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-R4005-M2

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 Regulation (CFR) part 55, which incorporate by reference the Prevention of Significant Deterioration of Air Quality (PSD) Regulations at 40 CFR 52.21,

Anadarko Petroleum Corporation
1201 Lake Robbins Road
The Woodlands, Texas 77380

is hereby authorized to construct and operate air emissions units and to conduct other air pollutant emitting activities at an OCS source at the following location:

Lloyd Ridge Lease Block 317 or 410, or any lease block further from all Class I areas, located on the OCS waters in the Gulf of Mexico east of longitude 87.5, west of the Military Mission Line (86°41' west longitude), and not within 125 nautical miles of the state seaward boundary of 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 originally became effective on July 15, 2011. The permit was modified on October 10, 2012, October 30, 2012, (to correct an administrative error), and December 11, 2012.

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 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. This permit is based upon the application initially submitted to EPA by Anadarko Petroleum Corporation (Anadarko) on November 18, 2009, and supplemental submittals identified in the administrative record for this permit action, and upon the technical analysis performed by EPA.

2. APPLICANT:

Anadarko Petroleum Corporation
1201 Lake Robbins Road
The Woodlands, Texas 77380

3. PROJECT LOCATION:

Lloyd Ridge Lease Block 317 or 410, or any lease block further from all Class I areas, located in the OCS waters of the Gulf of Mexico (GOM) east of longitude 87.5, west of the Military Mission Line (86° 41' west longitude), and not within 125 nautical miles of the state seaward boundary of Florida. The drill site is located approximately 160 miles southeast of the mouth of the Mississippi River and 200 miles southwest of Panama City, Florida.

4. PROJECT DESCRIPTION:

The project, known as the Phoenix Prospect, will mobilize the Transocean Discoverer Spirit drill ship (Discoverer Spirit) and support vessels to drill a single exploration well in the GOM, to determine if natural gas reserves are present in this location. The well's objective depth is 16,100 feet true vertical depth sub-sea or 6,300 feet below the mud line of the seafloor and will be drilled in approximately 9,800 feet of water from the dynamically positioned Discoverer Spirit. The operation will last less than 92 days and, based on applicable permitting regulations, is a "temporary source" for permitting purposes.

Air pollutant emissions generated from the Phoenix Prospect include the criteria pollutants of oxides of nitrogen, carbon monoxide, particulate matter, fine particulates, sulfur dioxide, and volatile organic compounds, as well as other regulated air pollutants, including greenhouse gas pollutants. These emissions are primarily released from the combustion of diesel fuel in the engines which produce power for the thrusters to hold the dynamically positioned drill ship in place, as well as the power to operate the drilling equipment. Emissions are also released from other activities such as cementing the well and the use and pumping of heavy lubricating muds. Based on emissions estimates, and the applicable permitting thresholds, the project is considered to have significant emissions of nitrogen oxides, as the measured pollutant for the criteria pollutants nitrogen dioxide and ozone and is subject to the PSD program.

The equipment to be used on the Discoverer Spirit drill ship includes six main propulsion diesel electric generators, consisting of four Wärtsilä 18V32 LNE diesel engines with a rated power output of approximately 9,910 horsepower (hp) each; and, two Wärtsilä 12V32 LNE diesel engines with a rated power output of approximately 6,610 hp each. The emissions from the diesel engines will be controlled using Low NO_x Engine (LNE) design, turbo-charged with after coolers, injection timing retard, and high

injection pressure. Nitrogen oxides (NO_x) will be further controlled using good combustion practices, enhanced with a Power Management System and NO_x Concentration Maintenance System.

The Discover Spirit will be supported by a crew boat and supply boats that may include either a "work boat" and an "anchor handling boat" or combination thereof. These support vessels will be used to transport personnel, supplies, and fuel to the drill ship, as required, during the entire duration of the exploratory drilling. The anchor handling boat will act as a work boat or supply boat, but will not be used to set anchors while on site. The specific support vessels that will be on location during the operation will be identified prior to commencing operations. Emissions from the support vessels, including emissions while at the OCS source or en route to or from the OCS source within 25 miles of the OCS source, shall be considered direct emissions from the OCS source.

