# Secretary of Energy Advisory Board

# Task Force Report on FracFocus 2.0

# March 28, 2014

U.S. Department of Energy

**Executive Summary**

This report presents the findings and recommendations for the Secretary of Energy Advisory Board (SEAB) Task Force on FracFocus. This Task Force report builds upon and extends the 2011 SEAB Subcommittee report on the environmental impacts of unconventional gas production.

The Task Force believes that the FracFocus experience to date demonstrates the ease of disclosure of chemicals added to fracturing fluid for companies, the value of this disclosure for the public, and the importance of public confidence in the quality and accessibility of the FracFocus chemical registry data. It has accomplished a good deal and shows the capacity to make improvements at modest additional cost. FracFocus has greatly improved public disclosure quickly and with a significant degree of uniformity.

The Task Force recommends a number of actions that will further improve the effectiveness of the FracFocus disclosure of chemical additives and improve transparency for regulators, operating companies, and the public. Recommendations are made for improving the accuracy and completeness of registry submissions. In addition, the Task Force believes that an independent audit to assess the accuracy and compliance of the process will be useful for all stakeholders.

A large fraction of reporting wells claim at least one trade secret exemption. The Task Force favors full disclosure of all known constituents added to fracturing fluid with few, if any exceptions. A "systems approach" that reports the chemicals added separately from the additive names and product names that contain them, generally should provide adequate protection of trade secrets. The Task Force further calls for state and federal regulators to adopt standards for making a trade secret claim and establish an accompanying compliance process and a challenge mechanism.

The Task Force also makes recommendations for improving data storage and retention collected by FracFocus, the budget required for FracFocus to operate and upgrade its

service and system, as well as for how these activities might be financed by a combination of DOE support and/or a user charge.

All members of the Task Force support this report.

**Context for the Task Force Deliberations**

On November 26, 2013 Secretary of Energy Moniz charged the SEAB to establish a Task Force to review FracFocus 2.0, the registry for public disclosure of chemical constituents added to hydraulic fracturing fluids used in unconventional oil and gas production. The Ground Water Protection Council (GWPC) and the Interstate Oil and Gas Compact Commission (IOGCC), two quasi-public organizations dedicated to conservation and environmental protection, operate the FracFocus registry.[1] The Secretary's charge to the Task Force included in Appendix A, instructs the Task Force to examine seven topics related to the operation of FracFocus. Task Force membership is given in Appendix B.

The Task Force was formed to respond to a request from Senator Wyden, chair of the Senate Energy Committee, to review FracFocus. The Secretary turned to SEAB because a subcommittee of the board had undertaken a study to identify measures to reduce the environmental impacts of unconventional gas production in 2011.[2] President Obama had directed former Secretary Chu to form this Subcommittee as part of the President's "Blueprint for a Secure Energy Future."[3]

The 2011 SEAB Subcommittee report made over twenty recommendations for reducing the environmental impact of unconventional gas operations.[4] A central finding of the 2011 Subcommittee report was *the importance of a process of continuous improvement in various aspects of shale gas production that relies on best practices and is tied to*

[1] Information about FracFocus can be found on the web at http://fracfocus.org/ .
[2] The Subcommittee's interim and final report in August and November 2011, respectively can be found at http://www.shalegas.energy.gov/.
[3] Available at-*Blueprint for a Secure Energy Future* (pdf), The White House, March 30, 2011.
[4] Page 1, August 2011 Subcommittee report.

*measurement and disclosure* in order to achieve progressively lower levels of environmental impact.[5] While the focus of the Subcommittee was unconventional shale gas production the Task Force believes that most, if not all, of its findings apply to both unconventional oil and gas exploration and production.

Several of the 2011 Subcommittee recommendations were directed at increasing transparency and disclosure in order to support state and national regulations and to meet public concerns about hydraulic fracturing. The Subcommittee specifically recommended DOE support for (1) the then new FracFocus website for voluntary disclosure of fracturing fluid composition; (2) STRONGER (the State Review of Oil and Natural Gas Environmental Regulation); and (3) the Groundwater Protection Council for expansion of the Risk Based Data Management System (RBDMS), so that similar projects might be expanded to other aspects of shale gas and oil development. As discussed below several additional suggestions were made bearing on the disclosure of fracturing fluid chemicals and on the operation of FracFocus. Accordingly, it was appropriate for Secretary Moniz to turn to SEAB to review and extend its findings on disclosure of fracturing fluid chemical composition and the operation of FracFocus in response to Chairman Wyden's request.

