UNITED STATES GOVERNMENT
MEMORANDUM

February 14, 2019

To: Public Information (MS 5030)

From: Plan Coordinator, FO, Plans Section (MS 5231)

Subject: Public Information copy of plan

- Control # - N-10039
- Type - Initial Exploration Plan
- Lease(s) - OCS-G33596 Block - 170 Vermilion Area
  OCS-G34802 Block - 153 Vermilion Area
- Operator - TOPCO OFFSHORE, LLC
- Description - Well A002
- Rig Type - Jackup

Attached is a copy of the subject plan.

It has been deemed submitted as of this date and is under review for approval.

Chiquita Hill
Plan Coordinator

Site Type/Name	Botm Lse/Area/Blk	Surface Location	Surf Lse/Area/Blk
WELL/A002	G34802/VR/153	2689 FNL, 7088 FEL	G33596/VR/170

October 19, 2018 SUBMITTED VIA FEDERAL EXPRESS

Regional Supervisor for Leasing and Plans
U.S. Department of the Interior
Bureau of Ocean Energy Management
1201 Elmwood Park Boulevard
New Orleans, LA 70123-2394

ATTN: Plans Section (GM 235D)

RE: **Initial Exploration Plan (EP)**
Vermilion Block 153
Lease OCS-G 34802
OCS Federal Waters, Gulf of Mexico, Louisiana

To whom it may concern:

In accordance with the provisions of Title 30 CFR, Parts 250 and 550, Subpart B and further defined in Notice to Lessees (NTL) BOEM 2015-N01, 2009-G27 and 2008-G04 (extended by NTL BOEM 2015-N02), clarifying the information requirements for Exploration Plans and Development Operations Coordination Documents on the OCS, TOPCO OFFSHORE, LLC (herein referred to as 'TOPCO') hereby submits for your review and approval an Initial Exploration Plan (EP) for the above referenced lease.

Enclosed are two (2) hard copies of the IEP, one for Proprietary Data and one for Public Information. There are three (3) CDs in PDF format each for the BOEM Proprietary and Public copies and one (1) public copy for Louisiana CZM.

Under this Initial Exploration Plan, BHPB proposes to drill and complete one (1) well in Vermilion Area, Block 153, Lease OCS-G 34802.

TOPCO's Plan is being submitted under a strict schedule for a Suspension of Production (SOP) submitted on June 22, 2018 and respectfully requests your office please expedite the review and approval process. TOPCO anticipates commencing drilling operations on March 15, 2019.

Should additional information be required, please contact Kathy Camp at 713.201.9627 or via email to kathy.camp@kcampassociates.com. **Please forward all approval documents to the undersigned at amanda@topcooffshore.com.**

Sincerely,

Amanda Thompson

Amanda Thompson
Manager

AT:KC
Enclosures

INTERIM CZM INFORMATION REQUIREMENTS FOR
CONSISTENCY REVIEW (15 CFR 930.58) FOR LOUISIANA
OCS-G 33596/34802 – Vermilion Area Blocks 170/153

The specific information OCM for State of Louisiana requires for each Plan/ROW PL is:		*Reply or page reference:*
1)	Description of the proposed activity	Pg 1
2)	Location Plat (table - latitude/longitude, water depth, and TVD of each proposed well)	Attachment B
3)	Bathymetry Map depicting the surface location and water depth of each proposed well and/or production facility or pipeline (if applicable)	Attachment C
4)	Type of drilling unit, if applicable	Pg 1
5)	Description of related new or existing offshore production facilities	Pg 22
6)	Operator contact information	Attachment A
7)	Discussion of new or unusual technology proposed to be used. Verify if not applicable.	Pg 4 / NA
8)	Consistency certification	Attachment P
9)	Discussion of safety, pollution prevention, and early spill detection measures	Pgs 2-3
10)	Confirmation that the facility / activity is covered by an approved OSRP; date of OSRP approval	Pg 16
11)	Discussion of WCD scenario / response for OCS Plans and ROW pipeline applications	Pgs 5-7
11a)	Location of primary oil spill response equipment and staging areas	Pg 16
11b)	Estimated time of spill response (from spill detection to equipment deployment on site)	Pgs 5-6
11c)	Per 30 CFR 254.26(d)(1), estimated time to contain, to the maximum extent practicable, a worst-case discharge	Pgs 5-6
11d)	Discussion of potential impacts from a spill to Louisiana's coastal resources uses, onshore and offshore	Detailed discussion in EIA Pgs 27-36
12)	Site-specific and Regional WCD scenario comparison	Pg 16
13)	For **EPs and DOCDs** – facility tanks, facility fuel tanks, and production vessels over 25 bbls	Pg 2
14)	Diesel oil supply vessels	Pg 23
15)	Support vessel fuel tanks	Pg 23
16)	For **DOCDs** only, produced hydrocarbon transportation vessels and the destination at which the product will be offloaded	NA
17)	Oil & synthetic-based mud, if applicable	Pg 4
18)	Name(s) of the Oil Spill Response Organization(s)	Pg 16
19)	Onshore support base and support vessel(s)	Pgs 23-24
20)	New or expanded onshore facilities, if required	Pg 24
21)	Method of transportation and disposal of trash, waste and discharges in Louisiana's coastal zone and waters, even if no drilling operations are proposed. Discussion of OCS discharges is NOT required. Specific municipal, governmental or other facilities used for disposal of trash, wastes and discharges should be named.	Pgs 23-24 Attachment K
22)	For **EPs and DOCDs**, projected generated wastes as required in Table specified by NTL 2008-G04	Pg 14 Attachment K
23)	For **OCS Plans ONLY**, blowout scenario, even if NO drilling is proposed	Pgs 5-6
24)	For **ROW PIPELINE** projects ONLY, installation and burial method	NA
25)	For **ROW PIPELINE** projects ONLY, water depths	NA
26)	For **ALL OCS Plans and ROW Pipeline Applications** = Discussion of any new or unusual technology proposed to be used for spill prevention, control, cleanup, etc., if applicable. Verify if not applicable.	TOPCO will NOT use any new or unusual technology for spill prevention, control, cleanup, etc.

Table of Contents

Attachments

Attachment A	**Plan Information Form & RUE Consent Letter**
Attachment B	**Well Location Plat**
Attachment C	**Bathymetry Map**
Attachment D	**PF Elevation Drawing**
Attachment E	**Pay.gov Service Fee**
Attachment F	**Structure Maps**
Attachment G	**Interpreted Seismic Lines**
Attachment H	**Geological Cross Sections**
Attachment I	**Biostratigraphic Column**
Attachment J	**Time vs. Depth**
Attachment K	**Waste Tables**
Attachment L	**Air Emission Spreadsheets**
Attachment M	**Worst Case Discharge**
Attachment N	**Spill Response Discussion (NEPA)**
Attachment O	**Vicinity Map**
Attachment P	**Louisiana CZM Certificate**

Initial Exploration Plan (IEP)
For
TOPCO OFFSHORE, LLC
Vermilion Area, Block 153
Lease OCS-G 34802
Offshore Louisiana

SECTION 1 - CONTENTS OF PLAN

Under this Initial Exploration Plan, TOPCO OFFSHORE, LLC, Company No. 03472 (herein referred to as TOPCO) is proposing to:

- Drill and complete Well No. A002 from an existing structure (Platform A / CPXID 2423) in Lease OCS-G 33596 Vermilion Area, Block 170, currently owned and operated by Contango Operators, Inc. (herein referred to as Contango) to a proposed bottom hole located on TOPCO's Lease OCS-G 34802, Vermilion Area, Block 153

- Commence drilling operations by March 15, 2019.

Lease OCS-G 34802, Vermilion Block 153 was issued to Focus Exploration, LLC in Lease Sale 227 with an effective date of July 1, 2013 and a primary term expiration date of June 30, 2018. TOPCO obtained record title effective February 13, 2017, and is designated operator of Block 153, Vermilion Area.

TOPCO submitted a Suspension of Production (SOP) on June 22, 2018 and is submitting this Initial EP concurrently with a Surface and Subsurface Right-of-Use and Easement covering the proposed drilling and potential completion and production of Lease OCS-G 34802, Well No. A002, Vermilion 153 from a surface location on Contango's Platform A in Lease OCS-G 33596, Vermilion Area, Block 170. A portion of the wellbore will traverse a portion of Contango's leasehold acreage in OCS-G 33596. A letter of consent is included in Attachment A, Plan Information Form section.

(a) Plan Information Form

An OCS Plan Information Form (BOEM-137) with details of the proposed drilling operations is included as **Attachment A**. The proposed operations are in approximately 87 feet of water.

The proposed well will be drilled with a typical Jackup using surface BOP. There will be no anchors associated with the operations proposed in this Plan.

(b) Bathymetry Map and Location Plat

Included as **Attachments B and C** are the Well Location Plat and Bathymetry Maps. The plat shows the surface location of the proposed well. The proposed bottom hole location, proposed depth of the well (MD and TVD) and the associated water depth is provided. Please note, bottom hole location, MD & TVD depth is omitted from the Public Information Copy.

Since this well will be drilled with a typical Jackup rig there will be no anchors associated with the proposed drilling and production activities.

Attachment D – saved for future use.

(c) Safety and Pollution Prevention Features

Safety features on the MODU will include well control, pollution prevention, welding procedure, and blowout prevention equipment as described in the following Federal Register Notices, Notice to Lessees (NTL) and Subparts located in Title 30 CFR Part 250 and 550:

- Federal Register, Vol. 77, No. 163, August 22, 2012, Final Rule for Increased Safety Measures for Energy Development on the Outer Continental Shelf
- Federal Register, Vol. 75, No. 198, October 14, 2010, Final Rule for Increased Safety Measures for Energy Development on the Outer Continental Shelf
- BOEM 2015-N01 for Information Requirements for Exploration Plans, Development and Production Plans, and Development Operations Coordination Documents on the OCS for Worst Case Discharge and Blowout Scenarios
- NTL 2010-N10 for Statement of Compliance with Applicable Regulations and Evaluation of Information Demonstrating Adequate Spill Response and Well Containment Resources

These regulations may be further clarified by Safety Alerts, and current policy making invoked by the Bureau of Ocean Energy Management (BOEM), Environmental Protection Agency (EPA) and the U.S. Coast Guard (USCG).

The appropriate life rafts, life jackets, ring buoys, etc., as prescribed by the U.S. Coast Guard will be maintained on the MODU at all times.

BSEE is required to conduct onsite inspections of offshore facilities to confirm operators are complying with lease stipulations, operating regulations, approved plans, and other conditions; as well as to assure safety and pollution prevention requirements are being met. The National Potential Incident of Noncompliance (PINC) List serves as the baseline for these inspections.

BSEE also inspects the stockpiles of equipment listed in the Operator's approved Regional Oil Spill Response Plan that would be used for the containment and cleanup of hydrocarbon spills and is further addressed in the “Oil Spill Information” section of this Plan.

In accordance with Title 30 CFR 250.1501, the goal of our training program is safe and clean OCS operations. To accomplish this, TOPCO ensures that our employees and contractor personnel engaged in well control understand and can properly perform their duties.

Supervisory and certain designated personnel on-board the facility are to be familiar with the effluent limitations and guidelines for overboard discharges into the receiving waters, as outlined in the EPA’s NPDES General Permit GMG290000. Some of these pollution prevention measures include installation of curbs, gutters, drip pans, and drains on drilling deck areas to collect all contaminants and debris.

All discharges related to the operations proposed in this Plan are covered under EPA Region 6’s NPDES General Permit.

(d) Storage Tanks and Production Vessels

Tanks with a capacity of 25 Bbls or more of oil as defined at 30 CFR 254.6 are listed below:

Type of Storage Tank	Type of Facility	Tank Capacity (bbls)	Number of Tanks	Total Capacity (bbls)	Fluid Gravity (API)
Fuel Oil	MODU – JU	1000	2	2000	32.4°
Fuel Storage	Platform A	25	1	25	28°

(e) Service Fees

In accordance with 30 CFR 550.125(a) TOPCO has used the following table showing the fees that must be paid to BOEM for the activity proposed in this Plan. The fees will be adjusted periodically according to the Implicit Price Deflator for Gross Domestic Product by publication of a document in the Federal Register. If a significant adjustment is needed to arrive at the new actual cost for any reason other than inflation, then a proposed rule containing the new fees will be published in the Federal Register for comment.

Service Fee Table

Service — processing of the following:	Fee amount	30 CFR citation
Exploration Plan (EP)	$3,673 per surface location	§550.211(d)

A copy of the receipt for payment of the above referenced fee(s) accompanies the submission of this document as **Attachment E**. It is our understanding that once a fee is paid, it is nonrefundable, even if an application or other request is withdrawn. If our application is returned as incomplete, we are not required to submit a new fee if and when we submit an amended application.

(f) Pollution Prevention Measures

Supervisory and certain designated personnel on-board the MODU and/or the facility are to be familiar with the effluent limitations and guidelines for overboard discharges into the receiving waters, as outlined in EPA's NPDES General Permit GMG290000.

Some of these pollution prevention measures include installation of curbs, gutters, drip pans, and drains to collect all contaminants and debris to prevent the discharge of oils and greases from drilling rigs or platforms during rainfall and routine operations.

TOPCO will ensure that our employees and contractor personnel engaged in our offshore drilling and production operations understand the state and federal regulations.

(g) Additional Measures

TOPCO does not propose any additional safety, pollution prevention, and early spill detection measures beyond those required by 30 CFR Part 250 and 550. These are also addressed above in section (c) and (f).

SECTION 2 - GENERAL INFORMATION

(a) Applications and Permits

Application / Permit	Issuing Agency	Status
Surface & Subsurface RUE	BOEM	Pending
APD	BSEE District	To be submitted via eWell
eNOI	EPA Region 6	To be submitted via EPA website
Emergency Evacuation Plan	USCG	Pending

(b) Drilling Fluids

(1) The following table provides information on the types and amounts of the drilling fluids TOPCO plans to use during drilling operations.

Type of Drilling Fluid	Commercial Name (if applicable)	Estimated Volume of Drilling Fluid to be Used
Water-based (SW, FW, Barite)		1922 Bbls
Oil-based (diesel, mineral oil)	Newpark Drlg – OptiDrill System	1000 Bbls
Synthetic-based (internal olefin, ester, etc)		NA

(c) Peak Production Rates / Life of Reserves

Not applicable for exploration plans.

(d) Oil Characteristics

Not applicable for exploration plans.

(e) New or Unusual Technology

TOPCO does not propose the use of any new or unusual technology in the exploration activities proposed under this plan.

(f) Bonding Information

The bond requirements for the activities and facilities proposed in this Initial Exploration Plan will be satisfied by the appropriate bond furnished and maintained according to 30 CFR Part 556, Subpart I, BOEM NTL No. 2015-N04 “General Financial Assurance” and BOEM NTL No. 2016-N01 “Requiring Additional Security”.

(g) Oil Spill Financial Responsibility (OSFR)

TOPCO (BOEM Operator No. 03472) will demonstrate oil spill financial responsibility for the facilities proposed in this Initial Exploration Plan in accordance with 30 CFR Part 553, and NTL No. 2008-N05, “Guidelines for Oil Spill Financial Responsibility for Covered Facilities”.

(h) Deepwater Well Control Statement

The water depth at the surface location is 87 feet. A deepwater well control statement is not required for the location of the activities proposed in this plan.

(i) Suspensions of Production

TOPCO submitted a Suspension of Production (SOP) on June 22, 2018. TOPCO has a rig under contract which is available December 3, 2018 therefore we are requesting this Plan be expedited.

(j) Blowout Scenario

For this proposed operation, the worst-case discharge is defined as an uncontrolled blowout through the drilling string during drilling operations.

The calculated WCD rate is 17,225 BCPD, 561,628 Mscf/d and 579 BWPD. The gravity is expected to be 47.0° API. Total uncontrolled blowout volume is estimated at 792,350 bbls of condensate. Please see the WCD detail in **Attachment M**.

1. RELIEF WELL

Relief Rig Availability

In the event a relief well is initiated, TOPCO does not anticipate any delays in acquiring a jack-up type rig to conduct the proposed operations.

Relief Rig Package Constraints

TOPCO does not foresee any relief rig constraints in this water depth and location.

Relief Rig Timing (Contract) and Rig Mobilization

Many rig companies can suspend their operations and make rigs available to drill a relief well.

Duration of Relief Well Activity from Commencement

In the case that the well did not bridge over and conventional surface intervention was unsuccessful, the following table shows our estimation of the duration of relief well activity assuming a rig is readily available at that point in time.

Days	
10	Contract a rig
3	Mobilize to location
31	Spud & drill relief well
3	Casing to provide kill platform
47	Total Days

Location and Strategy of Relief Well

TOPCO would propose to intersect the flowing well at the deepest casing point and perform kill and abandonment procedure as per submittal to BSEE District Office.

The optimal location for a relief well would be an "open water" location and not from an onshore location. There are no platforms in the vicinity with slots available to drill from.

2. BLOWOUT PREVENTION AND INTERVENTION

Summary of Prevention Measures

The following measures will be taken in attempt to ensure the VR 153 well is kept under control at all times: TOPCO will incorporate Federal Register, Vol. 75, No. 198, October 14, 2010, and Vol. 77, No. 163, August 22, 2012, "Final Rules for Increased Safety Measures for Energy Development on the Outer Continental Shelf" into well operations. TOPCO will operate under safe and prudent practices, including but not limited to BOP and Pit drills as required by BSEE, ensuring rig supervisors have current well control certification, taking and recording slow pump rates each tour, function testing TIW valves each tour, posting a kill sheet on the rig floor, updating the kill sheet each tour, updating the kill sheet when mud weight is changed. TOPCO will ensure that rig supervisors will monitor proper hole fill up on trips in the open hole, maintain circulating swages on the rig floor while running casing, and the perform pre-job safety meetings. Rig availability and location will be monitored in case the need arises to drill a relief well.

Reduce the Likelihood of a Blowout

TOPCO believes that proper well control training, proper well design and real time well monitoring reduces the likelihood of a blowout. Approved well kill operations if necessary to eliminate chance of a blowout.

Likelihood for Surface Intervention to Stop the Blowout

TOPCO believes that the likelihood for surface intervention to stop a blowout is 50%.

Plans for Effective and Early Intervention

If the BOPs are unable to actuate, resulting in a loss of well control from the surface, there is a very high probability that the well will bridge over within the first 12 hours. If the well does not bridge as expected and the rig has not caught fire and can support well control efforts, the initial intervention would consist of top killing the well with heavy mud or replacing the BOPs with functioning equipment. If the rig is on fire or otherwise unable to support well control efforts, a rig would be mobilized to commence drilling a relief well as discussed below.

Relief Well Arrangements

TOPCO is prepared to locate rig providers and well control providers to have a Service Agreement in place prior to commencement of drilling the well.

Other Measures Taken

TOPCO only purchases new tangible equipment for use in its wells and inspects the casing and tubing as per API 5 CT. TOPCO also follows the guidelines established in the API RP 53 Third Edition regarding blowout preventers.

TOPCO will utilize two barriers in their cementing operations on all strings. The conductor casing will utilize a double valve float shoe. The cement job will be planned to bring cement to surface. The surface casing will utilize a single valve float shoe and float collar. The cement for the surface string will be designed to bring cement to surface. The production casing will be designed to bring the top of cement to a minimum of 500' above the shallowest hydrocarbon bearing interval.

(k) Chemical Products

This information is not required for the activities proposed in this plan in the BOEM GOMR.

SECTION 3 - GEOLOGICAL AND GEOPHYSICAL INFORMATION

In accordance with 43 CFR, Part 2, those items considered proprietary have been omitted from the Public Information copy and have been referenced accordingly.

(a) Geological Description

PROPRIETARY DATA

(b) Structure Contour Maps

PROPRIETARY DATA

(c) Interpreted 2-D or 3-D Seismic Lines

PROPRIETARY DATA

(d) Geological Structure Cross-Sections

PROPRIETARY DATA

(e) Shallow Hazards Report

The proposed operations will be conducted from a previously approved surface location; therefore, in accordance with NTL No. 2008-G05, "Shallow Hazards Program," a shallow hazards report is not required at this time.

