Final NPDES General Permit for Discharges from New and Existing Sources in the Offshore Subcategory of the Oil and Gas Extraction Point Source Category for the Western Portion of the Outer Continental Shelf of the Gulf of Mexico (GMG290000)

Agency: United States Environmental Protection Agency

Action: Final permit decision and response to comments received on the draft reissued NPDES permit publicly noticed in the Federal Register on July 22, 2022

Date: May 10, 2023

SUBSTANTIAL CHANGES FROM PROPOSED PERMIT:

All changes are discussed in the "Responses to Comments" section below and only significant changes are listed here.

1. Well, heads, pipelines, jumpers, and associated infrastructures connected to the facility are considered part of the host facility even when the infrastructure crosses lease block boundaries.
2. NOI requirements allow for all vessels, to be able to file one valid NOI when performing jobs in the same lease block, if jobs are performed for the same designated operator.
3. Operators who filed under the previous permit have an additional 30 days to submit eNOI, if the system is unavailable during the 60 day renewal period. These operators are covered under the reissued permit for up to 90 days.
4. Only new operators, not covered under the previous permit, can submit temporary NOIs when system is unavailable. Due date and coverage for temporary NOI extended 14 days, after the system becomes available, if the system remains unavailable after 14 days.
5. Removed continuous monitoring language from cooling water intake requirements.
6. Removed the additional requirements for a signed agreement for transfers.
7. Flow rate monitoring for Well Treatment Fluids, Completion Fluids, and Workover Fluids.
8. Characteristic Assessment requirements for Well Treatment Fluids, Completion Fluids, and Workover Fluids have been removed.
9. For Sanitary Waste, all limits must be complied with in the event the Marine Sanitation Device is not properly operating or not operating.
10. Cooling water intake structure operation for New Fixed Facilities that Employ Sea Chests as Intake Structures and New Fixed Facilities that do not employ sea chests as intake structures require development, and implementation of operation and maintenance plans, with reporting requirements for numeric exceedances.
11. All facilities are subject to monitoring requirements if they discharged during said monitoring period, regardless of whether the discharge lasted the full period
12. Methods and/or calculations for estimated flow must be documented.

13. Sample type for oil and grease is grab or composite.
14. The use of other disinfection technologies, including, but not limited to, bio-membrane filtration and ultra-violet light are allowed as substitutes for systems that use chlorine, provided that the MSD is approved by the U.S. Coast Guard and results in equivalent or improved disinfection of the Sanitary Waste stream to that considered in the ELG. TRC monitoring is not required for alternative MSDs that do not use chlorine, when the system is not properly operating or not operating, unless a chlorine based product is used as a backup disinfectant.
15. Operators must flush and capture the materials contained in pipelines, umbilicals, and other equipment prior to disconnection. No releases or discharges of fluid from pipelines, umbilicals, and/or other equipment that have not been fully flushed prior to being disconnected or cut from the facility are authorized under this NPDES permit.
16. Calculation for WET critical dilutions and testing frequencies is based on calendar year.
17. Waiver for the minimum number of samples to be collected for WET tests, should the effluent cease discharging for produced water.
18. For Treatment, Completion, and Workover discharges, acute WET results can be derived from chronic WET test.
19. Compliance schedule for WET acute limits related to Treatment, Completion, and Workover discharges and sample holding time of 72 hours.
20. No approved Alternative Test Procedure (ATP) for WET, however they can be requested at any time following 40 CFR 136.5.
21. 72 hour hold time for WET samples for Chemically Treated Miscellaneous Discharges.
22. For Chemically Treated Miscellaneous Discharges, non-continuous discharges are discharges that occur less than or equal to once per week and last less than 24 hours. These discharges shall be monitored once per discharge.
23. State general permit or state individual permit may be required in addiiton to authorization under this permit.
24. Defines decommissioning and Subsea Cleaning Fluids.
25. 7-day chronic toxicity requirements for Well Treatment Fluids, Completion Fluids, and Workover Fluids has been moved from limitations to monitoring section, to provide clarity that chronic is monitoring only.
26. Free oil language has been updated to reference DMRs and twenty-four hour reporting requirements.
27. Part I.C. reflects Other Limitations, Prohibitions and Discharges not Authorized. Moved Limitations on Coverage section in Part I.A.1 to Part I.C for Prohibitions and Discharges Not Authorized.
28. Permit does not authorize radioactive materials that are under the jurisdiction of the NRC.
29. Miscellaneous Discharges of Water Which Have Been Chemically Treated includes discharges from well operations other than those covered by other sections of Part I.B of the permit.
30. Corrections to the Permit Summary Table. Table is for reference only.

31. Corrected data for Discharge Monitoring Reports (DMRs) and Other Reports must be submitted as soon as the error has been identified but no later than the following quarter. Submittal of corrected data does not excuse any permit violation.
32. If Offshore 24-Hour Reporting Application Portal is not available, an email shall be sent within 24 hours of occurrence of specified violation and electronic report shall be submitted within 14 days of the system becoming available.
33. A facility map that delineates authorized discharge locations and type must be submitted, as an attachment, when filing the eNOI.
34. Lanuage has been updated to specify that new operators are not eligible for coverage and existing operators may not submit new NOI's during the administraive continued period.
35. Updated language to provide clarity that timely updates to "CDX" are required, in lieu of "eNOI".
36. Numeric exceedances of maximum through-screen design intake velocity and dates must also be included on DMRs, for all new facilities required to comply with intake structure monitoring requirements.
37. Once a month temperature monitoring for produced water.

RESPONSES TO COMMENTS:

The EPA received comments from fourteen entities including: 1) the Joint Trades, 2) BP Exploration and Production Inc., 3) Beacon Offshore Energy, 4) Bureau of Safety and Environmental Enforcement - Gulf of Mexico OCS Region, 5) CETCO Energy Services, 6) Transocean Offshore Deepwater Drilling Inc., 7) International Association of Drilling Contractors, 8) Chevron U.S.A. Inc., 9) Shell Exploration & Production Company, 10) Anonymous, 11) Center for Biological Diversity, 12) Helen Kimball-Brooke, 13) Virginia Gomez, and 14) Daniel Gregg. Summaries of those comments and the EPA's responses are discussed below. While most of comments from regulated communities focus on operation requirements, comments from environmental groups mainly focus on regulatory requirements. Therefore, the EPA's responses are addressing the permit conditions first, then other regulatory requirements.

The Joint Trades: The Offshore Operators Committee (OOC), the American Petroleum Institute (API), the National Ocean Industries Association (NOIA) and Louisiana Mid-Continent Oil and Gas Association (LMOGA) (referred to as "the Joint Trades") submitted joint comments. The following 69 comments were provided by the Joint Trades.

Comment 1: [Part I.B.4.b – Produced Water Monitoring Requirements for Toxicity] The Joint Trades recommended revising the permit text as follows: "New discharges must perform initial toxicity tests as required by this permit within three months after discharge begins and continue on the appropriate calendar quarter or calendar year based on the highest monthly discharge rate available". Rationale: Adding the word "discharge" as noted above provides additional clarity.

Response: EPA agrees with the proposed language. The suggested language has been added to the permit.

Comment 2: [Authorization to Discharge Under the National Pollutant Discharge Elimination System] The Joint Trades offered the following suggested revisions to the proposed permit language: "Operators who previously submitted an NOI to be covered under this permit are covered under this reissued permit until 60 days after either the effective date of the reissued permit or the date the eNOI system is available (whichever is later) and must submit a new NOI prior to that date to retain coverage". The Joint Trades requested the additional language to this section of the permit to provide clarity in the event the eNOI system is unavailable. The Joint Trades requested that EPA hold workshops in both Houston and New Orleans for the new eNOI system that are specific to the Region 6 OCS permit and reiterate there be a transitional period to assure the system is fully operational before its use becomes a requirement.

Response: During the previous permit reissuance, EPA was developing a new eNOI system. Since 2018, the system has been regularly available with no more than a seven day interruption in service. EPA fully expects the eNOI system will be fully operational as of the effective date of the permit, however the final permit has been modified to provide a 30 day window, should the eNOI system not be available upon issuance. The cover page second paragraph of the permit has been modified to read "*Operators who previously submitted a NOI to be covered under this permit are covered under this reissued permit until 60 days after the effective date of the reissued permit and must submit a new NOI prior to that date to retain coverage.. Should the eNOI system not be available during this 60 day period, operators may submit the eNOI the latter of 60 days after the effective date of the permit or 30 days from the date the system was restored and are covered by this reissued permit during this period for up to 90 days.*" Similar language revisions have been made in Part I.A.2 regarding eNOI due dates.

Comment 3: [Part I.A.1.b – Limitations on Coverage] The Joint Trades recommended moving Limitations on Coverage list to Part I.C - Other Discharge Limitations. Rationale: Part I.C is the part of the permit where general discharge limitations and prohibitions are described. The limitations described in this proposed section are better aligned for inclusion in Part I.C.

Response: EPA agrees with the comment. Part I.C has been updated to reflect discharges mentioned in limitations on coverage. Limitations on Coverage now reads: "*See Part I.C for prohibitions and discharges not authorized by this permit*" Part I.C. title has been updated to read "*Other Discharge Limitations, Prohibitions and Discharges Not Authorized by this Permit*".

Comment 4: [Part I.A.1.b.iv – Radioactive Materials Under the Jurisdiction of the Nuclear Regulatory Commission (NRC)] The Joint Trades recommended adding the following language to clarify that the NRC require NRC licensees to obtain authorization: "Radioactive Materials Under the Jurisdiction of the Nuclear Regulatory Commission (NRC) not authorized for discharge under an NRC License (if required): Discharge of radioactive materials under the jurisdiction of the NRC are not independently authorized by this permit. NRC licensees ~~Permittees~~ must obtain separate authorization from NRC, if required, in order to include radioactive materials under the jurisdiction of the NRC in discharges authorized by this permit ~~or for any other disposal of such materials~~. Compliance with this limitation must be achieved within

two years after the effective date of the permit." The Joint Trades stated that this is important as third-party vendors hold the NRC license for use of radioactive tracers, not the operators. The Joint Trades further noted that EPA's past consideration of radioactive tracers weighs strongly against an outright prohibition against their discharge. Specifically, during the 2017 permit renewal process, the OOC requested that EPA add the following language, underlined and in red, to the Miscellaneous Discharge section: "Mud, Cuttings, and Cement (including tracers) at the seafloor." EPA accepted OOCs proposed language. The commenter also noted that the radioactive tracers used in fracturing are the same as used in cementing and cited a letter sent to EPA in 2011.

The Joint Trades stated that given EPA's prior determinations, the proppant's small size, the viscous matrix used to convey the proppant, and the expected trivial loss to produced water due to the well bore screen—USEPA should not prohibit discharge of insignificant levels of radioactive tracers; Should EPA intend to prohibit discharge of radioactive tracers, the Joint Trades requested: 1. EPA demonstrate a cost/benefit analysis for requiring a prohibition of the discharge of radioactive tracers. 2. OOC proposes the following language be added to this section of the permit: "Compliance with this limitation must be achieved within two years after the effective date of this permit."

Response: EPA does not have the authority to authorize radioactive discharges that are under the regulation of the NRC and only NRC can provide licenses, as necessary. To provide clarity the permit language has been updated to read "*Discharge of radioactive materials under the jurisdiction of the NRC are not independently authorized by this permit*".

Comment 5: [Part I.A.2- Notice of Intent] The Joint Trades recommended the following revised language: "Once an eNOI has been accepted for coverage a ~~Permitted Feature ID~~ Structure ID number will be assigned." Rationale: The Permitted Feature ID and Structure are synonymous, and the terminology used in the permit should be consistent with the reporting systems.

Response: The eNOI system has been updated to reflect Permitted Feature ID, instead of Structure ID, as the number that is assigned. No change has been made to the permit.

Comment 6: [Part I.A.2- Notice of Intent] The Joint Trades recommended the proposed permit language be modified as follows: "A facility means either an exploratory facility, a development facility, or a production facility as defined in Part II.G of the permit. All well heads, pipelines, jumpers, and associated infrastructure connected to the facility shall be considered parts of the host facility, even where such infrastructure crosses lease block boundaries. For clarification purposes, following conditions apply: Note 1: A separate eNOI is required for each facility, and that eNOI shall include all discharges associated with that facility controlled by the primary operator. Note 2: An eNOI filed for a Mobile Offshore Drilling Unit or ~~drilling~~ vessel is valid for different well ~~drilling~~ jobs within the same lease block ~~from the originally filed location~~ if well ~~drilling~~ jobs are performed for the same designated operator. (Note: eNOI update is required to reflect well locations and associated information.) A separate eNOI is required for well ~~drilling~~ jobs not within the same lease block, and/or if the Mobile Offshore Drilling Unit or ~~drilling~~ vessel moves to a new lease block". Rationale: The recommended revised language provides additional clarity on the types of equipment and infrastructure associated with a host facility and

provides additional context for the regulated community to understand the intent of the permit. In addition, the revised language in Note 2 broadens the types of operations a MODU or vessel may undertake. The term "drilling" does not address well completions, treatment, intervention, or decommissioning operations.

Response: EPA has included the proposed language in the final permit, except "from the originally filed location" has been replaced with "*indicated on the eNOI*" to improve clarity.

Comment 7: [Part I.A.2- Notice of Intent] The Joint Trades offered the following suggested revisions to the proposed permit language: "Operators who filed eNOIs under the previous permit, issued on September 30, 2017, will be authorized to discharge by this reissued permit without submittal of an NOI up to 60 days after either the effective date of the reissued permit or the date the eNOI system is available (whichever is later). Operators must submit a new eNOI within 60 days of the effective date of the reissued permit, to retain coverage after that time.

An email or a written and signed paper NOI mailed to EPA will be accepted as temporary coverage based on the postmark/email date. The temporary NOI is good for 14 days, unless an extension is granted by the Director. Official eNOIs shall be filed within 14 days of submitting a temporary NOI. If the eNOI system remains unavailable, the temporary NOI coverage will be extended to 14 days after the system becomes functional. EPA may deny an NOI within 45 days after the filing. All NOIs shall include the following information:" Rationale: The Joint Trades requested the change in the rare instance where the eNOI system is unavailable for an extended period of time, the permit should contain language to address such a situation. The Joint Trades requested that EPA hold workshops in both Houston and New Orleans for the new eNOI system that are specific to the Region 6 OCS permit and reiterate there be a transitional period to assure the system is fully operational before its use becomes a requirement.

Response: See response to comment 2, regarding eNOI submittal deadlines for permittees covered by the previous permit. Part I.A.2 has been modified to clarify that the temporary NOI provisions apply to new eNOI's filed after the effective date of this permit. Language has modified to read "*For new NOIs for discharges not covered under the previous permit*, *the temporary NOI coverage and extended due date for filing an eNOI is 14 days, unless the eNOI system remains unavailable after 14 days, in which case the temporary NOI coverage and extended eNOI due date will be extended to 14 days after the eNOI system becomes available*."

Comment 8: [Part I.A.2- Notice of Intent] The Joint Trades recommended the proposed permit language in item l) be modified as follows: "l) any other information included in the eNOI to identify the nature and location of each discharge being authorized and any co-permittees, if applicable. ~~For each separate discharge point, the location volume and nature of the discharge.~~" Rationale: This change is recommended because the location, volume and nature of a discharge may change over time. In addition, item f) requires the operator to list the types of discharges (similar to nature of discharge) expected from the facility and item e) requires BSEE Complex ID/API Number and geographic coordinates (location). Not all authorized discharges listed in the permit have limitations or monitoring requirements related to discharge volume. For those permitted discharges that have requirements regarding discharge volume that information will be reported to EPA on an ongoing basis as stipulated by the permit.

Response: The EPA agrees that not all authorized discharges have limitations or monitoring requirements related to discharge volume and that some of the language that has been requested to be removed is duplicative of language in other portions of Part I.A.2 of the permit. As a result, the language has been modified, as requested.

Comment 9: [Part I.A.2- Notice of Intent] The Joint Trades recommended that the link provided by EPA for eNOT/eNOI instructions be functioning prior to the issuance of the final permit.

Response: Comment noted for the record. As the date of permit issuance, the link is currently functioning. In addition, EPA has added a link to instructions on using the Twenty-Four Hour Reporting Portal (https://www.epa.gov/npdes-permits/support-documents-npdes-general-permit-offshore-oil-and-gas-operations-western-gulf).

Comment 10: [Part I.A.4- Transfers Due to Merger and/or Acquisition] The Joint Trades recommended the proposed language in paragraph a) be changed as follows: "a) During the initial term of permit: The surviving company of a merger between two offshore companies shall submit an NOI (or NOIs) prior to taking operational control. The company that will no longer operate shall submit a NOT within 60 days of relinquishing operational control. The company that will no longer operate shall also submit final DMRs within 60 days of their NOT date(s)." Rationale: The proposed language creates unnecessary burden on the regulated community because the information requested in the proposed language is duplicative of the information provided in the NOI. In addition, linking the submission of an NOT for one operator to the submittal of an NOI for another operator ties permit compliance for one operator to another. The operator relinquishing operational control of a facility has no control over whether the company acquiring the facility will submit the required NOI. Therefore, the relinquishing company cannot achieve compliance independently and must rely on the acquiring company. Furthermore, the date that operational control is transferred between two companies is a logical date, negotiated between the two parties, which should drive submission of NOIs and NOTs. In addition, the date of transfer of operational control should also be the date when any non-compliances would begin once the surviving company assumes operational control.

Response: EPA agrees with the proposed language with minor modifications. Final DMRs must be submitted with NOT. Language has been updated as follows: "a) During the initial term of permit: The new or surviving operator shall submit an NOI prior to taking operational control and the old operator shall submit a NOT (for all lease areas/blocks as well as their NPDES permit number) within 60 days of relinquishing operational control. The old operator shall submit final DMRs within 60 days of NOT."

Comment 11: [Part I.A.4- Transfers Due to Merger and/or Acquisition] The Joint Trades recommended striking the proposed language: ~~b) Companies involved in a merger must also submit a written and signed agreement between the companies identifying: the names of the two offshore companies and their assigned NPDES permit number; the agreement between the two companies for the merger; the effective date of the merger; the lease area(s)/block(s) involved in the merger; the surviving company name; the surviving NPDES permit number; and liability. This letter can be emailed to the Offshore Specialist or sent to the address below:~~ Rationale: The

proposed language creates unnecessary burden on the regulated community because the information requested in the proposed language is duplicative of the information provided in the NOI and NOT as listed in section 4.a. Furthermore, the date that operational control is transferred between two companies is a logical date, negotiated between the two parties, which should drive submission of NOIs and NOTs. In addition, the date of transfer of operational control should also be the date when any non-compliances would begin once the surviving company assumes operational control.

Response: Companies are already required to submit the information requested in this section, for approval, when involved in a merger, so that EPA may clearly determine liability in such cases. No change has been made to the permit. See also response to comment number 10.

Comment 12: [Part I.A.4- Transfers Due to Merger and/or Acquisition] The Joint Trades recommended the proposed permit be changed as follows: "c) During any "administratively continued" term of the permit following the indicated expiration date: The new operator shall submit an NOI at least 30 days prior to taking operational control and the old operator shall submit a NOT within 60 days of relinquishing operational control. ~~receiving confirmation that the new permittee has submitted the NOI. The new operator shall submit a written agreement between the new and old permittees concerning the date of the transfer of permit responsibility, coverage, and liability. This letter can be emailed to the Offshore Specialist or sent to the address below:~~" Rationale: The proposed language creates unnecessary burden on the regulated community because the information requested in the proposed language is duplicative of the information provided in the NOI. Furthermore, the date that operational control is transferred between two companies is a logical date, negotiated between the two parties, which should drive submission of NOIs and NOTs. In addition, the date of transfer of operational control should also be the date when any non-compliances would begin once the surviving company assumes operational control.

Response: Companies are already required to submit the information requested in this section, for approval, when involved in mergers, not transfers. The language has been modified to "*The new operator shall submit an NOI at least 30 days prior to taking operational control and the old operator shall submit a NOT within 60 days of relinquishing operational control. The new operator shall submit a written agreement between the new and old permittees concerning the date of the merger of permit responsibility, coverage, and liability*". See also response to comment number 10.

Comment 13: [Part I.A.4- Transfers Due to Merger and/or Acquisition] The Joint Trades recommended that the following text be removed from the permit: "~~NOTE: Each company must collect and report their own samples. Samples from a company transferring coverage cannot be used by the receiving company. Transfer of coverage can be for a single lease area/block of multiple lease areas/blocks. Transfer of coverage during "Administratively Continued" status can only occur when the company who is transferring their coverage obtained that coverage on or before midnight of when the previous permit expired.~~" Rationale: The information listed in the "NOTE" is important for the regulated community to understand. However, the Joint Trades recommend that this information be included in guidance and/or instructions that support implementation of the permit requirements.

Response: The information listed in the note is included to create permit conditions. Requiring each company to have their own samples ensures that the results are representative of the discharge under the new companies' operational procedures. Only existing permit coverage can be transferred, therefore the transferring operator must have had permit coverage prior to the expiration date of the administratively continued permit. To improve clarity on the allowable scope of transfers, "*Transfer of coverage can be for a single lease area/block of multiple lease areas/blocks*" has been moved to the first paragraph under Part I.A.4.

Comment 14: [Part I.A.5 - Continuation of Coverage for Existing Operators After the Permit Expires] The Joint Trades recommended adding the following language: "Note that if the 2022 permit is not reissued or replaced prior to the expiration date, it will be administratively continued in accordance with section 558(c) of the Administrative Procedure Act (see 40 CFR 122.6) and remain in force and effect for operators that were covered prior to its expiration. Operators with existing coverage may continue to submit NOIs during the period the permit is continued. All operators authorized to discharge prior to the expiration date of the 2022 permit will automatically remain covered under the 2022 permit until the earliest of:" Rationale: As proposed, the existing General Permit will be administratively continued for existing facilities if there is a delay, but discharges from new facilities and operations may not be covered under the existing permit (*e.g.,* discharges from new drilling, completion, and abandonment operations and from new oil and natural gas platforms); therefore, those facilities and activities may need to obtain separate coverage for those associated discharges via a lengthy individual permit application. Furthermore, an administrative continuance of the General Permit could result in delays or cancellations of new projects and may further delay delivery of existing and planned energy resources to the market and the American people. To avoid these consequences, the Joint Trades request the addition of the above language clarifying that EPA will continue processing new Notices of Intent for coverage for new lease areas under the administrative continuance until the renewed General Permit becomes effective. This would allow the Agency time to carefully consider all comments and provide permittees the confirmation needed to continue to plan and execute necessary activities. With 15% of U.S. oil production coming from the U.S. Gulf of Mexico, any disruption in that production or future development could be detrimental to an already imbalanced supply and demand market.