**Questions for the Task Force to address**

The terms of reference suggests the Task Force examine seven matters:

(1) Evolution of the operation of FracFocus 2.0 toward timely, complete, and accurate data storage.
(2) The extent to which state and federal regulatory bodies are using FracFocus to meet regulatory disclosure requirements.

[5] Pages 1 to 5, August 2011 Subcommittee Report.

(3) Understanding the breadth of data maintained by FracFocus, how frequently companies are using the proprietary exemption to avoid disclosure of fracturing fluid composition, and the standards for the use of this exemption.

(4) Understanding the difference in federal data custody requirements and FracFocus practices.

(5) Increasing the utility of FracFocus by maintaining it as a database with tools suitable for analysis by regulatory bodies, companies, and the public.

(6) Expanding the scope of the FracFocus registry to other areas, such as the water quality data in neighboring water wells collected prior to well stimulation or postproduction.

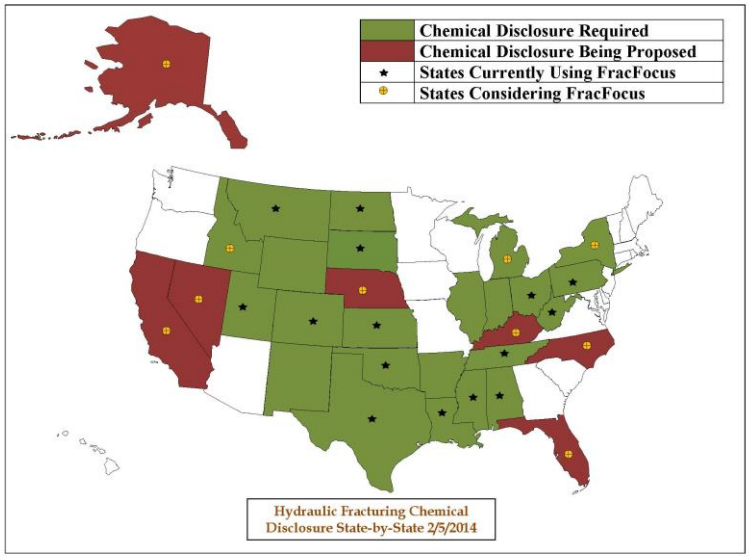
(7) Adequacy of funding for FracFocus activities and suggestion for possible alternative arrangements.

The 2011 Subcommittee addressed several of these issues, in particular, (2), (3), (5), and (7). The current report is informed by this work and, where noted, the 2011 findings have been confirmed and/or extended.

**Addressing the Questions**

**(1) Evolution of the operation of FracFocus 2.0 toward timely, complete, and accurate data storage.** The following table summarizes the rapid growth of key FracFocus operating factors and the map below displays the states that require chemical disclosure. It is notable that between 2011 and 2013 the number of registered wells increased more than four fold.

| Operating Factors | 2011 | 2012 | 2013 |
|---|---|---|---|
| States requiring FF disclosure | 2 | 8 | 14 |
| # of wells registered | 14,246 | 24,570 | 62,410 |
| FF budget[6] $000 | $527 | $1,438 | $1,406 |




The two important trends are the growth in the number of wells entered into the registry and the increase in the number of states that use FracFocus as part of their disclosure requirement for the composition of fracturing fluids. The evolution of FracFocus from version 1.0 to 2.0 enables the system to respond to several of the 2011 Subcommittee recommendations. The registry's back end has also converted from spreadsheet based to a web-based data entry process.

Initially FracFocus directed those using the site to disclose all chemicals used in fracturing fluids that appear on Material Safety Data Sheets (by common name and, more importantly, by their Chemical Abstract Service, or CAS, identification number). Chemicals on these sheets are believed to be hazardous to workers in an occupational

[6] Source: FracFocus. These funds come from the DOE, the American Petroleum Institute, American Natural Gas Alliance, Environmental Defense Fund and other organizations.

setting as determined by the Occupational Safety and Health Administration, (OSHA). MSDS reporting does not include other chemicals that might be hazardous to humans in an environmental setting or that might be harmful to the environment. Thus the 2011 Subcommittee recommended that disclosure include all chemicals intentionally added to fracturing fluid, not just those that appear on MSDS. FracFocus 2.0 follows this recommendation now asking for "additional ingredients not listed on MSDS."

