April 22, 2015

U.S. Environmental Protection Agency
EPA Docket Center (EPA/DC)
Docket ID No. EPA–HQ–OPA–2006–0090
1200 Pennsylvania Avenue NW 20460

Submitted via electronic submission to http://www.regulations.gov **and by mail**

Dear Dr. Gregory Wilson,

On January 22, 2015, the U.S. Environmental Protection Agency (EPA or the Agency) issued a Proposed Rule to amend Subpart J of the National Oil and Hazardous Substances Contingency Plan that governs the use of dispersants, other chemical and biological agents, and other spill mitigating substances when responding to oil discharges into the waters of the United States. 80 Fed. Reg. 3380 (January 22, 2015). Comments are due by April 22, 2015. The following comments to the docket are provided by the American Petroleum Institute (API) and the National Ocean Industries Association (NOIA) (collectively, "we") on behalf of our member companies based on review of the above-cited Proposed Rule.

API is a national trade association that represents over 625 members involved in all aspects of the oil and natural gas industry, including the exploration and production of both onshore and offshore Federal resources. The U.S. oil and natural gas industry supports 9.8 million U.S. jobs and 8 percent of the U.S. economy, delivering tens of millions per day in revenue to our government. API members provide most of the nation's energy and are backed by a growing grassroots movement of more than 25 million Americans.

NOIA, founded in 1972, represents more than 270 companies among all segments of the offshore industry with an interest in the exploration and production of both traditional and renewable energy resources on the nation's outer continental shelf (OCS). NOIA's mission is to secure reliable access and a fair regulatory and economic environment for the companies that develop the nation's valuable offshore energy resources in an environmentally responsible manner.

API, NOIA, and our respective members recognize the important mission of the EPA in protecting human health and the environment and share in this mission. More than most industries, the oil and natural gas industry understands the nature of risk and places at the center of its concern comprehensive planning for and effective management of risks in order to safeguard human well-being and protect environmental resources. To this end, woven into every operational endeavor are release prevention measures, preparedness methods and plans for rapid, effective response should an incident resulting in a release occur. Developed alongside regulatory agencies, operators submit to and follow a distinct set of response principles which protect shared values. The framework by which these principles are employed and tradeoffs are made in order to protect these shared values is called Net Environmental Benefit Analysis (NEBA). NEBA is a process used by the response community for making the best choices to minimize impacts of oil releases on people and the environment. NEBA aids in protecting people and the environment, and is the matrix through which every decision is made in a response event. In the offshore context, oil dispersing agents are a primary tool in the NEBA process and the response toolkit, as they

are a principal tool used for protecting human health and defending environmentally sensitive areas. When a release occurs, judgment and response speed are critical. In an offshore setting, dispersants are essential in creating a safe environment and are a key ingredient in marshaling an effective, swift response.

API, NOIA, and our respective members understand that through this Proposed Rule, EPA's goal is to develop a regulation which protects people and preserves natural resources. We too wish to accomplish the same goal, based upon sound scientific research and grounded in real-world, outside-the-laboratory scenarios and taking into account incident-specific risk. While the original intent of the dispersant rule was simply to provide for a schedule of dispersants and other chemicals that may be used in carrying out the National Contingency Plan (NCP), the Proposed Rule would essentially expand its purpose to an operational rulemaking which would significantly alter operational procedures.

In summary, the Proposed Rule, if implemented, would be substantially problematic for all stakeholders, including the response community, which is required to carry out an effective spill response. The Proposed Rule would also be problematic for the Federal and state agency community interests, as well as the public with regard to increasing environmental and community impacts. Although the Agency indicates that it seeks to "*encourage the development of safer and more effective spill mitigating products, and would better target the use of these products to reduce the risks to human health and the environment*" and "*ensure that On-Scene Coordinators (OSCs), Regional Response Teams (RRTs), and Area Committees have sufficient information to support agent preauthorization or authorization of use decisions*," API, NOIA, and our respective members submit that the Proposed Rule falls short of these objectives and in many cases would have the opposite effect. For example, and at the center of our concern, is the proposed dispersed oil toxicity test and its threshold which could result in the elimination of many dispersants and potential future dispersants. Even if the dispersants themselves were completely non-toxic, the proposed dispersed oil toxicity test and associated pass/fail threshold could prevent all dispersants from being listed and available for use in a spill response. The Proposed Rule covers activities broader than mere scheduling criteria for dispersants. The added complexity resulting from the Proposed Rule in authorization, monitoring and product listing, in addition to unfounded and overly corrective assumptions about dispersant effects described in the Proposed Rule, will not assist the Unified Command during an oil spill. Instead, it will likely complicate and limit its ability to respond in the most effective manner to ensure the health and safety of people and minimize environmental and community impacts. Also, prohibiting the application of dispersants during an oil spill response or delaying their use will significantly increase the economic and environmental damage of oil spills.

API and NOIA encourage the Agency to review the comments contained herein, incorporate the corresponding recommendations in a supplemental proposed rule, and provide the public and other Federal government and state stakeholder agencies with an opportunity to provide another round of comments before implementing a final rule. We also recommend that EPA initiate a Negotiated Rulemaking under the Negotiated Rulemaking Act of 1990 to establish a negotiating committee under the Federal Advisory Committee Act to develop draft regulatory text on a consensus basis for adoption and implementation as a proposed supplemental proposed rule by EPA. A balanced negotiating committee made up of response experts – from the Federal Agencies who oversee oil spill response and from industry and relevant third-party experts – would add value to further Proposed Rule revisions and ensure that Subpart J is aligned with the latest scientific consensus on, and avoid an artificial bias against, the use of dispersants. As an example, Negotiated Rulemaking was successfully used to implement vessel and facility response planning requirements under the Oil Pollution Act of 1990. At a minimum, we believe that EPA should facilitate a discussion between the response experts before finalizing the Proposed Rule.

We first provide general comments followed by detailed comments on a section-by-section basis for EPA's consideration below.

GENERAL COMMENTS

Industry Shares EPA's Goal Of Establishing Sound Dispersants Policy Grounded In Science and Executable in Real-World Spill Scenarios

In every operation, the goal of industry is to never have an oil spill, and it invests extensive time and effort to prevent spills from occurring. Industry and government have a shared interest in a unified, coordinated, and proactive approach that allows us to protect our common values. These values include the health and safety of our citizens, sensitive ecosystems, the local business community and economy, and the vitality and sustainability of tourism and other key community industries, such as fishing.

To achieve a well-managed response and the protection of our common values, the primary guiding principle is to stop the source of a spill as quickly as possible with the goals of ensuring the health and safety of people and minimizing environmental and community impacts. In many spill circumstances, dispersants play a critical role in achieving these goals, perhaps most importantly by reducing risks associated with Volatile Organic Compounds (VOCs) in the immediate vicinity of the spill that could be both a human health and safety issue, and should continue to be a response option promptly available to the Unified Command. The Proposed Rule could jeopardize the protection of the common values by potentially precluding even completely non-toxic dispersants from being listed due to the proposed dispersed oil toxicity tests and associated pass/fail thresholds. Scientific studies have shown that approximately 97.5% of the TPH constituents in dispersed oil toxicity tests come from the oil (not the dispersant), so the proposed laboratory tests will measure the toxicity of oil (not the dispersant).[1] If the standardized oils (i.e., ANS and IFO-120) required to be used in the proposed test have toxicity values (LC50) in water accommodated fractions (WAF) less than 10 ppm, then no dispersant, no matter its individual toxicity, will meet the threshold values for listing.

Moreover, the creation of arbitrary thresholds for passing such tests, especially when EPA has shown that modern dispersants are of low toxicity, is not supportable and it is not clear whether any dispersant will be approved for the NCP Product Schedule when both toxicity and effectiveness tests are required. Specifically, setting an acute toxicity threshold of dispersants plus oil at an LC50 of 10 ppm has a high probability of eliminating an effective dispersant from the list, i.e., any dispersant that passes the baffled flask effectiveness test. We know from previous testing by industry that many (or even most) crude oils by themselves have LC50's below 10 ppm. Of more relevance is the use of toxicity results to assist in a NEBA-based discussion of the relative merit of using a particular dispersant in favor of another. Similarly, the attempt to link lab test results to decisions relating to pre-authorization and use is misplaced since laboratory tests are useful in understanding differences between products, not their real world performance.

The Proposed Rule indicates that the Agency "*does not state or imply*" that one response option is endorsed over another which is a practice shared by industry. However, the preponderance of additional requirements for dispersant use will likely have the unintended consequence of prohibiting, or delaying the approval of, dispersant use in a timely manner regardless of whether they may be the best, or only, response option. Further, the language contained in the preamble suggests that the Agency considers dispersants as a last priority, rather than giving them equal consideration with all other appropriate response options. Additionally, API and NOIA are concerned that the Proposed Rule may cause chemical

[1] Scientific reasoning that the dispersant only contributes ~2.5% of the TPH toxicity is based on the following. In a 1:20 dispersant-to-oil ratio (DOR), the dispersant proportion is 5%. The solvent component of modern day dispersants is roughly half, which means the overall TPH contribution from the dispersant is ~2.5%. As a result, the toxicity is dominated by the oil constituents.

manufacturers to either discontinue the production of effective, commercially-available products or discontinue research into the development of the next generation of dispersants.

A Net Environmental Benefit Analysis Process Ensures Response Choices that Minimize the Impacts of Oil Spills on People and the Environment

Any changes to the rule must take into account the Net Environmental Benefit Analysis (NEBA)[2] process. When a spill occurs, the OSC must make time-critical choices about which response options to implement immediately and effectively to manage the potential impacts of the spill. The NEBA process helps the OSC select choices that minimize the impacts of the spill on people and the environment. NEBA is a consensus-based planning tool that is used to bring natural resource trustees, regulators and stakeholders together to address resource-management decision-making needs for an oil spill response. It provides a structured, scientific method to evaluate the likely net reduction, or possible increase, in environmental and socio-economic impacts resulting from the implementation candidate response options as compared to the natural recovery or "do nothing" alternative. An assessment of the trade-offs associated with each option is then conducted taking into consideration the potential impacts to sensitive environmental resources and local community values. The NEBA process determines which response option or combination of options can best reduce the overall impact of spilled oil to common values and promote the fastest overall ecosystem recovery. Of particular note, the NEBA process considers the potential effects to a wide range of concerns, ranging from likely environmental effects (i.e., deep marine to terrestrial, etc.) to possible economic consequences. When initially considering the potential outcomes, no individual area receives a greater priority over another. Instead, all are weighed from an equal footing and only after evaluating all the likely effects is a determination made regarding the response option that offers that greatest environmental benefit. In so doing, decision-makers ensure that an unbiased process is used, with input from relevant stakeholders, to determine the best course of action. This process has been adopted all over the world to identify response methods that will yield the greatest benefit with the least impact.[3]

The NEBA process can be used in both oil spill preparedness planning and response. In the United States, a formal NEBA process is conducted during the planning phase at the Area Committee and Regional Response Team (RRT) levels with input from state and Federal participants to determine the benefits and limitations from using each response technology within their individual areas of responsibility. In most offshore regions of the U.S., this is accomplished in the form of the Consensus-Based Ecological Risk Assessments (CERA) process (NEBA equivalent) used by the U.S. Coast Guard (USCG)[4] and supported by the National Oceanic and Atmospheric Administration (NOAA), EPA, other Federal and state agencies, and academia. More than twenty workshops were held in various locations around the continental U.S., Caribbean, and Alaska from 1995 to 2011 to compare the benefits and risks of various response options when considering resource trade-off decisions. All of the workshops resulted in final publications (available from USCG) that were delivered to the Area Committees and RRTs to assist with response planning. One example of how this CERA/NEBA process was used to inform dispersant use decision-making is summarized in several papers authored by regulators in the state of California.[5] The applicability of the CERA/NEBA process as a tool for facilitating dispersant decision-making during spill response and planning was also evaluated by NOAA and published in a 2008 paper.[6]

---

[2] NEBA is similar to the Consensus Ecological Risk Assessment (CERA) process developed by the U.S. Coast Guard in the mid-1990s.

[3] See, *Incident management system for the oil and gas industry: good practice guidelines for incident management and emergency response personnel*, IPIECA, August 2014, http://www.ipieca.org/publication/incident-management-system-oil-and-gas-industry-good-practice-guidelines-incident-manage.

[4] Aurand, D., Walko, L., & Pond, R. (2000). *Developing consensus ecological risk assessments: Environmental protection in oil spill response planning*. Washington, D.C.: U.S. Coast Guard.

[5] Addassi, Y. N., & Faurot-Daniels, E. (2005). California oil spill dispersant plan-Achievement through cooperation. *Proceedings of the 2005 International Oil Spill Conference, 2005*(1), 433-437. doi:10.7901/2169-3358-2005-1-433; Addassi, Y. N., Sowby, M.,

In 2014, the practice of incorporating a NEBA review during Source Control drills in the Gulf of Mexico was implemented by RRT VI during several large scale spill response exercises,[7] which has fostered good cooperation between the agencies to focus on the goal of minimizing shoreline community and ecosystem impacts by selecting response options that can maximize the effective treatment of oil offshore. NEBA discussions during both of these recent spill drills resulted in the concurrence of the RRT to authorize dispersants (both aerially and subsea) to treat the offshore oil slick.

Government decision-makers and/or the Responsible Party can conduct a rapid NEBA during actual spill responses to compare and rank the strengths and weaknesses of different response options for the incident-specific conditions. Lessons learned following a spill are incorporated into future policies and plans. Ecological recovery studies of the 1996 *Sea Empress* spill in the UK demonstrate the benefit of dispersant application along the coastline to prevent persistent oil from stranding in shoreline habits.[8] A more recent publication examined the recovery rates for a tropical ecosystem during a controlled study of dispersed versus untreated shoreline oil slicks and concluded that better recovery occurred in the areas where dispersant was used.[9]

Regrettably, the Proposed Rule lacks a NEBA perspective. It incorrectly focuses on intrinsic, hazard-based criteria for substance listing and ignores the more appropriate risk-based trade-off decision process responders must consider during an oil spill response. It does not recognize that dispersants are only applied when regulators and response decision-makers deem them necessary to prevent more significant and harmful consequences. The Proposed Rule favors protecting pelagic and benthic species while putting critical habitats, such as the ocean's surface and near-surface zones, as well as sensitive shorelines, at greater risk to environmental damage. Modeling results presented at the 2005 International Oil Spill Conference concluded that:

> *"…the results of the modeling support the contention that there are more opportunities to save wildlife, shorelines, and sensitive habitats along the shore with dispersant use than there are risks of impacting water column biota. If the areas that would be impacted by surface oil are those where wildlife are concentrated, as they typically are near shore, and the water column impacts resulting from dispersant use would be offshore where water column biota are lower in abundance, the trade-off is much more heavily weighted toward dispersant use before oil comes near the shoreline. In fact, for medium or smaller spills, or even larger spills where sensitive species and life stages are not present, the impact of dispersant use on water column biota could be negligible."*[10]

Parker-Hall, H., & Robberson, B. (2005). Establishment of dispersant use zones in the state of California: A consensus approach for marine waters 3–200 nautical miles from shore. Proceedings of the 2005 International Oil Spill Conference, 2005(1), 187-191. doi:10.7901/2169-3358-2005-1-187.

[6] Mearns, A., & Evans, M. (2008). Evaluating the consensus ecological risk assessment workshop as a tool for facilitating decision-making during spill response and planning. *Proceedings of the 2008 International Oil Spill Conference Proceedings, 2008*(1), 739-741. doi:10.7901/2169-3358-2008-1-739

[7] Freeport McMoran Source Control drill (April 30-May 1, 2014) and BP Source Control drill (Nov 5-6, 2014)

[8] Lunel, T., Rusin, J., Bailey, N., Halliwell, C., & Davies, L. (1997). The net environmental benefit of a successful dispersant operation at the Sea Empress incident. *Proceedings of the 1997 International Oil Spill Conference, 1997*(1), 185-194. doi:10.7901/2169-3358-1997-1-185

[9] Baca, B., Rosch, E., DeMicco, E. D., & Schuler, P. A. (2014). TROPICS: 30-year follow-up and analysis of mangroves, invertebrates, and hydrocarbons. *Proceedings of the 2014 International Oil Spill Conference, 2014*(1), 1734-1748. doi:10.7901/2169-3358-2014.1.1734

[10] French McCay, et al., Modeling Fates and Impacts of Hypothetical Oil Spills in Delaware, Florida, Texas, California, and Alaska Waters, Varying Response Options Including Use of Dispersants. International Oil Spill Conference Proceedings: May 2005, Vol. 2005, No. 1 pp. 735-740. Also available at http://ioscproceedings.org/doi/pdf/10.7901/2169-3358-2005-1-735.

For oil spills where dispersant use is contemplated, a typical NEBA will predict the potential impacts to aquatic organisms from an increased exposure to dispersed oil droplets. Dispersant use is typically restricted to water depths greater than 10 to 20 meters so that dilution will minimize exposure or impacts to the benthic community. Studies have shown the dispersed oil concentrations are rapidly diluted within the large volume of receiving water from a high of a few hundred parts per million to a few parts per million within a few hours. Consequently, exposure to the toxic effects of the dispersed oil will be of short duration and limited to those aquatic organisms that inhabit near surface waters. The NEBA will also estimate the reduction of impacts to waterfowl, shoreline ecosystems and coastal communities resulting from the reduction in, or elimination of, the quantity of floating oil. The trade-offs of a short term increase in exposure of selected aquatic organisms to dispersed oil versus an increase in oil impacting coastal environments and communities must be evaluated and take into account local community values to determine if dispersant use is warranted.

Given the challenges of implementing other response options, a decision not to have dispersants available to responders could result in oil stranding on shorelines where it may persist for an extended time. Effectively dispersed oil will biodegrade rapidly so that the majority of the oil will persist for a much shorter period of time. Reducing the persistence of the oil in the environment is critical to reducing the overall impacts.[11] This is not to say that water column organisms are less intrinsically important than surface or shoreline species but using NEBA can and does provide a critical framework for deciding what is best for the overall ecosystem. Important considerations to understand in assessing this tradeoff include:[12]

- The impacts to the water column are mitigated by dilution – that is the potentially toxic levels of dispersed oil are limited in duration and physical coverage/extent and effected populations (e.g., plankton) tend to be ones that recover quickly.
- Oil effectively dispersed in the water column will generally biodegrade after a few days or weeks while oil stranded in near shore and shoreline areas can persist for years.
- Near shore and shoreline areas are the nursery grounds for many species, even those that live offshore as adults, so protecting the near shore areas also protects organism that live as adults offshore.
- The bio density of near shore areas (swamps and marshes) is far greater than the bio density in pelagic waters offshore.
- Dispersants also protect surface dwelling organisms offshore, i.e., marine mammals, birds, and turtles, through removal of floating oil.
- Slicks on the water surface are far more likely to impact fish eggs and larva that tend to float at or near the water surface than quickly removing oil from the surface with dispersants.
- In certain geographies, slicks can impact mangroves and other shoreline vegetation that can subsequently die off and result in shoreline erosion that increases sediments in the near shore water column and potentially affects corals and other species.

[11] Hazen, et al., Deep-Sea Oil Plume Enriches Indigenous Oil-Degrading Bacteria, Science, 330 (2010), pp. 204-208.

[12] (a) French McCay, D., and Graham, E. Quantifying Tradeoffs – Net Environmental Benefits of Dispersant Use. International Oil Spill Conference Proceedings: May 2014, Vol. 2014, No. 1, pp. 762-775.
(b) McManus, M.A., Woodson, C.B. Plankton Distribution and Ocean Dispersal. The Journal of Experimental Biology, 215 (2012), pp. 1008-1016.
(c) DeMicco et al., Net Environmental Benefit Analysis (NEBA) of Dispersed Oil on Nearshore Tropical Ecosystems: TROPICS – The 25th Year Research Visit, International Oil Spill Conference Proceedings, May 2011, Vol. 2011-282.
(d) Varela et al., The Effect of the "Prestige" Oil Spill on the Plankton of the N-NW Spanish Coast. Marine Pollution Bulletin 53 (2006), pp. 272-296.
(e) Addassi, et al., Establishment of Dispersant Use Zones in the State of California: A Consensus Approach for Marine Waters 3-200 Nautical Miles from Shore. International Oil Spill Conference Proceedings: May 2005, Vol. 2015, No. 1, pp. 187-191.

The Agency should consider the NEBA process and how and why dispersants are used before making changes to the Subpart J Regulations.

The Proposed Rule has the Practical Effect of Treating Dispersants as Toxic and either Prohibiting or Discouraging the Use of this Critical Response Tool

Dispersants are an essential tool in the responder's toolkit. They are products used in oil spill response to dilute the oil in the water column to enhance natural microbial degradation, a process where microorganisms remove oil from the environment.[13] All marine environments contain naturally occurring microbes that feed on and break down crude oil. Dispersants aid the microbial degradation by forming tiny oil droplets, typically less than the size of a period on this page (<100 microns), thus increasing the oil's surface area and making it more available for the petroleum-degrading microorganisms to consume.[14]

All oil spill response options have their place in the response toolkit because of the extreme variability of spill conditions. Dispersants become a critical response tool for larger spills far from shore; spills more distant from stockpiles of recovery and containment equipment; when weather and ocean conditions preclude the use of other options; or when weather conditions are predicted to become more severe because they can be rapidly applied by aircraft or subsea (at a high encounter rate) when wind and wave conditions prevent other vessel-based recovery options.

The Proposed Rule focuses on the potential risks of dispersants without recognizing the benefits and core purpose of dispersants, which is to rapidly dilute the spilled oil and enhance removal of the oil from the environment through microbial degradation, resulting in reduced VOCs and shoreline impacts. Ultimately, the purpose of dispersants is to reduce the overall toxicity and persistence of oil in the environment.

We believe that research showing that dispersants do not enhance the biodegradation of oil from the environmental is based on studies that used unrealistically high concentrations of dispersed oil. Prince and Butler only recently developed a biodegradation test method that compares dispersed oil biodegradation to biodegradation of a surface slick at representatively low concentrations (i.e., 2.5 ppm).[15] This research unambiguously shows the enhanced biodegradation of dispersed oil over allowing an oil slick to remain on the surface. Most prior dispersed oil biodegradation studies used oil concentrations that were two or more orders of magnitude too high.[16]

Dispersants have proven to be an effective way to respond to an oil spill, most notably in those situations that prohibit, or otherwise limit, the effectiveness of other response measures. We submit that all response options should be contemplated based on their individual, or combined, ability to respond to

[13] American Society for Microbiology (ASM). (2011). *FAQ: Microbes & oil spills*. Retrieved from http://academy.asm.org/images/stories/documents/Microbes_and_Oil_Spills.pdf; Personna, Y., Boufadel, M., & Zhang, S. (2014). Biodegradation of dispersed Endicott oil in controlled experiments. Proceedings of the 2014 International Oil Spill Conference, 2014(1), 1126-1140. doi:10.7901/2169-3358-2014.1.1126; McFarlin, K., Leigh, M., & Perkins, R. (2014). Biodegradation of oil and dispersed oil by arctic marine microorganisms. Proceedings of the 2014 International Oil Spill Conference, 2014(1), 300-317. doi:10.7901/2169-3358-2014-1-300317.1.

[14] Hazen, T. C., Dubinsky, E. A., DeSantis, T. Z., Andersen, G. L., Piceno, Y. M., Singh, N., Jansson, J. K., Probst, A., Borglin, S. E., Fortney, J. L., Stringfellow, W. T., Bill, M., Conrad, M. E., Tom, L. M., Chavarria, K. L., Alusi, T. R., Lamendella, R., Joyner, D. C., Spier, C., Baelum, J., Auer, M., Zemla, M. L., Chakraborty, R., Sonnenthal, E. L., D'haeseleer, P., Holman, H. N., Osman, S., Lu, Z., Van Nostrand, J. D., Deng, Y., Zhou, J., & Mason, O. U. (2010). Deep-sea oil plume enriches indigenous oil-degrading bacteria. *Science*, *330*, 204-208. doi:10.1126/science.1195979

[15] Prince, R.C. and Butler, J.D. A protocol for assessing the effectiveness of oil spill dispersants in stimulating the biodegradation of oil. Environ Sci Pollut Res Int. 2014 Aug;21(16):9506-10. doi: 10.1007/s11356-013-2053-7. Epub 2013 Aug 13.

[16] Lee, K., Nedwed T., Prince R.C., Palandro D., Lab tests on the biodegradation of chemically dispersed oil should consider the rapid dilution that occurs at sea. Mar Pollut Bull. 2013 Aug 15;73(1):314-8. doi: 10.1016/j.marpolbul.2013.06.005. Epub 2013 Jun 27.

discharged oil, either on or below the water's surface, in a manner that causes the lowest negative effect on the environment and promotes the most rapid recovery of the affected ecosystem.

Laboratory Dispersant Efficacy Tests do not Predict How Well Dispersants Will Work in the Wide Range of Real World Spill Conditions

Although laboratory dispersant effectiveness testing can be used as a comparative screening tool for different dispersants under laboratory conditions, the Proposed Rule appears to suggest these results will be representative of actual effectiveness when applied to oil spills on open water. However, these results do not translate to the wide range of field conditions, oil types and weathering degrees in real world oil spills. Specifically, the static conditions in a lab, where researchers conduct experiments with known quantities of oil and dispersant, cannot be replicated at sea. Although the amount of dispersant that is to be applied is calculated based on a desired initial dispersant-to-oil ratio, the quantity and characteristics of oil during a real spill is an estimate, making any definitive, quantitative effectiveness estimation problematic. Localized determinations of the relative effect of surface dispersant application may be evaluated qualitatively using visual cues or semi-quantitatively using ultraviolet fluorometry, which is sufficient for operational effectiveness assessments. Additionally, much of the detailed spill monitoring specified by the Agency in the Proposed Rule has no bearing on dispersant effectiveness monitoring and cannot be conducted in a time-frame that will support day-to-day, near real-time operational decision-making.

We suggest the language in the Proposed Rule be modified to clarify the laboratory efficacy testing is for comparative purposes only and that the pass/fail criteria be established at a level that will only eliminate the least effective dispersants from being listed. Some dispersants that only exhibit average effectiveness in the laboratory tests may be very effective in certain situations in the field and the Response Community needs to maintain as many options as possible to select the most appropriate response option for a given set of conditions and circumstances.

Dispersant Toxicity Tests do not Accurately Simulate Real World Exposures.

API and NOIA acknowledge that there may be benefits to a so-called "gate-keeper" toxicity test with dispersant alone to ensure that any dispersants that might contain highly toxic components would not be accepted for listing on the Product Schedule. However, it is unclear what rationale was used for the dispersed oil toxicity tests stated in the Proposed Rule.

The relevant factors in dispersed oil toxicity include the concentration of dispersed oil, or oil compounds, in the water and the duration of exposure. The fundamental basis of aquatic toxicity testing is to create a set of concentrations and expose the animals for a duration where observable effects can be measured. As a result, laboratory exposures are useful for data collection and generating toxicity curves; however these conditions are not representative of the real world where the natural processes of rapid dilution and biodegradation act on the dispersed oil to dramatically reduce the exposure conditions[17]. Using acute 48- or 96-hour LC_{50} toxicity tests with dispersed oil mixtures (to calculate LC_{50} values) is considerably different from the likely exposure regime experienced by marine organisms in the open sea following an oil spill. For this reason, the Chemical Response to Oil Spills: Ecological Effects Research Forum (CROSERF)[18] was assembled to develop new dispersed oil toxicity testing protocols that account for rapid dilution. Academia, regulators and industry funded a ten year program through CROSERF to

[17] Lee, K., Nedwed, T., & Prince, R. (2011). Lab tests on the biodegradation rates of chemically dispersed oil must consider natural dilution. *Proceedings of the 2011 International Oil Spill Conference, 2011*(1), 245. doi:10.7901/2169-3358-2011-1-245

[18] Aurand, D., & Coelho, G. (2005). *Cooperative aquatic toxicity testing of dispersed oil and the chemical response to oil spills: Ecological effects research forum (CROSERF)*. Ecosystem Management & Associates, Inc., Technical Report 07-03. Lusby, MD.

develop new testing methods that are more aligned with real-world field conditions. This data is now available via the NOAA Dtox database.[19]

Results from dispersed oil monitoring during the Deepwater Horizon (DWH) spill is clear evidence of the rapid dilution occurring after surface dispersant application[20] and subsea dispersant injection.[21] Further evidence of the rapid dilution of dispersed oil in the field is found in the analytical results from several field trials conducted in the North Sea to characterize the fate and transport of dispersants applied to an open ocean oil slick. These field experiments and the subsequent chemical characterization conducted in 1994,[22] 1995,[23] and 1996[24] showed a rapid (within one hour) dilution of dispersed oil concentrations following dispersant application. This same effect was observed during the DWH response following surface dispersant application.[25] Since the proposed EPA dispersed oil testing does not take into account dilution, it is more likely that reported toxicity values at artificially high laboratory concentrations, not representative of real-world dilution exposures, will lead to misinterpretation of these test results and possibly preclude the use of dispersants altogether.

We strongly suggest that the laboratory toxicity test be limited to dispersants only to screen out the more toxic products and that toxicity testing for dispersed oil be explicitly eliminated from the Rule. It is very likely that all dispersants will be unable to pass the dispersed oil toxicity test as existing oil toxicity data indicates the test oils alone will be unable to pass the test.

In the context of NEBA (and its forebear, the Consensus Ecological Risk Assessment, or CERA), scientists understand and accept that marine organisms may experience localized, transient toxic effects from exposure to dispersed oil, but these local effects are offset by the benefit of dispersant use in preventing or minimizing oil drifting ashore and causing severe and long-term harm to more sensitive coastal resources and communities. While knowledge of the potential for toxic effects to marine organisms is useful for conducting a NEBA, it cannot be the sole indicator that dictates the use of dispersants. All resources-at-risk as well as coastal communities must be considered in the response option decision-making process, with the emphasis on coordinating a response that will result in the least overall impacts while promoting the most rapid overall recovery of the affected ecosystem.

