

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Region 4
Atlanta, Georgia

**Permit to Construct and Operate Under the
Outer Continental Shelf Air Regulations
Permit No. OCS-EPA-R4006**

In accordance with the provisions of section 328 of the Clean Air Act (CAA), 42 U.S.C. § 7627 and the implementing Outer Continental Shelf (OCS) Air Regulations at title 40 Code of Federal Regulations (CFR) CFR part 55, which incorporate by reference the Prevention of Significant Deterioration (PSD) of Air Quality Regulations at 40 CFR § 52.21 and the title V Operating Permit Program at 40 CFR part 71,

Shell Offshore Inc.
200 North Dairy Ashford
Houston, Texas 77079

is hereby authorized to construct and operate air emissions units and to conduct other air pollutant emitting activities at an OCS source at multiple sites within the DeSoto Canyon and Lloyd Ridge lease blocks designated Lease Sale areas 205, 208 and 224. These lease blocks are located on OCS waters of the Gulf of Mexico east of longitude 87.5, greater than 160 miles southeast of the mouth of the Mississippi River and greater than 200 miles southwest of Panama City, Florida.

Upon initial start-up, this OCS source and support vessels shall be constructed and operated in accordance with the terms and conditions set forth in this permit.

This permit shall become effective on: December 30, 2011.

This permit shall expire on: December 30, 2016.

This permit shall not relieve the owner or operator of the responsibility to comply fully with all applicable provisions of federal and state law.

Date Signed

Beverly H. Banister
Director
Air, Pesticides, and Toxics
Management Division

1 AUTHORITY

The United States Environmental Protection Agency (EPA) issues this permit pursuant to section 328 of the CAA, 42 U.S.C. § 7627, and the implementing OCS Air Regulations at 40 CFR part 55, which incorporate by reference the PSD Regulations at 40 CFR § 52.21 and the title V Operating Permit Program at 40 CFR part 71. This permit is based upon the application initially submitted to EPA by Shell Offshore, Inc. (Shell) on April 15, 2010, supplemental submittals in the administrative record for this permit action, and upon the technical analysis performed by EPA.

2 APPLICANT

Shell Offshore, Inc.
200 North Dairy Ashford
Houston, Texas 77079

3 PROJECT LOCATION

Shell's intent is to conduct exploratory drilling at multiple sites within its DeSoto Canyon and Lloyd Ridge lease blocks designated Lease Sale areas 205, 208 and 224. These lease blocks are located on OCS waters of the Gulf of Mexico east of longitude 87.5, greater than 160 miles southeast of the mouth of the Mississippi River and greater than 200 miles southwest of Panama City, Florida as listed in Table 1 below. Each lease block is approximately five kilometers by five kilometers.

Table 1 –Shell Lease Block Numbers and Locations

Lease Sale Area	Lease Block Number	NW Corner Latitude	NW Corner Longitude
205	801	28.19657409	-87.51955297
205	940	28.06669362	-87.17499648
205	939	28.06662219	-87.22412964
205	938	28.06653318	-87.27326259
205	937	28.06642659	-87.3223953
205	892	28.1098868	-87.37167778
205	936	28.06630241	-87.37152772
205	935	28.06616064	-87.4206598
205	934	28.06600129	-87.46979151
205	985	28.02316197	-87.12581245
205	984	28.02310823	-87.17492596
205	983	28.02303693	-87.22403931
205	980	28.02271773	-87.37137799
205	979	28.02257622	-87.42049027
205	978	28.02241717	-87.46960218
205	014	27.97936271	-87.27304258
205	063	27.93604478	-87.02756296
205	064	27.93604586	-86.97848871
205	060	27.93593661	-87.17478537
205	107	27.89245835	-87.02755191
205	108	27.89245943	-86.97849733
205	106	27.89243982	-87.07660646
205	104	27.89235038	-87.17471532

Lease Sale Area	Lease Block Number	NW Corner Latitude	NW Corner Longitude
205	151	27.84887165	-87.02754089
205	152	27.84887272	-86.97850593
205	150	27.84885315	-87.07657581
205	149	27.84881722	-87.12561067
205	195	27.80528467	-87.02752989
205	194	27.8052662	-87.07654523
205	239	27.7616974	-87.02751891
205	240	27.76169847	-86.97852308
205	238	27.76167897	-87.07651472
224	288	27.71794191	-86.7826269
208	547	27.45657881	-87.02744278
208	548	27.45657986	-86.9785825
208	586	27.41272745	-87.27163627
208	943	28.06680238	-87.02759625
208	020	27.97963201	-86.97848007
208	018	27.97961233	-87.07666796
208	187	27.80464993	-87.41964829
208	231	27.76106383	-87.41948102
208	230	27.76090651	-87.46847505
208	324	27.67441506	-87.17436738
208	323	27.6743448	-87.22332391
208	452	27.54326784	-87.36975289
208	451	27.54312917	-87.41865028
208	450	27.54297329	-87.4675473
208	495	27.4995414	-87.41848525
208	545	27.45652527	-87.12516325
208	542	27.45631644	-87.271743
208	628	27.3689141	-87.36917183
208	627	27.36877644	-87.41799238
208	672	27.32532497	-87.36902738
208	671	27.32518757	-87.41782883
208	718	27.28195882	-87.27131753
208	717	27.2818557	-87.32010053

4 PROJECT DESCRIPTION

Shell will use one of three drilling vessels (the *Deepwater Nautilus*, the *Noble Bully I* or the *Noble Bully II*) and their associated support fleets to conduct exploratory drilling for approximately 150 days per year in multiple locations within the DeSoto Canyon and Lloyd Ridge lease locations indentified in Section 3. Shell expects drilling exploration operations to occur for approximately five to ten years. At this time, Shell has no plans to establish any permanent production platforms in the exploration areas. If opportunities are discovered, such facilities would be permitted separately.

Based on emissions estimates and applicable permitting thresholds, the project is considered to have significant emissions of NO_x and is subject to the PSD and title V programs for this pollutant as the measured pollutant for the criteria pollutants nitrogen dioxide and ozone, and as a precursor to PM_{2.5}. Based on Shell's permit application, both CO and PM_{2.5} will be emitted at close to their respective significant emission rates. Therefore, EPA has also included conditions in this permit that limit the project's CO and PM_{2.5} emissions.

The *Deepwater Nautilus* drillship (Operating Scenario 1) is a semi-submersible drill rig equipped with four main generator engines to provide power, two cementing unit engines, two crane engines, a standby generator, four life boats and two rescue boats. Support vessels operating within 25 nautical miles of the drillship will include a towing vessel, anchor handling vessels, crew boats and offshore support vessels.

The *Noble Bully* drillships (Operating Scenario 2) are state-of-the-art dynamically positioned drillships equipped with a computer-controlled system to automatically maintain the vessel's position and heading over the desired location using the vessel's own propellers and thrusters. The drillship travels under its own power to the next drill site and does not require towing or anchoring vessels. Each *Noble Bully* drillship includes eight main engines to provide power and serve as propulsion generators, an emergency generator, four life boats and a rescue boat. The support vessels operating within 25 nautical miles of the *Noble Bully I* and *II* will include crew boats and offshore support vessels.

The information provided in Tables 2 and 3 is for description and identification purposes and does not establish operating limits.

Table 2 –Deepwater Nautilus Emissions Units (Operating Scenario 1)

Emissions Unit ID	Engine Description	Manufacturer	Model	Rating ^a (kW) [*]	Manufacture Year
GEN-1	Main Diesel Generator Engine 1	Wärtsilä	12V32 LNE	4,929	1998
GEN-2	Main Diesel Generator Engine 2	Wärtsilä	12V32 LNE	4,929	1998
GEN-3	Main Diesel Generator Engine 3	Wärtsilä	12V32 LNE	4,929	1998
GEN-4	Main Diesel Generator Engine 4	Wärtsilä	12V32 LNE	4,929	1998
CR-1	Diesel Crane Engine 1	Caterpillar	3408EDITA	429	2000
CR-2	Diesel Crane Engine 2	Caterpillar	3408EDITA	429	1998
EGEN	Emergency Diesel Generator Engine	Caterpillar	3508BDITA	634	1998
LB-1	Lifeboat 1	BUKH	DV36RME	27	--
LB-2	Lifeboat 2	BUKH	DV36RME	27	--
LB-3	Lifeboat 3	BUKH	DV36RME	27	--
LB-4	Lifeboat 4	BUKH	DV36RME	27	--
MOB-1	Fast Rescue Boat Engine 1	Cummins	6BTA270-2000	201	2001
MOB-2	Fast Rescue Boat Engine 2	Cummins	6BTA270-2000	201	2001
CMU-1	Cement Unit Engine 1	Caterpillar	3512DITA	1,342	2000
CMU-2	Cement Unit Engine 2	Caterpillar	3512	365	2000

^a Permit conditions may limit operation to less than rated capacity.