Full disclosure means the public reporting of all constituents added to fracturing fluid injected into a well. Constituents include both "chemicals" and "additives" such as surfactants, friction reduction agents, and tracers that are composite material composed of several, perhaps many, molecules. As discussed below this distinction is important because companies frequently believe that it is the chemical composition of additives (or formulated materials) as a product that is most likely to have proprietary value that deserve exemption from disclosure as a "trade secret." Most states currently require disclosure of both chemicals and additives.

Currently, disclosure does not require any information about the chemistry of the make-up water that is traditionally 90% by weight of the fracturing fluid. The water used to mix the fracturing fluid is normally fresh water taken from water wells, lakes or rivers. However, during the past few years, it is becoming increasingly common to recycle fracture fluid that is produced from wells that have recently experienced physical or chemical fracture treatment. In either case, the chemicals that are part of the make-up water are not always measured and usually not reported as part of FracFocus 2.0. Disclosure of the water analysis of the make-up water used in hydraulic fracturing would be appropriate, if data were available.

It is important to assess the accuracy of well data disclosed on FracFocus since transparency implies correct information has been filed. Examination of a limited sample of records from FracFocus 2.0 indicates a variety of errors, partly due to many different companies contributing data to an individual FracFocus record, besides the operator of the well. We recommend:

(a) FracFocus should examine the entire data entry workflow and structure, looking for opportunities to simplify data structure and steps for data entry to reduce the probability of data entry errors, and assuring accuracy. Simple data entry reduces errors.

(b) FracFocus should improve the quality of the data entered into the system, especially the accuracy and completeness of reported CAS numbers. CAS numbers are the unique and universal identifier of individual chemicals that might go under a variety of different names. FracFocus 2.0 has introduced basic error checking that alerts users if an entered CAS number is in the proper format, but not whether the CAS number matches the chemical name, or even if the CAS number is currently in use. While FracFocus does not assert authority to reject operator entries, the automatic validation system should be expanded and improved.

(c) When FracFocus discovers an error in a company submission FracFocus should inform the company and indicate on the web site that the submitted data are in some doubt. Such a notice on the FracFocus web site would inform the regulatory authorities and the public that there is an issue and serve as incentive to the company to revise the submission. (The Task Force understands that the FracFocus variant in use in British Columbia contains this feature). This practice would also encourage operators to assure that CAS numbers received from manufacturers and suppliers are accurate.

(d) FracFocus should make provisions for submissions to include more information about the water used as a base fluid, for example whether it is 100% fresh water or does it contain a percentage of recycled fracturing fluid. Such data in FracFocus would be available to EPA, state regulators and the public.

(e) In some instances, the FracFocus disclosure form does not explicitly call for information required by state disclosure rules. For example, with respect to chemical concentrations, some states require actual concentrations, while the form only requests maximum concentrations. The Task Force recommends that

states be attentive to ensure compliance with more specific state disclosure requirements, especially where FracFocus requires less or different information.

FracFocus and the states that require disclosure, through FracFocus or more generally, have different ways of assessing compliance with respect to timing, accuracy, and substance of the disclosure. The Task Force believes that an understanding of how well this disclosure system is working would be enhanced if an independent audit were conducted to assess the accuracy and compliance of the process. This would benefit all stakeholders in FracFocus – regulators, companies, and the public. The audit should be sponsored by an independent entity with the objective of shedding light on FracFocus system operations in addition to the information it houses. Accordingly, the Task Force recommends that DOE's Office of Fossil Energy contract with a suitable audit or consulting firm to perform this audit. The audit should include (1) the accuracy of the operator's field records; (2) a comparison of the operator's field records to the service company field tickets; (3) a comparison of the service company's field ticket to the service company final report; and (4) the accuracy of the data entry into FracFocus 2.0. The audit firm should consider sample size and diversity to ensure a meaningful review and should examine, among other factors, trade secret exemption claims.

**(2) The extent to which state and federal regulatory bodies are using FracFocus to meet regulatory disclosure requirements**. FracFocus has evolved beyond a strictly voluntary effort as state regulators and firms have recognized the level of public concern about possible health and environmental consequences of chemical constituents used in fracturing fluid to water supplies. Voluntary disclosure offered an immediate and practical response to growing public concern about chemical use for both industry and regulatory bodies.

As of November 1, 2013, over 20 states have adopted some level of disclosure requirements, of which 14 states require the use of FracFocus. Inspection and

enforcement will require increased effort on the part of state regulators.[7] FracFocus makes an important contribution by facilitating the flow of information to states through the Risk Based Data Management System (RBDMS).