---

[19] Bejarano, A., Chu, V., Dahlin, J., & Farr, J. (2014). Development and application of dtox: A quantitative database of the toxicity of dispersants and chemically dispersed oil. *Proceedings of the 2014 International Oil Spill Conference*, *2014*(1), 733-746. doi:10.7901/2169-3358-2014.1.733

[20] Operational Science Advisory Team (OSAT 1). (2010). *Summary report for sub-sea and sub-surface oil and dispersant detection: Sampling and monitoring. Unified Area Command, New Orleans*. Retrieved from: http://www.dep.state.fl.us/deepwaterhorizon/files2/osat_report_17dec.pdf.

[21] Coelho, G., Aurand, D., Essex, L., Parkin, A., & Robinson, L. (2012). *Monitoring subsurface dispersant injection during the MC252 incident, volume 1*. Lusby, MD, USA: Ecosystem Management & Associates, Inc.

[22] AEA Technology. (1994). *International calibration of laboratory dispersant test methods against sea trials*. Oxfordshire, UK: AEA Technology.

[23] AEA Technology. (1995*). International calibration of laboratory dispersant test methods against sea trials. Field trial report. July 1995 sea trials*. Oxfordshire, UK: AEA Technology; Jones, M., & Petch, S. (1995). A report on the analysis of hydrocarbons in sea waters and associated samples from trial oil spills off eastern England, July 1995. Newcastle upon Tyne, UK: University of Newcastle upon Tyne.

[24] Strøm-Kristiansen, T., Hokstad, J. N., Lewis, A., & Brandvik, P. J. (1997). *NOFO 1996 oil on water exercise – analysis of sample material. SINTEF Data report number STF66 A97050*. Trondheim, Norway: SINTEF; Coelho, G. M., Aurand, D. V., Petch, G.S., & Jones, D.M. (1998). Toxicity bioassays on dispersed oil in the North Sea: June 1996 field trials. Ecosystem Management & Associates, Inc., Report 96-02. Purcellville, VA: Ecosystem Management & Associates, Inc.

[25] Huber, C. A., Steen, A., & Parscal, B. (2014). Does wave height matter for effective surface dispersant application? *Proceedings of the 2014 International Oil Spill Conference, 2014*(1), 747-761. doi: 10.7901/2169-3358-2014.1.747

During an Oil Spill, Operational Monitoring Should Focus on How the Selected Response Options Mitigate the Effects of the Oil on the Environment

Following an oil spill, the primary emphasis of operational response monitoring should be directed toward the response effort and the effect that those efforts have on reducing the net negative environmental consequences. The Agency proposes the requirement to "*monitor agent use in the environment*." API and NOIA submit that operational monitoring should not be focused on monitoring the agent (i.e., dispersant) use, but rather on monitoring the overall changes to the characteristics, transport, and fate of the oil within the ecosystem. We also submit the Agency should acknowledge that the primary issue in a spill scenario is oil in the environment (not dispersants in the environment) and that operational monitoring efforts should concentrate on evaluating how well the response option (or options) mitigates the negative effects of the oil on sensitive environmental resources.

EPA proposes monitoring that will provide a comprehensive assessment of the environment. However, the monitoring actions required in the Proposed Rule go beyond those required to inform operational decision-making and cross into the realm of Natural Resource Damage Assessment (NRDA) monitoring. One reason for this is that NRDA monitoring requires days to years before opinions on damages are made. Operational decisions require real or near-real time data. Damage assessment monitoring should not fall under the purview of spill response decision-making, and any monitoring of response options should be done solely to ensure the effectiveness of that response technique.

The Proposed Rule includes additional surface dispersant effectiveness monitoring requirements beyond those established in current practices, with no justification of how this additional monitoring burden will enhance operational response decision-making. Further, the additional requirements do not differentiate between surface and subsurface use of dispersants. As a result, the Proposed Rule would apply an unnecessary set of requirements in the event of surface dispersant usage in lieu of those monitoring techniques outlined in the USCG *et al., Special Monitoring of Applied Response Technologies* (SMART) protocols.[26] Additionally, the monitoring regime outlined in the Proposed Rule deviates substantially from that recommended by the National Response Team (NRT) in its *Environmental Monitoring for Atypical Dispersant Operations: Including Guidance for Subsea Application and Prolonged Surface Application,*[27] which also advocates the adaptation of the SMART monitoring regimen. These additional monitoring requirements, if adopted, may divert valuable resources away from the response effort, potentially prolonging the spill event. They may also preclude the use of dispersants in many cases if required to be in place as a condition of authorization, as it can take many days to assemble the equipment, vessels, and scientific experts.

During a subsea dispersant application, the Agency proposes an exhaustive set of environmental monitoring parameters that include *in situ* oil droplet size distribution analysis, *in situ* fluorometry, fluorescence signatures, dissolved oxygen, total petroleum hydrocarbons, carbon dioxide, methane, heavy metals, turbidity, water temperature, pH, and conductivity. As stated previously, we concurs with monitoring that supports effective, operational decision-making, but argues that most of these parameters will not provide any information on the effectiveness of the subsea dispersant application, will unnecessarily require additional scientific resources and will delay the reporting of key operational monitoring parameters. Spill response effectiveness monitoring should be based on simple, rapid assessments that can provide near real-time information on the progress of the response. For this reason, we believe that any mandated operational monitoring should be both incident-specific and designed to integrate into the other operational activities taking place. As such, the Responsible Party

[26] These protocols were jointly developed by the U.S. Coast Guard, National Oceanic and Atmospheric Administration, U.S. Environmental Protection Agency, Centers for Disease Control and Prevention, and Minerals Management Service.
[27] See http://www.nrt.org/production/nrt/nrtweb.nsf/AllAttachmentsByTitle/SA-1086NRT_Atypical_Dispersant_Guidance_Final_5-30-2013.pdf/$File/NRT_Atypical_Dispersant_Guidance_Final_5-30-2013.pdf?OpenElement

shares in the responsibility with the OSC in determining what monitoring needs to be done in accordance with the region-specific pre-approval and planning process. Comprehensive, detailed environmental monitoring is not an appropriate topic for this Proposed Rule.

The Agency's Economic Review Fails to Recognize Significant Costs of the Proposed Rule.

The Regulatory Impact Analysis (RIA) conducted by the Agency does not estimate all of the potential policy scenarios, and the economic impacts of those policies, that are issued in the Proposed Rule. Therefore, the RIA neglects to provide the public with a full description of the proposal's impact. Additionally, EPA did not provide any quantified social benefits that could result from implementation of any part of the Proposed Rule. An independent assessment[28] of the proposal (see Attachment A) has found that including the impacts of the requirements neglected by the Agency in the RIA would increase the cost of the proposal three times. In addition to underestimating compliance costs and administration costs for both industry and the federal government, the RIA supporting the proposal fails to calculate the costs associated with the immediate market imbalances that could occur if products are removed from the market, either temporarily or permanently.

Beyond the market imbalance, removal of dispersants from the toolbox could result in additional clean-up costs that are not considered in the RIA. As noted in Attachment A, "To the degree this rulemaking reduces chemical and biological agent availability and innovation, the nation will have less tools available to fight oil spill damage." A possible outcome of this limitation "is that future oil spill damages would be more severe than they would be if the rule did not occur." EPA did not quantify the costs associated with the possibility that the rule would limit the ability of the Response Community to keep oil from reaching shorelines or damaging ecosystems to a greater extent than if dispersants were readily available. We believe additional costs could extend to costs associated with environmental claims, increased response costs due to the need for shoreline cleanup, and other costs of environmental damages to sensitive shorelines, birds, and lost economic and recreational opportunities. In fact, EPA confuses the social benefits of avoiding an oil spill or having an appropriate response to a spill with the social costs of a spill, such as lost tourism revenue and other environmental damages. Furthermore, the Agency underestimated the costs to small businesses, which resulted in the false conclusion that small businesses would not be materially affected by the proposed ruling. Using realistic estimates, the attached third-party report finds that 43 percent of the firms identified by the Agency would face compliance costs in excess of three percent of annual sales and risk of closure. The Agency should amend the methodology and deficiencies found in the RIA, as discussed here and in the attached report.

We explicitly incorporate the comments and recommendations addressing the RIA provided by the independent assessment (see Attachment A).

The Proposed Rule Conflicts with Current Facility and Vessel Oil Spill Response Plans

Effective September 30, 2009, facility and tank vessel plan holders were required to update their response plans to include planning for responding to discharges using dispersants under a USCG rulemaking. Specifically, dispersant equipment is required in areas where it has been pre-determined that dispersants would be a viable oil spill mitigation technique and pre-authorizations have been established. Previously, with regard to dispersants for facilities located in areas with pre-authorization, a mechanical recovery equipment credit for up to 25% could be obtained for certain persistent oils.

[28] The independent assessment was prepared by the Policy Navigation Group (PNG), which consists of a diverse team of senior policy analysts with experience at Office of Management and Budget in the White House, managers, economists, engineers, lawyers and skilled researchers, with particular expertise in both private and public sector environmental management strategies including benefit-cost analysis and life-cycle assessments. See http://www.policynavigation.com/index.php?page=bios for more information about PNG.

However, since 2009 facilities handling certain persistent oils in areas with pre-authorization must ensure, through contract or other approved means, the availability of dispersant response resources and the commencement of dispersant-application operations within 7 hours of the decision by the OSC to use dispersants. Dispersant response resources must include: (1) sufficient volumes of dispersants to meet specified regulatory requirements, (2) dispersant application platforms and systems sufficient to meet planning standards, and (3) trained personnel.

Similarly, vessels transporting certain persistent oils in areas where dispersants are pre-authorized have been since 2009 required, through contract or other approved means, to have dispersant-related response resources meeting dispersant planning standards, including appropriately trained dispersant-application personnel. The dispersant resources must include the identification of each primary dispersant staging site used by each dispersant-application platform and the corresponding distance to the associated stockpile. Similar requirements were adopted for non-tank vessels in 2013.

There are also aerial tracking requirements under the current response plan requirements, and there are now pre-authorization zones for the use of dispersants outlined in the applicable Area Contingency Plan throughout the nation for every state except for Alaska and Connecticut whereby the OSC has the authority to expedite the authorization for the use of dispersants. Although there are no specific dispersants requirements under Bureau of Safety and Environmental Enforcement's (BSEE) response plan requirements for offshore facilities, it is clear based on experience with the *Deepwater Horizon* that dispersants are a key response tool that must be available on an expedited basis to respond both to a spill on the surface of the water and subsea in case of a blowout.

The Proposed Rule, however, appears to directly conflict with Coast Guard response plan requirements and raises a host of questions related to the continued validity of facility and vessel response plans. It is unlikely that any dispersants will pass both the efficacy and toxicity tests required by the Proposed Rule as a precursor to being listed on the NCP Product Schedule. For example, the EPA proposal may have the practical effect of virtually eliminating the entire stockpile of available dispersants nationwide that will be able to be listed on the NCP Product Schedule following full implementation of the Proposed Rule. In addition, it could have the practical effect of eliminating the usefulness of preauthorization zones. This could result in invalidating response plans.

Furthermore, the Proposed Rule, if implemented, would require significant additional requirements for information needed and monitoring required before dispersants use approval is granted, which may prevent a plan holder from being able to deploy dispersants in the desired/required amount of time. For some spills it may mean that dispersants cannot be used at all due to limited window of opportunity. Thus, the Proposed Rule raises significant issues related to USCG and BSEE facility and vessel oil spill response plan compliance and could result in unnecessary and increased environmental damage and corresponding spill claims as a result of increased damages. In this regard, we note that although the President delegated to EPA the responsibility for the amendment of the NCP, the Proposed Rule may extend beyond the limits of EPA's authority under that delegation or the applicable law. Furthermore, amendments to the NCP must be coordinated with members of the NRT, including the USCG and other relevant agencies, prior to publication for notice and comment. 40 C.F.R. § 300.2. It appears this coordination may not have been accomplished sufficiently to avoid the conflicts discussed above. Accordingly, we recommend that EPA further coordinate with the USCG and BSEE to ensure that the Proposed Rule does not adversely affect USCG and BSEE response planning procedures and requirements.

Agency Review of Public Comments

Due to the significance of this rulemaking to the industry and to other Federal government agency stakeholders involved with spill response, it is critical the Agency provide adequate time for these other

agencies to review and provide feedback on comments submitted by the public for EPA's benefit and consideration. Accordingly, we strongly urge the Agency to seek and consider comments from the other relevant Federal government agencies on the public's comments before it decides on how to handle all input received in response to the Proposed Rule.

Availability of EPA Testing Data

It has come to the attention of API and NOIA that the Agency may have testing data related to dispersants that may not have been released to the public. If that is the case then the Agency should make that data publicly available as soon as possible in some form of a supplemental notice to this Proposed Rule. Supplemental comments should then be requested to ensure that the public has an opportunity to provide additional informed comments for EPA's consideration before finalizing the Proposed Rule.

DETAILED COMMENTS ON THE PROPOSED AMENDMENTS TO 40 CFR PARTS 110 AND 300

Our specific section-by-section comments on the Proposed Rule are presented as follows. These comments conform to the organization of the Proposed Rule on a section-by-section basis.

I. § Section 300.5 Definitions

A. *The definition of burning agents should not include ignition devices*.

Burning Agents. The proposed definition reads: "*Burning agents are additives that improve the combustibility of the materials to which they are applied through physical or chemical means*." In the preamble (80 Fed. Reg. 3385) an example is given of a helitorch system, stating that the materials in the helitorch would be considered burning agents. Additionally, the Agency is seeking comment on whether it should add ignition devices to the definition of burning agent.

The proposed definition seems to combine burning agents (materials that actually change the combustibility of the material they are added to) and ignition agents (materials used to start combustion, as is the case with the helitorch). This confuses the question around including ignition devices within the definition of burning agents which, if happens, could lead to administrative pauses in requesting a test burn, or any burn during an emergency phase of a response.

Igniters are used to initially heat a small portion of the oil to release vapors that can be ignited. The initial process of ignition is not the same as improving overall combustibility of an oil. For example, when starting a campfire, a match does not change the combustibility of the wood; it simply provides the energy to start the combustion process. Similarly, an in-situ burn ignition system provides energy to heat and vaporize some of the oil so that it can start to combust. For this reason, we submit that ignition devices (both ignition liquids and equipment) should not be included in the definition of a burning agent.

We recommend the Agency adopt the following definitions:

> *Burning agents are additives that change the combustibility of the materials to which they are applied through physical or chemical means prior to ignition.*
>
> *Ignition agents are additives that ignite, or initiate combustion of the materials to which they are applied.*

B. *EPA's definition of dispersants does not fully define dispersants*.

Dispersants. The EPA proposed definition of dispersants in 300.5 should be expanded to include an explanation of why the production of smaller droplets is important. The following language should be added to the end of the proposed definition: "*The formation of small droplets is intended to allow the oil to be rapidly diluted in open ocean environments to non-harmful concentrations and to promote rapid biodegradation of the oil by naturally occurring microbes*."

C. *Oil-mineral aggregate ("OMAs") are not sorbents*

Sorbents. API and NOIA offer several comments on the definition of sorbents in 300.5, as follows:

- We support the addition of clay as an example of an inorganic/mineral compound, especially since commercial products made from clay are currently on the market.
- The Agency expresses concern that sorbents made from particulate matter may be used as sinking agents. Many inorganic/mineral compounds that are quite dense are commonly used on terrestrial spills on roads, pavements and other hard surfaces. The rule should not limit their use for these situations.
- Very fine clays (like those used in OMAs), while still nominally denser than water, will still suspend in the water column because the particle sizes are very small. The rule needs to acknowledge that OMA's are not sinking agents. If the Agency is concerned that inorganic/mineral sorbents are being used as sinking agents, then their use should be explicitly prohibited for use as a sinking agent. Uses for other purposes should be allowed.
- EPA should not limit how sorbents in particulate form are used. The use of OMA technologies is not to sorb oil but to promote dispersion and biodegradation. The purpose of the technique is not the same as for sorbents and should not be regulated as such. OMA technologies should be excluded in the definition of sorbents and should have separate testing/authorization requirements.
- While most sorbents are collected and recovered from the environment, some natural organic sorbents are spread over oil on habitats where the oil cannot be easily removed. The sorbent ties up the oil to reduce further migration and to limit the exposure to flora and fauna. The Agency should not discourage this application as it is sometimes considered a "best practice" for certain oiled habitats. As such, the Agency should either remove the phrase, "generally collected and recovered…" or add language to indicate that loose, organic sorbents used in wetlands may not be recovered.

D. *Saltwater should be defined in the Proposed Rule*

Saltwater. In column 2, 80 Fed. Reg. 3389, of the preamble and subsequent sections the term "saltwater" is used. It is recommended that saltwater be defined in the definitions in 300.5 since the Proposed Rule states that dispersants are only allowed in saltwater environments. There is no definition of saltwater offered in the proposal. Dispersants have been shown to work at salinity much lower than the typical 35 ppt ocean concentrations and effectiveness at salinity as low as 14 ppt has been reported. A definition where dispersants can be used needs to be provided, taking into consideration the data on dispersant performance in brackish or estuarine environments.

II. Section § 300.910 Authorization for Agent Use

A. *The Unified Command (UC) determines the best use of response assets on a daily basis.*

EPA should not establish a policy or rule that mechanical recovery is always the priority choice of countermeasures to use in a response. In the preamble for this section (column 1, 80 Fed. Reg. 3387), the Agency makes the following statement:

> *"During the DWH response, a priority countermeasures scheme was established to first use mechanical recovery via skimming/booming or in-situ burning followed by subsea dispersant and lastly surface dispersant use."*

This may have been the conceptual prioritization from the perspective of EPA, but in reality dispersants played a much larger role and it was the responsibility of the UC to determine the best use of response assets on a daily basis to account for weather conditions, VOC suppression, oil slick locations, response equipment availability, etc. Every spill is different and specific references to a single spill event can indirectly and inappropriately be perceived as a recommended practice and should be avoided. In any spill scenario, all response tools must be used to their maximum effect. The Agency's unprecedented use of "Directives" during the DWH incident severely limited the use of dispersants and circumvented the NEBA decision-making process allowing significantly more oil reaching the water's surface and, subsequently, the shoreline. This resulted in additional environmental impacts with no documented benefits to the marine ecosystem.

The Agency should reconsider this statement and prioritization as it puts unneeded complexity into the response decision-making process and inappropriately prioritizes mechanical recovery over other response options. The effectiveness of mechanical recovery can be limited in large, offshore spills as a result of typical environmental conditions, such as wave action/height or wind conditions as well as the extensive surface area that must be covered. Further, the Agency's artificial prioritization of this technique over other viable response options is contrary to the NEBA concept to determine the best blend of response options (with no pre-determined or pre-existing bias) to achieve the best overall protection and recovery for the ecosystem.

B. *Decision-making plans are also important to response decision-making.*

Later in the same paragraph referenced above, the Agency makes the following statement:

> *"The Agency believes that preauthorization or expedited decision making plans are critical elements of contingency planning activities."*

We strongly agree that preauthorization and expedited decision-making are important.

C. *Proposed changes involving preauthorization planning will increase the workload of all Regional Response Teams (RRTs) and Area Committees (AC) and restrict their flexibility.*

EPA should not restrict RRT or OSC activities related to preauthorization plans in areas where preauthorization is desirable and applicable. At the end of the same paragraph (column 2, 80 Fed. Reg. 3387), the Agency makes the following statement:

> *"The Agency believes these proposed revisions to the authorization of use provisions will assist OSCs, RRTs, and ACs in their advanced planning activities as they consider response methods that result in the greatest environmental protection."*

We agree with the intent to assist the OSCs and RRTs. However, the added complexity resulting from the Proposed Rule in authorization, monitoring and product listing, in addition to the overly conservative assumptions about dispersant effects described in the Proposed Rule, will not assist these entities.

Instead, it complicates and limits their ability to respond. The Agency must provide specific examples to show how this rule assists responders, particularly in relation to the OSC duties of making timely operational decisions, especially those decisions based on using the concept of NEBA to guide a response.

The existing rule states that the RRTs and Area Committees should evaluate the desirability of using various agents as part of their planning processes and state that "*RCPs and ACPs shall, as appropriate, include applicable preauthorization plans....*" Under the current rule, most RRTs did, in fact, create preauthorization plans, and those plans did include appropriate oceanographic and geographic limits. In practice, only Region VI used those plans to mitigate oil spills, and the Region VI OSCs, RRTs, and Area Committees became very familiar with their use. Policies and practices for the use of the RRT VI preauthorization plan were created by the appropriate member agencies without regulatory requirements and evolved to account for changes in information technology.

The proposed language states, "*RRTs and Area Committees shall address in a preauthorization plan…*" This becomes a mandate for all RRTs and Area Committees, including those areas that may have little interest or need for such plans. In fact, some RRTs and Area Committees do not even have water bodies where dispersants could be used. Most of the factors that are required to be considered by the Proposed Rule are already addressed in preauthorization plans (e.g., water depth, distance from shorelines). Some factors, however, such as the requirement that "*preauthorization plans must specify limits for the quantities and the duration of use,*" for agents are new and have the effect of limiting the application and effectiveness of the preauthorization plans. This requirement would suggest that RRTs must know in advance the size of the potential releases, the resources at risk and what strategies are available to protect them, the dispersability of the oil, and the optimum dispersant-to-oil application rate. The OSC's flexibility and the effectiveness of the response method are limited and not assisted by such requirements, and EPA has not justified that the proposed requirement is necessary in relation to existing requirements.

The existing rule also states that "*preauthorization plans may address factors such as*..." However, the Proposed Rule states "*Preauthorization plans should document…*" and adds requirements for consideration of factors such as "inventory" and "manufacturing capability of available agents." Again, this requires additional effort on the part of RRTs and Area Committees, where such work is already typically being done by industry as part of their planning processes.

The net effect of most of the changes involving preauthorization planning is an increase in the workload of all RRTs and Area Committees while restricting their flexibility in areas where preauthorization is desirable and applicable.

III. Section § 300.910(a) Use of Agents Identified on the Schedule on Oil Discharges Addressed by a Preauthorization Plan

A. *Adding more entities complicates the planning process.*

Section § 300.910(a) states that the RRTs and Area Committees shall address preauthorization plans. API and NOIA do not see any valid reason to add more entities to the planning process. In the preamble to this section, the Agency makes the following statement (column 1, 80 Fed. Reg. 3388):

> *"Therefore, the Agency is proposing to include RRTs as another planning entity with responsibility for developing preauthorization plans, and is requesting comment on this change, and on the advantages or disadvantages of keeping the development of these plans at the AC level."*

We believes that while the RRTs may provide more practical experience to the planning effort, the potential benefit would be overshadowed by the added complexity and bureaucracy. Unless the Agency can provide a sound rationale, we recommend against including the RRTs in the development of preauthorization plans.

B. *Area Committees should identify shoreline habitats that can benefit from the appropriate use of dispersants.*

In this same section of the preamble (column 3, 80 Fed. Reg. 3388), the Agency makes the following statement:

> *"The RRT's and ACs should identify the affected biological resources and their habitats likely to be negatively impacted, as well as those that are expected to benefit."*

API and NOIA support the requirement that Area Committees should identify shoreline habitats that can benefit from the appropriate use of dispersants or other response methods. This will advance the use of the NEBA concept. Note that many of these resources are already identified in Area Contingency Plans.

C. *Preauthorization plans should provide the OSC sufficient authority to use chemical or biological response agents.*

In this same section of the preamble (column 1, 80 Fed. Reg. 3389), the Agency makes the following statement:

> *"The Agency is clarifying that if the preauthorization plan is approved in advance for chemical or biological agent use under specified discharge circumstances, then the OSC may authorize the use of the agents on the Schedule for their intended purpose without the incident specific concurrences and consultations described in paragraphs (b) of this section unless otherwise directed by the Administrator in accordance with current concurrence authority."*

We believe that the preauthorization plan should provide the OSC sufficient authority to use chemical or biological response agents. Since the Agency will have already been involved in the preauthorization plan approval, additional Administrator concurrence is unnecessary and would unduly complicate the response.

D. *RRTs and Area Committees should be required to address and document their review and conclusions on whether or not the use of chemical or biological agents is appropriate.*

The Proposed Rule reads that:

> "*RRTs and Area Committees shall address in a preauthorization plan, as part of their planning activities, whether the use of chemical and biological agents listed on the Schedule on certain oil discharges is appropriate."*

This appears to compel RRTs and Area Committees to document when and why such agents are appropriate, but does not require documentation or the rationale if they are not deemed appropriate, leaving the option open for RRTs and Area Committees to simply not address preauthorization for use of such agents. RRTs and Area Committees should be required to address and document their review and conclusions on whether or not the use of chemical or biological agents is appropriate. API and NOIA suggest modifying the proposed language to read:

> *RRTs and Area Committees shall address in a preauthorization plan, as part of their planning activities, whether or not the use of chemical and biological agents listed on the Schedule on certain oil discharges is appropriate and document the rationale for whether or not the use of an agent is considered appropriate.*

IV. Section § 300.910(a)(1) Preauthorization Plan Development

A. *Dispersant use should not be limited by the preauthorization plan.*

EPA should not unnecessarily limit the use of dispersants through new requirements in developing preauthorization plans. In this section (column 3, 80 Fed. Reg. 3422), the Agency makes the following statement:

> *"For discharge situations identified where such agents may be used, the preauthorization plan must specify limits for the quantities and the duration of use* (Ed. emphasis added)*, and use parameters for water depth, distance to shoreline, and proximity to populated areas."*

We assume that this provision in the Proposed Rule is a direct response to recommendation C5 on page 270 of the January 2011 report *Deep Water: the Gulf Oil Disaster and the Future of Offshore Drilling* by the National Commission on the BP *Deepwater Horizon* Oil Spill and Offshore Drilling. However, in the four years since the publication of this report, there have been numerous scientific, peer-reviewed environmental and health publications that have examined the dispersant use during DWH.[29] Subsequent laboratory toxicological studies of dispersed oil in the water column after dispersant application showed that there was no detectable harm to the species tested. Key findings from this research program included the following:

- Following surface dispersant applications, the dispersed oil concentrations in the water column return within 3 hours to background levels due to vertical and horizontal dilution into surrounding ocean waters;

[29] Atlas, R. M., & Hazen, T. C. (2011). Oil biodegradation and bioremediation: A tale of the two worst spill in U.S. history. *Environmental Science & Technology, 45*(16), 6709-6715. doi:10.1021/es2013227; Chakraborty, R., Borglin, S. E., Dubinsky, E. A., Anderson, G. L., & Hazen, T. C. (2012). Microbial response to the MC-252 oil and Corexit 9500 in the Gulf of Mexico. Frontiers in Microbiology, Ecotoxicology and Bioremediation, 3, 357-367. doi:10.3389/fmicb.2012.00357; Lubchenco, J. (2010, December 29). Oil spill clarifies road map for sea turtle recovery. The Miami Herald. Retrieved from http://www.nmfs.noaa.gov/mediacenter/docs/2011/mar/oil_spill_clarifies_road_map_for_sea_turtle_recovery.pdf; Louisiana Department of Wildlife and Fisheries. (2010, July). Oyster stock assessment report of the public oyster areas in Louisiana. Oyster Data Report Series No. 16. Retrieved from https://www.wlf.louisiana.gov/sites/default/files/pdf/page_fishing/32695-Oyster%20Program/2010-oyster-stock-assessment-report.pdf; Operational Science Advisory Team. (2010). Summary report for sub-sea and sub-surface oil and dispersant detection: Sampling and monitoring. Retrieved from http://www.restorethegulf.gov/sites/default/files/documents/pdf/OSAT_Report_FINAL_17DEC.pdf; Operational Science Advisory Team. (2011). Summary report for sub-sea and sub-surface oil and dispersant detection: ecotoxicity addendum. Retrieved from http://www.restorethegulf.gov/sites/default/files/u306/FINAL%20OSAT%20Ecotox%20Addendum.pdf; Shea, D. (2014, August 15). In re oil spill by the oil rig "Deepwater Horizon" in the Gulf of Mexico, on April 20, 2010. Expert report of Dr. Damian Shea. New Orleans, LA: United States District Court, Eastern District of Louisiana. Retrieved from http://mdl2179trialdocs.com/releases/release201501200700000/TREX-013444.pdf; Soniat, T. M., King, S. M., Tarr, M. A., & Thorne, M. A. (2011). Chemical and physiological measures of oysters (Crassostrea virginica) from oil-exposed sites in Louisiana. Journal of Shellfish Research, 30(3), 713-717. doi:10.2983/035.030.0311; and U.S. Food and Drug Administration. (2010, October 29). NOAA and FDA announce chemical test for dispersant in Gulf seafood. Retrieved from http://www.fda.gov/NewsEvents/Newsroom/PressAnnouncements/2010/ucm231653.htm.

- The surface dispersants were applied over an operating area of 18,000 sq. mi., as a result, surface dispersant application rarely occurred in the exact same location, which further enhanced dilution of dispersed oil in the Gulf; and
- The mixing of relatively small volumes of dispersed oil into the very large, well-mixed Gulf of Mexico resulted in very short exposure durations of animals

These studies, conducted during and after the DWH aerial dispersant operations, indicate that there is no need to specify limits for the quantities and the duration of use of dispersants in a preauthorization plan. We believe the Section 300.910(a)(1) proposed requirement that specifies limits for the quantities and duration of use should be deleted from the Proposed Rule.

If the Agency wants to determine whether and how to limit dispersant use, we propose a joint EPA/industry study of existing research results to provide scientific credibility to any limitations that are established. Without scientific justification, artificially-set limitations on dispersant use would threaten the intent of using NEBA to support response decision-making and would limit the OSC's ability to make the best overall decision concerning the actual scenario and the environment.

To be clear, API and NOIA believe the amount of dispersant used should be based on the outflow of oil and the dispersant-to-oil ratio (DOR) that is effective in dispersing the plume. It is understood that after a specified time period (e.g., 48 hours), the OSC will request RRT concurrence for continued dispersant use (except when there is a threat to human life and health) wherein concerns over quantities and duration can be evaluated.