Anadarko is authorized to construct and operate the Discoverer Spirit, support vessel and emission units listed in Tables 1 through 4, at the lease block identified on Page 1 of this permit, as well as, emission units and activities emitting minor quantities of other regulated air pollutants, consistent with the representations in the permit application, supplemental submittals and revisions, and subject to the terms and conditions in this permit.

The information provided in tables 1-4 is for description and identification purposes and does not establish operating limits. The following emission units are those found at the OCS source that emit NO_X.

Table 1 – Transocean Discoverer Spirit Drill Ship

Unit ID	Description	Make & Model	Rating [a]
DR-GE-01	Main propulsion generator #1	Wärtsilä 18V32 LNE	9,910 hp[*]
DR-GE-02	Main propulsion generator #2	Wärtsilä 18V32 LNE	9,910 hp
DR-GE-03	Main propulsion generator #3	Wärtsilä 18V32 LNE	9,910 hp
DR-GE-04	Main propulsion generator #4	Wärtsilä 18V32 LNE	9,910 hp
DR-GE-05	Main propulsion generator #5	Wärtsilä 12V32 LNE	6,610 hp
DR-GE-06	Main propulsion generator #6	Wärtsilä 12V32 LNE	6,610 hp
DR-GE-07	Emergency diesel engine	Wärtsilä 6R32LNE	3,300 hp
DR-EC-01	Escape capsule diesel engine #1	Lister Petter L4 (or equivalent)	39 hp
DR-EC-02	Escape capsule diesel engine #2	Lister Petter L4(or equivalent)	39 hp
DR-EC-03	Escape capsule diesel engine #3	Lister Petter L4(or equivalent)	39 hp
DR-EC-04	Escape capsule diesel engine #4	Lister Petter L4(or equivalent)	39 hp
DR-EC-05	Escape capsule diesel engine #5	Lister Petter L3(or equivalent)	29 hp
DR-EC-06	Escape capsule diesel engine #6	Lister Petter L3(or equivalent)	29 hp
DR-FR-01	Fast rescue craft engine	Steyr M16 TCAM-	230 hp

		MO236 K42(or equivalent)	
DR-AC-01	Emergency air compressor diesel engine #1	Sperre M-HL2/140 (or equivalent)	18 hp
DR-AC-02	Emergency air compressor diesel engine #2	Sperre M-HL2/140 (or equivalent)	15 hp
DR-GE-08	Remotely operated vehicle emergency generator	Cummins QSM11-G2NR3 (or equivalent)	427 hp
DR-FL-01	Diesel powered forklift engine	Caterpillar DP30K (or equivalent)	30 hp
DR-WL-01	Wire line diesel engine #1		119 hp
DR-WL-02	Wire line diesel engine #2		123.6 hp
DR-EL-01	Schlumberger electric line diesel engine #1		300 hp
DR-EL-02	Schlumberger electric line diesel engine #2		300 hp
DR-CU-01	Casing unit diesel engine #1		104 hp
DR-CU-02	Casing unit diesel engine #2		104 hp
DR-WB-01	Water blasting engine	Deutz BF6M2012C (or equivalent)	208 hp

[a] Permit conditions may limit operation to less than rated capacity.
[*] Horsepower

Table 2 – HOS Coral or Similar (Work Boat)

Unit ID	Description	Make & Model	Rating [a]
ME-01	Diesel marine propulsion engine #1	Caterpillar 3516C DITA	3,004 hp
ME-02	Diesel marine propulsion engine #2	Caterpillar 3516C DITA	3,004 hp
TE-01	Diesel marine forward bow thruster engine #1	Caterpillar 3508C DITA	1,100 hp
TE-02	Diesel marine aft bow thruster engine #2	Caterpillar 3508C DITA	1,100 hp
TE-03	Diesel marine stern thruster engine #3	Caterpillar 3508C DITA	1,100 hp
GE-01	Port electrical generator diesel engine #1	Caterpillar C32 DITA	1,047 hp
GE-02	Starboard electrical generator diesel engine #2	Caterpillar C32 DITA	1,047 hp
GE-03	Emergency electrical generator diesel engine #3	Caterpillar C9 DITA	253 hp