**(3) Understanding the breadth of data housed in FracFocus, how frequently companies are invoking the trade secret exemption to avoid disclosure of fracturing fluid composition, and the standards for the use of this exemption**. The Task Force believes that full disclosure of all known constituents added to fracturing fluids is desirable. It is desirable because transparent disclosure addresses the public concern, justified or not, about the risk these chemicals present to drinking water supplies. Trade secret claims that shield disclosure are made to protect perceived intellectual property value of the chemical treatment. The Task Force has no wish to constrain innovation for improved environmental characteristics or performance/cost attributes of chemical stimulation, or to limit the role of proprietary information as part of the innovation process. Indeed, as discussed below, the Task Force believes this disclosure can be accomplished with little or no risk to disclosing proprietary information. Regulatory bodies have the authority to adopt binding disclosure requirements. The Task Force is challenging FracFocus to operate in a manner that encourages full disclosure with few, in any trade secret exceptions.

The 2011 Subcommittee strongly endorsed full disclosure of the chemical composition of fracturing fluids:

> Disclosure of fracturing fluid composition: The Subcommittee shares the prevailing view that the risk of fracturing fluid leakage into drinking water sources through fractures made in deep shale reservoirs is remote.[8] Nevertheless the Subcommittee believes there is no economic or technical reason to prevent public disclosure of all chemicals in fracturing fluids, with an exception for genuinely proprietary information. While companies and

[7] *Hydraulic Fracturing – Chemical Disclosure Requirements*, Congressional Research Service, Brandon Murrill & Adam Vann, June 19, 2012. R42461.

[8] Fracturing fluids can reach surface and near-surface water supplies, for example, if there is poor well completion or surface accidents during production.

> regulators are moving in this direction, progress needs to be accelerated in light of public concern.[9]
>
> The Subcommittee believes that the high level of public concern about the nature of fracturing chemicals suggests that the benefit of immediate and complete disclosure of all chemical components and composition of fracturing fluid completely outweighs the restriction on company action, the cost of reporting, and any intellectual property value of proprietary chemicals. The Subcommittee believes that public confidence in the safety of fracturing would be significantly improved by complete disclosure and that the barrier to shield chemicals based on trade secret should be set very high. Therefore the Subcommittee recommends that regulatory entities immediately develop rules to require disclosure of all chemicals used in hydraulic fracturing fluids on both public and private lands.[10]

The Task Force endorses this finding.

The FracFocus disclosure exemption is based on "trade secret" as defined in OSHA regulation 1910.1200(i)(1).[11] The Task Force has learned from FracFocus that 84% of the registered wells invoked a trade secret exemption for at least one chemical, with the range by state extending from 57% to 100%, since FracFocus 2.0 went operational in June of 2013. On average, trade secret exemptions were claimed for 16% of the chemical entries recorded in the FracFocus database between June and December 2013.[12] (See Appendix C). While there are many different ways to assess the incidence of the trade secret exemption claim (for example, by well, by chemical, by mass, by state, or by operating company) this data does not suggest the level of transparency and disclosure urged by this Task Force or by the 2011 Subcommittee and supported by this Task Force. More can be done.

---

[9] Page 3, August, 2011 Subcommittee Report.
[10] Page 24, August 2011 Subcommittee Report.
[11] This report uses the narrower "trade secret" term rather than "proprietary information" or "confidential business information" because it is more consistent with the call for a "high bar" for disclosure.
[12] A chemical entry occurs each time that a chemical is disclosed in an individual well. The percentage of chemical entries is not the same as the percentage of unique chemicals claimed as a trade secret, but it is one of the more useful metrics for understanding the incidence of trade secret claims. But, recall the reporting complications mentioned on page 11.

There may be reporting complications that can be masking, to some extent, the number of trade secret exemptions on FracFocus and the number of trade secrets claimed. If a submission leaves the CAS field blank or reports zero concentration of uses the "less than" symbol, the FracFocus users may interpret such instances as a trade secret claim. One company reviewed for the Task Force their internal records of the 1500+ disclosures made to FracFocus after 6/1/2013 and found 120 separate trade secret claims, involving 400 chemicals from almost 58,000 chemicals reported in all the disclosures. The company was unable to determine from the FracFocus database the chemical agent claims attributed to this particular 1500+ sample. There seems to be a discrepancy between the trade secret claims data indicated by FracFocus and the internal records of some companies that suggest a much lower incidence of trade secret claims for those companies. The work recommended by this Task Force should shed light on this important issue.

