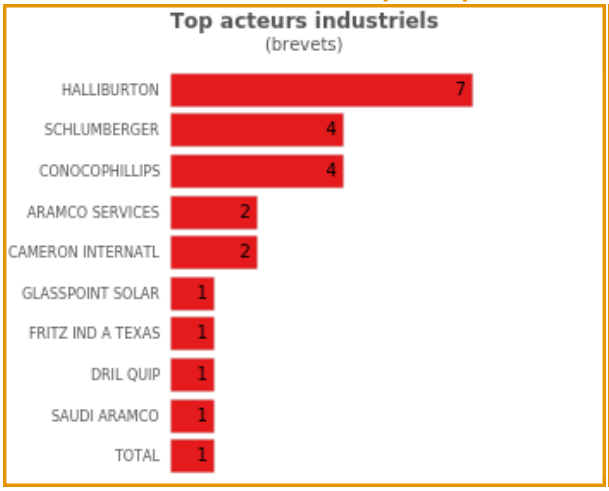


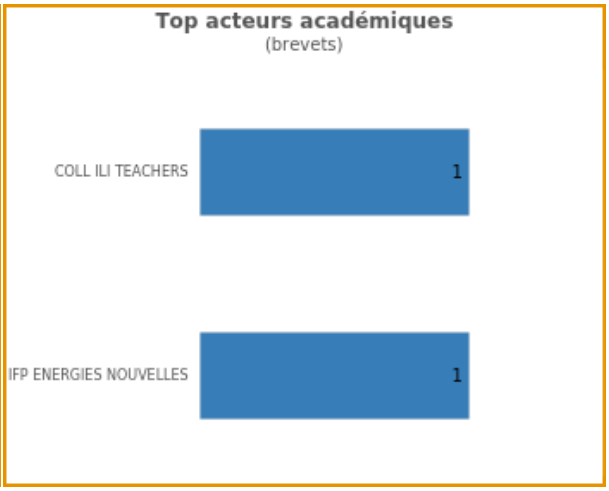
Répartition des documents et principaux acteurs





Les principaux acteurs dans les brevets





LES BREVETS

Géo information - Géoscience big data

16/03/2017 - US2017075872 **INFORMATION ANALYSIS SYSTEM** - HITACHI (JAPAN) - The problem solved by this invention is to convert text information in a geology report to numerical values which reflects geological characteristics of a well's subsurface. Prior art referred above cannot be applicable to this problem. Since text information in the geology report is in the natural language form. This information is not widely used in this industry, due to the fact that the text information can be hardly extracted and...

Techniques d'exploration

13/04/2017 - US2017102470 **MULTICOMPONENT PASSIVE SEISMIC IMAGING USING GEOMETRICAL OPTICS** - MICROSEISMIC (USA) - A method for passive seismic imaging includes entering into a programmable computer seismic signals measured at a plurality of spaced apart locations above a volume of Earth's subsurface to be evaluated. The signals are measured at each location along different directions to enable resolution of motion in three orthogonal directions. A seismic moment tensor is determined for at least one seismic event...

06/04/2017 - WO17058692 **METHODS AND SYSTEMS TO ANALYZE BED BOUNDARY DETECTION** - SCHLUMBERGER (FRANCE) - Methods capable of determining a depth of investigation of a logging tool can include generating an error distribution model for a logging tool. The methods can also include defining a detection threshold above which a measured signal from a measurement channel of the logging tool can be considered reliable based on output from the error distribution model, and generating a simulated formation model to determine the depth of investigation…

17/03/2017 - FR3041027 **PASSIVE RANGING USING ACOUSTIC ENERGY ORIGINATING FROM A TARGET WELLBORE** - HALLIBURTON (USA) - In one or more embodiments, a system comprises a first (target) wellbore disposed in a formation, the first wellbore having a pressure imbalance therein causing an influx of formation fluids, a second (relief) wellbore disposed in the formation, a drill string disposed in the second wellbore, the drill string comprising a drill bit and a logging tool, and a wellbore ranging module comprising a processor and memory, the wellbore ranging module...