(f) Site Specific Shallow Hazards Assessment

The proposed operations will be conducted from a previously approved surface location; therefore, in accordance with NTL No. 2008-G05, "Shallow Hazards Program," a site-specific shallow hazards report is not required at this time.

(g) High Resolution Seismic Lines

PROPRIETARY DATA

(h) Stratigraphic Column

PROPRIETARY DATA

(i) Time Versus Depth Tables

PROPRIETARY DATA

(j) Geochemical Information

This information is not required for the activities proposed in this plan in the BOEM GOMR.

(k) Future G&G Activities

This information is not required for the activities proposed in this plan in the BOEM GOMR.

SECTION 4 - HYDROGEN SULFIDE INFORMATION

(a) Concentration

TOPCO does not anticipate encountering H_2S while conducting our proposed exploration activities.

(b) Classification Request

In accordance with Title 30 CFR 250.490(c), TOPCO requests the area of operations in VR Block 153, Leases OCS-G 34802 be classified by the BOEM as an area where the "**absence**" of Hydrogen Sulfide has been confirmed based upon the following:

PROPRIETARY DATA

(c) Contingency Plan

TOPCO does not anticipate encountering H_2S while conducting our proposed exploration activities therefore a contingency plan is not required at this time.

(d) Modeling Report

TOPCO does not anticipate encountering H_2S while conducting our proposed exploration activities therefore a modeling report is not required at this time.

SECTION 5 - MINERAL AND RESOURCE CONVERSATION INFORMATION

(a) Technology and Reservoir Engineering Practices and Procedures

Not required for exploration plans.

(b) Technology and Recovery Practices and Procedures

Not required for exploration plans.

(c) Reservoir Development

Not required for exploration plans.

SECTION 6 - BIOLOGICAL, PHYSICAL AND SOCIOECONOMIC INFORMATION

(a) Chemosynthetic Communities Report

The activities proposed in this Plan are in water depths less than 300 meters (984 feet); therefore, information as outlined in Attachment A of NTL No. 2009-G40, "Deepwater Benthic Communities," is not provided.

(b) Topographic Features Map

The activities proposed in this Plan are in water depths less than 305 meters (1000 feet) of a topographic "No Activity Zone"; therefore, no map(s) are required per NTL No. 2009-G39, " Biologically Sensitive Underwater Features and Areas."

(c) Topographic Features Statement

The activities proposed under this EP will be conducted outside all Topographic Feature Protective Zones; therefore, shunting of drill cuttings and drilling fluids is not required per NTL No. 2009-G39, "Biologically Sensitive Underwater Features and Areas."

(d) Live Bottom (Pinnacle Trend) Map

The activities proposed in this plan are not affected by a live bottom (Pinnacle Trend) stipulation attached to the lease.

(e) Live Bottom (Low Relief) Map

The activities proposed in this plan are not affected by a live bottom (low relief) stipulation attached to the lease.

(f) Potentially Sensitive Biological Features

TOPCO does not propose bottom-disturbing activities within 30 meters (100 feet) of potentially sensitive biological features; therefore, the map described in NTL No. 2009-G39 "Biologically Sensitive Underwater Features and Areas" is not required.

(g) ROV Monitoring Survey Plan

This information is no longer required.

(h) Threatened and Endangered Species Information

Congress passed the Endangered Species Act (ESA) on December 28, 1973, recognizing that the natural heritage of the United States was of "esthetic, ecological, educational, recreational, and scientific value to our Nation and its people." It was understood that, without protection, many of our nation's living resources would become extinct. The purpose of the ESA is to conserve threatened and endangered species and their ecosystems. There are more than 1,900 species listed under the ESA. A species is considered endangered if it is in danger of extinction throughout all or a significant portion of its range. A species is considered threatened if it is likely to become endangered in the future. The U.S. Fish and Wildlife Service (USFWS) and the National Marine Fisheries Service (NMFS) share responsibility for implementing the ESA. NMFS is responsible for 69 marine species, from whales to sea turtles and salmon to Johnson's sea grass.

The Marine Mammal Protection Act (MMPA) of 1972 was written to establish American federal responsibility to conserve marine mammals. Some species were in immediate danger of extinction while other populations were becoming severely depleted.

Below is a list of endangered and threatened species and critical habitats under the jurisdiction of NOAA Fisheries Service in the Gulf of Mexico:

Listed Species	Scientific Name	Status	Date Listed
Marine Mammals			
Blue Whale	Balaenoptera musculus	Endangered	12/02/1970
Fin Whale	Balaenoptera physalus	Endangered	12/02/1970
Sei Whale	Balaenoptera borealis	Endangered	12/02/1970
Sperm Whale	Physeter macrocephalus	Endangered	12/02/1970
West Indian Manatee	Trichechus manatus	Endangered	03/11/1967
Turtles			
Green Sea Turtle	Chelonia mydas	Threatened[1]	04/06/2016
Hawksbill Sea Turtle	Eretmochelys imbricata	Endangered	06/02/1970
Kemp's Ridley Sea Turtle	Lepidochelys kempii	Endangered	12/02/1970
Leatherback Sea Turtle	Dermochelys coriacea	Endangered	06/02/1970
Loggerhead Sea Turtle	Caretta caretta	Threatened[2]	09/22/2011
Fish			
Gulf Sturgeon	Acipenser Oxyrinchus Desotoi	Threatened	09/30/1991
Invertebrates			
Elkhorn Coral	Acropora Palmata	Threatened	05/09/2006

1. Green turtles are listed as threatened, except for breeding populations of green turtles in Florida and on the Pacific Coast of Mexico, which are listed as endangered.
2. Northwest Atlantic Ocean (NWA) Distinct Population Segment (DPS) was listed as threatened. NMFS and USFWS issued a final rule changing the listing of loggerhead sea turtles from a single, threatened species to nine DPSs listed as either threatened or endangered in 2012 (76 FR 58868).

TOPCO is aware of the above referenced federal acts and will ensure that all offshore personnel, including contractors and other support services-related personnel understand the need to conserve marine mammals and the conservation of their ecosystems. Several NTLs were issued to address conservation measures to be taken by offshore operators and contractors.

Further discussions on threatened and endangered species are included in Section 19 (EIA).

(i) Archaeological Report

The proposed operations will be conducted from a previously approved surface location; therefore, an archaeological report is not required at this time.

(j) Air and Water Quality Information

The State of Florida is not an affected State for the activities proposed in this plan; therefore this information is not required.

(k) Socioeconomic Information

The State of Florida is not an affected State for the activities proposed in this plan; therefore this information is not required.

SECTION 7 - WASTE AND DISCHARGE INFORMATION

(a) Projected Generated Wastes

All projected solid and liquid wastes likely to be generated by our proposed activities are included in **Attachment K (Table 1)** for a typical Jackup. This table includes both operational wastes permitted by the appropriate NPDES permit and any other identified wastes.

TOPCO does not plan to treat, store or dispose of any of the above wastes down hole at our proposed drilling location.

(b) Projected Ocean Discharges

All projected solid and liquid wastes likely to be discharged overboard during our proposed activities are included in **Attachment K (Table 1)** for a typical Jackup. This table includes both operational wastes permitted by the appropriate NPDES permit and any other identified wastes.

(c) Modeling Report

Not required by EPA under the OCS General Permit.

(d) NPDES Permits

This information is not required for the activities proposed in this plan in the BOEM GOMR.

(e) Cooling Water Intakes

This information is not required for the activities proposed in this plan in the BOEM GOMR.

SECTION 8 - AIR EMISSIONS INFORMATION

(a) Screening Checklist

Included in this section, (if applicable) are the Projected Air Emissions Worksheets prepared in accordance with NTLs 2009-G27 and 2008-G04, associated with the new proposed wells locations.

For this plan, there is an existing facility and there are activities co-located with the current proposed activities. The platform will be shut-in during the proposed exploration activity; therefore, the Complex Total Emissions will be the same as the Plan Emissions.

TOPCO proposes to drill and complete one (1) well (to be designated Well A002) to a bottom hole located on Vermilion Area, Block 153, Lease OCS-G 34802. The proposed well will be drilled from an available slot on Platform A (CPXID 2423) located on Vermilion Area, Block 170, Lease OSC-G 33596.

Screening Questions for EP	Yes	No
Is any calculated Complex Total (CT) Emission amount (in tons) associated with your proposed exploration activities more than 90% of the amounts calculated using the following formulas: CT = $3400D^{2/3}$ for CO, and CT = 33.3D for other air pollutants (where D = distance to shore in miles)?		X
Do your emission calculations include any emission reduction measures or modified emission factors?		**X**
Are your proposed exploration activities located east of 87.5° W longitude?		X
Do you expect to encounter H_2S at concentrations greater than 20 parts per million (ppm)?		X
Do you propose to flare or vent natural gas for more than 48 continuous hours from any proposed well?		X
Do you propose to burn produced hydrocarbon liquids?		X

The following information was prepared by:

Kathy Camp
K. Camp & Associates
Phone : 713.201.9627
Email : Kathy.camp@kcampassociates.com

(b) Summary Table of Plan Emissions

COMPANY	AREA	BLOCK(s)	LEASE(s)	PLATFORM	WELL(s)
TOPCO OFFSHORE LLC	Vermilion	170/153	G33596/34802	A	A002
Year	**Emitted Substance**				
	PM	**SOx**	**NOx**	**VOC**	**CO**
2019	**7.99**	**4.32**	**260.84**	**8.30**	**56.89**
Allowable	**1402.93**	**1402.93**	**1402.93**	**1402.93**	**41166.12**

Detailed spreadsheets are included as **Attachment L.**

SECTION 9 - OIL SPILL INFORMATION

Oil Spill Response Planning

TOPCO OFFSHORE, LLC (Company No. 03472) has an approved Regional Oil Spill Response Plan on file at BSEE (O-1032).

The proposed activities in this Plan will not supersede the WCD that was approved on **November 28, 2018.**

The proposed activities in this Plan will be covered by the Oil Spill Response Plan approved on **November 28, 2018** and any future revisions.

Spill Response Sites

Primary Response Equipment Location	Preplanned Staging Location(s)
Houma, LA Harvey, LA Venice, LA	Houma, LA Harvey, LA Venice, LA

OSRO Information

TOPCO's primary equipment providers is Clean Gulf Associates (CGA). The Clean Gulf Associates Services, LLC (CGAS) will provide closest available personnel, as well as a CGAS supervisor to operate the equipment. **Witt O'Briens** has been contracted as the Spill Management Team by TOPCO for the proposed activities.

Worst Case Scenario Determination

The calculated WCD for this Exploration Plan is the only WCD addressed for TOPCO's operations at this time.

Category	Regional OSRP WCD	EP WCD
Type of Activity	**Drilling >10**	**Drilling >10**
Facility Location (area/block)	VR 170	VR 170
Facility Designation[2]	A	A
Distance to Nearest Shoreline (miles)	42.13	42.13
Volume[3]		
Storage tanks & Flowlines	25	25
Lease term pipelines	0	0
Uncontrolled blowout	17,225	17,225
Total Volume	**17,250**	**17,250**
Type of Oil(s) (crude oil, condensate, diesel)	Condensate	Condensate
API Gravity(s)[4]	47°	47°

Footnotes:
1. Types of activities include pipeline, platform, caisson, subsea completion or manifold, and mobile drilling rig.
2. E.g., Well No. 2, Platform JA, Pipeline Segment No. 6373.
3. Take your regional OSRP worst-case scenario volume from the appropriate section of your regional OSRP. For EP's, the worst-case scenario volume is the daily volume possible from an uncontrolled blowout. Determine this volume using the provisions of 30 CFR 30 CFR 254.47(b). For DOCDs, determine the volume of your worst-case scenario using the provisions of 30 CFR 30 CFR 254.47(a) or (b), as appropriate.
4. Provide API gravity of all oils given under "Type of Oil(s)" above. Estimate for EPs.

TOPCO will have the capability to respond to the appropriate worst-case spill scenario included in its regional OSRP approved on November 28, 2018 and I hereby certify that TOPCO has the capability to respond, to the maximum extent practicable, to a WCD, or a substantial threat of such a discharge, resulting from the activities proposed in our Exploration Plan.

NTL 2015-N01 – WCD Calculations Overview

TOPCO has included the WCD calculations for Vermilion Block 153, Well A002 for information purposes in **Attachment M**.

(b) Oil Spill Response Discussion / NEPA Analysis

For the purpose of NEPA and Coastal Zone Management Act analysis, the largest spill volume originating from the proposed activity would be a well blowout during drilling operations, estimated to be 17,250 Bcpd with an API gravity of 47°.

TOPCO's detailed spill response discussion is included as **Attachment N**.

(c) Modeling Report

A modeling report for a potential oil or hazardous substance spill is not required for the activities proposed in this plan. In the event TOPCO proposes to prepare such a report, we would contact the Regional Supervisor of the BOEM GOMR for guidance in preparing the report and the BOEM GOMR would be provided with two copies.

SECTION 10 - ENVIRONMENTAL MONITORING INFORMATION

(a) Monitoring Systems

This information is not required for the activities proposed in this plan in the BOEM GOMR.

(b) Incidental Takes

TOPCO does not believe that protected species may be incidentally taken during the exploration activities proposed in this plan.

TOPCO and its personnel and subcontractors, while undertaking activities authorized under this lease, must implement and comply with the most current measures, including but not limited to new or updated versions of the NTLs identified below, to protect any species listed in the Endangered Species Act (ESA):

- BOEM NTL No. 2016-G01 (Vessel Strike Avoidance and Injured/Dead Protected Species Reporting)
- BOEM NTL No. 2016-G02 (Implementation of Seismic Survey Mitigation Measures and Protected Species Observer Program)
- BSEE NTL No. 2015-G03 (Marine Trash and Debris Awareness and Elimination)

(c) Flower Garden Banks National Marine Sanctuary

TOPCO's activity under this Plan is not located within the Protective Zones of the Flower Garden Banks or Stetson Bank and therefore is not required to monitor the impacts of an oil spill.

SECTION 11 - LEASE STIPULATIONS INFORMATION

The Federal Endangered Species Act (16 U.S.C. 1531 *et seq.)* and the Marine Mammal Protection Act (MMPA) (16 U.S.C. 1361 *et seq.)* are designed to protect threatened and endangered species and marine mammals and apply to activities on the Outer Continental Shelf (OCS). The Congressional Declaration Policy included in the OCS Lands Act (43 U.S.C. 1331 *et seq.)* provides that it is the policy of the United States that the OCS should be made available for expeditious and orderly development subject to environmental safeguards, in a manner which is consistent with the maintenance of competition and other national needs (see 43 U.S.C. 1332). Both the Bureau of Ocean Energy Management (BOEM) and the Bureau of Safety and Environmental Enforcement (BSEE) comply with these laws on the OCS.

Oil and gas exploration and development activities on the OCS are subject to stipulations developed before the lease sale and would be attached to the lease instrument, as necessary, in the form of mitigating measures.

TOPCO is aware that the exploration activities are subject to the following stipulations attached to the surface lease OCS-G33596, Vermilion Block 170:

Military Warning Area (MWA)

Vermilion Block 170 is located within designated MWA-59. The Naval Air Station JRB 159 Fighter Wing will be contacted in order to coordinate and control the electromagnetic emissions during the proposed operations.

Marine Protected Species

Lease Stipulation No. 8 is meant to reduce the potential taking of marine protected species. TOPCO will operate in accordance with the current NTL's, to minimize the risk of vessel strikes to protected species and report observations of injured or dead protected species, and the prevention of intentional and/or accidental introduction of debris into the marine environment.

BOEM and BSEE issue Notices to Lessees (NTLs) that more fully describe measures implemented in support of the above-mentioned implementing statutes and regulations, as well as measures identified by the U.S. Fish and Wildlife Service and NMFS arising from, among others, conservation recommendations, rulemakings pursuant to the MMPA, or consultation. The lessee and its operators, personnel, contractors, and subcontractors, while undertaking activities authorized under this lease, must implement and comply with the specific mitigation measures outlined in **BOEM NTL No. 2016-G01** (Vessel Strike Avoidance and Injured/Dead Protected Species Reporting), **BOEM NTL No. 2016-G02** (Implementation of Seismic Survey Mitigation Measures and Protected Species Observer Program), and **BSEE NTL No. 2015-G03** (Marine Trash and Debris Awareness and Elimination).

The lessee and its operators, personnel, contractors, and subcontractors will be required to comply with the mitigation measures (identified in the above referenced NTLs) and additional measures in the conditions of approvals for their plans or permits.

SECTION 12 - ENVIRONMENTAL MITIGATION MEASURES INFORMATION

(a) Impacts to Marine and Coastal Environments and Habitats, Biota, and Threatened and Endangered Species

The State of Florida is **not** an affected State for the activities proposed in this plan; therefore this information is not required.

(b) Incidental Takes

TOPCO does not believe that any of the endangered species or marine mammals as listed in the ESA will be taken during the exploration activities proposed in this plan.

TOPCO understands that the use of explosives or seismic devices may affect marine life in the vicinity. There are no operations proposed in this plan that will be using explosives or seismic instruments.

SECTION 13 - DECOMMISSIONING INFORMATION

This information is not required for plans submitted in the BOEM GOMR.

SECTION 14 - RELATED FACILITIES AND OPERATIONS INFORMATION

(a) Related OCS Facilities and Operations

This discussion is not required for Exploration Plans.

(b) Transportation System

This discussion is not required for Exploration Plans.

(c) Produced Liquid Hydrocarbons Transportation Vessels

Not applicable for the activities proposed in this plan.

SECTION 15 - SUPPORT VESSELS AND AIRCRAFT INFORMATION

(a) General

The following list provides information regarding the vessels and aircraft TOPCO will use to support our proposed activities.

Type of Vessel	Maximum Fuel Tank Storage Capacity	Maximum No. in Area at Any Time	Trip Frequency or Duration during Drilling
Supply boat(s)	500-1000 bbls	1	3 times / week
Crew boat(s)	500-1000 bbls	1	3 times / week
Tug boat	450 bbls	2	1 day on / 1 day off
Helicopter	760 gals	1	As needed

(b) Diesel Oil Supply Vessels

TOPCO proposes to use the following vessel(s) to supply diesel oil to support the drilling operation in this Exploration Plan.

Size of Fuel Supply Vessel	Capacity of Fuel Supply Vessel (in Bbls)	Frequency of Fuel Transfers	Route Fuel Supply Vessel will Take
180 ft	1500 bbls	2x per week	The shortest / most direct route from the shorebase to the MODU

(c) Drilling Fluids Transportation

The proposed exploration activities do not affect the State of Florida; therefore information on the projected drilling fluids transportation is not required at this time.

(d) Solid and Liquid Wastes Transportation

All projected solid and liquid wastes likely to be transported during our proposed activities are included in **Attachment K (Table 2).**

(e) Vicinity Map

The surface location in Vermilion Area Block 170 is located approximately 42.13 statute miles from the nearest Louisiana shoreline and approximately 59.74 statute miles from the onshore support base located in Intracoastal City, Louisiana for drilling and completion operations.

A Vicinity Plat showing the location of the proposed exploration activities relative to the shoreline and the primary route of the vessels and aircraft utilized with traveling from Cameron, Louisiana to the offshore drilling facility are included as **Attachment O**.

SECTION 16 - ONSHORE SUPPORT FACILITIES INFORMATION

(a) General

TOPCO proposes to utilize the following existing onshore base for vessel and helicopter support:

Name	Location	Existing, New or Modified
MI / Newpark	Intracoastal City, LA	Existing

(1) Support Base Construction or Expansion

The proposed operations do not mandate any immediate measures for land acquisition or expansion of the existing onshore base facilities.

(2) Support Base Construction or Expansion Timetable

The proposed operations do not mandate any immediate measures for land acquisition or expansion of the existing onshore base facilities, therefore a timetable is not required.

(b) Air Emissions

Information regarding air emissions generated by onshore support facilities is not required to accompany plans submitted in the BOEM GOMR.