Response: Administrative continuance under 40 CFR §122.6 is limited to permittees that are already covered by a permit and have filed a timely reapplication. New operators are not eligible for administrative continuance because they were not permittees at the time the permit expired. In addition, existing operators may not submit NOI's during the administrative continued period. Note that for this general permit a timely reapplication by an administratively continued permittee is considered to be complying with the NOI deadlines contained in the new permit. No change has been made to the permit. The permit has been updated to clarify that new operators are not eligible for coverage during administrative continuance and that existing operators may not submit NOI's during the administrative continued period.

Comment 15: [Part I.B.3.a – Deck Drainage Free Oil Limitations] The Joint Trades recommended revising the last sentence of this paragraph as follows: "The total number of days a sheen is observed must be recorded and reported in accordance with Part II.D.7.c of this

permit." Rationale: Providing a specific reference for reporting increases clarity of the requirement and provides certainty to the regulated community.

Response: EPA agrees with the suggestion and has modified the language to read "*The total number of days a sheen is observed must be recorded and reported on DMRs and in accordance with Part II.D.7.c of this permit*". Language for Produced Water visual sheen has also been updated to reflect this change.

Comment 16: [Part I.B.4.a – Produced Water Toxicity Limitations] The Joint Trades recommended EPA continue to use the language contained in the 2017 permit: "The critical dilution shall be determined using Table 1 in Appendix D of this permit and is based on the highest monthly average discharge rate for the three months prior to the month in which the test sample is collected, discharge pipe diameter, and water depth between the discharge pipe and the bottom." Alternatively, if EPA has rationale for discharge rate to be moved from three months prior to calendar year prior; the Joint Trades requested revisions to the proposed permit language: "The critical dilution to be used for each calendar year ~~shall be determined during the month of December~~ using Table 1 in Appendix D of this permit and is based on the highest estimated monthly flow rate recorded during the previous calendar year ~~12 months~~, discharge pipe diameter, and water depth between the discharge pipe and the bottom. The critical dilution shall be calculated when this permit becomes effective, using the previous calendar year ~~12 months, until recalculated in December and every end of calendar year thereafter.~~" Rationale: The Joint Trades requested rationale from EPA for discharge rate to be moved from three months prior to calendar year prior. If language is moved to calendar year, the Joint Trades requested the language change to this section of the permit to provide clarity. Replacing "12 months" with calendar year will prevent operators from making varying interpretations and will help answer the following questions: "Did EPA intend for a calendar year or rolling 12-month period from month sampled? If this is to be done in December, does the Operator include December since the month is not complete?"

Response: Review of WET data for produced waters during the previous permit cycle revealed several instances where the testing frequency is not being recalculated after initial determination, and the permit language appeared to be confusing to some operators. In order to simplify the recalculation process and ensure clarity on expectations from the Agency, EPA has standardized this process. Frequency is now determined only once every year and used for any produced water WET test during that year. Language in the final permit has been modified to read "*The critical dilution to be used for each calendar year, shall be determined using Table 1 in Appendix D of this permit, and is based on the highest estimated monthly flow rate recorded during the previous calendar year*, *discharge pipe diameter, and water depth between the discharge pipe and the bottom. The critical dilution shall be calculated when this permit becomes effective, using the flow from the previous calendar year".*

Comment 17: [Part I.B.4.b – Produced Water Monitoring Requirements for Oil and Grease] The Joint Trades offered the following suggested revisions to the proposed permit language: "Oil and Grease. Samples for oil and grease monitoring shall be collected and analyzed a minimum of once per month. ~~If a sheen is observed during the required daily monitoring, the operator must record the sheen and assess the cause of the sheen.~~ In addition, a produced water sample

shall be collected, within two (2) hours of when a sheen is observed in the vicinity of the discharge or within two hours after startup of the system if it is shut down following a sheen discovery and analyzed for oil and grease. ~~The operator must keep records of findings and make the record available for inspector's review. The operator must report number of days of sheen observed during the reporting period.~~ Oil and grease samples collected for any sheen event must be included in the monthly average on DMRs." Rationale: The proposed permit contains both a section dedicated to produced water oil and grease limitations and another section for produced water visual sheen requirements. It appears that the intent is to delineate the sampling and analytical component in the oil and grease section while defining the monitoring/recordkeeping obligations related specifically to sheens in the visual sheen section. Since the passages referring to sheen recording, recordkeeping, and cause identification are already included in the visual sheen portion, the Joint Trades recommend removing the duplication from the oil and grease section. The requirement listed in the oil and grease section to collect produced water samples within two (2) hours of observing a sheen is pertinent to the sampling and analytical portion of the produced water requirements and should remain in this section.

Response: The EPA agrees that the language is repetitive. The language has been updated to read "*Samples for oil and grease monitoring shall be collected and analyzed a minimum of once per month. The sample type for all oil and grease monitoring shall be grab or a composite which consists of the arithmetic average of the results of four (4) or more grab samples collected at even intervals during a period of 24-hours or less. The operator must keep records of findings and make the record available for inspector's review. If a sheen is observed during the required daily monitoring, the operator must record the sheen and assess the cause of the sheen. See visual sheen requirements below.*"

Comment 18: [Part I.B.4.b – Produced Water Monitoring Requirements for Toxicity] The Joint Trades recommended maintaining the language contained in the 2017 permit: "Toxicity. The flow used to determine the frequency of toxicity testing shall be the highest monthly average flow for the three months prior to the month in which the test sample is collected." Alternatively, if EPA has rationale for discharge rate to be moved from three months prior to calendar year prior, the Joint Trades requested revisions to the proposed permit language: "Toxicity. Flow must be analyzed at the end of each calendar year ~~(December)~~. The flow used to determine the frequency of toxicity testing for the following calendar year shall be the highest estimated monthly flow rate recorded during the previous calendar year ~~12 months~~. The required frequency of testing shall be determined as follows:" Rationale: The Joint Trades requested rationale from EPA for discharge rate to be moved from three months prior to calendar year prior. If language is moved to calendar year, the Joint Trades requested the language change in this section of the permit to provide clarity. Replacing "12 months" with calendar year will prevent operators from making varying interpretations and will help answer the following questions: "Did EPA intend for a calendar year or rolling 12-month period from month sampled? If this is to be done in December, does the Operator include December since the month is not complete?"

Response: See response to comment number 16. The EPA agrees with the suggestion in regard to analyzing flow at the end of the calendar year and the change has been made as requested.

Comment 19: [Part I.B.4.b – Produced Water Monitoring Requirements for Toxicity] The Joint Trades offered the following suggested revisions to the proposed permit language: "Results of testing for any overlapping monitoring period that were done during the previous permit may also be used to satisfy that monitoring period under the 2022 permit. ~~Flow rate for the purpose of determining the frequency of testing and critical dilution of the next calendar year shall be analyzed in the month of December following issuance of this permit.~~". Rationale: If the permittee qualified to monitor produced water toxicity at the reduced frequency of once per year under the 2017 permit, the required monitoring frequency should remain at once per year as long as the discharge is compliant with the toxicity limits. Determining toxicity testing frequency for new discharges or existing discharges on a reduced monitoring period is covered in those respective sections of the permit. The Joint Trades requested to remove duplicate information from this section.

Response: The EPA agrees with the suggestion and the change has been made as requested.

Comment 20: [Part I.B.4.b – Produced Water Monitoring Requirements for Toxicity] The Joint Trades recommended revising the proposed text as follows: "~~A minimum of three (3)~~ samples shall be collected as grabs or composites. Test Acceptability Criteria and reporting requirements can be found in Part I.D.3 of this permit." Rationale: The Joint Trades commented that EPA has not provided a justification for proposing that a "minimum of three samples" is necessary. Increasing the number of samples and, by default, the volume of samples introduces additional operational complexity; most notably increased weight for transport on helicopters. Larger sample volumes will also increase the amount of laboratory waste for disposal. Increasing waste volumes is in conflict with the regulated community's sustainability principles to reduce wastes as much a practical. As an alternative, if EPA does not accept continuing to allow single grab samples for testing, the Joint Trades recommended that EPA adopt the following sampling methodology:
• Discharges 24 hours or less in duration: 1 grab sample is required.
• Discharges more than 24 hours in duration: 3 aliquots are required captured at evenly space time intervals over a 24 hour period or less.

The Joint Trades recommended including language in the permit that clarifies when sample holding times begin: "As described in the National Pollutant Discharge Elimination System (NPDES) Compliance Inspection Manual, time of sample collection (holding time) begins when the last aliquot is dispensed into the composite sample container."

Response: The requirement to collect a minimum of three (3) samples is part of the methods for marine chronic WET testing (Short Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Marine and Estuarine Organisms, October 2022, or EPA-821-R-02-014). There is no flexibility on the number of samples to be collected, but there is flexibility offered on how they are collected. A single grab would be acceptable in the case the effluent ceases to discharge abruptly, and the test has been initiated. The final permit includes this clarification and incorporates the suggestions, granted the 24 hour period is representative of the discharge throughout the testing period. No composite is necessary, grabs are adequate.

Additionally, if shipping encounters or constraints are encountered, the test may be renewed and finished with the sample received for set up.

Comment 21: [Part I.B.4.b – Produced Water Monitoring Requirements for Visual Sheen] The Joint Trades offered the following suggested revisions to the proposed permit language: "The permittee shall monitor free oil using the visual sheen test method on the surface of the receiving water. Monitoring shall be performed daily when discharging, during conditions when observation of a sheen on the surface of the receiving water is possible in the vicinity of the discharge, and when the facility is manned. If a sheen is observed in the course of required daily monitoring, or at any other time, the Operator must record the sheen and assess the cause of sheen. ~~In addition, a produced water sample shall be collected, within two (2) hours of when a sheen is observed in the vicinity of the discharge or within two hours after startup of the system if it is shut down following a sheen discovery and analyzed for oil and grease. The sample type for all oil and grease monitoring shall be grab or a composite which consists of the arithmetic average of the results of four (4) or more grab samples collected at even intervals during a period of 24- hours or less.~~ The operator must keep records of findings and make the record available for inspector's review. The operator must report total number of days of sheen observed during the reporting period." Rationale: The proposed permit contains sections dedicated to oil and grease and another for Visual Sheen. It appears that the intent is to delineate the sampling and analytical component in the oil and grease section while defining the visual monitoring/recordkeeping obligations related specifically to sheens in the visual sheen section. Since the passage referring to collection of produced water samples within two (2) hours of observing a sheen is already included in the oil and grease section, the Joint Trades recommend removing the duplication from the visual sheen section.

Response: See Response to Comment 17. The Visual Sheen sentence referring to collection of produced water samples within two (2) hours of observing a sheen has been removed from the Oil and Grease section. No further change has been made to the permit.

Comment 22: [Part I.B.6.a - Well Treatment Fluids, Completion Fluids, and Workover Fluids (TCW fluids) Limitations] The Joint Trades recommended revising the last sentence of this paragraph as follows: "The total number of days a sheen is observed must be recorded and reported in accordance with Part II.D.7.c of this permit." Rationale: Providing a specific reference for reporting increases clarity of the requirement and provides certainty to the regulated community.

Response: EPA agrees with the suggestion and has modified the language to read "*The total number of days a sheen is observed must be recorded and reported on DMRs and in accordance with Part II.D.7.c of this permit*".

Comment 23: [Part I.B.6.a.1.a - Well Treatment Fluids, Completion Fluids, and Workover Fluids 48-Hour Acute WET Limitation] The Joint Trades recommended 3 options for EPA to consider regarding 48-Hour Acute WET Limitations for TCW fluids. Those options, in order of priority, are:
1. Removal of the limitations from the permit. (The Joint Trades requested that the limitations for 48-hour acute WET testing and the monitoring requirements for 7-day chronic WET testing

of TCW fluids be removed from the permit, stating that the use of 48-hour and 7-day testing regimens are overly conservative for short duration, intermittent, low volume discharges, the fluids do not pose an unreasonable risk to the aquatic environment, additional WET testing does not provide any added environmental benefit and implementation of WET testing requirements increases operational complexity and risk.) or
2. Modify the limitation to a monitoring requirement and allow 1 sample to accommodate both 48-hour acute testing and 7-day chronic testing. If 48-hour acute monitoring and 7-day chronic monitoring are included in the final permit, the Joint Trades recommended that EPA include language that clarifies that a single sample can be utilized to obtain both acute and chronic test results: "A single grab or composite sample may be obtained to satisfy both the 48-hour acute and 7-day chronic monitoring. 48-hour acute test results may be obtained from the 7-day chronic test procedure."
or
3. Adding a compliance implementation period for the limitation and clarifying on how discharge rates are determined. The Joint Trades recommended this language to be added to the permit if EPA adds a compliance period: "Compliance with 48-hour Acute WET testing must be achieved within two years of the effective date of the permit. The critical dilution shall be determined using Table 1 in Appendix D of this permit and is based on the estimated flow rate when the discharge occurs, discharge pipe diameter, and water depth between the discharge pipe and the bottom. Flow rate shall be determined as follows: For discharges greater than 24 hours in duration, flow rate=total volume discharged (bbls)/total duration of discharge (days). For discharges of lasting 24 hours or less, flow rate=total volume discharged (bbls)/1 day."

Response: A limitation is appropriate and consistent with the regulations at 40 CFR 122.44 (d)(1)(5). Although the TCW fluid discharges are typically of short duration, results from the Industry Wide Study indicate there is reasonable potential for these to exhibit toxicity even in limited exposures. Duration of discharge does not necessarily determine the duration of the exposure, as there are other variables that can affect exposure. The acute tests for NPDES permitting range from 24-96 hours for the species selected. The test requirement will continue to be an acute 48 hour WET test with a limit. Final permit has been updated to allow the 48 hour result to be derived from the chronic test, with three samples collected over the duration of the discharge. The mixing approach approved by EPA on November 18, 2020, for Category III Gel Samples was approved for the Industry Wide Study but is not a formally approved ATP for use in NPDES compliance. The industry may seek an alternative test procedure as allowed in 40 CFR 136.5. A compliance schedule for the TCW acute limit has been included in the permit. The critical dilution is to be calculated by extrapolating the hourly discharge to 24 hours. In addition, a requirement to report estimated flow daily, when discharging, has been added to the final permit as a monitoring requirement for TCW discharges, to provide clarity when calculating critical dilutions for toxicity testing.

Comment 24: [Part I.B.6.a.1.b - Well Treatment Fluids, Completion Fluids, and Workover Fluids 48-Hour Acute WET Limitation] Joint Trades recommended that this requirement for a 48-Hour Acute WET Limitation be removed from the permit. If the 48-hour WET testing requirements are finalized, the Joint Trades recommended the use of 3 aliquots spaced out at constant time intervals in not feasible. Rationale: As discussed above, the majority of TCW fluid discharges

are less than 2 hours in duration. Capturing 3 aliquots from such short duration discharges does not provide any benefit to the testing methodology. During the industry-wide study, 4 of 28 discharges had durations longer than 4 hours. The remaining 24 discharges had a combined duration of 22.5 hours.

The Joint Trades recommended revising the proposed text as follows: "One grab or one composite sample representing the duration of the discharge, must be collected, and used in the initiation and renewal of the 48-hour test. The time composite sample must contain no fewer than 3 aliquots spaced out at constant time intervals throughout the compositing period. In order to assess compliance with the WET limit, ~~no alternate test procedures are authorized, and~~ the test must be conducted in accordance with the method." Rationale: EPA has not provided a justification for grab samples not being representative of the discharge. Increasing the volume of samples through composite sampling introduces additional operational complexity; most notably increased weight for transport on helicopters. Larger sample volumes will also increase the amount of laboratory waste for disposal. Increasing waste volumes is in conflict with the regulated community's sustainability principles to reduce wastes as much a practical.

If EPA does not accept continuing to allow single grab samples for testing, the Joint Trades recommended that EPA adopt the following sampling methodology:
• Discharges 24 hours of less in duration: 1 grab sample is required.
• Discharges more than 24 hours in duration: 3 aliquots are required to be captured at evenly space time intervals over a 24 hour period or less.

The Joint Trades requested the addition of the following language to clarify when sample holding time begins "As described in the National Pollutant Discharge Elimination System (NPDES) Compliance Inspection Manual, time of sample collection (holding time) begins when the last aliquot is dispensed into the composite sample container."

The Joint Trades believed that the phrase "no alternative test procedures are authorized" contradicts existing EPA regulations and should be removed from the permit. Rationale: 40 CFR 136.5 contains regulations for "Approval of alternate test procedures for limited use." Paragraph (a) of 40 CFR 136.5 clearly states that: "Any person may request the Regional ATP Coordinator to approve the use of an alternate test procedure in the Region."

Response: A limitation is appropriate and consistent with the regulations at 40 CFR 122.44 (d)(1)(5). The Final Report on the Joint Industry Study indicated instances where toxicity fluctuated throughout the duration of the discharge. Because of the potential spikes in toxicity, a single grab would increase the probability of missing a spike, therefore a series of aliquots is appropriate. The mixing approach approved by EPA on November 18, 2020, for Category III Gel Samples was approved for the Industry Wide Study but is not a formally approved ATP for use in NPDES compliance. The industry may seek an alternative test procedure as allowed in 40 CFR 136.5. The final permit clarifies when the holding time begins and that the previously approved mixing approach is not approved for use in compliance, but an alternative test procedure may be requested formally.

Comment 25: [Part I.B.6.a.2.a - Well Treatment Fluids, Completion Fluids, and Workover Fluids 7-day Chronic WET Monitoring] The Joint Trades recommended 2 options for EPA to consider regarding 7-day chronic WET Limitations for Well Treatment Fluids, Completion Fluids, and Workover Fluids. Those options are:
1. Removal of the monitoring requirements from the permit, or
2. Adding a compliance implementation period for the monitoring and include a minimum discharge duration of 4 days that require monitoring. The Joint Trades proposed the following language be added to this section of the permit: "Compliance with 7-day chronic WET monitoring requirements must be achieved within two years of the effective date of the permit." The Joint Trades recommended the following language if EPA chooses to maintain the 7-day Chronic Monitoring: "Toxicity shall be assessed through a 7-day chronic WET test in accordance with Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Water to Marine and Estuarine Organisms (EPA/821-R-02-014), or the most current edition. The 7-day chronic WET test shall only apply to those discharges lasting longer than 4 days in duration."

If 48-hour acute monitoring and 7-day chronic monitoring are included in the final permit, the Joint Trades recommended that EPA include language that clarifies that a single sample can be utilized to obtain both acute and chronic test results. The Joint Trades recommended the following language be added to the permit: "A single grab or composite sample may be obtained to satisfy both the 48-hour acute and 7-day chronic monitoring. 48-hour acute test results may be obtained from the 7-day chronic test procedure."

Response: The chronic WET test requirement is a monitoring and reporting requirement, not a limitation. A compliance schedule is not appropriate for this reason. The TCW wastes do vary in duration, and chronic effects were not part of the study therefore it is appropriate to consider chronic effects through a monitoring requirement in the permit, based on acute toxicity exhibited. EPA notes that a chronic test can be conducted on discharges of short duration, therefore the requirement to monitor for chronic effects will remain in the permit. Final permit allows the 48 hour result to be derived from the chronic test, however a minimum of three samples will continue to be a requirement, per method. Language in the TCW section of the permit has been updated to clarify that the acute WET testing has limitations and chronic WET testing is a monitoring requirement, only.

Comment 26: [Part I.B.6.a.2.b - Well Treatment Fluids, Completion Fluids, and Workover Fluids 7-day Chronic WET Monitoring] The Joint Trades recommended, if the 7-day chronic testing monitoring requirements are retained in the final permit, the monitoring should only be applicable to discharge durations of 4 days or more. If the 7-day chronic testing monitoring requirements are included in the final permit, the Joint Trades recommend modifying the proposed language in this paragraph as follows: "Three (3) samples are to be collected for the chronic test. The samples may be collected as grab samples spaced out at constant time intervals throughout the duration of the discharge. Each sample must meet the holding time of ~~36 hours (up to~~ 72 hours ~~if required)~~ for first use of the sample, and then the samples may be used to prepare renewals until test completion. In order to assess toxicity, ~~no alternate test procedures are authorized, and~~ the test must be conducted in accordance with the method."

The Joint Trades stated that the language regarding holding times is unclear and would like clarification in the permit on whether the holding time is 36 hours or 72 hours. The Joint Trades stated that the hold time for TCW samples should be adjusted to the maximum of 72 hours because a 36-hour hold-time will introduce significant logistical complexity to well workover, completion, and treatment operations by creating the need for operators to have multiple vessels and flights dedicated to sample transportation only, which will increase emissions, noise, safety risks and other environmental impacts; and increase costs.

The Joint Trades also recommended that the phrase "no alternative test procedures are authorized" be struck as it contradicts existing EPA regulations. Rationale: 40 CFR 136.5 contains regulations for "Approval of alternate test procedures for limited use." Paragraph (a) of 40 CFR 136.5 clearly states that: "Any person may request the Regional ATP Coordinator to approve the use of an alternate test procedure in the Region." By pre-emptively stating that no alternate test procedures are authorized in the permit language, EPA is effectively removing the ability of the regulated community to avail itself of the procedures in 40 CFR 136.5, and thereby, contradicting EPA's regulations for NPDES permits.

Response: See response to comment 25. A chronic test can be conducted in discharges of short duration, and the chronic methods indicate the sample should be collected for the duration of the discharge when dealing with an intermittent discharge. Permit language has been updated to clarify the holding time of 72 hours is acceptable for first use of each sample. The mixing approach approved by EPA on November 18, 2020, for Category III Gel Samples was approved for the Industry Wide Study but is not a formally approved ATP for use in NPDES compliance. The industry may seek an alternative test procedure as allowed in 40 CFR 136.5. The final permit clarifies this.

Comment 27: [Part I.B.6.c - Well Treatment Fluids, Completion Fluids, and Workover Fluids Characteristic Assessments] The Joint Trades recommended the characteristic assessment requirements be removed from the permit. Rationale: The Characteristic Assessment requirements retained from the 2017 permit were intended to apply to the industry-wide TCW fluid toxicity study, or individual studies for those operators that chose not to participate in the industry study. Now that the studies have concluded, these characteristic assessment requirements are not appropriate for routine, normal operations and should be removed from the 2022 permit. This type of detailed information is maintained by operators in well files and could be made available to EPA upon request. In addition, these requirements may create the risk of operators providing proprietary and/or trade secret information on well campaigns. This information is nearly always kept confidential.

Response: The EPA agrees with the suggestion and the change has been made as requested.

Comment 28: [Part I.B.7.b - Sanitary Waste Facilities Continuously Manned for 30 or more consecutive days by 10 or More Persons – Residual Chlorine Limitations] The Joint trades recommended the following revisions to the proposed language: "Residual Chlorine. Total residual chlorine (TRC) is a surrogate parameter for fecal coliform. Discharge of TRC must meet a minimum of 1 mg/l and shall be maintained as close to this concentration as possible. A grab sample must be taken once per month and the concentration recorded. The approved methods are

either Hach CN-66- DPD or EPA method specified in 40 CFR part 136 for TRC. Equivalent Disinfection – Other Technologies. The use of other disinfection technologies, including, but not limited to, bio-membrane filtration and ultra-violet light, are allowed as substitutes for total residual chlorine provided that those technologies result in equivalent or improved disinfection of the sanitary waste stream. Rationale: The Joint Trades recommended that the EPA consider updating this standard to include additional types of disinfection technologies. Modern sanitary treatment equipment may also utilize other means by which to disinfect sanitary waste, such as bio-membrane technology and ultra-violet light. The single standard for total residual chlorine may limit the use of such technologies. Such technologies are proven and have been utilized in the sanitary waste treatment for many years. In addition, USCG-approved MSDs are already in use that do not utilize chlorine for disinfection. These types of units are approved by the USCG and the International Maritime Organization (IMO).