09/03/2017 - US2017067836 **NANO-LEVEL EVALUATION OF KEROGEN-RICH RESERVOIR ROCK** - ARAMCO SERVICES (USA); SAUDI ARAMCO (SAUDI ARABIA) - Examples of nano-level evaluation of kerogen-rich reservoir rock are described. A micro-scale beam is formed from kerogen-rich reservoir rock. The beam has reservoir rock and kerogen, which has polymeric properties. A maximum dimension of the micro-scale beam is at most 1000 micrometers. A mechanical experiment that includes a tension test or a compression test is performed on the micro-scale beam. The mechanical experiment is imaged using a...

02/03/2017 - WO17034410 **DATA-DRIVEN FOCUSED INVERSIONS** - STATOIL (NORWAY) - DATA-DRIVEN FOCUSED INVERSIONS A method of processing geophysical data acquired from a subsurface region is disclosed. The method includes receiving geophysical data acquired from a subsurface region, determining data points which have high sensitivity to an anomaly, performing an inversion based on said data points, wherein during inversion focusing towards the anomaly is achieved by increasing the weight of said data points, and determining...

Forage et équipements de puits

25/04/2017 - KR20170044580 **WITHDRAWABLE HAMMER BIT** - JEONGSUNYONG - The present invention bit, bit 20 is inserted into the hammer to be coupled to the receiving groove 11 is formed at the front end portion, and wing bit connecting means 30 is provided on the inside of the space portion 14 is formed, the fixing pin 41 is provided with a fixing pin which is inserted into seating is provided with a receiving hole 12 a movement passage of air, water or the longitudinal direction of the inlet (13), is formed through...

04/04/2017 - BR102016021906 **SUBSEA SYSTEM AND METHOD FOR HIGH PRESSURE HIGH TEMPERATURE WELLS** - DRIL QUIP - In accordance with the present disclosure, a full top-to-bottom subsea system and method used to drill, complete, produce, and perform interventions on HPHT subsea wells is provided. The disclosed systems and methods involve the use of a controlled multiple barrier system, such as a high integrity pipeline protection system (HIPPS), incorporated into the subsea system to divide the system into two sections. The sections on either side of the...

23/03/2017 - WO17048862 **CHARACTERIZATION OF WELLBORE MATERIALS IN MULTIPLE CASING STRINGS** - HALLIBURTON (USA) - Methods, systems, and computer program products for characterizing materials in a wellbore having multiple casing strings uses well completion data and instantaneous frequency, instantaneous phase, and/or amplitude attributes, including waveform amplitude and instantaneous amplitude, of an acoustic waveform to determine

material densities, acoustic velocities and acoustic travel distances for the materials between the various stages of casings.

09/03/2017 - WO17040888 **COMPOSITIONS AND METHODS FOR WELL CEMENTING** - IMERYS OILFIELD MINERALS - A method for well cementing may include supplying a settable composition including a cement composition and water into a well bore, and allowing the settable composition to set to form hardened concrete. The cement composition may include a hydraulic cement and natural glass, and the hardened concrete may have a strength activity index of at least 125 percent, A method for making well cement may include combining hydraulic cement and natural...

09/03/2017 - WO17040500 **METHOD AND SYSTEM FOR MONITORING THE PERFORMANCE OF OIL OR GAS DRILLING EQUIPMENT** - SHELL (NETHERLANDS) - The performance of oil/and or gas well drilling equipment is measured by: - input and output performance sensor assemblies that monitor associated equipment input and output performance characteristics; and - alerting an operator if there is an anomaly between the monitored input and output performance characteristics; and wherein furthermore electric or hydraulic power input characteristics supplied to drilling equipment, such as a mud pump,...