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

Table 3 – Harlan S. McCall or Similar (Crew Boat)

Unit ID	Description	Make & Model	Rating [a]
ME-01	Diesel marine propulsion engine #1	Cummins KTA38 M2 engine	1,350 hp
ME-02	Diesel marine propulsion engine #2	Cummins KTA38 M2 engine	1,350 hp
ME-03	Diesel marine propulsion engine #3	Cummins KTA38 M2 engine	1,350 hp
ME-04	Diesel marine propulsion engine #4	Cummins KTA38 M2 engine	1,350 hp
ME-05	Diesel marine propulsion engine #5	Cummins KTA38 M2 engine	1,350 hp
GE-01	Diesel marine generator engine #1	Cummins QSM11	425 hp
GE-02	Diesel marine generator engine #2	Cummins QSM11	425 hp
BE-01	Diesel marine bow thruster engine #1	Cummins QSM11	425 hp

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

Table 4 – Kirt Chouest or Similar (Anchor Handling Boat)

Unit ID	Description	Make & Model	Rating [a]
AB-ME-01	Diesel marine propulsion engine #1	Caterpillar Model 3616	7,600 hp
AB-ME-02	Diesel marine propulsion engine #2	Caterpillar Model 3616	7,600 hp
AB-TE-01	Diesel marine bow tunnel thruster	Caterpillar Model 3512C	1,474 hp
AB-TE-02	Diesel marine aft tunnel thruster	Caterpillar Model 3512C	1,474 hp
AB-TE-03	Diesel marine bow drop down thruster	Caterpillar Model 3512C	1,474 hp
AB-GE-01	Service generator engine #1	Caterpillar Model 3512C	787 hp
AB-GE-02	Service generator engine #2	Caterpillar Model 3512C	787 hp
AB-GE-03	Service generator engine #3	Caterpillar Model 3512C	787 hp
AB-GE-04	Service generator engine #4 (crane dedicated)	Caterpillar Model 3508B	1,300 hp
AB-GE-05	Service generator engine #5 (crane dedicated)	Caterpillar Model 3508B	1,300 hp
AB-GE-06	Emergency generator engine	Caterpillar Model 3406	310 hp
AB-GE-07	Port winch hydraulic engine	Caterpillar Model C32	1,300 hp
AB-GE-08	Starboard winch hydraulic engine	Caterpillar Model C32	1,300 hp

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

5. GENERAL CONDITIONS:

5.1 **Compliance Required.** The permittee shall comply with all requirements of 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.

5.2 **Construction and Operation.**

5.2.1 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.

5.2.2 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.

5.3 **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.

5.4 **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.

5.5 **Expiration of Approval to Construct.**

5.5.1 As provided in 40 CFR 52.21(r)(2), 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 and under the condition that project emissions do not exceed those specified in this permit.

5.5.2 This permit shall expire 92 days from the date the OCS Source commences activity on Lloyd Ridge lease block 317 or 410, or other specified drill site. EPA may extend the 92 days upon a satisfactory showing that the extension is justified, and under the condition that project emissions do not exceed those specified in this permit.

5.6 **Property Rights.** This permit does not convey any property rights of any sort, or any exclusive privilege.

5.6.1 This permit does not authorize any injury to public or private property or any invasion of personal rights, nor any infringement of federal, state, or local laws or regulations.

5.6.2 This permit does not relieve the permittee from liability for harm or injury to human health or welfare, animal, or plant life, or property caused by the construction or operation of this permitted source, or from penalties therefore; nor does it allow the permittee to cause pollution in contravention of federal statutes or EPA rules.