This Task Force believes that the goal should be to have very few trade secret exemption claims from disclosure. The public is clearly concerned about the nature of the chemicals used in hydraulic fracturing. It is much to industry's advantage to meet this concern.

The federal Emergency Planning and Community Right to Know Act[13] and laws enacted in several states give officials access to chemical trade secret information in times of crisis in order to give emergency first responders and health officials access to information they need. So the impression that trade secrets bar public access to information in all circumstances is incorrect. The Task Force endorses strong provisions to provide access to trade secret information in emergency situations but goes further in advocating disclosure.

[13] The objective of the Emergency Planning and Community Right-To-Know Act (EPCRA) is to: (1) allow state and local planning for chemical emergencies, (2) provide for notification of emergency releases of chemicals, and (3) address communities' right-to-know about toxic and hazardous chemicals. However, the access formally is only to chemicals that appear on Materials Safety Data Sheets (MSDS) See http://www.epa.gov/oecaagct/lcra.html

The Task Force urges industry to pursue complete disclosure rather than protecting trade secrets of uncertain technical merit, especially since compliance has very low, if any, risk of disclosing proprietary information if submission is organized by the chemicals rather than the additives or products to the fluid. A list of chemicals that includes the contributions from all the constituents added makes it extremely difficult to reverse engineer to determine which chemicals and in what proportions these chemicals are present in a particular additive or product with specific trade name. Thus trade secret protection generally can be accomplished by reporting a list of products and chemicals added without disclosing which chemical is in each product. In sum, the Task Force recommendation for chemical disclosure is

- No trade secret disclaimers unless documented and attested as they do in Wyoming or Arkansas - but the fewer the better.
- Report the complete list of chemical by their CAS numbers and quantities added.
- Report a complete list of products without linking to the list of chemicals [14]

Operators report that chemical suppliers or pumping services demand trade secret protection for their products. The Task Force believes that if the leading operators and oil field service companies establish practical protocols for data transfer across the supply chain, and clear requirements for their suppliers, then supplier insistence of trade secrets will be greatly reduced and possibly disappear.

The Task Force believes three steps should be taken to further explore way to reduce the use of the trade secret exemption:

(a). Assemble accurate data about the nature and extent of trade secrecy claims across chemical, states, operators, suppliers and time. Under the auspices of DOE

[14] The reporting by disaggregated chemicals in known in industry practice as the "systems approach" and it is used by at least one large oil field service supplier.

Fossil Energy and with the cooperation of FracFocus, it should be possible to complete this study within four to six months.

The study should include: (1) trends in trade secret claims; (2) the percentage of wells with one or more hydraulic fracturing chemicals that are claimed to be trade secret; (3) for wells with trade secret claims, the average number of claims, the average percentage of chemicals used in such wells that have been claimed as trade secret, and the percentage by mass of chemicals used in such wells that have been claimed as trade secret; (4) the degree to which the incidence of trade secret claims varies by operator and supplier; (5) the overall percentage of hydraulic fracturing chemicals, on a state and national basis, that are claimed to be trade secret; and (6) how commonly particular chemicals claimed as trade secret are used.

(b). States and federal regulators should establish a standard for claiming the exemption. The Task Force notes the criticism that has been raised that while trade secret law is generally standardized across the country, there is no accepted standard for asserting a trade secret exemption in the hydraulic fracturing context and no standardized compliance procedure to verify the claim for protection.[15] The Task Force believes the standard for disclosure exemption should be very high. We recommend that states use the State Review of Oil and Gas Regulations, (STRONGER) mechanism to craft and adopt stringent criteria for trade secret exemption to disclosure and a process for validating compliance. STRONGER should begin by reviewing the practices in different states to determine the effectiveness of different approaches and, when available, draw on the results of the DOE Fossil Energy review in subsection (a) above and the independent audit we recommend above of the FracFocus disclosure system, in particular the data collected on trade secret claims.

[15] K. Konschnik, M. Holden, and A. Shasteen, *Legal Fractures in Chemical Disclosure Laws*, Harvard Law School, Environmental Law Program, April 23, 2013.

(c). State and federal regulators should establish compliance of trade secret claims and challenge mechanisms once a procedure is in place. Every trade secret exemption procedure adopted by a state should be accompanied by mechanisms for determining compliance (including certification by the company invoking exemption that the procedure has been followed) and for interested parties from the public to raise challenges.