Techniques de production

13/04/2017 - WO17060452 **CASHEW NUTSHELL LIQUID ALKOXYLATE SULFATE AS A NEW RENEWABLE SURFACTANT COMPOSITION FOR ENHANCED OIL RECOVERY APPLICATIONS** - CLARIANT (SWITZERLAND) - The present invention contains methods, of making a cashew nutshell liquid alkoxylate sulfate surfactant by alkoxylation of a natural alkylphenol using propylene oxide (PO) and/or ethylene oxide (EO) followed by a sulfation reaction. The cashew nutshell liquid alkoxylate sulfate surfactant of the present invention is made by a facile and cost effective method. The natural hydrophobe surfactant of the present invention find uses in EOR...

06/04/2017 - WO17058632 **SEALING ELEMENT AND RELATED METHODS** - 3M INNOVATIVE PROPERTIES - Provided are sealing elements useful for isolating or diverting segments of a well in a hydraulic fracturing operation. These sealing elements resist the extreme temperatures and pressures encountered within a well, yet can be degraded or dissolved when no longer needed without use of hazardous acids or other chemicals. The sealing elements are made from a composite containing one or more resins of polylactic acid combined with a degradant that...

16/03/2017 - US2017074082 **VARIABLE RATE STEAM INJECTION, INCLUDING VIA SOLAR POWER FOR ENHANCED OIL RECOVERY, AND ASSOCIATED SYSTEMS AND METHODS** - GLASSPOINT SOLAR - Systems and methods for variable rate steam injection, including via solar power for enhanced oil recovery, are disclosed. Several embodiments include using the variable nature of solar-generated steam to improve the efficiency and cost-effectiveness of enhanced oil recovery processes. In particular embodiments, the variable rate injection can provide more uniform steam distribution in an oil-bearing formation, at a lower cost than if the same...

11/11/2015 - GB201517301 **EMULSION FOR INHIBITING THE GROWTH OF MICROORGANISMS** - VIRUSTATIC - An emulsion comprising water and an immiscible predominantly hydrocarbon-based liquid, wherein the emulsion further comprises at least one protein for inhibiting the growth of microorganisms, said protein containing or being capable of binding to one of: a monosaccharide and an oligosaccharide. Uses of the invention include, but are not limited to: applications in oil well/fracking operations where it is necessary or desirable to neutralise...

Techniques de monitoring

23/03/2017 - WO17046623 **METHOD FOR ANALYSING LIQUID SAMPLES** - TOTAL (FRANCE) - The invention pertains to a method for analyzing a plurality of liquid samples. For each sample the method starts by introducing the sample inside a respective pipette. Then the sample settles to separate a plurality of phases. These separated phases are then released through an end of the pipette. The flow rate of each released phase is measured and used to determine the viscosity of the phase. The invention is particularly suitable for...

26/04/2017 - CN206133882 **NATURAL GAS LEAK MONITORING WARNING INSTRUMENT (MACHINE TRANSLATION)** - COLL ILI TEACHERS - The utility model discloses a natural gas leak warning monitoring instrument comprising: The controller, a signal input module, alarm module, power module, the wireless WIFI module, clock oscillation circuit and reset and switch circuits; The signal input module, alarm module, wireless WIFI module, clock oscillation circuit, reset and switch circuit are respectively connected to the controller; Said controller for receiving and processing...

13/04/2017 - WO17061993 **SYSTEMS AND METHODS DERIVING HYDRAULIC FRACTURE GROWTH FROM MICROSEISMICITY ANALYSIS** - HALLIBURTON (USA) - An illustrative monitoring system for a hydraulic fracturing operation includes: a data acquisition module collecting microseismic signals from a subterranean formation undergoing a hydraulic fracturing operation; a processing module implementing a monitoring method; and a visualization module that displays an estimate or prediction of fracture extent. The monitoring method implemented by the processing module includes: deriving microseismic...

23/03/2017 - AU2016225822 **PERMANENT SOIL AND SUBSOIL MEASUREMENT PROBE** - IFP ENERGIES NOUVELLES (FRANCE) - A device for monitoring an underground formation containing a fluid such as CO2 or methane comprising a measuring cell (CM) arranged in a cavity, analysis means (MA) arranged on the surface and sealed connection means (ML) connecting measuring cell (CM) to analysis means (MA). The measuring cell comprises two chambers (CH1, CH2) that can sealingly communicate with one another. The First chamber (CH1) comprises a plurality of orifices (OR)...