Response: The statement "Discharge of TRC must meet a minimum of 1 mg/l and shall be maintained as close to this concentration as possible" is consistent with Effluent Limitation Guidelines (40 CFR 435.14). EPA agrees with the comment and recognizes that other disinfection technologies are available and used in MSDs that are approved by the U.S. Coast Guard for use. As a result, the language in the final permit has been modified to include "*Equivalent Disinfection – Other Technologies. The use of other disinfection technologies, including, but not limited to, bio-membrane filtration and ultra-violet light are allowed as substitutes for systems that use chlorine, provided that the MSD is approved by the U.S. Coast Guard and results in equivalent or improved disinfection of the sanitary waste stream to that considered in the ELG. For alternative MSDs that do not use chlorine, monitoring for TRC limitations is not required when system is not properly operating or not operating, unless a chlorine based product is used as a backup disinfectant* ".

Comment 29: [Part I.B.7.b - Sanitary Waste Facilities Continuously Manned for 30 or more consecutive days by 10 or More Persons – Residual Chlorine Limitations] The Joint Trades recommended that the proposed permit language be revised as follows: "[Exception] Any facility operator which properly operates and maintains a marine sanitation device (MSD) that complies with pollution control standards and regulations under section 312 of the Act shall be deemed in compliance with permit prohibitions and limitations for sanitary waste. The MSD shall be tested yearly for proper operation and the test results maintained for three years at the facility or at an alternate site if not practicable. The operator is required to demonstrate proper operation of MSD via US Coast Guard approval, annual inspections, Class/Flag State inspections and/or the International Sewage Pollution Prevention Certificate (ISPPC) and maintenance logs/records. Failure to comply with any of the aforementioned requirements for the U.S. Coast Guard must be included in a non-compliance report to EPA. If an MSD is undergoing maintenance and/or is malfunctioning, then an operator may demonstrate compliance by maintaining disinfection capabilities. If the limitations are met this does not constitute a non-compliance."
Rationale: Based on discussions with EPA staff, it is the Joint Trades understanding that if an operator can demonstrate compliance with limitations during MSD maintenance and/or malfunction, then the operator remains in compliance with permit limitations. This should be clearly documented in the permit.

Response: Bypass not exceeding limitations are included in Part II.B.4 of the permit. Language has been updated to provide clarity that failure to comply with any of the MSD requirements mentioned in this section must be included in a non-compliance report to EPA. No additional changes have been made to the final permit.

Comment 30: [Part I.B.8.a - Sanitary Waste Facilities Continuously Manned for 30 or more consecutive days by 9 or Fewer Persons] The Joint Trades recommended that the proposed permit language be revised as follows: "[Exception] Any facility operator which properly operates and maintains a marine sanitation device (MSD) that complies with pollution control standards and regulations under section 312 of the Act shall be deemed in compliance with permit prohibitions and limitations for sanitary waste. The MSD shall be tested yearly for proper operation and the test results maintained for three years at the facility or at an alternate site if not practicable. The operator is required to demonstrate proper operation of MSD via US Coast Guard approval, annual inspections, Class/Flag State inspections and/or the International Sewage Pollution Prevention Certificate (ISPPC) and maintenance logs/records. Failure to comply with any of the aforementioned requirements for the U.S. Coast Guard must be included in a non-compliance report to EPA. If an MSD is undergoing maintenance and/or is malfunctioning, then an operator may demonstrate compliance by maintaining disinfection capabilities. If the limitations are met this does not constitute a non-compliance." Rationale: Based on discussions with EPA staff, it is the Joint Trades understanding that if an operator can demonstrate compliance with limitations during MSD maintenance and/or malfunction, then the operator remains in compliance with permit limitations. This should be clearly documented in the permit.

Response: See response to comment 29.

Comment 31: [Part I.B.9.b – Domestic Waste Monitoring Requirements for Solids] The Joint Trades recommended modifying the permit language for domestic waste monitoring as follows: "Solids. Observation must be made daily during daylight in the vicinity of domestic waste outfalls. If floating solids are observed at other times in addition to the daily monitoring, it must be recorded and reported to EPA." Rationale: Adding the word "daily" makes these requirements consistent with the sanitary waste monitoring requirements.

Response: The suggested change has been incorporated in the final permit.

Comment 32: [Part I.B.10 – Miscellaneous Discharges] The Joint Trades supported the addition of Subsea Cleaning Fluids to this section of the permit, however they are recommending that the following definition of Subsea Cleaning Fluids be included in the permit: "acidic cleaning agents used to dissolve marine deposits on subsea equipment during subsea maintenance and intervention activities to assure proper seating of equipment operating and to avoid ingress of extremely high subsea pressures and egress (losses of containment) of fluids to the environment".

Response: The suggested change has been incorporated in the final permit.

Comment 33: [Part I.B.10.a – Miscellaneous Discharges Free Oil Limitations] The Joint Trades recommended revising the last sentence of the paragraph in Part I.B.10.a as follows: "The total number of days a sheen is observed must be recorded and reported on DMRs and in accordance with Part II.D.7.c of this permit." Rationale: Providing a specific reference for reporting increases clarity of the requirement and provides certainty to the regulated community.

Response: EPA agrees with the suggestion and has modified the language to read "*The total number of days a sheen is observed must be recorded and reported on DMRs and in accordance with Part II.D.7.c of this permit*".

Comment 34: [Part I.B.11 - Miscellaneous Discharges of Water Which Have Been Chemically Treated] The Joint Trades recommend the proposed permit language be revised as follows: "Excess water which permits the continuous operation of fire control and utility lift pumps, Excess water from pressure maintenance and secondary recovery projects, Water released during training of personnel in fire protection, Water used to pressure test new and existing piping and pipelines, Ballast water, Once through non-contact cooling water, Water used as piping or equipment preservation fluids, and Water used during Dual Gradient Drilling and well operations." Rationale: Seawater and fresh water used for fluid displacement in well operations are drawn from chemically treated and uncontaminated sources. The chemically treated water sources are the same as, or similar to, those sources used for water released during training of personnel in fire protection, ballast water, once through non-contact cooling water, water used as piping or equipment preservation fluids, and water used during Dual Gradient Drilling. The change provides clarity and would be more inclusive of current operations in industry.

Response: EPA agrees with the language suggestion with modifications. Language in the permit has been modified to add "…*Dual Gradient Drilling and well operations other than those covered by the other sections of Part I.B of the permit.*

Comment 35: [Part I.B.11.a - Miscellaneous Discharges of Water Which Have Been Chemically Treated Free Oil Limitations] The Joint Trades recommended revising the last sentence of this paragraph as follows: "The total number of days a sheen is observed must be recorded and reported in accordance with Part II.D.7.c of this permit." Rationale: Providing a specific reference for reporting increases clarity of the requirement and provides certainty to the regulated community.

Response: EPA agrees with the suggestion and has modified the language to read "*The total number of days a sheen is observed must be recorded and reported on DMRs and in accordance with Part II.D.7.c of this permit*".

Comment 36: [Part I.B.11.a - Miscellaneous Discharges of Water Which Have Been Chemically Toxicity Limitations] The Joint Trades recommended revising the proposed text as follows: "One grab, or one composite, sample representing the duration of the discharge, must be collected, and used in the initiation and renewal of the 48-hour test. The time composite sample must contain no fewer than 3 aliquots spaced out at constant time intervals throughout the

compositing period." Rationale: The Joint Trades stated that EPA has not provided a justification for grab samples not being representative of the discharge. Increasing the volume of samples through composite sampling introduces additional operational complexity; most notably increased weight for transport on helicopters. Larger sample volumes will also increase the amount of laboratory waste for disposal. Increasing waste volumes is in conflict with the regulated community's sustainability principles to reduce wastes as much a practical.

If EPA does not accept continuing to allow single grab samples for testing, the Joint Trades recommended that EPA adopt the following sampling methodology:
• Discharges 24 hours of less in duration: 1 grab sample is required.
• Discharges more than 24 hours in duration: 3 aliquots are required
captured at evenly space time intervals over a 24 hour period or less.

The Joint Trades requested that the permit clarify when sample holding time begins by adding the following: "As described in the National Pollutant Discharge Elimination System (NPDES) Compliance Inspection Manual, time of sample collection (holding time) begins when the last aliquot is dispensed into the composite sample container."

Response: Because of the potential spikes in toxicity, a single grab would increase the probability of missing a spike, therefore a series of aliquots is appropriate. The permit has been updated to provide clarification on when the holding times begin.

Comment 37: [Part I.B.11.a - Miscellaneous Discharges of Water Which Have Been Chemically Toxicity Limitations] The Joint Trades recommended modifying the proposed language to improve clarity as follows: "For continuous discharges, if a test fails the survival or sub-lethal endpoint at the critical dilution in any test, the operator must perform monthly retest until it passes three consecutive monthly tests. Failing the toxicity test is considered violation of the permit. After compliance is demonstrated for three consecutive months, the permittee may return to the testing frequency in use at the time of the initial test failure." Rationale: For non-continuous discharges, this language regarding frequency is not applicable since those discharges require monitoring once per discharge.

Response: EPA agrees with the suggestion. The permit has been updated to reflect the suggested language for clarity.

Comment 38: [Part I.B.11.b - Miscellaneous Discharges of Water Which Have Been Chemically Toxicity Monitoring Requirements] The Joint Trades recommended the following changes to the proposed permit language: "Toxicity. The required frequency of testing for continuous discharges ~~occurring more than once per week~~ shall be determined as follows:" Rationale: The phrase "occurring more than once per week" as applied to continuous discharges is confusing. If a discharge is "continuous" then, by its nature, it is an ongoing discharge and not limited to a weekly timeframe.

Response: EPA agrees with the suggestion. The permit has been updated to reflect the suggested language for clarity.

Comment 39: [Part I.B.11.b - Miscellaneous Discharges of Water Which Have Been Chemically Toxicity Monitoring Requirements] The Joint Trades recommended the proposed permit language be revised as follows: "~~Intermittent or batch~~ Non-continuous discharges that occur less than or equal to once per week and last less than 24 hours shall be monitored once per discharge ~~but are required to be monitored no more frequently than the corresponding frequencies shown above for continuous discharges~~. Test Acceptability Criteria can be found in Section Part II.D.4 of this permit." Rationale: The Joint Trades recommended that the phrase "intermittent or batch discharges" be changed to "non-continuous discharges" to improve clarity as well as improve consistency with the previous paragraph discussing continuous discharges. In addition, the language referencing the corresponding frequencies for continuous discharges is unnecessary. Non-continuous discharges are sampled as they occur and are not continuous. Therefore, a determining test frequency based on discharge rate or volume is not needed.

Response: EPA agrees with the suggestion. The permit has been updated to reflect the suggested language and clarify the meaning of noncontinuous and continuous discharges for the purpose of toxicity testing.

Comment 40: [Part I.B.12.b.1).i – Cooling Water Intake Structure Operation Requirements for New non- Fixed Facilities] The Joint Trades recommended that EPA consider the comments submitted by the International Association of Drilling Contractors (IADC) regarding cooling water intake structures on non-fixed facilities.

Response: Noted for the record. Please see response to IADC Comments.

Comment 41: [Part I.B.12.b.1).ii – Cooling Water Intake Structure Operation Requirements for New non- Fixed Facilities] The Joint Trades recommended that EPA consider the comments submitted by the International Association of Drilling Contractors (IADC) regarding cooling water intake structures on non-fixed facilities.

Response: Noted for the record. Please see response to IADC Comments.

Comment 42: [Part I.B.12.c.1).ii - Cooling Water Intake Structure Operation Requirements Monitoring Requirements for New non-Fixed Facilities] The Joint Trades proposed to strike "on a continuous basis" as it directly conflicts with the below monitoring frequencies. Changes requested are as follows: "iii. Velocity monitoring. The operator must monitor intake flow velocity across the intake screens ~~on a continuous basis~~ to ensure the maximum intake flow velocity does not exceed 0.5 ft/s. The intake flow velocity shall be monitored according to the following frequencies: If the Most recent intake Then Monitoring Frequency flow velocity (ft/s) Should be <0.300 Quarterly, 0.300 – 0.38 Monthly, >0.38 Daily". Rationale: Continuous intake flow velocity monitoring would require possibly significant upgrades to existing intake flow velocity monitoring systems including routing of signals to process computers for automatic logging. Monitoring frequencies in the table allow permittees to manually log the intake flow velocity if continuous monitoring systems are not feasible. EPA agreed with this request in their Response to Comments for the 2012 and 2017 GMG290000 permit renewal

Should EPA require continuous monitoring, the Joint Trades proposed following language be added to this section of the permit: "Compliance with continuous intake flow velocity monitoring must be achieved within two years after the effective date of this permit."

Response: EPA agrees with the change and has removed the words "*on a continuous basis*" in the final permit in regard to cooling intake to provide clarity on measurement frequency for intake screen velocity.

Comment 43: [Part I.B.12.c.2).iii - Cooling Water Intake Structure Operation Requirements Monitoring Requirements for New Fixed Facilities that do not employ sea chests as intake structures] The Joint Trades proposed to strike "on a continuous basis" as it directly conflicts with the below monitoring frequencies. Changes requested are as follows: "iii. Velocity monitoring. The operator must monitor intake flow velocity across the intake screens ~~on a continuous basis~~ to ensure the maximum intake flow velocity does not exceed 0.5 ft/s. The intake flow velocity shall be monitored according to the following frequencies: If the Most recent intake Then Monitoring Frequency flow velocity (ft/s) Should be <0.300 Quarterly, 0.300 – 0.38 Monthly, >0.38 Daily". Rationale: Continuous intake flow velocity monitoring would require possibly significant upgrades to existing intake flow velocity monitoring systems including routing of signals to process computers for automatic logging. Monitoring frequencies in the table allow permittees to manually log the intake flow velocity if continuous monitoring systems are not feasible. EPA agreed with this request in their Response to Comments for the 2012 and 2017 GMG290000 permit renewal.

Should EPA require continuous monitoring, the Joint Trades proposed following language be added to this section of the permit: "Compliance with continuous intake flow velocity monitoring must be achieved within two years after the effective date of this permit."

Response: See response to comment 42.

Comment 44: [Part I.D.3 - Test Methods for 7-Day Chronic Toxicity Testing Requirements] The Joint Trades commented that the sentence "No alternative test procedures are allowed" contradicts existing EPA regulations and should be removed from the permit. 40 CFR 136.5 contains regulations for "Approval of alternate test procedures for limited use." Rationale: Paragraph (a) of 40 CFR 136.5 clearly states that: "Any person may request the Regional ATP Coordinator to approve the use of an alternate test procedure in the Region."

Response: The mixing approach approved by EPA on November 18, 2020, for Category III Gel Samples was approved for the Industry Wide Study but is not a formally approved ATP for use in NPDES compliance. The industry may seek an alternative test procedure as allowed in 40 CFR 136.5. The permit has been updated to clarify this issue.

Comment 45: [Part I.D.3.f - Test Methods for 7-Day Chronic Toxicity Testing Requirements - Test Acceptability Criteria] The Joint Trades recommended that some of the values listed in the Test Acceptability Criteria table be changed to align with WET testing protocols and methods. For *Menidia beryllina*, they recommend the following changes: # of replicates per concentration should be 5; not 4 and # of organisms per replicate should be 8; not 10.

In addition, to align with recommendations on TCW fluids 48-hour acute WET testing, the Joint Trades recommended sample Requirements for both *Americamysis bahia* and *Menidia beryllina* be modified to: "1 grab sample for discharges of 24 hours or less, or 3 aliquots at evenly spaced time intervals over a 24-hour period for discharges greater than 24-hours in duration."

Regarding PMSD Limits, the Joint Trades states: PMSD limits are protective of the environment and permittees. Upper PMSD limits prevent highly variable data that decreases the power of the required statistical methods from being used to demonstrate permit compliance. Lower PMSD limits prevent data sets with very low variability, hyper-sensitive data sets, from failing. If the PMSD for a sub-lethal data set is less than the lower PMSD limit and the required statistical methods indicate a statistically significant difference between the control and a treatment, this difference must be confirmed by calculating relative differences between the control and each treatment. Growth data are based on biomass: dry weight of survivors from each replicate divided by the number of organisms exposed not the number surviving. Any mortalities exacerbate sublethal biomass variability. If the replicate dry weight is for one surviving organism, it must be divided by the number originally exposed! If a treatment fails survival it is excluded from sub-lethal data analyses. If the survival and growth data are near perfect and clearly passing except at the highest concentration tested (low survival and high variability between replicates), the required statistical methods (Steel's Many-One Rank Test in particular) may not pick up >40% mortality as statistically significant. This can lead to the upper biomass PMSD limit being exceeded and an invalid test, even though the lower sample dilutions are statistically equivalent in survival and biomass to the concurrent control. The Joint Trades suggested including the 2017 permit language for chronic tests to prevent resampling and retesting that clearly passes data sets: "If the conditions of Test Acceptability are met in Item 3.f. above and the percent survival of the test organism is equal to or greater than 80% in the critical dilution concentration and all lower dilution concentrations, the survival test shall be considered to be passing and the permittee shall report a survival NOEC of not less than the critical dilution for the DMR reporting requirements found below." The Joint Trades also recommended adding similar language for sublethal biomass data as follows: "If the conditions of Test Acceptability are met in Item 3.f. except that the PMSD upper limit is exceeded, then if the mean dry weight of surviving control organisms is equal to or greater than the limit in the test method, and the biomass data for the critical dilution and all lower dilutions are not more than the PMSD lower limit (11% for both species) less than the concurrent control, the growth test shall be considered to be passing and the permittee shall report a growth NOEC of not less than the critical dilution for the DMR reporting requirements found below."

Response: Method 1006.0, chronic survival, and growth test for *Menidia beryllina* has a minimum requirement of 10 larvae per test chamber, 4 replicate chambers per concentration, and 40 larvae per concentration. Because the permit requirements are within the minimum requirement and total 40, no change has been made to the final permit . A technical review of a lab report may be requested from EPA at any time when a lab report indicates a test outside of the test acceptability criteria (such as outside of PMSD bounds). Validity of the results would be determined at that time.

Comment 46: [Part I.D.3.g - Test Methods for 7-Day Chronic Toxicity Testing Requirements – Statistical Interpretation] Regarding PMSD Limits, the Joint Trades states: PMSD limits are

protective of the environment and permittees. Upper PMSD limits prevent highly variable data that decreases the power of the required statistical methods from being used to demonstrate permit compliance. Lower PMSD limits prevent data sets with very low variability, hyper-sensitive data sets, from failing. If the PMSD for a sub-lethal data set is less than the lower PMSD limit and the required statistical methods indicate a statistically significant difference between the control and a treatment, this difference must be confirmed by calculating relative differences between the control and each treatment. Growth data are based on biomass: dry weight of survivors from each replicate divided by the number of organisms exposed not the number surviving. Any mortalities exacerbate sublethal biomass variability. If the replicate dry weight is for one surviving organism, it must be divided by the number originally exposed! If a treatment fails survival it is excluded from sub-lethal data analyses. If the survival and growth data are near perfect and clearly passing except at the highest concentration tested (low survival and high variability between replicates), the required statistical methods (Steel's Many-One Rank Test in particular) may not pick up >40% mortality as statistically significant. This can lead to the upper biomass PMSD limit being exceeded and an invalid test, even though the lower sample dilutions are statistically equivalent in survival and biomass to the concurrent control. The Joint Trades suggested including the 2017 permit language for chronic tests to prevent resampling and retesting that clearly passes data sets: "If the conditions of Test Acceptability are met in Item 3.f. above and the percent survival of the test organism is equal to or greater than 80% in the critical dilution concentration and all lower dilution concentrations, the survival test shall be considered to be passing and the permittee shall report a survival NOEC of not less than the critical dilution for the DMR reporting requirements found below." The Joint Trades also recommended adding similar language for sublethal biomass data as follows: "If the conditions of Test Acceptability are met in Item 3.f. except that the PMSD upper limit is exceeded, then if the mean dry weight of surviving control organisms is equal to or greater than the limit in the test method, and the biomass data for the critical dilution and all lower dilutions are not more than the PMSD lower limit (11% for both species) less than the concurrent control, the growth test shall be considered to be passing and the permittee shall report a growth NOEC of not less than the critical dilution for the DMR reporting requirements found below."

Response: See response to comment 46.

Comment 47: [Part I.D.3.h - Test Methods for 7-Day Chronic Toxicity Testing Requirements – Dilution Water] The Joint Trades strongly recommended removing the requirements for the use of receiving waters as dilution water for the purposes of WET testing and listed three technical and operational reasons for concern. 1. WET Testing Methods Recommendations - Gulf of Mexico receiving waters are higher than the recommended salinities in Method 1007.0 and therefore may not "support adequate performance of the test organisms with respect to survival, growth, reproduction, or other responses that may be measured in the test." 2. Impractically of Capturing Receiving Water Samples - The proposed permit language states that "Dilution water used in the toxicity tests shall be receiving water collected as close to the point of discharge as possible but unaffected by the discharge." The Joint Trade commented that it is unclear how operators are to determine if the receiving water collection point is unaffected by the discharge and that the requirement is vague and ambiguous; in addition, capturing samples of receiving water for use as dilution water would potentially require the launching and operation of small fast rescue craft from the platform and most platforms do not have such craft available or

installed. The Joint Trades commented that the requirement to use receiving water as dilution water increases the risks and hazards to offshore personnel. Additional helicopter flights would be required as well as additional ground transport; and increased transportation results in significantly higher greenhouse gas emissions, higher costs to the regulated community and additional burden in the form of increased scheduling and planning. The Joint Trades concluded that the use of synthetic dilution water eliminates all of these concerns and provides a practical, sound alternative to the use of receiving water. 3. Synthetic Dilution Water Has a Proven History – The Joint Trades commended that synthetic dilution water has been used for Gulf of Mexico dilution water since the inception of the General Permit and that there are decades of data that provide ample evidence that synthetic dilution water is appropriate for WET testing. The Joint Trades requested that if EPA has identified concerns or issues with the historical use of synthetic dilution water based upon this historical data, that information should be shared with the regulated community and the public to justify the need for this proposed change. Based on the rationale discussed in items 1-3, the Joint Trades recommended that this proposed paragraph be removed from the permit.

Response: EPA agrees that synthetic dilution water is allowed. The final permit has been updated to reflect this change.