(c) Unusual Solid and Liquid Wastes

Information regarding unusual solid and liquid wastes generated by onshore support facilities is not required to accompany plans submitted in the BOEM GOMR.

(d) Waste Disposal

All projected solid and liquid wastes likely to be disposed of during and after our proposed activities are included in **Attachment K (Table 2).**

SECTION 17 - SULPHUR OPERATIONS INFORMATION

TOPCO is not proposing to conduct sulphur operations in this plan.

SECTION 18 - COASTAL ZONE MANAGEMENT ACT (CZMA) INFORMATION

The States of Texas, Louisiana, Mississippi, Alabama and Florida have federally approved coastal zone management programs (CZMP). Applicants for an OCS plan submitted to the BOEM must provide a certification with necessary data and information for the affected State to determine that the proposed activity(s) complies with the enforceable policies of each States' approved program, and that such activity will be conducted in a manner consistent with the program.

(a) Consistency Certification

The Coastal Zone Management Consistency Certification from the State of Louisiana is required for the exploration activities proposed in this plan and is included as **Attachment P**.

(b) Other Information

State of Louisiana:

The enforceable policies of the State of Louisiana have been considered and will be complied with.

SECTION 19 - ENVIRONMENTAL IMPACT ANALYSIS (EIA)

(a) and (b) Impact Producing Factors (IPFs) from the Proposed Activities

TOPCO has placed an "X" in each IPF category that we believe (by using good engineering judgment) would be impacted by the activity proposed in this plan.

Environmental Resources	Impact Producing Factors (IPFs) Categories and Examples					
	Emissions (air, noise, light, etc.)	Effluents (muds, cuttings, other discharges to the water column or seafloor)	Physical disturbances to the seafloor (rig or anchor emplacements, etc.)	Wastes sent to shore for treatment or disposal	Accidents (e.g., oil spills, chemical spills, H_2S releases)	Other IPFs you identify
Site-specific at Offshore Location						
Designated topographic features		(1)	(1)		(1)	
Pinnacle Trend area live bottoms		(2)	(2)		(2)	
Eastern Gulf live bottoms		(3)	(3)		(3)	
Chemosynthetic communities			(4)			
Water quality		X	X	X	X	
Fisheries		X	X		X	
Marine mammals	(8) X	X			(8) X	X
Sea turtles	(8) X	X			(8) X	X
Air quality	(9) X					
Shipwreck sites (known or potential)			(7)			
Prehistoric archaeological sites			(7) X			
Vicinity of Offshore Location						
Essential fish habitat		X	X		(6) X	
Marine and pelagic birds	X				X	X
Public health and safety					(5)	
Coastal and Onshore						
Beaches					(6) X	X
Wetlands					(6) X	
Shore birds and coastal nesting birds	X				(6) X	X
Coastal wildlife refuges					X	
Wilderness areas					X	
Other Resources You Identify						
None						

Footnotes for Environmental Impact Analysis Matrix

1. Activities that may affect a marine sanctuary or topographic feature. Specifically, if the well or platform site or any anchors will be on the seafloor within the:
   (a) 4-mile zone of the Flower Garden Banks, or the 3-mile zone of Stetson Bank,
   (b) 1000-m, 1-mile or 3-mile zone of any topographic feature (submarine bank) protected by the Topographic Features Stipulation attached to an OCS lease;
   (c) Essential Fish Habitat (EFH) criteria of 500 ft from any no-activity zone; or
   (d) Proximity of any submarine bank (500 ft buffer zone) with relief greater than 2 meters that is not protected by the Topographic Features Stipulation attached to an OCS lease.
2. Activities with any bottom disturbance within an OCS lease block protected through the Live Bottom (Pinnacle Trend) Stipulation attached to an OCS lease.
3. Activities within any Eastern Gulf OCS block where seafloor habitats are protected by the Live Bottom (Low-Relief) Stipulation attached to an OCS lease.

4. Activities on blocks designated by the BOEM as being in water depths 400 meters or greater.
5. Exploration or production activities where H_2S concentrations greater than 500 ppm might be encountered.
6. All activities that could result in an accidental spill of produced liquid hydrocarbons or diesel fuel that you judge would impact these environmental resources. If the proposed action is located a sufficient distance from a resource that no impact would occur, the EIA can note that in a sentence or two.
7. All activities that involve seafloor disturbances, including anchor emplacements, in any OCS block designated by the BOEM as having high-probability for the occurrence of shipwrecks or prehistoric sites, including such blocks that will be affected that are adjacent to the lease block in which your planned activity will occur. If the proposed activities are located a sufficient distance from a shipwreck or prehistoric site that no impact would occur, the EIA can note that in a sentence or two.
8. All activities that you determine might have an adverse effect on endangered or threatened marine mammals or sea turtles or their critical habitats.
9. Production activities that involve transportation of produced fluids to shore using shuttle tankers or barges.

(c) ANALYSIS

Site-specific at Offshore Location – **VR 170 (Surface Location) / VR 153 (Bottom Hole Location)**

1. Designated Topographic Features

The topographic features of the Central Gulf provide habitat for coral reef community organisms. Since 1973 stipulations have been made a part of leases on or near these biotic communities so that impacts from nearby oil and gas activities were mitigated to the greatest extent possible. This stipulation does not prevent the recovery of oil and gas resources but serves to protect valuable and sensitive biological resources.

There are no IPFs (including effluents, physical disturbances to the seafloor, and accidents) from the proposed activities in Vermilion Area Block 170 that could cause impacts to topographic features.

The activities proposed in this plan will be covered by our regional OSRP.

2. Pinnacle Trend Area Live Bottoms

A small portion of the Central Planning Area and the Eastern Gulf of Mexico OCS planning areas include portions of approximately 70 lease blocks that have been classified as being within the "pinnacle trend" area. The Department of the Interior, Bureau of Ocean Energy Management is the agency with jurisdiction over these leases.

The term "live bottom" is used to refer to the biological assemblages attached to hard substrates found interspersed between sand and mud bottoms of the continental shelf. These assemblages often consist of colorful sponges, corals, sea whips and sea fans rising from the benthic environment. Some of these features have extensive vertical relief rising far into the water column and serving as a reefal habitat for numerous commercially and recreationally important fish species.

A special "Live Bottom (Pinnacle Trend) Stipulation" is assigned to leases in those blocks intended to protect the pinnacle trend and associated hard-bottom communities from damage and, at the same time, provide for recovery of potential oil and gas resources. This stipulation was not invoked with the issuance of these leases.

The activities proposed in this plan will be covered by our regional OSRP.

3. Eastern Gulf Live Bottoms

A small portion of the Central Planning Area and the Eastern Gulf of Mexico OCS planning areas include portions of approximately 70 lease blocks that have been classified as being within the "pinnacle trend" area. The Department of the Interior, Bureau of Ocean Energy Management is the agency with jurisdiction over these leases.

The term "live bottom" is used to refer to the biological assemblages attached to hard substrates found interspersed between sand and mud bottoms of the continental shelf. These assemblages often consist of colorful sponges, corals, sea whips and sea fans rising from the benthic environment. Some of these features have extensive vertical relief rising far into the water column and serving as a reefal habitat for numerous commercially and recreationally important fish species.

A special "Live Bottom (Pinnacle Trend) Stipulation" is assigned to leases in those blocks intended to protect the pinnacle trend and associated hard-bottom communities from damage and, at the same time, provide for recovery of potential oil and gas resources. This stipulation was not invoked with the issuance of these leases.

There are no IPFs (including effluents, physical disturbances to the seafloor, and accidents) from the proposed activities in Vermilion Area Block 170 that could cause impacts to Eastern Gulf live bottoms. The site-specific offshore location of the proposed activity is over 100 miles from the eastern gulf live bottoms.

The activities proposed in this plan will be covered by our regional OSRP.

4. Chemosynthetic Communities

There are no IPFs (including effluents, physical disturbances to the seafloor, and accidents) from the proposed activities in Vermilion Area Block 170 that could cause impacts to Chemosynthetic Communities.

Chemosynthetic biologic communities that lie in water depths in excess of 300 meters (984 feet) are of concern for environmental protection measures. The water depth at the proposed location is approximately 83 feet (per current NOAA mapping).

5. Water Quality

Effluents, physical disturbances to the seafloor and accidents from the proposed activities in Vermilion Area Block 170 could potentially cause impacts to water quality. Routine impact-producing factors that could result in water quality degradation from offshore OCS oil and gas operations include rig / anchor emplacement, platform and pipeline installation and removal, and the discharge of operational wastes.

With regards to marine trash and debris, effective December 17,2015, BSEE issued *BSEE NTL No. 2015-G03* pursuant to 30 CFR 250.103 to provide guidance and assist the operators in preventing intentional and / or accidental introduction of trash and debris into the marine environment. With this assistance and with laws such as MARPOL-Annex V, the Marine Plastic Pollution Research and Control Act, and regulations imposed by various agencies including the U.S. Coast Guard and the U.S. Environmental Protection Agency, our employees will ensure that all offshore personnel, including contractors and other support services-related personnel have complete understanding of the requirement that Operators be proactive in avoiding accidental loss of solid waste items on the OCS.

The major discharges from offshore oil and gas exploration and production activities include produced water, drilling fluids and cuttings, ballast water, and uncontaminated seawater. Minor discharges from the offshore oil and gas industry include drilling-waste chemicals, fracturing and acidifying fluids, and well completion and workover fluids; and from production operations, deck drainage, and miscellaneous well fluids (cement, BOP fluid); and other sanitary and domestic wastes, gas and oil processing wastes, and miscellaneous discharges. Since all discharges will be made in accordance with a general National Pollutant Discharge Elimination System (NPDES) permit issued by U.S. Environmental Protection Agency (USEPA), operational discharges are not expected to cause significant adverse impacts to water quality.

Offshore accidents, such as blowouts and spills could also occur and have the potential to alter offshore water quality. Sediment disturbance is expected to result in minor, localized, temporary increases in water-column turbidity in offshore waters. Given the low frequency of blowouts, minimum impacts on water quality due to re-suspension of sediments are expected.

Oil spills related to the proposed action are assumed to be mostly very small events (and for spills greater than 50 bbl) to occur very infrequently. It is unlikely that an accidental oil spill would occur from the proposed activities. If a spill were to occur, the dissolved components and small oil droplets would temporarily affect the water quality of marine waters. Dispersion by currents and microbial degradation would remove the oil from the water column or dilute the constituents to background levels.

The activities proposed in this plan will be covered by our Regional OSRP.

6. Fisheries

Effects on commercial fisheries from activities associated with this plan could come from emplacement of production platform(s), underwater OCS obstructions, oil spills, subsurface blowouts, pipeline installation and offshore discharges of drilling mud and produced waters (See Section 5, Water Quality above).

An accidental oil spill that may occur as a result of the proposed action has the potential to cause some detrimental effects to fisheries. However, it is unlikely that an accidental surface or subsurface oil spill would occur from the proposed activities. If a spill were to occur in open waters of the OCS proximate to mobile adult finfish or shellfish, the effects would likely be sublethal and the extent of damage would be reduced to the capability of adult fish and shellfish to avoid a spill, to metabolize Hydrocarbons, and to excrete both metabolites and parent compounds. The effect of oil spills on fisheries is expected to cause less than 1 percent decrease in commercial populations or in commercial fishing. At the expected level of effect, the resultant influence on Central Gulf fisheries is negligible and will be indistinguishable from natural population variations.

The activities proposed in this plan will be covered by our regional OSRP.

Drilling mud discharges contain chemicals toxic to marine fishes; however, this is only at concentrations 4 or 5 orders of magnitude higher than those found more than a few meters from the discharge point. Offshore discharges of drilling muds will dilute to background levels within 1000 meters of the discharge point and have a negligible effect on Central Gulf fisheries.

7. Marine Mammals

Marine mammals may be adversely impacted by several IPFs (including vessel traffic, noise, accidental oil spills, and loss of trash and debris), all of which could occur due to the proposed action in Vermilion Area Block 170. Chronic and sporadic sublethal effects could occur that may stress and / or weaken individuals of a local group or population and make them more susceptible to infection from natural or anthropogenic sources. Few lethal effects are expected from oil spills, chance collisions with service vessels and ingestion of plastic material. Oil spills of any size are estimated to be periodic events that may contact cetaceans. Disturbance (e.g., noise) may stress animals, weaken their immune systems, and make them more vulnerable to parasites and diseases that normally would not be fatal.

The net result of any disturbance would depend on the size and percentage of the population affected, ecological importance of the disturbed area, environmental and biological parameters that influence an animal's sensitivity to disturbance and stress, and the accommodation time in response to prolonged disturbance (Geraci and St. Aubin, 1980). Collisions between cetaceans and ships could cause serious injury or death (Laist et al., 2001). Sperm whales are one of 11 whale species that are hit commonly by ships (Laist et al., 2001). Collisions between OCS vessels and cetaceans within the project area are expected to be unusual events.

The activities proposed in this plan will be covered by our Regional OSRP.

BOEM issued *NTL No. 2016-G01* pursuant to 30 CFR 250.103, 550.103 and also 250.282 and 550.282 to explain how Operators must implement monitoring programs to minimize the risk of vessel strikes to protected species and report observations of injured or dead protected species effective January 1, 2012. We will ensure that our contract vessel operators are aware of their requirement to report sightings of any injured or dead protected species immediately to the BOEM Protected Species Biologist by telephone.

With regards to marine trash and debris, effective December 17, 2015, the Bureau of Safety and Environmental Enforcement issued BSEE NTL No. 2015-G03 pursuant to 30 CFR 250.103, and 250.300 to provide guidance and assist the operators in preventing intentional and / or accidental introduction of trash and debris into the marine environment. With this assistance and with laws such as MARPOL-Annex V, the Marine Plastic Pollution Research and Control Act, and regulations imposed by various agencies including the U.S. Coast Guard and the U.S. Environmental Protection Agency, our employees will ensure that all offshore personnel, including contractors and other support services-related personnel have complete understanding of the requirement that Operators be proactive in avoiding accidental loss of solid waste items on the OCS.

8. Sea Turtles

IPFs that could impact sea turtles include vessel traffic, noise, trash and debris, and accidental oil spills. Small numbers of turtles could be killed or injured by chance collision with service vessels or by eating indigestible trash, particularly plastic items, accidentally lost from drill rigs, production facilities, and service vessels. Drilling rigs and project vessels produce noise that could disrupt normal behavior patterns and create some stress potentially making sea turtles more susceptible to disease. Oil spills and oil-spill-response activities are potential threats that could have lethal effects on turtles. Contact with oil, consumption of oil particles, and oil-contaminated prey could seriously affect individual sea turtles. Oil-spill-response planning and the habitat protection requirements of the Oil Pollution Act of 1990 should mitigate these threats.

Most OCS-related impacts on sea turtles are expected to be sublethal. Chronic sublethal effects (e.g., stress) resulting in persistent physiological or behavioral changes and / or avoidance of affected areas could cause declines in survival or productivity, resulting in gradual population declines.

The activities proposed in this plan will be covered by our Regional OSRP.

BOEM issued *NTL No. 2016-G01* pursuant to 30 CFR 250.103, 550.103 and also 250.282 and 550.282 to explain how Operators must implement monitoring programs to minimize the risk of vessel strikes to protected species and report observations of injured or dead protected species effective January 1, 2012. We will ensure that our contract vessel operators are aware of their requirement to report sightings of any injured or dead protected species immediately to the BOEM Protected Species Biologist by telephone.

With regards to marine trash and debris, effective December 17, 2015, the Bureau of Safety and Environmental Enforcement issued BSEE NTL No. 2015-G03 pursuant to 30 CFR 250.103, and 250.300 to provide guidance and assist the operators in preventing intentional and / or accidental introduction of trash and debris into the marine environment. With this assistance and with laws such as MARPOL-Annex V, the Marine Plastic Pollution Research and Control Act, and regulations imposed by various agencies including the U.S. Coast Guard and the U.S. Environmental Protection Agency, our employees will ensure that all offshore personnel, including contractors and other support services-related personnel have complete understanding of the requirement that Operators be proactive in avoiding accidental loss of solid waste items on the OCS.

9. Air Quality

The proposed drilling activities are located 42.13 miles from the nearest Louisiana shoreline.

Although the proposed operations are temporary in nature, there would be a limited degree of air quality degradation in the immediate vicinity. Emissions from drilling activities consist mainly of NOx and CO. These emissions are temporary in nature. Emissions of pollutants into the atmosphere from the drilling operations proposed are not expected to have significant impacts on onshore air quality because of the prevailing atmospheric conditions, emission heights, emission rates, and the distance of these emissions from the coastline.

The Projected Air Quality Emissions Report indicates that the BOEM exemption level will not be exceeded during the operations proposed in the Initial EP. For this plan, there is an existing facility and there are activities co-located with the current proposed activities. The platform will be shut-in during the proposed exploration activity; therefore, the Complex Total Emissions will be the same as the Plan Emissions.

10. Shipwreck Sites (Known or Potential)

IPFs that could cause impacts to known or potential shipwreck sites from the proposed activities in Vermilion Area Block 170 include physical disturbances to the seafloor such as rig emplacement. Fugro GeoServices, Inc. performed a high resolution geophysical shallow hazards analysis and archaeological assessment on VR 170 under a previously approved plan. VR 170 lies within an area of high-probability for the occurrence of historic shipwrecks. Analyses of available shipwreck sources indicate that no shipwrecks have been reported within the survey area. No unusual depressions, scours, sediment changes or unidentified seafloor targets were observed that could represent unidentified shipwreck remains.

However, in the event items of significant cultural resource potential are discovered during the proposed operations, TOPCO will immediately halt all operations and notify the appropriate department at the BOEM for further evaluation and assistance.

11. Prehistoric Archaeological Sites

IPFs that could cause impacts to known or potential prehistoric archaeological sites from the proposed activities include physical disturbances to the seafloor such as rig emplacement. Fugro GeoServices, Inc. performed a high resolution geophysical shallow hazards analysis and archaeological assessment on VR 170 under a previously approved plan. VR 170 is in an area of high-probability for prehistoric and archaeological sites. Based on the previous interpretation, the surface location is clear of any evidence of possible high probability areas for prehistoric archaeological sites.

However, in the event items of significant cultural resource potential are discovered during the proposed operations, TOPCO will immediately halt all operations and notify the appropriate department at the BOEM for further evaluation and assistance.

Vicinity of Offshore Location:

1. Essential Fish Habitat

IPFs that could impact essential fish habitats as a result of the proposed operations in Vermilion Area Block 170 include effluents and accidents. The major effluent discharges from offshore oil and gas exploration and production activities include produced water, drilling fluids and cuttings, ballast water, and uncontaminated seawater (see Section 5, Water Quality, above). Minor discharges from the offshore oil and gas industry include drilling-waste chemicals, fracturing and acidifying fluids, and well completion and workover fluids; and from production operations, deck drainage, and miscellaneous well fluids (cement, BOP fluid); and other sanitary and domestic wastes, gas and oil processing wastes, and miscellaneous discharges.

Produced water will not be discharged during this operation.

The activities proposed in this plan will be covered by our regional OSRP.

2. Marine and Pelagic Birds

IPFs that could impact marine and pelagic birds as a result of the proposed operations in Vermilion Area Block 170 include air emissions, accidents and discarded trash and debris. Emissions of pollutant into the atmosphere from the activities associated with the proposed operations in this plan are not projected to have significant impacts on air quality that could harm marine and pelagic birds because of the prevailing atmospheric conditions, emission heights, emission rates and pollutant concentrations.

An accidental oil spill that may occur as a result of the proposed action has the potential to cause some detrimental effects on marine and pelagic birds. Some physical oiling could occur during dives, as well as secondary toxic effects through the uptake of prey. However, it is unlikely that an accidental surface or subsurface oil spill would occur from the proposed activities. The activities proposed in this plan will be covered by our regional OSRP.