We believe that the proposed preauthorization requirement to provide distance to shoreline and proximity to populated areas is not justified as the RRTs/Area Committees have already set these requirements in existing preauthorization plans as appropriate. Each RRT has developed preauthorization maps which clearly depict minimum distances from shore and minimum water depths. In addition to these already established distance and depth limitations, during an actual response, dispersant responders work with the RRT, OSC, and Responsible Party to set standard requirements and operating procedures for aerial spray safety setbacks of 1,000 ft. or more from vessels, platforms, response personnel, and sensitive marine life. Because these practices are already in place, there is no need to specifically regulate new parameters. For these reasons, API and NOIA believe the parameters for distance to shoreline and proximity to populated areas should be deleted.

We suggest that the Agency confer with other Federal agencies involved in oil spill planning and response and revise the language in the Proposed Rule to specify that preauthorization should rely on the concepts of CERA/NEBA as the foundation for plans and response decisions, not on artificially set limits on dispersant volumes. The USCG has conducted more than a dozen CERAs to help inform the decision-making process, but the Proposed Rule appears to contradict the CERA/NEBA tenets that were previously used to define preauthorization zones.

B. *EPA should work with other agencies to implement changes to preauthorization plans.*

Finally, since the Proposed Rule suggests that the Agency is adjusting the natural resource trustee concurrence requirement for preauthorization plans, we believe strongly that the Agency must demonstrate how it will work with other agencies to implement these proposed changes into the existing RRT preauthorization process and should specify a time interval for the relevant agencies to complete this integration (e.g., 1-year).

C. *The USCG and Bureau of Safety and Environmental Enforcement (BSEE) already regulate logistical aspects of dispersant use.*

There is no reason for the Agency to regulate logistical matters related to dispersant usage because they are already regulated by other agencies. In Section § 300.910(a)(1), the Agency makes the following statement:

> *"…and logistical factors including inventory, storage locations and manufacturing capability of available agents, availability of equipment needed for agent use, availability of adequately trained operators, and means to monitor agent use in the environment."*

There have been many advances in regulations and spill response planning in the past decade. The regulations should acknowledge that there are now requirements in 33 CFR Parts 154 and 155 that have established a surface dispersant capability throughout the U.S. to apply up to 55,000 gallons (daily) of dispersant out to 50 nm offshore. These new regulations resulted in the development of 44 strategically located dispersant stockpile bases. Further, these regulations require training and exercising of equipment and personnel. Given existing compliance with 33 CFR Parts 154 and 155, preauthorization plans do not have to restate all of these assets but should be able to refer to this regulated capability. With current U.S. stockpiles containing close to 1 million gallons of dispersant and international stockpiles containing over 1.5 million gallons (as established via the Global Dispersant Stockpile), the requirement to assess dispersant manufacturing capability during the initial response is unnecessary.

We recommend that the Agency revise this section of the regulation to not require specific information on stockpiles, spray equipment, personnel, training or manufacturing and acknowledge that the USCG and the BSEE are regulating these aspects of spill response.

V. <u>Section § 300.910(a)(2) – Preauthorization Plan Approval</u>

A. *The proposed language for when a withdrawal of concurrence invalidates a Preauthorization Plan is unclear.*

EPA needs to clarify when withdrawal of concurrence invalidates a preauthorization plan. In the preamble to this section (column 2, 80 Fed. Reg. 3389), the Agency states:

> *"The Agency is proposing specific procedures for concurrence withdrawals, allowing agencies to do so if they believe the preauthorization plan no longer addressed or reflects existing situations if it were to be implemented. While an agency with concurrence authority may not decide to withdraw concurrence from an approved preauthorization plan, there are currently no set procedures to promptly address those situations. The proposal would require the RRT and the ACs to address the withdrawal of approval of the preauthorization plan within 30 days of the withdrawal, allowing an opportunity to address the concerns."*

However, the Proposed Rule language is not clear regarding how the withdrawal process operates. While the proposed 30-day period for the RRT to address withdrawal is a positive step as it provides structure and guidance to the process, it is unclear when withdrawal of concurrence would render the preauthorization plan invalid. API and NOIA believe this only makes sense if there is no active or ongoing response. Agencies should not withdraw their concurrence from an existing plan during a response as this could make responding in a timely fashion difficult, if not impossible. This could potentially allow an agency to invalidate a plan at the time of a spill forcing a delay in the use of dispersants at the most critical time of the response. Note that the States of Alaska and Florida have withdrawn their approval for

preauthorization in state waters, which was done effectively without any additional regulatory requirements.

Clarifying the language to allow for preauthorization plans to remain in place during the 30-day period in which RRTs and Area Committees address the withdrawal would prevent disruption to response activities. This would maintain the validity and usefulness of preplanning and preauthorization, while allowing for agencies to withdraw concurrence based on changing conditions, reducing the possibility of the withdrawal based on political or media influence. This 30-day review period should also be subject to public comment.

We also note that currently Subpart J does not include the USCG representative to the RRT as a government agency required to approve preauthorization plans. It is important to include one of the key stakeholders, the USCG, in the approval of preauthorization plans.

Accordingly, API and NOIA suggest modifying the proposed language as follows:

> *(2) Preauthorization Plan Approval. The EPA representative to the RRT, USCG RRT representative for the coastal and ocean zones where the USCG OSC would have primary authority and responsibility for operational decisions, the Department of Commerce and the Department of the Interior natural resource trustees and, as appropriate, the state RRT representatives shall review and either approve, approve with modification, or disapprove the preauthorization plans developed by the RRT and/or the Area Committees. Withdrawal of concurrence means the preauthorization plan becomes invalid and the authorization of use for chemical or biological agents must be performed according to paragraph (b) of this section. For an agency to withdraw concurrence, the agency must first notify the RRTs and Area Committees. The RRTs and Area Committees shall review and address the withdrawal within 30 days of the date of notification, during which time the notification of withdrawal will be subject to public comment. The Preauthorization Plan will remain in effect while the RRTs and Area Committees review the withdrawal. If the agency withdrawing its concurrence remains unsatisfied after the 30-day review period, then the Preauthorization Plan becomes invalid at the conclusion of the 30-day review period, and the authorization of use for chemical or biological agents must be performed according to paragraph (b) of this section.*

VI. Section § 300.910(a)(3) – Preauthorization Plans Reviews

A. *The re-approval process for preauthorization plans is too frequent and the timing and process for review and revision is unclear.*

Currently there are no requirements for the review of preauthorization plans. Revised Section 300.918(a)(3) requires preauthorization plan review, and revision as needed at the following times:

> *at least every 5 years; after a major discharge or a Spill of National Significance (SONS); to address revisions of the Schedule; to reflect new listings of threatened and/or endangered species; and to address any other change that may impact the conditions under which the use of chemical and biological agents is preauthorized.*

The preamble explains that "other changes" may include a new or revised worst case discharge estimate, and that this review requirement is "intended to ensure that preauthorization plans are actively maintained and updated to reflect revisions to the Schedule." (80 Fed. Reg. 3389). If the Agency decides to move forward with a review requirement, API and NOIA recommend that the Agency clarify (1) what defines a

"major discharge"; (2) what process should be followed for re-approval; and (3) what effect a change in the preauthorization would have on existing FRPs and VRPs, which are also updated on a 5-year cycle. We believe the review of preauthorization plans every 10 years or, at the discretion of the RRT/Area Committee after a SONS (per [a] and [b] in the statement), is sufficient and that the "major discharge" language should be removed. The Agency should also strike the requirement for review upon new threatened and/or endangered species listings and "to address any other change" since this type of planning on a "less than five year basis" overly-burdens the RRTs. Also, the Agency should clarify what the re-approval process would entail and establish a framework for how long review and approval should take. In addition, the USCG representative to the applicable RRT should also be included in this process. This, along with the remaining review triggers, would still allow for robust, current preauthorization plans, while maintaining stability of existing, potentially affected FRPs and VRPs.

We suggest modifying the proposed language as follows:

> *(3) Preauthorization Plans Reviews. The RRT and/or the Area Committees must review, and revise as needed, pursuant to paragraph (a)(1) of this section, preauthorization plans at least every 10 years; or at the discretion of the RRT and/or Area Committee after a Spill of National Significance (SONS); to address revisions of the Schedule; to reflect new listings of threatened and/or endangered species; and to address any other change that may impact the conditions under which the use of chemical and biological agents is preauthorized. The designated EPA RRT representative, the USCG RRT representative for the coastal and oceans zones where the USCG OSC would have primary authority and responsibility for operational decisions, the Department of Commerce and the Department of the Interior natural resource trustees, and the RRT representative from the state(s) with jurisdiction over the waters of the area to which a preauthorization plan applies shall review and either approve, approve with modification, or disapprove any revisions to the preauthorization plans.*

VII. Section § 300.910(b) Use of Agents Identified on the Schedule on Oil Discharges Not Addressed by a Preauthorization Plan

A. *A reasonable consultation time of 48 hours should be established for natural resource trustees if the Agency concludes that the current "if Practicable" standards should be changed*

In this section in the Proposed Rule (column 1, 80 Fed. Reg. 3423), the Agency has removed the words *"when practicable"* with respect to consultation with the Department of Commerce (DOC) and the Department of the Interior (DOI) natural resource trustees for the following reasons discussed in the preamble:

> *"The requirement for consultation with the DOC and DOI natural resource trustees is also maintained. However, the language is amended by removing 'when practicable' with respect to consultation with the DOC and DOI natural resource trustees. The Agency believes that the case-by-case decision making should include consultations with natural resource trustees since these discharge situations may present unique challenges when selecting a response option that involves chemical or biological agents. While the Agency recognizes the time-critical nature of decision making during a response, advances in communication technology with increased capabilities to communicate quickly."*

(column 1, 80 Fed. Reg. 3390) API and NOIA believe that while technical advances in communication (e.g., cell phones) have improved since the last Subpart J revision, it does not guarantee an immediate or timely response by the required individuals. And the current system has worked well for years. Thus,

continued flexibility in the approval process (i.e., "when practicable") is still warranted to ensure the timeliest and best possible response. If the Agency concludes that the current "when practicable" language needs tightening up it could establish a reasonable consultation time of 36 hours. Spill response decision-making requires timely decision-making. Natural resource trustees already have an independent process to assess possible damages outside of the response effort (via Natural Resources Damage Assessments [NRDA]). The phrase could be revised to state, "…*when practicable within a 36-hour timeframe*".

B. *The change in the term "navigable waters threatened" will set up additional barriers to dispersant use and unduly limit actions by the OSC.*

In the same paragraph (column 1, 80 Fed. Reg. 3390), the Agency makes the following statement:

> *"The Agency is also proposing to revise the term 'navigable waters threatened' to 'waters and adjoining shorelines threatened' to be consistent with the provisions in paragraph (a) of this section."*

We are concerned that this change will set up additional barriers to dispersant use and unduly limit actions by the OSC.

C. *Early dispersant use decision-making should focus on documenting that a NEBA justification exists to support dispersant application.*

The Proposed Rule would unnecessarily establish new requirements for an OSC to document the parameters used to authorize dispersants. This is discussed in the same section (column 2, 80 Fed. Reg. 3423), as follows:

> *"…the OSC must consider and document the parameters for the use of agents including the quantities to be used, the duration of use, the depth of water, the distance to shoreline and proximity to populated areas, and should address factors such as environmentally sensitive resources or restricted areas that might be impacted, agent inventory and storage locations, agent manufacturing capability, availability of equipment needed for agent use, availability of adequately trained operators and appropriate means to monitor agent use in the environment."*

Because dispersants have a limited window of opportunity to be used on spills, it is important to decide quickly on their use. Decisions by the OSC should not be delayed to complete information that is not needed. Many of the proposed items for the OSC to document (e.g., stockpiles, personnel, spray assets) are already specified and required in the applicable response plan requirements of 33 CFR Parts 154 and 155. Given the current stockpile availability in the U.S. and in the Global Dispersant Stockpile, dispersant availability will not be a concern for weeks or months. As such, we believe that the immediate actions by the OSC should include a review of the pre-authorization plan(s) and a rapid, incident-specific NEBA to support the selection of response options that may include dispersant application as a means to lessen or eliminate impacts to sensitive shoreline resources or to protect worker health and safety. In addition, we recommend that the Proposed Rule require referencing the USCG-classified dispersant OSRO or other OSRO for many of the items requested.

VIII. Section § 300.910(c) Burning Agents

A. *Ignition devices for in-situ burning are not burning agents.*

Under the current rule an OSC may authorize use of a burning agent on a case-by-case basis after concurrence of the EPA representative to the RRT, the state RRT representative and in consultation with the DOC and DOI natural resource trustees, when practicable. The Agency proposes to authorize the OSC to approve the use of a burning agent without the approval or consultation with other agencies to facilitate expedited use in recognition of their increasing importance in response to spills and that small quantities of burning agents are used and are quickly consumed by the resulting fire. API and NOIA agree and commend the Agency for this proposal. Further, we agree that ignition devices should be excluded from the definition of burning agents.

We believe that chemical herder agents are included within the scope of the term burning agents. In the preamble to this section (column 3, 80 Fed. Reg. 3390), the Agency makes the following statement:

> *"Further, because of the nature of burning agents and the proposed revisions to the authorization of use for these products, the Agency continues to believe it is not necessary to require product submissions for burning agents."*

We believe this statement also applies to chemical herder agents. Please clarify if this is correct.

IX. Section § 300.910(d) Exception

A. *EPA needs to clarify the phrases "protection of human life" and "near inhabited areas."*

In this section in the Proposed Rule (column 2, 80 Fed. Reg. 3423), the Agency makes reference to "the protection of human life." We believe it is unclear whether "*protection of human life*" is inclusive of the protection of worker health and safety. The Agency should amend this section to clearly include the protection of oil spill response worker safety within this concept. This same section also references spills "*near inhabited areas.*" This language is confusing since spills where dispersant use serves an environmental benefit will rarely (if ever) be near inhabited areas.

B. *A time limit on protecting human health is inappropriate.*

We believe the establishment of a 48 hour limit to the OSC's use of authority to use agents to protect human health is inappropriate. There should never be a limit to the OSC's ability to make decisions that are aimed at protecting human health or human life, and the exception should be permissible until the threat to human health has subsided. The current rule adequately allows for the OSC to approve use of dispersants in such cases and EPA has not justified that the proposed requirement is necessary or provides any benefit to existing requirements.

X. Section § 300.910(e) Prohibited Agents

A. *Banning nonylphenol (NP) and nonylphenol ethoxylates (NPE) is not necessary for dispersants.*

API and NOIA submit that NP and NPE components should not be banned. In the preamble to this section (column 2, 80 Fed. Reg. 3391), the Agency makes the following statement:

> *"The Agency is also proposing to add a prohibition from listing on the Schedule and from authorizing use of any chemical or biological agents that contain nonylphenol (NP) or nonylphenol ethoxylates (NPEs) as components."*

While we appreciate the Agency's concern about NP and NPE components, an outright prohibition seems inconsistent with the practice of allowing NP and NPE ingredients in a variety of widely-used cleaning products in the U.S. After use, these products are routinely flushed and transported into wastewater discharges on a daily basis. Spill response dispersant use is extremely infrequent and only occurs when a significant threat to shoreline or near shore resources is present. Banning these components in oil spill dispersants while allowing their wide spread use in other commercial products seems contradictory and prejudicial. API and NOIA requests that the Agency explain why NP/NPE is banned in dispersant products, but not in many more commonly manufactured products.

B. *Endocrine disruption testing has little relevance and is not necessary.*

We submit that endocrine disruption testing should not be added. In the same section (column 1, 80 Fed. Reg. 3392), the Agency states:

> *"Because validated testing methods are still being developed the agency is not proposing any test requirements with respect to endocrine disruption for products to be listed on the Schedule."*

We believe that adding any such testing provides little relevance in the context of oil spill response decisions and that testing efforts are better directed at the use of standardized toxicity tests with aquatic organisms using endpoints of population relevance (i.e., mysid and *Menidia* tests proposed).

C. *Mechanical response clean-up methods have greater limitations in offshore conditions than dispersants.*

Mechanical response clean-up methods have many limitations. In the same section (column 2, 80 Fed. Reg. 3392), the Agency makes the following statement:

> *"There are chemical and biological agent alternatives to sinking agents and to agents containing NP or NPE; as well as mechanical methods* (Ed. emphasis added) *for responding to oil discharges, including those situations that pose extreme threats or are time critical."*

We believe the Agency must realize the limitations that mechanical response methods have in offshore conditions. Weather conditions will preclude booming and skimming operations in sea states above six feet wave height, and even in ideal sea state conditions, responding to offshore spills historically has resulted in 5-10% of spilled oil recovered by mechanical recovery methods. For this reason, it is critical that responders have reasonable access to chemical response methods, because of the substantially higher encounter rates (80% or more) that can be achieved by treating the spilled oil with dispersants.

XI. Section § 300.910(f) Storage and Use of Agents

A. *No additional requirements should be put in place for product shelf life.*

Currently, the manufacturer is required to provide information on recommended conditions of storage and use for each product at the time an application for listing a product under Subpart J is submitted to the Agency. With regard to shelf life, the Agency is requesting comments on whether more information should be submitted on issues related to shelf life. Specifically, in the preamble to this section (column 1, 80 Fed. Reg. 3393), the Agency makes the following statement:

> *"To alleviate concerns that applications are submitted that establish an extended or indefinite shelf life for a product, the Agency is requesting comments on whether any*

> *additional data or information requirements should be included for the product listing determinations specific to a product's shelf life, or whether alternative approaches, such as limiting the shelf life for product categories to a given timeframe, should be considered."*

API and NOIA believe that no additional requirements should be put in place for product shelf life and thus it should not change the current practice of having the manufacturer provide information on recommended conditions of storage and use for each product. Ensuring product efficacy (regardless of age) is the only relevant end-point. For example, research has shown that properly maintained stockpiles of Corexit 9500 have remained effective for 25 years. Given that periodic effectiveness testing is proposed, there is no justification for also mandating a shelf life that could potentially result in costly replacement of stockpiles that remain viable and effective.

If the Rule dictates a dispersant shelf-life, this could cause an undue financial burden. We believe that suppliers may set low shelf-lives to protect themselves from liability or to promote future recurring sales, even though there are well-documented studies indicating that properly stored dispersant stockpiles have maintained their effectiveness for decades. A 2008 study by Clark, *et al.*,[30] evaluated U.S. stockpiles of Corexit 9527 and concluded that batches of this dispersant have remained viable for spill response for over 30 years. Establishing shelf-lives for products makes sense if periodic testing is not specified. However, since the Proposed Rule specifies re-testing of the dispersant stockpiles, there is no justification for also requiring a shelf-life. We submit that the requirement for a shelf-life should be removed from the Proposed Rule and that the Agency should instead provide more clarity on product re-testing for efficacy. Specifically, the requirement to conduct periodic 5-year tests of effectiveness and toxicity is unclear. The sampling requirement has not been delineated in the Proposed Rule, which could be interpreted, in the extreme case, that every single dispersant container would have to be re-sampled and tested to remain in an "approved" status.

The Rule should clearly state that representative samples of batches/lots are tested for efficacy and that the testing interval take into account the aforementioned studies that demonstrated that dispersant stockpiles maintain effectiveness for decades. Further, we submit that there is no scientific justification for re-testing toxicity.

B. *Central dispersant stockpiles are typically maintained by OSROs, not by Responsible Parties or product manufacturers.*

Under the Proposed Rule the OSC would only be able to authorize use if the Responsible Party certifies that the products have been stored under the conditions provided by the submitter. In this section in the Proposed Rule (column 2-3, 80 Fed. Reg. 3423), the Agency makes the following statement:

> *"The OSC may authorize for use only products that are certified by the Responsible Party to have been stored under the conditions provided by the submitter under 300.915(a)(6) and whose date of use does not exceed the expiration date listed on the container's label at the time of the incident. The Responsible Party must provide the OSC product documentation, developed in consultation with the submitter of the product to the Schedule, prior to OSC authorization of product use affirming it has maintained its integrity, including no changes in its composition, efficacy, and toxicity."*

[30] Clark, J., Becker, K., & Lessard, R. (2008). Maintaining dispersant stockpiles and assessing their quality. *Proceedings of the 2008 International Oil Spill Conference, 2008*(1), 695-698. doi:10.7901/2169-3358-2008-1-695

The Agency needs to recognize that central dispersant stockpiles are typically maintained by OSROs and are stored mainly in 200 to 300 gallon totes so that they can be transported by truck or air to the site of a spill. In most spill situations, the dispersant stockpile will not be in the control of the Responsible Party or the submitter of the product (i.e., the original manufacturer) at the onset of a spill. As a result, there is no way for these two entities to make a certification for a product that was not in its direct control just prior to the spill. API and NOIA suggest modifying the language to clarify that Responsible Parties must only demonstrate compliance with Section 300.915(a)(6) for inventory/product they control.

C. *Certification of storage conditions should not be required for authorization of use.*

Section § 300.910(f) states that the OSC may authorize for use only products that have been stored under the conditions specified by the manufacturer including the maximum, minimum and optimum temperatures as well as humidity and other relevant conditions. This proposed regulation could require dispersants to be stored in climate controlled buildings with continuous temperature and humidity monitoring. We do not support this proposed requirement.

D. *API and NOIA opposes any re-testing requirements during a spill response.*

The intent of this section is difficult to discern but it appears that the certification requirement appears to essentially requires complete retesting of the product (at the time of the spill) for the Responsible Party to certify such a statement. It appears that the Agency has included this language with the specific intent to delay the dispersant authorization process by requiring complete re-testing at the time of a spill incident. We strongly oppose any re-testing requirements during a spill response. Any product testing should be conducted at a specified, planned interval, not during an emergency response. During a response, the Responsible Party should not have to certify the dispersants that will be applied, since that is the purpose of the NCP Product List. The only requirement should be for the Responsible Party to show the OSC, if requested, the original manufacturer's verification (Certification of Analysis) that the product meets specifications for dispersants with an age of less than the period for retesting recommended by the manufacturer. For older dispersants the Responsible Party should, if requested, show the efficacy re-test data for the stockpile. The test required should only be for effectiveness as it is a reliable indicator that the composition has remained the same. We propose that this language is changed to read: *"The OSC, to authorize the use of dispersants, may request that the Responsible Party provide test data of the dispersant stockpile showing it is effective."* We also suggest modifying the language so that it applies only for product manufactured or produced after the date of final rule publication.

E. *Re-testing requirements must permit flexibility in test results over time.*

This same section specifies re-testing and re-labelling requirements. This section does not specify the criteria for re-testing results and needs to specify permissible levels of deviation from past testing results. We point out that efficacy and toxicity testing have inherent variability. Two testing runs of the same product, in the same laboratory, in the same week can yield varied results, so any re-testing requirements must permit flexibility in test results over time. We suggest an allowable 10% variance in effectiveness test results, based on manufacturer and scientific experts' opinion on effectiveness testing. As previously stated, we do not believe there is any scientific justification to re-test for toxicity since efficacy results will confirm if the composition of the dispersant has changed. We suggest clarifying language so that it is clear product testing is only required if it is not stored under requirements provided by submitter, or it has expired.

F. *The assignment of an arbitrary 5-year life to products is biased and creates unwarranted expense due to recurrent testing.*

Finally, the assignment of an arbitrary 5-year life to products without regard to prior research on product viability over time, or on manufacturer input on product re-testing, is biased and creates unwarranted expense due to recurrent testing. Proposing 'no change' in composition, efficacy, and toxicity seems unreasonable and could result in significant costs of replacing usable dispersant stockpiles. Additionally, dispersant manufacturers typically advise that container seals not be broken and the material not be exposed to air, which would be necessary to test existing stocks, which may or may not have an expiration date printed on the label under current regulation.

Studies exist that show Corexit products maintain effectiveness for 25 years. We believe that any re-certification term should be based on existing scientific and manufacturer data. There should also be an allowance for some change/degradation of product over time, aligned to international practice. For example, the United Kingdom Marine Management Organisation allows a loss of efficacy to 75% of the original minimum level. Further, there is no scientific rationale to require any form of toxicity re-testing of a dispersant that was previously tested. Manufacturers will have the best insight regarding when product recertification should be needed. In addition, the Responsible Party should never be required to re-label products they did not produce, with the possible exception of adding a re-test date for product efficacy.

XII. Section § 300.910(g) Supplemental Testing, Monitoring, and Information

A. *API believes the standard efficacy and toxicity tests already required are more than adequate for regional use.*

We do not believe there is a need for additional testing than is currently required under the NCP. In the preamble to this section (column 2, 80 Fed. Reg. 3393), the Agency makes the following statement:

> *"The proposal removes 'in addition to the test methods specified in 300.915 and described in appendix C to part 300.' While RRT's may want to use the efficacy and toxicity testing protocols specified in Appendix C of the NCP for comparative purposes, the proposed revisions clearly establish the RRT's authority to require tests using parameters beyond those specified in Appendix C. Furthermore, there may be supplementary toxicity and efficacy testing information based on recognized standard testing methods already available that RRTs may want to consider when addressing site, area, or ecosystem specific concerns."*

We believe the standard efficacy and toxicity tests already required are more than adequate for regional use. We suggest the Agency consult the NOAA Dtox database. A review of that database suggests that the sensitivities of all tested species are in the known range and that additional tests simply reinforce the existing species sensitivity distribution curves. Regional data are unlikely to fundamentally change overall NEBA considerations for dispersant use. Any regionally required laboratory efficacy tests during a response will not be as relevant as a pilot test in the field and will only delay the dispersant authorization process approval beyond the window during which dispersants could be applied (thereby precluding their use in some situations where they may have provided a net environmental benefit). This proposal allows RRTs to request a broad range of additional data on a product, a situation that creates the potential for confusing and costly testing and is unlikely to add further information of value to oil spill response decision-making.

B. *Additional monitoring during a response is unreasonable.*

Section § 300.910(g) provides the RRT with the authority to request that the OSC require the Responsible Party to conduct additional monitoring associated with use of a product. We submit it is unreasonable to require additional monitoring during a response except in exceptional circumstances. In the preamble (column 2, 80 Fed. Reg. 3393), the Agency makes the following statement:

> "*For example, the RRT may want to monitor the exposure of marine mammals to oil constituents, including the dispersed oil, or to monitor toxicity in the water column using biological assays."*

We believe such monitoring during a response is unreasonable and should only be undertaken if (a) there is some critical question associated with the spill response that has not been answered with the testing already in place; and (b) there is sufficient time to arrange for proper and scientifically defensible protocols to be established. Given that tests associated with such monitoring are likely to be complex and require considerable time to prepare, implement, and interpret, it appears that the tests would not inform operational decision-making during the response, but rather would develop data for NRDA. As previously stated, operational monitoring and NRDA are two different things and this Proposed Rule should not specify NRDA monitoring. Additionally, the "biological assays" that are referenced in the Proposed Rule are impractical given the nature of offshore spills where dilution is significant, water movement is constant, and synoptic sampling of small quantities of organisms from dynamic water masses is not representative of any chronic or resident conditions.

API and NOIA suggest revising the language as follows:

> *(g) Supplemental Testing, Monitoring and Information. The RRT may require supplementary toxicity and efficacy testing, or available data or information that addresses site, area, or ecosystem specific concerns relative to the use of a product for both planning and authorization of use. During a discharge incident, the RRT may request that the OSC require a Responsible Party to conduct additional monitoring associated with the use of a product to the extent necessary for conducting response operations. Such additional monitoring data may include supplemental sampling and testing to ensure safety of response personnel, to assess acute environmental impacts or otherwise aid the OSC and/or the RRT in operational decisions.*

XIII. Section § 300.910(h) Recovery of Agents from the Environment

A. *The OSC has the authority to use the NEBA process to make decisions on recovery of agents from the environment.*

In the preamble to this section, the Agency is requesting comments on new language that would require the Responsible Party, under OSC oversight, to remove specified products/agents from the environment after use. While the Proposed Rule hints at NEBA, it does not reference it specifically when suggesting that some situations (e.g., safety of personnel or greater harm to the environment) might preclude the removal of these agents. That would seem to contradict the main change in this section (h) while not providing any framework (e.g., NEBA) in which to make a determination for precluding the removal. The language is also potentially redundant as the OSC is already obligated to consider safety and additional adverse environmental impacts (i.e., via NEBA) as part of the normal decision-making process. Essentially, it is already an underlying tenet of the response process. Additionally, in some cases recovering 100 percent of these agents after application is not practical or even feasible regardless of the diligence of the Responsible Party

We suggest revising the proposed language to make it clear that the OSC has the authority to use the NEBA process to make these decisions:

> *(h) Recovery of Agents from the Environment. Depending on factors such as the safety of response personnel and harm to the environment (including consideration of Net Environmental Benefit Analysis [NEBA]), and as directed by the OSC, the Responsible*

Party shall, following application, endeavor to adequately contain, collect, store and dispose of the agents that are intended to be recovered from the environment.

XIV. Section § 300.910(i) Reporting of Agent Use

A. *The Agency should not adopt a prescriptive time period for reporting of agent use.*

The Agency is requesting comments on the appropriateness of requiring the OSC to provide the RRT additional reporting information "*within 30 days of completion of agent use*." This runs counter to the adaptive decision-making that might be required during a discharge event where such agents are used.

Based on the preauthorization testing that is being proposed and, more importantly, the variability of discharge situations, we recommend that the Agency not adopt a prescriptive time period and rather provide the relevant RRT(s) discretion to determine the appropriate time period for reporting agent use. A strong justification for this approach is that during prolonged discharges, a fixed 30-day reporting period might constrain the response personnel and interfere with higher priority resource allocations. Furthermore, the OSC would typically request this information as part of the daily briefing.

API and NOIA suggest removing the 30-day window for reporting and modifying the proposed language as follows.

(i) Reporting of Agent Use. Unless already included in the OSC report required under § 300.165 of this part, the authorizing OSC shall provide the RRT the following information on chemical and biological agents used in response to an oil discharge: product name, quantity and concentration used, duration of use, and locations.

XV. Section § 300.913 Monitoring the Use of Dispersants

A. *The appropriate use of spill mitigating products will reduce the overall impact of the spill and protect the health and safety of response personnel.*

The Agency makes the following two related statements to explain the goal of the NCP Product Schedule (column 3, 80 Fed. Reg. 3393; column 3, 80 Fed. Reg. 3402; respectively):

"*The goal of establishing a Schedule under the NCP is to protect the environment from possible damage related to spill mitigating products used in response to oil discharges.*"

"Emergency response personnel need to know whether a dispersant or any other type of chemical or biological agent on the Schedule could have negative environmental impacts relative to the oil before decisions are made about its use in a particular oil discharge situation. Consequently, it is essential to consider comparative information about the efficacy and the toxicity of these products."