This work and its results will be of interest to the U.S. Environmental Protection Agency and the Bureau of Land Management (BLM) of the Department of Interior. Therefore the study and work recommended on trade secrets should be coordinated with these federal agencies. The BLM recently proposed disclosure policy regulations.[16] These proposed disclosure regulations do not yet meet the high disclosure standards that the 2011 Subcommittee recommended that BLM adopt.[17] Therefore, the Task Force recommends that any trade secret exemptions permitted by BLM in its regulations for hydraulic fracturing on federal lands include a rigorous process of claiming trade secret exemptions and robust trade secret verification and challenge mechanisms.

**(4) Understanding the difference in federal data custody requirements and FracFocus practices**. The Task Force understands that there are differences in the data custody practices of FracFocus and the more stringent and comprehensive federal data custody standards. It is not unusual to find private sector data practices different from and/or below federal standards with respect to security, storage, and retention. The Task Force would encourage and welcome improvements in FracFocus data custody practices.

---

[16] Department of Interior, BLM, 43 CFR Part 3160 , [WO-300-L13100000.FJ0000] RIN 1004-AE26, *Oil and Gas; Well Stimulation, Including Hydraulic Fracturing, on Federal and Indian Lands*. The BLM proposed rule allows companies to identify confidential information that is exempt from public disclosure under the Trade Secrets Act or other Federal law. However, if BLM determines that the asserted confidential information is not prohibited from disclosure by Federal law, BLM may make that information available to the public. The rule does not specify the process by which the BLM would assess or deny the protection, nor a procedure for public challenge of the claim.

[17] Page 6, November 2011 Subcommittee Report.

FracFocus has an informal policy for permanent data retention. The Task Force recommends that FracFocus formalize a more robust policy for its public data custody, data management, security, storage and retention practices and adopt an explicit policy of long-term data retention. This policy should include provision for data custody if the organizations that currently sponsor FracFocus decide in the future to drop the activity.

The Task Force is aware of discussions underway between FracFocus and DOE's Energy Information Administration to include FracFocus as an element of EIA's contemplated National Oil and Gas Information Gateway. This relationship should prove productive for FracFocus, and the RBDMS with which it is now integrated, as a means to identify further opportunities for improvement of data management.

Standards that are important for FracFocus to adopt include: protections against unauthorized alteration or deletion of data; long-term data retention policy including both original and any updated submissions, and audit trails. Additionally, FracFocus should amend its "terms of use" to eliminate restrictions on sharing and aggregation of data on the site.

To ensure that data will be subject to government open records policies that apply to publicly held data, the Task Force also recommends that any state or federal agency that adopts FracFocus as a reporting venue should explicitly adopt a policy to download data or otherwise take possession of information from FracFocus on a regular basis (e.g., weekly).

The Task Force recognizes that the RBDMS program, the oil and gas regulatory agency database used by the majority of oil and gas producing states to manage and analyze oil and gas program data and water resources information, has developed a module to interface with the FracFocus website. This module will allow regulators to automatically download and parse raw data submitted to FracFocus, streamlining the data transfer process and permitting statistical analyses and auditing functions. Putting this module to work in individual states can be done quickly but requires certain additional

programming. GWPC should accelerate the rollout of this RBDMS module to states that receive chemical disclosure data through FracFocus.

**(5) Increasing the utility of FracFocus by maintaining it as a database with tools suitable for analysis by regulatory bodies, companies, and the public**. The 2011 Subcommittee report noted that the FracFocus registry was not maintained as a database and tools were not available to analyze the information to answer questions of interest to regulators, operating companies, and public interest groups.

By 2013, FracFocus had made important progress in upgrading the registry to act as a database, with varying levels of access for the public and for state regulators. The Task Force recommends that DOE fund FracFocus to upgrade its website to be a more usable interactive database.[18] DOE's Office of Fossil Energy should commission an independent cost estimate of a project to construct a fully interactive database.

The following are a non-exhaustive list of improvements that FracFocus should consider making:

a. Allow for searching by any field included in a FracFocus submission record (including additive trade name, additive purpose, chemical supplier, date submitted, etc.).
b. Eliminate the 2000 record display limit, or allow a "next" function. FracFocus currently returns a maximum of 2000 records for any search, without indicating which 2000 are being presented. FracFocus should either return all results, or allow for a "next 2000" functionality.
c. Solve the CAS number concatenation problem. To the extent that the public is using data scrapers in order to transfer information from FracFocus PDFs to private databases (an activity that promotes better understanding of the FracFocus data in the absence of raw database availability), researchers are

[18] Pages 13 – 15, August 2011, Subcommittee Report

running into problems that arise from how CAS numbers are sometimes entered in batch instead of separately, resulting in CAS numbers appearing together on one line in an unbroken string. FracFocus should modify how the PDFs are created to eliminate this problem.

d. Allow batch downloads of PDFs. Currently, the system only permits the downloading of a single well's chemical disclosure PDF at a time.

e. Address the SEAB 2011 report recommendation that the system "include tools for searching and aggregating data by chemical, well, by company, and by geography."[19] One way to do so would be to release the full contents of the FracFocus database in raw, machine-readable form on the FracFocus website.