Comment 48: [Part I.D.3.1 - Test Methods for 7-Day Chronic Toxicity Testing Requirements – Produced Waters Toxicity Data Reporting] The Joint Trades recommended removing the references to NODI codes from the permit as this type of language is better suited for DMR instructions and changes to the following language: "~~The testing frequency is assessed at the end of every calendar year and established for the following year. However,~~ Monthly reporting of toxicity data is required regardless of the testing frequency. This is to allow a space in the DMR to report data under a fluctuating frequency. ~~If a test is not conducted every month, then the permittee must report "NODI 9" for toxicity data.~~"

Response: EPA agrees with the first suggestion. The permit has been updated to reflect this language. The final permit will maintain the language that specifies the reporting code when tests are not conducted.

Comment 49: [Part I.D.3.1 - Test Methods for 7-Day Chronic Toxicity Testing Requirements – Produced Waters Toxicity Data Reporting] The Joint Trades recommended revising the paragraph preceding the STORET codes table as follows: "Compliance with the WET limit is established when both the sublethal and lethal NOEC of a WET test is greater than or equal to the critical dilution. ~~Compliance is represented by a "0" in the DMR. In accordance with Part II.D.4 of this permit, if the (sublethal or lethal) NOEC for Menidia beryllina is less than the permittee's critical dilution, this constitutes a violation of the WET limit and a "1" should be entered under parameter 51712 of the DMR. If the NOEC is greater than or equal to the critical dilution, a "0" should be entered in the DMR. If the (lethal or sublethal) NOEC for Americamysis bahia (formerly Mysidopsis bahia as referred to in Method 2007.0 and 1007.0, and DMRs) is less than the permittee's critical dilution, this constitutes a violation of a WET limit and a "1" should be entered under parameter 51713. If the NOEC is greater than or equal to the critical dilution, a "0" should be entered in the DMR.~~ For each toxicity test conducted, the permittee shall also report the results as follows:" Rationale: The type of

information highlighted above for removal from the paragraph is better suited for DMR instructions rather than permit language.

The Joint Trades recommended the following corrections to the STORET CODES for *M. Beryllina*: Survival NOEC TOP6B, Survival LOEC TXP6B, Growth NOEC TPP6B, and Growth LOEC TYP6B.

Response: Comment is noted for the record. The final permit will retain reporting instructions. EPA notes that codes ending in B are categorized for *Menidia menidia* and codes ending in J for *Menidia beryllina*.

Comment 50: [Part I.D.3.2 - Test Methods for 7-Day Chronic Toxicity Testing Requirements – Well Treatment, Completion and Workover Toxicity Data Reporting] The Joint trades recommended removing chronic toxicity testing for TCW fluids from the permit, however if the requirement is maintained they recommended the following corrections to the STORET CODES: *M. Beryllina* 51712 - Survival NOEC TOP6B, Survival LOEC TXP6B, Growth NOEC TPP6B, Growth LOEC TYP6B and CD 51726. *A. Bahia* 51713 - Survival NOEC TOP3E, Survival LOEC TXP3E, Growth NOEC TPP3E, Growth LOEC TYP3E and CD 51726.

Response: EPA notes that 51712 and 51713 are compliance codes. The chronic test requirement for TCW wastes is a monitoring requirement therefore compliance codes are not applicable. See response to comment 49. No changes have been made to the final permit.

Comment 51: [Part I.D.4 - Test Methods for 48-Hour Toxicity Testing Requirements (48-Hour Acute NOEC Marine Limits)] The Joint Trades commented that the phrase “no alternative test procedures are authorized” contradicts existing EPA regulations and should be removed from the permit. Rationale: 40 CFR 136.5 contains regulations for “Approval of alternate test procedures for limited use.” Paragraph (a) of 40 CFR 136.5 clearly states that: “Any person may request the Regional ATP Coordinator to approve the use of an alternate test procedure in the Region.”

Response: The mixing approach approved by EPA on November 18, 2020, for Category III Gel Samples was approved for the Industry Wide Study but is not a formally approved ATP for use in NPDES compliance. The industry may seek an alternative test procedure as allowed in 40 CFR 136.5. The permit has been updated to clarify this issue.

Comment 52: [Part I.D.4.f - Test Methods for 48-Hour Toxicity Testing Requirements (48-Hour Acute NOEC Marine Limits) – Test Acceptability Criteria] The Joint Trades recommended that some of the values listed in the Test Acceptability Criteria table be changed to align with WET testing protocols and methods as follows: “ # of replicates per concentration should be 5; not 2, # of organisms per replicate should be 8; not 10, # of organisms per concentration should be 40; not 20, and NOEC values cannot be achieved with less than 4 replicates.”

Response: EPA notes that the Test Acceptability Criteria in the permit are in accordance with acute WET methods. The comment is noted for the record. No change has been made to the final permit.

Comment 53: [Part I.D.4.f - Test Methods for 48-Hour Toxicity Testing Requirements (48-Hour Acute NOEC Marine Limits) – Test Acceptability Criteria] The Joint Trades recommended that the following sentence be removed from the permit: "~~When possible, the effluent samples used for the toxicity tests shall be collected on separate days~~." Rationale: Collection of samples on separate days creates unnecessary burden on the regulated community, including: Increased difficulty in meeting required holding times leading to "special order" flights and ground transportation, safety risks increase due to increased material handling and additional helicopter flights, and increased air pollutants and GHG emissions due to increased vessel and ground transportation.

Response: EPA agrees with the suggestion. The final permit has been updated to reflect the suggested language.

Comment 54: [Part I.D.4.f - Test Methods for 48-Hour Toxicity Testing Requirements (48-Hour Acute NOEC Marine Limits) – Test Acceptability Criteria] The Joints Trades recommended that the reference to PMSD values be removed from this section of the permit as PMSD limits do not apply to 48-hour tests.

Response: EPA agrees with the suggestion. The final permit has been updated to reflect the suggested language.

Comment 55: [Part I.D.4.h - Test Methods for 48-Hour Toxicity Testing Requirements (48-Hour Acute NOEC Marine Limits) – Dilution Water] The Joint Trades strongly recommended removing the requirements for the use of receiving waters as dilution water for the purposes of WET testing and listed three technical and operational reasons for concern. 1. WET Testing Methods Recommendations - Gulf of Mexico receiving waters are higher than the recommended salinities in Method 1007.0 and therefore may not "support adequate performance of the test organisms with respect to survival, growth, reproduction, or other responses that may be measured in the test." 2. Impractically of Capturing Receiving Water Samples - The proposed permit language states that "Dilution water used in the toxicity tests shall be receiving water collected as close to the point of discharge as possible but unaffected by the discharge." The Joint Trade commented that it is unclear how operators are to determine if the receiving water collection point is unaffected by the discharge and that the requirement is vague and ambiguous; in addition, capturing samples of receiving water for use as dilution water would potentially require the launching and operation of small fast rescue craft from the platform and most platforms do not have such craft available or installed. The Joint Trades commented that the requirement to use receiving water as dilution water increases the risks and hazards to offshore personnel. Additional helicopter flights would be required as well as additional ground transport; and increased transportation results in significantly higher greenhouse gas emissions, higher costs to the regulated community and additional burden in the form of increased scheduling and planning. The Joint Trades concluded that the use of synthetic dilution water eliminates all of these concerns and provides a practical, sound alternative to the use of receiving water. 3. Synthetic Dilution Water Has a Proven History – The Joint Trades commended that synthetic dilution water has been used for Gulf of Mexico dilution water since the inception of the General Permit and that there are decades of data that provide ample evidence that synthetic dilution water is appropriate for WET testing. The Joint Trades requested that if EPA has identified

concerns or issues with the historical use of synthetic dilution water based upon this historical data, that information should be shared with the regulated community and the public to justify the need for this proposed change. Based on the rationale discussed in items 1-3, the Joint Trades recommended that this proposed paragraph be removed from the permit.

Response: See response to comment 47.

Comment 56: [Part I.D.4.1 - Test Methods for 48-Hour Toxicity Testing Requirements (48-Hour Acute NOEC Marine Limits) – Chemically treated miscellaneous discharges (Toxicity Data Reporting)] The Joint Trades recommended removing the references to NODI codes from the permit as this type of language is better suited for DMR instructions instead of permit language. The recommended permit text is as follows: "Monthly reporting of toxicity data is required regardless of the testing frequency. This is to allow a space in the DMR to report data under a fluctuating frequency. ~~If a test is not conducted every month, then the permittee must report "NODI 9" for toxicity data.~~"

Response: Comment noted for the record. Reporting instructions will be maintained in the permit for clarity on reporting when tests are not conducted. No change has been made to the final permit.

Comment 57: [Part I.D.4.1 - Test Methods for 48-Hour Toxicity Testing Requirements (48-Hour Acute NOEC Marine Limits) – Chemically treated miscellaneous discharges (Toxicity Data Reporting)] The Joint Trades recommended revising the paragraph prior to the STORET CODES table as follows: "Compliance with the WET limit is established when the NOEC of a WET test is greater than or equal to the critical dilution. ~~Compliance is represented by a "0" in the DMR. In accordance with Part II.D.4 of this permit, if the (sublethal or lethal) NOEC for *Menidia beryllina* is less than the permittee's critical dilution, this constitutes a violation of the WET limit and a "1" should be entered under parameter 51712 of the DMR. If the NOEC is greater than or equal to the critical dilution, a "0" should be entered in the DMR. If the (lethal or sublethal) NOEC for *Americamysis bahia* (formerly *Mysidopsis bahia* as referred to in Method 2007.0 and 1007.0, and DMRs) is less than the permittee's critical dilution, this constitutes a violation of a WET limit and a "1" should be entered under parameter 51713. If the NOEC is greater than or equal to the critical dilution, a "0" should be entered in the DMR.~~ For each toxicity test conducted, the permittee shall also report the results as follows:" Rationale: The Joint Trades commented that the type of information included in the paragraph is better suited for DMR instructions rather than permit language; and that *the following* STORET CODE Corrections are needed: *A. bahia* 51713, Survival NOEC TOM3E, *M. beryllina* 51712, and Survival NOEC TOM6B

Response: See response to comment 49.

Comment 58: [Part I.D.4.2 - Test Methods for 48-Hour Toxicity Testing Requirements (48-Hour Acute NOEC Marine Limits) – Well Treatment, Completion and Workover Toxicity Data Reporting] The Joint Trades stated that this section of the permit describes reporting requirements for acute testing and that the paragraph should be changed as follows: "An acute ~~chronic~~ test shall be conducted per discharge. For each test, the permittee shall report the results

as follows:" In addition, the Joint Trades commented that the following STORET CODE Corrections are needed: *A. bahia* 51713, Survival NOEC TOM3E, CD 51726, *M. beryllina* 51712, Survival NOEC TOM6B, and CD 51726.

Response: EPA agrees with the correction. The final permit has been updated to reflect the corrected language.

Comment 59: [Part II.C.2 – Monitoring and Records Representative Sampling] The Joint Trades recommended the following language be removed from the permit: "Samples and measurements taken for the purpose of monitoring shall be representative of the monitored activity. ~~If a representative sample is not possible due to a natural disaster, environmental conditions, or weather, the facility should use one of the following NODI Codes:" K – Natural disaster (declared by President) T – Environmental conditions – monitoring not possible (hurricanes, high tides) V – Weather related (storms, hail, wind, etc.). Facilities have 30 days after a weather event/national disaster occurs to submit DMRs or other required reporting documents.~~" Rationale: The Joint Trades mentioned that the strikethrough sentences above are more suited for updated guidance and DMR instructions and that if such language is included in the permit and NODI codes change during the permit term, then the permit will be outdated and potentially contain incorrect information. The Joint Trades recommended updating 2007 Permit Offshore Discharge Monitoring Reports INSTRUCTIONS FOR COMPLETING DISCHARGE MONITORING REPORTS (DMRs) UNDER OFFSHORE GENERAL PERMIT GMG290000 and mentioned that NODI codes require additional clarification because the code descriptions overlap.

Response: The referenced language was included in the permit to enhance compliance and provide clarification on NODI codes. No change has been made to the final permit. Comment is noted for the record.

Comment 60: [Part II.D.4 – Reporting Requirements for Discharge Monitoring Reports (DMR) and Other Reports] The Joint Trades offered the following suggested revisions to the proposed permit language: "Permittees shall be responsible for submitting accurate monitoring results for all facilities which they have permit coverage. The monitoring results for each facility shall be reported on DMRs for each individual permitted feature authorized that has a monitoring requirement. Each individual permitted feature may authorize multiple points of discharge or outfalls. ~~Points of discharge will be assigned limit sets based on discharge~~. Rationale: The Joint Trades requested the language change to this section of the permit to provide clarity. The final sentence of this paragraph creates ambiguity, and descriptions such as the assignment of limit sets is better suited for permit guidance and instructions.

Response: EPA agrees with the suggestion. To provide clarity, the language has been modified to "*During the NOI approval process, permit limit sets are assigned to each authorized discharge based on limits applicable to the type(s) of discharge authorized by the permit.*"

Comment 61: [Part II.D.4 – Reporting Requirements for Discharge Monitoring Reports (DMR) and Other Reports] The Joint Trades recommended the following changes to the proposed permit

language: “If discharge is not applicable for a facility, "no discharge" must be reported for that facility until an NOT is submitted. If a permittee or facility submits a “no discharge” DMR for a reporting period in which a discharge occurred, it is a violation of this permit, and the permittee shall submit corrected data no later than the following quarter.” Rationale: A definitive timeframe provides clarity to both the regulated community and the agency. In addition, correction of such an error may require operators to validate the information submitted on the DMR and obtain the necessary signatures of the responsible corporate official. This approach is consistent with other sections of the permit, particularly Part II.D.4.

Response: When discharges occur, permittees must report any corresponding DMR data. Failure to report when discharges occur are a violation of the permit. In addition, the certification statement, upon submission of DMRs, requires the corporate officer to ensure the DMR is true, accurate and correct under penalty of the law. To clarify expectations for submittal of corrected data, the following change has been made to the final permit: “*If a permittee or facility submits a no discharge DMR for a reporting period in which a discharge occurred, it is a violation of this permit, and the permittee shall submit corrected data as soon as the error has been identified but no later than the following quarter. Submittal of corrected data does not excuse any permit violation*”.

Comment 62: [Part II.D.7.a – Reporting Requirements for Twenty-Four Hour Reporting] The Joint Trades strongly recommended that EPA hold a training seminar and provide instructions for the regulated community on the new reporting system prior to the permit becoming effective.

Response: EPA has added a link to the permit that provides instructions on the Twenty-Four Hour Reporting Portal. EPA plans to have a training on the new reporting system, shortly following permit issuance.

Comment 63: [Part II.D.7.c – Reporting Requirements for Twenty-Four Hour Reporting] The Joint Trades recommended the proposed permit language be changed as follows: “All sheens on the receiving water from permitted discharge points with free oil limitations must be reported under the twenty-four hour reporting requirements. If the online reporting system is not available or functioning, operators may submit the required notification via email to: INSERT EMAIL ADDRESS.” Rationale provided is as follows: The suggested red text above adds clarity that EPA is referring to discharges subject to the requirements of the permit. Sheens from other, non-permitted sources (typically traditional oil spills) are currently required to be reported immediately to the National Response Center. In addition, EPA has proposed language for produced water discharges for operators to document the cause of produced water sheens and that documentation of those sheens be available for inspection, as well as reported on DMRs. By restricting the 24-hour reporting requirements to discharges with free oil limitations, duplicative reporting and complexity of requirements is eliminated.

If produced water is retained in the final permit as a sheen that requires 24-hour reporting, then the Joint Trades requested that EPA provide some clarification that a sheen from produced water discharges may not be a non-compliance based on the outcome of the required sheen sampling.

The Joint Trades commented that treatment, completion, workover fluids are required to meet free oil limitations using the static sheen test; often, the static sheen test is run prior to fluid discharge. If the fluid does not pass the static sheen test, then it is not discharged. The Joint Trades requested that EPA clarify that if an effluent stream does not pass a static sheen test and, as a result, is not discharged to the receiving water, then 24-hour reporting is not required.

The Joint Trades also requested a secondary method of submitting the required report in the event that the online reporting system is unavailable.

Response: Regarding the comment on treatment, completion, workover fluids that are not discharged after failing a pre-discharge static sheen test, Twenty-Four Hour reporting is only required for noncompliance of actual discharges.

Regarding the comment on alternative reporting methods, the permit has been updated to require notification by email within twenty-four hours of becoming aware of an event if the online reporting system is not available or functioning. An electronic report shall be submitted to the Offshore 24-Hour Reporting Application Portal within 14 days of the system becoming available again.

Regarding the comment on clarifying Twenty-Four Hour Reporting for sheen events, the final permit language has been modified to read "*All sheens on the receiving water from permitted discharge points with free oil limitations (e.g. Miscellaneous Discharges, Miscellaneous Discharges of seawater and freshwater to which treatment chemicals have been added, Well Treatment Fluids, Completion Workover Fluids, Pipeline Brine, Produced Water, Deck Drainage, Drill Cuttings, and Drilling Fluids) must be reported under the twenty-four hour reporting requirements*".

Comment 64: [Part II.G.71 – Definitions] The Joint Trades recommended the following changes to the proposed permit language: "Produced Water" means the water (brine) brought up from the hydrocarbon-bearing strata during the extraction of oil and gas, and can include formation water, injection water, and any chemicals added downhole or during the ~~oil/water~~ oil/gas/water separation process." Rationale: The definition change to provide clarity, be more inclusive and a more realistic approach with what we believe is current operations in industry. The basic separation process at any offshore production facility is designed to separate oil, natural gas and produced water into 3 distinct streams for processing, handling and/or treatment.

Response: EPA notes that Produced Water is already defined at 40 CFR 435. To clarify the final permit, the regulatory definition of Produced Water is interpreted to include oil/gas/water separation. The addition of the clarifying note is consistent with discretion provided at 40 CFR 122.43(a).

Comment 65: [Part II.G.71 – Definitions] The Joint Trades recommended adding the following new definition to the proposed permit language: "Subsea cleaning fluids" means acidic cleaning agents used to dissolve marine deposits on subsea equipment during subsea maintenance and intervention activities to assure proper sealing of operating equipment and to avoid ingress of extremely high subsea pressures and egress (losses of containment) of fluids to the

environment." Rationale: EPA provided this definition in the 2022 draft Fact Sheet that accompanied the proposed permit. The Joint Trades believe this definition is appropriate and should be included in the permit.

Response: See response to comment 32.

Comment 66: [Appendix F – Permit Summary Table] The Joint Trades requested that the permit summary table be deleted from the permit. Rationale: The permit summary table is not necessary since it is repetitive of the permit limitations and requirements described in the permit itself. The information in the permit summary table is better suited for permit guidance and instructions. Inclusion of this type of information in the permit itself creates opportunities for discontinuity and misalignment with the permit text.

The Joint Trades requested that if the permit summary table is retained, it must be updated to align with the permit language and imperative that a statement be added to the permit summary table that states that the permit language, not the table, is the enforceable requirements of the permit. The Joint Trades attached a "redline" version of the proposed permit summary table that highlighted areas where there was believed to be inconsistency and inaccuracies in the table.

Response: Comment noted. The requested statement has been added. The EPA has updated the table in the final permit to reflect accurate limitations. The EPA believes Table 1 is useful as a quick reference guide. Table will remain in the permit to enhance compliance

Comment 67: [Fact Sheet] The Joint Trades noted one item regarding the proposed Fact Sheet. The Fact Sheet includes the following statement regarding the industry-wide treatment, completion, and workover fluids toxicity study:"46% of the samples collected showed acute toxicity for one or more species indicating that there is reasonable potential for acute toxicity stemming from well treatment, completion, and workover fluid discharge. Therefore, in accordance with 40 CFR §122.44 (d)(1)(iv), acute WET limits are included the proposed permit. Chronic toxicity monitoring will be a requirement of the proposed permit to assess potential for chronic effects."

The Joint Trades commented that if the actual volume discharged is used to determine the critical dilution for those discharges lasting less than 24 hours, then 25 of the 28 (89%) samples analyzed did not exhibit acute toxicity at the critical dilution. The Joint Trades also stated that during the industry-wide TCW study estimated flow rates were calculated using the total volume discharged divided by discharge duration to determine an hourly discharge rate. When this hourly rate is extrapolated to a 24-hour day the estimated discharge rate is conservatively overestimated. For example, if 100 barrels of fluid are discharged in 1 hour, the discharge rate is 100 barrels/hour. Extrapolated to a "barrel per day" rate value, one could estimate a daily rate of 2400 barrels/day. However, this is not representative of what was actually discharged. 100 barrels was discharged in 1 hour and the discharge ceased, therefore, a more representative estimate of actual discharge rate is 100 barrels/day. This illustrates the importance of clearly defining how discharge rates are used to determine critical dilution, especially if EPA proceeds with these requirements as a compliance limitation. This type of approach, use of the total

volume discharged for discharges lasting less than 24 hours, is consistent with how discharge rates are estimated for other short duration discharges authorized by the permit.

Response: Comment is noted for the record. No change has been made to the final permit.

Comment 68: [Ocean Discharge Evaluation Criteria] The Joint Trades offered two observations regarding the Ocean Discharge Evaluation Criteria.1. Evaluation of discharges – The Ocean Discharge Evaluation Criteria (ODCE) does not appear to provide a full evaluation of all discharge streams authorized by the permit. Produced water and drilling fluids are discussed extensively, but other authorized discharges such as deck drainage, sanitary waste, and miscellaneous discharges are not addressed. EPA should consider a more comprehensive review to better align the criteria with the authorized discharges. 2. List of threatened and endangered species – The Joint Trades recommend that the list of threatened and endangered species in the Ocean Discharge Evaluation Criteria be reviewed to determine if the list is consistent with other documents describing Gulf of Mexico threatened and endangered species. The Joint Trades identified 3 resources that may be helpful: a. NOAA Fisheries Threatened and Endangered Species List Gulf of Mexico, b. NOAA Fisheries Biological Opinion on the Federally Regulated Oil and Gas Program Activities in the Gulf of Mexico (also known as "the BiOp), and c. BOEM's 2023-2028 National Outer Continental Shelf Oil and Gas Leasing Program Draft Programmatic Environmental Impact Statement.

Response: Comment noted for the record. Deck drainage and sanitary wastes are addressed in the ODCE. Miscellaneous wastes have been included in the final document and species list has been updated to reflect the BiOp. No changes have been made to the final permit.

Comment 69: [Essential Fish Habitat] The Joint Trades noted one item regarding the Essential Fish Habitat. The Essential Fish Habitat includes the following statement regarding the industry-wide treatment, completion, and workover fluids toxicity study:"46% of the samples collected showed acute toxicity for one or more species indicating that there is reasonable potential for acute toxicity stemming from well treatment, completion, and workover fluid discharge. Therefore, in accordance with 40 CFR §122.44 (d)(1)(iv), acute WET limits are included the proposed permit. Chronic toxicity monitoring will be a requirement of the proposed permit to assess potential for chronic effects."