Possible damage related to spill mitigating products used in response to oil discharges is considered, but not the possible damage that could be caused by the oil itself without the use of spill mitigating products. The main threat to response personnel, communities, and the ecosystem comes from the oil, not from the spill mitigating products. The concept of CERA/NEBA accepts that some effects might be caused by the response (including the use of spill mitigating products), but also recognizes the greater benefit of reducing the overall impact of the spill that can be achieved by using them. The Agency needs to acknowledge the importance of NEBA in justifying the use of dispersants.

We believe that the focus on the potential for negative environmental impacts that could be caused by a dispersant ignores the essential point that dispersants are used to mitigate (minimize) the negative human health and environmental impacts that could be caused by the oil. The main threat to the ecosystem comes from the oil itself, not from the dispersant. The wording of the preamble to a final rule needs to:

- reflect the ultimate aim of dispersant use;
- clarify that the toxicity of dispersed oil comes from the oil (not the dispersant); and
- acknowledge and emphasize the importance of using a NEBA process in dispersant use decision-making.

We request that the Agency consider including the following two paragraphs (or equivalent language) in the preamble to the final rule to briefly explain dispersant use and the importance of NEBA in making dispersant use decisions.

> *"Dispersant Use and Net Environmental Benefit Analysis (NEBA)*
> *The aim of dispersant use is to protect response personnel from VOC exposure and to prevent oil from drifting ashore and potentially causing severe and long-term damage to coastal resources and communities, by dispersing the oil into the water column where it will be diluted rapidly to very low concentrations and the majority of the oil will subsequently be biodegraded. This common aim of dispersant use is the same, whether it is applied to oil on the sea surface or directly at the outflow source in the case of a subsea release. The potential risk of dispersant use is that, by dispersing the oil into the water column, there is an increased potential for toxic effects to be caused to marine organisms. The severity of the toxic effects that could be caused is related to the exposure of the marine organisms to the dispersed oil (or the partly water-soluble oil compounds) and exposure is a function of concentration of the oil in the water and the duration for which such exposure persists.*
>
> *The issue of the environmental trade-offs caused by dispersant use is addressed by Net Environmental Benefit Analysis (NEBA). NEBA is a process used to make choices about oil spill response techniques to be used to minimize the potential impacts of the oil on people and the environment. NEBA takes into account the likely effectiveness and feasibility of conducting alternative response techniques under the prevailing conditions. The main principle of NEBA is that an oil spill response technique (or combination of techniques) that is used should be that which minimizes potential impacts of the oil on the environment to the greatest extent and promotes the most rapid recovery and restoration of the affected area. In many cases of dispersant use, the potential risks to the offshore marine ecosystem are very low because dispersed oil concentrations are low and persist only briefly. There is benefit in using dispersants in offshore environments to prevent damage to coastal communities and sensitive near-shore resources where persistent stranded oil can cause longer-term environmental problems."*

The Proposed Rule also appears to focus more on the environmental effects during the response rather than the health and safety of response personnel. The Agency should make it clear that one of the primary objectives of characterizing the efficacy and understanding transport is to protect the health and safety of response personnel. That critical aspect is not mentioned in this section.

B. *The OSC should determine where, when, and how monitoring resources should be deployed.*

EPA should clarify the meaning of the phrase *"upon initiation and for the duration of subsurface dispersant use."* Later in this section of the preamble (column 2, 80 Fed. Reg. 3394), the Agency states the following:

> *"The proposal requires the responsible party to implement monitoring for any subsurface dispersant use in response to an oil discharge upon initiation and for the duration of subsurface dispersant use."*

The phrase *"upon initiation and for the duration of subsurface dispersant use"* can be misconstrued to mean that all monitoring required by the Proposed Rule must be performed at all times, when in fact the monitoring timing and operational parameters should be established by the OSC. Every response is unique, and it should be left to the OSC to determine where, when and how monitoring resources should be deployed to provide the best near real-time operational monitoring on the progress of the response.

C. *The Proposed Rule should be restructured to separate surface dispersant application monitoring from subsea dispersant injection monitoring.*

EPA should distinguish between surface and subsea dispersant application monitoring. In the first paragraph of this section in the Proposed Rule (column 1, 80 Fed. Reg. 3424), the Agency states:

> *"As directed by the OSC, the Responsible Party must monitor any subsurface use of dispersant in response to an oil discharge, surface use of a dispersant in response to oil discharges of more than 100,000 US gallons occurring within 24 hours, and surface use of dispersant for more than 96 hours in response to an oil discharge, and submit a Quality Assurance Project Plan for approval to the OSC covering the collection of all environmental data".*

We believe it is significant that monitoring is to be required *"as directed by the OSC."* It should be made clear that the OSC has discretion to authorize initial use of dispersants during a time-limited efficacy testing phase while evaluating the need for and extent of additional adaptive monitoring actions. The OSC is in the best position to determine when and what operational spill response monitoring is to occur. Experience has shown that the use of phased monitoring approaches, consistent with the USCG *et al*.'s *Special Monitoring of Applied Response Technologies* (SMART) protocols, is appropriate, and they are most responsive to changes in site-specific conditions and information requirements. While the requirement for the Quality Assurance Project Plan (QAPP) is constructive in helping to maintain effective data integrity and management, the rule should provide the OSC with discretion in how detailed the document needs to be to meet this requirement. This would provide the relevant incident decision-makers with practical information that can be consistently acquired, analyzed, and understood.

The Proposed Rule seems to inappropriately replace the currently used 3-tier SMART protocols for monitoring surface dispersant use with the more exhaustive monitoring approach proposed for subsea dispersant use. The USCG Strike Teams already have the responsibility for monitoring surface dispersant operations and possess the trained personnel and equipment to conduct these activities. Many RRTs require the immediate activation of USCG Strike Team monitoring for all dispersant operations, regardless of size or location. We believe it is beneficial to have the government perform the surface monitoring to enhance credibility with the public that the operations are being conducted correctly and are working as intended. If this practice is going to change, the Agency should explain why it is circumventing an established, well-vetted process performed by the USCG Strike Teams. The information in the Proposed Rule creates confusion between existing responsibilities of the USCG Strike Teams and those of the Responsible Party. We request that this confusion be reconciled between the Agency and the USCG, as the Responsible Party should not be required to provide duplicate monitoring for surface dispersant operations.

For these reasons, we believe this section of the Proposed Rule should be restructured to separate surface dispersant application monitoring from subsea dispersant injection monitoring. API and NOIA offer the following relevant points:

- The section on surface dispersant application monitoring should specify that it will be implemented with existing SMART protocols using USCG resources.
- The section describing subsea dispersant injection monitoring should specify it will be performed by the Responsible Party.
- In both cases, the Proposed Rule should clearly state that the mobilization of monitoring capabilities will not delay initial dispersant applications. Monitoring requirements should not impede the use of chemical agents during a response and should be implemented as appropriate resources become available during the response.
- The criteria of greater than 100,000 gallons or duration of 96 hours for the spill should be replaced with a single criterion that "*any enhanced monitoring beyond SMART shall commence within seven days.*" Our rationale for a deployment schedule of seven days for any enhanced monitoring (whether subsea or surface dispersant monitoring) ensures that scientifically-defensible monitoring can be performed, by ensuring:
  - The best scientific experts can be assembled and mobilized to the spill;
  - Once on scene, the science team can design a monitoring plan that can be integrated safely into ongoing response operations, and be worked into the Simultaneous Operations (SIMOPs) schedule;
  - The team can tailor a general monitoring strategy into a specific mission plan for the monitoring vessel that is available (there is no way to know what research vessel may be available, and each vessel will have unique characteristics for equipment deployment);
  - Available monitoring vessel(s) can be identified, mobilized to port, and properly outfitted with the scientific equipment needed to implement the mission plan;
  - An appropriate sampling strategy can be developed and approved for the specific incident, taking into account ongoing response activities that may impede access to sampling sites; and,
  - Appropriate safety considerations for the monitoring vessel, dispersant application or injection platforms, and rapidly-assembled teams can be properly reviewed.

D. *Effectiveness determination is not currently scientifically feasible.*

The language in this section of the Proposed Rule appears to indicate the Agency believes that comprehensive monitoring will permit the dispersant effectiveness at sea to be quantitatively determined. This requirement for effectiveness determination is not currently scientifically feasible. Also, use of the word "*comprehensive*" should be avoided as it is subjective. Instead, it should be replaced with "*adaptive*" which indicates that a decision could be revisited as the discharge situation changes. We recommend replacing all instances of the word "*comprehensive monitoring*" with "*adaptive monitoring*" throughout the proposed section. The following language could be used:

> *The agency believes that an adaptive monitoring program which includes objective science and ocean transport modeling in certain discharge situations is necessary to determine the overall effectiveness of the dispersants and should transcend the initial dispersant application to include the extent, character, and transport of the dispersant and dispersed oil in the water column.*

With respect to surface dispersant use monitoring, we offer the following comments:

- Experience at the DWH and other incidents has shown that no currently available remote sensing technique, including airborne visible/infrared spectrometer (AVIRIS) and other multi- and hyper-spectral equipment, is capable of accurately quantifying the total amount of oil on the sea surface. It is also not possible to accurately determine the total amount of dispersed oil in the water column at any time because water sampling or ultra violet fluorometry (UVF) transects cannot be made at sufficient resolution in space (i.e., distance and depth) and cannot be made at sufficient resolution in time (i.e., simultaneously at all points in the water under an oil slick). Localized measurements by UVF made before and after dispersant spraying can reveal the relative effect of dispersant use, but is not quantitative. A sharp increase in dispersed oil concentrations in the water, after dispersant use, is a good indication that the dispersant is working, but such measurements cannot produce an aggregate estimate of dispersant effectiveness. As such, we believe that the Agency should remove any requirement for quantitative reporting of efficacy, since it is not technically possible.
- A QAPP should not be required for surface dispersant operations. QAPP for approval by the OSC covers the collection of all environmental data to ensure and maximize its quality, objectivity, utility, and integrity. All these requirements will result in the need to generate a very large document that needs to be reviewed, verified and approved by OSC. This will lead to delays in dispersants decision-making, while adding little value to the goals of the response. A more useful approach may include a daily Quality Control review of the SMART data to determine if the surface dispersant applications were effective that day, to support decisions for possible dispersant use the next day. A Quality Control form was developed during DWH for this purpose. we believe the QAPP requirement should be deleted for surface dispersant operations and replaced with a simplified Quality Control form for SMART data.

With respect to subsea dispersant injection monitoring, we provide the following comments:

- The Agency does not address methods for visual determination of subsea dispersant effectiveness. During DWH, visual monitoring of the subsea dispersant injection was conducted in two ways to provide valuable, near real-time information to help inform response decisions. These included:
  - Aerial observations of surfacing oil quantity and appearance (provided from observation aircraft overflights); and
  - Subsea observations of changes in plume appearance at the injection site (provided from ROV imagery).

  This form of monitoring for subsea dispersant injection should be recognized as an important step for initially evaluating the operation while more "enhanced scientific monitoring capabilities" are being assembled.
- API has developed subsea monitoring guidance (API Technical Report 1152, *Industry Recommended Subsea Dispersant Monitoring Plan – Version 1.0*) and recommends the Agency consider this as the basis for their approach for operational monitoring. This guidance is publicly available at http://www.oilspillprevention.org/~/media/oil-spill-prevention/spillprevention/r-and-d/dispersants/api-1152-industry-recommended-subsea-dis.pdf.

XVI. Section § 300.913(a) Documenting and Monitoring the Oil Discharged and Dispersants Used Requirements

A. *The Responsible Party should not be required to document information at the beginning of a response that has already been determined in planning and preparedness activities.*

The current regulations found in 33 CFR Parts 154 and 155 require OSROs that use dispersants to maintain a certain level of spray assets, dispersant stockpile quantities, and logistical capabilities to

deliver stockpiles to staging bases, and to provide information on the application dosages they can apply. Since this is regulated elsewhere, reporting of these elements should not be required in the Proposed Rule and should therefore be deleted.

The Responsible Party should not be required to provide the *"rationale for dispersant product choice(s) including the results of any efficacy and toxicity tests specific to area or site conditions."* If the dispersant product is on the Product Schedule (which means that efficacy and toxicity data have already been provided to the government), then it is, by definition, a viable option for the response.

Providing *"hourly application rates"* does not apply to aerial and vessel application since dosages are prepared in gallons per acre application and are based on the spray assets' application speed and spray system swath width. We suggest that this statement be modified to read: *"hourly application rates (in the case of subsea dispersant injection)."*

The phrase "*recommended dispersant-to-oil ratio (DOR)*" should be modified to "*recommended initial dispersant-to-oil ratio (DOR).*" Every spill is different, and the DOR should be adjusted as additional monitoring, analytical data results, and/or oil release rate information becomes available. Additionally, the DOR may need to change as the oil weathers or other conditions change. The Agency should consider providing a clarifying sentence recognizing that oil characteristics and effective DORs may vary and thus dispersant application rates/volumes cannot be fixed to pre-determined values as this practice may affect negatively the response.

The Agency should refrain from requiring estimates of dispersant volumes needed to effectively respond to the spill at the onset of the response. In the case of a subsea oil release, it is impossible to know how much oil will be released and, therefore, impossible to estimate what volume of dispersants might be necessary. Further, as oil weathers, DORs for surface application will need to be adjusted, and these changing weathering conditions cannot be fully known in advance. Given current dispersant stockpiles in the U.S. and in the Global Dispersant Stockpile, it should be assumed that sufficient dispersants will be available if their use is warranted by NEBA.

B. *Identifying and reporting associated volatile petroleum hydrocarbons will be impossible with changing environmental conditions, and is unnecessary for response decision-making.*

The requirement to *"…document any associated volatile petroleum hydrocarbons…"* would be very difficult to achieve, given that volatiles will fluctuate with sun exposure and changing wind conditions. The reason for this requirement is not explained; therefore, the Agency should specify what is intended by this requirement or delete it.

C. *The Agency should accept best available industry practice for dispersant monitoring.*

There is no need to restate the requirement for documenting the results of toxicity testing. In general, the list of characteristics is practical and does not create an undue burden; however, there is a significant assumption in the requirements (i.e., that the condition of the discharge point is such that it will enable the acquisition of these data at any given time). A reference to a best available industry practice, or any of the existing guidance on dispersant sampling/monitoring (e.g., API guidelines on subsurface dispersant monitoring, API TR 1152) would be more effective for gathering the information requested by the agency without imposing undue burden on response personnel. Additionally, there is no technical reason to differentiate subsurface discharges from the rest of this paragraph. We suggest removing this differentiation and suggests modifying the proposed language as follows:

> *As directed by the OSC, the Responsible Party must monitor any subsurface use of dispersant in response to an oil discharge, surface use of dispersant in response to oil discharges of more than 100,000 U.S. gallons occurring within 24 hours, and surface use of dispersant for more than 96 hours in response to an oil discharge, and submit a Quality Assurance Project Plan for approval to the OSC covering the collection of operational monitoring data. When these dispersant use conditions are met, and for the duration of dispersant operations, the Responsible Party shall:*
>
> > *(a) Document the characteristics of the source oil; best estimate of the oil discharge flow rate, periodically reevaluated as conditions dictate, including a description of the method, associated uncertainties, and materials; dispersant(s) product used, rationale for dispersant product choice(s), recommended dispersant-to-oil ratio (DOR); and the application method and procedures, including a description of the equipment to be used, hourly application rates, capacities, and total amount of dispersant needed.*

XVII. Section § 300.913(b) Sampling Requirements

A. *Daily water sampling and testing is burdensome.*

The requirement to conduct these required tests on water samples daily may prove overly burdensome and not necessary after the initial efficacy tests. We suggest modifying the Proposed Rule to ensure that the OSC has discretion in how frequently the samples must be acquired after the initial efficacy tests are conducted. Sampling on a daily basis, once efficacy is determined and agreed, is arbitrary and does not fit the timeline required to provide in-depth analysis of samples.

The collection of water column samples where the dispersed oil plume is located is not necessary and in many cases is not possible for aerial dispersant application. For spills of up to 100,000 gallons, aerial dispersant assets can be activated and apply dispersants to the entire spill area during Day 1, before a monitoring team can arrive on-site to conduct water sampling. It was shown during the DWH event that to collect water samples, special operations had to be developed and coordinated so that the vessel monitoring team had sufficient time to obtain the water samples of the dispersed oil. This was due to the fact that most of the area under the aerial dispersant application returned to normal background levels within one hour following the application. It should also be understood that water samples will only determine the amount of oil in the sample, not the effectiveness of the dispersant, as there is no way of determining the amount of oil that was treated. As stated previously, these sampling requirements do not provide information on dispersant effectiveness and can therefore not inform the operational response. Water sampling requirements are more appropriate to NRDA and should be directed under NOAA jurisdiction.

B. *The oil droplet size distribution measurement, as described, is not technically feasible.*

The requirement in 300.913(b)(1) to conduct *"in situ oil droplet size distribution, including the mass or volume mean diameters between droplet sizes ranging from 2.5 to 2000 µm*" is not possible for three reasons:

- The General Information section suggests that this measurement can be done via a Laser In Situ Scattering and Transmissometry (LISST) instrument, but the LISST detection limit is roughly 500 microns;
- Commercial droplet size measurement equipment suitable for deep water monitoring that ranges up to 2000 microns does not exist; and

- Even if such instrumentation became available in the future, there would be no way to safely deploy it in the resulting dispersed oil plume by either ROV or research vessel without interfering with other critical, oil spill response operations.

With respect to droplet size determination, the Agency should focus on the most important aspect of subsea dispersant injection, which is to significantly reduce the initial droplet size to slow and change the surface expression of oil release as well as "thin out" the surface slick for better dispersion on the surface. Work by API and sponsored by BSEE suggest that HD high speed photography or sonar are the most promising methods of studying changes in droplet size during a full scale application of subsea dispersants. We propose that alternative methods (i.e., high definition, high speed photography; sonar; etc.), as they mature and become available, should be allowed. Additionally, there should be flexibility to use other, improved scientific methods as they become available.

C. *Fluorometry is only useful as a screening tool.*

Indirect measures, such as fluorometry, are useful only as a screening tool to help refine monitoring locations and not as direct evidence of oil or specific oil concentrations in the subsurface as suggested.

In 300.913(b)(2), in addition to *in-situ* fluorometry, the Proposed Rule also requires the Responsible Party to conduct a fluorescence intensity analysis on collected water samples to determine fluorescence signatures of the dispersed oil for use as a relatively simple and rapid means to assess dispersion effectiveness. Fluorescence intensity in this context is redundant and not as meaningful a measure as particle size analysis. An alternative would be to simply suggest this as a potential measure that could be used as the situation demands. Moreover, dispersant effectiveness assessments using SMART Tier 1 visual monitoring is a relatively simple, rapid way to evaluate this and is a well-accepted practice, as is the use of simple fluorometry from the SMART Tier II protocol for surface dispersant application. The Agency should substantiate the need to replace the tiered monitoring approach of the SMART protocols and, rather than listing all possible tests that can be conducted, specify how they add value to response decision-making and offer improvements over other, existing approaches.

D. *Detailed chemical analysis is unnecessary and many of the tests are too difficult to perform in the field.*

In 300.913(b)(4), the Agency should recognize that more real-time operational monitoring information can be obtained by "quick screening" some samples for total petroleum hydrocarbons (TPH) by means of a hand-held gas chromatograph flame ionization detector (GC-FID). Detailed chemical analysis will not inform the response decision-making process and should instead fall under the purview of NRDA.

The requirement in 300.913(b)(5) for carbon dioxide measurements is unclear. While pH and dissolved oxygen monitoring seem logical, carbon dioxide (CO_2) measurements are not routinely made in deep water. It is not clear from the Proposed Rule what benefit carbon dioxide monitoring would bring that dissolved oxygen does not already provide. Similarly, the proposed requirement to measure methane is also unnecessary as it is also linked to potential oxygen depletion, and the measure of DO is a reliable and sufficient method. There is a limited amount of sensors and water sampling devices that can be deployed from a research vessel at one time and inclusion of CO_2 detection complicates other elements for the deployment of the instrument array.

Regarding the DO measurements, we suggest simply requiring the *in situ* measurement of DO using best available technology (which would currently be automated sensors) to measure dissolved oxygen at depth and not expose it to surface pressures and temperatures before or during analysis. Verification can be achieved through the use of consistent sensor cleaning procedures, calibration tests, and redundant sensors which can be compared. Winkler titration, as discussed in the Proposed Rule, is an outdated

analytical method that is impractical for use on unstable offshore vessels, is prone to the introduction of human errors, and would slow the information flow within the response. If periodic bench tests are required to verify the integrity of the *in situ* DO sensor measurements, there are more consistent and reliable techniques than Winkler titration. We also recommend that only a fraction of the water samples be used to verify the *in situ* DO measurements as opposed to every sample, which will slow the process and information flow.

With respect to TPH analysis, the recommendation would be to provide these data for a fraction of the water column samples as opposed to every water sample (as currently proposed).

The requirement in 300.913(b)(7) for analyzing heavy metals has no bearing on dispersed oil monitoring. There is no operational reason for collecting these data. This should fall under the purview of NRDA. The source samples of oil are much better sources for determining the proportion of individual constituents. The carbon dioxide, methane, and heavy metals analysis requirements do little to inform response decisions, add unnecessary time and cost to the response activities, and would have a high degree of uncertainty in the absence of understanding the natural variations that might occur in the water column or in the case that a compounding discharge event (e.g., major flood) occurs during the response.

The focus of the Proposed Rule is almost exclusively on empirical data and should include some elements of 3-D and 4-D modelling to broaden the overall understanding of subsurface conditions.

We suggest revising the proposed language as follows:

> *(b) In areas not affected by the discharge of oil, collect a representative set of background water column samples following standard operating and quality assurance procedures, at the closest safe distance from the discharge as determined by the OSC and in any direction of likely transport considering surface and subsurface currents and oil properties for the variables listed below. Adherence to API TR1152 meets the requirements of this subsection. In the dispersed oil plume, at an interval designated by the OSC, collect water column samples following standard operating and quality assurance procedures, at such depths and locations where dispersed oil is likely to be present to analyze for the following:*
>
> > *(1) In-situ oil droplet size distribution, including mass or volume mean diameter for droplet sizes, with the majority of data collected between the 2.5 and 100 µm size;*
> > *(2) In-situ fluorometry signatures targeted to the type of oil discharged and referenced against the source oil;*
> > *(3) Dissolved oxygen (DO);*
> > *(4) Total petroleum hydrocarbons (based on an extracted water sample), individual resolvable constituents including volatile organic compounds, aliphatic hydrocarbons, monocyclic, polycyclic, and other aromatic hydrocarbons including alkylated homologs, and hopane and sterane biomarker compounds;*
> > *(5) 3-D and/or 4-D modeling when/where practical*
> > *(6) Turbidity;*
> > *(7) Water temperature;*
> > *(8) pH; and*
> > *(9) Conductivity.*
>
> *The purpose of analyzing these components is to map the extent and location of subsurface oil; to characterize the condition of that oil; and to help inform transport models that are also a key part of the decision-making process by helping to characterize the overall movement of subsurface oil.*

XVIII. Section § 300.913(c) Dispersant Effectiveness and Oil Distribution Characterization

A. *The Proposed Rule needs to be clearer on what is required for surface monitoring and what is required for subsea monitoring.*

Section § 300.913 provides monitoring requirements collectively for "subsurface use of dispersant in response to an oil discharge, surface use of dispersant in response to oil discharges of more than 100,000 U.S. gallons occurring within 24 hours, and surface use of dispersant for more than 96 hours in response to an oil discharge…" However, the preamble is often unclear as to whether every requirement within this section applies to surface or subsea dispersant applications or both. To facilitate a better evaluation of the proposed changes, each subsection should be divided into those aspects that apply to subsea applications and those to surface applications and those that apply to both. Elements within this section are already addressed in other sections of this Proposed Rule, particularly water column monitoring. The sections ought to be combined. The concept of an informed monitoring program (one that includes fixed and adaptive sampling locations and modeling) is already well understood and acknowledged in the spill response community.

In 300.913(c), requiring best available technologies may result in equipment not suitable for field conditions. Consideration should be given to changing "*available*" to "*practicable.*"

In 300.913(c), the best available technology requirement should acknowledge aerial photography as a tool to measure effectiveness. This was a key method of effectiveness assessment during DWH and is not mentioned in the Proposed Rule. It is much more practical than the concepts put forward in the present proposal.

The relative effectiveness of the surface application should be determined by using the SMART protocols. For surface application, it is impossible to determine a numerical effectiveness as the amount of oil on the surface that is being sprayed is not known. Note that the analysis equipment often cannot return to the spray site in time to capture the information requested as the dispersant plume quickly dilutes or cannot be found.

XIX. Section § 300.913(d) Ecological Receptor Characterization

A. *Monitoring required to determine possible environmental effects is too time consuming to support dispersant operations decisions.*

Industry agrees that environmental monitoring should be performed to support operational decision-making. Monitoring required to determine environmental effects, however, is likely to be too time consuming to support dispersant operations decisions and should remain a NRDA activity.

This section of the Proposed Rule requires the Responsible Party to characterize the ecological receptors and to consult with the OSC to determine an acute toxicity level of concern for the dispersed oil using available dose/response information relevant to potentially exposed species. Conducting the required ecological characterization of the spill site may not be possible in the available response time-frame. If the untreated oil is likely to drift ashore and impact a sensitive coastal resource within a day or two unless it is dispersed, there will be a very finite period of time for such considerations suggested in the Proposed Rule.

With respect to the proposed ecological thresholds, although it is constructive to have known benchmarks, it is not clear what decision would be forthcoming if a threshold were exceeded and would certainly be misplaced to derive new thresholds during a response. The documented toxicity of dispersed oil to individual laboratory organisms is by no means a measure of the overall population of that

organism, nor of the ecosystem as a whole, to recover from oil exposure. During a spill, dispersants operations might be stopped because of the threshold of an individual species even though there may be the potential for higher environmental damages beyond that species. During a spill, dispersants operations might be stopped based on a threshold for an individual species. The suggestion of using species sensitivity distributions (SSD) during an active response is a misuse of the method (which requires long periods of time to assess) and is counter to establishing frameworks that are relevant in the dynamic ocean setting.

Rather than requiring the Responsible Party to make this real-time assessment, a CERA/NEBA process (conducted as part of contingency planning) should serve as the basis to make operational decisions on whether dispersants and/or other agents should be used during a response. A CERA/NEBA is the only mechanism that allows a full environmental trade-offs analysis of all response options to be conducted.

XX. Section § 300.913(e) Immediate Reporting Requirements

A. *Reporting requirements should be more flexible.*

The Proposed Rule does not include any indication of what happens if such a requirement to immediately report the information is not met for any reason. From a functional standpoint, the idea of reporting is sound, but the OSC should have the discretion to determine the frequency of reporting.

The Agency is also requesting comments on whether similar requirements should be applied to surface dispersant application. There are already practical and agreed reporting requirements for surface dispersant use and the natural weathering and dispersion that takes place at the surface is fundamentally different than what might occur in the subsurface.

XXI. Section § 300.913(e)(1) Daily Sampling and Data Analyses Reporting

A. *The Agency should not develop requirements for daily authorizations of dispersant quantities.*

This section requires reporting of a deviation of more than 10 percent from the mean hourly volume of dispersant authorized for "*24 hours use*." The Proposed Rule does not require authorization of dispersant use in 24 hour increments. Such restrictive authorization requirements tremendously complicate dispersant operations while providing little environmental benefit. The Agency should not develop requirements for daily authorizations of dispersant quantities, as this decision should be based on the ongoing spill scenario and should be left to the OSC. Dispersant application rates may need to vary to account for dynamic spill conditions, environmental conditions, and other ongoing response operations. Placing daily limits on volumes of dispersants that may be used prevents trained response personnel from utilizing appropriate dispersant application rates. Furthermore, it circumvents the NEBA process that evaluates the best response options that protect the environment as a whole.

We suggest modifying the proposed language as follows:

> *(e) Report to the OSC as soon as practicable or at an interval determined by the OSC:*
> *(1) Deviation of more than 10 percent from the mean hourly dispersant use rate for subsurface application, based on the dispersant volume authorized for 24 hours use, and the reason for the deviation; and*
> *(2) Any threatened or endangered species, or other priority ecological receptors formally identified by the OSC in consultation with the Environmental Unit, that may be exposed, based on dispersed plume trajectory modeling and level of concern information.*

XXII. Section § 300.913(e)(2) Immediate Reporting of Ecological Receptors

A. *Real-time ecological receptor analysis is unrealistic and should be part of a CERA/NEBA process.*

The requirement in this section for real-time ecological receptor analysis is unrealistic. Such efforts need time and broad stakeholder participation to be meaningful. This information should be part of a NEBA process to document the resources at risk of the potentially affected ecosystem. Only through this detailed NEBA process can an adequate understating of overall ecosystem recovery be developed and assessed. Further, the process of overall environmental trade-offs is independent of individual species impacts and should be based at the ecosystem level.

XXIII. Section § 300.913(f) Daily Sampling and Data Analyses Reporting

A. *Daily reporting of water sampling data should only apply to subsea dispersant injection and is not useful for dispersant decision-making.*

This section should be amended to clarify that daily reporting of water sampling data only applies to subsea dispersant injection. Further, the requirement in Section 300.913(f)(3) for a 5-day turnaround time for analysis is unrealistic, given that it could take several days for the sample to be transported to shore and additional time for it to reach a qualified laboratory and put in the queue for analysis. During DWH, the sheer quantity of samples overwhelmed both the regional and the nation's labs processing abilities. In many cases, the backlog of samples lasted 30 days or longer. A blanket requirement of five days is unrealistic and should be replaced with a negotiated time that is staggered on the basis of sample data priority for operational decision-making. The data may be useful for NRDA, but not for dispersants decision-making because other monitoring techniques can better inform decision-making. These water samples will provide information about concentrations in water from 5 or more days previously, but will be irrelevant for operational questions that require near real-time feedback.