^{*} kilowatt

Table 3 – Noble Bully I and Noble Bully II Emissions Units (Operating Scenario 2)

Emissions Unit ID	Engine Description	Manufacturer	Model	Rating ^a (kW) [*]	Manufacture Year
GEN-1	Main Diesel Generator Engine 1 ^b	Electro-Motive	20-710G7C-T2	4,027	2008
GEN-2	Main Diesel Generator Engine 2 ^b	Electro-Motive	20-710G7C-T2	4,027	2008
GEN-3	Main Diesel Generator Engine 3 ^b	Electro-Motive	20-710G7C-T2	4,027	2008
GEN-4	Main Diesel Generator Engine 4 ^b	Electro-Motive	20-710G7C-T2	4,027	2008
GEN-5	Main Diesel Generator Engine 5 ^b	Electro-Motive	20-710G7C-T2	4,027	2008
GEN-6	Main Diesel Generator Engine 6 ^b	Electro-Motive	20-710G7C-T2	4,027	2008
GEN-7	Main Diesel Generator Engine 7 ^b	Electro-Motive	20-710G7C-T2	4,027	2008
GEN-8	Main Diesel Generator Engine 8 ^b	Electro-Motive	20-710G7C-T2	4,027	2008
EGEN	Emergency Diesel Generator Engine	Electro-Motive	8-710G7C-T2	1,600	2008
LB-1	Lifeboat 1	NORSAFE	NLDE-3 (380J-3)	20.6	2008
LB-2	Lifeboat 2	NORSAFE	NLDE-3 (380J-3)	20.6	2008

Emissions Unit ID	Engine Description	Manufacturer	Model	Rating ^a (kW) [*]	Manufacture Year
LB-3	Lifeboat 3	NORSAFE	NLDE-3 (380J-3)	20.6	2008
LB-4	Lifeboat 4	NORSAFE	NLDE-3 (380J-3)	20.6	2008
MOB	Fast Rescue Boat Engine	Steyr	M0164M40	120	2009

^a Permit conditions may limit operation to less than rated capacity.

^b Also referred to as Primary Mover Engines and Primary Movers in the application

^{*} kilowatt

Table 4 – Support Vessels

Vessel Description	Representative Vessel	Operating Scenario
Towing Vessel	<i>Harvey Warhorse II</i>	Operating Scenario 1
Anchor Handling Vessel	<i>Dino Chouest</i>	Operating Scenario 1
Crew Boats	Various vessels ^a	Operating Scenario 1 and 2
Offshore Support Vessel	<i>C-Liberty</i>	Operating Scenario 1 and 2

^a Specific crew boats available for use during the drilling project had not been identified at the time of application

5 GENERAL CONDITIONS

5.1 Compliance

5.1.1 The permittee shall comply with all requirements of 40 CFR part 71, 40 CFR § 52.21, 40 CFR part 55 and this permit. Failure to do so shall be considered a violation of section 111(e) of the CAA. All enforcement provisions of the CAA, including, but not limited to, the provisions of sections 113, 114, 120, 303 and 304 of the CAA, shall apply to the OCS source and permittee.

[40 CFR § 55.9(a) and (b)]

5.1.2 The permittee must comply with all conditions of this permit. All terms and conditions of this permit are enforceable by EPA and citizens under the CAA. Any permit noncompliance constitutes a violation of the CAA and is grounds for enforcement action; for permit termination, revocation and reissuance, or modification; or for denial of a permit renewal application.

[40 CFR § 71.6(a)(6)(i)]

5.1.3 It shall not be a defense for a permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit.

[40 CFR § 71.6(a)(6)(ii)]

5.2 Permit Shield

Compliance with the terms and conditions of this permit shall be deemed in compliance with the applicable requirements that are included and are specifically identified in this permit. Nothing in this permit shall alter or affect the following:

- The provisions of CAA section 303 (emergency orders), including the authority of the Administrator under that section;

- The liability of an owner or operator of a source for any violation of applicable requirements prior to or at the time of permit issuance; or
- The ability of EPA to obtain information from a source pursuant to CAA section 114.

[40 CFR § 71.6(f)(1)]

5.3 Other Credible Evidence

For the purpose of submitting compliance certifications in accordance with Condition 5.21 of this permit, or establishing whether or not a person has violated or is in violation of any requirement of this permit, nothing shall preclude the use, including the exclusive use, of any credible evidence or information, relevant to whether a source would have been in compliance with applicable requirements if the appropriate performance or compliance test or procedure had been performed.

[CAA §§ 113(a) and (e)(1), 40 CFR §§ 60.11(g) and 61.12]

5.4 Construction and Operation

5.4.1 As approved and conditioned by this permit, all construction and operation, including equipment operations and maintenance, of the OCS source and support vessels shall be in accordance with the data, specifications, drawings, exhibits, and assumptions included with the application and supporting materials submitted by the permittee, which resulted in this permit (application materials). This permit is valid only for the specific processes and operations applied for and indicated in the application materials. Any unauthorized deviation from the application materials, or from any term or condition of this permit may constitute grounds for revocation or enforcement action by EPA.

5.4.2 The permittee shall properly operate and maintain the OCS source and support vessels, including all systems of treatment and control (and related appurtenances) that are installed and used by the permittee to achieve compliance with the terms and conditions of this permit. This provision includes the operation of backup or auxiliary facilities or similar systems when necessary to minimize or prevent emissions in achieving compliance with the terms and conditions of the permit.

[40 CFR § 52.21(r)(1)]

5.5 Compliance with Other Requirements

This permit does not relieve the permittee of the responsibility to comply fully with applicable provisions of any other requirements under federal law.

[40 CFR § 55.6(a)(4)(iii)]

5.6 Notification to Owners, Operators, and Contractors

The permittee must notify all other owners or operators, contractors, and the subsequent owners or operators associated with emissions from the OCS source and support vessels of the terms and conditions of this permit.

[40 CFR § 55.6(a)(4)(iv)]

5.7 Expiration of Approval to Construct and Permit Renewal

5.7.1 This approval to construct shall become invalid if: construction is not commenced within 18 months after the effective date of this permit, construction is discontinued for a period of 18 months or more, or construction is not completed within a reasonable time. EPA may extend the 18-month period upon a satisfactory showing that an extension is justified. For the purposes of this permit, periods greater than 18 months between drilling campaigns are not considered to be a discontinuation of construction.

[40 CFR § 52.21(r)(2)]

5.7.2 This permit shall expire on the expiration date on page one of this permit.

[40 CFR § 71.6(a)(2)]

5.7.3 Expiration of this permit terminates the permittee's right to operate unless a timely and complete permit renewal application has been submitted at least six (6) months, but not more than 18 months, prior to the date of expiration of this permit. If the permittee submits a timely and complete renewal application, and EPA does not take final action on the renewal application before the end of the term of this permit, the permittee's failure to have a permit is not a violation of 40 CFR part 71 until the permitting authority takes final action on the renewal application. Such protection will cease to apply if, subsequent to EPA's determination that the renewal application is complete, the permittee fails to submit by the deadline specified in writing by EPA any additional information identified as being needed to process the application.

[40 CFR §§ 71.5(a)(1)(iii), 71.7(b) and 71.7(c)(1)(ii)]

5.7.4 If the permittee submits a timely and complete permit application for renewal, consistent with 40 CFR sections 71.5(a)(1)(iii) and 71.5(a)(2), but EPA does not take final action on the renewal application before the end of the term of this permit, then all the terms and conditions of this permit, including any permit shield granted pursuant to 40 CFR § 71.6(f), shall remain in effect until EPA takes final action on the renewal application.

[40 CFR §§ 71.7(c)(3) and 71.7(b)]

5.7.5 Renewal of this permit is subject to the same procedural requirements that apply to initial permit issuance, including those for public participation and affected State review.

[40 CFR part 71.7(c)(1)(i)]

5.7.6 The application to EPA for renewal shall include all information required pursuant to 40 CFR § 71.5(c), as well as the current permit number, a description of permit revisions and off-permit changes that occurred during the permit term and were not incorporated into the permit during the permit term, any applicable requirements that were promulgated and not incorporated into the permit during the permit term, and other information required by the application form.

[40 CFR §§ 71.5(a)(2) and 71.5(c)(5)]

5.8 Property Rights

This permit does not convey any property rights of any sort, or any exclusive privilege.

[40 CFR §71.6(a)(6)(iv)]

5.9 Inspections

The permittee, by accepting this permit, specifically agrees to allow authorized EPA personnel, upon presentation of credentials or other documents as may be required by law and at reasonable times, access to the premises where the permitted activity is located or conducted or where any records are required to be kept under the terms and conditions of this permit to:

- 5.9.1 Have access to and copy any records that must be kept under conditions of the permit, including but not limited to, information relating to the OCS source, support vessels, monitoring data, or compliance or noncompliance with the permit;
- 5.9.2 Inspect the OCS source, support vessels, equipment, practices, or operation regulated or required under this permit; and
- 5.9.3 Sample or monitor any substances or parameters at any location reasonably necessary to assure compliance with this permit or EPA rules.

Reasonable time may depend on the nature of the concern being investigated.