With regards to marine trash and debris, coastal and marine birds can commonly become entangled and snared in discarded trash and debris. Effective December 17, 2015, BSEE issued *BSEE NTL No. 2015-G03* pursuant to 30 CFR 250.103, and 250.300 to provide guidance and assist the operators in preventing intentional and / or accidental introduction of trash and debris into the marine environment. With this assistance and with laws such as MARPOL-Annex V, the Marine Plastic Pollution Research and Control Act, and regulations imposed by various agencies including the U.S. Coast Guard and the U.S. Environmental Protection Agency, our employees will ensure that all offshore personnel, including contractors and other support services-related personnel have complete understanding of the requirement that Operators be proactive in avoiding accidental loss of solid waste items on the OCS.

3. Public Health and Safety Due to Accidents

There are no IPFs (including an accidental H_2S releases) from the proposed activities that could cause impacts to public health and safety.

Further, in accordance with 30 CFR 250.490(c) and NTL's 2009-G27 and 2008-G04 we have submitted sufficient information to justify our request that the area of our proposed activities be classified by BOEM as H_2S absent.

Coastal and Onshore:

1. Beaches

Primary IPFs associated with offshore oil and gas exploration and development, and most widely recognized as major threats to the enjoyment and use of recreational beaches, are oil spills (accidents) and marine trash and debris. The operations proposed in this plan are not projected to have significant impacts on coastal beaches.

An accidental oil spill that may occur as a result of the proposed action has the potential to cause some detrimental effects to beaches, however, it is unlikely that an accidental surface or subsurface oil spill would occur from the proposed development activities in Vermilion Area Block 170. The level of response to a spill will be based on volume, weather, and the characteristics of the product spilled. TOPCO's objectives for spill response are to ensure the safety of citizens and response personnel; control the source of the spill, have a coordinated response effort; maximize the protection of environmental sensitive areas; contain, recover and remove as much of the spill product as possible; recover and rehabilitate injured wildlife; minimize economic impacts; and keep the general public informed of the response activities.

The activities proposed in this plan will be covered by our regional OSRP.

With regards to marine trash and debris, December 17, 2015, BSEE issued *BSEE NTL No. 2015-G03* pursuant to 30 CFR 250.103, and 250.300 to provide guidance and assist the operators in preventing intentional and / or accidental introduction of trash and debris into the marine environment. With this assistance and with laws such as MARPOL-Annex V, the Marine Plastic Pollution Research and Control Act, and regulations imposed by various agencies including the U.S. Coast Guard and the U.S. Environmental Protection Agency, our employees will ensure that all offshore personnel, including contractors and other support services-related personnel have complete understanding of the requirement that Operators be proactive in avoiding accidental loss of solid waste items on the OCS.

2. Wetlands

According to the U.S. Department of the Interior ((Dahl, 1990); Henfer et al., 1994), during the mid-1980's, 4.4 percent of Texas (3,083,860 ha) (Henfer et al., 1994), 28 percent of Louisiana (3,557,520 ha), 14 percent of Mississippi (17,678,730 ha) and 8 percent of Alabama (1,073,655 ha) were considered wetlands. More recent information indicates recent land change as a result of Hurricanes Katrina and Rita. The most notable was the 217-mi² of Louisiana's coastal lands that were transformed to water after Hurricanes Katrina and Rita (Barras, 2006). The primary IPF associated with offshore oil and gas exploration and development, and most widely recognized as major threats to the wetlands are oil spills (accidents). The operations proposed in this plan are not projected to have significant impacts on wetlands.

The activities proposed in this plan will be covered by our regional OSRP.

3. Shore Birds and Coastal Nesting Birds

The primary IPF associated with offshore oil and gas exploration and development, and most widely recognized as a major threat to the shore birds and coastal nesting birds is oil spills (accidents). The operations proposed in this plan are not projected to have significant impacts on shore birds and coastal nesting birds.

An accidental oil spill that may occur as a result of the proposed action has the potential to cause some detrimental effects to shore birds and coastal nesting birds, however, it is unlikely that an accidental surface or subsurface oil spill would occur from the proposed activities in Vermilion Area Block 170. The level of response to a spill will be based on volume, weather, and the characteristics of the product spilled. TOPCO's objectives for spill response are to ensure the safety of citizens and response personnel; control the source of the spill, have a coordinated response effort; maximize the protection of environmental sensitive areas; contain, recover and remove as much of the spill product as possible; recover and rehabilitate injured wildlife; minimize economic impacts; and keep the general public informed of the response activities.

The activities proposed in this plan will be covered by our regional OSRP.

4. Coastal Wildlife Refuges

The primary IPF associated with offshore oil and gas exploration and development, and most widely recognized as a major threat to the coastal wildlife refuges is oil spills (accidents). The operations proposed in Vermilion Area Block 170 are not projected to have significant impacts on coastal wildlife refuges.

The activities proposed in this plan will be covered by our regional OSRP.

5. Wilderness Areas

The primary IPF associated with offshore oil and gas exploration and development, and most widely recognized as a major threat to wilderness areas is oil spills (accidents). The operations proposed in this plan are not projected to have significant impacts on wilderness areas.

The activities proposed in this plan will be covered by our regional OSRP.

Other Environmental Resources Identified: None

(d) Environmental Hazards

The site-specific environmental conditions have been taken into account for the proposed activities under this plan. Being located in the Gulf of Mexico, all oil and gas exploratory and development operations may at some time experience hurricane force winds, tropical storm activity and unusual surge and sea currents.

In accordance with requirements set forth in Title 33 CFR 146.140, an Emergency Evacuation Plan (EEP) is prepared and submitted to the appropriate USCG Marine Safety Office or Unit for review and ultimate approval. This plan provides descriptions to help define the type of storm based on the winds associated with it (i.e., major gulf storm, squall, tropical depression, tropical storm, gale warning, storm warning, hurricane, etc). Major hurricanes (storm having wind speeds in excess of 74 mph) in the Gulf normally form in the southern Gulf or Caribbean Sea. Tropical disturbances (storms having wind speeds greater than 40 mph but less than 73 mph) that originate near the facility do not provide much warning, but usually pass the rig or facility prior to attaining hurricane status.

Each tropical disturbance will be evaluated on its own merit and the operations modified accordingly. No impacts are expected on the proposed activities from site-specific environmental conditions.

(e) Alternatives

There are no alternatives other than those required by regulation to be considered to reduce the environmental impacts of the activities proposed in this plan.

(f) Mitigation Measures

No mitigation measures other than those required by regulation will be considered to avoid, lessen or eliminate potential impacts on environmental resources.

(g) Consultation

There were no outside agencies or persons consulted regarding the potential environmental impacts associated with the activities proposed under this Initial EP.

(h) Preparer(s)

Kathy Camp
K. Camp & Associates
Phone: 713.201.9627
Email: Kathy.camp@kcampassociates.com

(i) References

Federal Register, Vol. 77, No. 163, August 22, 2012, *Final Rule for Increased Safety Measures for Energy Development on the Outer Continental Shelf*

BSEE NTL No. 2015-G03 effective December 17, 2015 for Marine Trash and Debris Awareness and Elimination

BOEM NTL No. 2016-G01 effective January 1, 2012 for Vessel Strike Avoidance and Injured / Dead Protected Species Reporting

BOEM NTL No. 2016-G02 (Implementation of Seismic Survey Mitigation Measures and Protected Species Observer Program)

Federal Register, Vol. 75, No. 198, October 14, 2010, Final Rule for Increased Safety Measures for Energy Development on the Outer Continental Shelf

BOEM NTL 2015-N01 effective January 14, 2015 for Information Requirements for Exploration Plans, Development and Production Plans, and Development Operations Coordination Documents on the OCS for Worst Case Discharge and Blowout Scenarios

NTL 2009-G40 effective January 27, 2010 for Deepwater Benthic Communities

NTL 2009-G39 effective January 27, 2010 for Biologically-Sensitive Underwater Features and Areas

NTL 2009-G27 effective September 9, 2009 for Submitting Exploration Plans and Development Operations Coordination Documents

NTL 2008-G04 effective May 1, 2008 for Information Requirements for Exploration Plans and Development Operations Coordination Documents

Federal Register, Tuesday, August 30, 2005, 30 CFR Parts 250 and 170, Oil and Gas Sulphur Operations in the Outer Continental Shelf – Plans and Information; Final Rule effective September 29, 2005

Final EIS, Western Planning Area Sales (204, 207, 210, 215 & 218), and Central Planning Area Sales (205, 206, 208, 213, 216 & 222)

Marine Mammal Protection Act of 1972 (MMPA)

Endangered Species Act of 1973 (ESA)

SECTION 20 - ADMINISTRATIVE INFORMATION

(a) Exempted Information Description (Public Information Copies Only)

In accordance with 43 CFR Part 2, the following information is exempt from disclosure and has been omitted from the Public Information copy of this plan:

- The geologic objectives, BHL, TVD, and MD information on form BOEM-137 (OCS Plan Information Form) in Attachment A
- All items under Geological and Geophysical Information, except for the non-proprietary version of shallow hazards assessment
- Correlative well information used to justify H_2S classification request under Hydrogen Sulfide Information
- Worst Case Discharge Calculations
- Mineral Resource Conservation

(b) Bibliography

Vermillion Block 170 Initial DOCD approved July 21, 2011 via Control Document Number N-09573.

Vermillion Block 170 Initial EP approved October 1, 2010 via Control Document Number N-09540.

U.S. Department of the Interior
Bureau of Ocean Energy Management

OMB Control Number: 1010-0151
OMB Approval Expires: 6/30/2021

OCS PLAN INFORMATION FORM

General Information

Type of OCS Plan:		Exploration Plan (EP)	X	Development Operations Coordination Document (DOCD)	

Company Name: TOPCO OFFSHORE, LLC	BOEM Operator Number: 03472
Address: 5858 Westheimer Road, Suite 115 Houston, Texas 77057	Contact Person: Kathy Camp
	Phone Number: 713.201.9627
	E-Mail Address: kathy.camp@kcampassociates.com

If a service fee is required under 30 CFR 550.125(a), provide the	Amount paid	3673.00	Receipt No.	ID 26CTOU1J / ID 75595936566

Project and Worst Case Discharge (WCD) Information

Lease(s): OCS-G 34802	Area: VR	Block(s): 153	Project Name (If Applicable):

Objective(s)		Oil	X	Gas		Sulphur		Salt	Onshore Support Base(s): Intracoastal City, LA

Platform/Well Name: A002	Total Volume of WCD: 17,225 BCPD	API Gravity: 47.0
Distance to Closest Land (Miles): 42.13	Volume from uncontrolled blowout: 792,350 BCPD	

Have you previously provided information to verify the calculations and assumptions for your WCD?		Yes	X	No
If so, provide the Control Number of the EP or DOCD with which this information was provided				
Do you propose to use new or unusual technology to conduct your activities?		Yes	X	No
Do you propose to use a vessel with anchors to install or modify a structure?		Yes	X	No
Do you propose any facility that will serve as a host facility for deepwater subsea development?		Yes	X	No

Description of Proposed Activities and Tentative Schedule (Mark all that apply)

Proposed Activity	Start Date	End Date	No. of Days
Exploration drilling & Completion	03/15/2019	05/01/2019	47

Description of Drilling Rig

X	Jackup		Drillship		Caisson		Tension leg platform
	Gorilla Jackup		Platform rig	X	Fixed platform		Compliant tower
	Semisubmersible		Submersible		Spar		Guyed tower
	DP Semisubmersible		Other (Attach Description)		Floating production system		Other (Attach Description)

Drilling Rig Name (If Known):

Description of Structure

Description of Lease Term Pipelines

From (Facility/Area/Block)	To (Facility/Area/Block)	Diameter (Inches)	Length (Feet)
NA			

ATTACHMENT A

OCS PLAN INFORMATION FORM (CONTINUED)
Include one copy of this page for each proposed well/structure

Proposed Well/Structure Location

Well or Structure Name/Number (If renaming well or structure, reference previous name): A					Previously reviewed under an approved EP or DOCD?	X	Yes		No	
Is this an existing well or structure?		Yes X		No	If this is an existing well or structure, list the Complex ID or API No.	2423				
Do you plan to use a subsea BOP or a surface BOP on a floating facility to conduct your proposed activities?							Yes		No X	

WCD info	For wells, volume of uncontrolled blowout (Bbls/day):	For structures, volume of all storage and pipelines (Bbls): 25 BCPD	API Gravity of fluid	47.0

	Surface Location	**Bottom-Hole Location (For Wells)**	**Completion (For multiple completions, enter separate lines)**
Lease No.	OCS-G 33596		OCS OCS
Area Name	VERMILION		
Block No.	170		
Blockline Departures (in feet)	N/S Departure: 2688 FNL		N/S Departure: F____L N/S Departure: F____L N/S Departure: F____L
	E/W Departure: 7068 FEL		E/W Departure: F____L E/W Departure: F____L E/W Departure: F____L
Lambert X-Y coordinates	X: 1,714,044.20		X: X: X:
	Y: -93,524.09		Y: Y: Y:
Latitude/ Longitude	Latitude 28.92077467		Latitude Latitude Latitude
	Longitude -92.22686902		Longitude Longitude Longitude

Water Depth (Feet): 87	MD (Feet):	TVD (Feet):	MD (Feet): MD (Feet): MD (Feet):	TVD (Feet): TVD (Feet): TVD (Feet):
Anchor Radius (if applicable) in feet: NA				

Anchor Locations for Drilling Rig or Construction Barge (If anchor radius supplied above, not necessary)

Anchor Name or No.	Area	Block	X Coordinate	Y Coordinate	Length of Anchor Chain on Seafloor
			X =	Y =	
			X =	Y =	
			X =	Y =	
			X =	Y =	
			X =	Y =	
			X =	Y =	
			X =	Y =	
			X =	Y =	

OCS PLAN INFORMATION FORM (CONTINUED)
Include one copy of this page for each proposed well/structure

Proposed Well/Structure Location

Well or Structure Name/Number (If renaming well or structure, reference previous name): A002					Previously reviewed under an approved EP or DOCD?		Yes	X	No	
Is this an existing well or structure?		Yes	X	No	If this is an existing well or structure, list the Complex ID or API No.					
Do you plan to use a subsea BOP or a surface BOP on a floating facility to conduct your proposed activities?							Yes		No	X

WCD info	For wells, volume of uncontrolled blowout (Bbls/day): 17,225 BCPD	For structures, volume of all storage and pipelines (Bbls): 25 BCPD	API Gravity of fluid	47.0

	Surface Location	**Bottom-Hole Location (For Wells)**	**Completion (For multiple completions, enter separate lines)**
Lease No.	OCS-G 33596		OCS OCS
Area Name	VERMILION		
Block No.	170		
Blockline Departures (in feet)	N/S Departure: 2689.62 FNL	_	N/S Departure: F____L N/S Departure: F____L N/S Departure: F____L
	E/W Departure: 7088.11 FEL	_	E/W Departure: F____L E/W Departure: F____L E/W Departure: F____L
Lambert X-Y coordinates	X: 1,714,084.30		X: X: X:
	Y: -93,522.48		Y: Y: Y:
Latitude/ Longitude	Latitude 28° 55' 14.7712"		Latitude Latitude Latitude
	Longitude 92° 13' 36.9546"		Longitude Longitude Longitude

Water Depth (Feet): 87	MD (Feet):	TVD (Feet):	MD (Feet): MD (Feet): MD (Feet):	TVD (Feet): TVD (Feet): TVD (Feet):
Anchor Radius (if applicable) in feet: NA				

Anchor Locations for Drilling Rig or Construction Barge (If anchor radius supplied above, not necessary)

Anchor Name or No.	Area	Block	X Coordinate	Y Coordinate	Length of Anchor Chain on Seafloor
			X =	Y =	
			X =	Y =	
			X =	Y =	
			X =	Y =	
			X =	Y =	
			X =	Y =	
			X =	Y =	
			X =	Y =	

Provide the following information for the well with the highest Worst Case Discharge volume:

Worst Case Discharge (WCD) Well Information							
WCD Well Name	Surface Lease	Surface Area/Block	Bottom Lease	Bottom Area/Block	Product Type	MD	TVD
A002	G33596	VR 170	G34802	VR 153	GAS		

Analog Well(s)			
Area/Block	OCS Lease	Well No.	API No.

Geologic Data for WCD

Open Hole Interval for WCD	
Top (TVD in feet)	Base (TVD in feet)

	Sand 1	Sand 2	Sand 3	Sand 4	Sand 5
Formation Data					
Sand Name					
Estimated Top TVD					
Estimated Base TVD					
Estimated Net Sand Height MD (Net Pay if hydrocarbon)					
Estimated Net Sand Height TVT (Net Pay if hydrocarbon)					
Fluid Type					
Used in WCD? (Yes/No)					

Seismic Survey Used	
NA	

Engineering Data for WCD

WCD Engineering Items											
WCD (STB/Day)											
WCD Calculated at	Mudline		**Yes**		No		Atmosphere		**Yes**		No
Flow Correlation											
Outlet Pressure (Psia)											
Gas Turbulence Factor											
Software Model Used											

	Sand 1	Sand 2	Sand 3	Sand 4	Sand 5
Formation Data					
Sand Name					
Permeability (mD)					
Initial Pressure (PSIA)					

	Sand 1	Sand 2	Sand 3	Sand 4	Sand 5
Formation Data					
Reservoir Temperature (F)					
Porosity (0.00)					
Water Saturation (0.00)					
Rock Compressibility (microsips)					
Water Salinity (ppm)					
Drive Mechanism					
Drainage Area (acres)					
Oil Reservoir Data					
Bubble Point Pressure (PSIA)					
Initial Bo (RB/STB)					
Bo (RB/STB) @ Bubble Point					
Rsi (SCF/STB)					
Initial Oil Viscosity (Cp)					
Oil Viscosity (CP) @ Bubble Point					
Oil Compressibility (1/PSIA)					
Oil API Gravity (API)					
Specific Gas Gravity (0.00)					
Gas Reservoir Data					
Condensate API Gravity (API)					
Specific Gas Gravity (0.00)					
Yield (STB/MMCF)					

Source of Permeability Used			
Permeability from MDT			
Permeability from Core Analysis	Percussion core	Rotary sidewall core	Conventional core
Pressure Transient Analysis			
Permeability from CMR or NMR log analysis			
Permeability from other source			

Provide Model Input Values for Relative Permeability:	
Residual Oil to Gas fraction (=1-Slc-Swc)	
Residual Oil to Water fraction (=Soc)	
Critical Gas fraction (Sgc, Gas/Oil-Water Systems)	
Residual Gas to Water fraction (Sgc, Gas/Gas-Water Systems)	
Kro Oil Curve Endpoint (fraction of absolute permeability)	
Krg Gas Curve Endpoint (fraction of absolute permeability)	
Krw Water Curve Endpoint (fraction of absolute permeability)	

Paperwork Reduction Act of 1995 Statement: The Paperwork Reduction Act of 1995 (44 U.S.C. 2501 et seq.) requires us to inform you that BOEM collects this information as part of an applicant's Exploration Plan or Development Operations Coordination Document submitted for BOEM approval. We use the information to facilitate our review and data entry for OCS plans. We will protect proprietary data according to the Freedom of Information Act and 30 CFR 550.197. An agency may not conduct or sponsor, and a person is not required to respond to, a collection of information unless it displays a currently valid Office of Management and Budget Control Number. Responses are mandatory (43 U.S.C. 1334). The public reporting burden for this form is included in the burden for preparing Exploration Plans and Development Operations Coordination Documents. We estimate that burden to average 600 hours with an accompanying EP, or 700 hours with an accompanying DPP or DOCD, including the time for reviewing instructions, gathering and maintaining data, and completing and reviewing the forms associated with subpart B. Direct comments regarding the burden estimate or any other aspect of this form to the Information Collection Clearance Officer, Bureau of Ocean Energy Management, 45600 Woodland Road, Sterling, Virginia 20166.

June 22nd , 2018

Contango Operators, Inc.
717 Texas Avenue, Suite 2900
Houston, TX 77002

Attention: Joseph Grady
Senior Vice President and Chief Financial Officer

RE: Request for Surface and Subsurface Right of Use and Easement for Lease OCS-G 34802, Well No. A-2, Vermilion Block 153, OCS Federal Waters, Gulf of Mexico, Offshore, Louisiana

Gentlemen:

This letter serves as notification that TOPCO OFFSHORE, LLC (TOPCO) is in the process of submitting an application to the Bureau of Ocean Energy Management for a Surface and Subsurface Right-of-Use and Easement covering the proposed drilling and potential completion and production of Lease OCS-G 34802, Well No. A-2, Vermilion Block 153 from a surface location at Contango Operators, Inc.'s Vermilion Block 170 A Platform. A portion of the wellbore will traverse a portion of your leasehold acreage in OCS-G 33596, Vermilion Block 170.

