



United States Department of the Interior

BUREAU OF OCEAN ENERGY MANAGEMENT

Gulf of Mexico OCS Region
1201 Elmwood Park Boulevard
New Orleans, LA 70123 2394

In Reply Refer To: GM 235D

February 21, 2020

Ms. Sylvia Bellone
Shell Offshore Inc.
One Shell Square
P.O. Box 61933
New Orleans, Louisiana 70161-1933

Dear Ms. Bellone,

Reference is made to the following plan:

Control No. R-06858
Type Revised Development Operations Coordination Document
Received May 23, 2019, amended July 5, August 14 and 26, and
September 26, 2019, and January 22 and 23, 2020
Lease(s) OCS-G 05868, Block 809, Mississippi Canyon Area (MC)
OCS-G 06981, Block 808, Mississippi Canyon Area (MC)
OCS-G 09873, Block 810, Mississippi Canyon Area (MC)
OCS-G 12166, Block 765, Mississippi Canyon Area (MC)
OCS-G 14653, Block 766, Mississippi Canyon Area (MC)

The Minerals Management Service Mississippi Canyon Area, Block 854 Unit(s)
Agreement Number is 754393012.

You are hereby notified that the approval of the subject plan has been
granted as of February 21, 2020, in accordance with 30 CFR 550.270(b)(1).

This approval includes the activities proposed for the wells listed below and
the revision of air emissions.

Well	Area and Block	Lease No.
EE	MC 809	OCS-G 05868
UI002, API# 6081741126	MC 809	OCS-G 05868
P007, API# 6081741155	MC 808	OCS-G 06981
PI001, API# 6081741123	MC 810	OCS-G 09873
UI003, API# 6081740531	MC 810	OCS-G 09873
UI004, API# 6081741386	MC 810	OCS-G 09873
P003, API# 6081740988	MC 765	OCS-G 12166
P004, API# 6081741005	MC 765	OCS-G 12166
P005, API# 6081741091	MC 765	OCS-G 12166
P008, API# 6081741297	MC 765	OCS-G 12166
P009, API# 6081741370	MC 765	OCS-G 12166
P011	MC 765	OCS-G 12166
P011ALT	MC 765	OCS-G 12166
P012	MC 765	OCS-G 12166
P012ALT	MC 765	OCS-G 12166

PI002, API# 6081740882	MC 765	OCS-G 12166
PI003	MC 765	OCS-G 12166
PI003ALT	MC 765	OCS-G 12166
P002, API# 6081740963	MC 766	OCS-G 14653
P006, API# 6081741254	MC 766	OCS-G 14653

In accordance with 30 CFR 556.901(d), additional security may be required for your proposed activities. Prior to conducting activities in which you need to obtain approvals and/or permits described in 30 CFR 550.281(a) from the appropriate District Manager or BSEE Regional Supervisor, you must contact BOEM Risk Management Operations Group by email at boemrmog@boem.gov to determine if additional security is required and comply with any demand for this security.

The projected NO_x emissions amounts in your plan were calculated using historic fuel consumption rates. Maintain monthly records of the total annual fuel consumption for the DP drillship or similar DP semisubmersible with a limit of 3,499,500 gallons per year and provide the information to the BOEM Regional Supervisor, Office of Leasing and Plans, Plans Section (GM 235D) annually by February 1st of each year, beginning in the year 2021. If no activities were conducted during a calendar year, provide a statement to that effect in lieu of the required records. If at any time during your activities these records indicate that your NO_x annual emissions may exceed the annual limit approved in your plan or the total annual fuel consumption limit, you must immediately prepare a revised plan pursuant to 30 CFR 550.283 to include the recalculated emissions amounts. You will not proceed with the actions that could cause the potential annual increase in emissions until the revised plan has been submitted to and approved by BOEM.

Exercise caution while drilling due to indications of high potential of shallow water flows. BOEM has received reports of 32 wells within 50 miles of Mississippi Canyon blocks 809 and 765 that have experienced shallow water flow incidents over the last 30 years. Exercise extreme caution between approximately 1,500 to 2,100 feet below mudline from the surface hole locations of all proposed wells.

In response to the request accompanying your plan for a hydrogen sulfide (H₂S) classification, the area in which the proposed drilling operations are to be conducted is hereby classified, in accordance with 30 CFR 250.490(c), as "H₂S absent."