The Joint Trades commented that if the actual volume discharged is used to determine the critical dilution for those discharges lasting less than 24 hours, then 25 of the 28 (89%) samples analyzed did not exhibit acute toxicity at the critical dilution. The Joint Trades also stated that during the industry-wide TCW study estimated flow rates were calculated using the total volume discharged divided by discharge duration to determine an hourly discharge rate. When this hourly rate is extrapolated to a 24-hour day the estimated discharge rate is conservatively overestimated. For example, if 100 barrels of fluid are discharged in 1 hour, the discharge rate is 100 barrels/hour. Extrapolated to a "barrel per day" rate value, one could estimate a daily rate of 2400 barrels/day. However, this is not representative of what was actually discharged. 100 barrels was discharged in 1 hour and the discharge ceased, therefore, a more representative estimate of actual discharge rate is 100 barrels/day. This illustrates the importance of clearly defining how discharge rates are used to determine critical dilution, especially if EPA proceeds

with these requirements as a compliance limitation. This type of approach, use of the total volume discharged for discharges lasting less than 24 hours, is consistent with how discharge rates are estimated for other short duration discharges authorized by the permit.

Response: Comment is noted for the record. No changes have been made to the final permit.

Comment 70: The Joint Trades offered the following suggested edits to this paragraph: Permittees are required to make timely updates to the Operators NPDES ID section in EPA's CDX system ~~eNOI~~. Any change in name, address, contact or contact information must be updated within 30 days of the change. Rationale: The Joint Trades requested that this section clarify the updates to be made to the Operators NPDES ID section in EPA's CDX system for contact information changes being that the CDX system is the repository for name, address, or contact information requested.

Response: EPA agrees that the updates should be made in CDX. eNOI has been replaced with CDX System.

BP Exploration & Production Inc. (BP) submitted the following comment:

Comment 1: [Toxicity sampling and testing requirements for treatment, completion and workover (TCW) fluids] BP commented that the proposed 36-hour hold time associated with toxicity sampling and testing requirements for treatment, completion and workover (TCW) fluids combined with the sampling frequency for TCW fluids will be difficult to implement, would increase safety risks, and would result in substantial adverse environmental impacts and suggested that the 36-hour hold time for these samples be increased to 72 hours. Rationale: Because of their distance from shore, TCW operations conducted in deep-water Gulf of Mexico (GoM) areas are subject to unique timing constraints, including weather, ocean currents, and personnel, equipment, and supplies availability. When these constraints allow, TCW operations are generally conducted in a continuous fashion. Due to these constraints, TCW discharges can occur at a time when helicopter flights and supply- and fast boats are not immediately available. For instance, for safety reasons, bp does not schedule non-emergency helicopter flights at night. Additionally, the amount of dilution water needed to conduct the toxicity tests under the proposed permit is expected to be significant – potentially 41 gallons per sample/test. That amount of volume and weight could mean that helicopter transport is not viable. BP requests the language be updated as follows:

I.B.6.a.1.b
"One composite sample representing the duration of the discharge, must be collected, and used in the initiation and renewal of the 48-hour test. The time composite sample must contain no fewer than 3 aliquots spaced out at constant time intervals throughout the compositing period. Each sample must meet a holding time of 72 hours for first use of the sample, and then the samples may be used to prepare renewals until test completion. In order to assess compliance with the WET limit, no alternate test procedures are authorized, and the test must be conducted in accordance with the method."

I.B.6.a.2.b

"Three (3) samples are to be collected for the chronic test. The samples may be collected as grab samples spaced out at constant time intervals throughout the duration of the discharge. Each sample must meet a ~~the~~ holding time of ~~36 hours (up to 72 if required)~~ 72 hours for first use of the sample, and then the samples may be used to prepare renewals until test completion. In order to assess compliance with the WET limit,~~ toxicity~~, no alternate test procedures are authorized, and the test must be conducted in accordance with the method."

Response: EPA agrees with the suggestion in regard to hold time. The permit has been updated to reflect a 72 hour hold time. EPA notes that chronic testing for TCW is not a limit and is monitoring only.

Beacon Offshore Energy submitted the following comment:

Comment 1: Beacon Offshore Energy supported comments submitted jointly by the Joint Trades.

Response: The comment is noted for the record.

Bureau of Safety and Environmental Enforcement - Gulf of Mexico OCS Region (BSEE): BSEE submitted twenty-one comments as discussed below.

Comment 1: [Permit Applicability and Coverage Conditions: Abandonment/Decommissioning] BSEE commented that the permit does not contain specific provisions regarding EPA's expectations for facilities' compliance during abandonment/decommissioning activities even though such operations are explicitly included in the list of applicable NPDES operations. All OCS operations must be supported within the NPDES permit, including abandonment and decommissioning operations because EPA is responsible for implementing and enforcing the Clean Water Act and has the authority to investigate and enforce against NPDES permit violations and unpermitted discharges. BSEE requested that EPA add language to address the following: 1) definitions of abandonment and decommissioning 2) enforceable requirements that apply during such operations, 3) clarifying language that states under which conditions NPDES permit coverage is applicable and/or terminated, 4) statement explicitly delineating when NPDES regulated activities are deemed to have permanently ceased and NPDES permit coverage would no longer be applicable following abandonment/decommissioning activities. Suggest adding a submittal of an "Out-of-Service statement," a "Removal Report," "End of Operations Report (EOR)," or "Completion Report" for pipeline decommissioning, and 5) Specify that operators must flush and capture the materials contained in pipelines, umbilicals, and other equipment prior to disconnection. A release of fluid from pipelines, umbilicals, and other equipment that are disconnected or cut from the facility during abandonment/decommissioning activities is not authorized by this permit.

Response: The EPA's permit does not regulate decommissioning/abandonment of pipelines or equipment itself, only the specific discharges listed as authorized by the permit that would occur at times including decommissioning/abandonment are covered by this permit. Discharges not specifically listed are not authorized by the permit regardless of whether they occur during normal operations or decommissioning/abandonment. BOEM and BSEE regulate placement and decommissioning of structures and supporting infrastructure related to oil and gas exploration in

federal waters of the Gulf of Mexico. Therefore, if a facility is decommissioning/abandoning and wishes to discharge, all permit requirements prescribed are enforceable and must be met. In regard to termination of coverage, the permit does not authorize discharges after a NOT has been filed. A NOT is required within one year of termination of temporary operations and within one year of termination of lease ownership for lease blocks. The timeframe to submit an NOT may be extended if a request with justification is sent to EPA. The language in the final permit has been modified to clarify that temporary operations include decommissioning. In addition, EPA has modified the permit to specify "*operators must flush and capture the materials contained in pipelines, umbilicals, and other equipment prior to disconnection. No releases or discharges of fluid from pipelines, umbilicals, and/or other equipment that have not been fully flushed prior to being disconnected or cut from the facility are authorized under this NPDES permit*". In addition, the BSEE definition of decommissioning has been added to the final permit.

Comment 2: [Notice of Intent] BSEE requested EPA add language to require that each structure/platform of a larger bridge-connected facility must be assigned its own Permitted Feature if it has a discharge point and stated the change will allow BSEE to make sound compliance verification determinations on EPA's behalf.

Response: The EPA understands that bridged facilities may have different BOEM/BSEE assigned ID numbers. Previously, the EPA agreed that if bridged facilities have the same BOEM/BSEE ID numbers, the EPA will accept one NOI for that bridged facilities for compliance purposes. Comment is noted for the record and no changes have been made to the final permit. See response to comment 5.

Comment 3: [Notice of Intent] BSEE requested EPA consider the removal of Day-to-Day Operator as an "Operator". BSEE stated that allowing multiple parties to file their own separate NOI for a single facility makes it difficult for BSEE to perform compliance verification of the permit on EPA's behalf. The Day-to-Day Operator should be the same as the Primary Operator in that BSEE expects the Primary Operator to have "day-to-day" control and oversight of the operations. The Primary Operator is the party to which BSEE grant permits to conduct oil and gas operations, not a contractor.

Response: While the primary operator does have the ability to hire, fire, or give instructions to contactors who conduct the actual work that results in discharges regulated by the permit, third-party operator may have direct control of certain activities or discharges. As a result, in the previous permit renewal, EPA allowed third-parties to file a separate NOI, which as stated may result in dual-coverage for the same charge. In addition, in a case-by-case circumstance, EPA allowed the primary operator to require day-to-day or vessel operators to file their own eNOIs for dual coverages. No change has been made to the permit.

Comment 4: : [Notice of Intent] BSEE requested that EPA add language for an exception to primary operator filing for NOI – maintenance waste BMP and cooling water intake permitted features could be filed by secondary operator. BSEE agrees with previous comments made to EPA that there are specific sources of discharge from drilling vessels for which the primary operator may not have any control.

Response: In the previous permit renewal, EPA revised the language to allow contractors to file a separate NOI, which as stated may result in dual-coverage for the same charge. In addition, in a case-by-case circumstance, EPA allows the primary operator to require day-to-day or vessel operators to file their own eNOIs for dual coverages". EPA already allows contactors to file NOIs for maintenance wastes, BMP, and cooling water intake. As a result, no change has been made to the permit.

Comment 5: [Notice of Intent] BSEE commented that the permit is unclear regarding the information that operators must submit with an NOI regarding each "specific discharge." For example, the operator is asked to be "specific," when submitting an eNOI, but this leads to operator confusion about limit sets and actual specifically approved discharge locations (differentiated from potentially unauthorized discharge points that are not specified with the NOI). BSEE requests language be added to the permit that would require an operator to specifically delineate each discharge point or points for each limit set an operator request to be covered under the permit.

Response: The latitude and longitude of the facility is a required NOI element under Section I.A.2 of the permit and is consistent with 40 CFR 122.21(g)(1), the location must be within fifteen seconds of the nearest latitude and longitude. This means the location would be accurate to approximately one quarter of a mile. Minor movement within this fifteen second latitude/longitude radius would not require a new NOI, unless the new location is in a different lease block. To address the aforementioned concern, the final permit has been updated to require permittees/operators to submit a facility map that delineates authorized discharge locations and type, as an attachment, when filing the eNOI.

Comment 6: [Produced Water] BSEE recommended that the produced water limitations are re-evaluated by performing an updated study of new available technology and improved performance of existing technology and stated that it has been a long time (over 20 years) since EPA has evaluated the technologies to ensure that the limitations provide the best reduction of pollution. Current limits could allow over a barrel of oil per day to be legally discharged from some of the largest facilities (discharging at 35,000 bbl/day of water).

Response: Request for re-evaluation of the technology basis for existing Effluent Limitation Guidelines (ELGs) are outside the scope of this permitting action. EPA has an ongoing ELG review and planning process. This comment has been forwarded to the appropriate staff contact for the 40 CFR 435 ELGs.

Comment 7: [Produced Water] BSEE recommended that EPA consider existing technologies for measuring onsite oil and grease concentrations in discharges and the applicability / feasibility of the technology for oil and gas platforms (*e.g.,* similar to Oil Content Monitors (OCMs) used for bilge water monitoring for vessels, infrared, UV florescence) for more representative sampling/measurement for better real-time monitoring of produced water. BSEE commented that in case of a sheen incident, it would be helpful to have a suite of tools and associated methods recognized by the EPA that would inform on-site decisions until lab sample results come back.

Response: Monitoring is required to be done in accordance with 40 CFR 136 approved methods. EPA has forwarded this comment to our regional Alternative Test Procedures coordinator for further consideration of approval under 40 CFR 136.5.

Comment 8: [Produced Water] BSEE recommended reducing the maximum 2-hour allowance for sampling after a visible sheen sighting to 30 minutes for a manned facility. BSEE believed that it is important to obtain samples more representative of the discharge that is observed. This will allow for: 1) the operator to define the baseline by which adjustments and corrections were made at the time of the incident and 2) EPA to better monitor the performance of produced water and the adequacy of the permit limitations.

Response: To accommodate situations where the location of visual monitoring, supplies storage, and sampling points were located such that mobilizing for sampling within 30 minutes would not be possible, the EPA previously established a 2-hour allowance for sampling. As a result, the current permit's requirement to collect a sample to monitor oil and grease compliance within 2-hours after a sheen is observed will be maintained. No changes have been made to the final permit.

Comment 9: [Produced Water] BSEE requested that produced water requirements for toxicity tests are rephrased to specify that consecutive toxicity tests shall be taken no less than 3 months apart, with one in the first half and one in the second half of each calendar year. BSEE agrees with previous comments made to the EPA on this issue that this suggested clarification would provide for more representative sampling throughout the year.

Response: Frequencies vary from once per quarter to once per year. There are instances where an operator will be required to sample monthly if they have a violation of a routine test, therefore consecutive toxicity test could be taken less than 3 months apart. Comment is noted for the record. No changes have been made to the final permit.

Comment 10: [Produced Sand and Misc. Discharges] BSEE requested that EPA provide references to definitions in Part II. Section G, pages 81 and 82 for "Produced Sand" and "Source Water and Sand" to clarify the difference between produced sand and source water and sand; and also requests that non-hydrocarbon bearing zones be defined.

Response: The definition of Produced Sand and Source Water and Sand are already included in the permit. No change has been made to the final permit.

Comment 11: [Well Treatment Fluids, Completion Fluids, and Workover Fluids] BSEE requested a composite sampling option for oil and grease as other sources allow for grab or composite sampling.

Response: EPA agrees and has updated the permit language to reflect that oil and grease sampling may be either grab or an average of four or more grab samples individually analyzed and averaged or manually composited prior to analysis. See EPA Method 1664A.

Comment 12: [Sanitary Waste] BSEE requested clarification between Facilities Continuously Manned for thirty or more consecutive days by 9 or Fewer Persons or Intermittently by Any Number and Facilities Continuously Manned for thirty or more consecutive days by 10 or More Persons or Intermittently by Any Number. BSEE stated that there is very little difference between the two sections and that the intent of Chorine sampling for Facilities Manned by 10 or More Persons is unclear. BSEE requested clarification if there will be limitations and reporting required

Response: For Facilities Continuously Manned for thirty or more consecutive days by 10 or More Persons, discharge of TRC must meet a minimum of 1 mg/l and shall be maintained as close to this concentration as possible consistent with Effluent Limitation Guidelines (40 CFR 435.14). Monitoring and reporting are required. For Facilities Continuously Manned for thirty or more consecutive days by 9 or Fewer Persons and Facilities Continuously Manned for thirty or more consecutive days by 10 or More Persons there is a prohibition on floating solids. Monitoring and reporting are required. No changes have been made to the final permit.

Comment 13: [Sanitary Waste- Facilities Continuously Manned for 30 or more consecutive days by 10 or More Persons] BSEE requested that EPA remove or add discrete boundaries to the TRC monitoring language "shall be maintained as close to this concentration as possible" and stated that Vague language (*e.g.*, "close to" and "as possible") does not allow for appropriate verification of compliance.

Response: The proposed requirement of "Discharge of TRC must meet a minimum of 1 mg/l and shall be maintained as close to this concentration as possible" is consistent with Effluent Limitation Guidelines (40 CFR 435.14) and cannot be removed from the final permit. No changes have been made to the final permit.

Comment 14: [Sanitary Waste- Facilities Continuously Manned for 30 or more consecutive days by 10 or More Persons] BSEE requested clarification on the permit not containing a maximum limit for Total Residual Chlorine limits.

Response: The minimum TRC concentration associated with Facilities Continuously Manned for 30 or more consecutive days by 10 or more persons was derived from Effluent Limitation Guidelines (ELG) at 40 CFR 435.14. No maximum chlorine level is prescribed in the ELG. The permit does not include a chlorine maximum limit in the permit for Sanitary Waste. However, the permittee is required to properly operate and maintain the MSD. No change has been made to the final permit.

Comment 15: [Sanitary Waste] BSEE requested that EPA add additional language for verification of proper MSD operation: [Exception] ... If the MSD is not properly operating or not operating, then the operator is required to immediately comply with the permit prohibitions and limitations for sanitary waste and maintain all records of when the MSD was not properly operating or not operating. Any time the MSD is not properly operating or not operating, it must be reported to EPA on the corresponding quarterly DMR. BSEE stated that this clarification is needed for facilities to demonstrate proper MSD operation

Response: To address the issue, EPA has required that any noncompliance with U.S. Coast Guard MSD operation requirements be included in a noncompliance report to EPA. EPA agrees that an operator must comply with limitations and prohibitions when the MSD is not operating/not operating properly, therefore the language: "*If the MSD is not properly operating or not operating, then the operator is required to immediately comply with the permit prohibitions and limitations for sanitary waste, submit any corresponding quarterly DMRs and maintain all records of when the MSD was not properly operating or not operating*" has been included in the final permit.

Comment 16: [Sanitary Waste] BSEE requested that EPA require some type of treatment for sanitary wastewater discharges for facilities with 9 or fewer occupants for 30 or more consecutive days and suggested adding requirement for (at minimum) grinding of effluent prior to discharge. BSEE stated that many facilities relatively close to shore support recreational fishing and are located in close proximity to each other; Also, water near the mouth of the Mississippi River can be much less saline (even fresh to brackish) than typical seawater, and therefore the destruction of the fecal bacteria and potential feces pathogens is not as likely or rapid as would be in full seawater concentrations.

Response: To address treatment for sanitary wastewater discharges for facilities with 9 or fewer occupants, the permit requires operators to properly operate, maintain and test their U.S. Coast Guard approved MSD. The permit also includes a prohibition on the discharge of floating solids.

Comment 17: [Misc. Discharges and Misc. Discharges of Seawater and Freshwater which have been Chemically Treated] BSEE recommended that the fluids authorized for discharge under the MD Limit Set be clearly associated with specific operations in the permit and stated that describing the operation associated with discharged fluid would potentially help provide clarification on the appropriate monitoring and discharge limitations. BSEE stated that discharging a hydrate control fluid or subsea production control fluids during subsea production operations could likely result in very different volumes and concentrations as compared to discharging those very fluids subsea during decommissioning operations.

Response: Comment is noted for the record. EPA assigns limit sets for specific discharges during the NOI process. Note that the requirements for hydrate control fluids do take into account differences in discharges. See Part I.B.10 of the permit. No changes have been made to the final permit.

Comment 18: [Misc. Discharges to which Treatment Chemicals have been added] BSEE stated that the Region 4 NPDES permit toxicity test specifies 7-day minimum and monthly average minimum NOEC, and The Region 6 NPDES permit specifies 48-hr average minimum and monthly average minimum NOEC. BSEE recommended that EPA Region 4 and 6 evaluate the best and most appropriate test method and be consistent.

Response: Comment noted for the record. Region 6 will not require averages for the acute test requirement and confirm it is an appropriate test method for the discharge. No change has been made to the final permit

Comment 19: BSEE requested that all defined terms in the permit should be capitalized within the document so as to indicate to the reader that the term is defined.

Response: Comment is noted for the record.

Comment 20: BSEE stated that the Permit should address, define, and limit the discharge of hydraulic fluid. BSEE stated that many leaks and spills reported to the National Response Center are reports of hydraulic fluid which go uncaptured from the required observation documentation because hydraulic fluid is not defined or mentioned in the permit.

Response: Discharges of leaks and spills are not authorized by this permit. See Part I.C.8 of the permit.

Comment 21: BSEE commented that the permit should provide acceptable methods for estimating flow. BSEE stated that flow estimation methods should be stated when parameters and frequency of sampling are based on flow rate.

Response: Multiple flow methods are available for estimating flow. EPA's *Handbook for Sampling and Sample Preservation of Water and Wastewater* and the *NPDES Compliance Flow Measurement Manual* include discussions of acceptable methods, which could apply to different situations ranging from flow meters, pump capacity volume calculations, to Weirs bucket and stopwatch methods etc. See Part II.C.6 for flow measurement requirements. The section has been modified to require documentation of flow estimation method and calculations.

CETCO Energy Services: CETCO submitted thirteen comments as discussed below.

Comment 1: [Well Treatment Fluids, Completion Fluids, and Workover Fluids – Toxicity Part I.B.6.a.1.b] CETCO requested clarification on the type of sampling is required for a long term (>48 hour) discharge. CETCO stated that the current wording requires a composite sample over the duration of the discharge and if spaced over a long term discharge (example 2 week discharge period), the samples would have a long hold period between the initial sample and subsequent compositing samples. CETCO suggested adding language detailing the sampling and renewal durations.

Response: EPA agrees with the suggestion. The permit language has been modified to reflect that a series of 3 grabs composited into one is required for acute samples, and that three grabs are required for the chronic test.

Comment 2: [Well Treatment Fluids, Completion Fluids, and Workover Fluids- Toxicity Part I.B.6.a.1.b] CETCO suggested adding wording for minimum and maximum compositing period due to ambiguity around sampling frequency for long term discharges.

Response: See response to BP Comment 1. No additional changes have been made to the permit as a result of this comment.

Comment 3: [Well Treatment Fluids, Completion Fluids, and Workover Fluids- Toxicity Part I.B.6.a.1.b] CETCO suggested that the sample hold time is specified within the regulation as shown in Part I.B.6.a.2.b "Each sample must meet the holding time of 36 hours (up to 72 if required)" in Part I.B.6.a.1.b.

Response: See response to BP comment 1.

Comment 4: [Well Treatment Fluids, Completion Fluids, and Workover Fluids- Toxicity Part I.B.6.a.1.b] CETCO requested clarification if the 48 hour toxicity test needs to be renewed for long term discharges greater than 48 hours.

Response: EPA agrees that the static non-renewal test type is allowed. No changes have been made to the final permit.

Comment 5: [Well Treatment Fluids, Completion Fluids, and Workover Fluids- Toxicity Part I.B.6.a.1.b] CETCO requested clarification on the three samples that are to be collected for the chronic test. CETCO further questioned if the three samples are to be used as a composite for the chronic testing or if these additional samples are being used for renewal of the initial test only.

Response: The three samples are used for test initiation and renewals. They are not to be composited into one. No change has been made to the permit.

Comment 6: [Well Treatment Fluids, Completion Fluids, and Workover Fluids- Toxicity Part I.B.6.a.2.b] CETCO requested clarification on the type of sampling required for a long term (> 48 hour) discharge. CETCO stated that the current wording requires three samples over the duration of the discharge and if spaced over a long term discharge (example: 2 week discharge period), the samples would exceed the hold period for the sample. CETCO suggested adding language detailing the sampling and renewal durations.

Response: EPA agrees with the suggestion. The permit language has been modified to reflect that a series of 3 grabs composited into one is required for acute samples, and that three grabs are required for the chronic test.

Comment 7: [Well Treatment Fluids, Completion Fluids, and Workover Fluids- Toxicity Part I.B.6.a.2.b] CETCO suggested adding wording for minimum and maximum sampling period due to ambiguity around sampling frequency and hold times and stated that it is unclear if the sample should be used before or after the 36 or 72 hour holding time

Response: See response to BP Comment 1. No additional changes have been made to the permit as a result of this comment. Comment is noted for the record.

Comment 8: [Well Treatment Fluids, Completion Fluids, and Workover Fluids- Toxicity Part I.B.6.a.2.b] CETCO requested clarification on if the chronic toxicity test needs to be renewed for long term discharges greater than 48 hours.

Response: The test type is a chronic static renewal test. All chronic tests need renewals. No change has been made to the final permit.