Please indicate your consent to the proposed Surface and Subsurface Right-of-Use and Easement by signing in the space provided below and return to Suzy Younger, J. Connor Consulting, Inc. 19219 Katy Freeway, Suite 200, Houston, TX 77094.

Should you have questions or require additional information, please contact Suzy Younger, J. Connor Consulting at 281-698-8520 or suzy.younger@jccteam.com.

Sincerely,

TOPCO OFFSHORE, LLC

David Monico
Manager

DM:SY
Enclosure

CONSENT GRANTED THIS 22ND DAY OF JUNE, 2018.

By: _____

Name: E. Joseph Grady

Title: Senior Vice President & CFO

VR153
OCS-G-34802
TOPCO

PF A & Well A002 (Surface)

VR170
OCS-G-33596
Contango

PROPOSED LOCATION NAD27 LOUISIANA SOUTH							
LOCATION	CALLNS	CALLEW	X COORDINATE	Y COORDINATE	LATITUDE	LONGITUDE	WD
WELL A2	2689.62' FNL	7088.11' FEL	1,714,084.30'	93,522.48'	28°55'14.7712"N	92°13'36.9546"W	87'

TOPCO OFFSHORE, LLC

EXPLORATION PLAN
OCS-G-34802
BLOCK 153
VERMILION AREA
GULF OF MEXICO

Geodetic Datum: NAD27
Projection: LOUISIANA SOUTH
Grid Units: US SURVEY FEET

SCALE 1:24000 — 0 — 2000 FEET

FUGRO USA MARINE, INC.
6100 Hillcroft Ave.
Houston, Texas 77081
(713) 346-3700

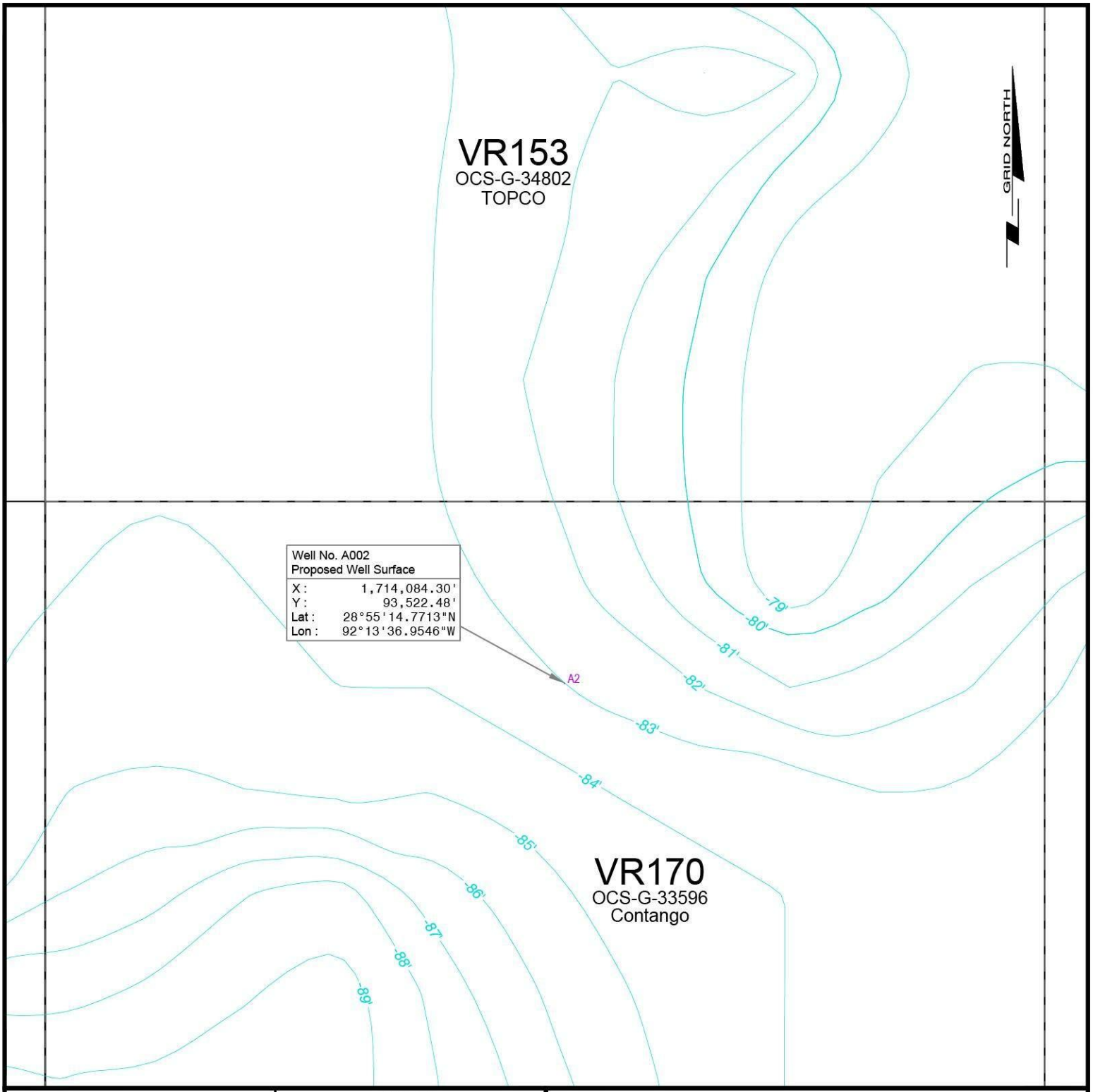
Job No.: 18015087 | Date: 10/5/2018 | Drwn: MM | Chart: 1 Of: 1

DWG File: 1801508701_VR170-153_EP_G34802

10/05/2018

PUBLIC INFORMATION

ATTACHMENT B



LEGEND

STRUCTURE
- PLATFORM
- (damaged/salv.)
- WELL
- (damaged/salv.)

PIPELINE
- ACTIVE
- OUT OF SERV.
- ABANDONED
- UN. CONST.
- PROPOSED
- POSITION
- FEATURE
- VALVE
- HUB
- CROSSING

HAZARD
- ANCH. PILE
- OBSTRUCTION
- USCG HAZARD

AVOIDANCE
- ANOMALY
- CONTACT
- BUFFER

MOORING
- ANCH. ROPE
- PROP. ROPE
- ANCH. / PILE
- ANCH. BUOY

NOTES

1. THIS MAP WAS COMPILED USING IN-HOUSE DATA FROM VARIOUS SOURCES AND DOES NOT REPRESENT A FUGRO FIELD SURVEY.
2. BATHYMETRY TAKEN FROM NOAA SURVEYS. CONTOURS ARE SHOWN IN FEET, ARE GENERALIZED, AND ARE INTENDED TO BE USED FOR PRELIMINARY PLANNING ONLY AND NOT FOR FINAL FACILITIES SITING OR FINAL PIPELINE ROUTING.

ATTACHMENT C

TOPCO OFFSHORE, LLC

BATHYMETRY MAP
PROPOSED WELL No. A002 OCS-G-34802

BLOCK 170
VERMILION AREA
GULF OF MEXICO

Geodetic Datum: NAD27
Projection: LOUISIANA SOUTH
Grid Units: US SURVEY FEET

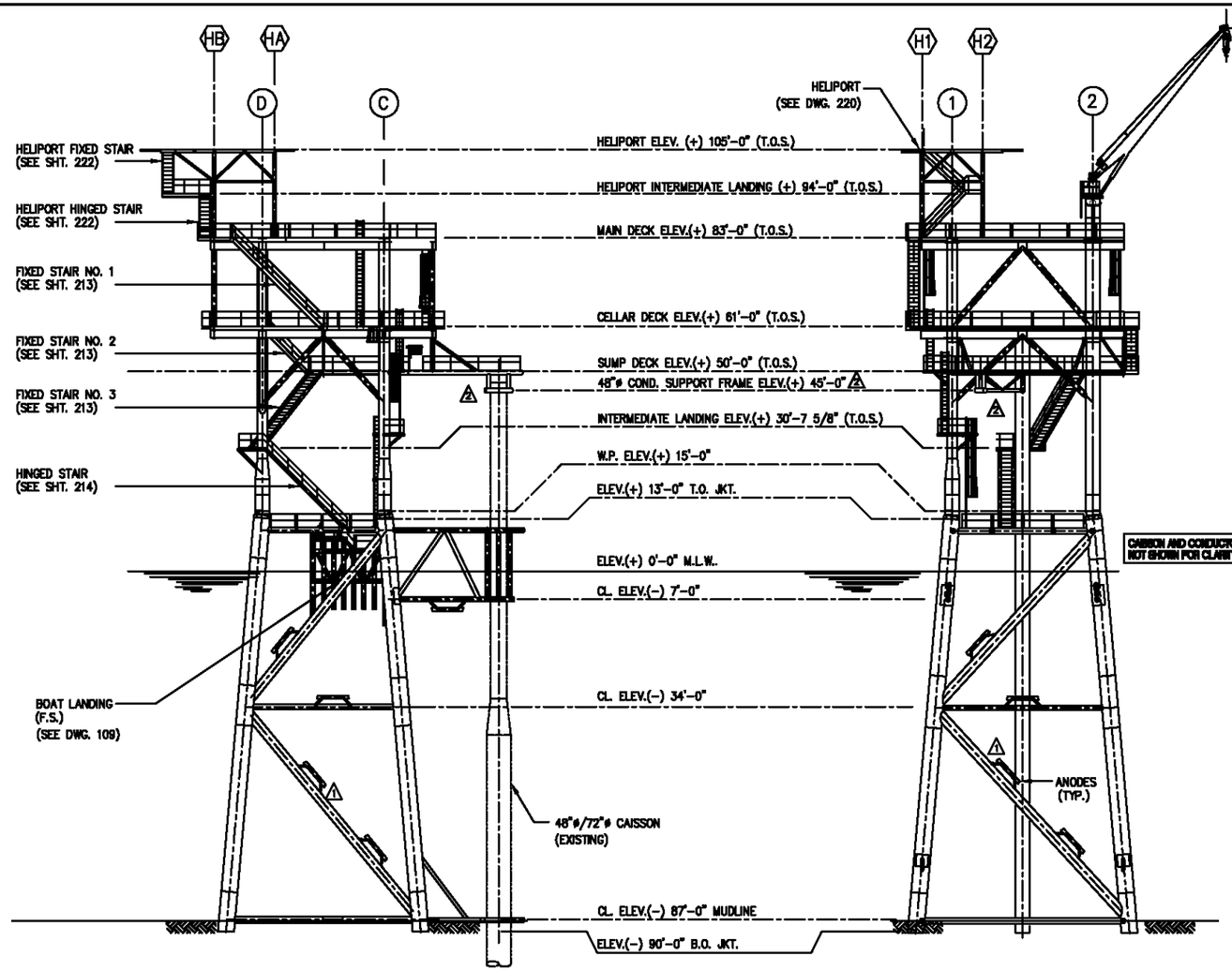
SCALE 1:24000 — 0 — 2000 FEET

FUGRO USA MARINE, INC.
6100 Hillcroft Ave.
Houston, Texas 77081
(713) 346-3700

Job No.: 18015087 | Date: 10/10/2018 | Drwn: JWJ | Chart: 1 Of: 1

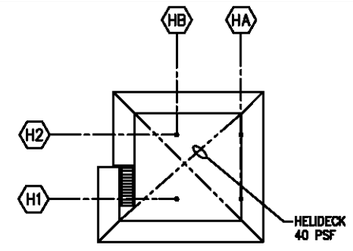
DWG File: 18015087_VR170-153_BATHY_G34802

10/10/2018

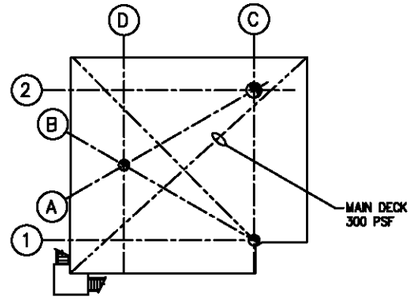


ELEVATION "A"
SCALE: 1/16"=1'-0"

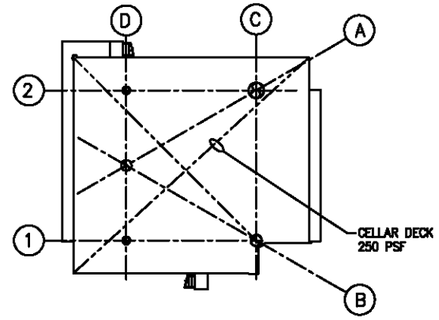
ELEVATION "B"
SCALE: 1/16"=1'-0"



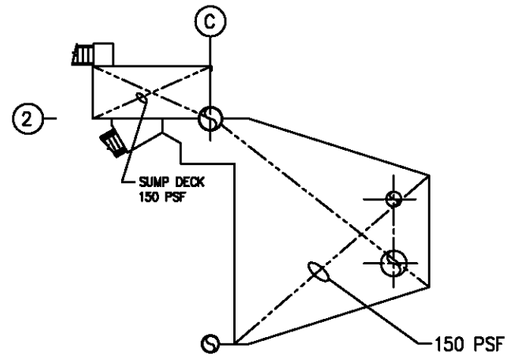
UNIFORM LIVE LOADING
HELIPORT LOADING DIAGRAM
SCALE: 1/16"=1'-0"



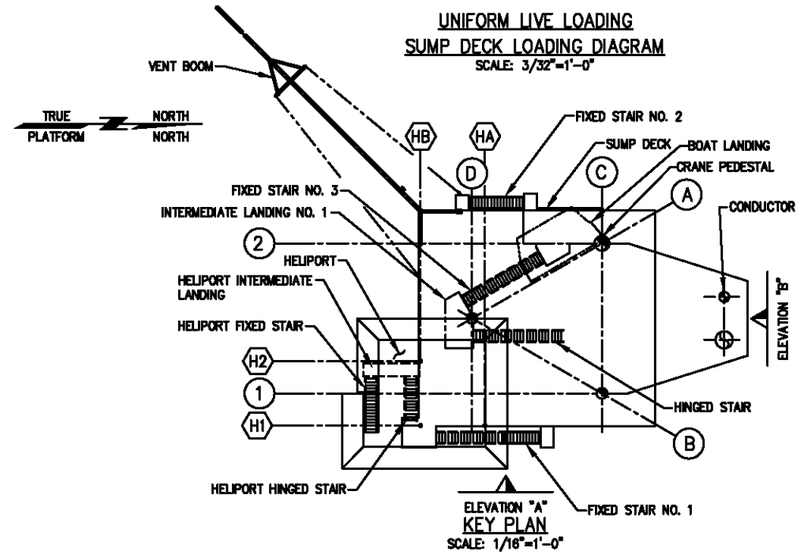
UNIFORM LIVE LOADING
MAIN DECK LOADING DIAGRAM
SCALE: 1/16"=1'-0"



UNIFORM LIVE LOADING
CELLAR DECK LOADING DIAGRAM
SCALE: 1/16"=1'-0"



UNIFORM LIVE LOADING
SUMP DECK LOADING DIAGRAM
SCALE: 3/32"=1'-0"



KEY PLAN
SCALE: 1/16"=1'-0"

LIST OF COMPONENTS

ITEMS	TOTAL WEIGHT (TONS)
JACKET (W/ANODES & RISER)	190.0 TONS
PILING (3)	249.5 TONS
BOAT LANDING	14.0 TONS
DECK (W/O EQUIPMENT)	211.0 TONS
VENT BOOM	4.5 TONS
HELIPORT	17.0 TONS
TOTAL	686.0 TONS

NOTES:

APP'D.	CHK'D.	DRAFT	DATE	REVISION	MARK
RG	RG	EV	10/27/11	AS BUILT	6
RG	RG	EV	8/25/11	ADDED 48"ø CONDUCTOR SUPPORT FRAME	5
RG	RG	LA	7/11/11	REVISED JACKET BRACES ORIENTATION DUE TO FABRICATORS ERROR	4
RG	CMH	CT	5/11/11	ISSUED FOR CONSTRUCTION	3
RG	CMH	CT	4/8/11	ISSUED FOR APPROVAL	2

Contango Operators, Inc.

TECHNICAL ENGINEERING CONSULTANTS
GRETNA, LOUISIANA LLC HOUSTON, TEXAS
TX. REG. NO. 9032

APPROVED	DATE
CLIENT	
PROJECT RG	3/21/11
DESIGN RG	3/21/11
CHECK CMH	5/11/11
DRAFT RJ	3/21/11

TITLE: TRIPOD WELL PROTECTOR
VERMILION BLOCK 170-A 87'-0" W.D.

ASSEMBLY ELEVATIONS

CLIENT: CONTANGO OPERATORS, INC.
JOB NO. 31123
DWG. NO. 001

ATTACHMENT D

Kathy Camp

Subject: FW: Pay.gov Payment Confirmation: BOEM Exploration Plan - BF

Your payment has been submitted to Pay.gov and the details are below. If you have any questions regarding this payment, please contact Brenda Dickerson at (703) 787-1617 or BseeAccountsReceivable@bsee.gov.

Application Name: BOEM Exploration Plan - BF
Pay.gov Tracking ID: 26CTOU1J
Agency Tracking ID: 75595936566
Transaction Type: Sale
Transaction Date: 10/16/2018 03:33:46 PM EDT

Account Holder Name: Amanda Thompson

Transaction Amount: $3,673.00
Card Type: AmericanExpress
Card Number: **********2008

Region: Gulf of Mexico
Contact: AMANDA THOMPSON (713) 789-7000
Company Name/No: TOPCO OFFSHORE, LLC, 03472
Lease Number(s): 34802, , , ,
Area-Block: Vermilion VR, 153: , : , : , : ,
Surface Locations: 1

THIS IS AN AUTOMATED MESSAGE. PLEASE DO NOT REPLY.

ATTACHMENT E

TABLE 1. WASTES YOU WILL GENERATE, TREAT AND DOWNHOLE DISPOSE OR DISCHARGE TO THE GOM

please specify if the amount reported is a total or per well amount

Projected generated waste based on single well			Projected ocean discharges		Projected Downhole Disposal
Type of Waste	Composition	Projected Amount	Discharge rate	Discharge Method	Answer yes or no
Will drilling occur ? If yes, you should list muds and cuttings					
Water-based drilling fluid	Water Base Drilling Mud	1922 bbls/well	200 bbls/hr/well	Overboard	No
Cuttings wetted with water-based fluid	Sand/Shale Cuttings	3500 bbls/well	100 bbls/day/well	Overboard	No
Synthetic-based drilling fluid	N/A	N/A	N/A	Overboard	No
Cuttings wetted with synthetic-based fluid	N/A	N/A	N/A	N/A	No
Will humans be there? If yes, expect conventional waste					
Domestic waste	Trash/Debris	1000 ft^3/well	20 ft^3/day/well	Transport To Dock	No
Sanitary waste	Sanitary Waste	100 bbls/well	5 bbls/day/well	Treated - Overboard	No
Is there a deck? If yes, there will be Deck Drainage					
Deck Drainage	Rainfall	35 bbls/well	1 bbl/day/well	Treated - Overboard	No
Will you conduct well treatment, completion, or workover?					
Well treatment fluids	N/A	N/A	N/A	N/A	N/A
Well completion fluids	CaCl2 / CaBr2 Brine	500 bbls/well	N/A	Transport to Disposal Facility	No
Workover fluids	N/A	N/A	N/A	N/A	N/A
Miscellaneous discharges. If yes, only fill in those associated with your activity.					
Desalinization unit discharge	N/A	N/A	N/A	N/A	N/A
Blowout prevent fluid	N/A	N/A	N/A	N/A	N/A
Ballast water	N/A	N/A	N/A	N/A	N/A
Bilge water	N/A	N/A	N/A	N/A	N/A
Excess cement at seafloor	N/A	N/A	N/A	N/A	N/A
Fire water	N/A	N/A	N/A	N/A	N/A
Cooling water	N/A	N/A	N/A	N/A	N/A
Will you produce hydrocarbons? If yes fill in for produced water.					
Produced water	N/A	N/A	N/A	N/A	N/A

Will you be covered by an individual or general NPDES permit ?	General

NOTE: If you will not have a type of waste, enter NA in the row.