5.7 **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:

5.7.1 Have access to and copy any records that must be kept under conditions of the permit or are related to this permit, including but not limited to, information relating to the OCS source, support vessels, monitoring data, or compliance or noncompliance with the permit;

5.7.2 Inspect the OCS Source, support vessels, equipment, practices, or operations regulated or required under this permit; and

5.7.3 Sample or monitor any substances or parameters at any location reasonably necessary to assure compliance with this permit or EPA rules.

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

5.8 **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.

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

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

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

5.8.4 The permittee shall hold at the corporate offices of Anadarko, located at 1201 Lake Robins Road, The Woodlands, Texas, 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.

5.8.5 Records of monitoring information shall include:

The date, emission unit, and time of sampling or measurements;

The results of such analyses and operating conditions as existing at the time of sample or measurement.

The person who performed the sampling or measurements;

The date(s) the analyses were performed; and

The analytical techniques or methods used.

5.8.6 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.

5.8.7 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:

Name	Email	Phone
David Lloyd	lloyd.david@epa.gov	404-562-9216
Jason Dressler	dressler.jason@epa.gov	404-562-9208
Kelly Fortin	fortin.kelly@epa.gov	404-562-9117

5.8.8 Any document required to be submitted under this permit shall be certified by the permittee as to truth, accuracy, and completeness. Such certification shall state that based on information and belief formed after reasonable inquiry, the statements and information in the document are true, accurate and complete. Such certification shall be made the responsible official of the permittee, authorized to make such certification on behalf of the permittee. For purposes of this condition, the definition of "responsible official" at 40 CFR § 71.2 shall apply.

5.9 **Permit Revision or amendment.** This permit may be revised and reissued or amended by EPA, as necessary for cause, including the following:

5.9.1 This permit contains a material mistake;

5.9.2 Materially inaccurate statements were made in establishing the terms or conditions of this permit; or

5.9.3 To assure compliance with CAA requirements.

5.10 **Excess Emission and Permit Deviation Reports**. The permittee shall report all emissions or operations that exceed or deviate from the terms and conditions of this permit as follows:

5.10.1 As soon as possible after the event commences or is discovered, but not more than 24 hours following discovery, report any excess emissions or deviations that present a potential threat to human health or the environment; and

5.10.2 Within 2 working days after the event commenced or was discovered, report an unavoidable; emergency, malfunction, or non-routine repair that caused emissions in excess of an emission limit;

5.10.3 Report all other excess emissions, permit deviations and failures to monitor:

5.10.3.1 Within 10 working days of when the excess emissions or deviation occurs, except as provided in General Condition 5.10.3.2;

5.10.3.2 If continuous or recurring excess emissions are not corrected, report within 48 hours of discovery.

5.10.4 When reporting excess emissions or permit deviations, the permittee must report in writing the following information. For reporting under 5.10.1 and 5.10.2, if information required below is not available at the time of the report, the permittee shall submit the additional information within 10 working days of the initial 24 hour/2 working day report:

- OCS Source (Facility) Name;
- OCS Air Permit Number;
- Company Name;
- Date/Time when the excess emissions was discovered;
- Date/Time when the event began (24hr clock);
- Date/Time when the event ended (24hr clock);
- The duration of the event: (hrs:min) or days (total # of hrs, min, or days, if intermittent then include only the duration of the actual emissions)
- If the exceedance was intermittent or continuous
- Cause of event
- A brief description of what happened and the cause, including information regarding the operating conditions during the exceedance
- 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
- Identify each emission limit potentially exceeded during the event and the level of exceedance, if applicable;
- Whether the excess emissions were unavoidable;
- Describe corrective action taken and action taken to prevent future recurrence; and
- If not corrected, the anticipated time the noncompliance is expected to continue, and steps being taken to reduce, eliminate, and prevent recurrence of the noncompliance.
- Certification: Based on information and belief formed after reasonable inquiry, certify that the statements and information reported are true, accurate, and complete.

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

5.10.6 Except as provided for in this permit, nothing in this permit shall be construed to relieve the permittee from civil or criminal penalties for noncompliance.