HSE-Environnement

12/04/2017 - CN106560461 **A REMEDIATION AND RESOURCE DISPOSAL METHOD FOR CONTAMINATED SOILS (MACHINE TRANSLATION)** - BRANCH TEIJITSU ENVIRONMENTAL ENGINEERING - The invention discloses a remediation and resource disposal method for contaminated soils, the methods include: control of contaminated soil particle size under 80 mesh, add a certain proportion of sludge, wood powder, water, mixing, in the preparation of the ball tray in the billet, regulating moisture into the rotary kiln roasting treatment, tail gas disposal, production wastewater treatment and other steps. Using the method of the invention...

13/04/2017 - US2017101841 **BLOWOUT PREVENTER WITH RAM PACKER ASSEMBLIES WITH SUPPORT MEMBER** - CAMERON INTERNATL (USA) - A blowout preventer ('BOP') includes a housing comprising a vertical bore extending through the housing and ram cavities intersecting the bore and ram assemblies, each ram assembly movably positionable within a ram cavity. Each ram assembly includes a packer assembly that comprises an upper plate, a lower plate, an elastomeric body positioned between the upper plate and the lower plate and comprising elastomeric material, and a support member...

26/02/2017 - CA2940562 **TREATMENT OF PRODUCED WATER USING INDIRECT HEAT** - CONOCOPHILLIPS (USA) - Systems and methods utilize heated waste flue gas to indirectly heat untreated water. The heated waste flue gas, which may come from a steam generator, passes through one or more heating coils in a vessel to vaporize untreated water and separate out solids and other contaminants before subsequent condensing. The steam generator may receive resulting treated water to produce steam for injection.

LES PUBLICATIONS SCIENTIFIQUES

Géo information - Géoscience big data

Simulation–Regression Approximations for Value of Information Analysis of Geophysical Data **- 2017 - Mathematical Geosciences** - CTR IBM T J WATSON RESEARCH (USA); DEPT MATHEMATICAL SCIENCES (NORWAY); UNIV STANFORD (USA) - Value of information analysis is useful for helping a decision maker evaluate the benefits of acquiring or processing additional data. Such analysis is particularly beneficial in the petroleum industry, where information gathering is costly and time-consuming. Furthermore, there are often abundant opportunities for discovering creative information gathering schemes, involving the type and location of geophysical measurements...

Integration of seismic and well-log data using statistical and neural network methods **- 2017 - Leading Edge** - SCHLUMBERGER (USA) - In the last two to three decades, the use of seismic attributes for reservoir characterization and modeling has grown exponentially. Now, a dozen or more attributes are often extracted from seismic data to predict reservoir properties. Meanwhile, an increasing trend of acquiring more wireline logs provides more and more data to describe reservoir properties. Both statistical methods and artificial neural networks (ANNs) are often used to...

New methodology merging seismic, geologic, and engineering data to predict completion performance **- 2017 - Leading Edge** - RUTHSAI (USA); SM ENERGY (USA) - Previous work in hydraulic fracture performance identifies rock quality and completion quality as key drivers of good production; however, quantifying rock quality in a systematic method along the wellbore is a difficult task. Novel methodologies are developed for calculating rock-quality…

Development of machine learning methodology for polymer gels screening for injection wells **- 2017 - Journal of Petroleum Science and Engineering** - MISSAN OIL (IRAQ); UNIV MISSOURI SCIENCE TECH (USA) - Conformance improvement by polymer gels continues to gain momentum in the field of water management in mature oilfields. A key component for a successful treatment is the identification of the most appropriate gel technology for a targeted reservoir. Advanced approaches provide efficient screening and ranking tools; however...