ATTACHMENT K

TABLE 2. WASTES YOU WILL TRANSPORT AND /OR DISPOSE OF ONSHORE

please specify whether the amount reported is a total or per well

	Projected generated waste		Solid and Liquid Wastes transportation	Waste Disposal		
Type of Waste	Composition		Transport Method	Name/Location of Facility	Amount	Disposal Method
Will drilling occur ? If yes, fill in the muds and cuttings.						
Oil-based drilling fluid or mud	Oil Based Mud		Vacuum Trucks	Newpark - ICY	2000 bbls	Recycled
Synthetic-based drilling fluid or mud	N/A		N/A	N/A	N/A	N/A
Cuttings wetted with Water-based fluid	Water Based Cuttings		N/A	N/A	1290	Overboard Discharge
Cuttings wetted with Synthetic-based fluid	N/A		N/A	N/A	N/A	N/A
Cuttings wetted with oil-based fluids	Oil Based Cuttings		Cuttings Box / Vacuum Trucks	R360 Bourg Facility	1062 bbls	Treatment / Landfill
Will you produce hydrocarbons? If yes fill in for produced sand.						
Produced sand	N/A		N/A	N/A	N/A	N/A
Will you have additional wastes that are not permitted for discharge? If yes, fill in the appropriate rows.						
Trash and debris	Trash & Debris		Storage Bins on Crewboat	Cameron, La.	1000 ft^3/well	Landfill
Used oil	Motor Oil		Drums on Crewboat	Newpark - ICY	100 bbls/well	Recycled
Wash water	N/A		N/A	N/A	N/A	N/A
Chemical product wastes	Chemical Product Waste		Drums on Crewboat	Newpark - ICY	50 lbs/well	Treatment / Recycled

NOTE: If you will not have a type of waste, enter NA in the row.

ATTACHMENT K

OMB Control No. 1010-0151
OMB Approval Expires: 06/30/2021

EXPLORATION PLAN (EP)
AIR QUALITY SCREENING CHECKLIST

COMPANY	TOPCO OFFSHORE, LLC
AREA	VERMILION
BLOCK	153
LEASE	OCS-G 34802
PLATFORM	A
WELL	A002
COMPANY CONTACT	KATHY CAMP
TELEPHONE NO.	713.201.9627
REMARKS	1 WELL D&C FROM VR170A TO PBHL IN VR153

ATTACHMENT L

EMISSIONS FACTORS

Fuel Usage Conversion Factors	Natural Gas Turbines		Natural Gas Engines		Diesel Recip. Engine		REF.	DATE
	SCF/hp-hr	9.524	SCF/hp-hr	7.143	GAL/hp-hr	0.0483	AP42 3.2-1	4/76 & 8/84

Equipment/Emission Factors	units	PM	SOx	NOx	VOC	CO	REF.	DATE
NG Turbines	gms/hp-hr		0.00247	1.3	0.01	0.83	AP42 3.2-1& 3.1-1	10/96
NG 2-cycle lean	gms/hp-hr		0.00185	10.9	0.43	1.5	AP42 3.2-1	10/96
NG 4-cycle lean	gms/hp-hr		0.00185	11.8	0.72	1.6	AP42 3.2-1	10/96
NG 4-cycle rich	gms/hp-hr		0.00185	10	0.14	8.6	AP42 3.2-1	10/96
Diesel Recip. < 600 hp.	gms/hp-hr	1	0.1835	14	1.12	3.03	AP42 3.3-1	10/96
Diesel Recip. > 600 hp.	gms/hp-hr	0.32	0.1835	11	0.33	2.4	AP42 3.4-1	10/96
Diesel Boiler	lbs/bbl	0.084	0.3025	0.84	0.008	0.21	AP42 1.3-12,14	9/98
NG Heaters/Boilers/Burners	lbs/mmscf	7.6	0.593	100	5.5	84	P42 1.4-1, 14-2, & 14	7/98
NG Flares	lbs/mmscf		0.593	71.4	60.3	388.5	AP42 11.5-1	9/91
Liquid Flaring	lbs/bbl	0.42	6.83	2	0.01	0.21	AP42 1.3-1 & 1.3-3	9/98
Tank Vapors	lbs/bbl				0.03		E&P Forum	1/93
Fugitives	lbs/hr/comp.				0.0005		API Study	12/93
Glycol Dehydrator Vent	lbs/mmscf				6.6		La. DEQ	1991
Gas Venting	lbs/scf				0.0034			

Sulphur Content Source	Value	Units
Fuel Gas	3.33	ppm
Diesel Fuel	0.05	% weight
Produced Gas(Flares)	3.33	ppm
Produced Oil (Liquid Flaring)	1	% weight

EMISSIONS CALCULATIONS 1ST YEAR

COMPANY	AREA	BLOCK	LEASE	PLATFORM	WELL		CONTACT	PHONE	REMARKS
TOPCO OFFSHORE, LL	VERMILION	153	OCS-G 34802	A	A002		KATHY CAMP	713.201.9627	

OPERATIONS	EQUIPMENT	RATING	MAX. FUEL	ACT. FUEL	RUN TIME		MAXIMUM POUNDS PER HOUR					ESTIMATED TONS				
	Diesel Engines	HP	GAL/HR	GAL/D												
	Nat. Gas Engines	HP	SCF/HR	SCF/D												
	Burners	MMBTU/HR	SCF/HR	SCF/D	HR/D	D/YR	PM	SOx	NOx	VOC	CO	PM	SOx	NOx	VOC	CO
DRILLING	PRIME MOVER>600hp diesel	16975	819.8925	19677.42	24	47	11.96	6.86	411.29	12.34	89.74	6.75	3.87	231.97	6.96	50.61
	PRIME MOVER>600hp diesel	0	0	0.00	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	PRIME MOVER>600hp diesel	0	0	0.00	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	PRIME MOVER>600hp diesel	0	0	0.00	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	BURNER diesel	0			0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	AUXILIARY EQUIP<600hp diesel	550	26.565	637.56	24	47	1.21	0.22	16.96	1.36	3.67	0.68	0.13	9.57	0.77	2.07
	VESSELS>600hp diesel(crew)	2100	101.43	2434.32	10	19	1.48	0.85	50.88	1.53	11.10	0.14	0.08	4.83	0.15	1.05
	VESSELS>600hp diesel(supply)	2500	120.75	2898.00	10	19	1.76	1.01	60.57	1.82	13.22	0.17	0.10	5.75	0.17	1.26
	VESSELS>600hp diesel(tugs)	15000	724.5	17388.00	24	2	10.57	6.06	363.44	10.90	79.30	0.25	0.15	8.72	0.26	1.90
FACILITY	DERRICK BARGE diesel	0	0	0.00	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
INSTALLATION	MATERIAL TUG diesel	0	0	0.00	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	VESSELS>600hp diesel(crew)	0	0	0.00	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	VESSELS>600hp diesel(supply)	0	0	0.00	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	MISC.	BPD	SCF/HR	COUNT												
	TANK-	0			0	0				0.00					0.00	
DRILLING	OIL BURN	0			0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
WELL TEST	GAS FLARE		0		0	0		0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00
2019 YEAR TOTAL							**26.99**	**15.01**	**903.14**	**27.94**	**197.02**	**7.99**	**4.32**	**260.84**	**8.30**	**56.89**
EXEMPTION CALCULATION	**DISTANCE FROM LAND IN MILES**											**1402.93**	**1402.93**	**1402.93**	**1402.93**	**41166.12**
	42.1															

ATTACHMENT L

SUMMARY

COMPANY	AREA	BLOCK	LEASE	PLATFORM	WELL
TOPCO OFFSH	VERMILION	153	OCS-G 34802	A	A002

Year	Emitted Substance				
	PM	SOx	NOx	VOC	CO
2019	7.99	4.32	260.84	8.30	56.89
Allowable	1402.93	1402.93	1402.93	1402.93	41166.12

ATTACHMENT L

TOPCO Offshore, LLC
Vermilion Block 153
Well #A002

Calculation Parameters, Reservoir Data
And Assumptions Utilized for Worst Case Discharge

PROPRIETARY DATA

SPILL RESPONSE DISCUSSION

For the purpose of NEPA and Coastal Zone Management Act analysis, the largest spill volume originating from the proposed activity would be a well blowout during drilling operations, estimated to be 13,936 barrels of condensate with an API gravity of 47°.

Land Segment and Resource Identification

Trajectories of a spill and the probability of it impacting a land segment have been projected utilizing information in the BOEM Oil Spill Risk Analysis Model (OSRAM) for the Central and Western Gulf of Mexico available on the BOEM website. The results are shown in **Figure 1.** The BOEM OSRAM identifies a 13% probability of impact to the shorelines of Cameron Parish, Louisiana within 10 days. Cameron Parish includes the east side of Sabine Lake, Sabine National Wildlife Refuge, Calcasieu Lake, Lacassine National Wildlife Refuge (inland) and Grand Lake. Cameron Parish also includes the area along the coastline from Sabine Pass to Big Constance Lake in Rockefeller Wildlife Refuge. This region is composed of open public beaches, marshlands and swamps. It serves as a habitat for numerous birds, finfish and other animals, including several rare, threatened and endangered species.

Response

TOPCO Offshore, LLC will make every effort to respond to the Worst Case Discharge as effectively as practicable. A description of the response equipment under contract to contain and recover the Worst Case Discharge is shown in **Figure 2.**

Using the estimated chemical and physical characteristics of condensate, an ADIOS weathering model was run on a similar product from the ADIOS oil database. The results indicate 60% or approximately 8,362 barrels of condensate would be evaporated/dispersed within 24 hours, with approximately 5,574 barrels remaining.

Natural Weathering Data: VR 170 A	**Barrels of Oil**
WCD Volume	13,936
Less 60% natural evaporation/dispersion	8,362
Remaining volume	5,574

Figure 2 outlines equipment, personnel, materials and support vessels as well as temporary storage equipment available to respond to the worst case discharge. The volume accounts for the amount remaining after evaporation/dispersion at 24 hours. The list estimates individual times needed for procurement, load out, travel time to the site and deployment. **Figure 2** also indicates how operations will be supported.

TOPCO Offshore, LLC's Oil Spill Response Plan includes alternative response technologies such as dispersants. Strategies will be decided by Unified Command based on a safety analysis, the size of the spill, weather and potential impacts. Although unlikely, if aerial dispersants are

utilized, 8 sorties (9,600 gallons) from two of the DC-3 aircrafts and 4 sorties (8,000 gallons) from the Basler aircraft would provide a daily dispersant capability of 7,540 barrels. Slick containment boom and sorbent boom would be immediately called out and on-scene as soon as possible. Offshore response strategies may include collection of condensate with sorbent boom (inside hard boom), attempting to skim utilizing CGA spill response equipment, with a total derated skimming capacity of 103,421 barrels. Temporary storage associated with skimming equipment equals 4,449 barrels. If additional storage is needed, various storage barges with a total capacity 107,000 bbls may be mobilized and centrally located to provide temporary storage and minimize off-loading time. **Safety is first priority. Air monitoring will be accomplished and operations deemed safe prior to any containment/skimming attempts.**

If the spill went unabated, shoreline impact in Cameron Parish, Louisiana would depend upon existing environmental conditions. Shoreline protection would include the use of CGA's near shore and shallow water skimmers with a totaled derated skimming capacity of 19,617 barrels. Temporary storage associated with skimming equipment equals 838 barrels. If additional storage is needed, one 23,000 barrel storage barge may be mobilized and centrally located to provide temporary storage and minimize off-loading time. Onshore response may include the deployment of shoreline boom on beach areas, or protection and sorbent boom on vegetated areas. A Letter of Intent from OMI Environmental will ensure access to 30,400 feet of 18" shoreline protection boom. **Figure 2** outlines individual times needed for procurement, load out, travel time to the site and deployment. Strategies would be based upon surveillance and real time trajectories that depict areas of potential impact given actual sea and weather conditions. Applicable Area Contingency Plans (ACPs), Geographic Response Plans (GRPs), and Unified Command (UC) will be consulted to ensure that environmental and special economic resources are correctly identified and prioritized to ensure optimal protection. Shoreline protection strategies depict the protection response modes applicable for oil spill clean-up operations. As a secondary resource, the State of Louisiana Initial Oil Spill Response Plan will be consulted as appropriate to provide detailed shoreline protection strategies and describe necessary action to keep the oil spill from entering Louisiana's coastal wetlands. The UC should take into consideration all appropriate items detailed in Tactics discussion of this Appendix. The UC and their personnel have the option to modify the deployment and operation of equipment to allow for a more effective response to site-specific circumstances. TOPCO Offshore, LLC's contract Spill Management Team has access to the applicable ACP(s) and GRP(s).

Based on the anticipated worst case discharge scenario, TOPCO Offshore, LLC can be onsite with contracted oil spill recovery equipment with adequate response capacity to contain and recover surface hydrocarbons, and prevent land impact, to the maximum extent practicable, within an estimated 48 hours (based on the equipment's Effective Daily Recovery Capacity (EDRC)).

Initial Response Considerations

Actual actions taken during an oil spill response will be based on many factors to include but not be limited to:

- Safety
- Weather
- Equipment and materials availability
- Ocean currents and tides
- Location of the spill
- Product spilled
- Amount spilled
- Environmental risk assessments
- Trajectory and product analysis
- Well status, i.e., shut in or continual release

TOPCO Offshore, LLC will take action to provide a safe, aggressive response to contain and recover as much of the spilled oil as quickly as it is safe to do so. In an effort to protect the environment, response actions will be designed to provide an "in-depth" protection strategy meant to recover as much oil as possible as far from environmentally sensitive areas as possible. Safety will take precedence over all other considerations during these operations.

Coordination of response assets will be supervised by the designation of a SIMOPS group as necessary for close quarter vessel response activities. Most often, this group will be used during source control events that require a significant number of large vessels operating independently to complete a common objective, in close coordination and support of each other. This group must also monitor the subsurface activities of each vessel (ROV, dispersant application, well control support, etc.). The SIMOPS group leader reports to the Source Control Section Chief.

In addition, these activities will be monitored by the spill management team (SMT) and Unified Command via a structured Common Operating Picture (COP) established to track resource and slick movement in real time.

Upon notification of a spill, the following actions will be taken:

- Information will be confirmed
- An assessment will be made and initial objectives set
- OSROs and appropriate agencies will be notified
- ICS 201, Initial Report Form completed
- Initial Safety plan will be written and published
- Unified Command will be established
    - Overall safety plan developed to reflect the operational situation and coordinated objectives
    - Areas of responsibility established for Source Control and each surface operational site
    - On-site command and control established

Offshore Response Actions

Equipment Deployment

Surveillance

- Surveillance Aircraft: within two hours of QI notification, or at first light
- Provide trained observer to provide on site status reports
- Provide command and control platform at the site if needed
- Continual surveillance of oil movement by remote sensing systems, aerial photography and visual confirmation
- Continual monitoring of vessel assets using vessel monitoring systems

Dispersant application assets

- Put ASI on standby
- With the FOSC, conduct analysis to determine appropriateness of dispersant application (refer to Section 18)
- Gain FOSC approval for use of dispersants on the surface
- Deploy aircraft in accordance with a plan developed for the actual situation
- Coordinate movement of dispersants, aircraft, and support equipment and personnel
- Confirm dispersant availability for current and long range operations
- Start ordering dispersant stocks required for expected operations

Containment boom

- Call out early and expedite deployment to be on scene ASAP
- Ensure boom handling and mooring equipment is deployed with boom
- Provide continuing reports to vessels to expedite their arrival at sites that will provide for their most effective containment
- Use Vessels of Opportunity (VOO) to deploy and maintain boom

Oceangoing Boom Barge

- Containment at the source
- Increased/enhanced skimmer encounter rate
- Protection booming

In-situ Burn assets

- Determine appropriateness of in-situ burn operation in coordination with the FOSC and affected SOSC
- Determine availability of fire boom and selected ignition systems
- Start ordering fire boom stocks required for expected operations
- Contact boom manufacturer to provide training & tech support for operations, if required
- Determine assets to perform on water operation
- Build operations into safety plan
- Conduct operations in accordance with an approved plan
- Initial test burn to ensure effectiveness

Dedicated off-shore skimming systems
General

- Deployed to the highest concentration of oil
- Assets deployed at safe distance from aerial dispersant and in-situ burn operations

CGA HOSS Barge

- Use in areas with heaviest oil concentrations
- Consider for use in areas of known debris (seaweed, and other floating materials)

CGA 95' Fast Response Vessels (FRVs)

- Designed to be a first vessel on scene
- Capable of maintaining the initial Command and Control function for on water recovery operations
- 24 hour oil spill detection capability
- Highly mobile and efficient skimming capability
- Use as far off-shore as safely possible

CGA FRUs

- To the area of the thickest oil
- Use as far off-shore as allowed
- VOOs 140' – 180' in length
- VOOs with minimum of 18' x 38' or 23' x 50' of optimum deck space
- VOOs in shallow water should have a draft of <10 feet when fully loaded

T&T Koseq Skimming Systems

- To the area of the thickest oil
- Use as far off-shore as allowed
- VOOs with a minimum of 2,000 bbls storage capacity
- VOOs at least 200' in length
- VOOs with deck space of 100' x 40' to provide space for arms, tanks, and crane
- VOOs for shallow water should be deck barges with a draft of <10 feet when fully loaded

Storage Vessels

- Establish availability of CGA contracted assets (See Appendix E)
- Early call out (to allow for tug boat acquisition and deployment speeds)
- Phase mobilization to allow storage vessels to arrive at the same time as skimming systems
- Position as closely as possible to skimming assets to minimize offloading time

Vessels of Opportunity (VOO)

- Use TOPCO Offshore, LLC's contracted resources as applicable
- Industry vessels are ideal for deployment of Vessel of Opportunity Skimming Systems (VOSS)
- Acquire additional resources as needed
- Consider use of local assets, i.e. fishing and pleasure craft for ISB operations or boom tending
- Expect mission specific and safety training to be required
- Plan with the US Coast Guard for vessel inspections
- Place VOOs in Division or Groups as needed
- Use organic on-board storage if appropriate
- Maximize non-organic storage appropriate to vessel limitations
- Decant as appropriate after approval to do so has been granted
- Assign bulk storage barges to each Division/Group
- Position bulk storage barges as close to skimming units as possible
- Utilize large skimming vessel (e.g. barges) storage for smaller vessel offloading
- Maximize skimming area (swath) to the optimum width given sea conditions and available equipment
- Maximize use of oleophilic skimmers in all operations, but especially offshore
- Nearshore, use shallow water barges and shuttle to skimming units to minimize offloading time
- Plan and equip to use all offloading capabilities of the storage vessel to minimize offloading time

Adverse Weather Operations:

In adverse weather, when seas are $\geq$ 3 feet, the use of larger recovery and storage vessels, oleophilic skimmers, and large offshore boom will be maximized. KOSEQ Arm systems are built for rough conditions, and they should be used until their operational limit (9.8' seas) is met. Safety will be the overriding factor in all operations and will cease at the order of the Unified Command, vessel captain, or in an emergency, "stop work" may be directed by any crew member.