We recommend combining this section with the proposed "*Immediate Reporting*" section into one section that notes the importance of reporting in supporting the coordination of response actions. Suggest modifying proposed language as follows:

(e) Reporting

(1) Report to the OSC as soon as practicable or at an interval determined by the OSC any:

(i) Deviation of more than 10 percent from the mean hourly dispersant use rate for subsurface application, based on the dispersant volume authorized for 24 hours use, and the reason for the deviation; and

(ii) Ecological receptors, including any threatened or endangered species that may be exposed based on dispersed plume trajectory modeling and level of concern information.

(2) Report to the OSC at an interval determined by the OSC, water sampling and data analyses collected in § 300.913(b) and include:

(i) Specific hourly dispersant application rate and the total amount of dispersant used for the previous reporting period established by the OSC with concurrence from the EPA representative to the RRT;

(ii) All collected data and analyses of those data within a timeframe necessary to make operational decisions, including documented observations, photographs, video, and any other information related to

> *dispersant use, based on a reasonable and appropriate timeframe authorized by the OSC;*
> *(iii) Estimates of the transport of dispersed and non-dispersed oil and associated volatile petroleum hydrocarbons, and dispersants, using the best available trajectory modeling.*

XXIV. Section § 300.915(a) General Information for any Product Category

A. *The proposed information requirements to be submitted by dispersant manufacturers may reduce the number of dispersant suppliers*.

The proposed requirements for information to be submitted, most likely by dispersant manufacturers, as described in 300.915 (a)(1)-(21), are extensive. API and NOIA are concerned that dispersant manufacturers may not have a sufficient business case to meet all proposed data requirements. The Agency therefore needs to demonstrate that this Proposed Rule will not collapse the market for dispersants and drive away all viable producers from supplying products to meet the need. Further, the Agency should consider developing a total re-listing cost analysis.

XXV. Section § 300.915(a)(5) Safety Data Sheet

A. *A Safety Data Sheet for each component in a product is unnecessary.*

The proposed requirement includes "*A Safety Data Sheet ('SDS') for the product."* We believe this is a reasonable request. However, in the preamble, the Agency solicited comments on the value of requiring an SDS for each individual component. We believe that requiring more than just an SDS for the whole product will add unnecessary burden to the submitter that will not add any protection. The information needed to protect responders will be provided in the SDS for the product as a whole.

XXVI. Section § 300.915(a)(11) Environmental Fate Information

A. *Vendors should not be required to generate new environmental fate information for their products.*

The proposed language in this section should be modified to clearly state that this data should be reported *only* if it is already available. As currently written it is unclear if the vendors are being asked to collect new data for their products to cover these parameters.

XXVII. Section § 300.915(a)(13) Identity and Concentration of Product Components

A. *Vendors should not be required to provide the identity and concentration of product components.*

Some vendors may refuse to submit this detailed data as it may threaten a proprietary advantage. This may result in less favorable/effective product being listed in the Product Schedule. We recommend that reporting should be restricted to naming the ingredients, but should not require that the percentage of each ingredient is disclosed. Although Proposed Rule Section 300.950(b) allows this information to be claimed as confidential business information, the requirement under 300.915(a)(13) still presents challenges because there is no guarantee that the claim of confidentiality will be accepted. This may discourage manufacturers from supplying dispersant products.

XXVIII. Section § 300.915(a)(15) Certification

A. *The requirement that product not contain levels exceeding the National Water Quality Standards is unnecessary.*

The agency is proposing certification, including data, methodology, and supporting documentation, indicating that the product does not contain levels that exceed the National Water Quality Standards lowest aquatic life acute value for the following contaminants: metals reasonably expected to be in the product including arsenic, cadmium, chromium, copper, lead, mercury, nickel, vanadium, zinc; cyanide; chlorinated hydrocarbons; pesticides; polychlorinated biphenyls (PCBs); and polynuclear aromatic hydrocarbons (PAHs).

The National Water Quality Standard Contaminants are defined as concentrations in the water column. Water quality criteria are applicable to receiving waters, not formulated products, and this proposal assumes the appropriate exposure is to full-strength (100%) product rather than a reasonable environmental-realistic exposure concentration.

This requirement is not reasonable because of the enormous dilution that occurs when any product is used in an oil spill situation, and it is not required for other chemicals released into the environment. We believe that the existing requirements to communicate hazardous impurities on product SDSs should be sufficient and suggests removing the requirement.

XXIX. Section § 300.915(a)(19) Annual Product Production Volume

A. *The requirement for vendor production capability is not realistic of the market for dispersants.*

Most dispersants are blends of components and are only manufactured upon request. Capacity is not fixed and varies with available blending tankage, existing business demands, other product orders, and component supplies/shipping constraints. While such data are very useful in a large spill where existing stockpiles could be depleted, the information provided in such a request at the time of the application would not be relevant to a future time when product manufacturing could be required during a response. Further, the development of both U.S. stockpiles and international Dispersant Global Stockpiles were designed to ensure that sufficient, effective dispersants will be available when needed. We believe this requirement should be removed. If not removed altogether, the Agency should consider modifying the language to require dispersant or agent producers to be able to provide such information within 24 hours should the OSC need it and make it a condition of product authorization. If the Agency is concerned about the availability of sufficient volume of dispersants required for operations, it should ensure that the main dispersants products that are used around the world and are extensively studied are included on the National Product Schedule and are available for response in the U.S.

XXX. Section § 300.915(a)(20) Recognition

A. *Design for Environment recognition is unnecessary*.

The Agency asks for recognition from EPA's Design for the Environment (DfE) if applicable. DfE recognition should not be included in the Proposed Rule because it is not required, and the Agency has other ways to advance voluntary programs.

XXXI. Section § 300.915(b)(1) Dispersant Efficacy

A. *The new efficacy test cannot predict field dispersant effectiveness.*

API and NOIA support the Agency's proposed change in efficacy testing from the Swirling Flask Test (SFT) to the Baffled Flask Test (BFT) method. The SFT was a very low energy test and required the use of low viscosity test oils to achieve significant levels of measured dispersant effectiveness. The BFT is a much more energetic test method thus permitting the use of higher viscosity test oils to achieve higher levels of measured effectiveness with the same dispersant. It is important to recognize that such laboratory tests can evaluate relative effectiveness between different dispersants, but cannot be used to predict the effectiveness of dispersants in the field on specific oils under specific conditions, such as differences in wave height, possible application in high turbulence subsea or using prop wash in ice-covered waters.

B. *The new test oils may not provide comparable results if new test samples are obtained.*

We also support the Agency's proposed changes in test oils from South Louisiana Crude (SLC) and Prudhoe Bay Crude (PBC) to Alaska North Slope (ANS) and Intermediate Fuel Oil (IFO–120), since these new test oils provide a wider range of properties in the oils to be tested. The agency should note that ANS is a blend of crude oils produced on the North Slope of Alaska, and the composition and properties have varied through the years as the crude oils produced on the Alaska North Slope have changed. Also, IFO-120 composition is entirely dependent on the crude run at the supplying refinery and their blending needs. However, IFO-120 is a blend of residual fuel components including vacuum residuum cut with a lighter product to achieve a specified viscosity (i.e., 120 cSt at 100F in this case), but will vary dramatically in composition between lots at a given refinery and between refineries. It is probable that the varying composition of IFO-120 will result in inconsistent DE results over time. This means that a single batch of IFO-120 will have to be preserved for all future product testing to ensure comparability. The Agency should conduct stability tests of ANS and IFO-120 stocks to ensure they can maintain viable samples over time. The Agency could consider substituting a heavy crude oil rather than this heavy refined product or store a large single batch of IFO-120 with data provided on shelf stability or a provision to account for changes over time.

C. *Testing dispersant efficacy at different temperatures will not provide information that will predict dispersant effectiveness in real world conditions.*

We oppose introducing testing at different temperatures. This new approach implies that laboratory tests represent field conditions in some way which is not the case. The Agency proposes that dispersants should only be approved for the type of oil they worked in the lab and temperatures tested in the lab. This is incorrect as:

- different oils will be treated than the two tested in the laboratory;
- even the same oil will weather with potential effects to dispersant efficacy;
- turbulence in environment will surely be different;
- subsea injection even into the same oil in the Arctic is different because of oil temperature and turbulence level subsea; and
- dispersing oil in ice is also different from lab tests because of the mixing provided by vessel propellers.

In the preamble to this same section, the Agency appears to suggest that the Proposed Rule changes are intended to indicate the likely effectiveness of operational dispersant use on oil spilled in the Arctic or Gulf of Mexico (column 3, 80 Fed. Reg. 3403; both locales are specified). Relatively simple efficacy tests such as the BFT are incapable of simulating the range of parameters and processes that will be encountered and influence real-world dispersant effectiveness. The Rule should clearly state that laboratory efficacy testing is a comparative screening tool for different dispersants under laboratory conditions and should recognize that actual dispersant effectiveness on oil treated at sea can vary a great deal from

effectiveness data collected in a laboratory. A dispersant/oil combination that produces an effectiveness result in the BFT laboratory method of 70% might result in >95% dispersion at sea (e.g., in a moderate sea state), and less dispersion in other circumstances (e.g., calmer sea state). Therefore as part of dispersant use authorization, divorced from the product approval process, the availability of suitable mixing energy becomes an operational consideration, coupled with the dilution potential for the dispersed oil. We suggest that reference to specific regions should be deleted from this section.

D. *Dispersant efficacy thresholds listed in the Proposed Rule are too high.*

In the preamble to this section (column 2, 80 Fed. Reg. 3403), the Agency's justification for dispersant efficacy thresholds (DE values) includes:

> "*Three of the eight dispersants tested clearly differentiated themselves from the other five dispersants for having the best DE_{LCL95} efficacy results… This natural break in the results provided the Agency with the basis for the proposed threshold criteria."*

We believe the proposed thresholds of efficacy for listing on the Schedule are high. The supporting documentation in the docket shows that only six (not eight) dispersants were tested and two of these six dispersants were only tested with one oil. The rationale for selecting the proposed efficacy thresholds for listing on the Schedule is not convincing on the basis of the limited data presented. Data from another EPA study[31] shows significant variability in the results obtained with the BFT. Variability in test results is troubling and this variation could lead to confusing data sets where the same dispersant sometimes "passes" and sometimes "fails" because of the high threshold limit that has been set. While the Agency states it tested the dispersants currently listed and found three of them to be sufficiently effective, the EPA study on the BFT funded by BSEE and published in 2011 suggests otherwise. As shown in Table 3 of this BFT study, Corexit 9500 may not be listed based on published Dispersant Effectiveness (expressed as the LCL95) of 69% and 61% on ANS Fresh and IFO-120, respectively, at room temperature (15° C). This suggests that the recommended thresholds are potentially too restrictive and do not sufficiently take into account the variability of the BFT.

The Agency should reconsider the proposed efficacy thresholds for listing on the Schedule. We suggest that these thresholds could be lowered without any significant impairment to the effectiveness of operational dispersant use at a response. In addition, reporting only the DELCL95 reduces the amount of information available on a product. We recommend that the test average and standard deviation should be provided, which would provide additional information on the precision of the testing.

The Agency makes the following statement in the preamble (column 1, 80 Fed. Reg. 3404):

> "*As a result of this increased mixing energy, better dispersion is realized under conditions more realistic of wave action in the sea*"

We believe that this statement would be more accurate if it were re-phrased as follows:

> "*As a result of this increased mixing energy, higher dispersant effectiveness results are obtained.*"

Since the recent subsea dispersant injection development does not have major implications for the rationale behind the current tests for dispersant product approval, it might be important to recognize that the laboratory test data are sufficient to identify whether a product has appropriate effectiveness,

[31] Venosa and Holder, 2011, Laboratory-Scale Testing of Dispersant Effectiveness of 20 Oils Using the Baffled Flask Test

irrespective of whether the product may be considered for use in surface application or subsea injection (SSDI) scenarios. Additional testing for SSDI approval is not necessary.

XXXII. Section § 300.915(b)(2) Dispersant Toxicity tests and listing criteria

We offer the following comments on the proposed revisions to the toxicity testing and has ordered the comments by specific test.

A. *Standard static acute toxicity testing should be used only for the dispersant alone.*

The Agency proposes that a dispersant should be tested using a modified standard static acute toxicity test for the dispersant with *Americamysis bahia* and *Menidia beryllina* using the 48 hour and 96 hour duration LC_{50} procedure. We agree there is a need for toxicity testing of dispersants to prevent highly toxic (LC50 <1ppm) dispersants from being listed on the Schedule. The proposed toxicity test method, although designed for effluent testing and having no relevance to real-world exposures of marine organisms to dispersants during dispersant use on oil releases, is a convenient way to screen individual dispersants. We agree with this proposal for dispersant-only toxicity tests.

The Agency also specifies a threshold for a dispersant to be listed on the Schedule, *"the LC_{50} being that at the lower 95% confidence interval for all acute toxicity tests must be greater than 10 ppm."* We believe this is a reasonable threshold for the "dispersant only" toxicity test.

B. *Standard static acute toxicity testing of dispersant/oil mixtures does not represent real world exposures.*

The purpose of the proposed toxicity testing of dispersant/oil mixtures is not clear. If the objective of the toxicity testing is to ensure that any dispersant that is to be listed has less than a specified level of toxicity measured in the test, then a dispersant alone toxicity test is sufficient.

We oppose the proposed dispersant/oil acute toxicity testing as a requirement for a dispersant to be listed on the Schedule, for the following reasons:

- It is now widely accepted by scientists that any concerns about the potential for toxic effects on marine organisms resulting from the use of modern dispersants should consider the potential effects of dispersed oil, not the dispersant itself. This is logical because dispersant is used at low concentrations, compared to the dispersed oil concentrations produced by their use, and they have much lower toxicity than oil. The potential severity of toxic effects that could be caused to marine organisms by exposure to dispersed oil will be a function of exposure: the concentration of dispersed oil (or oil components) in the water, the duration of that exposure, and oil type and receiving organisms. The Agency proposed dispersant/oil mixture tests will not provide any information about real-world exposure.
- More sophisticated dispersant/oil mixture toxicity testing procedures, using more relevant exposure regimes, can produce information about the potential for toxic effects on marine organisms by oil dispersed (or oil compounds released in to the water) as the result of dispersant use. Such toxicity studies may be relevant to deciding where and when dispersant use may be authorized, but not to dispersants being listed on the Schedule.
- Toxicity testing of dispersant/oil mixtures (i.e., dispersed oil) using the proposed standard static acute LC_{50} procedures will inevitably discriminate against more effective dispersants which disperse more oil into the water, thereby increasing exposure to aquatic organisms. Such testing does not give any indication of the potential for toxic effects to be caused by dispersant use on spilled oil on the sea surface.

- Previous work on dispersant/oil mixture toxicity testing conducted by the Agency in 2010 (Comparative Toxicity of Louisiana Sweet Crude Oil [LSC] and Chemically Dispersed LSC to Two Gulf of Mexico Aquatic Test Species [published by Hemmer, Barron and Greene]) shows that the proposed 10 ppm threshold (determined with LSC oil, not ANS or IFO-120) with *Americamysis bahia* would not be met by any of the eight dispersants tested at that time. Only one dispersant would have met the 10 ppm threshold with *Menidia beryllina*.

In general, the Agency should clearly distinguish between the requirements of (i) the toxicity testing required to assess which dispersants should be listed on the Schedule, and (ii) toxicological studies with appropriate oils, test organisms and exposure conditions that will inform discussions about how the listed dispersants might cause impacts in U.S. waters under the specific circumstances of an oil spill or release. The two toxicity test approaches required are incompatible. Attempting to use the same standard, static acute LC_{50} procedures to provide information or guidance on both aspects will not achieve these goals. Since the proposed dispersant/oil mixture toxicity testing requirements in this section do not address item (ii) above, the Agency needs to clarify the objective and rationale of the proposed acute exposure toxicity testing of dispersant/oil mixtures and should explain how this relates to the listing of a product on the Schedule.

C. *Testing of dispersants using the developmental assay for the purple sea urchin is not relevant.*

The Agency proposes a requirement for an EPA test protocol involving sea urchin embryos, routinely used in effluent testing, to be used to assess the potential for a dispersant product to cause adverse effects on the developmental process. The relevance of this test, which was developed for the assessment of wastewater effluents, to dispersant use is highly questionable. Again, trying to estimate potential real world consequences to dispersed oil exposure should be part of a NEBA decision-based process. The environmental trade-offs of using dispersants in offshore environments to protect sensitive shoreline habitats from oil exposure is being circumvented. Given that the purple sea urchin is found in shallow coastal waters, there is no relevance of applying purple sea urchin data given that dispersant operations are unlikely to occur in these environments. In addition, the proposed threshold that the LC_{50} must be greater than 10 ppm is not a relevant indicator to inform any potential real-world effects of dispersant use in the environment. Additionally, if the agency applies their proposed toxicity thresholds to the sub-chronic sea urchin toxicity tests, it is likely that many (maybe all) current and approved dispersants in the U.S. will fail the threshold. Some of them could also fail with the sub-chronic *M. beryllina* tests.

We oppose the proposed developmental assay and do not believe it should be a requirement for a dispersant to be listed on the Schedule. API and NOIA are also concerned that little experience is available in application of this assay to dispersants, and it is unclear about the intra-lab precision associated with this proposed requirement and the practical challenges that may arise in interpretation of test results.

D. *Sub-chronic 7-day static toxicity tests for dispersant are not relevant and are unnecessary.*

The Agency states (300.915(b)(2), 80 Fed. Reg. 3405) that it "*has limited information concerning the possible sub-lethal effects of dispersants currently listed on the Product Schedule*" and that "*This information would also be of value as guidance to regional responders and OSC's on possible adverse effects on survival and growth of larval fish and invertebrates caused by longer-term exposure to dispersants.*"

Chronic exposure to dispersant alone is not a relevant indicator of risks posed when dispersant is used to mitigate the effects of an oil release. As stated previously, this test was developed and validated for wastewater effluents and is not relevant to the use of dispersants in offshore spill response. Rather than proposing sub-chronic toxicity testing requirements for any dispersant to be listed on the Schedule, the Agency could undertake studies to establish whether this is a valid concern, or whether it could provide useful information under the likely conditions of dispersant use on offshore oil releases.

The Agency's proposal of a No Observed Effect Concentration (NOEC) equal to or greater than 1 ppm listing threshold level for sub-chronic effects is arbitrary. Although this threshold level provides a ten-fold safety factor over the proposed 10 ppm acute toxicity threshold values, it could also be questioned on the same basis; static toxicity tests over 48 to 96 hours do not represent relevant exposure scenarios in the marine ecosystem following offshore applications of dispersant.

We oppose the proposed sub-chronic toxicity testing and does not believe it should be a requirement for a dispersant to be listed on the Schedule. Sub-lethal/sub-chronic studies are not necessary (acute toxicity endpoints are considered relevant) since the global commercial dispersant products are confirmed as biodegradable so that the surfactants and solvent constituents of the dispersant formulation do not persist in the marine environment causing adverse effects. The French dispersant product approval regulator requires a biodegradability test of the dispersant as part of its product approval process. Commercial dispersants commonly stockpiled around the world are therefore readily biodegradable and pass the French test. If a dispersant is approved in France, it must have passed the biodegradation test (AFNOR standard NF T90-346). It is recommended that ready biodegradability of a dispersant be required for approval in the U.S. as well. Therefore any candidate dispersant product would need to be tested for biodegradability, or the dispersant manufacturer could be required to state that the formulation constituents are biodegradable and provide supporting evidence.

E. ***Dispersant testing should only be used for screening individual dispersant products.***

If the objective of the toxicity tests are to select less toxic dispersants (based on an aquatic toxicity threshold), then dispersant alone toxicity tests are sufficient and the maximum toxicity threshold of a candidate dispersant should be set if the dispersant is significantly less toxic than the reference oils. The dispersed oil toxicity testing (CEWAF) should not be considered for dispersant use authorization as it discriminates against the effective dispersant products which disperse more oil into the water thereby increasing exposure to the aquatic test organisms. It is also important to note that CEWAF toxicity testing does not simulate actual dispersant use on spilled oil in the marine environment. Additionally, static toxicity tests over 48 to 96 hours do not represent relevant exposure scenarios in the environment following surface application of dispersants.

In summary, the Agency's suggested toxicity testing changes in the Proposed Rule do not take into account the essential role of NEBA in considering the potential benefits and risks of dispersant use as a response option for an offshore oil release. The Product Schedule should focus on the basic testing to compare the efficacy and toxicity of the dispersants against each other with the sole purpose of screening good products that should be listed. The Proposed Rule should not attempt to translate any laboratory data into possible real-world implications. This process should instead be defined by full stakeholder NEBA discussions specific to a given spill scenario.

XXXIII. Section 300.915(c)(1) Surface Washing Agent Efficacy

A. ***Surface Washing Agent (SWA) efficacy testing should not be required until the Agency develops its own test protocol.***

In the preamble the Agency has requested comments on available methodologies and whether the rule should identify the specific methodologies to be used until the Agency develops and adopts a new testing protocol for SWA efficacy testing (column 1, 80 Fed. Reg. 3407). The Agency lists two tests by ASTM and Environment Canada as possible interim tests while the Agency develops its own test. There is no evaluation of how the ASTM test compares to the Environment Canada test. As a result, expecting similar results by both tests is unrealistic. The average efficacy in the published data reported using the Environment Canada test may indeed be approximately 30%, but the variation is high and the tests were performed on a Canadian oil using only one test. We believe the Agency should delay requiring SWA efficacy testing until it develops its own test protocol that utilizes a U.S. oil.

XXXIV. Section § 300.915(d) Bioremediation Agent Testing and Listing Requirements

A. *An additional protocol specific to products containing enzymes only would be appropriate.*

The Agency is requesting comments on whether an additional protocol specific to products containing enzymes only would be appropriate. This would consist only of exposure water, weathered oil and the enzymatic product in the concentrations specified by the manufacturer. A new protocol would be useful because effectiveness data from the testing would help determine whether this technology would be beneficial during a response. Many claims may be made about "safer" products to treat oil and thus more credible scientific information is warranted on products approved on the Schedule.

XXXV. Section § 300.915(e) Solidifier Testing and Listing Requirements

A. *Solidifier toxicity testing would be useful.*

The Agency is requesting comments on the need for acute toxicity tests conducted with solidifiers-reference oil mixtures. Toxicity tests with oil may be beneficial as they will help to evaluate efficiency of solidifiers in retaining water soluble hydrocarbons and preventing them from leaching into water. Simple efficiency tests may not provide such data.

XXXVI. Section § 300.915(g) Sorbent Requirements

A. *The proposed Sorbent Product List should not exclude natural sorbent materials.*

The Agency proposes to make available a Sorbent Product List that includes certain publically available non-proprietary sorbent materials. We believe this should be a generic list and should not exclude natural sorbent materials (e.g., hay) that could be obtained locally at a spill site.

XXXVII. Section § 300.950 Submission of Confidential Business Information (CBI)

A. *Full public disclosure of product information may reduce the number of products being made available in the U.S.*

In 300.950 (column 3, 80 Fed. Reg. 3426), the Agency requires everything in the product listing be made public except the actual concentrations of product ingredients. While the Agency may need full disclosure of product formulae, we do not believe the Agency needs to make them public and can accept products with both the ingredients and the concentrations as CBI. Any disclosure of information on product formulae (either ingredients or % concentrations) could put a manufacturer at a competitive disadvantage. This may discourage some manufacturers from listing their product at all and could result in effective dispersant products not being available in the United States.

XXXVIII. Section § 300.955 Addition of a Product to the Schedule

A. *The transition period for currently listed products is too short.*

In 300.955(f), the Agency specifies a 24-month transition period for currently listed products. This is a very short timeframe given the variety of products listed and depth of technical work (e.g., toxicology studies) required to be contracted, conducted, analyzed, and reported. We believe the Agency should extend the transition period to the lesser of five years, the current product expiration date, or after suitable replacement products are listed and commercially available.

We also believe that this section should include a discussion of how currently owned stockpiles purchased in 2010 and 2011 (more than one million gallons of Corexit, in the U.S.) will be tested to comply with the proposed existing stockpile testing requirements of being tested every five years. It is recommended the Agency state that currently held stockpiles will have five years to be re-tested after that dispersant product is listed on the new Product Schedule.

XXXIX. Appendix C to Part 300 Requirements for Product Testing Protocols and Summary Test Data

A. *The dispersant-to-oil ratio (DOR) ratio used in the BFT should be 1:20.*

In Appendix C, Section 2.1 (column 3, 80 Fed. Reg. 3428), the BFT mandates a DOR of 1:25. A DOR of 1:20 has commonly been accepted for use in the U.S. and abroad. Further, the 1:25 DOR may not even be within the manufacturer's recommended use ratio. The Agency needs to justify this test requirement. We believe that the DOR for the BFT should be changed to 1:20 to align with the regulatory requirements in 33 CFR 154 and 155 for calculating aerial and vessel dispersant capabilities and to align with standard dispersant spray system calibration. A DOR of 1:20 leads to a 5 gallon per acre dosage for surface spray systems and is the minimum amount of dispersant to oil slicks that can be visually identified as having sufficient thickness to warrant dispersant application. Having the testing procedure completed for the same DOR would provide more reliance that, when applied, the dispersant will be effective.

B. *The Agency should explain how it will address changes in the reference oils as they age and as new samples are acquired for the future.*

In Appendix C, Section 2.3.2, the Agency requires the use of ANS and IFO-120 as standard reference oils. The Agency is supplying these materials to labs but no data is presented showing shelf stability over time for either and whether stable equivalent materials can be provided in the future. No provision is provided for addressing changes in dispersant efficacy due to changes in composition of ANS (e.g., field production changes, new fields in pipeline blend, etc.).

Also, IFO-120 composition is entirely dependent on the crude run at the supplying refinery and their blending needs. It is a blend of residual fuel components including vacuum residue cut with a lighter product to achieve a specified viscosity (i.e., 120 cSt at 100 degrees F in this case), but it will vary dramatically in composition between lots at a given refinery and between refineries. If multiple IFO-120 samples were provided from different refineries to a toxicity laboratory, there would be varying results because IFO-120 composition changes from day to day and between refineries. This means that a single batch of IFO-120 will have to be preserved for all future product testing to ensure comparability. The Agency should conduct stability tests of ANS and IFO-120 stocks to ensure they can maintain viable samples over time.

CONCLUSIONS

In conclusion, as evidenced by the extensive substantive comments provided herein, it is clear that much work needs to be done before the Agency should finalize a rule in this key area of spill response, including to make sure that the final rule does not have the unintended consequence of eliminating all or most commercially available and future dispersants for use in spill response. We believe the Proposed Rule will likely result in dispersants being eliminated as a response technique, for the following reasons:

- The Proposed Rule does not recognize that response option decisions must be based on NEBA and that dispersing oil in offshore environments, where it may dilute and biodegrade, is often preferred over the long-term environmental damages that will occur when untreated oil strands and persists in shoreline environments;
- The Proposed Rule focuses on potential risks of dispersants without recognizing the primary purpose of dispersants, which is to rapidly dilute the spilled oil and enhance removal of the oil from the environment through microbial degradation, resulting in reduced VOCs (personnel safety), and a reduction in persistent, stranded oil in shoreline ecosystems (leading to faster ecosystem recovery);
- The Proposed Rule's dispersed oil toxicity testing thresholds could eliminate all dispersants that are on the current NCP list and could preclude the listing of future dispersants that are currently in development. Furthermore, the proposed dispersed oil toxicity testing thresholds favor ineffective dispersants over effective products and will mistakenly measure the toxicity of the standard test oils, not of the dispersant product;
- The Proposed Rule adversely constrains the ability of the OSC to make the necessary operational decisions to ensure for an expeditious, efficient, and effective response to mitigate the impacts of a spill to the greatest extent possible;
- The Proposed Rule raises significant issues related to USCG and BSEE facility and vessel oil spill response plan compliance and could result in unnecessary and increased environmental impacts and corresponding spill claims as a result of increased damages;
- The Proposed Rule's stockpile re-testing procedures have not taken into account manufacturer recommendations, nor considered scientific publications on the demonstrated, lengthy shelf-life of dispersant products; and
- The Proposed Rule's dispersant monitoring requirements are not focused on collecting data that can provide useful information regarding an ongoing dispersant operation. Instead, these requirements have the potential to delay dispersant use resulting in unnecessary environmental damage.

In addition, the RIA conducted by EPA is substantially flawed. The RIA falls woefully short of EPA's regulatory requirements. EPA fails to provide any quantification of the potential social benefits of the Rule; in fact, the RIA lists benefits associated with avoiding and limiting the impacts of oil spills as potential benefits of this Rule, even though the Proposed Rule has the potential to aggravate the impacts of an oil spill by limiting response options. As a result, the RIA significantly underestimates the potential costs of the Proposed Rule, while also underestimating the direct costs that the Rule would impose on small businesses, government, and the greater industry.

Accordingly, API and NOIA strongly urge the Agency to consider these comments and suggested revisions to the Proposed Rule to ensure that the best dispersants and dispersant-use practices are available for offshore oil spill response. We recommend that there be further discussions between the Federal agencies and industry scientific and operational experts to add value to further revisions of the Proposed Rule to ensure that the proposed changes to Subpart J align with the latest scientific practices and do not artificially bias against the use of certain response options, such as dispersants.

Furthermore, API and NOIA recommend EPA initiate a Negotiated Rulemaking which has proven to be effective in controversial rulemakings such as this one. At a minimum, we urge the Agency to publish a Supplemental Proposed Rule in the Federal Register for additional public comments before publishing a final rule to ultimately make sure that responders, both from the government and industry, are able to use dispersants in the most effective and expeditious manner, taking into consideration necessary environmental and safety factors, to provide for the best response possible depending on the circumstances of a particular spill event. Given the time it will take to initiate and complete a new rulemaking after the final rule is published it is imperative for the general public and all stakeholders that we get it right the first time.