Techniques d'exploration

Assessment of the precision of smart phones and tablets for measurement of planar orientations: A case study **- 2017 - Journal of Structural Geology** - ACAD SCIENCES CZECH REPUBLIC (CZECH REPUBLIC); UNIV TEXAS PASO (USA) -

Although paper and pencil approaches to geological mapping continue, digital mapping tools are being increasing implemented in field geology. Of particular note is the use of an electronic compass/inclinometer built into tablets and smartphones for obtaining orientation data where an important question is the reliability of these digital devices relative to conventional, analogue compass/inclinometers. This paper deals with this question...

High-resolution mini-seismic methods applied in the Mont Terri rock laboratory (Switzerland) **- 2017 - Swiss Journal of Geosciences** - CHEVRON (USA); INST FED FOR GEOSCIENCES NATURAL RESOURCES BGR (GERMANY); INST TECH SWISS FED (SWITZERLAND); KNIGHT PIESOLD (CANADA); OFFICE FED TOPOGRAPHY SWISSTOPO (SWITZERLAND); TEAM ROCK MECHANICS (USA) - We present several mini-seismic methods developed and applied in recent years in the Mont Terri rock laboratory. All these applications aimed at correlating and interpreting seismically derived parameters with relevant rock-mechanical parameters and findings. The complexity of the local site setting always required very high spatial and parameter resolution. Both, seismic P- and S-wave velocities and dynamic elastic parameters...

Optimizing the design of vertical seismic profiling (VSP) for imaging fracture zones over hardrock basement geothermal environments **- 2017 - Journal of Applied Geophysics** - INST GEOPHYSICS (CHINA); TU BERGAKADEMIE FREIBERG (GERMANY); UNIV KING FAHD PETROLEUM MINERALS (SAUDI ARABIA) - A primary focus of geothermal seismic imaging is to map dipping faults and fracture zones that control rock permeability and fluid flow. Vertical seismic profiling (VSP) is therefore a most valuable means to image the immediate surroundings of an existing borehole to guide, for example, the placing of new boreholes to optimize production from known faults and fractures. We simulated 2D and 3D acoustic synthetic seismic data and processed it...

Two dimensional joint inversion of direct current resistivity, radio-magnetotelluric and seismic refraction data: An application from Bafra Plain, Turkey **- 2017 - Journal of Applied Geophysics** - INST TECH EDUC CRETE (GREECE); UNIV ANKARA (TURKEY); UNIV TECHNICAL CRETE (GREECE) - Direct current resistivity, radio-magnetotelluric and seismic refraction methods are widely used in the identification of near surface structures with collected data generally being interpreted separately. In recent decades, the use of joint inversion algorithms in geosciences has become widespread to identify near surface structures. However, there is no developed joint inversion algorithm using...

Automated fault detection without seismic processing **- 2017 - Leading Edge** - INST TECH MASSACHUSETTS (USA); SHELL (NETHERLANDS); UNIV STANFORD (USA) - For hydrocarbon exploration, large volumes of data are acquired and used in physical modeling-based workflows to identify geologic features of interest such as fault networks, salt bodies, or, in general, elements of petroleum systems. The adjoint modeling step, which transforms the data into the model space, and subsequent interpretation can be very expensive, both in terms of computing resources and expert time…

Successful application of multiscale methods in a real reservoir simulator environment **- 2017 - Computational Geosciences** - MATHEMATICS CYBERNETICS (NORWAY); SCHLUMBERGER (USA) - For the past 10 years or so, a number of so-called multiscale methods have been developed as an alternative approach to upscaling and to accelerate reservoir simulation. The key idea of all these methods is to construct a set of prolongation operators that map between unknowns associated with cells in a fine grid holding the petrophysical properties of the geological...

Forage et équipements de puits

A new polymer nanocomposite repair material for restoring wellbore seal integrity **- 2017 - International Journal of Greenhouse Gas Control** - CTR POLYMER NANOCOMPOSITE EXCELLENCE (EGYPT); INST EGYPTIAN PETROLEUM RESEARCH EPRI (EGYPT); LAB SANDIA NATL (USA); UNIV 1 NEW MEXICO (USA); UNIV NEW MEXICO (USA) - Seal integrity of functional oil wells and abandoned wellbores used for CO2 subsequent storage has become of significant interest with the oil and gas leaks worldwide. This is attributed to the fact that wellbores intersecting geographical formations contain potential leakage pathways. One of the critical leakage pathways is the cement-shale interface...