5.11 **Compliance Certification.** The permittee shall compile and submit to EPA within 90 days of completion of the project, a compliance certification report which contains the following:

5.11.1 For each permit term and condition, including terms and conditions for monitoring, recordkeeping and reporting:

5.11.1.1 Certify the compliance status over the duration of the project consistent with the monitoring required by this permit;

5.11.1.2 State whether compliance is intermittent or continuous;

5.11.1.3 Briefly describe each method used to determine the compliance status; and

5.11.2 A summary of NO_x, CO, $PM/PM_{10}/PM_{2.5}$, SO_2, VOC, and HAP emissions in tons per year emitted by each emissions unit regulated under this permit during the duration of the project based on recorded data, such as actual fuel usage and actual hours of operation.

5.11.3 The signature of the responsible official of the permittee. For purposes of this condition, the definition of "responsible official" at 40 CFR § 71.2 shall apply.

5.12 **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 Safety and Environmental 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.

5.13 **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/or 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.

5.14. **Severability.** The provisions of this permit are severable, and, if any provision of the permit is held invalid, the remainder of this permit will not be affected thereby.

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 General Condition 5.8.7 of this permit, of the following information:

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

6.1.1.1 Latitude and longitude, and

6.1.1.2 Universal Transverse Mercator grid system.

6.1.2 The proposed date that the Discoverer Spirit will enter the lease block and commence construction or operation, and the probable duration of operation at that location.

6.1.3 The permittee shall notify EPA, not less than 24 hours prior to commencing construction or operation and in accordance with General Condition 5.8.7, of any changes to the information provided by the permittee in Specific Conditions 6.1.1 and 6.1.2.

6.2 **Support Vessels.** The permittee shall maintain records in accordance with General Condition 5.8, of the engine specifications, performance data, and emission estimates for any support vessel used in place of the HOS Coral (work boat), Harlan S. McCall (crew boat) and/or Kirt Chouest (anchor handling boat). These records shall be submitted as part of the Compliance Certification Report in accordance with General Condition 5.11. Also, any support vessel used in place of HOS Coral (work boat) or Kirt Chouest (anchor handling boat) shall meet Specific Condition 6.5, and any support vessel used in place of Harlan S. McCall (crew boat) shall meet Specific Condition 6.6.

6.3 **Source-wide SO_2 Emission Limit.** The permittee shall not combust any diesel fuel with sulfur content greater than 0.05 percent by weight, as determined by Specific Condition 6.3.1, in any diesel fueled emission unit on the Discoverer Spirit 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. The permittee shall:

6.3.2.1 Prior to mobilizing the Discoverer Spirit for the activities covered by this permit, determine and record the sulfur content of the diesel fuel on the Discoverer Spirit and the support vessels.

6.3.2.2 The permittee shall determine the sulfur content using the procedures in Specific Condition 6.3.1.

6.3.2.3 Thereafter, determine and record the sulfur content upon receiving each fuel shipment, as follows:

6.3.2.3.1 Obtain a certification of sulfur content for each shipment of fuel from the fuel supplier, or

6.3.2.3.2 Obtain a representative sample of the fuel delivered; and

6.3.2.3.3 Analyze the sample for sulfur content using the procedures in

Specific Condition 6.3.1

6.3.3 The permittee shall provide the results of all fuel sample analyses required by Specific Condition 6.3.2. with the Compliance Certification Report required by General Condition 5.11.

6.4 **Discoverer Spirit NO_x Emission Units Limits.**

6.4.1 Source Identification: DR-GE-01 through 06 Main propulsion generators.

6.4.1.1 BACT Limit: 12.7 g/kW-hr NO_x on a rolling 24-hour average basis for each unit.

6.4.1.2 BACT Work Practice Standard: Use of good combustion and maintenance practices, Power Management System, and NO_x Concentration Maintenance System as described in the OCS permit application.