Thank you for your time and attention to these comments on the Proposed Rule. API, NOIA and our member companies share EPA's goal of establishing sound Dispersants Use Policy and are committed to working with the Agency and the other Federal Agencies involved in oil spill response to ensure the health and safety of people and minimize environmental and community impacts during an oil spill. Please do not hesitate to contact Emily Hague (202-682-8260, Hague@api.org) or Nicolette Nye (202-465-8463, nnye@noia.org) if you have any questions.

Sincerely,

Erik Milito
Group Director, Upstream and Industry Operations
American Petroleum Institute

Nicolette Nye
VP Communications & Industry Affairs
National Ocean Industries Association

Attachment A

Analysis of EPA's Regulatory Impact Analysis for the Proposed Revisions to the National Oil and Hazardous Substances Pollution Contingency Plan in 40 CFR 300 Subpart J

Submitted by:

Policy Navigation Group

April 2015

TABLE OF CONTENTS

EXECUTIVE SUMMARY

Policy Navigation Group (PNG) was asked by the American Petroleum Institute to review the Regulatory Impact Analysis (RIA) for U.S. Environmental Protection Agency's (EPA) proposed rule entitled *National Oil and Hazardous Substances Pollution Contingency Plan*.[1] We were asked to evaluate whether the RIA for the proposed rule is consistent with the analytical standards set forward in OMB Circular A-4 and EPA's Guidelines for Preparing Economic Analyses and to perform an independent cost analysis.[2] In our analysis, the proposed RIA has the following principal deficiencies:

- The proposed rule's RIA does not have a consistent baseline that allows the public and policy officials to compare the incremental social costs and the incremental social benefits of EPA's proposed regulation and the individual policy options within the proposal.
- The RIA fails to estimate many policy scenarios and requirements issued in the proposed rulemaking. The RIA thus fails to provide the public a full description of the proposal's impact and undermines the public's opportunity to provide meaningful comment on the proposed rule.
- Further, for the provisions that it does give quantified social cost estimates, the RIA often underestimates compliance costs. The RIA thus underestimates the full social cost to comply and to administer the changes for both private firms and government agencies.
- The RIA does not provide any quantified social benefit estimates either for the proposal as a whole or for its individual options. Moreover, its qualitative description of social benefits is inaccurate and at times actually describes social costs of the proposal. Without estimates of the incremental social benefits of the rulemaking and the proposal's regulatory options, the public cannot provide meaningful comments on the merits of EPA's proposal.
- The RIA's methodology is designed to underestimate the small business impact. EPA's economic impact analysis is inconsistent with EPA's economic analysis guidelines and EPA's requirements under the Regulatory Flexibility Act (RFA).[3] In this analysis, we address some of the RIA's deficiencies and find that the rulemaking could have a significant impact on a substantial number of small businesses subject to the rulemaking.

---

[1] 80 FR 3380. Also, U.S. Environmental Protection Agency, *Regulatory Impact Analysis for Proposed Revisions to the National Oil and Hazardous Substances Pollution Contingency Plan Regulations*, December 3, 2014.

[2] U.S. Environmental Protection Agency, *Guidelines for Preparing Economic Analyses*, 2014.

[3] 5 U.S.C. 601-612

- These principal issues are among many aspects of the analysis that are inconsistent with Executive orders on regulatory review, OMB guidance, and EPA's own guidance for economic analysis.[4]

In the RIA, EPA estimates that the total incremental net present value (at 7 percent) social cost of the rule is $7.8 million, or approximately an annualized cost of $0.7 million over 20 years. In our analysis, we find that the estimated social costs are at least three times higher than EPA's estimate. The cost of the major provisions are given below:

Table ES-1. Estimated Social Costs of the Proposal

	NPV at 7% ($)	Annualized Cost over 20 years at 7% ($)
Product Loss Costs	4,000,000-7,300,000	380,000-720,000
Product Testing Costs	5,300,000	500,000
Stranded Capital/Stockpile Value Loss	1,000,000-1,250,000	90,000-120,000
Label	180,000	20,000
Recovery Costs	1,700,000	160,000
Monitoring Costs	11,000,000	1,000,000
Preauthorization Costs	200,000	20,000
EPA Costs	800,000	80,000
Totals[5]	24,000,000-27,000,000	2,300,000-2,600,000

These costs disproportionately burden small businesses. Most producers in this market are small businesses. The RIA did not find a significant effect on a substantial number of these small businesses. However, when we adjust for the more significant costs in Table ES-1 for the provisions the RIA omits and for real cost of capital, 43 percent of small businesses that the RIA analyzed have compliance costs greater than three percent of their 2011 revenues. As shown in Table ES-2, many small businesses face severe impacts. EPA should evaluate whether it must comply with the procedural and other analytic requirements of the Small Business Regulatory Enforcement Fairness Act (SBREFA).

[4] Executive Order 12866 Regulatory Review, September 30, 1993.

[5] Throughout this report, totals and summaries may be different due to rounding. Reflecting the likely precision of these estimates, figures are presented to two significant digits or less.

Table ES-2. Economic Impact of the Proposal on Small Businesses

Pct of 2011 Revenue	Number of Product Types	Percent of Companies
<3%	17	57%
3%-5%	5	17%
>5%	8	27%

We recommend that EPA correct these deficiencies including undertaking a comprehensive benefit analysis to determine if the rule is in the national interest. Once EPA conducts its analysis of the incremental net social benefits of each proposed provision, it should select the regulatory options that maximize net social benefits. As EPA's economic analysis guidelines states:

> Preparing high-quality economic analysis can greatly enhance the effectiveness of environmental policy decisions by providing policy makers with the ability to systematically assess the consequences of various actions. An economic analysis can describe the implications of policy alternatives not just in terms of economic efficiency, but also in terms of the magnitude and distribution of an array of impacts.[6]

This report discusses the major issues with the RIA in more detail, provides alternative estimates for the proposal's social costs, and recommends how EPA should correct these flaws before reissuing a proposed rule.

[6] U.S. EPA, *Guidelines*, pg. 1-2.

SECTION 1. INCONSISTENCY BETWEEN BASELINE AND POST-REGULATION MARKET SCENARIOS

1.1. BASELINE IS INCOMPLETE AND INCONSISTENT WITH OMB GUIDANCE

The RIA's description of the analytic baseline is incomplete and inconsistent with OMB guidance.[7] There are several problems with the RIA's regulatory baseline:

- The RIA does not establish baseline conditions for many proposed requirements. As discussed in Section 2 below, the RIA does not fully estimate the social benefits and costs of all of the provisions of the proposal. As it corrects the serious deficiency of omitting cost estimates for proposed provisions, EPA must apply a consistent framework for both baseline and post-proposal market conditions in any final rulemaking.

- The RIA assumes a regulatory baseline where all existing manufacturers must pay to test their products. Even in absence of a rule, manufacturers may choose to conduct additional toxicity testing to demonstrate the inherent low hazard of their product and thus to differentiate their products in the market. Oil spill response organizations and responsible parties may also insist on further toxicity testing from producers due to liability concerns. Other jurisdictions also require testing of oil response products. For example, the corresponding European Union (EU) authority, the European Maritime Safety Agency, lists the dispersant testing requirements as of 2014 in the EU member states.[8] Eight EU members require testing of dispersant products. For all these reasons, producers may have some or all of the proposed testing data already available.

Recommendation. EPA should gather additional information on available data not only to prepare a more accurate economic analysis, but also to properly estimate the incremental social costs of this rule. If additional data already exists, EPA could tailor the final rule's requirements to this data and only mandate additional testing where meaningful data gaps exist.

1.2. PROPOSAL DOES NOT HAVE CONSISTENT SCENARIO FOR THE SOCIAL BENEFITS AND SOCIAL COST ESTIMATES

The RIA assumes all existing products comply with the new testing requirements and remain on the market.[9] The RIA also assumes new products are approved by EPA at the same

---

[7] U.S. Office of Management and Budget, Circular A-4 Regulatory Analysis, September 2003.

[8] European Maritime Safety Agency, *Inventory of National Policies Regarding the Use of Oil Spill Dispersants in the EU Member States*, 2014

[9] U.S. Environmental Protection Agency, *Regulatory Impact Analysis for Proposed Revisions to the National Oil and Hazardous Substances Pollution Contingency Plan Regulations*, December 3, 2014.

pace as in the past. In other words, society gains the same benefits from products with the same capabilities and efficacy with or without the rule.

If this post-regulatory scenario is true, the rule has few, if any, social benefits.[10] For example, EPA cites reduced product toxicity on marine life as a potential social benefit. However, any potential ecological harm could only possibly be reduced if some existing (and future) products are withdrawn, not used, or disallowed due to the new toxicity testing requirement and due to the new EPA approval process.

However, the RIA's scenario is not the most plausible post-regulation scenario. It is more likely that some existing products will not remain on the approved list after the rulemaking. This outcome is more likely than the RIA scenario for two reasons. First, EPA may decide not to approve some of the existing products. It seems unlikely that EPA would use its scarce resources to promulgate increased toxicity testing standards if it did not have concerns with the toxicity of some existing products.

Second, given the uncertain sales volume, producers may not make a competitive expected rate of return with the additional testing and application expense and the greater risk of disapproval. In this case, they can be expected not to remain on the schedule after the rule is effective.

There is ample evidence that existing producers face a non-zero risk of product disapproval:

- Interest groups and media alleged significant concerns with oil spill product safety during the 2010 SONS.[11,12] Media attention and interest group attention to the issue does not mean that products are toxic per se; however, the threat of media scrutiny dampens producers' interest in bringing products to market. Increased attention is likely to lengthen EPA's approval process and the costs for the producer to respond to media inquiries. For producers, these response costs decrease the rate of return for oil spill products and potentially raise the costs for other company products.[13]

- Many producers are small businesses and need certain rates of return to compensate for their cost of capital and for the opportunity cost to innovate in

---

[10] There is the argument that there is an information externality – the producers of the agents have a more concentrated interest and easier access to the potential toxicity information than the purchasers. However, since the producers are mostly small businesses and the purchasers are typically government agencies or large businesses, the purchasers can be expected to have sufficient resources and potential legal liability to overcome any potential information externality.

[11] See for example, http://www.biologicaldiversity.org/programs/public_lands/energy/dirty_energy_development/oil_and_gas/gulf_oil_spill/dispersants.html.

[12] E. Rothsenthal, *In Gulf of Mexico, Chemicals under Scrutiny*, The New York Times, May 5, 2010.

[13] For example, the parent company, and not individual product, may face public criticism.

other markets. Their internal rate of return requirements may preclude further investments once the costs and the risk increase.

In addition to the effect on existing products, the rulemaking is likely to affect the number of future products. By requiring additional testing and approval, the rulemaking increases market barriers. Some new products may not reach the market in the future due to the costs and risks that new products will not pass the new testing requirements.

1.2.1. Social Cost Estimate

To overcome these limitations, we conduct an alternative estimate to illustrate the importance of considering how the rule will raise market barriers. In Section 6 below, we demonstrate that many smaller producers could face a significant economic impact from the rule, i.e., greater than three percent of their annual revenue. As EPA and Small Business Administration guidance suggests, we assume those firms fail or leave the market due to the regulatory costs.[14]

The social cost is the lost value added to society from these products that leave the market. Value added is the remaining revenue after the costs of the inputs (e.g., labor, materials, and energy) are subtracted. Since value added is often proprietary information and varies from firm to firm, we use a recent value added metric for the chemical industry as a whole. From 2013 Bureau of Economic Analysis data, the average valued added in chemical manufacturing is 44 percent of revenue.[15] We assume that each company in the oil spill product market has a value added of 44 percent of revenue.

Once existing firms leave the market, society loses the value added of their products for Subpart J responses. However, in a competitive marketplace, other firms will enter and offer their own products. Since the regulation is not changing the demand for oil spill response products or acting to reduce the likelihood of spills, post-regulatory supply will rise to meet this unchanged demand. Society, therefore, only temporarily loses the availability of some oil response capabilities once existing producers leave the market in response to regulation.

We assume the value added is lost for three years. While three years is an assumption, it is a reasonable one given the proposed rule's timing. Since existing firms have two years to provide EPA with the new test data, if they decide not to reapply, they will likely try to stay on the market for the full two years. Once EPA removes them from the schedule, competitors will then see a market opening. We assume these competitors offer alternatives and submit their applications to EPA one year later.

We recognize other outcomes are possible. Instead of replacing existing products with new products at a 1:1 ratio, fewer new products could enter the marketplace, leaving the

---

[14] U.S. Small Business Administration, *Guide for Government Agencies How to Comply with the Regulatory Flexibility Act*, May 2012. See U.S. EPA, *Final Guidance for EPA Rule writers: Regulatory Flexibility Act as amended by the Small Business Regulatory Enforcement Fairness Act*, November 2006.

[15] U.S. Department of Commerce, Bureau of Economic Analysis, *Value Added by Industry*, November 2014

approved products with a greater market share. In this case, compliance costs would be lower than this estimate; however, an additional social cost would be the loss of resiliency to responds to market disruptions. In addition to small firms, large firms may also not submit the new information due to the expense. On an individual product basis, larger firms may not find it profitable to continue.

Recognizing these limitations, based on these assumptions and the revenue information the RIA provides in Exhibit 7-1, Table 1-1 shows our estimate of the social cost of market disruption/transition due to the proposed rule.

Table 1-1. Social Costs from Market Transition

Annual Revenue	Product Type	Assumed Value Added	Social Cost	Discounted Social Cost (7 percent)
$ 62,000	Solidifiers	$ 27,000.00	$ 81,000.00	$ 74,000.00
$ 160,000	Surface Washing Agent	$ 71,000.00	$ 213,000.00	$ 195,000.00
$ 120,000	Solidifiers	$ 53,000.00	$ 159,000.00	$ 146,000.00
$ 200,000	Solidifiers	$ 88,000.00	$ 264,000.00	$ 242,000.00
$ 30,000	Solidifiers	$ 13,000.00	$ 39,000.00	$ 36,000.00
$ 120,000	Surface Washing Agent	$ 53,000.00	$ 159,000.00	$ 146,000.00
$ 150,000	Surface Washing Agent	$ 66,000.00	$ 198,000.00	$ 181,000.00
$ 1,000,000	Dispersant(2) & Surface Washing Agent	$ 441,000.00	$ 1,323,000.00	$ 1,211,000.00
$ 187,000	Surface Washing Agent	$ 82,000.00	$ 246,000.00	$ 225,000.00
$ 290,000	Bioremediation Agent	$ 128,000.00	$ 384,000.00	$ 352,000.00
$ 280,000	Surface Washing Agent	$ 123,000.00	$ 369,000.00	$ 338,000.00
$ 559,000	Bioremediation Agent	$ 246,000.00	$ 738,000.00	$ 676,000.00
$ 120,000	Bioremediation Agent	$ 53,000.00	$ 159,000.00	$ 146,000.00
Total (rounded)				$ 4,000,000.00

Summary	NPV at 7%	Annualized Cost over 20 years at 7%
Product Loss Costs	$4,000,000	$380,000

The social costs for existing products are estimated to be $4 million. If it takes longer for alternative products to enter the market, these costs would be higher. These social costs do not include the loss of efficacy and resiliency to respond to oil spills during this transition period. In Section 2.3 below, we expand this estimate to add the potential product loss social costs from the proposed ban on products containing NP and NPE.

As discussed previously, the regulation will not only discourage existing producers from re-qualifying, but also discourage new entrants by raising the costs and the risks of market

entry. The RIA assumes new entrants arrive after the rule at the same pace as in the baseline, or 10 per year. This assumption is not supported by economic theory. As discussed below in Section 3.4, we predict that application costs would rise by 40-50 percent for surface washing and stabilizer products, 260 percent for bioremediation products, and 120 percent for dispersants compared to current requirements. While we did not find estimates of the supply elasticity in these markets, such significant increases in prices will affect supply. We assume new product applications decrease by 30 percent from 10 to seven per year in response. The cost implications of this change are further discussed in Section 5.

1.2.2. **Recommendation**

Setting the baseline and policy alternative scenario is one of the key foundations of a regulatory analysis. As EPA's Guidelines for Economic Analysis states: "Because the level of detail presented in the baseline specification is an important determinant of the kinds of analysis that can be conducted on proposed regulatory options, careful thought in specifying the baseline is crucial."[16] The RIA has not shown this careful thought. For the final rule, EPA should understand the available toxicity and efficacy data available from producers. EPA should select, at a minimum, alternative market outcomes from the regulation in which some existing products do not return to the approved list. EPA must estimate the incremental social benefits and social costs from more accurate baselines.

[16] U.S. EPA, *Guidelines*, pg. 5-1.

SECTION 2. SOCIAL COSTS NOT INCLUDED IN THE RIA

2.1. STRANDED PRODUCTION CAPITAL AND PRODUCTS

EPA has not estimated the full social costs from a decision not to approve a product or from a producer's decision not to reapply. For the reasons listed in the previous section, it is plausible that some existing products will not be listed in the future due to the new regulatory requirements. In Section 1.2.1, we estimate the temporary lost value to society. The full social costs include the net change in value of the oil spill response product and the stranded human and physical capital used to produce the product. In addition, existing stockpiles of the dis-approved product can be expected to suddenly have lower value due to the disapproval. While on scene coordinators (OSC) could still allow their use during a spill response, the likelihood is lower once the product is no longer approved.

These costs are potentially significant. Stockpiling response products is an essential strategy to minimize oil spills' consequences. Response products must be deployed within hours of an oil spill; there is not time to ramp up production once a spill happens. Stockpiles are substantial and deployed across the globe. For example, a 2014 EU report lists nearly 3,500 metric tons of more than 40 different compounds in EU member state stockpiles.[17]

EPA has recognized this social cost category in other rulemakings. EPA has banned or phased-out products in other environmental programs. For example, EPA regulates the phase-out of ozone-depleting substances (ODS) under the Clean Air Act (CAA). EPA has conducted several major RIAs for the multiple phase-out decisions for ODS use under Title VI of the CAA. For example, in its Section 604 and Section 606 rulemakings, EPA considered the stranded capital and product costs for the ODS subject to the phase-out. EPA also attempted to estimate the social costs of the reduced efficacy of the substitutes.[18]

2.1.1. Social Cost Estimate

We consider the stranded capital and product costs separately. For the stranded capital, there are several considerations in estimating the social cost. First, the regulation does not destroy the labor and physical capital, but blocks its highest valued use. Workers and entrepreneurs can use their knowledge and machinery to make other products and/or the same product. Second, there is a distinct loss as suppliers move their capital from this highest valued use before the regulation to a lower valued use after the regulation. They also have costs as they retrain and retool their equipment for this shift.

This information guides our estimate. At one extreme, if the regulation completely destroyed the economic value of the enterprise, the loss could be estimated as the enterprise values of the firms. Using a standard financial estimation of small business enterprise value, the loss would be three to five times the firm's intrinsic value (i.e., value added). In this

---

[17] European Maritime Safety Agency, *Inventory of National Policies Regarding the Use of Oil Spill Dispersants in the EU Member States*, 2014

[18] For a good summary, see Appendix G of *The Benefits and Costs of the Clean Air Act, 1990 to 2010*, U.S. EPA, 1999.

case, the maximum social cost would be $6 million to $8 million. At the other extreme, in a dynamic economy, excess capital and labor is rapidly moved from one use to another, with almost zero transition cost. Since the regulation fundamentally does not change demand, we assume that the stranded human and physical capital costs will be closer to the low end and assume a loss of $1 million.

For the stranded product costs, knowledge of which existing products will not return to the schedule and the amounts of those products are stockpiled is important information. The RIA gives information about the product types that are likely to leave the market due to regulation (see Section 6 below), but not the specific products.

For current amounts in stockpiles, in support of its 2009 vessel response plan (VRP) rulemaking, the Coast Guard complied data on US stockpiles of products listed on Subpart J.[19] Although this data is comprehensive, it is from 1998. The VRP rulemaking required responsible parties to have contracts with oil spill removal organizations (OSRO) or organic capacity to respond to categorical spills.[20] The rulemaking required owners and operators to have response resources capable of applying dispersants. This rulemaking, and subsequent ones, increased the amount of dispersants stockpiled in the United States.

From public information given by OSROs, most advertised dispersant capacity is for Corexit® formulations. While it is very likely that these organizations also stockpile stabilizers, surface washing agents, and potentially bioremediation agents, we did not find a current, comprehensive list of stockpiled substances.

We therefore constructed our estimate under two scenarios: (1) if EPA does not approve Corexit® formulations; and, (2) If EPA does not approve other agents. For the latter, we include these costs in Section 2.4. A potential ban on Corexit® is discussed in this section.

We gathered available data on current and relatively recent reports of Corexit® formulation stockpiles in the United States and globally. Since the chemical is not approved for use in Europe, we found that global stockpiles are located primarily in the United States and Brazil.[21] Table 2-1 gives the organization and the reported stockpile amount.

---

[19] U.S. Coast Guard, "Caps" Review of Oil Spill Response Plan Equipment Capability, at https://homeport.uscg.mil/cgibin/st/portal/uscg_docs/MyCG/Editorial/20080725/combined%20document.pdf?id=213ab594d05ab39ffd49d74a2e188eb8246d23ed&user_id=7ee08b44562829c5918c18d08ac87c29.

[20] 74 FR 45004

[21] http://www.oilspillresponse.com/files/OSRL_GDS_Equipment_20Nov2014.pdf

Table 2-1. Estimated Stockpiles of Corexit® Formulations

Organization	Units	gal/unit	Total
MSRC[22]	1	104,000	104,000
Clean Seas Cooperative[23]	1	20,750	20,750
Oil Spill Response[24]	500	264	132,000
Alyeska Pipeline[25]	1	60,000	60,000
Clean Islands[26]	1	37,260	37,260
LOOP[27]	1	33,600	33,600
Clean Gulf Associates[28]	1	34,650	34,650
CISPRI[29]	1	20,570	20,570
Nalco[30]	1	12,000	12,000

Total (rounded)	450,000
Estimated Value	$ 250,000

[22] https://www-msrc-org-documents.s3.amazonaws.com/major-equipment-list/MSRC_Major_Equipment_List.pdf?AWSAccessKeyId=AKIAIGH7YZWA2HRSZUFA&Expires=1427976589&Signature=lYm5WdnIB7M4XV%2BR1foyl5kUg70%3D

[23] http://www.cleanseas.com/equipment.htm#ABSORBENTS/DISPERSANTS/SPRAY

[24] http://www.oilspillresponse.com/files/OSRL_GDS_Equipment_20Nov2014.pdf

[25] Minerals Management Service, *Assessment of the Use of Dispersants on Oil Spills in California Marine Waters*, S.L. Ross Environmental Research Ltd, June 2002.

[26] http://www.cleanislands.com/

[27] Minerals Management Service, *Assessment of the Use of Dispersants on Oil Spills in California Marine Waters*, S.L. Ross Environmental Research Ltd, June 2002.

[28] http://www.cleangulfassoc.com/equipment.

[29] Minerals Management Service, *Assessment of the Use of Dispersants on Oil Spills in California Marine Waters*, S.L. Ross Environmental Research Ltd, June 2002.

[30] http://www.rrt9.org/external/content/document/2763/904415/1/Nalco%20Dispersant%20Mfgr%20Capability.pdf

Table 2-1 may overestimate the amount stockpiled since different organizations may have overlapping agreements to use the same stockpile. The estimates may also be underestimates since we could not find publicly available data on the stockpiles of some of the larger OSROs such as NRC.[31] Based on a recently reported retail price from an OSRO of $0.55/gallon, the reported stockpiles in Table 2-1 are worth $0.25 million. Since the product is not approved for use in other jurisdictions, if EPA did not approve its continued use, it is likely that current stockpiles will have little residual value.

In summary, the stranded capital/stockpile value loss is the sum of the loss of enterprise value (assumed to be $1 million) and the potential loss of in value of Corexit® formulations. Since the loss in Corexit® formulations is speculative, we present our estimate for this rulemaking outcome as a range.

Summary	NPV at 7%	Annualized Cost over 20 years at 7%
Stranded Capital/Stockpile Value Loss	$ 1,000,000-$1,250,000	$90,000-$120,000

2.1.2. **Recommendation**

Once EPA establishes a more plausible baseline and post-regulation market conditions, it must account for all social costs that flow from an EPA decision not to approve products currently on the list. These costs include the stranded physical and human production capital, the loss in value of stockpiled products, and any loss in oil spill response efficacy from these decisions. EPA has access to data on oil response product stockpiles that it should use to better estimate the social costs of this rulemaking. EPA's analysis for the final rule should at least be as comprehensive as EPA's approaches in other comparable EPA rulemakings.

2.2. PERIODIC REVISIONS OF PREAUTHORIZATION PLANS

In the proposal, EPA requires Regional Response Teams (RRTs) to review and to update their preauthorization plans for chemical and biological response agents after major oil spills or at least once every five years. The RIA does not estimate the social costs of this proposed requirement.[32]

---

[31] http://nrcc.com/our-services/response-services/response-equipment-rental-packages/

[32] On page 37 of the RIA, under the section entitled "Authorization of Agent Use (part 300.910)," the RIA notes that RRTs and Area Committees are required to provide a preauthorization plan and to follow other requirements. The RIA states: "The incremental burden for members of the RRT and Area Committees requires labor hours to participate in the development of preauthorization plans and to add them to RCPS and ACPs." However, it is not clear whether the extremely low burden the RIA uses (2 hours) is to update the 11 or more preauthorization plans or the title of section,

There is evidence that this provision would have meaningful costs if finalized. Recently, EPA's Inspector General (IG) issued a report finding defects in emergency management planning and contingency planning for oil spills.[33] In response, EPA stated:

> Thus, although we generally agree with the recommendations in this report, and they parallel our efforts, two key obstacles (i.e., limited involvement by other agencies and stakeholders and resources) must be overcome for their successful implementation.[34]

The EPA program response to the IG suggests that resources, not interest, is the barrier to updating preauthorization plans. If local governments and other RRT team members are constrained by a lack of resources, then it is not clear how a regulation will alter this reality. The social costs then must reflect this scarcity. The social costs are not limited to the full compensation costs and capital costs necessary to maintain that employee. Unlike private markets, the supply of government officials' time does not increase with greater demand. For this reason, the social costs are the opportunity costs of that official's time – i.e., the social benefits society would gain if the government official spends the time on the next most valuable use of that person's time--enforcement, policy setting, permit approvals, or other public matters. The opportunity cost of this resource – a government agency official's work time – is how EPA's Guidelines for Economic Analysis defines social cost.[35]

2.2.1. **Estimated Social Costs**

Based on the IG's analysis, we estimate the social costs as the resources required to update preauthorization plans more frequently than is current practice. We assume in the baseline that plans are currently revised once every seven years; the proposal requires them every five years or after major oil spills. Based on the IG report finding that some plans had not been updated since the 1990s, a seven year update frequency in the baseline may underestimate social cost. For the post-rule scenario, we use a five year frequency since the other trigger, major spills, are rare and may be expected to lead to preauthorization plan reviews even in the absence of this rulemaking.

The resources required are the time spent revising each plan and the review of each plan by the member organizations. From the agenda of recent RRT meetings, we count the number of distinct Federal and state agencies. In a recent Region 6 RRT meeting, 13 Federal agencies sent staff.[36] We assume that 13 Federal agencies are part of each RRT. States,

---

authorization of agent use. In either case, the RIA's estimate is far too low to comply with the proposed requirement.

[33] U.S. Environmental Protection Agency, Office of the Inspector General, *EPA Could Improve Contingency Planning for Oil and Hazardous Substance Response*, February 15, 2013.

[34] Ibid, pg. 19.

[35] "Social cost represents the total burden that a regulation will impose on the economy. It is defined as the sum of all opportunity costs incurred as a result of a regulation where an opportunity cost is the value lost to society of any goods and services that will not be produced and consumed as a result of a regulation," *Guidelines*, p.8-1.

[36] http://www.rrt6.org/Uploads/Files/rrt_semi_annual_meeting_summary_2014_November.pdf

territories, and Tribes also serve on the RRTs. Among the 11 RRTs (one for each EPA region and one for Alaska), we assume 56 States, Tribes, and territories send representatives and participants.

We make some assumptions on the effort needed to revise each preauthorization plan. We assume 20 percent of the RRT's member organizations assign one staff person to serve on an RRT subgroup to revise the plan. Each assigned staff person spends 40 total hours in this revision process. Then, each Federal, State, Tribe, and territory agency reviews the draft revised plan in their organization. Three people in each organization are a part of the review to account for the agency's management and likely legal review. Each person reviewing the draft plan spends six hours reading and discussing the revised plan.

For the costs of government staff time, we use median and mean wages for Federal employees and State employees, respectively.[37] To these wages, we apply recent Federal government values for benefits and overhead to the Federal and State hourly wage values.[38] For the reasons discussed above, this estimate of the opportunity cost of this resource likely underestimates its true social value and thus the social cost of this proposed requirement.

We then compare the social costs for the baseline and proposed requirements – the costs of revising the plans on a seven versus five year frequency. We discount the baseline and proposal time stream of costs at a discount rate of seven percent and take the difference between those time streams as the social cost. The net present value of the additional social cost at a discount rate of seven percent is $0.18 million.

Summary	NPV at 7%	Annualized cost over 20 years at 7%
Preauthorization costs	$180,000	$20,000

2.2.2. **Recommendation**

The RIA must fully include the social costs and social benefits of this provision and calculate the social costs as the opportunity cost of government agency staff time.

2.3. PROHIBITION ON CHEMICALS AND PROPOSAL TO BAN EDCS

The RIA does not estimate the social benefits or the social costs for the proposed option to prohibit approving products containing nonylphenol (NP) and nonylphenol ethoxylates (NPE). More significantly, the RIA did not estimate the social benefits and costs of a regulatory option discussed in the preamble, a ban on endocrine disrupting compounds in approved products.

---

[37] U.S. Bureau of Labor Statistics, May 2014 State Occupational Employment and Wage Estimates, http://www.bls.gov/oes/current/oes_ms.htm#11-0000.

[38] See for example, U.S. Office of Personnel Management, Federal Investigative Services Division, *White Paper: Support Services Contract Cost Benefit Analysis*.

Banning any compounds will have social costs and potentially social benefits. As discussed elsewhere in these comments, EPA has acknowledged in other rulemakings the loss of income and loss of productive capital from product bans. These costs must be included in the economic analysis of this option.