[40 CFR § 71.6(c)(2)]

5.10 Emergency Provisions

In addition to any emergency or upset provision contained in any applicable requirement, the permittee may seek to establish that noncompliance with a technology-based emission limitation under this permit was due to an emergency. An emergency constitutes an affirmative defense to an action brought for noncompliance with such technology-based emissions limitation. The permittee shall demonstrate the affirmative defense of emergency through properly signed, contemporaneous operating logs, or other relevant evidence that:

- An emergency occurred and that the permittee can identify the cause(s) of the emergency;
- The permitted facility was at the time being properly operated;
- During the period of the emergency the permittee took all reasonable steps to minimize levels of emissions that exceeded the emissions standards, or other requirements in this permit; and
- The permittee submitted notice of the emergency to EPA within two (2) working days of the time when emission limitations were exceeded due to the emergency. This notice must contain a description of the emergency, any steps taken to mitigate emissions, and corrective actions taken. This notice fulfills the requirements of Condition 5.17.2 of this permit, concerning prompt notification of deviations.

[40 CFR §§ 71.6(g)(2), (3) and (5)]

5.11 Burden of Proof for Emergencies

In any enforcement proceeding, the permittee attempting to establish the occurrence of an emergency has the burden of proof.

[40 CFR § 71.6(g)(4)]

5.12 Emergency Defined

An “emergency” means any situation arising from sudden and reasonably unforeseeable events beyond the control of the source, including acts of God, which situation requires immediate corrective action to restore normal operation, and that causes the source to exceed a technology-based emission limitation under the permit due to unavoidable increases in emissions attributable to the emergency. An emergency shall not include noncompliance to the extent caused by improperly designed equipment, lack of preventive maintenance, careless or improper operation, or operator error.

[40 CFR § 71.6(g)(1)]

5.13 Certification Requirement

Any document required to be submitted under this permit shall be certified by a responsible official as to truth, accuracy and completeness. Such certifications shall state that based on information and belief formed after reasonable inquiry, the statements and information in the document are true, accurate, and complete.

[40 CFR §§ 71.5(d), 71.6(c)(1) and 71.9(h)(2)]

5.14 Permit Actions

This permit may be modified, revoked, reopened, and reissued, or terminated for cause. The filing of a request by the permittee for a permit modification, revocation and reissuance, or termination, or of a notification of planned changes or anticipated noncompliance does not stay any permit condition.

[40 CFR § 71.6(a)(6)(iii)]

5.15 Reopening for Cause

The permit shall be reopened by EPA and the permit revised prior to expiration under any of the circumstances described in 40 CFR § 71.7(f).

[40 CFR § 71.7(f)]

5.16 Recordkeeping Requirements

In accepting this permit, the permittee understands and agrees that all information relating to this permitted source which is submitted to EPA may be used by EPA as evidence in any enforcement case involving the permitted source arising under federal statutes, EPA rules, or rules enforceable by EPA.

5.16.1 This permit or a copy thereof shall be kept at the work site of the permitted activity.

5.16.2 The permittee shall furnish all records required by this permit.

5.16.3 During enforcement actions, the retention period for all records will be extended automatically unless otherwise stipulated by EPA.

5.16.4 The permittee shall hold at the corporate offices of Shell Offshore, Inc., located at, 701 Poydras Street, New Orleans, Louisiana 70139, records of all monitoring information required by the permit, copies of all reports required by this permit, and records of all data used to complete the application for this permit. These materials shall be retained at least five years from the date of the sample, measurement, report, or application unless otherwise specified.

[40 CFR § 71.6(a)(3)(ii)(B)]

5.16.5 Records of monitoring information shall include:

- The date, emission unit or other place as defined in this permit, and time of sampling or measurements;
- The results of such analyses and operating conditions as existing at the time of sample or measurement;
- The date(s) the analyses were performed;
- The person who performed the sampling or measurements; and
- The analytical techniques or methods used.

[40 CFR § 71.6(a)(3)(ii)(A)]

5.16.6 When requested by EPA, the permittee shall furnish any information required by law which is needed to determine compliance with the permit. If the permittee becomes aware that relevant facts were not submitted or were incorrect in the permit application or in any report to EPA, such facts or information shall be corrected promptly.

[40 CFR § 71.5(b)]

All notifications, reporting or other communications relating to this permit shall be submitted to:

Chief
Air & EPCRA Enforcement Branch
Air, Pesticides and Toxics Management Division
U.S. EPA Region 4
61 Forsyth Street, SW
Atlanta, GA 30303

In addition, electronic copies of the above-referenced notifications and communications shall be submitted to the following individuals at their corresponding email address:

<u>Name</u>	<u>Email</u>	<u>Phone</u>
David Lloyd	lloyd.david@epa.gov	404-562-9216
Jason Dressler	dressler.jason@epa.gov	404-562-9208
Gregg Worley	worley.gregg@epa.gov	404-562-9141

5.16.7 The permittee shall furnish to EPA, within a reasonable time, any information that EPA may request in writing to determine whether cause exists for modifying, revoking, and reissuing, or terminating the permit, or to determine compliance with the permit. Upon request, the permittee shall also furnish to EPA copies of records that are required to be kept pursuant to the terms of the permit, including information claimed to be confidential. Information claimed to be confidential must be accompanied by a claim of confidentiality according to the provisions of 40 CFR part 2, subpart B.

[40 CFR §§ 71.6(a)(6)(v) and 71.5(a)(3)]

5.17 General Reporting Requirements

5.17.1 The permittee shall submit to EPA reports of any required monitoring for each six month reporting period from July 1 to December 31 and from January 1 to June 30, except that the first reporting period shall begin on the effective date of this permit and end on either June 30 or December 31, whichever occurs first. All reports shall be submitted to EPA and shall be postmarked by the 30th day following the end of the reporting period. All instances of deviations from permit requirements must be clearly identified in such reports. All required reports must be certified by a responsible official consistent with Condition 5.13.

[40 CFR § 71.6(a)(3)(iii)(A)]

5.17.2 The permittee shall promptly report to EPA, by telephone or facsimile, deviations from permit conditions, including those attributable to upset conditions as defined in this permit, the probable cause of such deviations, and any corrective actions or preventive measures taken. The report shall be made using the following numbers:

Telephone: (404) 562-9194
Facsimile: (404) 562-9019
Attn: Air Permits Part 71 Deviation Report

[40 CFR § 71.6(a)(3)(iii)(B)]

5.17.3 For the purposes of Condition 5.17.2 of the permit, prompt is defined as follows:

5.17.3.1 Any definition of prompt or a specific time frame for reporting deviations provided in an underlying applicable requirement as identified in this permit.

5.17.3.2 Where the underlying applicable requirement fails to address the time frame for reporting deviations, reports of deviations will be submitted based on the following schedule:

- For emissions of a hazardous air pollutant or a toxic air pollutant (as identified in the applicable regulation) that continue for more than an hour in excess of permit requirements, the report must be made within 24 hours of the occurrence;
- For emissions of any regulated pollutant excluding those referenced in the preceding bullet, that continue for more than two (2) hours in

excess of permit requirements, the report must be made within 48 hours of the occurrence; or

- For all other deviations from permit requirements, the report shall be submitted with the semi-annual monitoring report required in Condition 5.17.1.

[40 CFR § 71.6(a)(3)(iii)(B)]

5.17.4 Within 10 working days of the occurrence of a deviation as provided in Condition 5.17.3.2 above, the permittee shall also submit a written notice, which shall include a narrative description of the deviation and updated information as listed below to EPA, certified consistent with Condition 5.13 of this permit. When reporting excess emissions or permit deviations, the permittee must report in writing the following information:

- OCS Source (Facility) Name;
- OCS Air Permit Number;
- Company Name;
- Date/Time when the deviation was discovered;
- Date/Time when the event began (24-hour clock);
- Date/Time when the event ended (24-hour clock);
- Duration of the event: (hours: minutes) or days (total number of hours, minutes or days, if intermittent then include only the duration of the deviation);
- If the deviation was intermittent or continuous;
- Brief description of what happened and the cause, including information regarding the operating conditions during the deviation;
- Identification of the emission unit(s) or source(s) involved in the event using the same identification number(s) and name(s) as in the permit;
- Identification of each emission limit potentially exceeded during the event and the level of exceedance, if applicable;
- Whether the deviation was unavoidable;
- Describe corrective action taken and action taken to prevent future recurrence;
- If not corrected, the anticipated time the deviation is expected to continue and steps being taken to reduce, eliminate, and prevent recurrence of the deviation; and
- Certification: Based on information and belief formed after reasonable inquiry, certify that the statements and information reported are true, accurate, and complete.

[40 CFR §§ 71.6(a)(3)(i)(B) and (iii)(B)]

5.17.5 For the purposes of Conditions 5.17.1 through 5.17.5, deviation means any situation in which the permittee fails to meet a permit term or condition. A deviation is not always a violation. A deviation can be determined by observation or through review of data obtained from any testing, monitoring, or record keeping required by this permit. For a situation lasting more than 24 hours, each 24-hour period is considered a separate deviation. Included in the meaning of deviation are any of the following:

- A situation where emissions exceed an emission limitation or standard;
- A situation where process or emissions control device parameter values indicate that an emission limitation or standard has not been met;
- A situation in which observations or data collected demonstrate noncompliance with an emission limitation or standard or any work practice or operating condition required by the permit (including indicators of compliance revealed through parameter monitoring); and
- A situation in which any testing, monitoring, recordkeeping or reporting required by this permit is not performed or not performed as required.