Investigation of wellbore microannulus permeability under stress via experimental wellbore mock-up and finite element modeling **- 2017 - Computers and Geotechnics** - LAB SANDIA NATL (USA); UNIV NEW MEXICO (USA) - This research aims to describe the microannulus region of the cement sheath-steel casing interface in terms of its compressibility and permeability. A wellbore system mock-up was used for lab-scale testing, and was subjected to confining and casing pressures in a pressure vessel while measuring gas flow along the specimen's axis. The flow was interpreted as the hydraulic aperture of the microannuli. Numerical joint models were used to calculate...

An economic analysis of a geothermal drilling operation **- 2017 - 2016 IEEE International Conference on Renewable Energy Research and Applications, ICRERA 2016** - MINERAL RESEARCH EXPLORATION (TURKEY) - Usage of geothermal resources in Turkey increased notable in the recent years. A drilling operation is necessary to obtain geothermal fluids generally. Such an operation includes an economic calculation and a significant engineering application. In this paper it is analyzed the cost elements of a drilling operation, such as employee cost, drilling and other material cost.

Fatigue crack growth analysis of drill pipes during rotary drilling operations by the multiple reference state weight function approach **- 2017 - Engineering Failure Analysis** - POLYTECH TORINO (ITALY) - Drill-string fatigue failures are the

most common and costly type of failures in Oil and Gas and Geothermal drilling operations. However, the drilling industry currently does not have a means of quantitatively evaluating drill-pipe fatigue fife. The aim of the present study is to fill this gap, providing a rapid and easy means of accurately obtaining drill-pipe fatigue life estimates...

Investigation of drill pipe rotation effect on cutting transport with aerated mud using CFD approach **- 2017 - Advanced Powder Technology** - UNIV AMIRKABIR TECH TEHRAN POLYTECH (IRAN) - In drilling with aerated mud, appropriate hole cleaning has a great impact on decreasing the drilling time and cost. Thus, investigating the impact of diverse drilling parameters such as pipe rotation on the hole cleaning looks as a key. In this study, the combination of k-ε turbulent model and Eulerian-Eulerian multiphase model was used to investigate the three phase flow in the concentric annulus. Furthermore, the collision of cutting –...

Numerical analysis on the impact of the flow field of hydrothermal jet drilling for geothermal wells in a confined cooling environment **- 2017 - Geothermics** - UNIV PETROLEUM CHINA BEIJING (CHINA) - Hydrothermal jet technology is a novel drilling method expected to be suitable for the exploitation of deep geothermal resources, in which the rocks are broken coupled by thermal spallation effect with high velocity impact. Because of the high temperature return fluid, the cooling of the drill string and wellbore is one major problem in hydrothermal jet drilling. This paper presents two cooling configurations in downhole conditions: the lateral...

Rigless well abandonment remediation in the shallow water U.S. Gulf of Mexico **- 2017 - Journal of Petroleum Science and Engineering** - UNIV STATE LOUISIANA (USA) - From 2004–2015, over 11,000 wells were plugged and abandoned in the federal waters of the Gulf of Mexico, but no studies have ever been conducted on the reliability of operations and the frequency of remediation activity. The purpose of this paper is to estimate the probability that a dry tree well abandoned using rigless methods, the most common approach in the shallow water Gulf of Mexico, requires remediation after initial operations are...

Performance enhancement of selected vegetable oil as base fluid for drilling HPHT formation **- 2017 - Journal of Petroleum Science and Engineering** - UNIV TEKNOLOGI PETRONAS (MALAYSIA) - Mineral oils are the base fluids of choice commonly used for the formulation of synthetic based mud (SBM) in drilling HPHT wells. However, the major drawbacks are largely related to environmental impact. They are highly toxic, non- biodegradable, non-renewable and thus leading to high cost of drilling waste treatment. In this work, an environmentally friendly based fluid was developed from a local vegetable oil. Crude palm oil (CPO) was...