One notable option EPA lists is to prohibit materials containing endocrine disrupting compounds from the approved list. More broadly, EPA's proposed prohibition – without any stated criteria for the ban – raises significant market uncertainty. Without transparency into EPA's rationale for the prohibition, producers may decide not to pay for testing costs and risk disapproval, reducing the overall efficacy and variety of products available.

However, the social costs are more significant than the loss of net value in the oil spill response market. Bans by a government agency will cast a cloud over the public's perception of the health and safety of a chemical compound. States and companies maintain lists of "toxic" chemicals and have policies that discourage purchasing and use of chemicals on these lists.[39] By banning a substance in oil spill response products, it is more likely that the market for NP and NPE compounds will shrink throughout the overall economy.

Moreover, the incremental social benefits of the proposed NP and NPE ban are uncertain. The RIA did not quantify these benefits. There is reason to believe that any such social benefits will be small. EPA's own test data provides evidence that the proposed bans would have minimal, if any, social benefits. EPA conducted tests of eight dispersant compound-oil mixtures, some of which contained NPE, for their endocrine activity.[40] EPA found:

> None of the eight dispersants tested displayed biologically significant endocrine disrupting activity, with the exception of a weak response for two of the dispersants (Nokomis 3-F4 and ZI- 400) in one of the tests. This estrogenic result is likely not of biological significance. Cell death (degree the dispersant is toxic to living cells) was observed in some tests at concentrations above 10 parts per million. The endocrine and the cytotoxicity screening were conducted at dispersant concentrations from 0.001 parts per million up to 10,000 parts per million. None of the dispersants triggered cell death at the likely concentrations of dispersants expected in the Gulf.[41]

Therefore, although EPA's study had a small sample set, EPA's test data provides no evidence that these oil spill response compounds with NP and NPE pose any inherent hazard that would justify the social costs of a precautionary ban. The preamble does not provide quantified social benefit estimates to support a ban over other policy alternatives.

---

[39] See, for example, Maine's "Chemicals of High Concern," at http://www.maine.gov/dep/safechem/highconcern/.

[40] Judson, R. S., Martin, M. T., Reif, D. M., Houck, K. A., Knudsen, T. B., Rotroff, D. M., Dix, D. J. (2010). *Analysis of Eight Oil Spill Dispersants Using Rapid, In Vitro Tests for Endocrine and Other Biological Activity*. Environmental Science & Technology, 44(15), 5979–5985. doi:10.1021/es102150z

[41] http://www.epa.gov/bpspill/dispersants-qanda.html#toxtest8. See also U.S. Environmental Protection Agency, *Toxicity of Louisiana Sweet Crude Oil (LSC) and chemical dispersed LSC to two Gulf of Mexico aquatic test species*, August 2010.

EPA failed to consider and to evaluate policy alternatives to its proposed ban. Under the Executive orders, EPA must evaluate available policy alternatives and select the ones in which the benefits justify the costs.[42] There are several policy alternatives EPA could choose and could evaluate besides a ban on NP and NPE compounds, such as imposing lesser restrictions or requirements. Such options could tailor the social costs more directly to any potential hazard than a product ban. Only through objective, transparent policy analysis of these alternatives can senior officials and the public weigh the options to decide upon the best policy.

2.3.1. **Estimated Social Costs**

We searched PubMED for published, peer-reviewed articles that found evidence of NP and NPE-containing oil spill response agents. The only study that specifically listed these compounds was EPA's 2010 work in response to the SONS.[43] It identified NP and NPE compounds in two listed dispersants, Nokomis 3-F4 and ZI-400. For the purpose of this estimate, we assume these products are subject to the proposal's ban.

Based on our evaluation, the manufacturers of these products are likely small businesses. To estimate the impact of the ban, we use a similar approach as in Section 1.2.1. The social costs are not permanent; the social value of the banned products is eventually replaced by substitutes or through greater sales of other dispersants. In EPA's testing, the most widely-used dispersant did not contain NP and NPE. The social costs, therefore, are limited to the immediate disruption in the market.

Since we do not know the actual sales of these dispersant products, we average the annual revenue from the three small business manufacturers of dispersant products given in the RIA. As done is Section 1.2.1, we use the value added of the chemical industry to estimate the added value from these products. The social cost of the ban is the lost value from these two products for a three year period.

There are several reasons this approach underestimates the likely social cost. First, medium and large companies may have their products banned also. While these companies may have resources to reformulate their products, there still will be social costs to switch to substitutes. Second, our estimate of two banned products comes from our search of the public, peer-reviewed literature. Given the controversy over dispersants during the SONS and EPA's proposed rule, companies have an incentive not to disclose voluntarily NP and NPE ingredients. Third, it is possible that NP and NPE compounds are used in other product types such as surface washing agents. Fourth, the manufacturers of the two dispersants that EPA identified as containing NP and NPE have similar products on the schedule. If these products also contain NP and NPE, they would also face bans under the proposal.

Finally, we do not estimate the social costs of a more sweeping ban on all EDC compounds. EPA's proposal is too vague for the public to understand its implications. First,

---

[42] U.S. Office of Management and Budget, Circular A-4 Regulatory Analysis, September 2003, pg. 16.

[43] Judson RS, Martin MT, Reif DM, et al. Analysis of Eight Oil Spill Dispersants Using Rapid, In Vitro Tests for Endocrine and Other Biological Activity. *Environmental science & technology*. 2010; 44(15):5979-5985. doi:10.1021/es102150z.

EPA does not define what it means to be an EDC. Second, EPA does not state whether all compounded named as an EDC are banned as ingredients or whether *de minimis* amounts are permitted.

Since some of these same products may drop out of the market due to the new testing requirement, we structure our NP product ban cost estimate so as not to double count the product loss estimates already presented. In Section 1.2.1, one product is a dispersant. Our range is simply whether this product's loss is included in the $4 million product loss calculated in Section 1.2.1 or is an additional social cost.

Summary	NPV at 7%	Annualized Cost over 20 years at 7%
Product Loss Costs	$4,000,000-$7,300,000	$380,000-$720,000

2.3.2. Recommendation

The RIA must fully estimate the social costs and the social benefits of the proposal to ban NP and NPE compounds in listed products and the alternative to ban EDCs. To comply with the Executive orders and OMB guidance, EPA must also evaluate policy alternatives to banning compounds and select the one with the greatest net social benefits.

2.4. Expired Product Testing and/or Replacement Costs

EPA proposes that stockpiled products must be tested in order to be used after their expiration date. The RIA does not estimate the social costs of this requirement.

This provision has social costs and potentially social benefits. There are two costs: increased product testing costs and potentially the cost of more frequent product shipments to stockpile locations. The social benefits are potentially more effective products due to this requirement.

2.4.1. Estimated Social Costs

Over time organizations that stockpile oil response products will attempt to minimize the cost of this requirement through inventory management. They can change their ordering procedures to better match inventory to use. More significantly, they can shift sales of products past their official expiration date to other markets. Numerous oil spills and cleanups occur that do not involve Federal OSCs. Since many expiration dates are minimal (e.g., "at least two years"), buyers may be willing to accept response products with older shelf lives for a discount or because their spill response need is less. Vendors/organizations that stockpile will, over time, manage their inventories so that products with young shelf lives are reserved for any Subpart J needs and then, rather than retest to verify their continued use, are migrated to other markets.

This strategy can only work if the major stockpiled products have sufficiently long shelf lives. In the Attachment, the recommended shelf lives for each existing product are listed. We assign a shelf life of 20 years to products reporting unlimited shelf life.

Bioremediation products have the shortest average shelf life of less than three years. Dispersants have the longest average shelf life, with the most widely stockpiled dispersant having an unlimited shelf life. While products vary significantly, there are numerous products in each category with relatively long shelf lives to allow inventory management. To the degree there are effects, management of existing bioremediation products could be most vulnerable to the requirement for additional testing.

For these reasons, we model the social cost as a one-time event to shift management of existing inventories. We assume future purchases and sales will direct products with older shelf lives to cleanups outside National Contingency Plan jurisdiction. We also assume that some operators of existing stockpiles and inventories will decide it is more cost-effective to test rather than replace their existing inventory.[44] They may have quantities of the surface washing products with shorter shelf lives than the average nine year life-span of these products. Different stockpiles will have different products; therefore, the testing decision is based on the number of stockpile-product combinations. We assume that operators find 20 stockpile-product combinations where testing is more cost-effective than selling into other markets or discarding and replacing the product. Since dispersants have a much longer shelf live on average, we only assume four stockpile-product decisions to test. Table 2.2 presents the results based on these assumptions. This provision could have social costs of $1.7 million.

Table 2-2 Estimated Costs of Testing Expired Products

Product	Testing Cost	Number of Stockpiles-Products	Total Cost
Bioremediation Agent	$31,800	20	$1,270,000
Dispersant	$13,050	4	$52,200
Surface Washing Agent	$10,300	20	$206,000
Solidifier	$10,300	20	$206,000
Total			**$1,740,000**

In Section 2.1.1, we consider the social cost of managing stockpiles of existing products that are not approved in the post-regulatory scenario. We assume that OSRO and others manage their inventories of surface washing agents, sorbents, and other products to market them to non-NCP spill responses. In Section 5 we combine all of the provisions that require testing into one estimate so that the analysis makes consistent predictions of market dynamics after the rulemaking.

2.4.2. **Recommendation**

EPA must estimate the social benefits and social costs of this provision if it is included in the final rule. EPA should use current data on stockpile amounts and their expiration dates.

[44] Or they will replace products in response to the rule up to the expected value of testing them to prove their efficacy. We use the testing cost as the upper limit of the cost to replace existing inventories.

2.5. RECOVERY OF AGENTS FROM ENVIRONMENT

In the proposal, EPA adds a regulatory requirement that responsible parties are obligated to recover certain oil spill response products from the environment. When stabilizers, surface washing agents, and sorbents are used, responsible parties must recover them when it is safe to do so. The RIA does not estimate any social benefits or social costs from this provision.

This requirement has social costs and potentially social benefits. For major spills, it is likely the regulation formalizes the likely site-specific orders by the OSC. By making it a regulatory requirement, the major change is that it subjects the responsible party to the full enforcement authorities under the Clean Water Act. The proposal reduces the government's administrative effort to levy fines and penalties.

The marginal increase in the threat of fines and penalties may change responsible party behavior. Responsible parties may put greater effort into recovery operations and respond to reports of agents in the environment after the spill for a longer period of time. More effort at recovery may then yield some environmental benefits on the margin. However, greater human activity – boats, motors, skimmers – in environmentally-sensitive areas may cause damage while recovering response products. The current framework – to take actions which have the greatest net environmental benefits – is more flexible and allows site-specific balancing of ecological, human safety, and response product use.

2.5.1. Estimated Social Costs

As a practical matter, this provision may not have any additional social costs for major Tier I, Tier II, or Tier III oil spills. On scene coordinators effectively order product recovery for these major spills. For larger spills, the greater level of government oversight in both the baseline and the post-regulation may be expected to lead to similar levels of responsible party activity. For smaller spills, the proposed regulatory requirement could increase social costs by diverting resources into product recovery, especially after the immediate spill response. It is difficult to estimate the additional costs in these site-specific decisions.

Since 2000, there have been on average 13 spills per year of between 5,000-10,000 gallons of oil products into U.S. navigable waters.[45] We assume that these spills are large enough that responsible parties use significant amounts of response products, but not so large that they trigger substantial government oversight.

We assume that the regulatory provision triggers an additional $10,000 in response costs per spill of this medium-to-large spill size. Since daily penalties under the Clean Water Act are up to $37,500 per day per violation, a responsible party may be willing to respond to reports of sorbents and other products in the environment after a spill rather than risk a penalty. They may be willing to spend much more than $10,000 per incident to avoid the fines. However, assuming an average per incident additional cost of $10,000, the net present value (at seven percent) social cost of this requirement is $1.7 million.

[45] United States Coast Guard, *Polluting Incidents In and Around U.S. Waters: A Spill/Release Compendium: 1969 – 2011*, December 2012.

2.5.2. **Recommendation**

EPA should articulate in any final rule the specific social benefits and social costs it believes will occur as a result of this provision. Specifically, EPA should explain the value of this requirement as a regulation as opposed to a site-specific/incident-specific decision that maximizes net environmental benefits.

SECTION 3. UNDERESTIMATED COSTS

3.1. MONITORING COSTS

The proposal requires responsible parties to carry out extensive monitoring of dispersant use, oil concentrations, and ecological effects in the event of a major oil spill where dispersants are used. The RIA estimates the cost of these monitoring requirements to be $500,000 per year for an average of one applicable major, off-shore oil spill per year.

The justification for the cost estimate in the RIA is two studies. However, these studies do not replicate the specific proposed requirements and therefore do not provide adequate justification for the RIA's estimate.

3.1.1. Estimated Social Costs

We build a bottom-up estimate of the social costs to monitor and to report the information listed in the proposed rule. We first make some assumptions concerning the duration of the spill. We assume the responsible party conducts active monitoring of the oil plume and dispersant use for 14 days, followed by 21 days of monitoring of the dissolved oil/dispersant mixture in the water column. Modeling of the oil movement in the water is carried out for 14 days; fluorescence monitoring occurs for the entire 35-day period.

Since dispersants are used, the oil spill is assumed to occur off shore, meaning boats are needed to obtain the water samples and to gather data for the modeling. Background samples are assumed to be gathered at four points upwind and downwind of the plume. In-plume measurements are assumed to be gathered at five points, with three different sampling points in the water column at each point. After the 14 day period, monitoring requirements for the next 21 days fall from five locations in the plume to four areas in the affected area. Background samples are still collected.

Field and test blanks are assumed to be analyzed for each background and plume collection point. The proposal also requires the responsible party to submit a quality assurance plan for the sampling and analysis.

Given the need for rapid decisions, the ecological characterization and risk assessment requirements are divided into two phases. For immediate decisions during the 14 day active response, experts gather available information from already-published studies and regional ecological evaluations. This study also sets the acute toxicity level from available data. Once the response moves to the 21-day monitoring of the ultimate dispersion, a more complete, written ecological characterization report is compiled.

The responsible party assigns 10 managerial and technical staff to manage, carry out, and to report compliance with the monitoring requirements during the 35-day event.

Based on this scenario, we gathered publicly-available price data from OSROs and commercial laboratories to build a social cost estimate. The Oil Spill Response Limited

organization has a global price list and cost data for their Florida-based response location.[46] Table 3-1 gives the principal data used in this cost estimate:

Table 3-1. Prices for Oil Spill Dispersant Use Modeling

Fluorescence Tracking[47]	659	GBP/day
Boat Rental[48]	400	GBP/day
Oil Modeling[49]	2,300	GBP/day
Heavy Metal Analysis[50]	350	$/sample
Volatile Organic Compounds and Benzene, Toluene, Ethylbenzene, and Xylenes[51]	250	$/sample
Total Petroleum Hydrocarbons[52]	150	$/sample
Other Parameters[53]	150	$/sample

Based on this scenario, the estimated monitoring costs are approximately $850,000 per spill. This value is substantially greater than the RIA estimate. This estimate does not include insurance costs, contingency costs, surcharges for rapid delivery, sample shipping costs, travel costs, or other logistical needs. Including these costs would increase the social costs of this provision.

Given the frequency of one spill per year, the net present value and annualized value of these social costs are given below.

Summary	NPV at 7%	Annualized Cost over 20 years at 7%
Monitoring Costs	$11,000,000	$1,000,000

[46] http://www.oilspillresponse.com/

[47] http://www.oilspillresponse.com/files/ScaleOfFees2015.pdf.

[48] Ibid

[49] http://www.oilspillresponse.com/files/ScaleOfFees2015.pdf.

[50] See for example, Price List from Water Testing Labs at http://www.wtlmd.com/wastewater-testing-pricing-maryland-md-va-dc-de.php.

[51] Ibid

[52] Ibid

[53] Ibid

3.1.2. **Recommendation**

EPA should use the available data from OSRO equipment price lists and laboratory sampling costs to build up a more complete cost estimate for all of the required parameters for dispersant modeling in the proposed rule. With a frequency of dispersant use of approximately once per year, there is sufficient existing data and markets to use market prices to estimate the social cost. EPA should also characterize plume size and expected monitoring requirements from past spill responses. Gathering this data will provide more support for a social cost estimate.

3.2. EPA COSTS TO ADMINISTER THE RULE

The RIA underestimates the total resource cost for EPA to administer the rule because it fails to include the total compensation and overhead costs to employ Federal agency staff and it omits the time necessary for EPA to administer the new requirements. The RIA's approach does not comply with EPA's obligations under the Paperwork Reduction Act's implementing regulations (PRA).[54]

The RIA use BLS data from 2011 as estimates of the opportunity cost of government employees. There are several problems with this data:

- It is out of date. The BLS has compensation data available through September 2014.[55] Moreover, the General Services schedule of Federal wages for 2014 is also available as it determines EPA employees' paychecks.

- It underestimates total compensation. It is unclear whether the data the RIA uses is for salary and wages only or for total compensation. It appears that the RIA uses a labor cost of approximately $54 per hour for EPA employees.[56] The

[54] See 5 CFR 1320.3(a)(1):

(1) *Burden* means the total time, effort, or financial resources expended by persons to generate, maintain, retain, or disclose or provide information to or for a Federal agency, including:

(i) Reviewing instructions;

(ii) Developing, acquiring, installing, and utilizing technology and systems for the purpose of collecting, validating, and verifying information;

(iii) Developing, acquiring, installing, and utilizing technology and systems for the purpose of processing and maintaining information;

(iv) Developing, acquiring, installing, and utilizing technology and systems for the purpose of disclosing and providing information;

(v) Adjusting the existing ways to comply with any previously applicable instructions and requirements;

(vi) Training personnel to be able to respond to a collection of information;

(vii) Searching data sources;

(viii) Completing and reviewing the collection of information; and

(ix) Transmitting, or otherwise disclosing the information.

[55] See the Employment Compensation Survey, http://www.bls.gov/ncs/tables.htm.

[56] Calculated from data in RIA, pg. 36.

RIA should use total compensation measures to account for Federal employee benefits such as pension, health care, disability insurance, and personal leave. This information is readily available in EPA budget documents, in OMB budget memoranda, and from the Office of Personnel and Management.

- The total resource costs for government services is more than the total compensation cost of labor. Government workers do not work in the open air. They need buildings, electricity, computers, telephones, water, and many other overhead costs. Estimating the overhead costs for government employment is a routine practice in Federal budgeting, in program evaluation, and for compliance with the Paperwork Reduction Act.[57]

Further, the RIA does not include the costs for EPA to administer certain provisions of the rule. In addition to the costs to participate in the RRT and AC meetings included in Section 2.2.1, the RIA fails to include the EPA resources necessary to remove a product from the listing schedule.

3.2.1. **Estimated Social Costs**

We estimate the social costs of EPA resources to oversee the proposed requirements. Although it is likely an underestimate, we retain the RIA's estimate of 26.5 hours for EPA staff to review each product application. Interestingly, the RIA estimates producers of existing products spend only 7.7 to 27.7 hours to submit the required testing data to EPA. Thus, by the RIA, EPA's review time is longer – up to three times longer – than the time needed to prepare the information. If this ratio is correct, EPA's review process could take over 100 hours. We also agree with the RIA's estimate that the same number of hours is needed when a manufacturer submits new testing data after a product has been reformulated.

However, the RIA assumes EPA spends only 2.5 hours reviewing resubmissions of data from applicants. Since EPA has only 90 days to review an application, it is likely to extend its review by asking applicants for additional information. It seems implausible that EPA would need less than 10 percent of its estimated total review time to review resubmitted data. We use an estimate of 20 hours. We also double the amount of time the RIA estimates to review an appeal of a product disapproval. We believe other divisions of EPA, including the Office of General Counsel, will support the Administrator's review of an appeal and a final Agency decision.

For the opportunity cost of EPA personnel time, we use the fully-loaded employment costs. In FY13, the median EPA employee salary was nearly $108,000, or nearly $55 per hour.[58] We apply OPM's benefit and overhead percentages to calculate a fully-loaded rate of

[57] 5 CFR 1320.3(a)(1).

[58] U.S. Office of Personnel Management, *Salary Information for the Executive Branch Fiscal Year 2013*, April 2014.

$81.50 per hour.[59] This estimate is a slight underestimate of the likely median wage due to general schedule increases since FY13.

Using the post-regulation rate of existing product submissions and new product submissions, we calculate a net present value (at seven percent) of $0.81 million in social costs for EPA to administer the testing requirements.

3.2.2. Recommendation

The RIA should include costs of EPA to carry out all the proposal in its entirety. EPA should include the total compensation cost for government personnel and the overhead costs necessary to house and to equip these employees so that they can perform their new tasks under this proposed regulation. EPA must include these costs and the resources to oversee all of the provisions of the rule in subsequent analyses.

3.3. Testing and Product Listing Costs

The RIA underestimates the costs an organization expends to understand and to comply with this regulation. The RIA assumes essentially that one or two individuals are solitary actors that read, plan, and implement a regulation for a company. In reality, many employees and managers in an organization will be involved in a product's application.

In addition to underestimating the costs for producers, the RIA underestimates the costs to understand, to comply, and to submit product applications. For example, the RIA does not include these costs:

- Laboratory Personnel Understanding the Rule. The RIA does not include the cost for laboratory personnel either within the manufacturer or at a commercial lab to understand the new testing requirements.

- Legal Personnel Time. It seems implausible that a company would file an important submission to EPA without it undergoing legal review. The submission could determine the entire market for a product.

- Response Costs. Often EPA staff will seek clarifications from respondents on their data submissions to the agency. Seeking clarifications in lieu of outright denials/approvals conserves resources for both EPA and respondents. Oddly, the RIA includes EPA's cost to review these re-submissions, but not those of the respondents to prepare them.[60]

---

[59] See for example, U.S. Office of Personnel Management, Federal Investigative Services Division, *White Paper: Support Services Contract Cost Benefit Analysis*.

[60] Even if the RIA estimates the full resource cost for the respondent to submit a "perfect" application that does not require clarification, the respondent is not in control of EPA staff comprehension of the submission and their ability to ask questions, triggering respondent costs.

3.3.1. **Estimated Social Costs**

In Table 3-2 below, we present alternative labor estimates for producers to comply with the rule that addresses the RIA's limitations. We include hours for all the provisions required of producers, including ones the RIA omits like the product label redesign.

Table 3-2. Estimated Skilled Labor Resources Producers Require to Comply with Proposal's Testing Requirements

(Hours)

	Labor Hours Needed		
	Managerial	Technical	Clerical
Hourly Compensation	$ 55.56	$ 55.56	$23.57
Understand Rule	4	8	2
Contract for Tests	2	16	4
Manage Tests	0	8	8
Prepare Documentation	4	40	16
Design Label	0.5	8	8
Legal Review	4	0	2
Revise Documentation	2	4	45
Respond/Follow up	4	16	8
Total (Hours)	20.5	100	93
Total ($) including overhead rate of 17 percent			$10,400

We include hours for essential tasks to prepare the required information. First, the producer must find and contract with an independent certified laboratory for the efficacy and toxicity testing. They must manage the outside laboratory's performance and review the results. In addition, the producer must prepare the written submission to EPA and follow up with any EPA questions.

For labor rates, we use the BLS Employer Cost for Employment Survey data for December 2014.[61] We use the same overhead rate as the RIA, 17 percent, and use the RIA's relative proportion of the application costs among dispersants, solidifiers, surface washing agents, and bioremediation agents. We use these labor costs for product testing in the multiple provisions in the proposal that require product testing.

[61] http://www.bls.gov/ncs/ect/sp/ececqrtn.pdf.

3.3.2. Recommendation

EPA should include all the costs to understand, to explain, and to incorporate the proposed rule into their organizations' operations. EPA is required to perform this analysis under the PRA regulations. In addition, from past applications, EPA should review whether, and if so, the scope of additional information requests it gave to applicants and include these costs in the any final rule. These costs must be assigned to the regulation.

3.4. Limitation To Tested Waters and Efficacy and Toxicity Testing Costs

In the proposal, EPA limits use of a product to the water characteristics of its toxicity and efficacy testing. Product data with just freshwater test data are limited to freshwater uses, for example. The proposed rule expands the number of efficacy tests for bioremediation agents and alters the efficacy test for dispersants. The proposed rule adds new toxicity tests for dispersants and freshwater/saltwater tests for bioremediation, solidifiers, surface washing agents, and other products.

The RIA makes a global assumption that producers chose just one testing environment, salt water or freshwater, and bear the costs for only one test protocol. Rather than chase market demand and maximize net profits, producers instead make their marketing decisions based on the testing cost. The RIA's assumption violates basic economic theory and thus underestimates social costs.

EPA's own data demonstrates this point. Producers list which of the current required toxicity and efficacy testing they have conducted. This information is available on the Subpart J schedule. Except for the bioremediation products, all other products list test data in both the reference saltwater and freshwater species. For bioremediation products, 27 products do not list any information; 21 report test data in both species. In other words, producers currently want to sell in both markets due to the demand for oil spill remediation in both waters. The rulemaking does not change this market demand.

3.4.1. Estimated Social Costs

Since producers currently market to oil spill response demands in both freshwater and saltwater environments, we assume existing and new product manufacturers will pay for the new efficacy and toxicity tests required for both environments. Using the RIA's testing costs, the total laboratory testing cost per product is listed in Table 3-3.

Table 3-3. Testing Costs by Product Type

Dispersants	$13,050
Bioremediation	$31,800
Solidifiers,	$10,300
Surface Washing	$10,300

We use these testing costs to estimate the application cost and the economic impact of the proposed rule. The labor and laboratory testing costs are combined and presented in Section 6.

3.4.2. Recommendation

Consumer demand will drive producers' decisions on marketing, not the testing requirements of the rule. EPA should align its economic analysis to observed producer decisions and thus expect increased testing costs rather than the estimates found in the RIA.

3.5. Retesting Whenever Chemical Composition Changes

In the proposal, producers would be required to retest its products and submit the results to EPA whenever they change the chemical compounds or their concentrations in an approved product. The proposal calls for comment on an option for allowing *de minimis* changes in concentrations or formulations, but proposes retesting for any change. The RIA assigns the same amount of cost to this requirement as it does for a new product application. For the reasons discussed in Section 3.3 above, the RIA underestimates social costs.

3.5.1. Estimated Social Costs

For a cost estimate, we assume that on average one product each year undergoes a change that triggers the requirement to retest. With more than 100 products and product lines on the Subpart J list, the RIA's assumption seems reasonable that approximately one product would undergo a change each year to trigger retesting.

Since we do not know which product type will undergo change, we take an average of the estimated testing costs for the four product types. Therefore, if one product triggers the retesting requirement per year, the net present value (at seven percent) of this proposed provision is $1.7 million/year.

3.5.2. Recommendation

EPA should articulate in any final rule the specific social benefits and social costs it believes will occur as a result of this provision. Specifically, EPA should explain the value of this requirement as opposed to a performance standard that makes manufacturers responsible to demonstrate that formulation changes do not affect toxicity or efficacy.

3.6. Product Label Redesign

In the proposed rule, applicants must submit a sample product label that includes the manufacture and expiration date, the storage conditions, and the mandatory disclaimer language. Producers must not only change the description on the label on the physical product, but also the description on any promotional material, websites, and other presentation forms. The RIA includes the social cost of submitting the sample label in its overall producer cost estimates.

EPA has estimated the social costs of mandatory labeling and labeling changes in multiple rulemakings.[62] The social costs include the one-time labor and capital costs to craft the new label design, any on-going incremental costs to produce the new label, and costs to digitize the information for electronic media.

---

[62] See, for example, U.S. Environmental Protection Agency, *Final Technical Support Document, Fuel Economy Labeling of Motor Vehicles: Revisions to Improve Calculation of Fuel Economy Estimates*, EPA420-R-06-017, December 2006.

3.6.1. Estimated Social Costs

We include additional labor hours to account for the changes to a producer's website and marketing materials. Table 3-4 shows the labor costs for this requirement. We add $500 for each producer in capital and material costs to create the new label.

3.6.2. Recommendation

In any final rulemaking RIA, EPA should draw upon other EPA analyses to estimate the labor hours and capital cost requirements to redesign labels and marketing materials.

3.7. Accredited Laboratory Requirement

The proposed rule requires test data be generated from an accredited laboratory. In the baseline, companies could use any laboratory or generate the information in their own laboratories. While the RIA states that it gathered costs from laboratories to conduct the tests, it is unclear whether this cost information is from accredited labs.

3.7.1. Estimated Social Costs

If the RIA data is from accredited labs, then the costs of this requirement is included in the test costs used in the RIA. If it is not, then the RIA's costs for each test is likely underestimated.

3.7.2. Recommendation

In any final rule, the accompanying RIA should disclose the sources of its information so that policy officials and the public can evaluate the incremental social benefits and social costs of this provision as required by the Executive orders on regulatory review.

SECTION 4. THE RIA'S SOCIAL BENEFIT DESCRIPTION IS INACCURATE AND DOES NOT COMPLY WITH EPA'S REGULATORY ANALYSIS REQUIREMENTS

Fundamentally, the RIA fails to comply with the Executive orders on regulatory review because it does not quantify the potential social benefits either in dollars or in any other metric.[63]

Even more troubling, the RIA lists social benefits that are irrelevant to this rule and, if applicable at all, are actually social costs. The RIA lists qualitative benefits from avoiding oil spills such as lost tourism revenue and enjoyment. However, this rulemaking has the potential for aggravating the potential damages from oil spills. To the degree this rulemaking reduces chemical and biological agent availability and innovation, the nation will have less tools available to fight oil spill damage. A possible, but hopefully remote, outcome of this rule is that future oil spill damages would be more severe than they would be if the rule did not occur. Therefore, the potential social costs from oil spills should be considered, if at all, as a social cost of this rulemaking, not a benefit.

The RIA also does not quantify the marginal social benefits from each provision and each regulatory option. Under Circular A-4, agencies are required to estimate the marginal social costs and benefits for each regulatory provision.[64] Since this rulemaking proposes multiple changes to Subpart J, the public and policy officials cannot determine which provisions have net social benefits and which provision provides the most social benefits.