[40 CFR § 71.6(a)(3)(iii)(C)]

5.17.6 If requested by EPA, the permittee shall provide a more detailed written report as requested to follow up on an excess emissions/deviation report.

[40 CFR § 71.6(a)(3)(iii)(B)]

5.18 Off Permit Changes

The permittee is allowed to make certain changes without a permit revision, provided that the following requirements are met:

- Each change is not addressed or prohibited by this permit;
- Each change shall meet all applicable requirements and shall not violate any existing permit term or condition;
- Changes under this provision may not include changes subject to any requirement under any provision of title I of the Clean Air Act;
- The permittee shall provide contemporaneous written notice to EPA of each change, except for changes that qualify as insignificant activities under 40 CFR § 71.5(c)(11). The written notice shall describe each change, the date of the change, any change in emissions, pollutants emitted and any applicable requirements that would apply as a result of the change;
- The permit shield in Condition 5.2 does not apply to changes made under this provision; and
- The permittee shall keep a record describing all changes that result in emissions of any regulated air pollutant subject to any applicable requirement not otherwise regulated under this permit, and the emissions resulting from those changes.

[40 CFR §71.6(a)(12)]

5.19 Operational Flexibility

The permittee is allowed to make a limited class of changes under section 502(b)(10) of the CAA within this permitted facility without applying for a permit revision, provided the changes do not exceed the emissions allowable under this permit (whether expressed therein as a rate of emissions or in terms of total emissions) and are not title I modifications. This class of changes does not include changes that would violate applicable requirements or changes that would contravene federally enforceable permit terms and conditions that are monitoring (including test methods), recordkeeping, reporting, or compliance certification requirements.

[40 CFR § 71.2 and 71.6(a)(13)(i)]

5.19.1 The permittee is required to send a notice to EPA at least seven (7) days in advance of any change made under this provision. The notice must describe the change, when it will occur and any change in emissions, and identify any permit terms or conditions made inapplicable as a result of the change. The permittee shall attach each notice to its copy this permit.

[40 CFR § 71.6(a)(13)(i)(A)]

5.19.2 Any permit shield provided under 40 CFR § 71.6(f) and Condition 5.2 of this permit does not apply to changes made under this provision.

[40 CFR § 71.6(a)(13)(i)(B)]

5.20 Combined Operating Scenarios

In the event that more than one drillship is constructed or operated during any compliance period, such as a 12-month rolling average, any applicable condition of this permit, including but not limited to emission limits, fuel consumption limits, operating limits, and fee calculations, shall be prorated based on the duration of the operation of each drillship during the compliance period. In no case does this condition allow for the simultaneous operation of more than one drillship under the terms of this permit.

[40 CFR § 55.6]

5.21 Annual Compliance Certification

The permittee shall submit to EPA a certification of compliance with permit terms and conditions, including emission limitations, standards, or work practices, postmarked by February 28 of each year and covering the previous calendar year except that the first certification shall cover the period from the effective date of this permit through December 31. The compliance certification shall be certified as to truth, accuracy and completeness by a responsible official consistent with Condition 5.13 of this permit. The certification shall include the following:

- The identification of each permit term or condition that is the basis of the certification;
- The identification of the method(s) or other means used by the permittee for determining the compliance status with each term and condition during the certification period. Such methods and other means shall include, at a minimum, the methods and means required in this permit. If necessary, the permittee also shall identify any other material information that must be included in the certification to comply with section 113(c)(2) of the CAA, which prohibits knowingly making a false certification or omitting material information;
- The status of compliance with each term and condition of the permit for the period covered by the certification, including whether compliance during the period was continuous or intermittent. The certification shall be based on the method or means designated above. The certification shall identify each deviation and take it into account in the compliance certification; and
- A summary of NO_x, CO, PM/PM₁₀/PM_{2.5}, SO₂, VOC, GHG and HAP emissions in tons per year emitted by each emissions unit regulated under this permit during the duration of the reporting period based on recorded data, such as actual fuel usage and actual hours of operation.

[40 CFR §71.6(c)(5) and 55.6(a)(4)]

5.22 Compliance Schedule

For applicable requirements with which the source is in compliance, the permittee will continue to comply with such requirements. For applicable requirements that will become effective during the permit term, the permittee shall meet such requirements on a timely basis.

[40 CFR §§ 71.6(c)(3) and 71.5(c)(8)(iii)(A) and (B)]

5.23 Safe Shutdown

As provided in 40 CFR § 55.9(c), if this OCS source is ordered to cease operation of any piece of equipment due to enforcement action taken by EPA, the shutdown will be coordinated by EPA with the Bureau of Ocean Energy Management, Regulation and Enforcement, the United States Coast Guard, the permittee, and the operator to assure that the shutdown will proceed in a safe manner. No shutdown action will occur until after EPA's consultation with these agencies, but in no case will initiation of the shutdown be delayed by more than 24 hours after EPA consults with these agencies. The initiation of the shutdown process will not preclude well procedures necessary to ensure safety.

[40 CFR § 55.9(c)]

5.24 Transfer of Ownership

In the event of any changes in control or ownership of the OCS source, this permit shall be binding on all subsequent owners and operators. Permittee shall notify the succeeding owner and operator of the existence of this permit and its conditions by letter, a copy of which shall be forwarded to EPA Region 4.

[40 CFR § 55.6(a)(4)(iv)]

5.25 Severability

The provisions of this permit are severable, and, in the event of any challenge to any portion of this permit or if any provision of the permit is held invalid, the remainder of this permit shall remain valid and in force.

[40 CFR §71.6(a)(5)]

5.26 General Testing Requirements

5.26.1 In addition to the specific testing requirements contained in the emission unit sections of this permit, the permittee shall comply with the generally applicable testing requirements in Conditions 5.26.2 through 5.26.10 whenever conducting a performance test required by this permit unless specifically stated otherwise in this permit.

5.26.2 The permittee shall provide EPA at least 30 days prior notice of any performance test, except as otherwise specified in this permit, to afford EPA the opportunity to have an observer present. If after 30 days notice for an initially scheduled performance test, there is a delay in conducting the scheduled performance test, the permittee shall notify EPA as soon as possible of any delay in the original test date, either by providing at least seven

(7) days prior notice of the rescheduled date of the performance test, or by arranging a rescheduled date with EPA by mutual agreement.

5.26.3 The permittee shall submit to EPA a source test plan 30 days prior to any required testing. The source test plan shall include and address the following elements:

- Purpose and scope of testing;
- Source description, including a description of the operating scenarios and mode of operation during testing and including fuel sampling and analysis procedures;
- Schedule/dates of testing;
- Process data to be collected during the test and reported with the results, including source-specific data identified in the emission unit sections of this permit;
- Sampling and analysis procedures, specifically requesting approval for any proposed alternatives to the reference test methods, and addressing minimum test length (e.g., one hour, eight (8) hours, 24 hours, etc.) and minimum sample volume;
- Sampling location description and compliance with the reference test methods;
- Analysis procedures and laboratory identification;
- Quality assurance plan;
- Calibration procedures and frequency;
- Sample recovery and field documentation;
- Chain of custody procedures;
- Quality assurance/quality control project flow chart;
- Data processing and reporting;
- Description of data handling and quality control procedures; and
- Report content and timing.

5.26.4 Only regular operating staff may adjust the processes or emission control devices during or within two (2) hours prior to the start of a source test. Any operating adjustments made during a source test, that are a result of consultation during the tests with source testing personnel, equipment vendors, or consultants, may render the source test invalid.

5.26.5 For the duration of each test run (unless otherwise specified), the permittee shall record the following information:

- All data which is required to be monitored during the test in the emission unit sections of this permit; and
- All continuous monitoring system data that is required to be routinely monitored in the emission unit sections of this permit for the emission unit being tested.

5.26.6 Each source test shall follow the reference test methods specified by this permit and consist of at least three (3) valid test runs conducted under normal operating conditions.

5.26.7 If the reference test method yields measured pollutant concentration values at an oxygen concentration other than specified in the emission standard, the permittee shall correct the measured pollutant concentration to the oxygen concentration specified in the emission standard by using the following equation:

$$PC_x = PC_m \times \frac{(21-X)}{(21-Y)}$$

Where:

PC_x = Pollutant concentration at X percent;

PC_m = Pollutant concentration as measured;

X = the oxygen concentration specified in the standard; and

Y = the measured average volumetric oxygen concentration.

5.26.8 Facilities for performing and observing the emission testing shall be provided that meet the requirements of 40 CFR § 60.8(e) and Reference Method 1 (40 CFR § 60, Appendix A).

5.26.9 Emission test reports shall be submitted to EPA within 45 days of completing any emission test required by this permit along with items required to be recorded in Condition 5.26.5 above.

5.26.10 Source test emission data shall be reported as the arithmetic average of all valid test runs and in the terms of any applicable emission limit, unless otherwise specified in the emission unit sections of this permit.