You must comply with the following species protective measures in all activities conducted pursuant to the plan:

- BOEM Notice to Lessees and Operators (NTL) No. 2016-G01, "Vessel Strike Avoidance and Injured/Dead Protected Species Reporting" (available at <http://www.boem.gov/BOEM-NTL-No-2016-G01/>);
- BOEM NTL No. 2016-G02, "Implementation of Seismic Survey Mitigation Measures and Protected Species Observer Program" (available at <http://www.boem.gov/BOEM-NTL-2016-G02/>); and

- BSEE NTL No. 2015-G03, "Marine Trash and Debris Awareness and Elimination" (available at <https://www.bsee.gov/sites/bsee.gov/files/notices-to-lessees-ntl/alerts/ntl-2015-g03.pdf>).

These measures are designed to promote environmental protection, consistent environmental policy, compliance with environmental laws, and safety.

If you have any questions or comments concerning this approval, please contact Ronald O'Connor at (504) 736-2889.

Sincerely,

MICHELLE
PICOU

Digitally signed by
MICHELLE PICOU
Date: 2020.02.21
16:03:06 -06'00'

for Bernadette Thomas
Regional Supervisor
Office of Leasing and Plans

Purpose

Shell has reviewed engine information for its GOM fleet of Drillship and DP semi-sub MODUs. Of the proposed MODUs, the highest fuel consumption is Shell's contracted Transocean Deepwater MODUs, which has six, main engines of 9,387 hp/engine. (Shell's contracted Noble MODUs have lower total horsepower and fuel consumption.) The projected fuel usages presented below would therefore be conservative across the fleet of Drillships and DP Semi-sub.

Step 1 - Determine Typical Operating Loads

Description	Value	Notes
Actual average daily fuel use (gal/day)	13,006	Based on daily fuel records for the Deepwater Thalassa from January 1, 2016 to December 31, 2016.
Contingency factor	1.05	The contingency factor is used to allow for more usage if need be.
Proposed MODU Campaign Average Daily Fuel Use (gal/day)	14,000	Calculated Value - PTE fuel use * Proposed Operating Load and rounded up to nearest thousand (for additional conservatism). This represents total fuel use on the MODU and is allocated equally amongst the six prime movers.
2019 Annual Fuel Limit, gals	3,500,000	Calculated Value - Campaign Average Daily Fuel Use * Campaign Days
2020-2021 Annual Fuel Limits, gals	5,110,000	Calculated Value - Campaign Average Daily Fuel Use * Campaign Days
2022-2035 Annual Fuel Limits, gals	4,200,000	Calculated Value - Campaign Average Daily Fuel Use * Campaign Days

Step 2 - Support Vessel Fuel Loads

Description	Value	Notes
Proposed Operating Loads	50%	Shell policy restricts D/P to < 50% near rig. When in standby away from rig but within 25 miles load will be < 50% (conserve fuel). When transiting through field (25 nm), traveling at economical speeds.
OSV - PTE Fuel Use (gal/day)	11,708	Offshore Support Vessels are rated at 10,098hp (rounded to 10,100 hp). The PTE fuel use is then estimated using the AQR conversion factor of 0.0483 gal/hp-hr.
Campaign Average Daily Fuel Use (gal/day)	5,854	Calculated Value - PTE fuel use * Proposed Operating Load.
Crew Vessel - PTE Fuel Use (gal/day)	9,274	Crew Vessels are rated at 7,944 hp (rounded to 8,000 hp). The PTE fuel use is then estimated using the AQR conversion factor of 0.0483 gal/hp-hr.
Crew Vessel - Campaign Average Daily Fuel Use (gal/day)	1,391	Calculated Value - PTE fuel use * Proposed Operating Load. Note that Crew Vessels are only in field 30% of campaign and daily average value has been
Proposed Vessel Campaign Average Daily Fuel Use (gal/day)	7,245	Calculated Value - Average fuel use * Contingency Factor and rounded up to nearest thousand (for additional conservatism). This represents total fuel use on the Support and Crew vessels.
Total Vessel Activity		
2019 Annual Fuel Limit, gals	2,180,049	Sum of (vessel daily fuel use * corresponding campaign days)
2020-2021 Annual Fuel Limits, gals	2,731,585	Sum of (vessel daily fuel use * corresponding campaign days)
2022-2035 Annual Fuel Limits, gals	2,174,891	Sum of (vessel daily fuel use * corresponding campaign days)

Additional Notes

- Operating loads are campaign specific and may change in future AQRs depending on the future fuel usage tracking. Fuel levels depicted in this AQR does not restrict Shell from using a different value in future AQRs.
- If tracked fuel usage associated with this activity indicates emissions may exceed the approved emissions, Shell will submit revised AQR calculations.