There is interest in understanding the value of FracFocus and who is using this resource. The Task Force recommends that FracFocus include on its website a dropdown menu requiring the user when entering the system to identify their affiliation or perspective:

- State government official
- Federal government official
- Local government official
- Non-Governmental Organization
- Operating company
- Service company
- Landowner
- Mineral owner
- Educator
- Research Organization
- General public
- Other

**(6) Potential for broadening the scope of FracFocus to include any water quality data regarding surrounding water sources both before and after hydraulic fracturing drilling activity.** There have been several other proposals for broadening the scope of FracFocus as well. Examples of these suggestions are to require disclosure at the registry of (a) the

chemical composition of flow back and produced water from hydraulically fractured wells; (c) concentration of radioactive elements in the flow back water from the geological formation; (d) disclosure of pre-fracturing information such as chemicals planned for use; and (e) "master lists" of chemicals used by particular companies in a state in a given year.

Each of these suggestions (and others) is of potential interest as part of the regulatory process. But each of these measures also poses challenges for a registry for which companies' disclosure submissions remain – in many instances – voluntary. Some of these suggestions would require, for example, definitions that respect highly variable geologies, quality control of data submitted by producers with different technical sophistication, and the necessary complex rules for inclusion. The exploration of possible extensions of the concept of the registry to a wider range of use may indeed be productive but we note that the success of FracFocus to date is very much a consequence of its narrow focus and therefore we do not endorse any specific extensions at the present time.

However, within the scope of hydraulic fracturing chemical disclosure, the Task Force notes that the current functionality of FracFocus 2.0 does not meet all of the state requirements, such as pre-fracturing disclosure in Wyoming and "master list" requirements in Arkansas. These are matters that need to be addressed by the RBDMS mechanism of the Groundwater Protection Council and the Interstate Oil and Gas Compact.

The 2011 Subcommittee recommended the creation of a web portal that would aggregate a wide range of public information on shale gas development.[20] This Task Force supports this recommendation, and stresses the importance of making data from state and federal regulatory agencies and other sources public -- including statistics regarding methane emission measurements, enforcement information, and other

[20] Pages 13 – 15, August 2011 Subcommittee Report.

material – as part of a comprehensive national database. The portal should be open to the public for use to study and analyze oil and gas operations and results.

**(7) Stable funding for FracFocus activities**. The Task Force like the 2011 Subcommittee, is concerned that FracFocus have a stable source of funding. Up to the present, support has come from a combination of sources: the DOE, the API, and other organizations. The current level of funding is about $700,000 per year. Currently, the annual cost of maintaining FracFocus is approximately $1 million. Measured initiatives to update the FracFocus 2.0 website, provide training for the use of the FracFocus system, and to increase capability, (e.g., well finder emergency response, implementation of integration between FracFocus and RBDMS), are programmed for an additional expenditure level of $500,000 per year for the period 2014 to 2016.

The Task Force believes that a funding level of about $1.5 million per year is justified to cover the current FracFocus 2.0 activities mentioned above and the additional work recommended in this report: (a) making the website a user-friendly database; (b) carrying out some audits of the accuracy of data deposited in the registry; and (c) coordinating with STRONGER to craft and adopt stringent criteria for trade secret exemption and a process for validating compliance. Additional initiatives put forward by FracFocus could well justify a higher budget especially projects that are integrated into the RBDMS.

At present the modest (< $1 million) budget for FracFocus is covered by a DOE grant, occasional contributions from a state, and from two oil and gas industry associations. The Task Force believes that the importance of FracFocus justifies a stable source of funding. There are two options for accomplishing this: (a) a higher multi-year grant or contract from DOE or (b) a modest user fee assessed on each well registered. For every 10,000 wells registered each year, a $50 registration fee per well would produce a revenue stream of $0.5 million for FracFocus. A combination of DOE support and use fee will comfortably provide for FracFocus. Accordingly, The Task Force recommends that DOE move to establish a stable multi-year budget for FracFocus employing one or

both of these mechanisms. To ensure public confidence in the integrity of FracFocus, it should take steps to make clear that any industry contributions do not appear to influence FracFocus operations in any way.