[40 CFR §§ 71.6(a)(3) and 71.6(c)(1)]

5.27 Payment of Fees

5.27.1 No later than April 1 of the subsequent year, the permittee shall submit the following to EPA:

- Full payment of the annual permit fee, as specified in Conditions 5.27.2 through 5.27.11;
- An updated fee calculation worksheet form and a photocopy of each fee payment check (or other confirmation of actual fee paid), as specified in Conditions 5.27.4 through 5.27.8; and
- An annual emissions report of actual emissions, as specified in Condition 5.27.6, for the preceding calendar year.

[40 CFR §§ 71.9(a) and (h)]

5.27.2 The fee payment shall be in United States currency and shall be paid by money order, bank draft, certified check, corporate check, or electronic funds transfer payable to the order of the U.S. Environmental Protection Agency.

[40 CFR § 71.9(k)(1)]

5.27.3 The permittee shall send fee payment and a completed fee filing form to either of the addresses listed below.

If sent by Regular Mail through U.S. Postal Service (USPS) send to:

U.S. Environmental Protection Agency
FOIA and Miscellaneous Payments
Cincinnati Finance Center
PO Box 979078
St. Louis, MO 63197-9000

If sent by Express Delivery (or when a physical address is required) send to:

U.S. Bank
Government Lockbox 979078
US EPA FOIA & Misc. Payments
1005 Convention Plaza
Mail Station SL-MO-C2GL
St. Louis, MO 63101
Contact: Natalie Pearson (314-418-4087)

[40 CFR § 71.9(k)(2)]

- 5.27.4 The permittee shall send an updated fee calculation worksheet form and a photocopy of each fee payment check (or other confirmation of actual fee paid), submitted annually by the date specified in Condition 5.27.1, to:

Chief
Air Permits Branch
Air, Pesticides and Toxics Management Division
U.S. EPA Region 4
61 Forsyth Street, SW
Atlanta, GA 30303

[40 CFR § 71.9(h)(1)]

- 5.27.5 The annual emissions fee shall be calculated by multiplying the total tons of actual emissions of all “regulated pollutants (for fee calculation),” emitted from the source by the presumptive emission fee (in dollars/ton) in effect at the time of calculation. The presumptive emission fee is revised each calendar year and is available from EPA prior to the start of each calendar year.

[40 CFR § 71.9(c)(1)]

- 5.27.5.1 “Actual emissions” means the actual rate of emissions in tons per year (TPY) of any “regulated pollutant (for fee calculation),” as defined in 40 CFR § 71.2, emitted from a part 71 source over the preceding calendar year. Actual emissions shall be calculated using each emissions unit’s actual operating hours, production rates, in-place control equipment, and types of materials processed, stored, or combusted during the preceding calendar year.

[40 CFR § 71.9(c)(6)]

5.27.5.2 Actual emissions shall be computed using methods required by the permit for determining compliance, such as monitoring or source testing data.
[40 CFR § 71.9(h)(3)]

5.27.5.3 If actual emissions cannot be determined using the compliance methods in the permit, the permittee shall use other federally recognized procedures.
[40 CFR § 71.9(e)(2)]

5.27.5.4 The permittee shall exclude the following emissions from the calculation of fees:

- The amount of actual emissions of each regulated pollutant (for fee calculation) that the source emits in excess of 4,000 tons per year;
- Actual emissions of any regulated pollutant (for fee calculation) already included in the fee calculation; and
- The insignificant quantities of actual emissions not required to be listed or calculated in a permit application pursuant to 40 CFR § 71.5(c)(11).

[40 CFR §§ 71.9(c)(5)(i) through (iii)]

5.27.6 The permittee shall submit an annual emissions report of its actual emissions for the preceding calendar year. The annual emissions report shall be certified by a responsible official and shall be submitted each year to EPA by the date specified in Condition 5.27.1. The annual emissions report shall be submitted to EPA at the address listed in Condition 5.27.3 of this permit.
[40 CFR §§ 71.9(h)(1) and (2)]

5.27.7 Fee calculation worksheets shall be certified as to truth, accuracy, and completeness by a responsible official in accordance with Condition 5.13 of this permit.
[40 CFR § 71.9(h)(2)]

5.27.8 The permittee shall retain in accordance with the provisions of Conditions 5.16.4 and 5.16.5 of this permit, all work sheets and other materials used to determine fee payments. Records shall be retained for five years following the year in which the emissions data is submitted.
[40 CFR § 71.9(i)]

5.27.9 Failure of the permittee to pay fees in a timely manner shall subject the permittee to assessment of penalties and interest.
[40 CFR § 71.9(l)]

5.27.10 The permittee, when notified by EPA of additional amounts due, shall remit full payment within 30 days of receipt of an invoice from EPA.

[40 CFR § 71.9(j)(2)]

5.27.11 If the permittee thinks an EPA assessed fee is in error and wishes to challenge such fee, the permittee shall provide a written explanation of the alleged error to EPA along with full payment of the EPA assessed fee.

[40 CFR § 71.9(j)(3)]

6 SPECIFIC CONDITIONS

6.1 Drill Site Notification

At least 10 days prior to entering the drill site, the permittee shall notify EPA in accordance with Condition 5.16.7 of this permit, of the following information:

6.1.1 The location of the proposed drill site, using coordinates in the following formats:

- Latitude and longitude; and
- Universal Transverse Mercator grid system.

6.1.2 The proposed date that the drillship will enter the lease block and commence construction or operation and the probable duration of operation at that location;

6.1.3 Not less than 24 hours prior to commencing construction or operation and in accordance with Condition 5.16.7, of any changes to the information provided by the permittee in Conditions 6.1.1 and 6.1.2; and

6.1.4 The certification of maintenance and no physical changes required by Condition 6.15.1.2 (if applicable).

[40 CFR §§ 71.6(a)(6)(v) and 52.21]

6.2 Support Vessel Identification

The permittee shall maintain records in accordance with Condition 5.16 of the engine specifications, operating time within the 25 nautical mile radius of the drillship, and emission estimates for any support vessel used in place of the *Harvey Warhorse II* (towing vessel), *C-Liberty* (offshore support vessel) and/or *Dino Chouest* (anchor handling vessel) and for any crew boat used. These records shall be submitted as part of the Annual Compliance Certification in accordance with Condition 5.21. Also, any support vessel used in place of the *Harvey Warhorse II* (towing vessel) shall meet Condition 6.11. Any support vessel used in place of or in addition to the *Dino Chouest* (anchor handling boat) shall meet Condition 6.12. Any support vessel used in place of or in addition to the *C-Liberty* (offshore support vessel) shall meet Condition 6.13. Any vessel used as a crew boat shall meet Condition 6.14.

[40 CFR § 52.21]

6.3 Source-wide SO₂ Emission Limit

The permittee shall not combust any fuel with sulfur content greater than 0.05 percent by weight, as determined by Condition 6.3.1, in any diesel fueled emission unit on the *Deepwater Nautilus*, *Noble Bully I* or *Noble Bully II* and any support vessel.

- 6.3.1 The permittee shall obtain a certification of sulfur content for each shipment of fuel from the fuel supplier (the certification must indicate the sulfur content was determined by an approved EPA method), or the permittee shall obtain representative fuel samples using one of the methods in 40 CFR § 80.330 and shall determine the sulfur content of the fuel using one of the methods in 40 CFR § 80.580.
- 6.3.2 Monitoring, Recordkeeping and Reporting
- 6.3.2.1 Prior to mobilizing the selected drillship for activities covered by this permit, the permittee shall determine and record the sulfur content of the diesel fuel on the drillship and the support vessels using the procedures in Condition 6.3.1.
- 6.3.2.2 Thereafter, the permittee shall determine and record the sulfur content upon receiving each fuel shipment, as follows:
- 6.3.2.2.1 Obtain a certification of sulfur content for each shipment of fuel from the fuel supplier, or
- 6.3.2.2.2 Obtain a representative sample of the fuel delivered and Analyze the sample for sulfur content using the procedures in Condition 6.3.1.
- 6.3.3 The permittee shall provide the results of all fuel sample analyses required by Conditions 6.3.1 and 6.3.2 with the Compliance Certification Report required by Condition 5.21.

[40 CFR §§ 52.21, 71.6(a)(3) and (c)(1)]

6.4 Source-Wide CO and PM_{2.5} Emission Limits

- 6.4.1 The permittee shall not discharge or cause the discharge into the atmosphere in excess of the following limits for the total emissions from all units permitted on the *Deepwater Nautilus* drillship or from all units permitted on either *Noble Bully* drillship.
- 6.4.1.1 CO: 99 TPY on a 12-month rolling total.
- 6.4.1.2 PM_{2.5}: 9.9 TPY on a 12-month rolling total.
- 6.4.2 Compliance with this operating limit shall be demonstrated by calculating and maintaining a record of monthly fuel consumption as required by Condition 6.7 (for the *Deepwater Nautilus*) or 6.10 (for the *Noble Bully I* and *II*) and determining emissions from all engines on the drillship in use by multiplying fuel usage by the pollutant-specific emissions rates presented in the application. Alternately, the permittee may calculate emissions rates by monitoring CO and PM_{2.5} emissions in accordance with compliance demonstration methods set forth in Conditions 6.16, 6.17 and 6.18 of this permit. The permittee shall calculate CO and PM_{2.5} emissions for the previous 12-month period on a 12-month rolling basis within 15 days following the end of each calendar month.
- 6.4.3 The permittee shall submit a written report in compliance with Condition 5.17.1 including the results of the CO and PM_{2.5} limit calculations performed in accordance with Condition 6.4.2 for each 12-month period completed in the report.