Techniques de production

New laboratory study and transport model implementation of microgels for conformance and mobility control purposes **- 2017 - Fuel** - CHEVRON (USA); UNIV MISSOURI SCIENCE TECH (USA); UNIV TEXAS AUSTIN (USA) - Water management in mature waterflooded reservoirs is a top priority to push more oil out and control water production. Excess water production through fractures and high permeability thief zones is a growing concern for sweep efficiency and oil production. Gel treatment has been applied widely to plug thief zones and reduce excess water production to improve macroscopic sweep efficiency. Field studies demonstrated that gel treatments can be...

Thermodynamic analysis of a solar–enhanced geothermal hybrid power plant using CO2 as working fluid **- 2017 - Applied Thermal Engineering** - LAB BEIJING KEY FOR COSUB2 (CHINA); LAB KEY FOR THERMAL SCIENCE POWER ENGINEERING MINISTRY EDUC (CHINA); UNIV TSINGHUA (CHINA) - CO2-based Enhanced Geothermal Systems (EGS) and closed-loop supercritical CO2 Brayton cycles for solar thermal systems are both currently being developed for environmentally-friendly power plant systems. However, the recompressor needed in closed-loop supercritical CO2 Brayton cycles operates at high temperature and pressure with attendant higher manufacture and maintain cost. Here a solar thermal-EGS hybrid system is proposed where the...

Experimental Investigation of Interfacial Tension Measurement and Oil Recovery by Carbonated Water Injection: A Case Study Using Core Samples from an Iranian Carbonate Oil Reservoir **- 2017 - Energy and Fuels** - UNIV ABERDEEN (UK); UNIV ISLAMIC AZAD (IRAN); UNIV TEKNOLOGI MARA (MALAYSIA) - Low volumetric sweep efficiency, early breakthrough of injected fluid, and high risk of gas leakage from the reservoir are the major technical challenges associated with direct gas and water injection into oil reservoirs. Injection of carbonated water (CW) into oil reservoirs is a carbon dioxide-augmented water injection technique, which results in improved oil recovery and possible CO2 storage in the reservoir. In this paper, the potential of...

Investigation of foam flow in a 3D printed porous medium in the presence of oil **- 2017 - Journal of Colloid and Interface Science** - UNIV CATOLICA TEMUCO (CHILE); UNIV MANCHESTER (UK); UNIV STRATHCLYDE (UK) - Foams demonstrate great potential for displacing fluids in porous media which is applicable to a variety of subsurface operations such as the enhanced oil recovery and soil remediation. The application of foam in these processes is due to its unique ability to reduce gas mobility by increasing its effective viscosity and to divert gas to un-swept low permeability zones in porous media. The presence of oil in porous media is detrimental to the...

Critical review of alkaline-polymer flooding **- 2017 - Journal of Petroleum Exploration and Production Technology** - UNIV SOUTHWEST PETROLEUM (CHINA); UNIV TEXAS TECH (USA) - Field performance shows that the incremental oil recovery factor from alkaline projects was low. Chemical EOR experience tells us that the mobility control is very important. Thus, the combination of alkaline flooding and polymer flooding is expected to improve alkaline flooding performance. This paper is to provide a critical review of alkaline-polymer (AP) flooding....

Convective heat transfer of supercritical CO2 in a rock fracture for enhanced geothermal systems **- 2017 - Applied Thermal Engineering** - UNIV TSINGHUA (CHINA) - Convective heat transfer characteristics of supercritical pressure fluid in a rock fracture are important for building an accurate heat transfer model of enhanced geothermal systems. This paper presents experimental investigations of laminar convection heat transfer of supercritical pressure CO2 in an artificial smooth parallel-plate fracture and a rough and tortuous fracture that was created using the Brazilian…

Techniques de monitoring

Feasibility of borehole ambient noise interferometry for permanent reservoir monitoring **- 2017 - Geophysical Prospecting** - CTR EXCELLENCE FOR GEOPHYSICS (AUSTRIA); OMV EXPLORATION PRODUCTION (AUSTRIA) - The analysis of seismic ambient noise acquired during temporary or permanent microseismic monitoring campaigns (e.g., improved/enhanced oil recovery monitoring, surveillance of induced seismicity) is potentially well suited for time-lapse studies based on seismic interferometry. No additional data acquisition required, ambient noise processing can be automatized to a high degree, and seismic interferometry is very sensitive to small medium...