6.4.1.3 Compliance Demonstration Method:

6.4.1.3.1 Stack test data shall be obtained for each engine using an EPA-approved testing protocol. Data collected prior to issuance of this permit may be used with EPA approval. Monitor emissions of NO_x by using stack testing data collected according to an EPA-approved protocol 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.

6.4.1.3.2 Use the load information recorded per Specific Condition 6.4.1.4, 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 as required by Specific Condition 6.4.1.3.1. Calculate the average emission rate for each hour of operation from all the individual emission rate results recorded during the hour.

6.4.1.3.3 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 as required by Specific Condition 6.4.1.3.1.

6.4.1.3.4 Determine the average emission rate (g/kW-hr) for each unit from the hourly emission rate results in each rolling 24 hour period.

6.4.1.3.5 An alternative NO_x compliance demonstration method may be used upon written approval by EPA.

6.4.1.4 Monitoring and Recordkeeping Requirements: The permittee shall monitor and record the following information at least once every 15 minutes while the engine is operating:

6.4.1.4.1 unit ID
6.4.1.4.2 date/time of recording
6.4.1.4.3 engine load

6.4.1.5 Additional Monitoring and Recordkeeping Requirements: The following requirements are for the purpose of determining the long-term effectiveness of the Transocean Diesel Emissions with Turbochargers (DEWT) monitoring system. Data generated from these requirements are not intended to be used for compliance with the BACT emission limits nor any other permit term, nor shall any exceedance shown solely by this data be considered a violation of any permit term.

6.4.1.5.1 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)
- NO_x, CO, SO_2, CO_2, and O_2 Emission Concentration (ppm)

6.4.1.5.2 The permittee shall record the date and time of most recent NO_x analyzer calibration method used to calibrate and the results.

6.4.1.6 Reporting Requirement: The permittee shall submit the information required in Specific Conditions 6.4.1.3, 6.4.1.4 and 6.4.1.5. with the Compliance Certification Report required by General Condition 5.11.

6.4.2 Source Identification: DR-GE-07 Emergency diesel engine.

6.4.2.1 Emission Limit: Not to exceed 9.4 tons of NO_x for the duration of the project

6.4.2.2 Operating Limit: This unit shall be operated no more than 24 hours per week.

6.4.2.3 Compliance Demonstration Method: Compliance with this operating limit will be assured by maintaining a record of weekly operating time.

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

6.4.2.4.1 unit ID
6.4.2.4.2 date/time engine started or reading on engine hour meter at start-up
6.4.2.4.3 date/time engine shut-down or reading on engine hour meter at shut-down

6.4.2.4.4 name of person operating equipment (printed)
6.4.2.4.5 signature of person operating equipment

6.4.3 Source Identification: DR-EC-01 and 06 Escape capsule diesel engines.

6.4.3.1 Operating Limit: These units shall be operated no more than 1.1 hours total (each unit) of non-emergency, planned operation time for the duration of this project.

6.4.3.2 Compliance Demonstration Method: Compliance with this operating limit will be assured by maintaining a record of operating time.

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

6.4.3.3.1 unit ID
6.4.3.3.2 date/time engine started or reading on engine hour meter at start-up
6.4.3.3.3 date/time engine shut-down or reading on engine hour meter at shut-down
6.4.3.3.4 name of person operating equipment (printed)
6.4.3.3.5 signature of person operating equipment

6.4.4 Source Identification: DR-FR-01 Fast rescue craft engine.

6.4.4.1 Operating Limit: This unit shall be operated no more than 4 hours total of non-emergency, planned operation time for the duration of this project.

6.4.4.2 Compliance Demonstration Method: Compliance with this operating limit will be assured by maintaining a record of operating time.

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

6.4.4.3.1 unit ID
6.4.4.3.2 date/time engine started or reading on engine hour meter at start-up
6.4.4.3.3 date/time engine shut-down or reading on engine hour meter at shut-down
6.4.4.3.4 name of person operating equipment (printed)
6.4.4.3.5 signature of person operating equipment

6.4.5. Source Identification: DR-AC-01 and 02 Emergency air compressor diesel engine.

6.4.5.1 Operating Limit: These units shall be operated no more than 15 minutes per week of non-emergency, planned operation time.