As discussed in Section 1, the other fundamental problem is that the RIA does not have a consistent baseline and post-regulatory alternative to allow a consistent measurement of social benefits. We present our recommended post-regulatory scenario in Section 5.

Recommendation. The RIA does not comply with the basic requirements of a social benefit estimate. First, it must define clearly what the social benefits are from this rulemaking and describe the real social goods that increase from the baseline to the post-regulation scenario. Second, an RIA for any final rulemaking must attempt to quantify the incremental amount of these social goods that can be attributed to this rulemaking and to the specific provisions of the rulemaking that will generate these social goods. Finally, EPA must use the established literature to value the gains, if any, in ecological services from the rulemaking.

---

[63] OMB, Circular A-4, pg. 27.

[64] OMB, Circular A-4, pg. 7.

SECTION 5. TOTAL SOCIAL COSTS

5.1. POST-MARKET CONDITIONS

As discussed in Section 1, EPA's economic analysis guidelines emphasize the need for a clear and consistent market baseline and description of post-regulation market conditions. This guidance is especially relevant for this rulemaking because of the interaction of the requirements, the effect on regulated parties' behavior, and the ultimate social cost of the rulemaking.

This section describes a potential sequence of actions flowing from EPA's promulgation of the final rule. The social cost of these actions, and the time they occur, is the structure of our social cost estimates:

- In year 1, EPA promulgates the final rule.
- In year 1 and 2, existing products remain on the market. At the end of year 2, 13 existing products do not submit testing data due to high costs. The value of 13 comes from the results of the economic impact analysis in Section 6. Therefore, the number of existing submitted application is 13 less than the baseline. It is likely that these 13 products include the products banned due to the NP and NPE formulation ban.[65]
- Starting in year 1 and continuing, the rate of new product applications falls from 10 per year to 7 due to increased costs and market barriers
- In year 3, 13 new product applications are submitted to fill the baseline market demand.
- In years 1-3, 64 expired product applications come as suppliers adjust their inventory. We assume 24 in year 1 and 20 each in years 2 and 3.
- One new application appears each year for product reformulation.

[65] In other words, the social costs of the product loss from the banned products are estimated. However, we assume that for the one or two potential products subject to the ban, only one new product is added in the future.

Table 5-1. Pace of Product Applications

	Year						
	1	2	3	4	5	6	7
Baseline							
Existing Products	109						
Annual New Products	10	10	10	10	10	10	10
New Estimate							
Existing Products	59	27					
Expired Products	24	20	20				
Annual New Products/New Formulations	7	8	8	21	8	8	8
Total	**90**	**55**	**28**	**21**	**8**	**8**	**8**

5.2. ADDITIONAL SOCIAL COSTS

5.2.1. Additional Social Costs from this Analysis

Based on the information in Table 5-1, we can integrate the social cost estimates for the different provisions of the rule. Table 5-2 gives the net present value and annualized social costs for the provisions with estimates in this analysis. As in Table 5-1, the social cost for testing includes the costs for expired products, for new products, for retesting of existing products, and for impact of existing products dropping out of the market.

Table 5-2. Additional Social Costs of the Proposal

	NPV at 7% ($)	Annualized Cost over 20 years at 7% ($)
Product Loss Costs	4,000,000-7,300,000	380,000-720,000
Product Testing Costs	5,300,000[66]	500,000
Stranded Capital/Stockpile Value Loss	1,000,000-1,250,000	90,000-120,000
Label	180,000	20,000

[66] This number is the net present value of the weighted annual testing cost multiplied by the number of products per year that is given in Table 5-1. The weighted annual testing cost is that year's mix of dispersant, solidifiers, surface washing, and bioremediation products that submit testing information. For existing products, the each yearly mix of different product types is proportional to the number of each type on Subpart J and the number of each type subtracted/added to the additional testing cost. As discussed in Table 2-2, different product types also have a different frequency of expired product testing. This proportion thus changes the number of each product type tested per year and thus the weighted annual testing cost.

Recovery Costs	1,700,000	160,000
Monitoring Costs	11,000,000	1,000,000
Preauthorization Costs	200,000	20,000
EPA Costs	800,000	80,000

Totals[67]	24,000,000-27,000,000	2,300,000 --2,600,000

5.2.2. **Other Costs from the RIA**

The RIA included social costs estimates for other proposed requirements that are not re-estimated in this analysis. The RIA estimates the costs for some sorbent manufacturers to submit technical data to be considered on a Sorbent Product List. The RIA estimates the annualized cost to be approximately $15,000. Adding this provision to the costs in Table 5-2 does not materially change the social cost estimate.

[67] Throughout this report, totals and summaries may be different due to rounding. Reflecting the likely precision of these estimates, figures are presented to two significant digits or less.

SECTION 6. THE RIA UNDERESTIMATES THE SMALL BUSINESS IMPACT

The RIA's methodology underestimates the rule's economic impact on small businesses. The proposed rulemaking may have a substantial effect on a significant number of small businesses in the oil spill response product market. EPA should evaluate whether it must comply the procedural and other analytic requirements of the Small Business Regulatory Enforcement Fairness Act (SBREFA).

EPA's methodology underestimates the economic impact in two principal ways. First, as discussed above, it underestimates the direct labor and capital costs to comply with the rule. Second, it underestimates the cost of capital in at least two ways: (1) by assuming owners can finance testing requirements over a longer time period than is likely; and, (2) by underestimating the cost of capital for small businesses. Each of these issues is discussed below.

First, firms producing existing listed products only have two years to reapply and to resubmit the newly-required information. Yet, the RIA annualizes a firm's costs over a 20 year period. It is highly unlikely that a small business could borrow funds over a 20 year period for a product that may only have a limited market for two years. Nor would rational business owners with high opportunity costs for capital tie up their capital for such a long time period. A more realistic financing period is two years.

Second, as EPA's economic guidelines state for economic impact analyses, EPA should use the private cost of capital for small businesses.[68] EPA uses the social cost of capital established by OMB. However, due to the increased loss risk, capital lending institutions or capital investors charge higher effective interest rates for loans to small businesses. The Federal Reserve conducts routine survey of small business lending conditions.[69] In recent months, they have found completed, Small Business Administration-backed small business loans at an interest rate of between 5.1 and 5.6 percent. However, the average effective borrowing rate across all small businesses is much higher. As firms report, if they do not qualify for commercial credit, they use instruments with higher interest rates such as credit cards, trade credit, or debt consolidation. The average effective borrowing rate across all small businesses and all credit needs is substantially greater than seven percent.

We present an alternative estimate of economic impact to small business as an illustration of how large the impacts are likely to be. Table 6-1 shows the testing and the labor costs for existing producers to comply with the proposed rule using different discount rates and annualization periods.

---

[68] EPA, *Guidelines*, pg. 9-16.

[69] Federal Reserve Banks of New York, Atlanta, Cleveland and Philadelphia, *Joint Small Business Credit Survey Report, 2014*, February 2015.

Table 6-1. Annualized Compliance Costs for New Testing Requirements, RIA Estimate and Revised Estimate

	Testing Costs	Estimated Labor Costs	RIA's Total Costs	Estimated Total Costs	Annualized at 7% over 20 Years	Annualized at 7% over 5 Years	Annualized at 7% over 2 Years
Dispersants	$13,050	$10,398	$14,240	$23,448	$1,344	$3,473	$12,969
Bioremediation	$31,800	$7,728	$14,042	$39,528	$1,325	$3,425	$21,863
Solidifiers,	$10,300	$6,412	$5,986	$16,712	$565	$1,460	$9,243
Surface Washing	$10,300	$5,077	$5,880	$15,377	$555	$1,434	$8,505

Table 6-2 replicates Exhibit 7-1 of the RIA to present the testing and application costs as a percentage of the firm's annual sales. For economic impact analyses, if a regulation's cost to a firm is three percent of its revenue or more, the general conclusion is that the firm is at risk of closure.[70] The RIA reviewed 30 of the 35 small businesses and found that none exceeded the three percent significant impact threshold. However, using a more realistic financing period and more realistic estimates of costs, 43 percent (13/30) of the firms would face compliance costs greater than three percent of their annual 2011 sales. We recognize that Table 3 uses 2014 values for labor costs and 2011 data for revenue. In any final rule, EPA should update the revenue estimates and recalculate the economic impact using costs and financing options that reflect market conditions.

[70] U.S. Small Business Administration, *Guide for Government Agencies How to Comply with the Regulatory Flexibility Act*, May 2012. See U.S. EPA, *Final Guidance for EPA Rulewriters: Regulatory Flexibility Act as amended by the Small Business Regulatory Enforcement Fairness Act*, November 2006.

Table 6-2. Economic Impact on Small Businesses

Company	Number of Employees	Annual Revenue	Product Type	Annualized Cost	Pct of Revenue
1	1	$ 62,000	Solidifiers	$9,243	14.9%
2	1	$ 1,000,000	Surface Washing Agent	$8,505	0.9%
3	1	$ 160,000	Surface Washing Agent	$8,505	5.3%
4	2	$ 2,500,000	Bioremediation Agent	$21,863	0.9%
5	2	$ 120,000	Solidifiers	$9,243	7.7%
6	2	$ 200,000	Solidifiers	$9,243	4.6%
7	2	$ 30,000	Solidifiers	$9,243	30.8%
8	2	$ 10,000,000	Solidifiers	$9,243	0.1%
9	2	$ 120,000	Surface Washing Agent	$8,505	7.1%
10	3	$ 280,000	Surface Washing Agent	$8,505	3.0%
11	3	$ 1,300,000	Surface Washing Agent	$8,505	0.7%
12	3	$ 150,000	Surface Washing Agent	$8,505	5.7%
13	3	$ 5,000,000	Surface Washing Agent	$8,505	0.2%
14	4	$ 559,000	Bioremediation Agent	$21,863	3.9%
15	4	$ 1,000,000	Dispersant(2) & Surface Washing Agent	$34,442.26	3.4%
16	4	$ 730,000	Solidifiers	$9,243	1.3%
17	4	$ 500,000	Surface Washing Agent	$8,505	1.7%
18	4	$ 187,000	Surface Washing Agent	$8,505	4.5%
19	4	$ 350,000	Surface Washing Agent	$8,505	2.4%
20	5	$ 5,000,000	Bioremediation Agent	$21,863	0.4%
21	5	$ 290,000	Bioremediation Agent	$21,863	7.5%
22	6	$ 120,000	Bioremediation Agent	$21,863	18.2%
23	6	$ 15,000,000	Dispersant(1) & Surface Washing Agent	$21,473	0.1%
24	6	$ 500,000	Surface Washing Agent	$8,505	1.7%
25	6	$ 5,000,000	Surface Washing Agent	$8,505	0.2%
26	7	$ 660,000	Surface Washing Agent	$8,505	1.3%
27	8	$ 3,054,214	Bioremediation Agent	$21,863	0.7%
28	8	$ 2,500,000	Surface Washing Agent	$8,505	0.3%
29	8	$ 1,500,000	Surface Washing Agent	$8,505	0.6%
30	9	$ 2,500,000	Surface Washing Agent	$8,505	0.3%

ATTACHMENT: SHELF LIFE OF LISTED AGENTS[71]

Product	Type	Shelf Life	Assumed Shelf Life (years)
AGROREMED (see SPILLREMED (MARINE)®)	Bioremediation Agent	one year	1
BILGEREMED (see SPILLREMED (MARINE)®)	Bioremediation Agent	one year	1
HYDROREMED (see SPILLREMED (MARINE)®)	Bioremediation Agent	one year	1
INIPOL EAP 22	Bioremediation Agent	one year	1
MUNOX SR®	Bioremediation Agent	over one year when stored at temperatures from 35°F to 95°F	1
OILCLEAN w/ACTIVATOR (see PRO-ACT)	Bioremediation Agent	one year	1
PRISTINE SEA II	Bioremediation Agent	As a dry bacterial blend, the shelf life is 1 year, and as a liquid bacterial mixture, the shelf life is 6 months	1
PRO-ACT	Bioremediation Agent	One year	1
SPILLREMED (INDUSTRIAL)	Bioremediation Agent	one year	1
VAPORREMED (see SPILLREMED (MARINE)®)	Bioremediation Agent	one year	1
BILGE CLEAR (see S-200)	Bioremediation Agent	1½ years if kept in the unopened original container	1.5
NANOBITE (see S-200)	Bioremediation Agent	1½ years	1.5
OIL GONE EASY (see S-200)	Bioremediation Agent	1½ years if kept in the unopened original container	1.5
S-200	Bioremediation Agent	1½ years	1.5
S-200C (see S-200)	Bioremediation Agent	1½ years	1.5

[71] Information compiled from individual products listed on schedule as of March, 2015. http://www2.epa.gov/emergency-response/alphabetical-list-ncp-product-schedule-products-available-use-during-oil-spill.

S-200 OIL CLEAN (see S-200)	Bioremediation Agent	1½ years	1.5
S-200 OIL GONE (see S-200)	Bioremediation Agent	1½ years	1.5
SHEENCLEAN (see S-200)	Bioremediation Agent	1½ years	1.5
Z-11 (see S-200)	Bioremediation Agent	1½ years	1.5
BIO-REGEN HYDROCARBON (see SOIL RX)	Bioremediation Agent	Shelf life exceeds 2 years when properly stored in the unopened original container	2
BIOREM-2000 OIL DIGESTER™	Bioremediation Agent	Two years when stored within the storage temperature range in the original container	2
BIOREM-2000 SC (see BIOREM-2000 OIL DIGESTER™)	Bioremediation Agent	Two years when stored within the storage temperature range in the original container	2
JE1058BS	Bioremediation Agent	2 years if stored in a cool dry area	2
REMEDIADE™	Bioremediation Agent	unopened is 2 years	2
SOIL RX	Bioremediation Agent	two years	2
SP 7010 (see REMEDIADE™)	Bioremediation Agent	two years	2
SUMP SAFE BIO-RECLAIM	Bioremediation Agent	The material must be used within 24-48 hours of constitution of the powdered bacteria portion in water. The dry material must be kept at -20°C and is stable for two years at this temperature. Once sent to the field, the material may be stored on ice for up to two weeks prior to constitution	2
SYSTEM E.T. 20 (formerly MCW.B 20)	Bioremediation Agent	2 years if maintained at 4ºC (39ºF)	2
WASTE AWAY®	Bioremediation Agent	Two years	2
WMI-2000	Bioremediation Agent	2 years if stored at ambient temperatures	2
B&S INDUSTRIAL (see STEP ONE)	Bioremediation Agent	Over 3 years	3
BET BIOPETRO (formerly BET BIOPETRO HEAVY)	Bioremediation Agent	More than 3 years in unopened original shipping container, stored in cool dry area	3
BIOWORLD BIOREMEDIATION HYDROCARBON TREATMENT PRODUCTS	Bioremediation Agent	exceeds 3 years when stored properly in cool, dry place out of direct sun light	3
SHAMANTRA BIO (see SHAMANTRA GREEN)	Bioremediation Agent	3 years when stored in sealed silos, polydrums, poly bags or totes	3
SHAMANTRA GREEN	Bioremediation Agent	3 years when stored in sealed silos, polydrums, poly bags or totes	3
STEP ONE	Bioremediation Agent	Over 3 years	3

VB591™, VB997™, BINUTRIX®	Bioremediation Agent	three years	3
ACT TERRA FIRMA	Bioremediation Agent	If kept in a sealed container with desiccant bag the shelf life is 5 years	5
ACT-TF (see ACT TERRA FIRMA)	Bioremediation Agent	If kept in a sealed container with desiccant bag the shelf life is 5 years	5
DRYLET™ MB BIOREMEDIATION	Bioremediation Agent	Minimum 5 years, with proper storage, in original packaging. Freezing does not harm shelf life; however, extreme heat (over 180°F) for long periods of time can shorten shelf life	5
DUALZORB®	Bioremediation Agent	unopened product is 5 years if not exposed to weather or direct sunlight	5
ERGOFIT MICRO MIX AQUA	Bioremediation Agent	5 years	5
LAND AND SEA RESTORATION	Bioremediation Agent	More than 5 years in unopened original shipping container, store in a cool, dry place	5
MICROSORB SC (see OPPENHEIMER FORMULA)	Bioremediation Agent	5 years	5
OIL SPILL EATER II	Bioremediation Agent	5 years	5
OPPENHEIMER FORMULA	Bioremediation Agent	5 years	5
The OPPENHEIMER FORMULA I (see OPPENHEIMER FORMULA)	Bioremediation Agent	5 year	5
TRAILZORB (see DUALZORB®)	Bioremediation Agent	5 years if not exposed to weather or direct sunlight	5
WHITZORB (see DUALZORB®)	Bioremediation Agent	unopened product is 5 years if not exposed to weather or direct sunlight	5
MICRO-BLAZE®	Bioremediation Agent	Minimum 10 years	10
SUPERSPERSE™ WAO2500	Dispersant	one year	1
MARINE D-BLUE CLEAN™	Dispersant	2 years, if unopened	2
NOKOMIS 3-AA	Dispersant	two years	2
FFT-SOLUTION™	Dispersant	5 years	5
NEOS AB3000	Dispersant	five years	5
MARE CLEAN 200 (formerly MARE CLEAN 505)	Dispersant	10 years when stored indoors	10
NOKOMIS 3-F4	Dispersant	15 years or more if stored correctly in plastic drums	15
ACCELL CLEAN® DWD	Dispersant	unopened drums of ACCELL CLEAN® DWD is unlimited	20

BIODISPERS (formerly PETROBIODISPERS)	Dispersant	unlimited	20
COREXIT® EC9500A (formerly COREXIT 9500)	Dispersant	The shelf life of unopened drums of COREXIT® EC9500A is unlimited	20
COREXIT® EC9500B	Dispersant	The shelf life of unopened drums of COREXIT® EC9500B is potentially unlimited when containers remain capped and sealed to prevent contamination and evaporation of solvents	20
COREXIT® EC9527A (formerly COREXIT 9527)	Dispersant	The shelf life of unopened drums of COREXIT® EC9580A is unlimited	20
DISPERSIT SPC 1000™	Dispersant	The shelf life of Dispersit SPC 1000™ is unlimited in unopened containers	20
FINASOL® OSR 52	Dispersant	unlimited when the containers remain capped and sealed	20
JD-109	Dispersant	unlimited	20
JD-2000™	Dispersant	unlimited	20
SAF-RON GOLD	Dispersant	unlimited in unopened containers	20
SEA BRAT #4	Dispersant	Indefinite when stored properly	20
SEACARE ECOSPERSE 52 (see FINASOL® OSR 52)	Dispersant	potentially unlimited when the containers remain capped and sealed to prevent contamination and evaporation of solvents, and are stored in a place with stable temperatures and are unexposed to direct sunlight	20
SEACARE E.P.A. (see DISPERSIT SPC 1000™)	Dispersant	unlimited in unopened containers	20
SF-GOLD DISPERSANT (see SAF-RON GOLD)	Dispersant	unlimited	20
ZI-400	Dispersant	Unlimited in sealed polydrums of totes	20
ZI-400 OIL SPILL DISPERSANT (see ZI-400)	Dispersant	Unlimited in sealed polydrums of totes	20
MARI-ZYME (see ZYME-FLOW)	Miscellaneous Oil Spill Control Agent – MOSCA	1 year minimum	1
UNITED 658 PETRO-ZYME (see ZYME-FLOW)	Miscellaneous Oil Spill Control Agent – MOSCA	1 year minimum	1
ZYME-FLOW	Miscellaneous Oil Spill Control Agent – MOSCA	1 year minimum	1
ZYME-TREAT (see ZYME-FLOW)	Miscellaneous Oil Spill Control Agent – MOSCA	1 year minimum	1
PX 700™	Miscellaneous Oil Spill Control Agent – MOSCA	Two years	2

NORSOREX® APX	Miscellaneous Oil Spill Control Agent – MOSCA	3 years from date of production	3
ALSOCUP	Miscellaneous Oil Spill Control Agent – MOSCA	five years	5
CIAGENT (formerly CI AGENT, CHEAP INSURANCE, and PETRO-CAPTURE)	Miscellaneous Oil Spill Control Agent – MOSCA	5 years, if stored in cool dry area, away from direct sunlight	5
ELASTOL	Miscellaneous Oil Spill Control Agent – MOSCA	5 years when stored at temperatures below 150ºF	5
LIQUID ELASTOL (see ELASTOL)	Miscellaneous Oil Spill Control Agent – MOSCA	5 years when stored at temperatures below 150ºF	5
OIL BOND®	Miscellaneous Oil Spill Control Agent – MOSCA	5 years	5
OPFLEX®	Miscellaneous Oil Spill Control Agent – MOSCA	5 years	5
SEPARATE (see ELASTOL)	Miscellaneous Oil Spill Control Agent – MOSCA	5 years	5
PES-51	Miscellaneous Oil Spill Control Agent – MOSCA	6 years (unopened drum), 1 year (opened drum)	6
GELCO 200	Miscellaneous Oil Spill Control Agent – MOSCA	10 years when stored in dry, cool area out of sunlight	10
AQUA N-CAP™ POLYMER (see OIL SOLUTIONS POWDER)	Miscellaneous Oil Spill Control Agent – MOSCA	Not Limited	20
OIL SOLUTIONS POWDER	Miscellaneous Oil Spill Control Agent – MOSCA	Not limited	20
RAPIDGRAB 2000™	Miscellaneous Oil Spill Control Agent – MOSCA	unlimited	20
WASTE-SET #3200®	Miscellaneous Oil Spill Control Agent – MOSCA	unlimited	20
WASTE-SET #3400®	Miscellaneous Oil Spill Control Agent – MOSCA	unlimited	20
SILTECH OP-40	Surface Collecting Agent	three years	3
THICKSLICK 6535	Surface Collecting Agent	three years	3
CLEAN SPLIT (see SPLIT DECISION SC)	Surface Washing Agent	one year	1

DUO-SPLIT (see SPLIT DECISION SC)	Surface Washing Agent	one year	1
GREEN TECHNOLOGIES SOLUTIONS-OIL RECOVERY (GTS-OR)	Surface Washing Agent	One year minimum when stored between 50°F and 100°F	1
SPLIT DECISION SC (formerly SPLIT DECISION)	Surface Washing Agent	one year	1
TXCHEM HE-1000™	Surface Washing Agent	One year in a sealed container	1
AQUACLEAN	Surface Washing Agent	18 months if stored between 50ºF and 104ºF, and away from acids	1.5
BIOGRASS® EXTRA	Surface Washing Agent	Two years minimum	2
CN-110	Surface Washing Agent	2 years	2
CORIBA 700 ER (see CORIBA 700 SR)	Surface Washing Agent	Two years unopened minimum	2
CORIBA 700 OS (see CORIBA 700 SR)	Surface Washing Agent	Two years unopened minimum	2
CORIBA 700 SR	Surface Washing Agent	Two years unopened minimum	2
CORIBA 713 ER (see CORIBA 713 SR)	Surface Washing Agent	Two years unopened minimum	2
CORIBA 713 OS (see CORIBA 713 SR)	Surface Washing Agent	Two years unopened minimum	2
CORIBA 713 SR	Surface Washing Agent	Two years unopened minimum	2
DE-SOLV-IT CLEAN AWAY APC SUPER CONCENTRATE	Surface Washing Agent	Two years in sealed drums or totes	2
DE-SOLV-IT INDUSTRIAL FORMULA	Surface Washing Agent	Two years in sealed polydrums or totes	2
DO-ALL #18	Surface Washing Agent	at least two years	2
ECOVOOM-MARINE (see JEP-MARINE CLEAN)	Surface Washing Agent	minimum 2 years	2
ETHOS CLEAN	Surface Washing Agent	2 years in a sealed (unopened) container (tote, drum, pail) as delivered. 1 year in an opened container).	2
JEP-MARINE CLEAN	Surface Washing Agent	minimum 2 years	2
MARINE GREEN CLEAN™	Surface Washing Agent	2 years	2
MARINE GREEN CLEAN PLUS™	Surface Washing Agent	2 years	2

NONTOX™	Surface Washing Agent	minimum of two years	2
OSR-10	Surface Washing Agent	2 years in a sealed (unopened) container (tote, drum, pail)	2
PROCLEANS	Surface Washing Agent	2 years at recommended temperatures if unopened	2
SOC 10	Surface Washing Agent	two years	2
SUPERALL #38 (see TOPSALL #30)	Surface Washing Agent	two years	2
TOPSALL #30	Surface Washing Agent	two years	2
TULXA	Surface Washing Agent	Two years if stored in dry, fresh environment	2
EO ALL PURPOSE SOAP-LAVENDER	Surface Washing Agent	Three years	3
FIREMAN'S BRAND SPILLCLEAN (see SPILLCLEAN)	Surface Washing Agent	3 years. Avoid extreme heat and store in a dry, cool area	3
SPILLCLEAN or SPILLCLEAN ["Concentrate"]	Surface Washing Agent	three years	3
CLEAN GREEN	Surface Washing Agent	5 years in sealed polydrums or totes	5
CLEANGREEN® PLANET WASH (see CLEAN GREEN)	Surface Washing Agent	5 years in sealed polydrums or totes	5
MICRO CLEAN (see NATURE'S WAY HS)	Surface Washing Agent	five years	5
NATURE'S WAY HS	Surface Washing Agent	five years	5
NATURE'S WAY PC (see NATURE'S WAY HS)	Surface Washing Agent	five years	5
POWERCLEAN (see NATURE'S WAY HS)	Surface Washing Agent	five years	5
PREMIER 99	Surface Washing Agent	5 years	5
SAFE KLEEN	Surface Washing Agent	Five years if stored in tightly closed containers under dry conditions within temperature range	5
SC-1000™	Surface Washing Agent	Minimum of 5 years	5
SIMPLE GREEN®2013 Reformulation	Surface Washing Agent	five years	5
G-CLEAN OSC-1809	Surface Washing Agent	Five to ten years in sealed polydrums or totes	7.5
OIL SPILL CLEANUP (see G-CLEAN OSC-1809)	Surface Washing Agent	Five to ten years in sealed polydrums or totes	7.5
DYNAMIC GREEN™	Surface Washing Agent	6-10 years in sealed poly drums or totes	8

BIOSOLVE® HYDROCARBON MITIGATION™ AGENT	Surface Washing Agent	10+ year shelf life if unopened	10
CYTOSOL	Surface Washing Agent	Closed container: 10 years in a dry environment. Open container: 1 year in a warm, humid environment. The product does not deteriorate appreciably over time, but will grow bacteria if water condensation accumulates in the container.	10
F-500	Surface Washing Agent	15 years when stored between 35ºF - 130ºF in unopened containers	15
NOKOMIS 5-W	Surface Washing Agent	15 years or more if stored correctly in plastic drums	15
ACCELL CLEAN® SWA	Surface Washing Agent	unopened drums of ACCELL CLEAN® SWA is unlimited	20
ALL PURPOSE CLEANER & REMEDIATOR (see GREEN BEAST™ OIL SPILL & ODOR REMEDIATOR)	Surface Washing Agent	Unlimited in sealed polydrums or totes	20
AWAN PRA OIL FIELD SOLUTION™ (see EPA OIL FIELD SOLUTION™)	Surface Washing Agent	Unlimited in sealed polydrums or totes (as delivered). Avoid direct sunlight.	20
BG-CLEAN™ 401	Surface Washing Agent	unlimited	20
COREXIT® EC9580A (formerly COREXIT 9580 SHORELINE CLEANER)	Surface Washing Agent	unlimited	20
ENVIROCLEAN (formerly ENVIRO CLEAN 165)	Surface Washing Agent	Unlimited if unopened	20
ENVIRONMENTAL 1 CRUDE OIL CLEANER	Surface Washing Agent	Unlimited in sealed polydrums or totes	20
ENVIRONMENTAL 1 WASHING AGENT (see ENVIRONMENTAL 1 CRUDE OIL CLEANER)	Surface Washing Agent	Unlimited in sealed polydrums or totes	20
EPA OIL FIELD SOLUTION™	Surface Washing Agent	Unlimited in sealed polydrums or totes (as delivered). Avoid direct sunlight.	20
E-SAFE©	Surface Washing Agent	Unlimited if left in unopened containers stored at 40º - 110ºF and away from direct sunlight	20
GLOBAL ENVIRONMENTAL CLEANER™ (see EPA OIL FIELD SOLUTION™)	Surface Washing Agent	Unlimited in sealed polydrums or totes	20
GOLD CREW SW	Surface Washing Agent	20 years (unopened)	20

GREEN BEAST OIL SPILL & ODOR REMEDIATOR	Surface Washing Agent	Unlimited in sealed polydrums or totes	20
GREEN BEAST WASHING AGENT (see GREEN BEAST OIL SPILL & ODOR REMEDIATOR	Surface Washing Agent	Unlimited in sealed polydrums or totes	20
HYDRO-CLEAN™ (see EPA OIL FIELD SOLUTION™)	Surface Washing Agent	Unlimited in sealed polydrums or totes	20
NALE-IT	Surface Washing Agent	Indefinite	20
NATURAMA G3 A-5	Surface Washing Agent	unlimited	20
PETRO-CLEAN	Surface Washing Agent	Indefinite when stored properly	20
PETRO-GREEN ADP-7	Surface Washing Agent	indefinite	20
PETROMAX PSC 3	Surface Washing Agent	Unlimited when stored in unopened, sealed 5 gallon containers, 55 gallon drums, polydrums, and totes	20
PETROMAX SOIL CLEANING AND WASHING AGENT (see PETROMAX PSC 3)	Surface Washing Agent	Unlimited when stored in unopened, sealed 5 gallon containers, 55 gallon drums, polydrums, and totes	20
PETROTECH 25	Surface Washing Agent	unlimited shelf-life when maintained in the factory sealed containers and stored within the prescribed temperature limits	20
SANDKLENE 950	Surface Washing Agent	Unlimited in sealed drums or totes	20
SHEEN-MAGIC©	Surface Washing Agent	Unlimited if left in unopened containers stored at 40º - 110ºF and away from direct sunlight	20
SIMPLE GREEN®	Surface Washing Agent	unlimited	20
VERU-SOLVE™ MARINE 200 HP	Surface Washing Agent	Indefinite, product will not degrade over time	20