Surface Oil Recovery Considerations and Tactics
(Offshore and Near-shore Operations)

Maximization of skimmer-oil encounter rate

- Place barges in skimming task forces, groups, etc., to reduce recovered oil offloading time
- Place barges alongside skimming systems for immediate offloading of recovered oil when practicable
- Use two vessels, each with heavy sea boom, in an open-ended "V" configuration to funnel surface oil into a trailing skimming unit's organic, V-shaped boom and skimmer (see page 7, *CGA Equipment Guide Book and Tactic Manual* (CGATM)

- Use secondary vessels and heavy sea boom to widen boom swath beyond normal skimming system limits (see page 15, CGATM)
- Consider night-time operations, first considering safety issues
- Utilize all available advanced technology systems (IR, X-Band Radar, etc.) to determine the location of, and move to, recoverable oil
- Confirm the presence of recoverable oil prior to moving to a new location

Maximize skimmer system efficiency

- Place weir skimming systems in areas of calm seas and thick oil
- Maximize the use of oleophilic skimming systems in heavier seas
- Place less mobile, high EDRC skimming systems (e.g. HOSS Barge) in the largest pockets of the heaviest oil
- Maximize onboard recovered oil storage for vessels.
- Obtain authorization for decanting of recovered water as soon as possible
- Use smaller, more agile skimming systems to recover streamers of oil normally found farther from the source. Place recovered oil barges nearby

Recovered Oil Storage

- Smaller barges in larger quantities will increase flexibility for multi-location skimming operations
- Place barges in skimming task forces, groups, etc., to reduce recovered oil offloading time
- Procure and deploy the maximum number of portable tanks to support Vessel of Opportunity Skimming Systems if onboard storage is not available
- Maximize use of the organic recovered oil storage capacity of the skimming vessel

Command, Control, and Communications (C^3)

- Publish, implement, and fully test an appropriate communications plan
- Design an operational scheme, maintaining a manageable span of control
- Designate and mark C^3 vessels for easy aerial identification
- Designate and employ C^3 aircraft for task forces, groups, etc.
- Use reconnaissance air craft and Rapid Response Teams (RAT) to confirm the presence of recoverable oil

On Water Recovery Group
When the first skimming vessel arrives on scene, a complete site assessment will be conducted before recovery operations begin. Once it is confirmed that the air monitoring readings for O2, LEL, H2S, CO, VOC, and Benzene are all within the permissible limits, oil recovery operations may begin.

As skimming vessels arrive, they will be organized to work in areas that allow for the most efficient vessel operation and free vessel movement in the recovery of oil. Vessel groups will vary in structure as determined by the Operations Section of the Unified Command, but will generally consist, at a minimum, of the following dedicated assets:

- 3 to 5 – Offshore skimming vessels (recovery)
- 1 – Tank barge (temporary storage)
- 1 – Air asset (tactical direction)
- 2 – Support vessels (crew/utility for supply)
- 6 to 10 – Boom vessels (enhanced booming)

Example *(**Note:** Actual organization of TFs will be dependent on several factors including, asset availability, weather, spilled oil migration, currents, etc.)*

The 95' FRV Breton Island out of Venice arrives on scene and conducts an initial site assessment. Air monitoring levels are acceptable and no other visual threats have been observed. The area is cleared for safe skimming operations. The Breton Island assumes command and control (CoC) of on-water recovery operations until a dedicated non-skimming vessel arrives to relieve it of those duties.

A second 95' FRV arrives and begins recovery operations alongside the Breton Island. Several more vessels begin to arrive, including a third 95' FRV out of Galveston, the HOSS Barge (High Volume Open Sea Skimming System) out of Harvey, a boom barge (CGA 300) with 25,000' of 42" auto boom out of Leeville, and 9 Fast Response Units (FRUs) from the load-out location at C-Port in Port Fourchon.

As these vessels set up and begin skimming, they are grouped into task forces (TFs) as directed by the Operations Section of the Unified Command located at the command post.

Initial set-up and potential actions:

- A 1,000 meter safety zone has been established around the incident location for vessels involved in Source Control
- The HOSS Barge is positioned facing the incident location just outside of this safety zone or at the point where the freshest oil is reaching the surface
- The HOSS Barge engages its Oil Spill Detection (OSD) system to locate the heaviest oil and maintains that ability for 24-hour operations

- The HOSS Barge deploys 1,320' of 67" Sea Sentry boom on each side, creating a swath width of 800'
- The Breton Island and H.I. Rich skim nearby, utilizing the same OSD systems as the HOSS Barge to locate and recover oil
- Two FRUs join this group and it becomes TF1
- The remaining 7 FRUs are split into a 2 and 3 vessel task force numbered TF2 and TF3
- A 95' FRV is placed in each TF
- The boom barge (CGA 300) is positioned nearby and begins deploying auto boom in sections between two utility vessels (1,000' to 3,000' of boom, depending on conditions) with chain-link gates in the middle to funnel oil to the skimmers
- The initial boom support vessels position in front of TF2 and TF3
- A 100,000+ barrel offshore tank barge is placed with each task force as necessary to facilitate the immediate offload of skimming vessels

The initial task forces (36 hours in) may be structured as follows:

TF 1

- 1 – 95' FRV
- 1 – HOSS Barge with 3 tugs
- 2 – FRUs
- 1 – 100,000+ barrel tank barge and associated tug(s)
- 1 – Dedicated air asset for tactical direction
- 8 – 500' sections of auto boom with gates
- 8 – Boom-towing vessels
- 2 – Support vessels (crew/utility)

TF 2

- 1 – 95' FRV
- 4 – FRUs
- 1 – 100,000+ barrel tank barge and associated tug(s)
- 1 – Dedicated air asset for tactical direction
- 10 – 500' sections of auto boom with gates
- 10 – Boom-towing vessels
- 2 – Support vessels (crew/utility)

TF 3

- 1 – 95' FRV
- 3 – FRUs
- 1 – 100,000+ barrel tank barge and associated tug(s)
- 1 – Dedicated air asset for tactical direction
- 8 – 500' sections of auto boom with gates
- 8 – Boom-towing vessels
- 2 – Support vessels (crew/utility)

Offshore skimming equipment continues to arrive in accordance with the ETA data listed in figure H.3a; this equipment includes 2 AquaGuard skimmers and 11 sets of Koseq Rigid Skimming Arms. These high volume heavy weather capable systems will be divided into functional groups and assigned to specific areas by the Operations Section of the Unified Command.

At this point of the response, the additional TFs may assume the following configurations:

TF 4

- 2 – Sets of Koseq Rigid Skimming Arms w/ associated 200'+ PIDVs
- 1 – AquaGuard Skimmer
- 1 – 100,000+ barrel tank barge and associated tug(s)
- 1 – Dedicated air asset for tactical direction
- 2 – Support vessels (crew/utility)
- 6 – 500' sections of auto boom with gates
- 6 – Boom-towing vessels

TF 5

- 3 – Sets of Koseq Rigid Skimming Arms w/ associated 200'+ PIDVs
- 1 – AquaGuard Skimmer
- 1 – 100,000+ barrel tank barge and associated tug(s)
- 1 – Dedicated air asset for tactical direction
- 2 – Support vessels (crew/utility)
- 8 – 500' sections of auto boom with gates
- 8 – Boom-towing vessels

TF 6

- 3 – Sets of Koseq Rigid Skimming Arms w/ associated 200'+ PIDVs
- 1 – 100,000+ barrel tank barge and associated tug(s)
- 1 – Dedicated air asset for tactical direction
- 2 – Support vessels (crew/utility)
- 6 – 500' sections of auto boom with gates
- 6 – Boom-towing vessels

TF 7

- 3 – Sets of Koseq Rigid Skimming Arms w/ associated 200'+ PIDVs
- 1 – 100,000+ barrel tank barge and associated tug(s)
- 1 – Dedicated air asset for tactical direction
- 2 – Support vessels (crew/utility)
- 6 – 500' sections of auto boom with gates
- 6 – Boom-towing vessels

CGA Minimum Acceptable Capabilities for Vessels of Opportunity (VOO)
Minimum acceptable capabilities of Petroleum Industry Designed Vessels (PIDV) for conducting Vessel of Opportunity (VOO) skimming operations are shown in the table below. PIDVs are "purpose-built" to provide normal support to offshore oil and gas operators. They include but are not limited to utility boats, offshore supply vessels, etc. They become VOOs when tasked with oil spill response duties.

Capability	FRU	KOSEQ	AquaGuard
Type of Vessel	Utility Boat	Offshore Supply Vessel	Utility Boat
Operating parameters			
Sea State	3-5 ft max	9.8 ft max	3-5 ft max
Skimming speed	≤1 kt	≤3 kts	≤1 kt
Vessel size			
Minimum Length	100 ft	200 ft	100 ft
Deck space for: • Tank(s) • Crane(s) • Boom Reels • Hydraulic Power Units • Equipment Boxes	18x32 ft	100x40 ft	18x32 ft
Communication Assets	Marine Band Radio	Marine Band Radio	Marine Band Radio

Tactical use of Vessels of Opportunity (VOO): TOPCO Offshore, LLC will take all possible measures to maximize the oil-to-skimmer encounter rate of all skimming systems, to include VOOs, as discussed in this section. VOOs will normally be placed within an On-water recovery unit as shown in figures below.

Skimming Operations: PIDVs are the preferred VOO skimming platform. OSROs are more versed in operating on these platforms and the vessels are generally large enough with crews more likely versed in spill response operations. They also have a greater possibility of having on-board storage capacity and the most likely vessels to be under contract, and therefore more readily available to the operator. These vessels would normally be assigned to an on-water recovery group/division (see figure below) and outfitted with a VOSS suited for their size and capabilities. Specific tactics used for skimming operations would be dependent upon many parameters which include, but are not limited to, safety concerns, weather, type VOSS on board, product being recovered, and area of oil coverage. Planners would deploy these assets with the objective of safely maximizing oil- to-skimmer encounter rate by taking actions to minimize non-skimming time and maximizing boom swath. Specific tactical configurations are shown in figures below.

The Fast Response Unit (FRU): A self-contained, skid based, skimming system that is deployed from the right side of a vessel of opportunity (VOO). An outrigger holds a 75' long section of air inflatable boom in place that directs oil to an apex for recovery via a Foilex 250 weir skimmer. The outrigger creates roughly a 40' swath width dependent on the VOO beam. The lip of the collection bowl on the skimmer is placed as close to the oil and water interface as possible to maximize oil recovery and minimize water retention. The skimmer then pumps all fluids recovered to the storage tank where it is allowed to settle, and with the approval of the Coast Guard, the water is decanted from the bottom of the tank back into the water ahead of the containment boom to be recycled through the system. Once the tank is full of as much pure recovered oil as possible it is offloaded to a storage barge for disposal in accordance with an approved disposal plan. A second 100 barrel storage tank can be added if the appropriate amount of deck space is available to use as secondary storage.

Tactical Overview

Mechanical Recovery – The FRU is designed to provide fast response skimming capability in the offshore and nearshore environment in a stationary or advancing mode. It provides a rated daily recovery capacity of 4,100 barrels. An additional boom reel with 440' of offshore boom can be deployed along with the FRU, and a second support vessel for boom towing, to extend the swath width when attached to the end of the fixed boom. The range and sustainability offshore is dependent on the VOO that the unit is placed on, but generally these can stay offshore for extended periods. The FRU works well independently or assigned with other on-water recovery assets in a task force. In either case, it is most effective when a designated aircraft is assigned to provide tactical direction to ensure the best placement in recoverable oil.
Maximum Sea Conditions – Under most circumstances the FRU can maintain standard oil spill recovery operations in 2' to 4' seas. Ultimately, the Coast Guard licensed Captain in charge of the VOO (with input from the CGAS Supervisor assigned) will be responsible to determine when the sea conditions have surpassed the vessel's safe operating capabilities.

Possible Task Force Configuration (Multiple VOOs can be deployed in a task force)
1 – VOO (100' to 165' Utility or Supply Vessel)
1 – Boom reel w/support vessel for towing
1 – Tank barge (offshore) for temporary storage
1 – Utility/Crewboat (supply)
1 – Designated spotter aircraft

The VOSS (yellow) is being deployed and connected to an out-rigged arm. This is suitable for collection in both large pockets of oil and for recovery of streaming oil. The oil-to-skimmer encounter rate is limited by the length of the arm. Skimming pace is ≤ 1 knot.

Through the use of an additional VOO, and using extended sea boom, the swath of the VOSS is increased therefore maximizing the oil-to-skimmer encounter rate. Skimming pace is ≤ 1 knot.

The Koseq Rigid Sweeping Arm: A skimming system deployed on a vessel of opportunity. It requires a large Offshore or Platform Supply Vessel (OSV/PSV), greater than 200' with at least 100' x 50' of free deck space. On each side of the vessel, a 50' long rigid framed Arm is deployed that consists of pontoon chambers to provide buoyancy, a smooth nylon face, and a hydraulically adjustable mounted weir skimmer. The Arm floats independently of the vessel and is attached by a tow bridle and a lead line. The movement of the vessel forward draws the rubber end seal of the arm against the hull to create a collection point for free oil directed to the weir by the Arm face. The collection weir is adjusted to keep the lip as close to the oil water interface as possible to maximize oil recovery while attempting to minimize excess water collection. A transfer pump (combination of positive displacement, screw type and centrifuge suited for highly viscous oils) pump the recovered liquid to portable tanks and/or dedicated fixed storage tanks onboard the vessel. After being allowed to sit and separate, with approval from the Coast Guard, the water can be decanted (pumped off) in front of the collection arm to be reprocessed through the system. Once full with as much pure recovered oil as possible, the oil is transferred to a temporary storage barge where it can be disposed of in accordance with an approved disposal plan.

Tactical Overview

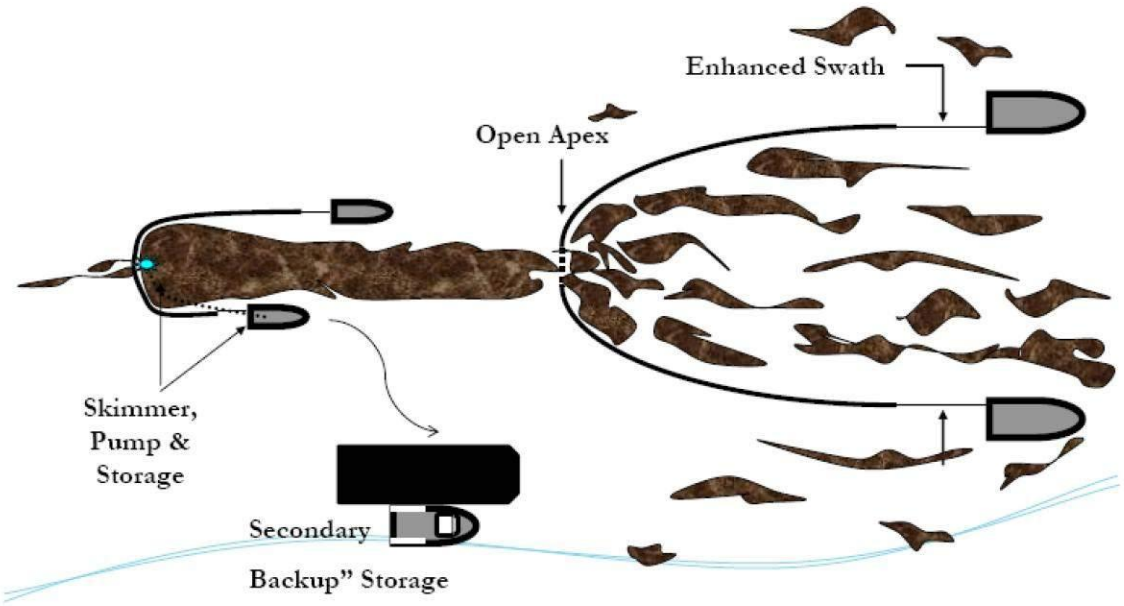
Mechanical Recovery – Deployed on large vessels of opportunity (VOO) the Koseq Rigid Sweeping Arms are high volume surge capacity deployed to increase recovery capacity at the source of a large oil spill in the offshore and outer nearshore environment of the Gulf of Mexico. They are highly mobile and sustainable in rougher sea conditions than normal skimming vessels (9.8' seas). The large Offshore Supply Vessels (OSV) required to deploy the Arms are able to remain on scene for extended periods, even when sea conditions pick up. Temporary storage on deck in portable tanks usually provides between 1,000 and 3,000 bbls. In most cases, the OSV will be able to pump 20% of its deadweight into the liquid mud tanks in accordance with the vessels Certificate of Inspection (COI). All storage can be offloaded utilizing the vessels liquid transfer system.

Maximum Sea Conditions - Under most circumstances the larger OSVs are capable of remaining on scene well past the Skimming Arms maximum sea state of 9.8'. Ultimately it will be the decision of the VOO Captain, with input from the T&T Supervisor onboard, to determine when the sea conditions have exceeded the safe operating conditions of the vessel.

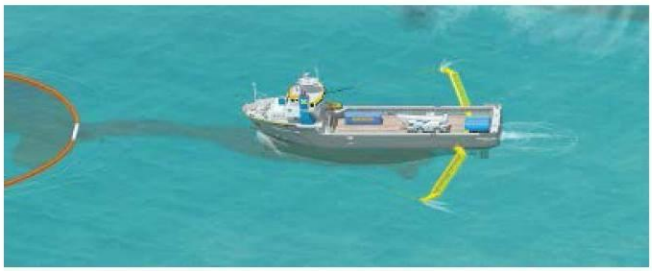
Command and Control – The large OSVs in many cases have state of the art communication and electronic systems, as well as the accommodations to support the function of directing all skimming operations offshore and reporting back to the command post.

Possible Task Force Configuration (Multiple Koseq VOOs can be deployed in a task force)

1 – $\geq$ 200' Offshore Supply Vessels (OSV) with set of Koseq Arms
2 to 4 portable storage tanks (500 bbl)
1 – Modular Crane Pedestal System set (MCPS) or 30 cherry picker (crane) for deployment
1 – Tank barge (offshore) for temporary storage
1 – Utility/Crewboat (supply)
1 – Designated spotter aircraft
4 – Personnel (4 T&T OSRO)



Scattered oil is "caught" by two VOO and collected at the apex of the towed sea boom. The oil moves thought a "gate" at that apex, forming a larger stream of oil which moves into the boom of the skimming vessel. Operations are paced at >1. A recovered oil barge stationed nearby to minimize time taken to offload recovered oil.



This is a depiction of the same operation as above but using KOSEQ Arms. In this configuration, the collecting boom speed dictates the operational pace at $\geq$ 1 knot to minimize entrainment of the oil.

Clean Gulf Associates (CGA) Procedure for Accessing Member-Contracted and other Vessels of Opportunity (VOOs) for Spill Response

- CGA has procedures in place for CGA member companies to acquire vessels of opportunity (VOOs) from an existing CGA member's contracted fleet or other sources for the deployment of CGA portable skimming equipment including Koseq Arms, Fast Response Units (FRUs) and any other portable skimming system(s) deemed appropriate for the response for a potential or actual oil spill, WCD oil spill or a Spill of National Significance (SONS).

- CGA uses Port Vision, a web-based vessel and terminal interface that empowers CGA to track vessels through Automatic Identification System (AIS) and terminal activities using a Geographic Information System (GIS). It provides live AIS/GIS views of waterways showing current vessel positions, terminals, created vessel fleets, and points-of-interest. Through this system, CGA has the ability to get instant snapshots of the location and status of all vessels contracted to CGA members, day or night, from any web-enabled PC.