Comment 9: [Well Treatment Fluids, Completion Fluids, and Workover Fluids- Toxicity Part I.B.6.a.1-2] For 48 Hour Acute WET Limitation and 7-day chronic WET Monitoring, CETCO suggested using a single sample for toxicity testing and recording the long term readings for Chronic Toxicity data. CETCO states this would remove the dual sample requirements, reduce complexity, and ensure the same fluid is used for both Acute and Chronic data.

Response: EPA agrees with the suggested change. The permit has been updated to allow the acute results to be derived from the chronic test.

Comment 10: [Well Treatment Fluids, Completion Fluids, and Workover Fluids- Toxicity Part I.B.6.a.1-2] For 48 Hour Acute WET Limitation and 7-day chronic WET Monitoring, CETCO suggested using a single sampling methodology and subsequent wording for both Acute and Chronic testing regimes. For example, the Acute testing uses a composite sample, while the chronic tests require 3 samples with no mention of composite. CETCO states the standard of sampling should be equal for both tests including frequency, hold time, renewals, and number of samples to ensure consistent results between testing data.

Response: The sampling methods are the same for both acute and chronic (3 samples collected over the duration of the discharge). If conducting an acute test alone, one composite sample is used for the test. If conducting a chronic test, the three samples would be used for initial and renewals. No changes have been made to the final permit.

Comment 11: [Well Treatment Fluids, Completion Fluids, and Workover Fluids- Toxicity Part I.B.6.a.2] CETCO stated that during the public hearing it was stated that the chronic testing was only for informational purposes and the chronic toxicity results would not be used as a permit violation. CETCO suggested clarifying the information-only purpose of the chronic testing in the permit wording and reporting requirements. CETCO stated, per the Joint Industry Project, no information is available regarding the chronic toxicity of the stated fluids. The project consisted of 48-Hr tests and compliance with chronic testing requirements is untested and burdens the Permittee. CETCO suggested removal of the "In order to pass" wording.

Response: Comment noted for the record. The permit specifies that the chronic test only has monitoring and reporting requirements. Chronic testing requirements for Well Treatment Fluids, Completion Fluids, and Workover Fluids have been moved to monitoring requirements section for clarity that there is no applicable limitation. In addition, the pass language is relevant in regard to toxicity testing methodology and does not indicate a permit violation as there is no chronic limitation for these fluids. No further changes have been made to the final permit.

Comment 12: [Well Treatment Fluids, Completion Fluids, and Workover Fluids- Toxicity Treatment Chemicals Part I.B.11.a] CETCO requested clarification on if seawater with mixed chemicals can be discharged without a toxicity test for the composite fluid. CETCO provided the following example: Two chemicals are used, both with proven 48-Hr NOEC greater than C/D required by the permit. The composite fluid also meets the treatment chemical rules shown in the

Section a. CETCO requested clarification on if the composite fluid would require chemical toxicity testing, or an individual toxicity testing and stated that this clarification is necessary in many discharges where a dye/corrosion inhibitor/biocide is used, and each chemical has shown to be non-toxic independently; it would alleviate unnecessary testing of the composite mixture.

Response: The toxicity requirement applies to the discharge itself. Regardless of whether the product has a passing toxicity test, if the waste streams are mixed when discharging, a test is required on the mixed discharge, to analyze potential synergistic and antagonistic effects. Comment is noted for the record.

Comment 13: [Well Treatment Fluids, Completion Fluids, and Workover Fluids- 48-Hour Toxicity Testing Requirements - Well Treatment, Completion and Workover Toxicity Data Reporting Part I.D.4.i.2] CETCO requested clarification on if this section should address acute tests per the section heading.

Response: Comment noted for the record. The section addresses acute tests. The correction has been made to the final permit.

Transocean Offshore Deepwater Drilling Inc.: Transocean submitted four comments focused on Part I, Section B Subsection 12 of the Draft Permit, which relates to Cooling Water Intake Structure ("CWIS") Operation Requirements for new, nonfixed facilities (Draft Permit pp. 37-44).

Comment 1: Transocean commented that the addition of an "operation and maintenance" standard to the Draft Permit requirements for CWIS Operation Requirements exceeds the EPA's authority. Subsection I.B.12.b (1) (Draft Permit p. 40) of the Draft Permit relates to Cooling Water Intake Structure Operation Requirements for New non-Fixed Facilities. Transocean stated that it proposes modifying the operation requirement for such facilities, to add that a CWIS must be "operated and maintained. . ." in addition to "designed and constructed . . . so that the maximum through-screen design intake velocity shall not exceed 0.5 ft/s." The corresponding regulation setting forth the requirements applicable to CWIS for new offshore oil and gas extraction facilities under Section 316(b) of the Clean Water Act ("CWA"), 40 CFR § 125.134 (b)(2), states that the owner or operator of a new offshore oil and gas extraction facility "must design and construct each cooling water intake structure at [its] facility to a maximum through-screen design intake velocity of 0.5 ft/s." The language of 40 CFR § 125.134(b)(2) applies only to design and construction standards and does not provide a regulatory basis to transform the design and construction limitation of intake velocity into an on-going operational standard requiring continuous monitoring. In the Draft Permit language, EPA has expanded on the language of the regulation, adding the terms "operation and maintenance."

Transocean considered that the EPA's Draft Permit language exceeds the scope of EPA's authority and imposes operation and maintenance obligations on offshore operators beyond what is provided for in the relevant Regulations. Transocean recommended and requested that EPA reconsider the language in the Draft Permit applying the 0.5ft/sec velocity standard to the operation and maintenance of CWIS through screens, and instead limit

permitholders' obligations to the design and construction standard set forth in the applicable regulation.

Response: 40 CFR § 125.136(b)(1) already reaches beyond design and construction to require that all owners/operators of offshore oil and gas facilities submit cooling water intake velocity information (including design, design calculations, structure, equipment, and operation used to meet the velocity requirement) prior to permit approval in order to demonstrate compliance with the operational velocity requirement. Additionally, 40 CFR 122.21(r)(3)(iii) requires "a narrative description of the operation of each of the cooling water intake structures, including design intake flows, daily hours of operation, number of days of the year in operation and seasonal changes, if applicable" to ensure compliance with the operational velocity requirement prior to the granting or renewal of a permit. These provisions are contained within 40 CFR 125.134(b)(6) and make clear that the language of 40 CFR 125.134(b)(2) is not meant to be isolated to design and construction, but rather, mandates broadly that facilities demonstrate compliance with the operational velocity requirement. By requiring the cooling water intake operation and maintenance plan for the velocity requirement, EPA is within its broad statutory authority implementing section 316(b) of the CWA to clarify when this performance requirement must be met. Furthermore, because section 316(b) is silent as to the factors EPA should consider in deciding whether a candidate technology minimizes adverse environmental impact, EPA has broad discretion to identify the appropriate criteria. See *Riverkeeper, Inc. v. U.S. E.P.A.*, 358 F.3d 174, 187 (2nd Cir. 2004), n.12 (brevity of section 316(b) reflects an intention to delegate significant rulemaking authority to EPA); see *id.* at 195 (appellate courts give EPA ''considerable discretion to weigh and balance the various factors'' where the statute does not state what weight should be accorded). As such, Section 316(b) of the CWA grants EPA broad authority to establish performance standards for cooling water intake structures based on the ''best technology available to minimize adverse environmental impact.''

EPA has broad power under the statute (316(b) of the CWA) for permit writers to impose conditions upon permittees, as such, EPA's inclusion of the operation and maintenance wording is an allowable clarification of this requirement for facility owners/operators and streamlines the permit language. To provide clarity on cooling water intake reporting, numeric exceedances of maximum through-screen design intake velocity and dates must also be included on DMRs, for all new facilities required to comply with intake structure monitoring requirements.

Comment 2: Transocean stated that EPA's Draft Permit language related to velocity monitoring on CWIS is confusing and could be interpreted to impose obligations on operators beyond what EPA intended. CETCO mentioned EPA's Draft Permit language modifies Section I.B.12.c (1)(ii) (Velocity Monitoring) (Draft Permit p. 41) to state that the "operator must monitor intake flow velocity across the intake screens on a continuous basis to ensure the maximum intake flow velocity does not exceed 0.5 ft/s.. . ." This reference in the Draft Permit to a "continuous basis" could be construed as requiring continuous monitoring which, within the offshore industry, generally means that a flowmeter must be installed to monitor flow rate at all times.

Transocean stated that it does not read the Draft Permit language as requiring the use of flowmeters on offshore facilities because monitoring requirements are expressly specified in the Monitoring Frequency table set forth in Section I.B.12.c (1)(ii); However, Transocean is

concerned that the reference to "continuous monitoring" could be misinterpreted in the future. Transocean therefore recommended EPA consider modifying Section I.B.12.c (1)(ii) to provide for monitoring on a "regular" or "periodic" instead of "continuous" basis, with express reference to the Monitoring Frequency table set out in that section.

Response: See response to Joint Trades comment 42.

Comment 3: Transocean commented that the installation of flowmeters would be prohibitively expensive for Transocean and other owner/operators of offshore non-fixed facilities. Transocean added:

"As noted in Section 2, above, Transocean is concerned that the reference to "continuous monitoring" in Section I.B.12.c (1)(ii) (Velocity Monitoring) of the Draft Permit (Draft Permit p. 41) could be interpreted to require the use of flowmeters to monitor flow velocity. However, it would be cost-prohibitive for Transocean and other similarly situated owners and operators to install flowmeters. Transocean estimates the costs for installation of flow meters on its fleet of vessels under ideal conditions would exceed $11 million USD per vessel. In particular, a vessel's thrusters would need to be removed before the vessel could be transported to one of the few U.S. shipyards capable of performing the necessary work. As discussed above, DP thrusters are safety-critical equipment and removal and reattachment for a purpose that provides very limited, if any, environmental benefit could potentially impact the integrity of the thrusters. This cost estimate also includes general yard services standard to a drydock, rig crew accommodations, actual installation of flowmeters on the 10-13 sea chests on each vessel, class review and approval, drawing updates and preparation, resealing of thrusters, tow out of the yard, additional fuel costs to transit from the well location to the shipyard, and lost revenue. Further, even if flowmeters were considered the best technology available for measuring flow velocity, such flowmeters could not be guaranteed as a reliable method of measurement for use on MODUs and other offshore facilities due to the currents, marine life variance, and DP thruster issues discussed in the Operational Background, above. EPA has an obligation to consider economic (cost-benefit) analysis in proposing regulations. 40 CFR 125.135. This obligation was further discussed in the EPA's Technical Development Document for the Final Section 316(b) Phase III Rule: Facilities also have the opportunity to request alternative requirements and provide data to determine if compliance with the requirements would result in compliance costs wholly out of proportion to those EPA considered in establishing the requirement, or would result in significant adverse impacts on local water resources other than impingement or entrainment, or local energy markets."

Transocean recommended EPA clarify that the use of flowmeters is not required by Section I.B.12.c (1)(ii) of the Draft Permit and take note of the substantial costs of such installation as against the negligible environmental benefit they would offer for non-fixed facilities like MODUs operating in deep water conditions.

Response: See response to Joint Trades comment 42. In addition, EPA agrees that use of flowmeters is acceptable but is not required at this time to satisfy cooling water intake monitoring requirements.

Comment 4: Transocean noted that EPA's proposed schedule for CWIS monitoring frequency is disproportionately burdensome on Transocean and other owners and operators.

Transocean added:

"Separate and apart from Transocean's concern about the phrasing used in Section I.B.12.c (1) (ii) of the Draft Permit, Transocean also takes issue with the schedule set forth in that section for the Monitoring Frequency (Draft Permit p. 41-42). In particular, under the inspection schedule contained in the Draft Permit, if the most recent intake flow velocity is greater than 0.38 ft./s, daily monitoring of intake velocity would be required. Transocean considers the Monitoring Frequency schedule in the Draft Permit to be arbitrary and capricious, and not supported by any scientific rationale. Daily monitoring of the intake flow velocities of the 10 – 13 sea chests aboard a MODU or other non-fixed facility operating in deep water ocean conditions would be unreasonably burdensome. Transocean's MODUs base their intake velocity calculations on visual inspections of each sea chest through deployment of remote monitoring devices from the MODU. Remote monitoring devices require low current thresholds for safe deployment and therefore must be operated when the DP thrusters can safely be disengaged, avoiding thruster damage by the remote monitoring device, and where other environmental factors (weather, visibility, and daylight) are optimal. Because active offshore drilling operations require DP thruster engagement, optimal environmental conditions are infrequent in the U.S. Gulf of Mexico area of operations and observation. Moreover, there is no evidence of a significant risk of impingement in this operating environment. This Draft Permit language therefore imposes arbitrary monitoring obligations on Transocean and other operators, which could create unwarranted safety and operational risks. Further, the CWA (specifically 40 CFR § 125.134(b)(4), (6), (7), and (8)), already sets forth requirements for monitoring and minimizing mortality of fish and shellfish. Typical CWIS arrangements onboard MODU vessels routinely provide for servicing of water intake arrangements where crews may observe any impinged marine life. These strainer arrangements are periodically cleaned and inspected to preserve the proper functioning of suction pumps located "downstream" from the strainer components. MODU maintenance crews would be able to simply record their observations of findings when conducting maintenance in accordance with the above-mentioned provisions."

Transocean recommended and requested that the monitoring frequency requirements set forth in Section I.B.12.c (1) (ii) of the Draft Permit be changed to reflect strainer content observations, reduced to periodic intervals or eliminated altogether, and instead owners and operators should be directed to the obligations set forth in 40 CFR § 125.134(b)(4), (6), (7), and (8).

Response: 40 CFR 122.44 gives EPA discretion to establish monitoring requirements as necessary to comply with permit limitations and requirements. NPDES permits typically have more monitoring requirements based on discharge volumes etc. The intake flow velocity of 0.38 ft/s is much closer to the 0.5 ft/s limitation; therefore, it is appropriate to have more frequent monitoring as opposed to lower velocities. In Facilities with higher velocities buildup or fouling could more easily result in a violation of the 0.5ft/s limit than smaller discharges which have more leeway before getting that close to the 0.5ft/s limit. For example, if the flow rate is <.30ft/s, 25% fouling on the intake screen could require the flow to pass thru only 75% of the screen

resulting in an adjusted flow rate of approximately 0.40ft/s. Whereas if the flow rate is >.38ft/s, 25% fouling on the intake screen could require the flow to pass thru only 75% of the screen resulting in an adjusted flow rate of approximately 0.51ft/s, which would violate the permit limit of 0.5ft/s. EPA believes that more frequent monitoring will allow the permittee to become aware of maintenance needs in time to prevent a permit violation and is necessary to ensure compliance for discharges closer to the permit limitation for intake flow velocity.

International Association of Drilling Contractors (IADC) submitted following comment:

Comment 1: The IADC supported the comments and concerns expressed by the Joint Trades. The IADC commented, in regard to Cooling Water Intake Structures (CWIS), on its' concerns with continuing to hold "non-fixed facilities" to the 0.5 ft/sec flowrate impingement requirements as applied to CWIS where sea chests are employed. The IADC noted that, in Section VI of EPA's June 16, 2006, National Pollutant Discharge Elimination System; Establishing Requirements for Cooling Water Intake Structures at Phase III Facilities; Final Rule (Vol. 71, No. 116), the EPA's view expressed where "facilities using sea chests may have few, if any, opportunities to meet the entrainment control requirements" applicable to facilities subject to the Phase I rule". The commenter noted that in the 2006 Final Rule, EPA also explained that the only technology control available to address entrainment at facilities with sea chests would entail installation of equipment projecting beyond the hull of the vessel and thus concluded that entrainment controls are unfeasible at these facilities. The commenter noted that since 2006, it has become apparent that EPA's acknowledgement of the inability to apply entrainment controls to non-fixed facilities with sea chests also applies to impingement mortality measures in the design and construction of these facilities.

The IADC noted that this outward projection has been shown to create problems with respect to fluid dynamics, vessel shapes, and safe seaworthy profile. The IADC stated that, since 2006 it has become apparent that EPA's acknowledgement of the inability to apply entrainment controls to non-fixed facilities with sea chests also applies to impingement. The commenter noted that appurtenances affixed to a Mobile Offshore Drilling Unit (MODU) hull to address impingement concerns may impose the unintended consequence of impeding cooling water intake flow that provide service to diesel generators providing electrical power to vital ship systems including, inter alia, dynamic positioning (DP), unique to non-fixed facilities constructed with sea chests. IADC stated, should the EPA persist in an expectation for maintaining impingement standards on non-fixed facilities equipped with sea chests as implemented in 2006, additional consultation with relevant U.S. Coast Guard DP subject matter experts would be necessary to further quantify the emergency disconnect risks associated with delimited sea chest flow imposed by a 0.5 ft/sec flowrate requirement. The commenter concluded that compliance with 40 CFR 125.134(b)(2) is fundamentally not possible as a means for implementing effective impingement measures.

The IADC noted that provisions found in 40 CFR 125.134(b)(4), (6), (7), and (8) already account for monitoring and management of processes that could detect impacts on marine organisms, The IADC noted that MODU vessels and crew are capable of integrating the intent of these provisions into existing maintenance procedures and management plans to observe any impingement of marine life. The commented also noted that MODU maintenance crews would

be able to record their observations of findings when conducting maintenance in accordance with the above-mentioned provisions.

The IADC recommended that EPA explicitly acknowledge in the proposed permit, the non-applicability of impingement measures for non-fixed facilities constructed with sea chests for the reasons described above. The IADC stated that Such recognition would provide necessary clarification of 40 CFR 125.134(b)(1)(iii) where discussion of applicability to non-fixed facilities does not distinguish between such facilities with or without sea chest arrangements as is otherwise expressed in 40 CFR 125.134(b)(1)(i) and (ii) for fixed facilities; additionally, EPA's acknowledgement of impingement provisions as recommended by IADC will provide the necessary alignment with EPA's own acknowledgement of shortcomings pertaining to entrainment standards as expressed in its 2006 Final Rule.

Response: New Source Performance Standards at 40 CFR 125 have required the design of cooling water intake structures at facilities to meet the maximum through-screen velocity intake of 0.5ft/s or less since 2006. The 2006 Final Rule does states "In response to comments, however, EPA is not promulgating national entrainment controls for fixed facilities with sea chests or mobile facilities in this final rule. EPA's data suggest that the only physical technology controls for entrainment at facilities with sea chests and non-fixed (i.e., mobile) facilities would entail installation of equipment projecting beyond the hull of the vessel or facility. Such controls may not be practical or feasible since the configuration may alter fluid dynamics and impede safe seaworthy travel, even for new facilities that could avoid the challenges of retrofitting control technologies. New offshore oil and gas facilities that are not fixed facilities would have to comply with the regulations at §125.134(b)(1)(iii), which address intake flow velocity, specific impact concerns (*e.g.,* threatened endangered species, critical habitat, migratory or sport or commercial species), required information submission, monitoring, and recordkeeping. Track II is not available to non-fixed (mobile) facilities because non-fixed facilities, which are expected to operate at multiple locations, would not be able to perform a site-specific demonstration. For this same reason, EPA has dropped some of the other site-dependent requirements for non-fixed facilities (*e.g.,* provision of source waterbody flow information). (35014)". Infeasibility does not also apply to impingement with respect to these facilities.

Both the 2017 & 2012 general permit held nonfixed facilities with sea chests to the same standard as proposed in the 2022 permit. The 2022 permit is a be a continuation of at least a decade of the same standard. It is important to note that for such existing sources, CWA section 301(b)(1)(A) requires the establishment of effluent limitations based on ''the application of best practicable control technology currently available,'' and, as mentioned above, because section 316(b) is silent as to the factors EPA should consider in deciding whether a candidate technology minimizes adverse environmental impact, EPA has broad discretion to identify the appropriate criteria. Section 316(b) of the CWA grants EPA broad authority to establish performance standards for cooling water intake structures based on the ''best technology available to minimize adverse environmental impact.'' See *Hudson Riverkeeper Fund v. Orange & Rockland Utils., Inc.*, 835 F. Supp. 160, 165 (S.D.N.Y. 1993) (''This leaves to the Permit Writer an opportunity to impose conditions on a case-by-case basis, consistent with the statute * * *'')

Note that the industry is already utilizing other effective technologies to comply with the

requirement, therefore it is not justifiable to exempt facilities that state it is impossible to comply with 40 CFR 125.134(b)(2).

Chevron U.S.A. Inc. submitted the following comment:

Comment 1: Chevron supported comments submitted jointly by the Joint Trades and reiterated concerns around acute and chronic toxicity testing requirements for TCW Fluids.

Response: Comment is noted for the record.

Shell Exploration & Production Company submitted the following comment:

Comment 1: Chevron supported comments submitted jointly by the Joint Trades and also noted that the burden and schedule impacts of the proposed TCW Fluids toxicity limits are not well understood. Chevron noted that it is further concerned that the additional monitoring of TCW Fluids, cooling water intake flows, and various discharge limitations have not been fully explained or justified or impacts to the industry clearly considered.

Response: Comment is noted for the record.

An anonymous commenter submitted the following comment:

Comment 1: The commenter noted that the annual monitoring requirements specific to mobile offshore drilling units and drilling vessels are unclear.

Response: EPA agrees with the comment. Monitoring requirements apply to all facilities, when discharging, even if for less than a full monitoring period. A sample must be collected and analyzed to meet annual, quarterly, monthly, weekly, and daily monitoring requirements even if discharges last for less than the full monitoring period (*e.g.,* if discharges occurred that are subject to annual monitoring, at least one sample must be taken, and results reported to meet the annual monitoring requirement even if the permittee was on site and discharging for only six months). Permit language has been updated to reflect this.

The Center for Biological Diversity (CBD) submitted following comment:

Comment 1: The CBD commented on the *Final Report on the Joint Industry Project Study of Well Treatment, Completion, and Workover Effluents* ("Industry Report"). The commenter stated that there are shortcomings of the Industry Report as follows:

1. Undisclosed chemicals. "The most significant shortcoming of the Industry Report is its failure to identify and disclose to EPA the vast majority of the chemical constituents discharged into the Gulf of Mexico in treatment, completion, and workover effluents, which makes it impossible to adequately assess the toxicity of the effluents.

2. Small Sample Size. The CBD noted that the small sample size is not a representative sample size, therefore EPA is unable to assess impacts of well treatment, completion, and workover fluids to Gulf marine ecosystems.
3. Truncated Effects Area. The commenter noted that the Report focuses on the edge of the mixing zone for its assessment of acute toxicity and does not discuss potential for toxicity closer to the point of discharge nor does it discuss the effects of repeated and chronic exposure.
4. Improper Comparison to Produced Water. The commenter noted that the Industry Study attempts to diminish the environmental effects of treatment, completion, and workover effluents by comparing them to produced water. The CBD commented that contrary to the report, while treatment, completion, and workover discharges may be less than produced water discharges, they represent a substantial input of chemicals into Gulf of Mexico waters: 5,006,232 gallons in 2019-2020, according to the Report. The CBD noted the toxicity of treatment, completion, and workover effluents should be assessed independently and without comparison to other point source discharges.