6.5 *Deepwater Nautilus* Main Generator Engines NO_x Emission Limits

- 6.5.1 Emission Limit: The permittee shall not discharge or cause the discharge of emissions into the atmosphere in excess of 12.7 g/kW-hr for each of the main propulsion generators (units GEN-1 through 4), on a rolling 24-hour average basis.
- 6.5.2 NO_x BACT Work Practice Standards for units GEN-1 through GEN-4: Use of main engines with Low NO_x Engine design (including ignition timing retard, turbo charger/after cooler, and high injection pressure), intake air cooling, good combustion practices based on the current manufacturer's specifications for these engines, and additional enhanced work practice standards as detailed in supplemental application information submitted to EPA in a March 24, 2011 letter from Shell. The letter is provided in the administrative record and defines a detailed engine performance management system and the Diesel Engines with Turbochargers (DEWT) monitoring system designed by Transocean. A parametric monitoring system equivalent to DEWT may be used with prior EPA approval.
- 6.5.3 Compliance Demonstration Method for units GEN-1 through GEN-4: The permittee shall monitor NO_x emissions by the use of an EPA-approved continuous emissions monitoring system, an EPA-approved alternative parametric monitoring method or, with prior written approval by EPA, a stack testing emissions monitoring system pursuant to Condition 6.16.
- 6.5.4 Monitoring, recordkeeping and reporting shall be conducted in accordance with Conditions 6.16 and 6.19.

6.6 *Deepwater Nautilus* Standby Generator (EGEN) and Small Engines NO_x Emission Limits

- 6.6.1 Source Identification: EGEN - Standby diesel engine
- 6.6.1.1 The permittee shall not discharge or cause the discharge of emissions into the atmosphere in excess of 0.15 tons of NO_x per year on a rolling 12-month total basis.
- 6.6.1.2 Operating Limit: This unit shall be operated no more than 15 hours per year on a rolling 12-month average basis to ensure that the emission limit set forth in Condition 6.6.1.1 is not exceeded.
- 6.6.1.3 NO_x BACT Work Practice Standards: Use of engine with intake air-cooling and turbo charger/after cooler and good combustion practices based on the current manufacturer's specifications for this engine.
- 6.6.1.4 Compliance with this operating limit will be assured by maintaining a record of weekly operating time.
- 6.6.1.5 Monitoring, recordkeeping and reporting shall be conducted in accordance with Conditions 6.17 and 6.19.

6.6.2 Source Identification: CMU-1 and CMU-2 Cement Unit diesel engines

- 6.6.2.1 The permittee shall not discharge or cause the discharge of emissions into the atmosphere in excess of 4.86 tons of NO_x per year on a rolling 12-month total basis.
- 6.6.2.2 Operating Limit: These units shall be operated no more than 192 hours (each unit) per year on a rolling 12-month total basis to ensure that the emission limit set forth in Condition 6.6.2.1 is not exceeded.
- 6.6.2.3 NO_x BACT Work Practice Standards:
 - 6.6.2.3.1 Use of engine with intake air cooling and turbo charger/after cooler and good combustion practices based on the current manufacturer's specifications for this engine for unit CMU-1 (large cement unit).
 - 6.6.2.3.2 Use of certified EPA Tier 1 engines with ignition timing retard, and high injection pressure, intake air cooling and good combustion practices based on the current manufacturer's specifications for this engine for unit CMU-2 (small cement unit).
- 6.6.2.4 Compliance with this operating limit will be assured by maintaining a record of weekly operating time.
- 6.6.2.5 Monitoring, recordkeeping and reporting shall be conducted in accordance with Conditions 6.17 and 6.19.

6.6.3 Source Identification: CR-1 and CR-2 Diesel Crane engines

- 6.6.3.1 The permittee shall not discharge or cause the discharge of emissions into the atmosphere in excess of 15.65 tons of NO_x per year on a rolling 12-month total basis.
- 6.6.3.2 Operating Limit: These units shall be operated no more than 12 hours (each unit) per day to ensure that the emission limit set forth in Condition 6.6.3.1 is not exceeded.
- 6.6.3.3 NO_x BACT Work Practice Standards: Use of certified EPA Tier 1 engines with Low NO_x Engine design (including ignition timing retard, turbo charger/after cooler, and high injection pressure), intake air-cooling and good combustion practices based on the current manufacturer's specifications for these engines.
- 6.6.3.4 Compliance with this operating limit will be assured by maintaining a record of daily operating time.
- 6.6.3.5 Monitoring, recordkeeping and reporting shall be conducted in accordance with Conditions 6.17 and 6.19.

6.6.4 Source Identification: LB-1 through LB-4 Life Boat engines

- 6.6.4.1 Operating Limit: These units shall be operated no more than 15 hours (each unit) per year of non-emergency, planned operation time on a rolling 12-month total basis.
- 6.6.4.2 Compliance with this operating limit will be assured by maintaining a record of weekly operating time.
- 6.6.4.3 Monitoring, recordkeeping and reporting shall be conducted in accordance with Conditions 6.17 and 6.19.

6.6.5 Source Identification: MOB-1 and MOB-2 Fast Rescue Boat diesel engines

- 6.6.5.1 Operating Limit: These units shall be operated no more than 15 hours (each unit) per year of non-emergency, planned operation time on a rolling 12-month total basis.
- 6.6.5.2 Compliance with this operating limit will be assured by maintaining a record of operating time.
- 6.6.5.3 Monitoring, recordkeeping and reporting shall be conducted in accordance with Conditions 6.17 and 6.19.

[40 CFR §§ 52.21 and 71.6(a)(1), (a)(3) and (c)(1)]

6.7 Deepwater Nautilus Fuel Consumption Limits

The *Deepwater Nautilus* drillship is limited to an annual consumption of 1,101,666 gallons of diesel fuel on a rolling 12-month total basis.

- 6.7.1 Compliance with this operating limit will be demonstrated by calculating and maintaining a record of monthly fuel consumption based on information obtained pursuant to Condition 6.7.2 for the duration of the drilling campaign to obtain the annual fuel usage.
- 6.7.2 The permittee shall monitor and maintain a contemporaneous record of the following information:
 - Initial number of barrels/gallons of diesel fuel on the drillship at the beginning of the drilling campaign;
 - Date of each diesel fuel delivery;
 - Number of barrels/gallons of diesel fuel in each delivery;
 - Name of person recording delivery (printed);
 - Signature of recorder; and
 - Final number of barrels/gallons of diesel fuel on the *Deepwater Nautilus* at the end of each month.

[40 CFR §§ 52.21 and 71.6(a)(1), (a)(3) and (c)(1)]

6.8 Noble Bully Main Generator Engines NO_x Emission Limits

- 6.8.1 Emission Limit: The permittee shall not discharge or cause the discharge of emissions into the atmosphere in excess of 5.5 g/kW-hr for each of the main generators (also referred to in the application as the primary mover engines) (units GEN-1 through GEN-8), on a rolling 24-hour average basis.
- 6.8.2 NO_x BACT Work Practice Standard for units GEN-1 through GEN-8: Use of certified EPA Tier 2 engines with Low NO_x Engine design (including ignition timing retard, turbo charger/after cooler, and high injection pressure), intake air cooling, and good combustion practices based on the current manufacturer's specifications for these engines.
- 6.8.3 Compliance Demonstration Method for units GEN-1 through GEN-8: The permittee shall monitor NO_x emissions by the use of an EPA-approved continuous emissions monitoring system, an EPA-approved alternative parametric monitoring method, or, with prior written approval by EPA a stack testing emissions monitoring system, pursuant to Condition 6.16.
- 6.8.4 Monitoring, recordkeeping and reporting shall be conducted in accordance with Conditions 6.16 and 6.19.

[40 CFR §§ 52.21 and 71.6(a)(1), (a)(3) and (c)(1)]

6.9 Noble Bully Emergency Generator (EGEN) and Small Engines NO_x Emission Limits

- 6.9.1 Source Identification: EGEN - Emergency diesel engine
 - 6.9.1.1 The permittee shall not discharge or cause the discharge of emissions into the atmosphere in excess of 0.15 tons of NO_x per year on a rolling 12-month total basis.
 - 6.9.1.2 Operating Limit: This unit shall be operated no more than 15 hours per year on a rolling 12-month total basis to ensure that the emission limit set forth in Condition 6.9.1.1 is not exceeded.
 - 6.9.1.3 NO_x BACT Work Practice Standards: Use of certified EPA Tier 2 engines with Low NO_x Engine design (including ignition timing retard, turbo charger/after cooler, and high injection pressure), intake air-cooling, and good combustion practices based on the current manufacturer's specifications for this engine.
 - 6.9.1.4 Compliance with this operating limit will be assured by maintaining a record of weekly operating time.
 - 6.9.1.5 Monitoring, recordkeeping and reporting shall be conducted in accordance with Conditions 6.17 and 6.19.