6.4.5.2 Compliance Demonstration Method: Compliance with this operating limit will be assured by maintaining a record of weekly operating time.

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

6.4.5.3.1 unit ID

6.4.5.3.2 date/time engine started or reading on engine hour meter at start-up
6.4.5.3.3 date/time engine shut-down or reading on engine hour meter at shut-down
6.4.5.3.4 name of person operating equipment (printed)
6.4.5.3.5 signature of person operating equipment

6.4.6 Source Identification: DR-GE-08 Remotely operated vehicle emergency generator.

6.4.6.1 Operating Limit: This unit shall be operated no more than 14 hours total of non-emergency, planned operation time for the duration of this project.

6.4.6.2 Compliance Demonstration Method: Compliance with this operating limit will be assured by maintaining a record of operating time.

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

6.4.6.3.1 unit ID
6.4.6.3.2 date/time engine started or reading on engine hour meter at start-up
6.4.6.3.3 date/time engine shut-down or reading on engine hour meter at shut-down
6.4.6.3.4 name of person operating equipment (printed)
6.4.6.3.5 signature of person operating equipment

6.4.7. Source Identification: DR-FL-01 Diesel powered forklift engine.

6.4.7.1 Operating Limit: This unit shall be operated no more than 12 hours per day.

6.4.7.2 Compliance Demonstration Method: Compliance with this operating limit will be assured by maintaining a record of weekly operating time.

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

6.4.7.3.1 unit ID
6.4.7.3.2 date/time engine started or reading on engine hour meter at start-up
6.4.7.3.3 date/time engine shut-down or reading on engine hour meter at shut-down
6.4.7.6.3.4 name of person operating equipment (printed)
6.4.7.3.5 signature of person operating equipment

6.4.8 Source Identification: DR-WL-01 and 02 Wire line diesel engine.

6.4.8.1 Operating Limit: These units shall be operated no more than 72 hours (each unit) for the duration of the project.

6.4.8.2 Compliance Demonstration Method: Compliance with this operating limit will be assured by maintaining a record of operating time.

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

6.4.8.3.1 unit ID
6.4.8.3.2 date/time engine started or reading on engine hour meter at start-up
6.4.8.3.3 date/time engine shut-down or reading on engine hour meter at shut-down
6.4.8.3.4 name of person operating equipment (printed)
6.4.8.3.5 signature of person operating equipment

6.4.9 Source Identification: DR-EL-01 and 02 Schlumberger electric line diesel engine.

6.4.9.1 Operating Limit: These units shall be operated no more than 96 hours (each unit) total for the duration of this project.

6.4.9.2 Compliance Demonstration Method: Compliance with this operating limit will be assured by maintaining a record of operating time.

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

6.4.9.3.1 unit ID
6.4.9.3.2 date/time engine started or reading on engine hour meter at start-up
6.4.9.3.3 date/time engine shut-down or reading on engine hour meter at shut-down
6.4.9.3.4 name of person operating equipment (printed)
6.4.9.3.5 signature of person operating equipment

6.4.10 Source Identification: DR-CU-01 and 02 Casing unit diesel engine.

6.4.10.1 Operating Limit: These units shall be operated no more than 156 hours (each unit) total for the duration of this project.

6.4.10.2 Compliance Demonstration Method: Compliance with this operating limit will be assured by maintaining a record of operating time.

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

6.4.10.3.1 unit ID
6.4.10.3.2 date/time engine started or reading on engine hour meter at start-up
6.4.10.3.3 date/time engine shut-down or reading on engine hour meter at shut-down
6.4.10.3.4 name of person operating equipment (printed)
6.4.10.3.5 signature of person operating equipment

6.4.11 Source Identification: DR-WB-01 Water blasting engine.

6.4.11.1 Operating Limit: This unit shall be operated no more than 768 hours total of the duration of this project.

6.4.11.2 Compliance Demonstration Method: Compliance with this operating limit will be assured by maintaining a record of operating time.