Magnetotelluric monitoring of permeability enhancement at enhanced geothermal system project **- 2017 - Geothermics** - GEOLOGICAL SURVEY AUSTRALIA (AUSTRALIA); INST FOR GEOTHERMAL ENERGY RESOURCE MANAGEMENT (GERMANY); UNIV ADELAIDE (AUSTRALIA) - Magnetotelluric (MT) data were collected across the Habanero Enhanced Geothermal System (EGS) project in the Cooper Basin, South Australia. A baseline regional MT survey consisting of two profiles were collected to delineate subsurface resistivity structure. An MT monitoring survey was conducted during stimulation of the Habanero-4 well. Inversions of the MT data in 2-D reveal three main…

Tracking the interaction between injected CO2 and reservoir fluids using noble gas isotopes in an analogue of large-scale carbon capture and storage **- 2017 - Applied Geochemistry** - UNIV EDINBURGH (UK); UNIV SCOTTISH ENVIRONMENTAL RESEARCH CTR (UK) - Industrial scale carbon capture and storage technology relies on the secure long term storage of CO2 in the subsurface. The engineering and safety of a geological storage site is critically dependent on how and where CO2 will be stored over the lifetime of the site. Hence, there is a need to determine how injected CO2 is stored and identify how injected CO2 interacts with sub-surface fluids. Since July 2008 ~1 Mt of CO2 has been injected...

A review on conceptual and practical oil and gas reservoir monitoring methods **- 2017 - Journal of Petroleum Science and Engineering** - UNIV TEKNOLOGI PETRONAS (MALAYSIA) - Reservoir monitoring is one of the key factors in the management of oil and gas resources. In particular, the evaluation of the Enhanced Oil Recovery (EOR) method through reservoir monitoring is crucial in EOR processes, where various fluids are injected into a reservoir to improve oil recovery. Reservoir monitoring methods enable engineers to conduct either direct or indirect surveillance …

HSE-Environnement

Costs and benefits associated with marine oil spill prevention in northern Norway **- 2017 - Polar Journal** - AGENCY SWEDISH CHEMICALS (SWEDEN); ANTHESIS ENVECO (SWEDEN); CTR FOR ECONOMIC FINANCIAL RESEARCH (RUSSIA); INST TECH KTH ROYAL (SWEDEN) - The purpose of this study is to analyse conflicts regarding natural resources and ecosystem services involving different stakeholder groups using cost–benefit analysis (CBA). The paper is formed around a specific case study in Lofoten–Vesterålen in northern Norway, investigating costs and benefits of decreasing the probability of a major oil spill from shipping in the area. Benefits of decreasing the probability of a spill are…

Produced water treatment using forward osmosis membranes: Evaluation of extended-time performance and fouling **- 2017 - Journal of Membrane Science** - SCHOOL COLORADO MINES (USA); WESTMINSTER (USA) - Forward osmosis (FO) membrane fouling and performance were systematically studied for an extended time during treatment of produced water using cellulose triacetate (CTA) and polyamide thin film composite (TFC) FO membranes. Performance was evaluated with integrity tests that measured water flux, reverse salt flux (RSF), and specific reverse salt flux (SRSF). The CTA membrane reached steady performance after one week and exhibited decreased...

Spatial Risk Analysis of Hydraulic Fracturing near Abandoned and Converted Oil and Gas Wells **- 2017 - Groundwater** - UNIV BAYLOR (USA) - Interaction between hydraulically generated fractures and existing wells (frac hits) could represent a potential risk to groundwater. In particular, frac hits on abandoned oil and gas wells could lead to upward leakage into overlying aquifers, provided migration pathways are present along the abandoned well...