Near Shore Response Actions

Timing

- Put near shore assets on standby and deployment in accordance with planning based on the actual situation, actual trajectories and oil budgets
- VOO identification and training in advance of spill nearing shoreline if possible
- Outfitting of VOOs for specific missions
- Deployment of assets based on actual movement of oil

Considerations

- Water depth, vessel draft
- Shoreline gradient
- State of the oil
- Use of VOOs
- Distance of surf zone from shoreline

Surveillance

- Provide trained observer to direct skimming operations
- Continual surveillance of oil movement by remote sensing systems, aerial photography and visual confirmation
- Continual monitoring of vessel assets

Dispersant Use

- Generally will not be approved within 3 miles of shore or with less than 10 meters of water depth
- Approval would be at Regional Response Team level (Region 6)

Dedicated Near Shore skimming systems

- FRVs
- Egmopol and Marco SWS
- Operate with aerial spotter directing systems to observed oil slicks

VOO

- Use TOPCO Offshore, LLC's contracted resources as applicable
- Industry vessel are usually best for deployment of Vessel of Opportunity Skimming Systems (VOSS)
- Acquire additional resources as needed
- Consider use of local assets, i.e. fishing and pleasure craft
- Expect mission specific and safety training to be required
- Plan with the US Coast Guard for vessel inspections
- Operate with aerial spotter directing systems to oil patches

Shoreline Protection Operations

Response Planning Considerations

- Review appropriate Area Contingency Plan(s)
- Locate and review appropriate Geographic Response and Site Specific Plans
- Refer to appropriate Environmentally Sensitive Area Maps
- Capability for continual analysis of trajectories run periodically during the response
- Environmental risk assessments (ERA) to determine priorities for area protection
- Time to acquire personnel and equipment and their availability
- Refer to the State of Louisiana Initial Oil Spill Response Plan, Deep Water Horizon, dated 2 May 2010, as a secondary reference
- Aerial surveillance of oil movement
- Pre-impact beach cleaning and debris removal
- Shoreline Cleanup Assessment Team (SCAT) operations and reporting procedures
- Boom type, size and length requirements and availability
- Possibility of need for In-situ burning in near shore areas
- Current wildlife situation, especially status of migratory birds and endangered species in the area
- Check for Archeological sites and arrange assistance for the appropriate state agency when planning operations the may impact these areas

Placement of boom

- Position boom in accordance with the information gained from references listed above and based on the actual situation
- Determine areas of natural collection and develop booming strategies to move oil into those areas
- Assess timing of boom placement based on the most current trajectory analysis and the availability of each type of boom needed. Determine an overall booming priority and conduct booming operations accordingly. Consider:
    - Trajectories
    - Weather forecast
    - Oil Impact forecast
    - Verified spill movement
    - Boom, manpower and vessel (shallow draft) availability
    - Near shore boom and support material, (stakes, anchors, line)

Beach Preparation - Considerations and Actions

- Use of a 10 mile go/no go line to determine timing of beach cleaning
- SCAT reports and recommendations
- Determination of archeological sites and gaining authority to enter
- Monitoring of tide tables and weather to determine extent of high tides
- Pre cleaning of beaches by moving waste above high tide lines to minimize waste
- Determination of logistical requirements and arranging of waste removal and disposal

- Staging of equipment and housing of response personnel as close to the job site as possible to maximize on-site work time
- Boom tending, repair, replacement and security (use of local assets may be advantageous)
- Constant awareness of weather and oil movement for resource re-deployment as necessary
- Earthen berms and shoreline protection boom may be considered to protect sensitive inland areas
- Requisitioning of earth moving equipment
- Plan for efficient and safe use of personnel, ensuring:
    - A continual supply of the proper Personal Protective Equipment
    - Heating or cooling areas when needed
    - Medical coverage
    - Command and control systems (i.e. communications)
    - Personnel accountability measures
- Remediation requirements, i.e., replacement of sands, rip rap, etc.
- Availability of surface washing agents and associated protocol requirements for their use (see National Contingency Plan Product Schedule for list of possible agents)
- Discussions with all stakeholders, i.e., land owners, refuge/park managers, and others as appropriate, covering the following:
    - Access to areas
    - Possible response measures and impact of property and ongoing operations
    - Determination of any specific safety concerns
    - Any special requirements or prohibitions
    - Area security requirements
    - Handling of waste
    - Remediation expectations
    - Vehicle traffic control
    - Domestic animal safety concerns
    - Wildlife or exotic game concerns/issues

Inland and Coastal Marsh Protection and Response Considerations and Actions

- All considered response methods will be weighed against the possible damage they may do to the marsh. Methods will be approved by the Unified Command only after discussions with local Stakeholder, as identified above.
    - In-situ burn may be considered when marshes have been impacted
- Passive clean up of marshes should considered and appropriate stocks of sorbent boom and/or sweep obtained.
- Response personnel must be briefed on methods to traverse the marsh, i.e.,
    - use of appropriate vessel
    - use of temporary walkways or road ways
- Discuss and gain approval prior cutting or moving vessels through vegetation
- Discuss use of vessels that may disturb wildlife, i.e, airboats
- Safe movement of vessels through narrow cuts and blind curves

- Consider the possibility that no response in a marsh may be best
- In the deployment of any response asset, actions will be taken to ensure the safest, most efficient operations possible. This includes, but is not limited to:
    - Placement of recovered oil or waste storage as near to vessels or beach cleanup crews as possible.
    - Planning for stockage of high use items for expeditious replacement
    - Housing of personnel as close to the work site as possible to minimize travel time
    - Use of shallow water craft
    - Use of communication systems appropriate ensure command and control of assets
    - Use of appropriate boom in areas that I can offer effective protection
    - Planning of waste collection and removal to maximize cleanup efficiency
- Consideration or on-site remediation of contaminated soils to minimize replacement operations and impact on the area

Decanting Strategy

Recovered oil and water mixtures will typically separate into distinct phases when left in a quiescent state. When separation occurs, the relatively clean water phase can be siphoned or decanted back to the recovery point with minimal, if any, impact. Decanting therefore increases the effective on-site oil storage capacity and equipment operating time. FOSC/SOSC approval will be requested prior to decanting operations. This practice is routinely used for oil spill recovery.

CGA Equipment Limitations

The capability for any spill response equipment, whether a dedicated or portable system, to operate in differing weather conditions will be directly in relation to the capabilities of the vessel the system in placed on. Most importantly, however, the decision to operate will be based on the judgment of the Unified Command and/or the Captain of the vessel, who will ultimately have the final say in terminating operations. Skimming equipment listed below may have operational limits which exceed those safety thresholds. As was seen in the Deepwater Horizon (DWH) oil spill response, vessel skimming operations ceased when seas reached 5-6 feet and vessels were often recalled to port when those conditions were exceeded. Systems below are some of the most up-to-date systems available and were employed during the DWH spill.

Boom	3 foot seas, 20 knot winds
Dispersants	Winds more than 25 knots Visibility less than 3 nautical miles Ceiling less than 1,000 feet.
FRU	8 foot seas
HOSS Barge/OSRB	8 foot seas
Koseq Arms	8 foot seas
OSRV	4 foot seas

Environmental Conditions in the GOM

Louisiana is situated between the easterly and westerly wind belts, and therefore, experiences westerly winds during the winter and easterly winds in the summer. Average wind speed is generally 14-15 mph along the coast. Wave heights average 4 and 5 feet. However, during hurricane season, Louisiana has recorded wave heights ranging from 40 to 50 feet high and winds reaching speeds of 100 mph. Because much of southern Louisiana lies below sea level, flooding is prominent.

Surface water temperature ranges between 70 and 80 ° F during the summer months. During the winter, the average temperature will range from 50 and 60 ° F.

The Atlantic and Gulf of Mexico hurricane season is officially from 1 June to 30 November. 97% of all tropical activity occurs within this window. The Atlantic basin shows a very peaked season from August through October, with 78% of the tropical storm days, 87% of the minor (Saffir-Simpson Scale categories 1 and 2) hurricane days, and 96% of the major (Saffir-Simpson categories 3, 4 and 5) hurricane days occurring then. Maximum activity is in early to mid September. Once in a few years there may be a hurricane occurring "out of season" - primarily in May or December. Globally, September is the most active month and May is the least active month.

FIGURE 1
TRAJECTORY BY LAND SEGMENT

Trajectory of a spill and the probability of it impacting a land segment have been projected utilizing TOPCO Offshore, LLC's WCD and information in the BOEM Oil Spill Risk Analysis Model (OSRAM) for the Central and Western Gulf of Mexico available on the BOEM website using 10 day impact. The results are tabulated below.

Area/Block	OCS-G	Launch Area	Land Segment and/or Resource	Conditional Probability (%)
VR 170 A *42.13 miles from shore*	G33596	C33	Galveston, TX Jefferson, TX **Cameron, LA** Vermilion, LA Iberia, LA Terrebonne, LA	3 4 **13** 6 1 1

WCD Scenario– <u>BASED ON WELL BLOWOUT DURING DRILLING OPERATIONS</u> (42.13 miles from shore)
5,574 bbls of condensate (Volume considering natural weathering)
API Gravity 47°

FIGURE 2 – Equipment Response Time to VR 170 A

Dispersants/Surveillance

Dispersant/Surveillance	Dispersant Capacity (gal)	Persons Req.	From	Hrs to Procure	Hrs to Loadout	Travel to site	Total Hrs
ASI							
Basler 67T	2000	2	Houma	2	2	0.5	4.5
DC 3	1200	2	Houma	2	2	0.7	4.7
DC 3	1200	2	Houma	2	2	0.7	4.7
Aero Commander	NA	2	Houma	2	2	0.5	4.5

Offshore Response

Offshore Equipment Pre-Determined Staging	EDRC	Storage Capacity	VOO	Persons Required	From	Hrs to Procure	Hrs to Loadout	Hrs to GOM	Travel to Spill Site	Hrs to Deploy	Total Hrs
CGA											
HOSS Barge	76285	4000	3 Tugs	12	Harvey	6	0	12	10	2	30
95' FRV	22885	249	NA	6	Vermilion	2	0	3	3	1	9
Boom Barge (CGA-300) 42" Auto Boom (25000')	NA	NA	1 Tug 50 Crew	4 (Barge) 2 (Per Crew)	Leeville	8	0	4	19	2	33

Recovered Oil Storage Pre-Determined Staging	EDRC	Storage Capacity	VOO	Persons Required	From	Hrs to Procure	Hrs to Loadout	Hrs to GOM	Travel to Spill Site	Hrs to Deploy	Total Hrs
Enterprise Marine Services LLC (Available through contract with CGA)											
CTCo 2604	NA	20000	1 Tug	6	Amelia	33	0	6	8	1	48
CTCo 2605	NA	20000	1 Tug	6	Amelia	33	0	6	8	1	48
CTCo 2606	NA	20000	1 Tug	6	Amelia	33	0	6	8	1	48
CTCo 5001	NA	47000	1 Tug	6	Amelia	33	0	6	8	1	48

Staging Area: Fourchon

Offshore Equipment With Staging	EDRC	Storage Capacity	VOO	Persons Req.	From	Hrs to Procure	Hrs to Loadout	Travel to Staging	Travel to Site	Hrs to Deploy	Total Hrs
CGA											
FRU (1) + 100 bbl Tank (2)	4251	200	1 Utility	6	Lake Charles	2	6	7	11	1	27

Nearshore Equipment Pre-determined Staging	EDRC	Storage Capacity	VOO	Persons Required	From	Hrs to Procure	Hrs to Loadout	Hrs to GOM	Travel to Spill Site	Hrs to Deploy	Total Hrs
Enterprise Marine Services LLC (Available through contract with CGA)											
CTCo 2607	NA	23000	1 Tug	6	Amelia	26	0	6	15	1	48

Staging Area: Cameron

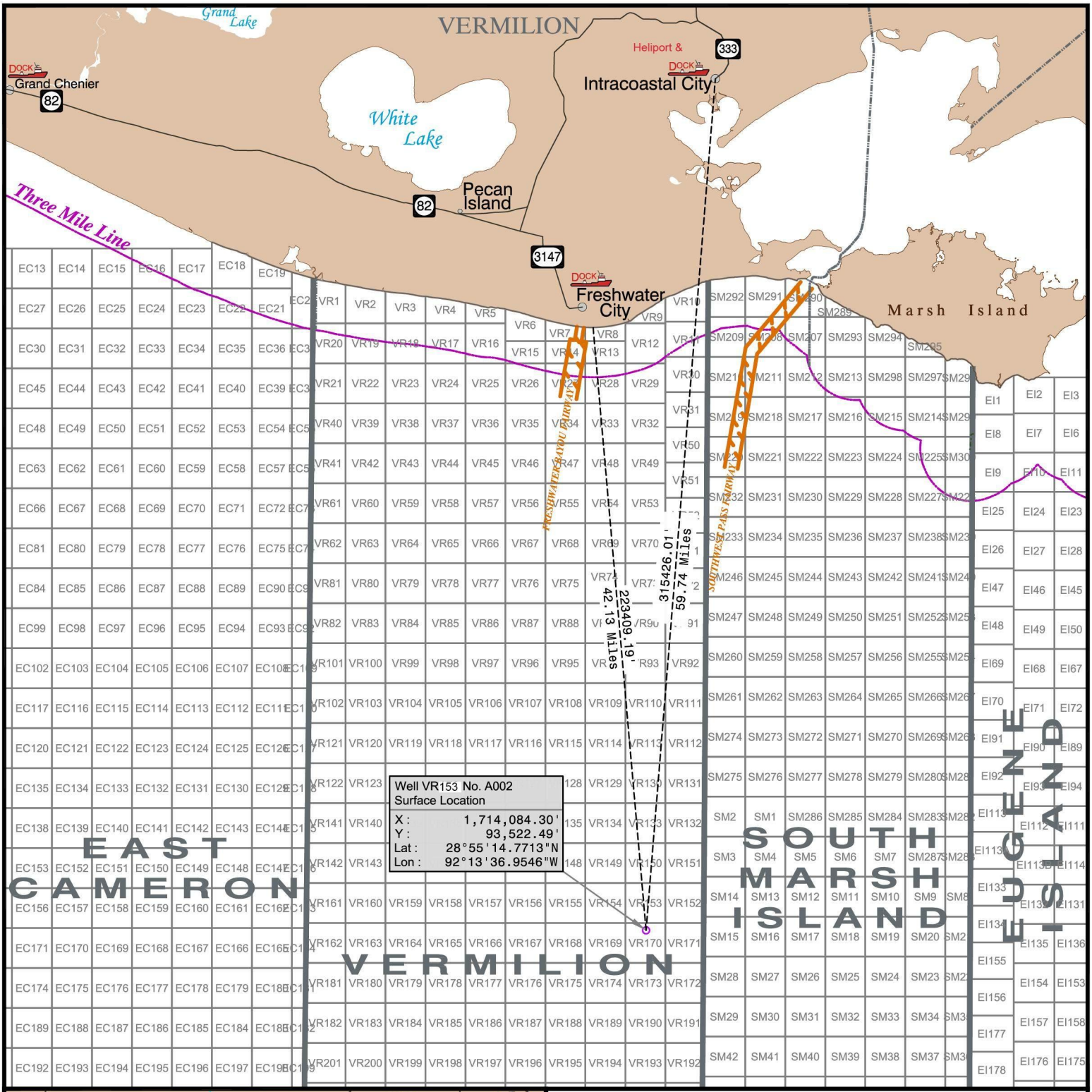
Nearshore Equipment With Staging	EDRC	Storage Capacity	VOO	Persons Req.	From	Hrs to Procure	Hrs to Load Out	Travel to Staging	Travel to Deployment	Hrs to Deploy	Total Hrs
CGA											
SWS Egmopol	1810	100	NA	3	Galveston	2	2	5	2	1	12
SWS Egmopol	1810	100	NA	3	Morgan City	2	2	4.5	2	1	11.5
SWS Marco	3588	20	NA	3	Lake Charles	2	2	2	2	1	9
SWS Marco	3588	34	NA	3	Leeville	2	2	7	2	1	14
SWS Marco	3588	34	NA	3	Venice	2	2	9.5	2	1	16.5
Foilex Skim Package (TDS 150)	1131	50	NA	3	Lake Charles	4	12	2	2	2	22
Foilex Skim Package (TDS 150)	1131	50	NA	3	Galveston	4	12	5	2	2	25
Foilex Skim Package (TDS 150)	1131	50	NA	3	Harvey	4	12	7	2	2	27
4 Drum Skimmer (Magnum 100)	680	100	1 Crew	3	Lake Charles	2	2	2	2	1	9
4 Drum Skimmer (Magnum 100)	680	100	1 Crew	3	Harvey	2	2	7	2	1	14
2 Drum Skimmer (TDS 118)	240	100	1 Crew	3	Lake Charles	2	2	2	2	1	9
2 Drum Skimmer (TDS 118)	240	100	1 Crew	3	Harvey	2	2	7	2	1	14

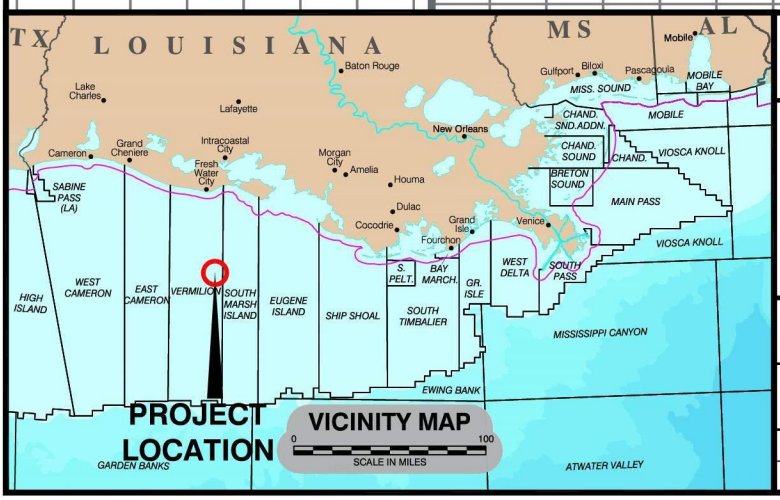
Staging Area: Cameron

Shoreline Protection Boom	VOO	Persons Req.	Storage/Warehouse Location	Hrs to Procure	Hrs to Loadout	Travel to Staging	Travel to Deployment Site	Hrs to Deploy	Total Hrs
OMI Environmental (available through Letter of Intent)									
12,500' 18" Boom	6 Crew	12	New Iberia, LA	1	1	4	2	3	11
6,400' 18" Boom	3 Crew	6	Houston, TX	1	1	4	2	3	11
3,500' 18" Boom	2 Crew	4	Port Arthur, TX	1	1	2	2	3	9
8,000' 18" Boom	3 Crew	6	Port Allen, LA	1	1	5	2	3	12

Wildlife Response	EDRC	Storage Capacity	VOO	Persons Req.	From	Hrs to Procure	Hrs to Loadout	Travel to Staging	Travel to Deployment	Hrs to Deploy	Total Hrs
CGA											
Wildlife Support Trailer	NA	NA	NA	2	Harvey	2	2	7	1	2	14
Bird Scare Guns (24)	NA	NA	NA	2	Harvey	2	2	7	1	2	14
Bird Scare Guns (12)	NA	NA	NA	2	Galveston	2	2	5	1	2	12
Bird Scare Guns (12)	NA	NA	NA	2	Aransas Pass	2	2	9.5	1	2	16.5
Bird Scare Guns (48)	NA	NA	NA	2	Lake Charles	2	2	2	1	2	9
Bird Scare Guns (24)	NA	NA	NA	2	Leeville	2	2	7	1	2	14

Response Asset	Total
Offshore EDRC	103,421
Offshore Recovered Oil Capacity	111,449
Nearshore / Shallow Water EDRC	19,617
Nearshore / Shallow Water Recovered Oil Capacity	23,838





TOPCO

VICINITY MAP
PROPOSED VR170 WELL A002

BLOCK 170
VERMILION AREA
GULF OF MEXICO

Geodetic Datum: NAD27
Projection: LOUISIANA SOUTH
Grid Units: US SURVEY FEET

SCALE 1:600000
0 50000
FEET

FUGRO USA MARINE, INC.
6100 Hillcroft Ave.
Houston, Texas 77081
(713) 346-3700

Job No.: 18015087 | Date: 10/16/2018 | Drwn: EA | Chart: 1 Of: 1

DWG File: 1801508702_Vicinity-VR170-VR153-A2

10/16/2018

ATTACHMENT O

COASTAL ZONE MANAGEMENT

CONSISTENCY CERTIFICATION

INITIAL EP

Vermillion Area, Block 153

LEASE OCS-G 34802

The proposed activities described in detail in this OCS Plan comply with Louisiana's approved Coastal Zone Management Program and will be conducted in a manner consistent with such Program. Relevant enforceable policies were considered in this certification and will be complied with.

TOPCO OFFSHORE, LLC
Lessee or Operator

Amanda Thompson
Certifying Official

October 16, 2018
Date

ATTACHMENT P