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

6.4.11.3.1 unit ID
6.4.11.3.2 date/time engine started or reading on engine hour meter at start-up
6.4.11.3.3 date/time engine shut-down or reading on engine hour meter at shut-down
6.4.11.3.4 name of person operating equipment (printed)
6.4.11.3.5 signature of person operating equipment

6.4.12 Source Identification: DR-PO-01 Painting operations.

6.4.12.1 Operating Limits:

6.4.12.1.1 This operation shall be performed no more than 768 hours total for the duration of this project.
6.4.12.1.2 Any spray gun operations shall be performed using airless spray guns with a manufacturer rated transfer efficiency of greater than or equal to 50%.

6.4.12.2 Compliance Demonstration Method: Compliance with this operating limit will be assured by maintaining a record of performance time and the manufacturer specifications for the airless spray guns and coating density and solids contents.

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

6.4.12.3.1 date/time painting started
6.4.12.3.2 date/time painting ended
6.4.12.3.1 coating density in lb/gal of each coating
6.4.12.3.2 solid contents in wt% of each coating
6.4.12.3.3 name of person operating equipment (printed)
6.4.12.3.4 signature of person operating equipment

6.4.13 Source Identification: Discoverer Spirit drill ship.

6.4.13.1 Operating Limit: The Discoverer Spirit drillship is limited to the consumption of 425 barrels per day of diesel fuel, not to exceed 1,081,920 gallons of diesel fuel for the duration of this project.

6.4.13.2 Compliance Demonstration Method: Compliance with this operating limit will be assured by maintaining a record of fuel consumption for the duration of the project.

6.4.13.3 Monitoring and Recordkeeping Requirements: The permittee shall monitor and maintain a record of the following information:

6.4.13.3.1 initial number of barrels/gallons of diesel fuel on the Discoverer Spirit at the beginning of the project
6.4.13.3.2 date of each diesel fuel delivery
6.4.13.3.3 number of barrels/gallons of diesel fuel in each delivery
6.4.13.3.4 name of person recording delivery (printed)

6.4.13.3.5 signature of recorder
6.4.13.3.6 final number of barrels/gallons of diesel fuel on the Discoverer Spirit at the end of the project

6.5 **Supply Boat Operating Limits.**

6.5.1 Operating Limit: The supply boats shall not exceed a total of 1772 operating hours within 25 nautical miles of the Discover Spirit for the duration of this project.

6.5.2 Compliance Demonstration Method: Compliance with this operating limit will be assured by maintaining a record of operating time within the 25 nautical mile radius of the Discoverer Spirit and during standby time at the Discoverer Spirit.

6.5.3 Monitoring and Recordkeeping Requirements: The permittee shall monitor and maintain a record of the following information:

6.5.3.1 date/time entering the 25 nautical mile radius
6.5.3.2 date/time exiting the 25 nautical mile radius
6.5.3.3 sulfur content of all fuel used in this vessel as specified in Specific Condition 6.3.1

6.5.4 The supply boats will consist of the vessel Kirt Chouest (anchor handling boat) or substitute boat (with equal or lower emissions) and the vessel HOS Coral (work boat) or substitute boat (with equal or lower emissions).

6.6 **Crew Boat Operating Limits.**

6.6.1 Operating Limit: The vessel Harlan S. McCall or substitute crew boat (with equal or lower emissions) shall not exceed a total of 368 operating hours within 25 nautical miles of the Discover Spirit for the duration of this project.

6.6.2 Compliance Demonstration Method: Compliance with this operating limit will be assured by maintaining a record of operating time within the 25 nautical mile radius of the Discoverer Spirit and during standby time at the Discoverer Spirit.

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

6.6.3.1 date/time entering the 25 nautical mile radius
6.6.3.2 date/time exiting the 25 nautical mile radius
6.6.3.3 sulfur content of all fuel used in this vessel as specified in Specific Condition 6.3.1