CBD stated that the report leaves EPA with little useful information about the toxic effects of treatment, completion, and workover discharges into the Gulf of Mexico. Due to the fact that the volume of fracking discharges into the Gulf of Mexico may increase dramatically in the coming years, CBD requested that the EPA prohibit the discharge of fracking chemicals into the Gulf of Mexico both treatment, completion, and workover effluents and produced water effluents—until those substances are proven safe for aquatic life or rendered safe through adequate pre-discharge treatment.

Response: The study was a requirement of the previous permit, therefore comments regarding issues of the study are outside the scope of this permit. The study was designed to gather information on Well Treatment, Completion, and Workover Effluents discharges. The results of the study allowed EPA to conclude that there was a reasonable potential for acute toxicity, therefore a limit was included in the proposed permit. In addition, EPA also required chronic monitoring to gather information on chronic effects of these discharges. The commenter did not provide any information on specific pollutants that were not already appropriately regulated by the permit conditions. No change has been made to the final permit.

Comment 2: The CBD commented that the Draft Permit does not comply with the Ocean Discharge Criteria or adequately protect water quality because it allows the unlimited discharge of produced water; it allows the discharge of toxic fracking and other well treatment fluids; it allows the discharge of drill cuttings and fluids; and is less protective of water quality than other offshore oil and gas permits. The CBD also noted that EPA cannot make a valid finding that the permit does not cause an unreasonable degradation of the marine environment, therefore the permit does not comply with the Clean Water Act and EPA cannot issue the Permit. CBD noted that the Draft Permit will cover more than 10,493 oil and gas extraction facilities and that an insufficient amount of information exists regarding impacts of well stimulation chemicals and fracking therefore individual permits should be required. The CBD commented that discharges authorized by the General Permit will further degrade already impaired waters in Texas and

Louisiana. The commenter also noted that EPA's assumptions on localized effects are decades-old, underestimate environmental impacts and should be updated.

Response: The EPA disagrees with the commenter's assertion that the EPA lacks sufficient data to support its finding that the permit does not cause an unreasonable degradation of the marine environment under CWA section 403(c) and that limits on the volume of produced water are necessary to prevent unreasonable degradation of the marine environment. The final permit is more protective than the previous permit. With respect to data on the types and quantities of chemicals used, chemical usage in offshore oil and gas extraction, including well treatment fluids, was examined extensively during development of the Effluent Limitations Guidelines (ELGs). The most recent chemical usage study that was conducted on operations in the Gulf of Mexico did not find evidence that significant changes in chemicals used for offshore oil and gas extraction have occurred since the ELG was issued in 1993. Note the cover page of the permit states, "*In compliance with the Federal Water Pollution Control Act, as amended (33 U.S.C. 1251 et. seq. the "Act"), operators in the Oil and Gas Extraction Point Source Category (40 CFR 435, Subpart A) located either in Federal Waters of the Gulf of Mexico seaward of the outer boundary of the territorial seas off Louisiana and Texas or within the territorial seas of Louisiana or Texas, but with discharges to Federal waters seaward of those state territorial seas, are authorized to discharge to waters of the United States described in Part I.A.1 in accordance with the effluent limitations, monitoring requirements, and other conditions set forth in Parts I, II, and Appendices hereof*" (emphasis added). EPA has neither observed nor discovered scientific evidence of "significant adverse changes" in ecosystem diversity, productivity or stability of the biological community, no threat to human health through direct exposure to pollutants or consumption of exposed aquatic organisms and, no loss of esthetic, recreational, scientific, or economic values which is unreasonable in relation to the benefit derived from the discharge as a result of the discharges authorized in compliance with the permit.

The permit applies to federally regulated waters offshore. Texas and Louisiana regulate discharges to their waters under their authorized NPDES programs. Furthermore, coastal, and near shore waters are heavily impacted by discharges originating onshore and carried into the ocean by rivers. EPAs May 2000 Integrated Assessment of Hypoxia in the Northern Gulf of Mexico, implicates river-born nutrients from the Mississippi-Atchafalaya River Basin as one of the major factors controlling hypoxia in the northern Gulf of Mexico, in addition to water-column stratification. The assessment further notes that the principal source of nitrates come from basins that drain agricultural land in southern Minnesota, Iowa, Illinois, Indiana and Ohio. The assessment goes on to mention that almost all of problems associated with hypoxia (and other symptoms of eutrophication) are caused or exacerbated by the increased flow of nutrients from land due to human activities. Therefore, degradation and impairment assessments are not relevant to discharges to the OCS. EPA notes that the commenter did not provide information to show that the impairments were caused solely by OCS discharges.

Comment 3: The CBD commented that they support Draft Permit now includes acute WET limits and chronic toxicity monitoring. The CBD commented, they also support the improvements for testing and monitoring well treatment, completion, and workover fluids and the new prohibition on discharging radionuclides but does believe that the Draft Permit goes far enough to protect the Gulf's waters. The CBD commented that the Draft Permit fails to ensure

toxicity testing occurs concurrently with instances of fracking pollution discharges and the infrequency of toxicity undermines the efficacy of using Whole Effluent Toxicity (WET) and does not constitute representative samples. The CBD stated that EPA needs to more clearly require sampling that represents flowback of "hydrate inhibitors, scale inhibitors, corrosion inhibitors, biocides, paraffin inhibitors, well completion fluids, workover fluids, well treatment fluids, and/or hydrate control fluids," as well as define methods for identifying the volume, concentration, and duration of the discharges of those additives. The CBD noted that annual and quarterly sampling are inadequate.

Response: The EPA disagrees that the monitoring frequencies in the permit are inadequate for assessing the discharges' compliance with permit requirements. Toxicity testing for TCW fluids is required per discharge and includes acute limitations and chronic monitoring to address toxicity per event. Because testing is required per discharge, it shall be representative of discharges. Additionally, samples shall be representative of the discharge as it is a requirement to collect several aliquots spaced out throughout the entire duration of the discharge. EPA has established this testing requirement to be representative of the TCW discharges. The WET requirements for the other discharges are expected to be more representative of these continuous discharges but do require re-testing and more frequent monitoring in the event of a test failure.

Comment 4: [Produced Waters and Well Treatment, Completion, and Workover Fluids (TCW Fluids)] The CBD commented that it would like clarity if EPA is requiring WET testing per fracking or treatment of the well and on the intent of the duration of discharge. The commenter added that EPA should require toxicity testing of the well treatment fluids before application and sampling of flowback at peak toxicity levels; or consider the first flush commingled produced water, when commingling TCW with produced waters, and sample or calculate volumes. The CBD also recommended a definition of Commingled Produced Water.

Response: See Response to comment 3. The permit has conditions related to commingling of Produced Water with other discharges. EPA does not believe a specific definition of Commingled Produced Water is necessary. The results of the TCW study indicated that these discharges are typically of a shorter duration. The monitoring requirement for TCW discharges in the permit were designed to ensure representative monitoring of those discharges. See Part I.B.4 and I.B.6 for toxicity monitoring requirements for Produced Waters and TCW Fluids.

Comment 5: [Produced Waters and Well Treatment, Completion, and Workover Fluids (TCW Fluids)] The CBD commented that EPA should require more robust monitoring and reporting as the monitoring in the permit is insufficient to meet permit conditions, including disclosure of volume and ingredients of TCW fluids. The CBD also commented that EPA should require toxicity testing and reporting for every hydraulic fracturing and acidization event as well as reporting the characteristic assessment to both EPA and Frac Focus, a public disclosure registry. The CBD commented that EPA should set numeric concentration limits for chemicals that are known to be toxic and require assessments of the toxicity of chemicals with inadequate data.

The CBD commented that the annual monitoring exceptions under the 2017 permit should be removed in the Draft Permit as it does not constitute representative sampling. The CBD

commented that sampling for toxicity should account for seasonal changes or circumstances and be established as, at a minimum, monthly until the cause of toxicity is identified and eliminated.

Response: Testing for WET is required per discharge event, thus covering every discharge of TCW wastes. For produced waters, the frequency has not changed in this permit and is dependent on the amount discharged per year.

Comment 6: [Produced Waters and Well Treatment, Completion, and Workover Fluids (TCW Fluids)] The CBD commented that the Draft Permit should include effluent limitations for toxicity. The CBD cited a study titled *Investigating the potential toxicity of hydraulic fracturing Flowback and produced water spills to aquatic animals in freshwater environments: a North American perspective* (Folkerts, Erik J., Greg G. Goss, and Tamzin A. Blewett) that reviewed fracking flowback thresholds for common chemicals that could be used to establish toxicity limits. The CBD recommended that the industry-wide study indicated reasonable potential, therefore effluent limitations should be established, and Toxicity Reductions Evaluation should be conducted when any toxicity test fails the survival and sublethal endpoints.

Response: The permit does include effluent limitations for toxicity on both produced waters and TCW wastes. See Part I.B.4.b of the permit for requirements already included that trigger permittee requirements resulting from failure of a Produced Water WET test. Failure of a WET test limit is a permit violation and Part II includes the duty to comply and duty to mitigate permit conditions required by 40 CFR 122.41.

Comment 7: [Produced Waters and Well Treatment, Completion, and Workover Fluids (TCW Fluids)] The CBD commented that EPA should specify in the permit that hydraulic fracturing and acidization fluids are considered well treatment fluids, rather than only mentioning it in the fact sheet.

Response: The definition of Well Treatment Fluids is already included in the permit. Fracking fluids are used to restore or improve productivity by chemically or physically altering hydrocarbon-bearing strata after a well has been drilled and thus are already covered by the definition of Well Treatment Fluids. No change has been made to the final permit.

Comment 8: [Produced Waters and Well Treatment, Completion, and Workover Fluids (TCW Fluids)] The CBD stated that EPA Region 6's OCS permit is laxer than and is inconsistent with permits in other regions. The CBD cites EPA Region 9's permit, which sets a limit of volume of produced water for each platform. The CBD stated EPA must place mass-based effluent limits for produced water and other chemical pollutants, per 40 CFR 122.45 to address bioaccumulation, antidegradation, and prevent adverse environmental impacts. The CBD commented that EPA must place a numeric volume for produced water allowed to be discharged and that monitoring flow should happen more frequently than once per month until the operator can demonstrate that the discharge volume is consistent during production.

Response: The EPA notes that the CBD did not provide any data or information to show that the current volume of produced water discharged in the Gulf of Mexico is resulting in adverse environmental impact or specify a discharge volume that would eliminate the alleged impact.

Accordingly, EPA does not have a record providing a basis to support inclusion of a produced water volume limit in the permit at this time. Adding specified limits simply on the basis that a permit authorizing discharges to the Pacific Ocean has those limits, would not be appropriate. Those limits and requirements in the Region 9 OCS general permit were largely added as a result of the Coastal Zone Management Act consultation with the California Coastal Commission and are reflective of California water quality standards, which do not apply to the Gulf of Mexico. Discharge authorized by this permit are outside of state jurisdiction and no state bordering the Gulf of Mexico included similar requirements as part of their Coastal Zone Management Act review. The distribution and proximity to the coast of the dischargers covered under Region 9's OCS general permit are not the same as what is found in the facilities regulated under GMG290000. Note that ELGs at 40 CFR 435 do not include production-based limits and includes limits that are not readily related to a measure of operation. See also 40 CFR 122.45(f)(1); "All pollutants limited in permits shall have limitations, standards or prohibitions expressed in terms of mass except:" (iii) "if in establishing permit limitations on a case-by-case basis under § 125.3, limitations expressed in terms of mass are infeasible because the mass of the pollutant discharged cannot be related to a measure of operation". Using production-based limitations would be an impractical in this case because flow is based on production, which is unknown beforehand. No change has been made to the final permit based on this request.

Comment 9: [Produced Waters and Well Treatment, Completion, and Workover Fluids (TCW Fluids)] The CBD commented that estimates for reporting monitoring and flow are unacceptable because flow measuring devices are available. The CBD added that drilling fluids flow, produced water flow, and other discharges treated with chemicals flow should be required to accurately measure and report flow because it is feasible and necessary to measure flow for well control. The CBD commented that monitoring of flow should be on a continuous basis, to capture volume of produced water discharges and that EPA did not provide an explanation why flow monitoring requirements were changed from quarterly to yearly.

Response: See response to comment 8 and response to BSEE comment 21. Review of WET data for produced waters during the previous permit cycle revealed several instances where the critical dilution was not being recalculated after initial determination, and the permit language was confusing to some. In order to simplify the recalculation process and ensure clarity on expectations from the Agency, EPA standardized this process. Critical dilutions are now to be determined only once every year and used for any produced water WET test during that year. Flow monitoring requirements are specified for each type of discharge (*e.g.,* produced water once per month and TCW Fluids daily, when discharging) and are not only required on an annual basis. These representative flow volume results from the monitoring requirements can be used to extrapolate to total flow volumes (*e.g.,* Results from once per month flow volume monitoring requirements are considered to be representative of each day of the month; therefore, multiplying by the number of days in a month are considered to be representative of the total monthly flow volume). No changes to flow monitoring requirements were made as a result of this comment.

Comment 10: [Produced Waters and Well Treatment, Completion, and Workover Fluids (TCW Fluids)] The CBD stated EPA should eliminate the option to add seawater prior to testing of

produced water and TCW fluids, to ensure that dilution will not be a substitute for treatment to meet permit limits and standards.

Response: Mixing with seawater has been a practice allowed in the permit for multiple permit issuance cycles to adjust flow and concentration loads to meet water quality based Whole Effluent Toxicity limitations. Monitoring for technology-based limits is required prior to mixing, to ensure dilution is not used to comply with the technology-based limits. The practice will continue in this permit cycle. No changes have been made based on this request.

Comment 11: [Produced Waters and Well Treatment, Completion, and Workover Fluids (TCW Fluids)] The CBD stated monitoring for oil and grease should be more frequent than once per month and sheen samples should be taken in less than two hours. The CBD also commented that EPA should set a temperature limit for produced water and other discharges.

Response: See response to BSEE comment number 8. Oil and grease samples are required once a month for Produced Waters and TCW Fluids. In addition, Part II.C.2 of the permit requires samples and measurements to be representative of the monitored activity. In addition to monitoring for oil and grease, daily sheen monitoring is also required, which can trigger additional oil and grease sampling when a sheen is observed. As a result, EPA does not believe more frequent sampling is necessary. EPA agrees that it would be useful to collect data on produced water temperatures, to be used in future permit reissuances. Temperature monitoring is relatively simple and inexpensive. As a result, once a month temperature monitoring for produced water has been included in the final permit.

Comment 12: The CBD commented that the Draft Permit fails to ensure TCW fluids will meet no priority pollutants in trace amounts because of a lack of information on chemicals and fracking. The CBD noted that EPA should require sampling of any added materials, to ensure there are no priority pollutants or toxic chemicals. The CBD noted that even allowing trace amounts of some pollutants can be harmful. The commenter also stated that harmful chemicals are used offshore even though they are not listed as priority pollutants, therefore EPA should require monitoring and reporting for chemicals in all types of discharges and references the Pacific OCS Permit. The CBD referenced and analyzed chemicals reported in the TCW Industry Wide Study, and concluded they were toxic and had harmful effects.

Response: TCW discharges are subject to an acute toxicity WET limit which protects against toxic discharges, even when the exact pollutants in the discharge are not know. For well treatment fluids, completion fluids, and workover fluids, the permit specifically prohibits the discharge of priority pollutants except in trace amounts. In Part II.G of the permit, Trace Amounts means "*if materials added downhole as well treatment, completion, or workover fluids do not contain priority pollutants then the discharge is assumed not to contain priority pollutants, except possibly in trace amounts*". Furthermore, the final Development Document for the Effluent Limitations Guidelines and New Source Performance Standards for the Offshore Subcategory of the Oil and Gas Extraction Point Source Category. stated that oil and grease was considered both a conventional pollutant and an indicator for toxic pollutants. Thus, toxic pollutants that would be reduced through the well treatment fluid priority pollutants prohibition

were also found to be controlled by the produced water oil and grease limit. No changes were made to the final permit in response to this comment.

Comment 13: The CBD commented that the Draft Permit allows chlorine in sanitary waste discharges to be discharged at an unsafe level for aquatic life. The CBD noted that EPA should review its' Chlorine minimum requirement in the permit, ensure elimination of toxic ammonia levels in discharge, and require temporary storage or wastes during maintenance (unless discharges meet use and water quality criteria through testing).

Response: Regarding the 1 mg/l chlorine limit, see response to BSEE comment 14. The Development Document for Effluent Limitations Guidelines and New Source Performance Standards – Offshore Subcategory of the Oil and Gas Extraction Point Source Category 1993, states that monthly average sanitary waste flow from Gulf Coast platforms was 35 gallons per day based on discharge monitoring reports. While U.S. Coast Guard guidelines for MSDs at 33 CFR 159 do not mandate capacities, guidelines approximate per capita sewage estimates to be approximately 96.1 liters (25 gallons) per person per day. A platform with a population of 200 persons (towards upper end of crew size for Gulf of Mexico) would discharge approximately 5,000 gallons per day. This volume, taking into account concentrations after dilution in the 100 meter mixing zone, is expected to have little to no effect. This dilution ratio is also applicable to ammonia in sanitary waste discharges. For comparison a produced water flow rate of 500 bbl/day (~ 21,000 gallons per day) would result in no more than 0.20% percent effluent after mixing. In addition, these types of offshore discharges are regulated by the U.S. Coast Guard and the International Maritime Organization and are allowed from various vessels.

Comment 14: The CBD noted that in regard to cooling water intakes that technology-based controls may be more effective than monitoring.

Response: The cooling water intake requirements in this permit are technology-based. See 40 CFR 125 Subpart N. Comment is noted for the record. No change has been made to the final permit based on this comment.

Comment 15: [Drilling Cuttings and Fluids] The CBD commented that EPA should prohibit the discharge of drilling fluids and drill cuttings from all facilities covered by the permit, based on the territorial seas permits in Texas and Louisiana. The commenter stated that EPA must provide oversight and/or public access for BMPs, update EPA's 1993 BMP guidance (EPA 833-B–93–004, U.S. EPA, 1993), as it is decades old, and provide criteria to evaluate plans.

Response: With respect to CBD's comments regarding territorial seas permits, EPA notes that these permits are based on both effluent limitation guidelines that apply to Coastal Subcategory (40 CFR Part 435, Subpart A), which establish technology-based limitations, and state water quality standards. Discharge authorized by this permit are outside of state jurisdiction. Note also that the state permitted discharges would be located within three miles of the coast, whereas all discharges covered by this permit are located further offshore where the state water quality standards do not apply. With respect to CBD's comment regarding BMPs and BMP guidance, all permit requirements are enforceable and subject to review by EPA during compliance inspections and enforcement activities. The commenter did not provide details on which parts of

the BMP guidance are considered to be inadequate or no longer applicable. The BMP guidance is a general document and therefore is not specific to the discharges authorized under this permit. Updates to the BMP guidance document is outside the scope of this permitting action.

Comment 16: The CBD stated that the availability of other disposal technologies and the fact that zero discharge has been required in other areas, such as the Beaufort Sea and in Coastal waters, supports their request that the permit prohibit discharges of drilling fluids, drill cuttings, well treatment fluids, and produced water. The CBD added that, if the EPA does not prohibit those discharges as a technology-based limitation, the Permit should limit produced water discharges, prohibit TCW Fluids (require a non-detect limit if they are still permitted) and fracking chemicals, require enhanced monitoring. The commenter stated that modern fracking uses chemicals that can cause cancer or damage to bodily systems and fish and other marine and cited *Natural Gas Operations for a Public Health Perspective, Human and Ecological Risk Assessment* (Colborn, Theo, et al.).

Response: EPA does not agree that a complete prohibition on discharges is necessary nor realistically achievable, given the nature of offshore oil and gas exploration and production activities covered by this permit, which permits discharges no closer than three miles and can be more than 80 miles offshore, and has included appropriate limitations and conditions to regulate authorized discharges consistent with ELGs and other applicable requirements for NPDES permits under the Clean Water Act. The commenter based their argument, in part, on no discharge permit conditions for coastal subcategory dischargers in the Gulf of Mexico and the Beaufort Sea GP. The feasibility of no discharge as a technology requirement was already considered as part of the guidelines and was found to be feasible for near shore coastal facilities but not for offshore facilities where Subcategory A does allow for such discharges. EPA recognizes that certain oil and gas permits have included zero discharge requirements for certain waste streams; however, these requirements are neither applicable nor appropriate with respect to this permit. The EPA also notes that the Beaufort Sea general permit authorizes discharges only from exploratory facilities, which are not typically associated with a produced water waste streams. The Beaufort Sea GP does authorize the discharge of waste streams that are normally related to exploratory drilling, such as drilling fluids and drill cuttings.

See response to comment 8 in regard to limits on volume of produced water. In addition, the final permit includes acute toxicity limits and chronic monitoring for TCW fluids, which constitutes enhanced monitoring. EPA disagrees with the assertion that permit does not provide sufficient limits to not cause an unreasonable degradation of the marine environment, under CWA section 403(c), due to these discharges. EPA notes that the study cited, primarily focuses on ingestion of chemicals and the Safe Drinking Water Act.

Comment 17: The CBD commented that the fact sheet fails to provide required elements. The CBD states that the fact sheet does not provide enough information on the number of facilities covered, volume of discharges, hydraulic fracking fluids and their toxicity or a basis for reducing monitoring of flow.

Response: While individual permits require applications, with details on the proposed discharge, that are used to prepare the fact sheet and draft permit, general permits do not require applications and therefore do not have details from each specific discharger that could be covered by the permit. Instead, they authorize discharges using a set of limitations and conditions, generally applicable to each permittee, that cover a category or subcategory of discharges in a defined geographical area (*e.g.,* oil and gas exploration and production facilities in the western Gulf of Mexico, at least three miles offshore of Louisiana and Texas). The exact number of dischargers that will apply to be covered by the permit over its' term is dependent on factors that prevent an exact determination of number of dischargers and volume of discharge. The number of permittees obtaining coverage will be dependent on factors such as BOEM leasing activities in the Gulf, conditions in the oil and gas industry, oil price etc. Volumes of discharges will be dependent on the number of wells, number and types of separate facilities, platforms/MODUs, conditions of the producing formations, changes over the life cycle of a well, etc. For perspective on uncertainties in estimating facilities, in 2017, EPA estimated approximately 3,000 facilities would be covered, but according to BSEE (https://www.bsee.gov/stats-facts/offshore-infrastructure-dashboard) there were approximately 1,862 platforms in the Gulf of Mexico in 2019. During the course of the previous permit term, EPA estimates that approximately 5,000 facilities were authorized in total. In regard to the reduction of flow monitoring, monitoring, and reporting frequencies have not been reduced on any authorized discharges. See response to comment 9. The final permit includes additional limits and monitoring and is therefore more protective than previous permit.

Comment 18: The CBD noted that there are errors in the draft permit limitations table, Ocean Discharge Criteria Evaluation, errors in links, and typographical errors in the permit and fact sheet.