## Appendix A – Secretary Moniz charge to SEAB for the Frac Focus Task Force

**The Secretary of Energy**
**Washington, DC 20585**

November 26, 2013

MEMORANDUM FOR THE CO-CHAIRS
SECRETARY OF ENERGY ADVISORY BOARD

FROM: ERNEST J. MONIZ

SUBJECT: Establishing a Task Force on FracFocus 2.0

I request that you form a Secretary of Energy Advisory Board (SEAB) Task Force composed of individuals with expertise and experience required to review how FracFocus 2.0 houses the information Federal and State regulatory agencies require as part of their regulatory functions with regard to disclosure of the composition and quantities of fracturing fluids injected into unconventional oil and gas wells.

**Purpose of the Task Force:** The SEAB FracFocus 2.0 Task Force will examine the following:

- Operating procedures of FracFocus 2.0.
- How procedures and interfaces allow for timely, complete, and accurate data storage in accordance with regulatory requirements.
- Understanding of the breadth of data housed in FracFocus 2.0 and the extent of exemption of information as being proprietary.
- Data handling and retention practices compared to Federal standards.
- Usefulness to regulatory officials and interested members of the public to access information contained in the FracFocus 2.0 database.
- Potential to expand FracFocus to include any well-water quality data collected prior to well stimulation and post-production.
- The adequacy of existing funding mechanism and suggestion of possible alternative arrangements.

**Designated Federal Officer:** Amy Bodette, Deputy Director, Office of Secretarial Boards and Councils

**Schedule:** The Task Force should complete its work, submit a report of its activities to SEAB by March 2014, and make a presentation at SEAB's March 27-28, 2014 meeting. This Task Force is expected to carry out most of its work in sessions open to the public.

## Appendix B – Task Force membership

*Organization affiliations are listed for identification purposes only. The Task Force report integrates the contributions of individual members and should not be associated with the view of any of the listed organizations.*

***Frances Beinecke** President, Natural Resources Defense Council

***Rafael L. Bras** Provost and Executive Vice President for Academic Affairs, Georgia Institute of Technology

***John Deutch** MIT Chemist and Former Under Secretary of Energy – Task Force Chair

***Persis Drell** Professor of Physics, Stanford University and Former Director, SLAC National Accelerator Laboratory – Ex Officio SEAB Co-chair

**Stephen Holditch** Professor of Petroleum Engineering, Texas A&M

**Fred Krupp** President, Environmental Defense Fund

***Dan W. Reicher** Executive Director, Steyer-Taylor Center for Energy Policy and Finance, Stanford University and faculty member, Stanford Law School and Graduate School of Business

***Ram Shenoy** Chief Technology Officer, ConocoPhillips

**Susan Tierney** Managing Principal, Analysis Group; Former DOE Assistant Secretary for Policy

***Daniel Yergin** Vice Chairman, IHS and Founder of IHS Cambridge Energy Research Associates

* SEAB member

**Appendix C - Data from FracFocus2**

| Disclosures Submitted to FracFocus Version 2.0 | | | |
|---|---|---|---|
| State | Disclosures Since 6/1/2013 | Disclosures With Trade Secret | Percent of Chemicals |
| Alabama | 17 | 17 | 21 |
| Alaska | 1 | 1 | 13 |
| Arkansas | 246 | 246 | 17 |
| California | 401 | 269 | 6 |
| Colorado | 1026 | 995 | 25 |
| Kansas | 91 | 52 | 4 |
| Louisiana | 100 | 68 | 15 |
| Michigan | 1 | 1 | 23 |
| Mississsippi | 6 | 4 | 10 |
| Montana | 78 | 51 | 11 |
| New Mexico | 343 | 336 | 22 |
| North Dakota | 1190 | 988 | 13 |
| Ohio | 154 | 128 | 23 |
| Oklahoma | 1158 | 764 | 15 |
| Pennsylvania | 565 | 356 | 15 |
| Texas | 6406 | 5509 | 17 |
| Utah | 609 | 591 | 22 |
| Virginia | 4 | 4 | 22 |
| West Virginia | 102 | 86 | 15 |
| Wyoming | 470 | 432 | 17 |
| | | | |
| **Total** | **12968** | **10898** | |
| **Average** | | **84.04%** | **15.80%** |