6.9.2 Source Identification: LB-1 though LB-4 Life Boat engines

- 6.9.2.1 Operating Limit: These units shall be operated no more than 15 hours (each unit) per year of non-emergency, planned operation time on a rolling 12-month total basis.
- 6.9.2.2 Compliance with this operating limit will be assured by maintaining a record of weekly operating time.
- 6.9.2.3 Monitoring, recordkeeping and reporting shall be conducted in accordance with Conditions 6.17 and 6.19.

6.9.3 Source Identification: MOB Fast Rescue Boat diesel engine

- 6.9.3.1 Operating Limit: This unit shall be operated no more than 15 hours per year of non-emergency, planned operation time on a rolling 12-month total basis.
- 6.9.3.2 Compliance with this operating limit will be assured by maintaining a record of weekly operating time.
- 6.9.3.3 Monitoring, recordkeeping and reporting shall be conducted in accordance Conditions 6.17 and 6.19.

[40 CFR §§ 52.21 and 71.6(a)(1), (a)(3) and (c)(1)]

6.10 Noble Bully Fuel Consumption and Operating Limits

- 6.10.1 The *Noble Bully* drillships are limited to a combined annual consumption of 2,869,475 gallons of diesel fuel on a rolling 12-month total basis.
- 6.10.2 Compliance with this operating limit will be demonstrated by calculating and maintaining a record of monthly fuel consumption based on information obtained pursuant to Condition 6.10.3 for the duration of the drilling campaign to obtain the annual fuel usage.
- 6.10.3 The permittee shall monitor and maintain a record of the following information:
 - Initial number of barrels/gallons of diesel fuel on the drillship at the beginning of the drilling campaign;
 - Date of each diesel fuel delivery;
 - Number of barrels/gallons of diesel fuel in each delivery;
 - Name of person recording delivery (printed);
 - Signature of recorder; and
 - Final number of barrels/gallons of diesel fuel on the *Noble Bully I* or *II* at the end of each month.

[40 CFR §§ 52.21 and 71.6(a)(1), (a)(3) and (c)(1)]

6.11 Towing Boat Operating Limits

- 6.11.1 The vessel *Harvey Warhorse II* or substitute towing boat shall not exceed a total of 4 days per year within 25 nautical miles of the *Deepwater Nautilus* on a rolling 12-month total basis.
- 6.11.2 The vessel *Harvey Warhorse II* or substitute towing boat shall not exceed an average total of 13,010 gallons of fuel per day of operation within 25 nautical miles of the *Deepwater Nautilus* on a rolling 12-month average basis.
- 6.11.3 The vessel *Harvey Warhorse II* or substitute towing boat shall not combust any diesel fuel with sulfur content greater than 0.05 percent by weight.
- 6.11.4 Compliance with this operating limit will be demonstrated through the monitoring, recordkeeping and reporting conditions as set forth in Conditions 6.18 and 6.19.

[40 CFR §§ 52.21, 55.2, 55.6(a)(4) and 71.6(a)(1), (a)(3) and (c)(1)]

6.12 Anchor Handling Boats Operating Limits

- 6.12.1 The anchor handling boat *Dino Chouest* and any additional or substitute anchor handling boats (with a maximum of up to three anchor handling boats operating simultaneously) shall not exceed a combined total of 32.5 days per year on a rolling 12-month total basis within 25 nautical miles of the *Deepwater Nautilus*.
- 6.12.2 The anchor handling boat *Dino Chouest* and any additional or substitute anchor handling boats (with a maximum of up to three anchor handling boats operating simultaneously) shall not exceed an average combined total of 11,668 gallons of fuel per day of operation within 25 nautical miles of the *Deepwater Nautilus*.
- 6.12.3 The vessel *Dino Chouest* and any additional or substitute anchor handling boats shall not combust any diesel fuel with sulfur content greater than 0.05 percent by weight.
- 6.12.4 Compliance with this operating limit will be demonstrated through the monitoring, recordkeeping and reporting conditions as set forth in Conditions 6.18 and 6.19.

[40 CFR §§ 52.21, 55.2, 55.6(a)(4) and 71.6(a)(1), (a)(3) and (c)(1)]

6.13 Offshore Support Vessels Operating Limits

- 6.13.1 Offshore support vessels like the *C-Liberty* and any additional or substitute work boats (with a maximum of two work boats operating simultaneously) shall not exceed a combined total of 127.5 days per year on a rolling 12-month total basis within 25 nautical miles of the drillship.
- 6.13.2 Offshore support vessels like the *C-Liberty* and any additional or substitute work boats (with a maximum of two work boats operating simultaneously) shall not exceed a combined total of 3,938 gallons of fuel per day of operation within 25 nautical miles of the drillship.

- 6.13.3 The vessels like the *C-Liberty* or substitute work boats shall not combust any diesel fuel with sulfur content greater than 0.05 percent by weight.
- 6.13.4 Compliance with this operating limit will be demonstrated through the monitoring, recordkeeping and reporting conditions as set forth in Conditions 6.18 and 6.19.

[40 CFR §§ 52.21, 55.2, 55.6(a)(4) and 71.6(a)(1), (a)(3) and (c)(1)]

6.14 Crew Boats Operating Limits

- 6.14.1 The utilized crew boats (with a maximum of two crew boats operating simultaneously) shall not exceed a combined total of 24 days per year on a rolling 12-month total basis within 25 nautical miles of the drillship.
- 6.14.2 The utilized crew boats shall not combust any diesel fuel with sulfur content greater than 0.05 percent by weight.
- 6.14.3 Compliance with this operating limit will be demonstrated through the monitoring, recordkeeping and reporting conditions as set forth in Conditions 6.18 and 6.19.

[40 CFR §§ 52.21, 55.2, 55.6(a)(4) and 71.6(a)(1), (a)(3) and (c)(1)]

6.15 General Stack Test Requirements

- 6.15.1 Within 30 days of the start of the first drilling campaign that the subject drillship operates under this permit, the four main engines (GEN-1 through GEN-4) of the *Deepwater Nautilus* or the eight main engines of the *Noble Bully I* or *Noble Bully II* (GEN-1 through GEN-8) shall have been stack tested under the requirements of this section and Condition 5.26 within the previous 12 month period.
- 6.15.1.1 If, after the initial stack tests, the drilling vessel discontinues drilling under the permit for more than 12 months, the permittee shall certify that a continuous maintenance program has been conducted and that no physical changes that could impact emissions have occurred since the latest stack test, or conduct a new stack test prior to restarting drilling operations in accordance with the general stack testing requirements set forth in Condition 5.26 and Conditions 6.15.2 through 6.15.6.
- 6.15.1.2 If a continuous maintenance program is selected from the options in Condition 6.15.1.1, the certification shall be included with the drill site notification required pursuant to Condition 6.1. Maintenance records shall be kept in accordance with the recordkeeping requirements set forth in Condition 5.16
- 6.15.2 Each stack test shall be conducted by using stack testing data collected according to an EPA approved source test plan set forth in Condition 5.26.
- 6.15.3 Each stack test shall be conducted at three different loads within the expected range of operations.

6.15.4 At a minimum, each stack test run shall test for emissions of CO, NO_x, PM_{2.5}, PM₁₀, VOC, and visible emissions.

6.15.5 During each test run, the permittee shall monitor and record the following information:

- Density of the fuel used (in lbs/gallon);
- Heat content of the fuel used (in Btu/gallon); and
- Electrical power produced (in kW-hr).

6.15.6 For each engine, each load, and each pollutant, the permittee shall determine emission rates in g/kW-hr.

[40 CFR §§ 52.21 and 71.6(a)(1), (a)(3) and (c)(1)]

6.16 Monitoring and Recordkeeping Requirements for Drillship Main Diesel Generator Engines

Compliance demonstration method for the main generator diesel units (GEN-1 through GEN-4 on the drillship *Deepwater Nautilus* and GEN-1 through GEN-8 on the *Noble Bully* drillships): In accordance with Conditions 6.5.3 and 6.8.3, the permittee shall monitor emissions from the main drillship engines by the use of either an EPA-approved continuous emissions monitoring system, or an EPA-approved alternative parametric monitoring method, or, with prior written approval by EPA, a stack testing emissions monitoring system as described in Conditions 6.16.1 through 6.16.3.

6.16.1 Continuous Emissions Monitoring (Compliance Monitoring Option #1)

- 6.16.1.1 The permittee shall properly install, maintain in good working order, and operate a continuous emissions monitoring system to monitor emissions from the main generator diesel units specified in Condition 6.16.
- 6.16.1.2 The permittee shall obtain stack gas volumetric flow rates using a calibrated flow monitor that records data on a continuous basis.
- 6.16.1.3 The permittee shall monitor and record electrical power produced (in kW-hr).
- 6.16.1.4 The permittee shall install, calibrate and maintain the continuous emissions monitoring system with a plan approved by EPA.
- 6.16.1.5 The quality assurance plan used by the permittee for the certification and operation of the continuous emissions monitoring system shall be made available to EPA upon request.
- 6.16.1.6 To demonstrate compliance, determine the average emission rate (g/kW-hr) for each unit from the hourly emission rate results in each rolling 24-hour period.