Response: Noted for the record. Necessary corrections have been made to the final permit and associated documents.

Comment 19: The CBD noted that fracking fluids are toxic and harmful to human health. The commenter cited the following studies: *Natural Gas Operations for a Public Health Perspective* (Colborn, Theo, et al.), *A systematic evaluation of chemicals in hydraulic –fracturing fluids and wastewater for reproductive and developmental toxicity* (Elliot, E.G. et al.)*, Center for Biological Diversity, Troubled Waters: Offshore Fracking's Threat to California's Ocean, Air and Seismic Stability* and, *Toxicity of acidization fluids used in California oil exploration* (Abdullah, Khadeeja, Timothy Malloy, Michael K. Stenstrom & I. H. (Mel) Suffet.). CBD stated that the studies conclude that chemicals used in fracking are toxic and can cause harm, cancer, mutations and found that a large portion of these chemicals posed developmental and reproductive risks, some chemicals of which could not be evaluated. The CBD noted that these chemicals are toxic to aquatic life and may have damaging impacts on the environment. The commenter also noted that a 2020 review of environmental hazards associated with produced water flowback from fracking surveyed common chemicals and showed that the Draft Permit does not provide sufficient limits on toxic chemicals to prevent unreasonable degradation (*Investigating the potential toxicity of hydraulic fracturing Flowback and produced water spills to aquatic animals in freshwater environments: a North American perspective* - Folkerts, Erik J., Greg G. Goss, and Tamzin A. Blewett).

Response: While the EPA agrees that potentially toxic chemicals are used in offshore oil and gas extraction, no evidence has been found to show that there has been a significant impact to aquatic life when exposed under normal conditions to the concentrations discharged consistent with the permit's terms and conditions. Furthermore, the EPA disagrees with the assertion that permit does not provide sufficient limits to not cause an unreasonable degradation of the marine environment under CWA section 403(c). For protection of aquatic resources and avoidance of unreasonable degradation of the receiving water, the permit includes various limitations and conditions for authorized discharges, including WET limitations that apply to Drilling Fluids, Drill Cuttings, Produced Water, Well Treatment Fluids, Completion Fluids, and Workover Fluids, Miscellaneous Discharges, and Miscellaneous Discharges of Water Which Have Been Chemically Treated.

EPA notes that the study titled *Natural Gas Operations for a Public Health Perspective* and *A systematic evaluation of chemicals in hydraulic –fracturing fluids and wastewater for reproductive and developmental toxicity* primarily focus on ingestion of chemicals and/or the Safe Drinking Water Act. The study *Center for Biological Diversity, Troubled Waters: Offshore Fracking's Threat to California's Ocean,* and *Toxicity of acidization fluids used in California oil exploration* focus on California and therefore are not relevant to this permit. In addition, although the study, *Investigating the potential toxicity of hydraulic fracturing Flowback and produced water spills to aquatic animals in freshwater environments: a North American perspective*, does survey chemicals and toxicity in produced water, it does not directly show nor conclude that this permit is unprotective in preventing reasonable degradation. Furthermore, the study does not specifically evaluate the conditions of this permit. EPA notes that toxicity in produced waters has already been addressed through WET testing in this permit.

Comment 20: The CBD noted that discharges from offshore fracking are likely to cause adverse marine ecosystem effects and cited studies *Hydraulic fracturing return fluids from offshore hydrocarbon extraction present new risks to marine ecosystems* (Zhong, C., Kwan, Y. H., Goss, G. G., Alessi, D. S., & Qian, P. Y.) and *Toxicity of hydraulic fracturing wastewater from black shale natural-gas wells influenced by well maturity and chemical additives* (Aghababaei, M., Luek, J. L., Ziemkiewicz, P. F., & Mouser, P. J.). The commenter cited *A systematic evaluation of chemicals in hydraulic-fracturing fluids and wastewater for reproductive and developmental toxicity* (Elliott, Elise G., et al.). The study evaluated 240 chemicals regularly found in fracking fluids and/or wastewater and concluded that 40% (of the 240 chemicals), were associated with developmental and reproductive harms. The CBD also cited *Unconventional oil and gas development and risk of childhood leukemia: Assessing the evidence* (Elliott, Elise G., et al.,), which analyzed 111 chemicals routinely found in fracking fluids and wastewater and found that 44% were known, probable, or possible human carcinogens (some of which were found to be linked to increased risk for leukemia and lymphoma). The commenter also cited *Estimating the Potential Toxicity of Chemicals Associated with Hydraulic Fracturing Operations Using Quantitative Structure-Activity Relationship Modeling* (Yost, Erin et al.), which concluded that chemicals used in oil and gas development can affect all body systems and *Natural Gas Operations for a Public Health Perspective* (Colborn, Theo, et al.), which concluded that 40% of chemicals used in fracking harm aquatic animals and other wildlife. In addition, the commenter cited a study in California that reported that 95% of fracked wells, in the study, contained

measurable and sometimes elevated concentrations of BTEX and PAH (*An analysis of chemicals and other constituents found in produced water from hydraulically fractured wells in California and the challenges for wastewater management* - Chittick, Emily A. & Tanja Srebotnjak); and another study which found greater hormone-disrupting properties in water located near hydraulic fracturing drilling sites than in areas without drilling (*Estrogen and Androgen Receptor Activities of Hydraulic Fracturing Chemicals and Surface and Ground Water in a Drilling-Dense Region*, Kassotis - Christopher D., et al.).

The commenter noted that Fracking and other well stimulation chemicals can kill or harm a wide variety of wildlife and cited U.S. Fish and Wildlife Service, Office of Law Enforcement. 2009; Case at a Glance: U.S. v. Nami Resources Company, LLC, *MIT Energy Initiative, The future of Natural Gas*, *Sublethal and Reproductive Effects of Acute and Chronic Exposure to Flowback and Produced Water from Hydraulic Fracturing on the Water Flea Daphnia magna* (Tamzin A. Blewett, et al.), *Chemical and toxicological characterizations of hydraulic fracturing flowback and produced water* (He, Yuhe, et al.), etc..

The CBD noted that EPA has not analyzed the large volume of produced water being discharged and stated that produced water contains chemicals toxic to aquatic life (under both acute and chronic conditions), including metal and substantial amounts of organic material, inorganic salts, small particles, organic acids and sulfur and sulfide in high levels. The commenter concluded that exposure to even low concentrations of produced water has negative effects on marine species. The commenter also stated that PAHs, alklyphenols and alkly phenols that occur in produced water can cause a myriad of impacts to fish and humans. CBD cited studies *Produced water: overview of composition, fates, and effects* (Neff, J., K. Lee, and E.M. Deblois), *PAH metabolites in bile, cytochrome P4501A and DNA adducts as environmental risk parameters for chronic oil exposure: a laboratory experiment with Atlantic cod* (Aas, E., T. Baussant, L. Balk, B. Liewenborg, and O. K. Andersen), *Defects in cardiac function precede morphological abnormalities in fish embryos exposed to polycyclic aromatic hydrocarbons* (Incardona, J. P., T. K. Collier, and N. L. Scholz), *Fish embryos are damaged by dissolved PAHs, not oil particles* (Carls, M. G., L. Holland, M. Larsen, T. K. Collier, N. L. Scholz, and J. P. Incardona), etc..

Response: The CBD did not provide any data or information to show that the current volume of produced water discharged in the Gulf of Mexico is resulting in adverse environmental impact or specify a discharge volume that would eliminate such impact. No change has been made to the final permit based on this request. EPA notes that the study *Hydraulic fracturing return fluids from offshore hydrocarbon extraction present new risks to marine ecosystems* acknowledges that future studies are needed to understand the effects of these fluids on deep-sea marine (micro)organisms, and that filling this knowledge gap will reveal the impact of release on extreme marine environments and organisms that traditional ecotoxicological studies do not normally report on. The study also concluded that the resulting data would provide a solid foundation to establish effective and protective regulation schemes and environmental monitoring programs for marine resource protection and conservation. As a result, EPA notes that the study did not provide effective limits or monitoring to address its' findings. In regard to the study *Toxicity of hydraulic fracturing wastewater from black shale natural-gas wells influenced by well maturity and chemical additives*, EPA notes that study focuses on produced water from deep shale formations. Note that the permit includes toxicity limits on produced water to address any concerns related to toxicity in produced waters.

EPA previously noted that the study titled *A systematic evaluation of chemicals in hydraulic – fracturing fluids and wastewater for reproductive and developmental toxicity* and *Natural Gas Operations for a Public Health Perspective* primarily focus on ingestion of chemicals and/or the Safe Drinking Water Act. *Unconventional oil and gas development and risk of childhood leukemia: Assessing the Evidence*, focuses on leukemia incidence related to domestic groundwater wells in Pennsylvania. EPA notes that this is not relevant to this permit as discharges do not affect ground water wells nor does this permit authorize discharges onshore nor in Pennsylvania. The study *Estimating the Potential Toxicity of Chemicals Associated with Hydraulic Fracturing Operations Using Quantitative Structure-Activity Relationship Modeling* provides estimates of the rat chronic toxicity. EPA notes this species is not relevant to this permit because it does not occur in the Gulf of Mexico. In regard to the study *Estrogen and Androgen Receptor Activities of Hydraulic Fracturing Chemicals and Surface and Ground Water in a Drilling-Dense Region*, EPA notes that the study focuses on natural gas drilling operations in Colorado, that discharge to surface and ground water, which is not relevant to this permit as discharges are to marine waters.

The study *MIT Energy Initiative, The future of Natural Gas* focuses on the outlook of oil and gas use in the future. In addition, the study concludes that oil and gas development is not without risk to the natural environment, but that state and federal regulations are designed to mitigate those risks. This permit includes limitations and monitoring to address and mitigate associated risks. EPA further notes that the study *Sublethal and Reproductive Effects of Acute and Chronic Exposure to Flowback and Produced Water from Hydraulic Fracturing on the Water Flea Daphnia magna* focuses on a freshwater species, which is not applicable to the saltwater environment that this permit authorizes discharges to. Furthermore, the study *Chemical and toxicological characterizations of hydraulic fracturing flowback and produced water*, characterizes produced water samples from the Duvernay Formation in Alberta, Canada and is therefore not relevant to the Gulf of Mexico.

EPA notes that the study *Produced water: overview of composition, fates, and effects* concludes that any effects of produced water on individual offshore production sites are likely to be minor, however there are unresolved questions regarding aspects of produced water composition and its fate and potential effects on the ecosystem remain. While EPA does recognize that more scientific studies would be beneficial, the permit does include toxicity testing for produced water discharges, which is designed to be protective of the ocean ecosystems.

EPA further notes that the study *Defects in cardiac function precede morphological abnormalities in fish embryos exposed to polycyclic aromatic hydrocarbons* and *Fish embryos are damaged by dissolved PAHs, not oil particles* focus on the zebrafish, a freshwater fish that does not occur in the permitted area, therefore this study is not relevant to the Gulf of Mexico.

EPA reviewed additional studies mentioned and notes that numerous studies cited cover species that are not found in the Gulf of Mexico. As a result, these studies are not relevant to this permitting action. (*i.e. Effects on Biotransformation, Oxidative Stress, and Endocrine Disruption in Rainbow Trout (Oncorhynchus mykiss) Exposed to Hydraulic Fracturing Flowback and Produced Water*, *The effect of hydraulic flowback and produced water on gill morphology*,

oxidative stress and antioxidant response in rainbow trout (Oncorhynchus mykiss), *Effects on biotransformation, oxidative stress, and endocrine disruption in rainbow trout (Oncorhynchus mykiss) exposed to hydraulic fracturing flowback and produced water*, *Developmental toxicity of the organic fraction from hydraulic fracturing flowback and produced waters to early life stages of zebrafish (Danio rerio), Suspended solids-associated toxicity of hydraulic fracturing flowback and produced water on early life stages of zebrafish (Danio rerio)*, *Understanding the effects of hydraulic fracturing flowback and produced water (FPW) to the aquatic invertebrate, Lumbriculus variegatus under various exposure regimes*, *PAH metabolites in bile, cytochrome P4501A and DNA adducts as environmental risk parameters for chronic oil exposure: a laboratory experiment with Atlantic cod*, *Effects of alkylphenols on redox status in first spawning Atlantic cod (Gadus morhua)*, *Effects of North Sea oil and alkylphenols on biomarker responses in juvenile Atlantic cod (Gadus morhua)*, *Assessment of lysosomal membrane stability and peroxisome proliferation in the head kidney of Atlantic cod (Gadus morhua) following long-term exposure to produced water components*, *Development of Atlantic cod (Gadus morhua) exposed to produced water during early life stages: Effects on embryos, larvae, and juvenile fish*, *Effects of xenoestrogen treatment on zona radiata protein and vitellogenin expression in Atlantic salmon (Salmo salar)*, *Differential biomarker gene and protein expressions in nonylphenol and estradiol- 17β treated juvenile rainbow trout (Oncorhynchus mykiss)*, *Effects of alkylphenols on the reproductive system of Atlantic cod (Gadus morhua)*, *Endocrine modulation in Atlantic cod (Gadus morhua L.) exposed to alkylphenols, polyaromatic hydrocarbons, produced water, and dispersed oil, Integrated biomarker assessment of the effects exerted by treated produced water from an onshore natural gas processing plant in the North Sea on the mussel Mytilus edulis*, *Effects of produced water on reproductive parameters in prespawning Atlantic cod (Gadus morhua)*, and *Embryonic exposure to produced water can cause cardiac toxicity and deformations in Atlantic cod (Gadus morhua) and haddock (Melanogrammus aeglefinus) larvae)*

In addition, numerous studies cover species that are not found in the Gulf of Mexico. As a result, these studies are not relevant to this permitting action. (i.e. *Effects of persistent energy-related brine contamination on amphibian abundance in national wildlife refuge wetlands* (Hossack, Blake R.), *An Independent Scientific Assessment of Well Stimulation in California Vol. II at 50* (July 2015), *Toxicity of acidization fluids used in California oil exploration* (Abdullah, Khadeeja, Timothy Malloy, Michael K. Stenstrom & I. H. (Mel) Suffet), *An analysis of chemicals and other constituents found in produced water from hydraulically fractured wells in California and the challenges for wastewater management* (Chittick, Emily A. & Tanja Srebotnjak) , *Histopathological Analysis of Fish from Acorn Fork Creek, Kentucky, Air and Seismic Stability*, *Environmental impacts of produced water and drilling waste discharges from the Norwegian offshore petroleum industry*, *Effects of North Sea oil and alkylphenols on biomarker responses in juvenile Atlantic cod (Gadus morhua)*, *Relationships between hepatic neoplasms and related lesions and exposure to toxic chemicals in marine fish from the US West Coast*, *PAH and biomarker measurements in fish from condition monitoring in Norwegian waters in 2005 and 2008*, and *Integrated biomarker assessment of the effects exerted by treated produced water from an onshore natural gas processing plant in the North Sea on the mussel Mytilus edulis*) are not relevant. These studies were done in different waters with conditions that are not comparable to the Gulf of Mexico.

Comment 21: The CBD commented that the EIS, conducted by the Bureau of Ocean Energy Management on the Five-Year Offshore Oil and Gas Leasing Program that the categorical exclusion relies on is insufficient. The CBD stated that EPA must prepare an Environmental Impact Statement (EIS) because the categorical exclusion fails to comply with the law and at the very least must prepare an Environmental Assessment, as there are newly listed species, increases in drilling, new information on aquatic life impacts of fracking, 33% of operators are out of compliance and the Inflation Reduction Act was passed. The commenter stated that EPA's attempt to rely on a categorical exclusion is problematic because the permit may have significant environmental effects. The CBD also noted that EPA must conduct an environmental justice analysis because onshore environmental justice communities will be impacted and cited a study (*Tracing the Flow of Oil and Gas: A Spatial and Temporal Analysis of Environmental Justice in Coastal Louisiana from 1980 to 2010*, Hemmerling, Scott A. Christine A. DeMyers, and Jessica Parfait)

CBD further stated that EPA has failed to prevent degradation of receiving waters as it continues to ignore the serious contamination problem from well stimulation activities. EPA's determination that there are no extraordinary circumstances from its NEPA regulations, 40 C.F.R. § 6.204(b)(1) through (10), is arbitrary; and the water pollution permit will harm federally protected species, there is significant public controversy over offshore fracking and oil and gas operations in the Gulf of Mexico, among other extraordinary circumstances. The commenter stated that EPA must take a hard look at the direct, indirect, and cumulative impacts of the Draft Permit.; and as part of this analysis, EPA must obtain, disclose, and analyze the full scope of offshore fracking and other well stimulation in the Gulf of Mexico. CBD also stated that EPA must also consider reasonable alternative to better protect the marine environment from discharges associated with offshore oil and gas actives to better comply with CWA and provided a list of examples including prohibiting produced water and TCW Fluids, requiring permittees to obtain individual permits, requiring oil companies to provide advanced notice of their use of well stimulation chemicals to the public and disclose chemicals, placing the burden on oil companies to prove that chemical are ecologically safe, requiring more frequent monitoring and testing, and implementing zero discharge in certain ecologically sensitive areas. The commenter cites an article *Armed with new technology, oil drillers revisit Gulf of Mexico* (Gopinath, Swetha & Ghosh, S.) in reference to increased production causing increased water pollution.

Response: The EPA agrees that issuance of this General Permit is a major Federal Action that requires review under NEPA. The EPA was a cooperating agency to the Bureau of Ocean Energy Management's Gulf of Mexico OCS Oil and Gas 2017-2022 Multisale Final Environmental Impact Statement (FEIS), which was issued in March 2017. Pursuant to NEPA, the Council on Environmental Quality's NEPA regulations, and EPA's regulations for implementing NEPA (40 CFR part 6), EPA has determined that the reissuance of the Permit is eligible for a categorical exclusion. The analysis and conclusions regarding the potential environmental impacts, reasonable alternatives, and potential mitigation included in the EIS are still valid for the reissuance of the 2022 Permit for Offshore Oil and Gas Operations in the Western Gulf of Mexico because the proposed permit conditions are either the same or in some cases are more environmentally protective. Note that environmental justice is covered in the EIS, since that is a more comprehensive look by BOEM on the effects resulting from offshore oil and gas leasing and does not focus solely primarily on the NPDES discharges.

EPA notes that the discharges authorized are those that comply with the permit and that the Rice's whale is covered under what was previously named as the Byrdes whale. No changes have been made to the final permit. Furthermore, EPA notes that the study mentioned focuses on advanced drilling technology and does not correlate increased production with increased water pollution. Note that D.C. Circuit Court upheld the 2017-2022 EIS.

Comment 22: The CBD noted that EPA Must Consult with the National Marine Fisheries Service (NMFS) and Fish and Wildlife Service (FWS) on the Impacts of the Permit on Threatened and Endangered Species and Critical Habitat. The commenter noted that issuance of the Permit could have several adverse effects on listed species and their critical habitat, and that EPA has previously admitted that there might be impacts to listed species. The CBD provided a list of endangered species that might be adversely affected by the permitted discharge. EPA's determination that the water pollution is not likely to adversely affect listed species is arbitrary. Additionally, the CBD noted that the Biological Opinion is deficient and that even if it was not, the need to reinitiate consultation has been triggered.

Response: EPA agrees that consultation with the National Marine Fisheries Service (NMFS) is required for this action. In 2020, NFMS issued the Biological Opinion (BiOp) on the Federally Regulated Oil and Gas Program Activities in the Gulf of Mexico, which is still applicable and provides an environmental baseline for assessing the effects of this permit issuance. As part of the Biological Opinion, EPA was required to complete a step-down review process outlined in the BiOp. These procedures were developed during consultation with NMFS under Section 7 of the Endangered Species Act (ESA). NMFS completed their review of the General Permit, conducted according to the step down review procedures in the BiOp. NMFS determined that the permit remained within scope of the 2020 biological opinion, associated appendices, and subsequent amendments. NMFS agreed that the activities described in the permit were unlikely to result in additional effects beyond those previously considered in the BiOp.

In regard to species listings, note that the Rice's whale was covered in the BiOp under what was previously named as the Byrde's whale. In addition, EPA notes that the Rough Cactus Coral, the Pillar Coral and the Staghorn are not listed as ESA species found in federal waters of the north central Gulf of Mexico (See 2017-2022 Gulf Of Mexico Multisale Environmental Impact Statement & 2021 Flower Garden Banks National Marine Sanctuary Final Environmental Impact Statement: Sanctuary Expansion). Furthermore, coral species occur in the Flower Garden Bank National Marine Sanctuary (FGBNMS). No federally managed oil and gas activities were proposed in these coral locations; however, some activities may be approved by FGBNMS on a case by case basis. In addition, the permit prohibits discharge in Areas of Biological Concern and National Marine Sanctuaries, except under specified conditions. EPA notes that West Indian Manatees and Whooping Cranes are under the jurisdiction of FWS, as such, the species were covered under the 2017-2022 Gulf Of Mexico Multisale Environmental Impact Statement. The protected birds analyzed under the EIS include those species that use the OCS or coastal counties/parishes along the Gulf of Mexico during any part of their lifecycle and are listed under ESA as threatened or endangered. Other species that met these criteria were excluded if their habitats were more upland or away from the coast. Red-cockaded Woodpecker is listed in the

2017-2022 Gulf of Mexico EIS as a species that was not considered further. Black Rails were not considered in the EIS.

Helen Kimball-Brooke submitted the following comment:

Comment 1: Helen commented "This permit MUST not be renewed. Fracking chemical waste threatens fisheries, marine wildlife, and human communities. After the Inflation Reduction Act paved the way for more drilling and fracking, it is more than urgent for the EPA to stop oil companies from dumping millions of gallons of fracking waste into our coastal waters."

Response: Comment noted for the record. Note that this permit does not authorize discharges to coastal waters therefore the comment is outside of the scope of this permitting action.

Virginia Gomez submitted the following comment:

Comment 1: Virginia commented " STOP POISONING THE WATER (RIVERS, OCEANS, ETC) AND OUR CHILDREN---NO FRACKING!! NOT NOW, NOT EVER!!"

Response: Comment noted for the record. Note that this permit complies with the requirements of the Clean Water Act.

Daniel Gregg submitted the following comment:

Comment 1: Daniel commented "First, foremost, middle, and last: Do whatever it takes to STOP ANY AND ALL POLLUTION to any and all waters including the Gulf of Mexico off the shores of Texas, Louisiana, and Florida where a lot of fracking is going on !! Period, exclamation marks and NO ifs, ands or buts. Water is Life !! If we, us humans, want any kind of decent life for our future generations we must protect the Waters of Life at all cost !!!!"

Response: Comment noted for the record. Note that this permit complies with the requirements of the Clean Water Act.

ADDITIONAL CHANGES:

- Typographical /formatting errors that would not result in substantial changes have also been corrected.
- Web Links in the permit have been updated.
- Provided definition of Mobile Offshore Drilling Unit (MODU) has been removed from the permit because it does not exist in the Code of Federal Regulations. Part I.A.2 has been updated to provide examples of MODUs.
- Civil and administrative penalty amounts have been updated to reflect updated statutory amounts.