6.16.2 Parametric Monitoring (Compliance Monitoring Option #2)

- 6.16.2.1 The permittee shall properly monitor emissions from the main generator diesel units specified in Condition 6.16 by using a parametric monitoring system such as the Transocean Diesel Engines with Turbochargers (DEWT) monitoring system or its equivalent upon prior written approval by EPA.
- 6.16.2.2 If the DEWT measurement system is utilized, the permittee shall monitor and record the following parameters once every 30 seconds for 30 minutes twice a day:
- Charge Air Pressure (bar) before and after air cooler;
 - Charge Air Temperature (Celsius) before and after air cooler;
 - Turbocharger RPM A& B (RPM);
 - Exhaust Air Temperature (Celsius);
 - Engine Air Inlet Pressure (mbar);
 - Engine Air Inlet Temperature (Celsius);
 - Engine Air Inlet Relative Humidity (%);
 - Generator Load (kW); and
 - NO_x, CO, SO₂, CO₂, O₂ Emission Concentration (ppm).
- 6.16.2.3 To demonstrate compliance, determine the average emission rate (g/kW-hr) for each unit from the emission rate results in each rolling 24-hour period.

6.16.3 Stack Testing Emissions Monitoring (Compliance Monitoring Option #3)

- 6.16.3.1 The permittee shall properly monitor emissions from diesel units specified in Condition 6.16 by using stack testing data collected within the previous 12 month according to an EPA approved source test plan, as set forth in Condition 5.26. Data collected prior to issuance of this permit may be used with EPA approval. After 3 annual/periodic stack tests of the same drilling rig, stack test frequency may be reduced upon written approval by EPA.
- 6.16.3.2 Each stack test shall be conducted at three different loads within the expected range of operations.
- 6.16.3.3 At a minimum, each stack test run shall test for emissions of CO, NO_x, PM_{2.5}, PM₁₀, VOC, and visible emissions.
- 6.16.3.4 During each test run, the permittee shall monitor and record the following information:
- Density of the fuel used (in lbs/gallon);
 - Heat content of the fuel used (in Btu/gallon); and
 - Electrical power produced (in kW-hr).

- 6.16.3.5 For each engine, each load, and each pollutant, the permittee shall determine emission rates in g/kW-hr.
- 6.16.3.6 Data collected pursuant to Condition 6.16.3.1 shall be used to prepare a graph of engine load versus emission rates expressed in grams per kilowatt-hour (g/kW-hr) for each engine. Plot the engine load as the independent (or x) variable and the pollutant emission rates as the dependent (or y) variable for each load point tested. Construct the graph by drawing straight-line segments between each load point. Draw a horizontal line to the y-axis from the minimum load point tested.
- 6.16.3.7 Use the load information recorded per Condition 6.16.3.2, along with the graph of engine load versus emission rates to determine the emission rate in g/kW-hr for each engine load recorded. Linear interpolation shall be used to determine the emission rate when the actual load falls between two tested load points. When the engine load exceeds the maximum load measured during the stack testing, report the g/kW-hr emission rate obtained for the highest load point tested during the most recent stack test. Calculate the average emission rate for each hour of operation from all the individual emission rate results recorded during the hour.
- 6.16.3.8 When records of engine load are not available, substitute the highest g/kW-hr emission rate calculated for all the load points tested during the most recent stack test.
- 6.16.3.9 To demonstrate compliance, determine the average emission rate (g/kW-hr) for each unit from the hourly emission rate results in each rolling 24-hour period.

[40 CFR §§ 52.21 and 71.6(a)(1), (a)(3) and (c)(1)]

6.17 Monitoring and Recordkeeping Requirements for Emergency or Standby Generators and Small On-board Engines

6.17.1 Compliance demonstration method for the emergency generator and standby diesel units (EGEN on both the drillship *Deepwater Nautilus* and the *Noble Bully* drillships) and the small on-board diesel engines (CMU-1 and CMU-2, CR-1 and CR-2, LB-1 through LB-4, and MOB-1 and MOB-2 on the drillship *Deepwater Nautilus* and LB-1 through LB-4 and MOB on the *Noble Bully* drillships): In accordance with Conditions 6.6 and 6.9, the permittee shall monitor and maintain a contemporaneous record of the following information:

- Unit ID;
- Date/time engine started;
- Date/time engine shut down;
- Name of person operating equipment (printed); and
- Signature of person operating equipment.

[40 CFR §§ 52.21 and 71.6(a)(1), (a)(3) and (c)(1)]

6.18 Monitoring and Recordkeeping Requirements for Support Vessel Engines

6.18.1 Compliance demonstration method for the support vessels for both the drillship *Deepwater Nautilus* and the *Noble Bully* drillships: In accordance with Conditions 6.11 through 6.14, the permittee shall monitor and maintain a contemporaneous record of the following information:

- 6.18.1.1 Compliance with this operating limit will be assured by maintaining a record of operating time within the 25 nautical mile radius of the drillship and during standby time at the drillship.
- 6.18.1.2 The permittee shall show compliance by determining and recording the sulfur content upon receiving each fuel shipment as specified in Condition 6.3.

6.18.2 Monitoring and Recordkeeping Requirements: The permittee shall monitor and maintain a contemporaneous record with the following information:

- Date/time entering the 25 nautical mile radius;
- Date/time exiting the 25 nautical mile radius;
- Sulfur content of all fuel used in any engine as specified in Condition 6.3;
- Gallons of diesel fuel on the support vessel entering the 25 nautical mile radius; and
- Gallons of diesel fuel on the support vessel exiting the 25 nautical mile radius.

[40 CFR §§ 52.21, 55.2, 55.6(a)(4) and 71.6(a)(1), (a)(3) and (c)(1)]

6.19 Reporting Requirements

The permittee shall submit the information required in Conditions 6.5 through 6.18 in accordance with reporting specifications detailed in Condition 5.17.

[40 CFR § 71.6(a)(3)(iii)]

6.20 New Source Performance Standards and National Emission Standard for Hazardous Air Pollutants (HAP) Requirements

6.20.1 The main diesel generator engines and the emergency generator on the *Noble Bully* drillships engines (Units GEN-1 through GEN-8 and EGEN) are subject to 40 CFR part 60, subpart III based on their per cylinder displacement and model year. The permittee shall demonstrate compliance with the applicable requirements through the following:

- 6.20.1.1 The permittee shall maintain documentation in accordance with Condition 5.16 that engines specified in Condition 6.20.1 were installed and configured according to manufacturer's specifications
- 6.20.1.2 The permittee shall maintain records in accordance with Condition 5.16 of manufacturer data indicating compliance with EPA Tier 2 standards.

6.20.1.3 The permittee shall operate and maintain the engines according to the manufacturer's written instructions or procedures developed by the permittee that are approved in writing by the engine manufacturer. The permittee shall only change those settings that are approved by the manufacturer. The permittee shall maintain records of the manufacturer's written instructions for operation and maintenance of the engine or the procedures the permittee developed that are approved in writing by the manufacturer in accordance with Condition 5.16.

6.20.1.4 The permitted engines shall not combust any diesel fuel that does not meet the requirements of Condition 6.3.

[40 CFR § 60 subpart IIII]

6.20.2 Based on engine model years and engine use (summarized in Table 2 of Section 4 of this permit), diesel engines (excluding the life boat (LB-1 through LB-4) and the fast rescue boat (MOB-1 and MOB-2) engines) on the *Deepwater Nautilus* are subject to and shall comply with the applicable requirements of 40 CFR part 63, subpart ZZZZ.

6.20.2.1 Existing stationary engines located at an area source of HAP emissions must comply with the requirements in Table 2d and the operating limitations in Table 1b and Table 2b in subpart ZZZZ no later than May 3, 2013 in accordance with the compliance schedule requirements of Condition 5.22.

6.20.2.2 Compliance with the numerical emission limitations established in subpart ZZZZ is based on the results of testing the average of three 1-hour runs using the testing requirements and procedures in 40 CFR § 63.6620.

6.20.2.3 Compliance with Condition 6.20.2 shall be determined based upon recordkeeping required by the Annual Compliance Certification set forth in Condition 5.21.

[40 CFR part 63, subpart ZZZZ]

6.20.3 Based on engine model years and engine use (summarized in Table 3 of Section 4 of this permit), the main diesel generator engines and the emergency generator on the *Noble Bully* drillships engines (Units GEN-1 through GEN-8 and EGEN) are subject to 40 CFR part 63, subpart ZZZZ. The permittee shall comply with subpart ZZZZ by demonstrating compliance with requirements of 40 CFR part 60, subpart IIII and Condition 6.20.1.

[40 CFR part 60, subpart IIII]

6.20.4 The permittee shall submit to EPA prior notification of any upgrades to or replacements of diesel units specified in Tables 2 and 3 of Section 4 of this permit in addition to a reevaluation of the applicability of pertinent NESHAP and NSPS regulations for the modified diesel unit.

[40 CFR §§ 71.6(a)(1), (a)(3) and (c)(1)]